

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

AMENDMENT NO. 1  
TO

**FORM S-1**

REGISTRATION STATEMENT  
*Under*  
THE SECURITIES ACT OF 1933

**EMERALD BIOSCIENCE, INC.**

(Exact Name of Registrant as Specified in its Charter)

**Nevada**

(State or other jurisdiction of  
incorporation or organization)

**2834**

(Primary Standard Industrial  
Classification Code Number)

**45-0692882**

(I.R.S. Employer  
Identification Number)

**130 North Marina Drive  
Long Beach, CA 90803  
(949) 480-9051**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Dr. Brian Murphy  
Chief Executive Officer  
Emerald Bioscience, Inc.  
130 North Marina Drive  
Long Beach, CA 90803  
(949) 480-9051**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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**Approximate date of commencement of proposed sale to the public:** As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box. ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer  
Non-accelerated filer

☐  
☒

Accelerated filer  
Smaller reporting company  
Emerging growth company

☐  
☒  
☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act. ☐

# CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered (1)	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee (4)
Common Units each consisting of: <sup>(5)</sup>	\$ 5,841,121.50	\$ 758.18
(i) One share of common stock, par value \$0.001 <sup>(3)</sup>		
(ii) One warrant to purchase one share of common stock <sup>(3)(7)</sup>		
Pre-funded Units each consisting of:	\$ -	\$ -
(i) One pre-funded warrant to purchase one share of common stock <sup>(5)(7)</sup>		
(ii) One warrant to purchase one share of common stock <sup>(3)(7)</sup>		
Common stock issuable upon exercise of the warrants included as part of the Common Units	\$ 5,841,121.50	\$ 758.18
Common stock issuable upon exercise of the warrants included as part of the Pre-funded Units		
Placement Agent's Warrants to purchase shares of common stock and common stock issuable upon exercise thereof <sup>(6)(7)</sup>	\$ 511,098.13	\$ 66.34
Total	12,193,341.13	
	\$ <sup>(2)</sup>	\$ 1,582.70 <sup>(8)</sup>

- (1) In accordance with Rule 416(a), this Registration Statement also covers an indeterminate number of shares that may be issued and resold resulting from stock splits, stock dividends or similar transactions.
- (2) Estimated solely for the purpose of calculating the registration fee under Rule 457(o) of the Securities Act of 1933, as amended ("Securities Act").
- (3) No fee required pursuant to Rule 457(g).
- (4) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.
- (5) The proposed maximum aggregate offering price of the common stock proposed to be sold in the offering will be reduced on a dollar-for-dollar basis based on the aggregate offering price of the pre-funded warrants offered and sold in the offering (plus the aggregate exercise price of the pre-funded warrants), and as such the proposed aggregate maximum offering price of the common stock and pre-funded warrants (including the common stock issuable upon exercise of the pre-funded warrants), if any, is \$5,841,121.50.
- (6) Represents warrants issuable to the placement agent, or the Placement Agent's Warrants, to purchase a number of shares of common stock equal to 7.0% of the aggregate number of shares of common stock (or common stock equivalent, if applicable, but shall not include any shares of common stock underlying warrants issued in this offering (other than pre-funded warrants) being offered) with an exercise price equal to 125% of the public offering price of the Common Units. See "Plan of Distribution."
- (7) Resales of the common stock warrants, the pre-funded warrants and the Placement Agent's Warrants on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, are registered hereby. Resales of shares of common stock issuable upon exercise of the Placement Agent's Warrants, the pre-funded warrants and the common stock warrants are also being registered on a delayed or continuous basis hereby.
- (8) Previously paid.

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until the Registration Statement shall become effective on such date as the SEC, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the Registration Statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any State where the offer or sale is not permitted.

**PRELIMINARY PROSPECTUS**

**SUBJECT TO COMPLETION, DATED JULY 28, 2020**



**EMERALD BIOSCIENCE, INC.**

**Up to 48,676,012 Common Units, each consisting of  
One Share of Common Stock and  
One Warrant to Purchase One Share of Common Stock  
Pre-Funded Units each consisting of One Pre-Funded Warrant to Purchase One Share of  
Common Stock and One Warrant to Purchase One Share of Common Stock**

We are offering, on a “best efforts” basis, up to 48,676,012 Common Units at an assumed public offering price per Common Unit of \$0.12, each unit consisting of (i) one share of our common stock, and (ii) one warrant to purchase one share of common stock. Each warrant will entitle the holder to purchase one share of common stock. The warrants will expire five years from the date of issuance.

We are also offering to certain purchasers whose purchase of shares of common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if any such purchaser so chooses, Pre-Funded Units, each consisting of (i) one pre-funded warrant to purchase one share of common stock and (ii) one warrant to purchase one share of common stock, in lieu of Common Units that would otherwise result in such purchaser’s beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock. The purchase price of each Pre-Funded Unit will be equal to the price at which a Common Unit is sold to the public in this offering, minus \$0.001, and the exercise price of each pre-funded warrant will be \$0.001 per share. The pre-funded warrants will be immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full. For each pre-funded warrant we sell in connection with the sale of a Pre-Funded Unit, the number of shares of common stock we are offering will be decreased on a one-for-one basis. Therefore, the number of common stock warrants sold in this offering will not change as a result of a change in the mix of the shares of our common stock and pre-funded warrants sold. The shares of common stock and pre-funded warrants, and the accompanying common stock warrants, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance. Each common stock warrant will have an exercise price of \$\_\_\_ per share of common stock, will be exercisable upon issuance and will expire five years from the date of issuance.

This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. The Common Units and Pre-Funded Units will not be issued or certificated. Instead, the shares of common stock or pre-funded warrants and the warrants underlying the Common Units and Pre-Funded Units will be issued separately and may be resold separately, although they will have been purchased together in this offering. There is no minimum number of Common Units or Pre-Funded Units required to be purchased, and subscriptions, once received and accepted, are irrevocable. Because there is no minimum offering amount required as a condition to closing in this offering, the actual public offering amount and

proceeds to us, if any, are not presently determinable and may be substantially less than all of the Common Units and Pre-Funded Units offered hereby.



any arrangements to place the funds received from the sale of Common Units and Pre-Funded Units in the offering in an escrow, trust or similar account.

Our common stock is quoted on the OTCQB under the symbol “EMBI”. On July 22, 2020, the closing price of our common stock on the OTCQB was \$0.12 per share.

The final public offering price per Common Unit or per Pre-Funded Unit will be determined through negotiation between us and the placement agent in this offering and will take into account the recent market price of our common stock, the general condition of the securities market at the time of this offering, the history of, and the prospects for, the industry in which we compete, and our past and present operations and our prospects for future revenues. The recent market price used throughout this prospectus may not be indicative of the public offering price per share or per warrant.

There is no established public trading market for the pre-funded warrants, the common stock warrants and the Placement Agent’s Warrants and we do not expect a market to develop. Without an active trading market, the liquidity of the warrants will be limited. In addition, we do not intend to list the pre-funded warrants, common stock warrants or the Placement Agent’s Warrants on any national securities exchange or any other trading system.

We engaged H.C. Wainwright & Co., LLC (the “Placement Agent”) as our exclusive placement agent to use its reasonable best efforts to solicit offers to purchase the securities in this offering. The Placement Agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. We have agreed to pay the placement agent the placement agent fees set forth in the table below, which assumes that we sell all of the securities we are offering. Because there is no minimum offering amount required as a condition to closing in this offering, the actual offering amount, placement agent’s fees, and proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth below.

**Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading “Risk Factors” beginning on page 8 of this prospectus, and under similar headings in any amendments or supplements to this prospectus.**

	Per Common Unit	Per Pre-Funded Unit	Total
Public offering price	\$	\$	\$
Placement Agent’s cash fee (1)	\$	\$	\$
Proceeds, before expenses, to us (2)	\$	\$	\$

- (1) We have agreed to reimburse the Placement Agent for certain of its expenses and to pay a cash fee and management fee to the Placement Agent of 7.5% and 1.0%, respectively, of the aggregate gross proceeds in this offering. In addition, we have agreed to issue to the Placement Agent warrants to purchase up to a number of shares of our common stock equal to 7.0% of the number of shares of common stock and pre-funded warrants sold in this offering. See “*Plan of Distribution*” for additional information and a description of the compensation payable to the Placement Agent.
- (2) We estimate the total expenses of this offering payable by us, excluding the Placement Agent’s cash fee, will be \$117,798.

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

Delivery of the securities to the purchaser is expected to be made on or about \_\_\_\_\_, 2020, subject to the satisfaction of certain closing conditions.

**H.C. Wainwright & Co.**

\_\_\_\_\_  
The date of this prospectus is \_\_\_\_\_, 2020

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*You should rely only on the information contained in this prospectus. Neither we nor the Placement Agent have authorized any other person, other than the Placement Agent, to provide you with information that is different from that contained in this prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. You should assume that the information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our securities. Our business, financial condition, results of operations and prospects may have changed since that date.*

**PROSPECTUS SUMMARY**

*This summary highlights selected information contained elsewhere in this prospectus. This summary does not contain all the information that you should consider before investing in our securities. You should carefully read the entire prospectus including “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our Financial Statements, before making an investment decision.*

In this prospectus, unless otherwise specified, the terms “we,” “us,” “our,” “Company” and “Emerald Bioscience” mean Emerald Bioscience, Inc., a Nevada corporation, and our wholly-owned subsidiaries.

**Corporate Overview**

We are a biopharmaceutical company targeting the discovery, development and commercialization of cannabinoid-based therapeutics through a number of license agreements with the University of Mississippi (“UM”) which holds the only contract to cultivate cannabis for research purposes on behalf of the Federal Government of the United States since 1968, and it has significant expertise in cannabis cultivation and the extraction, separation, processing and manufacture of cannabis extracts as well as the chemistry and physiology of cannabinoid molecules. We were established as, and continue to be, a development and commercialization partner of UM, working to bring the University’s proprietary cannabinoid molecules through the development process.

**Corporate Information**

Our principal executive offices are located at 130 North Marina Drive, Long Beach, CA 90803. Our telephone number is (949)480-9051 . Our website address is <http://emeraldbio.life>. The information on, or that can be accessed through, our website is not part of this prospectus.



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**THE OFFERING**

Common Units offered by us in this offering	<p>We are offering up to 48,676,012 Common Units. Each Common Unit consists of (i) one share of our common stock, and (ii) one warrant to purchase one share of common stock. Each warrant will entitle the holder to purchase one share of common stock. The common stock warrants will expire five years from the date of issuance.</p> <p>This prospectus also relates to the offering of shares of our common stock issuable upon the exercise of the warrants included in the Common Units.</p>
Pre-funded Units offered by us in this offering	<p>We are also offering to certain purchasers whose purchase of shares of common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the closing of this offering, the opportunity to purchase, if such purchasers so choose, Pre-Funded Units. Each Pre-Funded Unit consists of (i) one pre-funded warrant to purchase one share of common stock and (ii) one warrant to purchase one share of common stock, in lieu of Common Units that would otherwise result in any such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock. Each pre-funded warrant issued in connection with the Pre-Funded Units will be exercisable for one share of our common stock. The purchase price of each Pre-Funded Unit will be equal to the price at which a share of common stock and accompanying common stock warrant is being sold as a Common Unit to the public in this offering, minus \$0.001, and the exercise price of each pre-funded warrant will be \$0.001 per share. The pre-funded warrants issued in connection with the Pre-Funded Units will be immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. For each Pre - F unded Unit we sell, the number of Common Units we are offering will be decreased on a one-for-one basis. Because we will issue a common stock warrant for each share of our common stock sold as part of a Common Unit and for each pre-funded warrant to purchase one share of our common stock sold as part of a Pre-Funded Unit in this offering, the total number of common stock warrants sold in this offering will not change as a result of a change in the mix of the Common Units and Pre-Funded Units.</p> <p>For more information, see the section entitled “<i>Description of Securities</i>” on page 40 of this prospectus.</p>
Common stock warrants offered by us in this offering	<p>Warrants to purchase up to 48,676,012 shares (based on an assumed price per Unit of \$0.12), which may be exercised beginning on their date of issuance. The warrants are exercisable until the five-year anniversary of the original issuance date. The warrants have an exercise price of \$___ per share, subject to adjustment.</p> <p>For more information, see the section entitled “<i>Description of Securities</i>” on page 40 of this prospectus.</p>
Common stock to be outstanding after this offering	<p>231,883,759 shares (based on an assumed offering price of \$0.12 per share), assuming no sales of Pre-Funded Units, which, if sold, would reduce the number of shares of common stock that we are offering on a one-for-one basis and assuming no exercise of any common stock warrants issued in this offering.</p>

Use of proceeds	We intend to use the net proceeds from this offering for general corporate purposes, including working capital. We may use the net proceeds from this offering to fund possible acquisitions of other companies, products or technologies, though no such acquisitions are currently contemplated. In addition, a portion of the proceeds raised may be used to pay, in whole or in part, the principal and/or the accrued interest on our Credit Agreement. See “ <i>Use of Proceeds</i> ” on page 35 of this prospectus.
Best efforts	We have retained H.C. Wainwright & Co., LLC as our exclusive placement agent in connection with the securities offered by this prospectus. The placement agent has agreed to use its reasonable best efforts to solicit offers to purchase the securities offered by this prospectus. The placement agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. See “ <i>Plan of Distribution</i> ” on page 37 of this prospectus.
Risk factors	See “ <i>Risk Factors</i> ” beginning on page 8 and the other information included elsewhere in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our equity securities.

#### **INCORPORATION BY REFERENCE**

The SEC allows us to “incorporate by reference” into this prospectus the information in other documents that we file with it, including at a subsequent date. The information incorporated by reference is considered to be a part of this prospectus, and information in documents that we file later with the SEC will automatically update and supersede information contained in documents filed earlier with the SEC or contained in this prospectus. In addition to documents referenced as incorporated by reference elsewhere in this prospectus, we incorporate by reference herein all documents subsequently filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the termination of the offering; provided, however, that we are not incorporating, in each case, any documents or information deemed to have been furnished and not filed in accordance with SEC rules.

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**RISK FACTORS**

*Any investment in our securities involves a high degree of risk. Investors should carefully consider the risks described below and all of the information contained in this prospectus before deciding whether to purchase our securities. Our business, financial condition or results of operations could be materially adversely affected by these risks if any of them actually occur. Our common stock is quoted on the OTCQB under the symbol EMBI. This market is extremely limited and the prices quoted are not a reliable indication of the value of our common stock. As of the date of this prospectus, there has been very limited trading of shares of our common stock. If and when our common stock is traded, the trading price could decline due to any of these risks, and an investor may lose all or part of his or her investment. Some of these factors have affected our financial condition and operating results in the past or are currently affecting us. This prospectus also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks described below and elsewhere in this prospectus.*

**Risks Related to this Offering:**

***This is a “best efforts” offering, no minimum amount of securities is required to be sold, and we may not raise the amount of capital we believe is required for our business plans.***

The Placement Agent has agreed to use its reasonable best efforts to solicit offers to purchase the securities in this offering. The Placement Agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. There is no required minimum number of securities that must be sold as a condition to completion of this offering. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, Placement Agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth above. We may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us, and investors in this offering will not receive a refund in the event that we do not sell any minimum amount of securities. Thus, we may not raise the amount of capital we believe is required for our operations in the short-term and may need to raise additional funds, which may not be available or available on terms acceptable to us.

***If you purchase our common stock, pre-funded warrants and common stock warrants in this offering, you will incur immediate and substantial dilution in the book value of your shares.***

The combined public offering price in this offering is substantially higher than the net tangible book value per share of our common stock. Investors purchasing Units in this offering will pay a price per share that substantially exceeds the book value of our tangible assets after subtracting our liabilities. As a result, investors purchasing common stock, pre-funded warrants and common stock warrants in this offering will incur immediate dilution of \$0.11 per share, based on the assumed combined public offering price of \$0.12 per Unit.

As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. For a further description of the dilution that you will incur as a result of purchasing shares in this offering, see “*Dilution*.”

***The pre-funded warrants and common stock warrants are speculative in nature.***

Neither the pre-funded warrants nor the common stock warrants offered hereby confer any rights of common stock ownership on their holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire shares of common stock at a fixed price. Specifically, commencing on the date of issuance, holders of the pre-funded warrants may acquire the common stock issuable upon exercise of such warrants at an exercise price of \$0.001 per share of common stock and holders of the common stock warrants may acquire the common stock issuable upon exercise of such warrants at an exercise price of \$\_\_ per share. Moreover, following this offering, the market value of the pre-funded warrants and common stock warrants is uncertain and there can be no assurance that the market value of the pre-funded warrants or the common stock warrants will equal or exceed their public offering price. There can be no assurance that the market price of the common stock will ever equal or exceed the exercise price of the pre-funded warrants or common stock warrants, and consequently, whether it will ever be profitable for holders of the pre-funded warrants to exercise the pre-funded warrants or the holders of the common stock warrants to exercise the common stock warrants.

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***Holders of the pre-funded warrants and common stock warrants will have no voting rights as common stockholders until they acquire our common stock.***

Until you acquire shares of our common stock upon exercise of the pre-funded warrants and common stock warrants, you will have no voting rights with respect to our common stock issuable upon exercise of the pre-funded warrants or common stock warrants. Upon exercise of your pre-funded warrants or common stock warrants, you will be entitled to exercise all the voting rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

***Significant holders or beneficial holders of our common stock may not be permitted to exercise pre-funded warrants or common stock warrants that they hold.***

The pre-funded warrants and common stock warrants being offered hereby will prohibit a holder from exercising its pre-funded warrants or common stock warrants if doing so would result in such holder (together with such holder's affiliates and any other persons acting as a group together with such holder or any of such holder's affiliates) beneficially owning more than 4.99% of our common stock outstanding immediately after giving effect to the exercise, provided that, at the election of a holder and notice to us, such beneficial ownership limitation as to such holder shall be 9.99% of our common stock outstanding immediately after giving effect to the exercise. As a result, if you hold a significant amount of our securities, you may not be able to exercise your pre-funded warrants or common stock warrants for shares of our common stock, in whole or in part, at a time when it would be financially beneficial for you to do so.

***There is no public market for the pre-funded warrants or common stock warrants to purchase shares of our common stock being included in the Common Units and Pre-Funded Units offered in this offering.***

There is no public trading market for the pre-funded warrants or common stock warrants included as part of the Common Units and Pre-Funded Units being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the pre-funded warrants or common stock warrants on any national securities exchange or other nationally recognized trading system. Without an active market, the liquidity of the pre-funded

warrants or common stock warrants will be limited, and you may not be able to resell your warrants. If your warrants cannot be resold, you will have to depend upon any appreciation in the value of our common stock over the exercise price of the warrants in order to realize a return on your investment in the warrants.

***Except as otherwise provided in the pre-funded warrants or common stock warrants, holders of our pre-funded warrants or common stock warrants will not have the rights or privileges of a holder of our common stock, including any voting rights, until such holders exercise their warrants and acquire our common stock.***

Except as otherwise provided in the pre-funded warrants or common stock warrants, holders of our pre-funded warrants or common stock warrants will not have the rights or privileges of a holder of our common stock, including any voting rights, until such holders exercise their warrants and acquire our common stock. As a result, absent exercise of the pre-funded warrants or common stock warrants, holders of the pre-funded warrants or common stock warrants will not have the ability to vote their shares underlying the pre-funded warrants or common stock warrants, which may limit the influence that investors in our offering may have over the outcome of matters submitted to our stockholders for a vote.

***Because our management will have broad discretion and flexibility in how the net proceeds from this offering are used, we may use the net proceeds in ways in which you disagree.***

We currently intend to use the net proceeds from this offering for general corporate purposes, including working capital. We have not allocated specific amounts of the net proceeds from this offering for any of the foregoing purposes. Accordingly, our management will have significant discretion and flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the net proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for us. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

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**Risks Related to our Business and Capital Requirements:**

*Since we have a limited operating history in our business, it is difficult for potential investors to evaluate our business.*

Our short operating history may hinder our ability to successfully meet our objectives and makes it difficult for potential investors to evaluate our business or prospective operations. We have not generated any revenues since inception and we are not currently profitable and may never become profitable. As an early stage company, we are subject to all the risks inherent in the financing, expenditures, operations, complications and delays inherent in a new business. Accordingly, our business and success face risks from uncertainties faced by developing companies in a competitive environment. There can be no assurance that our efforts will be successful or that we will ultimately be able to attain profitability.

*We currently have no product revenues and no products approved for marketing and need substantial additional funding to continue our operations. We may not be able to raise capital when needed, if at all, which would force us to delay, reduce or eliminate our product development programs or commercialization efforts and could cause our business to fail.*

We expect to need substantial additional funding to pursue the clinical development of our product candidates and launch and commercialize any product candidates for which we receive regulatory approval. Our existing cash position is under \$0.1 million and we need to bring in additional capital in the near term. We require additional capital for the development and commercialization of our product candidates. Furthermore, we expect to incur additional costs associated with operating as a public company. We may also encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may increase our capital needs and/or cause us to spend our cash resources faster than we expect. Accordingly, we will need to obtain substantial additional funding in order to continue our operations. As noted in our audited financial statements for the years ended December 31, 2019 and 2018, the uncertainties surrounding our ability to fund our operations raise substantial doubt about our ability to continue as a going concern.

To date, we have financed our operations entirely through investments by founders and other investors. We may seek additional funds through public or private equity or debt financing, via strategic transactions or collaborative arrangements. Additional funding from those or other sources may not be

available when or in the amounts needed, on acceptable terms, or at all. If we raise capital through the sale of equity, or securities convertible into equity, it would result in dilution to our then existing stockholders, which could be significant depending on the price at which we may be able to sell our securities. If we raise additional capital through the incurrence of indebtedness, we would likely become subject to covenants restricting our business activities, and holders of debt instruments may have rights and privileges senior to those of our equity investors. In addition, servicing the interest and principal repayment obligations under debt facilities could divert funds that would otherwise be available to support research and development, clinical or commercialization activities. If we obtain capital through collaborative arrangements, these arrangements could require us to relinquish rights to our technology or product candidates and could result in our receipt of only a portion of the revenues associated with the partnered product.

There are no assurances that future funding will be available on favorable terms or at all. If additional funding is not obtained, we may need to reduce, defer or cancel preclinical and lab work, planned clinical trials, or overhead expenditures to the extent necessary. The failure to fund our operating and capital requirements could have a material adverse effect on our business, financial condition and results of operations.

If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts. Any of these events could significantly harm our business, financial condition and prospects.



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***Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern.***

Our historical financial statements have been prepared under the assumption that we will continue as a going concern. Our independent registered public accounting firm has issued a report on our audited financial statements for the years ended December 31, 2019 and 2018 that included an explanatory paragraph referring to our recurring operating losses and expressing substantial doubt in our ability to continue as a going concern. Our ability to continue as a going concern is dependent upon our ability to obtain additional equity financing or other capital, attain further operating efficiencies, reduce expenditures, and, ultimately, generate revenue. Our financial statements do not include any adjustments that might result from the outcome of this uncertainty. However, if adequate funds are not available to us when we need it, we will be required to curtail our operations which would, in turn, further raise substantial doubt about our ability to continue as a going concern. The doubt regarding our potential ability to continue as a going concern may adversely affect our ability to obtain new financing on reasonable terms or at all. Additionally, if we are unable to continue as a going concern, our stockholders may lose some or all of their investment in us.

***We rely heavily on UM for our research and development programs, and UM is a joint owner of the intellectual property resulting from its preclinical research and development.***

We rely heavily on our relationship with UM for our research and development programs. Under the terms of our agreements with UM, we are required to fund preclinical and clinical trials required for cannabinoid-based products developed by UM. If UM were to terminate one or more of our agreements, we may be required to return or destroy certain materials or data developed during our partnership that is confidential to UM and face substantial delays or possible termination of the affected program.

In addition, the agreements provide that all intellectual property rights (including any patents and non-manufacturing related know-how) that are conceived by both UM and us during the course of the collaboration are to be jointly owned by UM and us. Because UM exercises some control over this jointly owned intellectual property, we may need to seek UM's consent to pursue, use, license and/or enforce some of these intellectual property rights in the future. An unexpected deterioration in our relationship with UM may have a material adverse effect on our business, reputation, results of operations and financial condition.

***We are heavily dependent on the success of our early-stage product candidates, which will require significant additional efforts to develop and may prove not to be viable for commercialization.***

We are very early in our development efforts. We have no products approved for sale and all of our product candidates are in preclinical development, including the development of cannabinoid-based formulations. Further preclinical testing is ongoing and if successful, will be part of a regulatory filing to satisfy Investigational New Drug ("IND") requirements that need to be met in order for the candidate compounds and routes of administration to enter testing in humans. Our ability to generate product revenue, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and commercialization of our product candidates. Our business depends entirely on the successful development, clinical testing, and commercialization of these and any other product candidates we may seek to develop in the future, which may never occur.

The success of our product candidates will depend on several factors, any one of which we may not be able to successfully complete, such as:

- receipt of necessary controlled substance registrations from the DEA;
- successful completion of preclinical studies and clinical trials;
- receipt of marketing approvals from the Food and Drug Administration (the "FDA") and other applicable regulatory authorities;
- obtaining, maintaining and protecting our intellectual property portfolio, including patents and trade secrets, and regulatory exclusivity for our product candidates;
- identifying, making arrangements and ensuring necessary registrations with third-party manufacturers, or establishing commercial manufacturing capabilities for applicable product candidates;
- launching commercial sales of the products, if and when approved, whether alone or in collaboration with others;
- acceptance of our products, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining healthcare coverage and adequate reimbursement of our products; and
- maintaining a continued acceptable safety profile of our products following approval.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our product candidates, which would materially harm our business.

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We expect to conduct clinical trials for certain of our product candidates at sites outside the United States, and the FDA may not accept data from trials conducted in such locations.

We expect to conduct one or more of our clinical trials outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of this data is subject to certain conditions imposed by the FDA. For example, the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with ethical principles. The trial population must also adequately represent the U.S. population, and the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful. Generally, the patient population for any clinical trials conducted outside of the United States must be representative of the population for whom we intend to seek approval in the United States. In addition, while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will be dependent upon its determination that the trials also complied with all applicable U.S. laws and regulations. There can be no assurance that the FDA will accept data from trials conducted outside of the United States. If the FDA does not accept the data from any of our clinical trials that we conduct outside the United States, it would likely result in the need for additional trials, which would be costly and time-consuming and delay or permanently halt our development of the product candidate.

In addition, the conduct of clinical trials outside the United States could have a significant impact on us. Risks inherent in conducting international clinical trials include:

- foreign regulatory requirements that could restrict or limit our ability to conduct our clinical trials;
- administrative burdens of conducting clinical trials under multiple foreign regulatory schema;
- foreign exchange fluctuations; and
- diminished protection of intellectual property in some countries.

***We conduct certain research and development operations through our Australian wholly-owned subsidiary. If we lose our ability to operate in Australia, or if our subsidiary is unable to receive the research and development tax credit allowed by Australian regulations, our business and results of operations could suffer.***

In August 2019, we formed a wholly-owned Australian subsidiary, EMBI Australia, to conduct various clinical activities for our product candidates in Australia. Due to the geographical distance and lack of employees currently in Australia, as well as our lack of experience operating in Australia, we may not be able to efficiently or successfully monitor, develop and commercialize our lead product candidate in Australia, including conducting clinical trials. Furthermore, we have no assurance that the results of any clinical trials that we conduct for our product candidates in Australia will be accepted by the FDA or foreign regulatory authorities for development and commercialization approvals.

In addition, current Australian tax regulations provide for a refundable R&D tax credit equal to 43.5% of qualified expenditures. If our subsidiary loses its ability to operate in Australia, or if we are ineligible or unable to receive the R&D tax credit, or the Australian government significantly reduces or eliminates the tax incentive program, our business and results of operation may be adversely affected.

***We may not be successful in our efforts to build a pipeline of product candidates.***

Our strategy is to use and expand our relationship with UM to build a pipeline of cannabinoid-based products. We may not be able to develop product candidates that are safe and effective for all or any of our targets. Even if we are successful in building a product pipeline, the potential product candidates that we identify may not be suitable for clinical development for a number of reasons, including due to harmful side effects or other characteristics that indicate a low likelihood of receiving marketing approval or achieving market acceptance. If our methods of identifying potential product candidates fail to produce a pipeline of potentially viable product candidates, then we may not be able to obtain product revenue in future periods, which would make it unlikely that we would ever achieve profitability.

*We expect to face intense competition, often from companies with greater resources and experience than we have.*

The pharmaceutical industry is highly competitive and subject to rapid change. The industry continues to expand and evolve as an increasing number of competitors and potential competitors enter the market. Many of these competitors and potential competitors have substantially greater financial, technological, managerial and research and development resources and experience than we have. Some of these competitors and potential competitors have more experience than we have in the development of pharmaceutical products, including validation procedures and regulatory matters. In addition, our pipeline products, if successfully developed, will compete with product offerings from large and well-established companies that have greater marketing and sales experience and capabilities than we or our collaboration partners have. If we are unable to compete successfully, we may be unable to grow and sustain our revenue.

*We have substantial capital requirements that, if not met, may hinder our operations.*

We anticipate that we will make substantial capital expenditures for laboratory and preclinical work and for future clinical trials. If we cannot raise sufficient capital, we may have limited ability to expend the capital necessary to undertake or complete laboratory and preclinical work and future clinical trials. There can be no assurance that debt or equity financing will be available or sufficient to meet these requirements or for other corporate purposes, or if debt or equity financing is available, that it will be on terms acceptable to us. Moreover, future activities may require us to alter our capitalization significantly. Our inability to access sufficient capital for our operations could have a material adverse effect on our financial condition, results of operations or prospects.

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***Additional capital may be costly or difficult to obtain.***

Additional capital, whether through the offering of equity or debt securities, may not be available on reasonable terms or at all, especially in light of the recent downturn in the economy and dislocations in the credit and capital markets. If we are unable to obtain required additional capital, we may have to curtail our growth plans or cut back on existing business and, further, we may not be able to continue operating if we do not generate sufficient revenues from operations needed to stay in business. We may incur substantial costs in pursuing future capital financing, including investment banking fees, legal fees, accounting fees, securities law compliance fees, printing and distribution expenses and other costs. We may also be required to recognize non-cash expenses in connection with certain securities we issue, such as convertible notes and warrants, which may adversely impact our financial condition.

***Current global financial conditions have been characterized by increased volatility which could negatively impact our business, prospects, liquidity and financial condition.***

Current global financial conditions and recent market events have been characterized by increased volatility and the resulting tightening of the credit and capital markets has reduced the amount of available liquidity and overall economic activity. We cannot guaranty that debt or equity financing, and the ability to borrow funds or cash generated by operations will be available or sufficient to meet or satisfy our initiatives, objectives, or requirements. Our inability to access sufficient amounts of capital on terms acceptable to us for our operations will negatively impact our business, prospects, liquidity and financial condition.

***If we are not able to attract and retain highly qualified personnel, we may not be able to successfully implement our business strategy.***

Our ability to compete in the highly competitive biotechnology and pharmaceuticals industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. Our success depends in large measure on our key personnel, including Dr. Brian Murphy, our Chief Executive Officer. The loss of the services of Dr. Murphy could significantly hinder our operations. We do not currently have key person insurance in effect for Dr. Murphy. In addition, the competition for qualified personnel in the pharmaceutical industry is intense and there can be no assurance that we will be able to continue to attract and retain all personnel necessary for the development and operation of our business.

***We may be subject to claims by third parties asserting that our employees or we have misappropriated their intellectual property or claiming ownership of what we regard as our own intellectual property.***

Some of our employees were previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, with contractual provisions and other procedures, we may be subject to claims that these employees or we have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employers. Litigation may be necessary to defend against any such claims.

In addition, while it is our policy to require our employees and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact contributes to the development of intellectual property that we regard as our own. Further, the terms of such assignment agreements may be breached and we may not be able to successfully enforce their terms, which may force us to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of intellectual property rights we may regard and treat as our own.

***We will need to grow the size of our organization, and we may experience difficulties in managing any growth we may achieve.***

As of the date of this prospectus, we have three full-time employees. As our development and commercialization plans and strategies develop, we expect to need additional research, development, managerial, operational, sales, marketing, financial, accounting, legal and other resources. Future growth would impose significant added responsibilities on members of management. Our management may not be able to accommodate those added responsibilities, and our failure to do so could prevent us from effectively managing future growth, if any, and successfully growing our company.

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***If we breach any of the agreements under which we license from UM the commercialization rights to our product candidates, we could lose license rights that are important to our business and our operations could be materially harmed.***

We license from UM the use, development and commercialization rights for our product candidates. As a result, our current business plans are dependent upon our maintenance of the license agreements and the rights we license under it. If we fail to comply with any of the conditions or obligations or otherwise breach the terms of our license agreement with UM, or any future license agreement we may enter on which our business or product candidates are dependent, UM may have the right to terminate the applicable agreement in whole or in part and thereby extinguish our rights to the licensed technology and intellectual property and/or any rights we have acquired to develop and commercialize certain product candidates. The loss of the rights licensed to us under our license agreement with UM, or any future license agreement that we may enter granting rights on which our business or product candidates are dependent, would eliminate our ability to further develop the applicable product candidates and would materially harm our business, prospects, financial condition and results of operations.

***Our operating activities may be restricted as a result of covenants related to the outstanding indebtedness under our Credit Agreement and we may be required to repay the outstanding indebtedness in an event of default, which could have a material adverse effect on our business.***

We could default on the payment of our indebtedness under our Multi-Draw Credit Agreement, as amended, entered into with Emerald Health Sciences, Inc. (“Emerald Health Sciences”), a related party, on October 5, 2018 (the “Credit Agreement”), when it comes due which may result in acceleration of all amounts outstanding under our Credit Agreement. Additionally, our Credit Agreement restricts, among other things, our ability to incur debt and requires us to comply with certain covenants. We may not be able to comply with these restrictions and covenants in the future. Our failure to comply with any of the restrictions and covenants under our Credit Agreement could result in an event of default under our Credit Agreement and result in the acceleration of the maturity of the indebtedness under the Credit Agreement. We may not have enough available cash or be able to raise additional funds through equity or debt financings to repay such indebtedness at the time any such event of default occurs. In that case, we may be required to delay, limit, reduce or terminate our product candidate development or commercialization efforts or grant to others rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

***As our products and company are in a highly regulated industry, significant and unforeseen changes in policy may have material impacts on our business.***

A primary reason for our company to develop the cannabis-derived pharmaceuticals is the changing regulatory and social landscape, in terms of cannabis.

State efforts to decriminalize and/or legalize, as well as the growth of state level medical marijuana rulings, have created the opportunity to develop the medical potential for cannabis. However, cannabis is still illegal on a Federal level, outside of the areas described above. We do not know what impact might occur to our development plans, if the Federal law were to change dramatically in the near-term. While we believe the licensed intellectual property, the institutional knowledge, and our management experience will provide us with what is necessary to achieve our goals, we cannot predict the impact of any changes in the current regulatory environment.

***The use of “medical marijuana” or “recreational marijuana” in the United States may impact our business.***

There is a substantial amount of change occurring in various states of the United States regarding the use of “medical marijuana.” While cannabis is a Schedule I substance as defined under federal law, and its possession and use is not permitted in accordance with federal law, a number of individual states have enacted state laws to authorize possession and use of cannabis for medical purposes, and in some states for recreational purposes. While our product candidates are distinct from crude herbal cannabis, our prospects may nevertheless be impacted by these laws at the state level in the United States.



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As with all medicines, it is very difficult to gauge accurately market acceptance of our potential drug candidates. While we are taking and will take significant efforts in selecting drug candidates that we believe represent the best opportunities for market adoption, such as unsatisfied needs, competitive environment, partnering potential, therapeutic potential, and target product profile potential, the ultimate market acceptance of a preclinical candidate is very difficult to predict. The ultimate acceptance will be impacted by the performance in clinical trials (efficacy and safety), reimbursement and development of competitive compounds. Also, the healthcare reimbursement environment has been changing over the recent past and is likely to continue to evolve. If we are unable to gain market acceptance for our product candidates, if approved, then we may not be able to generate substantial product revenues.

***We currently have no marketing and sales experience or capabilities to market and sell our product candidates, if approved.***

We currently do not have experience in the marketing, sales and distribution of any of our product candidates that are able to attain regulatory approval. If our product candidates receive regulatory approval, we will need to establish sales and marketing capabilities to commercialize our product candidates, which will be expensive and time consuming. Any failure or delay in the development of our internal sales and marketing capabilities would adversely impact the commercialization of any of our products that we obtain approval to market. If we are not successful in commercializing our product

candidates, either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we may incur significant additional losses.

***Our commercial success depends upon attaining significant market acceptance of our product candidates, if approved, among physicians and patients.***

Even if approved by the FDA, our product candidates may not gain market acceptance among physicians and patients, which is vital to our commercial success. Market acceptance of any product candidate for which we receive approval depends on a number of factors, including:

- the clinical indications for which the drug is approved and efficacy and safety as demonstrated in clinical trials;
- the timing of market introduction of the product candidate and/or competitive products;
- acceptance of the drug as a safe and effective treatment by physicians and patients;
- the potential and perceived advantages of the product candidate over alternative treatments;
- the cost of treatment in relation to alternative treatments; and
- the prevalence and severity of adverse side effects.

If our product candidates are approved but fail to achieve an adequate level of acceptance by physicians and patients, we will not be able to generate significant revenues, and we may not become or remain profitable.

***We may expend our limited resources to pursue a particular product candidate or indication and may fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.***

Because we have limited financial and managerial resources, we must focus our efforts on particular research programs and product candidates for specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate. Any such failure to improperly assess potential product candidates could result in missed opportunities and/or our focus on product candidates with low market potential, which would harm our business and financial condition.

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### ***We engage in transactions with related parties and such transactions present possible conflicts of interest that could have an adverse effect on us.***

We have entered, and may continue to enter, into transactions with Emerald Health Sciences and its affiliates and other related parties for financing, corporate, business development and operational services. Such transactions may not have been entered into on an arm's-length basis, and we may have achieved more or less favorable terms because such transactions were entered into with our related parties. We rely, and will continue to rely, on our related parties to maintain these services. If the pricing for these services changes, or if our related parties cease to provide these services, including by terminating agreements with us, we may be unable to obtain replacements for these services on the same terms without disruption to our business. This could have a material effect on our business, results of operations and financial condition. The details of certain of these transactions are set forth in "Certain Relationships and Related Party Transactions." Related party transactions create the possibility of conflicts of interest with regard to our management, including that:

- we may enter into contracts between us, on the one hand, and related parties, on the other, that are not the result of arm's-length transactions;
- our executive officers and directors that hold positions of responsibility with related parties may be aware of certain business opportunities that are appropriate for presentation to us as well as to such other related parties and may present such business opportunities to such other parties; and
- our executive officers and directors that hold positions of responsibility with related parties may have significant duties with, and spend significant time serving, other entities and may have conflicts of interest in allocating time.

Such conflicts could cause an individual in our management to seek to advance his or her economic interests or the economic interests of certain related parties above ours. Further, the appearance of conflicts of interest created by related party transactions could impair the confidence of our investors. Our audit committee reviews these transactions. Notwithstanding this, it is possible that a conflict of interest could have a material adverse effect on our liquidity, results of operations and financial condition.

### ***We are expecting delays to our NB1111 clinical trial as a result of the COVID-19 pandemic and unpredictable business disruptions could seriously harm our future revenues and financial condition, increase our costs and expenses and impact our ability to raise capital.***

Our operations could be subject to unpredictable events, such as earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics such as the COVID-19 outbreak and other natural or manmade disasters or business interruptions, for which we are predominantly self-insured. We do not carry insurance for all categories of risk that our business may encounter. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. Notably, we rely on third-party manufacturers to produce our product candidates. The manufacturing of the active pharmaceutical ingredient of NB1111 is conducted in the United States. Formulation of the eye drop for testing is also performed in the United States but can rely on regulatory-accepted excipients that can be sourced from countries outside the United States, such as China. In connection with the recent COVID-19 pandemic, there could possibly be an impact on sourcing materials that are part of the eye drop formulation, as well as impacting volunteer and/or patient recruitment in

Australia for clinical studies. Therefore, we anticipate shifting our first-in-human studies of the lead drug candidate, NB1111, from the second half of 2020, to the 2021 timeframe. Additionally, COVID-19 has caused significant disruptions to the global financial markets which could impact our ability to raise additional capital. The ultimate impact on us and our significant suppliers and manufacturers is unknown, but our operations and financial condition could suffer in the event of these type of unpredictable events. Further, any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our business, results of operations, financial condition and cash flows from future prospects.

#### **Risks Related to Controlled Substances**

*The product candidates we are developing will be subject to U.S. controlled substance laws and regulations and failure to comply with these laws and regulations, or the cost of compliance with these laws and regulations, may adversely affect the results of our business operations, both during non-clinical and clinical development and post-approval, and our financial condition.*

The product candidates we plan to develop will contain controlled substances as defined in the CSA. Controlled substances that are pharmaceutical products are subject to a high degree of regulation under the CSA, which establishes, among other things, certain registration, manufacturing quotas, security, recordkeeping, reporting, import, export and other requirements administered by the DEA. The DEA classifies controlled substances into five schedules: Schedule I, II, III, IV or V substances. Schedule I substances by definition have a high potential for abuse, no currently “accepted medical use” in the United States, lack accepted safety for use under medical supervision, and may not be prescribed, marketed or sold in the United States. Pharmaceutical products approved for use in the United States may be listed as Schedule II, III, IV or V, with Schedule II substances considered to present the highest potential for abuse or dependence and Schedule V substances the lowest relative risk among such substances. Schedule I and II drugs are subject to the strictest controls under the CSA, including manufacturing and procurement quotas, security requirements and criteria for importation. In addition, dispensing of Schedule II drugs is further restricted. For example, they may not be refilled without a new prescription.

While cannabis, cannabis extracts, and some cannabinoids are Schedule I controlled substances, products approved for medical use in the United States that contain cannabis, cannabis extracts or some cannabinoids must be placed on Schedules II-V, since approval by the FDA satisfies the “accepted medical use” requirement.

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If approved by the FDA, we expect the finished dosage forms of our cannabinoid-derived drug product candidates to be listed by the DEA as a Schedule II or III controlled substance. Consequently, their manufacture, importation, exportation, domestic distribution, storage, sale and legitimate use will be subject to a significant degree of regulation by the DEA. In addition, the scheduling process may take one or more years, thereby delaying the launch of the drug product in the United States. Furthermore, if the FDA, DEA, or any foreign regulatory authority determines that any of our drug product candidates may have potential for abuse, it may require us to generate more clinical or other data than we currently anticipate to establish whether or to what extent the substance has an abuse potential, which could increase the cost and/or delay the launch of the drug product.

Facilities conducting research, manufacturing, distributing, importing or exporting, or dispensing controlled substances must be registered (licensed) to perform these activities and have the security, control, recordkeeping, reporting and inventory mechanisms required by the DEA to prevent drug loss and diversion. All these facilities must renew their registrations annually, except dispensing facilities, which must renew every three years. The DEA conducts periodic inspections of certain registered establishments that handle controlled substances. Obtaining the necessary registrations may result in delay of the manufacturing, development, or distribution of our product candidates. Furthermore, failure to maintain compliance with the CSA, particularly non-compliance resulting in loss or diversion, can result in regulatory action that could have a material adverse effect on our business, financial condition and results of operations. The DEA may seek civil penalties, refuse to renew necessary registrations, or initiate proceedings to restrict, suspend or revoke those registrations. In certain circumstances, violations could lead to criminal proceedings. Individual states have also established controlled substance laws and regulations. Though state-controlled substances laws often mirror federal law, because the states are separate jurisdictions, they may separately schedule our product candidates. While some states automatically schedule a drug based on federal action, other states schedule drugs through rulemaking or a legislative action. State scheduling may delay commercial sale of any product for which we obtain federal regulatory approval and adverse scheduling could have a material adverse effect on the commercial attractiveness of such product. We or our partners or clinical sites must also obtain separate state registrations, permits or licenses in order to be able to obtain, handle, and distribute controlled substances for clinical trials or commercial sale, and failure to meet applicable regulatory requirements could lead to enforcement and sanctions by the states in addition to those from the DEA or otherwise arising under federal law.

To conduct clinical trials with our product candidates in the United States prior to approval, each of our research sites must obtain and maintain a DEA researcher registration that will allow those sites to handle and dispense the product candidate and to obtain the product. If the DEA delays or denies the grant of a research registration to one or more research sites, the clinical trial could be significantly delayed, and we could lose clinical trial sites.

Manufacturing of our product candidates is, and, if approved, our commercial products will be, subject to the DEA's annual manufacturing and procurement quota requirements, if classified as Schedule II. The annual quota allocated to us or our contract manufacturers for the controlled substances in our product candidates may not be sufficient to meet commercial demand or complete clinical trials. Consequently, any delay or refusal by the DEA in establishing our, or our contract manufacturers', procurement and/or production quota for controlled substances could delay or stop our clinical trials or product launches, which could have a material adverse effect on our business, financial position and operations.

If, upon approval of any of our product candidates, the product is scheduled as Schedule II or III, we would also need to identify wholesale distributors with the appropriate DEA registrations and authority to distribute the product to pharmacies and other health care providers. The failure to obtain, or delay in obtaining, or the loss of any of those registrations could result in increased costs to us. Furthermore, state and federal enforcement actions, regulatory requirements, and legislation intended to reduce prescription drug abuse, such as the requirement that physicians consult a state prescription drug monitoring program may make physicians less willing to prescribe, and pharmacies to dispense, our products, if approved.

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***Our ability to research, develop and commercialize our drug product candidates is dependent on our ability to obtain and maintain the necessary controlled substance registrations from the DEA.***

In the United States, the DEA regulates activities relating to the cultivation, possession and supply of cannabis for medical research and/or commercial development, including the requirement to obtain annual registrations to manufacture or distribute pharmaceutical products derived from cannabis extracts. The National Institute on Drug Abuse (“NIDA”) also plays a role in oversight of the cultivation of cannabis for medicinal research. We do not currently handle any controlled substances, but we plan to partner with third-parties to engage in the research and development of cannabis-derived compounds for medical purposes. This will require that our third-party contractors obtain and maintain the necessary DEA registrations, and be subject to other regulatory requirements. We plan to develop and manufacture synthetically produced active drug products and in February 2016, July 2018 and April 2019, signed agreements with AMRI to synthetically manufacture our API to be used in our development programs for glaucoma and CINV. In August 2019, we terminated our ongoing agreements with AMRI. We entered into an agreement with Noramco in February 2019 to develop scale-up synthesis methods and to manufacture the analog derivative, CBDVHS, and amended the agreement in August 2019 to include THCVHS.

***The cultivation of cannabis is strictly regulated in the United States under a complex legal framework and our partners may be unable to obtain or maintain the necessary authorizations to cultivate cannabis for the research and development of cannabis-derived compounds.***

We are partnering with UM to research and develop cannabis-derived drug products. Pursuant to that partnership, UM plans to cultivate cannabis and make extracts to conduct or enable our third-party laboratories to conduct early investigations into proof-of-concept studies on the activity of these cannabinoids in various medical conditions. The regulation of cannabis is complex and subject to stringent controls. UM has indicated that its plan for cultivating cannabis for the purification of cannabis extracts is in compliance with applicable law, including the CSA, DEA regulations, and the United States' obligations under the 1961 Single Convention on Narcotic Drugs. However, there is a risk that regulatory authorities may disagree or may decline to authorize UM to engage in the contemplated activities under the partnership. Interpretations of law that DEA adopted in the past may evolve or change. If UM cannot obtain or maintain the necessary regulatory authorizations that we anticipate will be required for the contemplated development program, our business may suffer and we may not be able to pursue the discovery, research and development of cannabinoids. While UM conducts research using cannabinoids derived from the plant, all of the Company's candidate molecules are synthetic derivatives and therefore may not fall under the strict DEA definition of a controlled-substance.

#### **Risks Related to Government Regulation**

***If we fail to demonstrate the safety and efficacy of any product candidate that we develop to the satisfaction of the FDA or comparable foreign regulatory authorities we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of such product candidate. This would adversely impact our ability to generate revenue, our business and our results of operations.***

We are not permitted to commercialize, market, promote, or sell any product candidate in the United States without obtaining marketing approval from the FDA or in other countries without obtaining approvals from comparable foreign regulatory authorities, such as the European Medicines Agency (the "EMA"), and we may never receive such approvals. To gain approval to market a drug product, we must complete extensive preclinical development and clinical trials that demonstrate the safety and efficacy of the product for the intended indication to the satisfaction of the FDA or other regulatory authority.

We have not previously submitted a new drug application ("NDA") to the FDA, or similar drug approval filings to comparable foreign authorities, for any product candidate, and we cannot be certain that any of our product candidates will be successful in clinical trials or receive regulatory approval. Further, our product candidates may not receive regulatory approval even if they are successful in clinical trials. If we do not receive regulatory approval for our product candidates, we may not be able to continue our operations. Even if we successfully obtain regulatory approval to market our product candidates, our revenue will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval and have commercial rights.



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The FDA or any foreign regulatory bodies could delay, limit or deny approval of our product candidates for many reasons, including:

- our inability to demonstrate to the satisfaction of the FDA or the applicable foreign regulatory body that the product candidate is safe and effective for the requested indication;
- the FDA's or the applicable foreign regulatory agency's disagreement with the interpretation of data from preclinical studies or clinical trials;
- our inability to demonstrate that the clinical and other benefits of the product candidate outweigh any safety or other perceived risks;
- the FDA's or the applicable foreign regulatory agency's requirement for additional preclinical or clinical studies;
- the FDA's or the applicable foreign regulatory agency's non-approval of the formulation, labeling or the specifications of the product candidate;
- the FDA's or the applicable foreign regulatory agency's failure to approve the manufacturing processes or facilities of third-party manufacturers with which we contract; or
- the potential for approval policies or regulations of the FDA or the applicable foreign regulatory agencies to significantly change in a manner rendering our clinical data insufficient for approval.

Even if we eventually complete clinical testing and receive approval of a NDA or foreign regulatory filing for a product candidate, the FDA or the applicable foreign regulatory agency may grant approval contingent on the performance of costly additional clinical trials which may be required after approval. The FDA or the applicable foreign regulatory agency also may approve the product candidate for a more limited indication or a narrower patient population than we originally requested, and the FDA, or applicable foreign regulatory agency, may not approve the labeling that we believe is necessary or desirable for the successful commercialization of the product. Any delay in obtaining, or inability to obtain, applicable regulatory approval would delay or prevent commercialization of the product candidate and would materially adversely impact our business and prospects.

***Preclinical and clinical drug development involves a lengthy and expensive process with an uncertain outcome. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.***

Clinical testing is expensive and can take several years to complete, and its outcome is inherently uncertain. Moreover, obtaining sufficient quantities of

product for clinical testing is subject to regulation by DEA and, in some cases, NIDA. It is impossible to predict when or if any of our product candidates will prove effective or safe in humans or will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of any product candidate, we must complete preclinical studies and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. A failure of one or more clinical trials can occur at any stage of testing. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products. We may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or subsequently to commercialize our product candidates, including:

- FDA, DEA or NIDA may not authorize the use and distribution of sufficient quantities of product for clinical testing;
- regulators or independent institutional review boards (IRBs) may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;

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- we may experience delays in reaching, or fail to reach, agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;
- clinical trials of our product candidates may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- we may have to suspend or terminate clinical trials of our product candidates for various reasons, including a finding that the participants are being exposed to unacceptable health risks;

- regulators or IRBs may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- the cost of clinical trials of our product candidates may be greater than we anticipate;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate; and
- our product candidates may have undesirable side effects or other unexpected characteristics, causing us or our investigators, regulators or IRBs to suspend or terminate the trials.

If we are required to conduct additional clinical trials or other testing of our product candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our product candidates or other testing, if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we may:

- be delayed in obtaining marketing approval for our product candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements; or
- have the product removed from the market after obtaining marketing approval.

Our product development costs will also increase if we experience delays in testing or in receiving marketing approvals. We do not know whether any of our preclinical studies or clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant preclinical study or clinical trial delays also could allow our competitors to bring products to market before we do and impair our ability to successfully commercialize our product candidates and may harm our business and results of operations.

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***If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.***

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. Our pool of suitable patients may be smaller for some of our product candidates, which will impact our ability to enroll a sufficient number of suitable patients. In addition, some of our competitors have ongoing clinical trials for product candidates that treat the same indications as our product candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates. Patient enrollment is affected by other factors including:

- the severity of the disease under investigation;
- the eligibility criteria for the study in question;
- the perceived risks and benefits of the product candidate under study;
- the efforts to facilitate timely enrollment in clinical trials;
- the patient referral practices of physicians;
- the ability to monitor patients adequately during and after treatment; and
- the proximity and availability of clinical trial sites for prospective patients.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays and could require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs for our product candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing.

***Our development and commercialization strategy for THCVHS, including NB1111, may depend, in part, on published scientific literature and the FDA's prior findings regarding the safety and efficacy of dronabinol, based on data not developed by us, but upon which the FDA may rely in reviewing our NDA.***

The Hatch-Waxman Act added Section 505(b)(2) to the Federal Food, Drug and Cosmetic Act ("FDCA"), Section 505(b)(2) permits the filing of a NDA

where at least some of the information required for approval comes from investigations that were not conducted by or for the applicant and for which the applicant has not obtained a right of reference or use from the person by or for whom the investigations were conducted. The FDA interprets Section 505(b)(2) of the FDCA, for purposes of approving a NDA, to permit the applicant to rely, in part, upon published literature or the FDA's previous findings of safety and efficacy for an approved product. The FDA may also require companies to perform additional clinical trials or measurements to support any deviation from the previously approved product. The FDA may then approve the new product candidate for all or some of the label indications for which the referenced product has been approved, as well as for any new indication sought by the Section 505(b)(2) applicant. The label, however, may require all or some of the limitations, contraindications, warnings or precautions included in the listed product's label, including a black box warning, or may require additional limitations, contraindications, warnings or precautions. Depending on guidance from the FDA, we may decide to submit a NDA for NB1111 under Section 505(b)(2) relying, in part, on the FDA's previous findings of safety and efficacy from investigations for the approved drug product Dronabinol for which we have not received a right of reference and published scientific literature. Even though we may be able to take advantage of Section 505(b)(2) to support potential U.S. approval, the FDA may require us to perform additional clinical trials or measurements to support approval. In addition, notwithstanding the approval of many products by the FDA pursuant to Section 505(b)(2), over the last few years some pharmaceutical companies and others have objected to the FDA's interpretation of Section 505(b)(2). If the FDA changes its interpretation of Section 505(b)(2), or if the FDA's interpretation is successfully challenged in court, this could delay or even prevent the FDA from approving any Section 505(b)(2) NDAs that we submit. Such a result could require us to conduct additional testing and costly clinical trials, which could substantially delay or prevent the approval and launch of our product candidates, including NB1111.

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***Even if we receive regulatory approval for a product candidate, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to restrictions, withdrawal from the market, or penalties if we fail to comply with applicable regulatory requirements or if we experience unanticipated problems with our product candidates, when and if approved.***

Once regulatory approval has been granted, the approved product and its manufacturer are subject to continual review by the FDA, DEA and/or non-U.S. regulatory authorities. Any regulatory approval that we receive for our product candidates may be subject to limitations on the indicated uses for which the product may be marketed or contain requirements for potentially costly post-marketing follow-up studies or surveillance to monitor the safety and efficacy of the product. In addition, if the FDA and/or non-U.S. regulatory authorities approve any of our product candidates, we will be subject to extensive and ongoing regulatory requirements by the FDA and other regulatory authorities with regard to labeling, packaging, adverse event reporting, storage, distribution, advertising, promotion, recordkeeping and submission of safety and other post-market information. Manufacturers of our products and manufacturers' facilities are required to comply with current good manufacturing practice ("cGMP") regulations, which include requirements related to quality control and quality assurance as well as the corresponding maintenance of records and documentation. Further, regulatory authorities must approve these manufacturing facilities before they can be used to manufacture our products, and these facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP regulations. Accordingly, we and others with whom we work must continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production and quality control. We will also be required to report certain adverse reactions and production problems, if any, to the FDA and to comply with requirements concerning advertising and promotion for our products. If we, any future collaboration partner or a regulatory authority discovers previously unknown problems with a product,

such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory authority may impose restrictions on that product, the collaboration partner, the manufacturer or us, including requiring withdrawal of the product from the market or suspension of manufacturing.

Any DEA registrations that we receive may also be subject to limitations. For example, if approved, our commercial products will be subject to the DEA's annual manufacturing and procurement quota requirements. The annual quota allocated to us or our contract manufacturers for the controlled substances in our product candidates may not be sufficient to meet commercial demand. Our facilities that handle controlled substances, and those of our third-party contractors, will also be subject to registration requirements and periodic inspections. Additionally, if approved by the FDA, the finished dosage forms of our drug product candidates will be subject to the DEA's rescheduling process, which may delay product launch and impose additional regulatory burdens. Failure to maintain compliance with the CSA, particularly non-compliance resulting in loss or diversion, can result in regulatory action that could have a material adverse effect on our business, financial condition and results of operations. The DEA may seek civil penalties, refuse to renew necessary registrations, or initiate proceedings to restrict, suspend or revoke those registrations. In certain circumstances, violations could lead to criminal proceedings. For additional information, see Risk Factor, *"The product candidates we are developing will be subject to U.S. controlled substance laws and regulations and failure to comply with these laws and regulations, or the cost of compliance with these laws and regulations, may adversely affect the results of our business operations, both during non-clinical and clinical development and post-approval, and our financial condition."*

The FDA closely regulates the post-approval marketing and promotion of drugs to ensure drugs are marketed only for the approved indications and in accordance with the provisions of the approved labeling and regulatory requirements. The FDA also imposes stringent restrictions on manufacturers' communications regarding off-label use and if we do not restrict the marketing of our products only to their approved indications, we may be subject to enforcement action for off-label marketing. If we, our product candidates or the manufacturing facilities for our product candidates fail to comply with regulatory requirements of the FDA and/or other non-U.S. regulatory authorities, we could be subject to administrative or judicially imposed sanctions, including:

- warning letters or untitled letters;
- mandated modifications to promotional materials or the required provision of corrective information to healthcare practitioners;
- restrictions imposed on the product or its manufacturers or manufacturing processes;
- restrictions imposed on the labeling or marketing of the product;
- restrictions imposed on product distribution or use;
- requirements for post-marketing clinical trials;



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- suspension of any ongoing clinical trials;
- suspension of or withdrawal of regulatory approval;
- voluntary or mandatory product recalls and publicity requirements;
- refusal to approve pending applications for marketing approval of new products or supplements to approved applications filed by us;
- restrictions on operations, including costly new manufacturing requirements;
- seizure or detention of our products;
- refusal to permit the import or export of our products;
- required entry into a consent decree, which can include imposition of various fines (including restitution or disgorgement of profits or revenue), reimbursements for inspection costs, required due dates for specific actions and penalties for noncompliance;
- civil or criminal penalties; or
- injunctions.

Widely publicized events concerning the safety risk of certain drug products have resulted in the withdrawal of drug products, revisions to drug labeling that further limit use of the drug products and the imposition by the FDA of risk evaluation and mitigation strategies (“REMS”), to ensure that the benefits of the drug outweigh its risks. In addition, widely publicized events concerning the safety risk of certain drug products have resulted in the withdrawal of drug products, revisions to drug labeling that further limit use of the drug products and the imposition by the FDA of REMS to ensure that the benefits of the drug outweigh its risks. In addition, because of the serious public health risks of high profile adverse safety events with certain products, the FDA may require, as a condition of approval, costly REMS programs.

The regulatory requirements and policies may change, and additional government regulations may be enacted for which we may also be required to comply. For example, in December 2016, the 21st Century Cures Act (the “Cures Act”), was signed into law. The Cures Act, among other things, is intended to modernize the regulation of drugs and spur innovation, but its ultimate implementation is unclear. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or in other countries. For example, certain regulatory policies of the Trump administration may impact our business and industry in ways that are difficult or impossible to predict. Since the November 2016 U.S. presidential election, the Trump administration has made numerous efforts to reduce regulation and its associated costs, including the issuance of a number of Executive Orders which could impose significant burdens on, or

otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. In January 2017, President Trump issued Executive Order 13771, applicable to all executive agencies, including the FDA, which requires an agency to repeal two existing rules for each new significant rule or guidance document to be issued, unless otherwise prohibited by law. This "two-for-one" policy is aimed at reducing regulatory costs. For fiscal years 2018 and beyond, this Executive Order requires agencies to identify regulations to offset any incremental cost of a new regulation and approximate the total costs or savings associated with each new regulation or repealed regulation. It is difficult to predict the extent to which such regulatory reform initiatives and actions will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on the FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted. If we or any future collaboration partner are not able to maintain regulatory compliance, we or such collaboration partner, as applicable, will not be permitted to market our future products and our business will suffer.

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*Serious adverse events or undesirable side effects or other unexpected properties of any of our product candidates may be identified during development or after approval that could delay, prevent or cause the withdrawal of regulatory approval, limit the commercial potential, or result in significant negative consequences following marketing approval.*

Serious adverse events or undesirable side effects caused by, or other unexpected properties of, our product candidates could cause us, an IRB, or regulatory authorities to interrupt, delay or halt our clinical trials and could result in a more restrictive label, the imposition of distribution or use restrictions or the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities. If any of our product candidates are associated with serious adverse events or undesirable side effects or have properties that are unexpected, we may need to abandon their development or limit development to certain uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. Many compounds that initially showed promise in clinical or earlier stage testing have later been found to

cause undesirable or unexpected side effects that prevented further development of the compound.

Undesirable side effects or other unexpected adverse events or properties of any of our other product candidates could arise or become known either during clinical development or, if approved, after the approved product has been marketed. If such an event occurs during development, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of, or deny approval of, our product candidates. If such an event occurs after such product candidates are approved, a number of potentially significant negative consequences may result, including:

- regulatory authorities may withdraw the approval of such product;
- regulatory authorities may require additional warnings on the label or impose distribution or use restrictions;
- regulatory authorities may require one or more post-market studies;
- we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidate, if approved, or could substantially increase commercialization costs and expenses, which could delay or prevent us from generating revenue from the sale of our products and harm our business and results of operations.

***We expect to rely on third parties, such as CROs, to conduct some or all of our preclinical and clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may be unable to obtain regulatory approval for or commercialize any of our product candidates.***

We expect to rely on medical institutions, clinical investigators, contract laboratories and other third parties, such as CROs, to conduct our preclinical and clinical studies on our product candidates in compliance with applicable regulatory requirements. These third parties will not be our employees and, except for restrictions imposed by our contracts with such third parties, we will have limited ability to control the amount or timing of resources that they devote to our programs. Although we expect to rely on these third parties to conduct our preclinical studies and clinical trials, we will remain responsible for ensuring that each of our preclinical studies and clinical trials is conducted in accordance with its investigational plan and protocol and the applicable legal, regulatory, and scientific standards, and our reliance on these third parties will not relieve us of our regulatory responsibilities. These entities must maintain and comply with valid DEA registrations and requirements. The FDA and regulatory authorities in other jurisdictions require us to comply with regulations and standards, commonly referred to as current good clinical practices ("cGCPs"), for conducting, monitoring, recording and reporting the results of clinical trials, in order to ensure that the data and results are scientifically credible and accurate and that the trial subjects are adequately informed of the potential risks of participating in clinical trials. If we or any of our third-party contractors fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. In addition, we are required to report certain financial interests of our third-party investigators if these relationships exceed certain financial thresholds and meet other criteria. The FDA or comparable foreign regulatory authorities may question the integrity of the data from those clinical trials conducted by principal investigators who previously served or currently serve as scientific advisors or consultants to us from time to time and receive cash compensation in connection with such services. Our clinical trials must also generally be conducted with products produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

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Some of the third parties with whom we contract may also have relationships with other commercial entities, some of which may compete with us. If the third parties conducting our preclinical studies or our clinical trials do not perform their contractual duties or obligations or comply with regulatory requirements, we may need to enter into new arrangements with alternative third parties. This could be costly, and our preclinical studies or clinical trials may need to be extended, delayed, terminated or repeated, and we may not be able to obtain regulatory approval in a timely fashion, or at all, for the applicable product candidate, or to commercialize such product candidate being tested in such studies or trials. If any of our relationships with these third parties terminate, we may not be able to enter into arrangements with alternative third-party contractors or to do so on commercially reasonable terms. Though we plan to carefully manage our relationships with our CROs, there can be no assurance that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects.

***We rely on, and expect to continue relying on, third-party contract manufacturing organizations to manufacture and supply product candidates for us, as well as certain raw materials used in the production thereof. If one of our suppliers or manufacturers fails to perform adequately, we may be required to incur significant delays and costs to find new suppliers or manufacturers.***

We currently have no experience in, and we do not own facilities for, manufacturing our product candidates. We rely on, and expect to continue relying upon, third-party manufacturing organizations to manufacture and supply our product candidates and certain raw materials used in the production thereof. Some of our key components for the production of our product candidates may have a limited number of suppliers.

The facilities used by our contract manufacturers to manufacture our product candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit our NDA to the FDA. We expect that we will not control the manufacturing process of, and will be completely dependent on, our contract manufacturing partners for compliance with cGMP requirements, for manufacture of our drug products. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA, DEA or others, they will not be able to secure and/or maintain DEA registrations and regulatory approval for their manufacturing facilities. In addition, we expect that we will have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates, or if DEA does not register these facilities for the manufacture of controlled substances, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

We do not have commercial supply agreements with our suppliers. In the event that we and our suppliers cannot agree to the terms and conditions for them to provide clinical and commercial supply needs, we would not be able to manufacture our product or candidates until a qualified alternative supplier is identified, which could also delay the development of, and impair our ability to commercialize, our product candidates.

The failure of third-party manufacturers or suppliers to perform adequately or the termination of our arrangements with any of them may adversely affect our business.

***We could be subject to costly product liability claims related to our clinical trials and product candidates.***

Because we plan to conduct clinical trials with human subjects, we face the risk that the use of our product candidates may result in adverse side effects to our patients in our clinical trials. We face even greater risks upon any commercialization of our product candidates. An individual may bring a product liability claim against us alleging that one of our product candidates causes, or is claimed to have caused, an injury or is found to be unsuitable for consumer use. Any product liability claim brought against us, with or without merit, could result in:

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- withdrawal of clinical trial volunteers, investigators, patients or trial sites;
- the inability to commercialize our product candidates;
- decreased demand for our product candidates;
- regulatory investigations that could require costly recalls or product modifications;
- loss of revenue;
- substantial costs of litigation;
- liabilities that substantially exceed our product liability insurance, which we would then be required to pay ourselves;
- an increase in our product liability insurance rates or the inability to maintain insurance coverage in the future on acceptable terms, if at all;
- the diversion of management's attention from our business; and
- damage to our reputation and the reputation of our products.

Product liability claims may subject us to the foregoing and other risks, which could have a material adverse effect on our business, results of operations, financial condition, and prospects.

### ***Our employees, independent contractors, principal investigators, CROs, consultants and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.***

We are exposed to the risk that our employees, independent contractors, principal investigators, CROs, consultants and vendors may engage in fraudulent or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates: (1) FDA regulations, including those laws requiring the reporting of true, complete and accurate information to the FDA; (2) manufacturing standards; (3) federal and state healthcare fraud and abuse laws and regulations; or (4) laws that require the true, complete and accurate reporting of financial information or data. Specifically, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Activities subject to these laws also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter misconduct by our employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

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***We are subject to uncertainty relating to coverage and reimbursement policies which, if not favorable to our product candidates, could hinder or prevent our products' commercial success.***

Our ability to commercialize our product candidates, if approved, successfully will depend in part on the extent to which governmental authorities, private health insurers and other third-party payors establish appropriate coverage and reimbursement levels for our product candidates. As a threshold for coverage and reimbursement, third-party payors generally require that drug products have been approved for marketing by the FDA. A primary trend in the U.S. healthcare industry is cost containment. Third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular products and procedures. Increasingly, third-party payors are requiring that companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot assure you that coverage and reimbursement will be available for any product that we commercialize and, if coverage is available, what the level of reimbursement will be. Coverage and reimbursement may impact the demand for, or the price of, any product for which we obtain marketing approval. If coverage and reimbursement are not available or are available only to limited levels, we may not be able to successfully commercialize any product candidate that we successfully develop.

***Healthcare reform measures could hinder or prevent our products candidates' commercial success, if approved.***

In the United States, there have been, and we anticipate there will continue to be, a number of legislative and regulatory changes to the healthcare system that could impact our ability to sell any of our products profitably if approved. In the United States, the Federal government passed the Patient Protection and Affordable Care Act in 2010, as amended by the Health Care and Education Reconciliation Act (collectively, the "ACA"), which substantially changed the way healthcare is financed by both governmental and private insurers. The ACA contains a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement changes and fraud and abuse, which impact existing government healthcare programs and will result in the development of new programs, including Medicare payment for performance initiatives and improvements to the physician quality reporting system and feedback program. Additionally, the ACA:

- increases the minimum level of Medicaid rebates payable by manufacturers of brand-name drugs from 15.1% to 23.1%;
- requires collection of rebates for drugs paid by Medicaid managed care organizations;
- requires manufacturers to participate in a coverage gap discount program, under which they must agree to offer 50 percent point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D; and
- imposes a non-deductible annual fee on pharmaceutical manufacturers or importers who sell "branded prescription drugs" to specified federal government programs.

The Trump administration and the U.S. Congress have made numerous efforts to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. In May 2017, the U.S. House of Representatives voted to pass the American Health Care Act (the "AHCA"), which would repeal numerous provisions of the ACA. The U.S. Senate considered, but did not vote to pass, the AHCA, leaving the ACA largely in place. The Tax Cuts and Jobs Act signed into law in December 2017 repealed the ACA's individual health insurance mandate, which is considered a significant component of the ACA. Uncertainty remains with respect to the impact the Trump administration and the U.S. Congress may have, if any, on the future stability of the ACA and its resulting impact on our business. We expect efforts to modify or repeal the ACA to continue, and the potential impact of such efforts are unclear. Any future changes will likely take time to unfold and could have a significant impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. Increasing emphasis on managed care in the U.S. will continue to put downward pressure on the pricing of products, and cost-control initiatives could have the effect of decreasing the price that we or any of our collaborators may receive for our future products. We expect that the ACA and other healthcare reform initiatives adopted in the future may result in more rigorous coverage criteria and additional downward pressure on the price we may receive for any approved product. We cannot predict with certainty the effect the ACA or other healthcare reform initiatives that may be adopted in the future will have on our business. Our results of operations may be adversely affected by the ACA, changes to the ACA, and by other healthcare reform initiatives adopted in the future.

In addition to the ACA, other legislative changes have been proposed and adopted since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 was signed into law, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee did not achieve a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, triggering the legislation's automatic reduction to several government programs. This includes reductions to Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013, and, due to subsequent legislative amendments, will remain in effect through 2025 unless Congressional action is taken. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. In addition, there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed bills designed to, among other things, reform government program reimbursement methodologies.



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We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates if approved, or additional pricing pressure. The implementation of cost containment measures or other healthcare reform initiatives may prevent us from being able to generate revenue, attain profitability, or commercialize any products for which we may obtain regulatory approval. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to make and implement healthcare reforms may adversely affect:

- our ability to set a price we believe is fair for our products;
- our ability to generate revenues and achieve or maintain profitability;
- the availability of capital; and

- our ability to obtain timely approval of our products.

***We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.***

If we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations may be directly, or indirectly through our customers, subject to various federal and state fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute, the federal False Claims Act, and physician sunshine laws and regulations. These laws may impact, among other things, our proposed sales, marketing, and education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent;
- the federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), which created federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology and Clinical Health Act and its implementing regulations, which imposes certain requirements relating to the privacy, security, and transmission of individually identifiable health information;
- the federal physician sunshine requirements under the ACA, which require manufacturers of drugs, devices, biologics, and medical supplies to report annually to the U.S. Department of Health and Human Services information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws that may apply to items or services reimbursed by any third-party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

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Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. In addition, recent health care reform legislation has strengthened these laws. For example, the ACA, among other things, amends the intent requirement of the federal Anti-Kickback and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. Moreover, the ACA provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, imprisonment, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

***We may be subject to requests for access to our product candidates. Demand for compassionate use of our unapproved therapies could strain our resources, delay our drug development activities, negatively impact our regulatory approval or commercial activities, and result in losses.***

We are developing product candidates to treat life-threatening illnesses for which there are currently limited therapeutic options. If we experience requests for access to unapproved drugs, we may experience significant disruption to our business which could result in losses. We are a small company with limited resources, and any unanticipated trials or access programs resulting from requests for access could deplete our drug supply, increase our capital expenditures, and otherwise divert our resources from our primary goals.

In addition, legislation referred to as “Right to Try” laws have been introduced at the local and national levels, which are intended to give patients access to unapproved therapies. New and emerging legislation regarding expanded access to unapproved drugs for life-threatening illnesses could negatively impact our business in the future. Either activism or legislation related to requests for access may require us to initiate an unanticipated expanded access program or to make our product candidates more widely available sooner than anticipated.

Patients who receive access to unapproved drugs through compassionate use or expanded access programs have life-threatening illnesses and generally have exhausted all other available therapies. The risk for serious adverse events, including those which may be unrelated to our product candidates, in this patient population is high and could have a negative impact on the safety profile of our product candidate, which could cause significant delays or an inability to successfully commercialize our product candidate and could materially harm our business. In addition, in order to perform the controlled clinical trials required for regulatory approval and successful commercialization of our product candidates, we may also need to restructure or pause any ongoing compassionate use and/or expanded access programs, which could prompt adverse publicity or other disruptions related to current or potential participants in such programs.

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**Risks Related to our Common Stock:**

***We are subject to the reporting requirements of federal securities laws, which is expensive.***

We are a public reporting company in the United States and, accordingly, subject to the information and reporting requirements of the Exchange Act and other federal securities laws, and the compliance obligations of the Sarbanes-Oxley Act. The costs of preparing and filing annual and quarterly reports, proxy statements and other information with the SEC and furnishing audited reports to stockholders causes our expenses to be higher than they would be if we remained a privately-held company.

***Our compliance with the Sarbanes-Oxley Act and SEC rules concerning internal controls is time consuming, difficult and costly.***

We are a reporting company with the SEC and therefore must comply with Sarbanes-Oxley Act and SEC rules concerning internal controls. It is time consuming, difficult and costly for us to develop and implement the internal controls and reporting procedures required by the Sarbanes-Oxley Act. In order to expand our operations, we will need to hire additional financial reporting, internal control, and other finance staff in order to develop and implement appropriate internal controls and reporting procedures.

***Our stock price may be volatile, which may result in losses to our stockholders.***

The stock markets have experienced significant price and trading volume fluctuations, and the market prices of companies quoted on the OTCQB, where our shares of common stock will be quoted, generally have been very volatile and have experienced sharp share-price and trading-volume changes. The trading price of our common stock is likely to be volatile and could fluctuate widely in response to many of the following factors, some of which are beyond our control:

- variations in our operating results;
- changes in expectations of our future financial performance, including financial estimates by securities analysts and investors;
- changes in operating and stock price performance of other companies in our industry;
- additions or departures of key personnel; and
- future sales of our common stock.

Domestic and international stock markets often experience significant price and volume fluctuations. These fluctuations, as well as general economic and political conditions unrelated to our performance, may adversely affect the price of our common stock. In particular, following initial public offerings, the market prices for stocks of companies often reach levels that bear no established relationship to the operating performance of these companies. These market prices are generally not sustainable and could vary widely. In the past, following periods of volatility in the market price of a public company's securities, securities class action litigation has often been initiated.

***Our common shares are thinly-traded, and in the future, may continue to be thinly-traded, and you may be unable to sell at or near ask prices or at all if you need to sell your shares to raise money or otherwise desire to liquidate such shares.***

We cannot predict the extent to which an active public market for our common stock will develop or be sustained due to a number of factors, including the fact that we are a small company that is relatively unknown to stock analysts, stock brokers, institutional investors, and others in the investment community that generate or influence sales volume, and that even if we came to the attention of such persons, they tend to be risk-averse and would be reluctant to follow an unproven company such as ours or purchase or recommend the purchase of our shares until such time as we became more seasoned and viable. As a consequence, there may be periods of several days or more when trading activity in our shares is minimal or non-existent, as compared to a seasoned issuer which has a large and steady volume of trading activity that will generally support continuous sales without an adverse effect on share price. We cannot give you any assurance that a broader or more active public trading market for our common stock will develop or be sustained, or that current trading levels will be sustained.

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The market price for our common stock may be particularly volatile given our status as a relatively small company and lack of revenues that could lead to wide fluctuations in our share price. You may be unable to sell your common stock at or above your purchase price if at all, which may result in substantial losses to you.

The market for our common shares may be characterized by significant price volatility when compared to seasoned issuers, and we expect that our share price will be more volatile than a seasoned issuer for the indefinite future. The potential volatility in our share price is attributable to a number of factors. First, as noted above, our common shares may be sporadically and/or thinly traded. As a consequence of this lack of liquidity, the trading of relatively small quantities of shares by our stockholders may disproportionately influence the price of those shares in either direction. The price for our shares could, for example, decline precipitously in the event that a large number of our common shares are sold on the market without commensurate demand, as compared to a seasoned issuer that could better absorb those sales without adverse impact on its share price. Secondly, an investment in us is a speculative or “risky” investment due to our lack of revenues or profits to date. As a consequence of this enhanced risk, more risk-averse investors may, under the fear of losing all or most of their investment in the event of negative news or lack of progress, be more inclined to sell their shares on the market more quickly and at greater discounts than would be the case with the stock of a seasoned issuer.

***Because we became public by means of a “reverse merger,” we may not be able to attract the attention of major brokerage firms or investors in general.***

Additional risks may exist because we became a public company through a “reverse merger.” Securities analysts of major brokerage firms may not provide coverage of us since there is little incentive to brokerage firms to recommend the purchase of our common stock. No assurance can be given that brokerage firms will want to conduct any secondary offerings on behalf of our company in the future. In addition, the SEC has recently issued an investor bulletin warning to investors about the risks of investing in companies that enter the U.S. capital markets through a “reverse merger.” The release of such information from the SEC may have the effect of reducing investor interest in companies, such as us, that enter the U.S. capital markets through a “reverse merger.”

***We cannot assure you that our common stock will become eligible for listing or quotation on any exchange and the failure to do so may adversely affect your ability to dispose of our common stock in a timely fashion.***

In order for our common stock to become eligible for listing or quotation on any exchange, reverse merger companies must have had their securities traded on an over-the-counter market for at least one year, maintained a certain minimum closing price for not less than 30 of the most recent 60 days prior to the filing of an initial listing application and prior to listing, and timely filed with the SEC all required reports since the consummation of the reverse merger, including one annual report containing audited consolidated financial statements for a full fiscal year commencing after the date of filing of the Current Report on Form 8-K which discloses the reverse merger. We may not be able to meet all of the filing requirements above and may not be able to satisfy the initial standards for listing or quotation on any exchange in the foreseeable future or at all. Even if we are able to become listed or quoted on an exchange, we may not be able to maintain a listing of the common stock on such stock exchange.

***We do not anticipate paying any cash dividends.***

We presently do not anticipate that we will pay any dividends on any of our capital stock in the foreseeable future. The payment of dividends, if any, would be contingent upon our revenues and earnings, if any, capital requirements, and general financial condition. The payment of any dividends will be within the discretion of our Board. We presently intend to retain all earnings, if any, to implement our business plan; accordingly, we do not anticipate the declaration of any dividends in the foreseeable future.

***Our common stock may be subject to penny stock rules, which may make it more difficult for our stockholders to sell their common stock.***

Broker-dealer practices in connection with transactions in “penny stocks” are regulated by certain penny stock rules adopted by the SEC. Penny stocks generally are equity securities with a price of less than \$5.00 per share. The penny stock rules require a broker-dealer, prior to a purchase or sale of a penny stock not otherwise exempt from the rules, to deliver to the customer a standardized risk disclosure document that provides information about penny stocks and the risks in the penny stock market. The broker-dealer also must provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker-dealer and its salesperson in the transaction, and monthly account statements showing the market value of each penny stock held in the customer’s account. In addition, the penny stock rules generally require that prior to a transaction in a penny stock the broker-dealer make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser’s written agreement to the transaction. These disclosure requirements may have the effect of reducing the level of trading activity in the secondary market for a stock that becomes subject to the penny stock rules.

***Volatility in our common stock price may subject us to securities litigation.***

The market for our common stock is characterized by significant price volatility when compared to seasoned issuers, and we expect that our share price will continue to be more volatile than a seasoned issuer for the indefinite future. In the past, plaintiffs have often initiated securities class action litigation against a company following periods of volatility in the market price of its securities. We may, in the future, be the target of similar litigation. Securities litigation could result in substantial costs and liabilities and could divert management's attention and resources.

***We will need additional capital, and the sale of additional shares or other equity securities could result in additional dilution to our stockholders.***

We expect our existing cash will be sufficient to fund our capital requirements for at least the next month. We require additional capital for the development and commercialization of our product candidates and may require additional cash resources due to changed business conditions or other future developments, including any investments or acquisitions we may decide to pursue. If our resources are insufficient to satisfy our cash requirements, we will seek to sell additional equity or debt securities or obtain a credit facility. The sale of additional equity securities could result in additional dilution to our stockholders. The incurrence of additional indebtedness would result in increased debt service obligations and could result in operating and financing covenants that would restrict our operations. We cannot assure you that financing will be available in amounts or on terms acceptable to us, if at all.

***Our principal stockholder owns a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.***

Our principal stockholder, Emerald Health Sciences, owns a significant percentage of our outstanding capital stock. As of July 8, 2020, Emerald Health Sciences owned approximately 62.2% of our outstanding shares of common stock. Additionally, our Board is controlled by the directors of Emerald Health Sciences. Accordingly, our directors have significant influence over our affairs due to their substantial ownership and have substantial voting power to approve matters requiring the approval of our stockholders. For example, Emerald Health Sciences may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This concentration of ownership may prevent or discourage unsolicited acquisition proposals or offers for our common stock that some of our stockholders may believe is in their best interest.

***We have a substantial number of authorized common shares available for future issuance that could cause dilution of our stockholders' interest and adversely impact the rights of holders of our common stock.***

We have a total of 500,000,000 shares of common stock authorized for issuance and up to 20,000,000 shares of preferred stock with the rights, preferences and privileges that our Board may determine from time to time. As of July 8, 2020, we have reserved 4,186,786 shares for issuance upon the exercise of outstanding options, and 22,268,750 shares for issuance upon the exercise of outstanding warrants. As of July 8, 2020, we had no outstanding preferred stock. As of July 8, 2020, we had 316,792,253 shares of common stock available for issuance. We may seek financing that could result in the issuance of additional shares of our capital stock and/or rights to acquire additional shares of our capital stock. We may also make acquisitions that result in issuances of additional shares of our capital stock. Those additional issuances of capital stock would result in a significant reduction of your percentage interest in us. Furthermore, the book value per share of our common stock may be reduced. This reduction would occur if the exercise price of any issued warrants, the conversion price of any convertible notes is lower than the book value per share of our common stock at the time of such exercise or conversion.

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The addition of a substantial number of shares of our common stock into the market or by the registration of any of our other securities under the Securities Act of 1933, as amended (the “Securities Act”), may significantly and negatively affect the prevailing market price for our common stock. The future sales of shares of our common stock issuable upon the exercise of outstanding warrants may have a depressive effect on the market price of our common stock, as such warrants would be more likely to be exercised at a time when the price of our common stock is greater than the exercise price.

***There is not now, and there may never be, an active, liquid and orderly trading market for our common stock, which may make it difficult for you to sell your shares of our common stock.***

There is not now, nor has there been since our inception, any significant trading activity in our common stock or a market for shares of our common stock, and an active trading market for our shares may never develop or be sustained. As a result, investors in our common stock must bear the economic risk of holding those shares for an indefinite period of time. Although our common stock is quoted on the OTCQB, an over-the-counter quotation system, trading of our common stock is extremely limited and sporadic and at very low volumes. We do not now, and may not in the future, meet the initial listing standards of any national securities exchange. We presently anticipate that our common stock will continue to be quoted on the OTCQB or another over-the-counter quotation system in the foreseeable future. In those venues, our stockholders may find it difficult to obtain accurate quotations as to the market value of their shares of our common stock and may find few buyers to purchase their stock and few market makers to support its price. As a result of these and other factors, you may be unable to resell your shares of our common stock at or above the price for which you purchased them, or at all. Further, an inactive market may also impair our ability to raise capital by selling additional equity in the future and may impair our ability to enter into strategic partnerships or acquire companies or products by using our shares of common stock as consideration.

***If we are unable to implement and maintain effective internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our reported financial information and the market price of our common stock may be negatively affected.***

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal control. Section 404 of the Sarbanes-Oxley Act requires that we evaluate and determine the effectiveness of our internal control over financial reporting and provide a management report on the internal control over financial reporting. If we have a material weakness in our internal control over financial reporting, we may not detect errors on a timely basis and our consolidated financial statements may be materially misstated. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting, our management will be unable to conclude that our internal control over financial reporting is effective. Moreover, when we are no longer a smaller reporting company, our independent registered public accounting firm will be required to issue an attestation report on the effectiveness of our internal control over financial reporting. Even if our management concludes that our internal control over financial reporting is effective, our independent registered public accounting firm may conclude that there are material weaknesses with respect to our internal controls or the level at which our internal controls are documented, designed, implemented or reviewed.

If we are unable to conclude that our internal control over financial reporting is effective, or when we are no longer a smaller reporting company, if our auditors were to express an adverse opinion on the effectiveness of our internal control over financial reporting because we had one or more material weaknesses, investors could lose confidence in the accuracy and completeness of our financial disclosures, which could cause the price of our common stock to decline. Internal control deficiencies could also result in a restatement of our financial results in the future.

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***If securities or industry analysts do not publish research or reports about our business, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.***

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. We are currently covered by one research analyst. If no more analysts commence coverage of us, the trading price of our stock would likely decrease. Even if we do obtain more analyst coverage, if one or more of the analysts who cover us downgrade our stock, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

***The issuance of shares upon exercise of outstanding warrants and options may cause immediate and substantial dilution to our existing stockholders.***

If the price per share of our common stock at the time of exercise of any warrants, options, or any other convertible securities is in excess of the various conversion or exercise prices of these convertible securities, conversion or exercise of these convertible securities would have a dilutive effect on our common stock. As of July 8, 2020, we had outstanding (i) warrants to purchase up to 22,268,750 shares of our common stock at exercise prices ranging from \$0.00 to \$5.00 per share, and (ii) options to purchase up to 4,186,786 shares of our common stock at exercise prices ranging from \$0.25 to \$0.42 per share. Further, any additional financing that we secure may require the granting of rights, preferences or privileges senior to those of our common stock and which result in additional dilution of the existing ownership interests of our common stockholders.

***Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.***

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change,” the corporation’s ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income may be limited. In general, an “ownership change” occurs if the aggregate stock ownership of one or more stockholders or groups of stockholders who own at least 5% of a corporation’s stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. If it is determined that we have in the past experienced any ownership changes, or if we experience ownership changes as a result of future transactions in our stock, our ability to use our net operating loss carryforwards and other tax attributes to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us.

## **FORWARD-LOOKING STATEMENTS**

Statements in this prospectus that are not descriptions of historical facts are forward-looking statements that are based on management’s current expectations and assumptions and are subject to risks and uncertainties. If such risks or uncertainties materialize or such assumptions prove incorrect, our business, operating results, financial condition and stock price could be materially negatively affected. In some cases, you can identify forward-looking statements by terminology including “anticipates,” “believes,” “can,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “should,” “will,” “would” or the negative of these terms or other comparable terminology. Factors that could cause actual results to differ materially from those currently anticipated include those set forth in the section titled “Risk Factors” including, without limitation, risks relating to:

- the results of our research and development activities, including uncertainties relating to the discovery of potential product candidates and the preclinical and clinical testing of our product candidates;
- the early stage of our product candidates presently under development;
- our need for substantial additional funds in order to continue our operations, and the uncertainty of whether we will be able to obtain the funding we need;
- our ability to obtain and, if obtained, maintain regulatory approval of our current product candidates, and any of our other future product candidates, and any related restrictions, limitations, and/or warnings in the label of any approved product candidate;
- our ability to retain or hire key scientific or management personnel;
- our ability to protect our intellectual property rights that are valuable to our business, including patent and other intellectual property rights;
- our dependence on UM, third-party manufacturers, suppliers, research organizations, testing laboratories and other potential collaborators;
- our ability to develop successful sales and marketing capabilities in the future as needed;
- the size and growth of the potential markets for any of our approved product candidates, and the rate and degree of market acceptance of any of our approved product candidates;
- competition in our industry;
- the duration and impact of the novel coronavirus (“COVID-19”) pandemic; and
- regulatory developments in the United States and foreign countries.



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We operate in a rapidly-changing environment and new risks emerge from time to time. As a result, it is not possible for our management to predict all risks, such as the COVID-19 outbreak and associated business disruptions including delayed clinical trials and laboratory resources, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. The forward-looking statements included in this prospectus speak only as of the date hereof, and except as required by law, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations.

### USE OF PROCEEDS

We estimate that the net proceeds of this offering will be \$5,113,928 from the sale of our Common Units or Pre-Funded Units in this offering at the assumed public offering price of \$0.12 per unit, after deducting the estimated Placement Agent's fees and estimated offering expenses payable by us, assuming the sale of all of the units being offered hereunder. The assumed public offering price, and the resulting number of units offered hereby as reflected in this prospectus, has been arbitrarily determined and is approximately based on the last reported sale price of our common stock on July 22, 2020. However, the final public offering price will be a negotiated price and the final number of units being offered hereby will be based on such negotiated offering price. This amount excludes the proceeds, if any, from the exercise of warrants in this offering. Excluding the placement agent warrants, if all of the common stock warrants sold in this offering were to be exercised in cash at an assumed exercise price of \$0.12 per share, we would receive additional net proceeds of approximately \$5,841,000. However, the final exercise price will be a negotiated price. We cannot predict when or if these warrants will be exercised. It is possible that these warrants may expire and may never be exercised. The table below depicts how we plan to utilize the proceeds in the event that 25%, 50%, 75% and 100% of the Common Units and Pre-Funded Units in this offering are sold, after deducting estimated placement agent fees and offering expenses payable by us.

Use of Proceeds	100 %	75%	50%	25%
General corporate purposes	\$ 5,113,928	\$ 3,777,772	\$ 2,441,615	\$ 1,105,459
<b>Total:</b>	\$ 5,113,928	\$ 3,777,772	\$ 2,441,615	\$ 1,105,459

We intend to use the net proceeds from this offering for general corporate purposes, including working capital. We may use the net proceeds from this offering to fund possible acquisitions of other companies, products or technologies, though no such acquisitions are currently contemplated. In addition, a portion of the proceeds raised may be used to pay, in whole or in part, the principal and/or the accrued interest on our Credit Agreement. The terms of the Credit Agreement are described in the section entitled "Certain Relationships and Related Transactions and Director Independence."

This expected use of our net proceeds from this offering represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our drug candidate development, the status of and results from clinical trials, as well as any collaborations that we may enter into with third parties for our drug candidates, and any unforeseen cash needs.

As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering, and investors will be relying on the judgment of our management regarding the application of the net proceeds from this offering. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business.

Any funds we raise in this offering will be immediately available for our use and will not be returned to investors. We will not maintain an escrow, trust, or similar account for the receipt of proceeds from the sale of our shares.

### DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not expect to pay any dividends on our capital stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our Board, subject to applicable laws, and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, general business conditions, and other factors that our Board may deem relevant.

## DILUTION

If you purchase Common Units or Pre-Funded Units in this offering, your interest will be diluted to the extent of the difference between the public offering price per Common Unit and Pre-Funded Unit and the net tangible book value per share of our common stock after this offering. Our net tangible book value (deficit) as of March 31, 2020 was \$(1,702,897) or \$(0.01) per share of common stock (based upon 183,207,747 outstanding shares of common stock as of March 31, 2020). “Net tangible book value (deficit)” is total assets minus the sum of liabilities and intangible assets. “Net tangible book value (deficit) per share” is net tangible book value (deficit) divided by the total number of shares of common stock outstanding.

After giving effect to the sale by us in this offering of 48,676,012 Common Units or Pre-Funded Units (attributing no value to the common stock warrants or proceeds from the sale of warrants being offered) at an assumed public offering price of \$0.12 per unit, and after deducting the estimated Placement Agent’s fees and estimated offering costs payable by us, our net tangible book value as of March 31, 2020 would have been \$3,411,031, or \$0.01 per share of common stock. This amount represents an immediate increase in net tangible book value of \$0.02 per share to existing stockholders and an immediate dilution of \$0.11 per share to purchasers in this offering.

The following table illustrates the dilution:

Assumed public offering price per share		\$	0.12
Net tangible book deficit per share as of March 31, 2020	\$	(0.01)	
Increase in net tangible book value per share attributable to this offering	\$	0.02	
Pro forma, net tangible book value per share after this offering	\$	0.01	
Dilution per share to new investors	\$	0.11	

The dilution information set forth in the table above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

The above table is based on 183,207,747 shares of common stock outstanding as of March 31, 2020 and, unless otherwise indicated, excludes:

- 4,512,715 shares of our common stock issuable upon exercise of outstanding options at a weighted average exercise price of \$0.30 per share;
- 24,830,750 shares of our common stock issuable upon exercise of outstanding warrants with a weighted-average exercise price of \$0.51 per share;
- 5,125,363 shares of our common stock underlying our Credit Agreement;
- 13,159,631 shares of our common stock that are reserved for equity awards that may be granted under our equity incentive plans;
- any sales of pre-funded warrants, which, if sold, would reduce the number of shares of common stock that we are offering on a one-for-one basis, and shares of our common stock issuable upon exercise of the common stock warrants to be issued as part of the Common Units or Pre-Funded Units issued in this offering.

## CAPITALIZATION

The following table sets forth our cash and our capitalization as of March 31, 2020 on:

- an actual basis; and
- an as adjusted basis giving effect to the sale by us in this offering of 25%, 50%, 75% and 100% of the 48,676,012 Common Units or Pre-Funded Units in this offering at an assumed public offering price of \$0.12 per unit, assuming no sales of pre-funded warrants, which, if sold, would reduce the number of shares of common stock that we are offering on a one-for-one basis, after deducting estimated Placement Agent’s fees and estimated offering expenses payable by us.

The information set forth in the table below is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing. Cash is not a component of our total capitalization. You should read these tables together with the other information contained in this prospectus, including “Use of Proceeds,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the historical financial statements and related notes thereto included elsewhere in this prospectus.

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**As of March 31, 2020**

	<b>As Adjusted</b>				
	<b>Actual</b>	<b>100% of Maximum</b>	<b>75% of Maximum</b>	<b>50% of Maximum</b>	<b>25% of Maximum</b>
Cash	\$ 563,864	\$ 5,677,792	\$ 4,341,636	\$ 3,005,479	\$ 1,669,323
Convertible multi-draw credit agreement, related party, net of discount (1)	517,780	517,780	517,780	517,780	517,780
Stockholders' deficit:					
Preferred Stock, \$0.001 par value; 20,000,000 shares authorized; no shares issued and outstanding actual or as adjusted	-	-	-	-	-
Common Stock, par value \$0.001; 500,000,000 shares authorized; 183,207,747 shares issued and outstanding, actual; 231,883,759 shares issued and outstanding as adjusted, 100%; 219,714,756 shares issued and outstanding as adjusted, 75%; 207,545,753 shares issued and outstanding as adjusted, 50%; 195,376,750 shares issued and outstanding as adjusted, 25%	183,208	231,884	219,715	207,546	195,377
Additional paid-in capital	32,628,837	37,694,089	36,370,102	35,046,114	33,722,127
Accumulated deficit	(34,514,942)	(34,514,942)	(34,514,942)	(34,514,942)	(34,514,942)
Total stockholders' deficit	(1,702,897)	3,411,031	2,074,875	738,718	(597,438)
Total capitalization	(1,185,117)	3,928,811	2,592,655	1,256,498	(79,658)

(1) The carrying value of the discount at March 31, 2020 is \$1,496,720.

The above table is based on 183,207,747 shares of common stock outstanding as of March 31, 2020 and, unless otherwise indicated, excludes:

- 4,512,715 shares of our common stock issuable upon exercise of outstanding options at a weighted average exercise price of \$0.30 per share;
- 24,830,750 shares of our common stock issuable upon exercise of outstanding warrants with a weighted-average exercise price of \$0.51 per share;
- 5,125,363 shares of our common stock underlying our Credit Agreement;
- 13,159,631 shares of our common stock that are reserved for equity awards that may be granted under our equity incentive plans;
- any sales of Pre - Funded Units , which, if sold, would reduce the number of Common Units that we are offering on a one-for-one basis, with no corresponding change to the number of shares of our common stock issuable upon exercise of the warrants to be issued as part of the Common Units and Pre-Funded Units issued in this offering.

**PLAN OF DISTRIBUTION**

Pursuant to an engagement agreement dated July 20, 2020, we have engaged H.C. Wainwright & Co., LLC, or the Placement Agent, to act as our exclusive placement agent in connection with this offering, on a reasonable best efforts basis, of our Common Units and Pre-Funded Units pursuant to this prospectus. The terms of this offering are subject to market conditions and negotiations between us, the Placement Agent and prospective investors. The engagement agreement does not give rise to any commitment by the Placement Agent to purchase any of our securities, and the Placement Agent will have no authority to bind us by virtue of the engagement agreement. Further, the Placement Agent does not guarantee that it will be able to raise new capital in any prospective offering. The Placement Agent may engage sub-agents or selected dealers to assist with the offering.

We will enter into a securities purchase agreement directly with institutional investors in certain states in connection with this offering. Institutional investors who do not enter into a securities purchase agreement shall rely solely on this prospectus in connection with the purchase of our securities in this offering.

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We will deliver the securities being issued to the investors upon receipt of investor funds for the purchase of the securities offered pursuant to this prospectus. We expect to deliver the shares of our common stock being offered pursuant to this prospectus on \_\_, 2020.

### **Fees and Expenses**

We have agreed to pay to the Placement Agent a cash fee equal to 7.5% of the aggregate gross proceeds raised in this offering. The following table shows the Placement Agent's fees per Unit payable to the Placement Agent by us in connection with this offering. The total Placement Agent's fee below assumes the purchase of all of the securities we are offering.

Per Common Unit	\$
Per Pre-Funded Unit	\$
Total Per Unit	\$

We estimate the total expenses payable by us for this offering to be approximately \$727,193, which amount includes (i) a Placement Agent's cash fee of \$438,084 equal to 7.5% of the aggregate gross proceeds raised in this offering, assuming the purchase of all of the securities we are offering; (ii) a management fee of \$58,411 equal to 1.0% of the aggregate gross proceeds raised in this offering; (iii) a \$25,000 non-accountable expense allowance payable to the Placement Agent; (iv) reimbursement of the accountable expenses, including fees and expenses of counsel, of the Placement Agent up to \$75,000 including the legal fees of the Placement Agent being paid by us (none of which has been paid in advance); (v) the Placement Agent's clearing expenses in the amount of \$12,900 in connection with this offering; (vi) the costs associated with the use of a third-party electronic road show service; and (vii) additional legal, accounting, registration and miscellaneous fees estimated at \$117,798. We also have granted the placement agent a tail cash fee of 7.5% of the gross proceeds and warrants to purchase shares of common stock equal to 7.0% of the aggregate number of shares of common stock sold in any offering, within 12 months of the termination of the placement agent's engagement, to investors whom the placement agent contacted or introduced to us directly or indirectly in connection with this offering. See "Placement Agent's Warrants" below for additional detail.

### **Placement Agent's Warrants**

We have agreed to issue to the Placement Agent warrants to purchase shares of our common stock which represent 7.0% of the number of shares of common stock and pre-funded warrants being sold in this offering. The Placement Agent's Warrants will have a term of five years from the effective date of this prospectus and an exercise price per share equal to \$ \_\_\_\_ per share, which represents 125% of the public offering price for the Common Units sold in this offering and shall be in the form of the warrant issued to the investors in this offering, except as required by FINRA. Pursuant to FINRA Rule 5110(g), the Placement Agent's Warrants and any shares issued upon exercise of the Placement Agent's Warrants shall not be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of the securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of this offering, except the transfer of any security: (i) by operation of law or by reason of our reorganization; (ii) to any FINRA member firm participating in the offering and the officers or partners thereof, if all securities so transferred remain subject to the lock-up restriction set forth above for the remainder of the time period; (iii) if the aggregate amount of our securities held by the Placement Agent or related persons does not exceed 1% of the securities being offered; (iv) that is beneficially owned on a pro rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund and the participating members in the aggregate do not own more than 10% of the equity in the fund; or (v) the exercise or conversion of any security, if all securities remain subject to the lock-up restriction set forth above for the remainder of the time period. The Placement Agent's Warrants are registered on the registration statement of which this prospectus forms a part.

### **Right of First Refusal**

We have also granted the Placement Agent a right of first refusal for 9 months following the closing of this offering to act as our exclusive underwriter, placement agent or manager for any public offering, private placement or other capital raising transactions undertaken by us, subject to certain exceptions.

### **Determination of Offering Price**

The assumed public offering price used herein is \$0.12 per Common Unit or \$0.12 per Pre-Funded Unit, and the resulting number of shares offered hereby as reflected in this prospectus, has been arbitrarily determined and is approximately based on the last reported sale price of our common stock on July 22, 2020. However, the final public offering price will be a negotiated price and the final number of shares offered hereby will be based on such negotiated offering price.

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**State Blue Sky Information**

In connection with this offering, we will rely on exemptions from registration for sales of securities in this offering solely to institutional investors pursuant to an exemption provided for sales to these investors under the state Blue Sky laws. The definition of an “institutional investor” varies from state to state but generally includes financial institutions, broker-dealers, banks, insurance companies and other qualified entities.

**Transfer Agent and Registrar**

Our independent transfer agent is ClearTrust LLC, 16540 Pointe Village Drive, Suite 210, Lutz, Florida 33558.

**Stock Market Listing**

Our common stock trades on the OTCQB under the symbol “EMBI”.

We do not intend to apply to list the warrants or prefunded warrants to be issued as part of the Common Units or Pre-Funded Units we are offering on the OTCQB or any other exchange.

**Indemnification**

We have agreed to indemnify the Placement Agent and specified other persons against some civil liabilities, including liabilities under the Securities Act, and the Securities Exchange Act of 1934, as amended, or the Exchange Act, and to contribute to payments that the Placement Agent may be required to make in respect of such liabilities.

**Regulation M**

The Placement Agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act and any fees received by it and any profit realized on the sale of the securities by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. The Placement Agent will be required to comply with the requirements of the Securities Act and the Exchange Act including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of our securities by the Placement Agent. Under these rules and regulations, the Placement Agent may not (i) engage in any stabilization activity in connection with our securities; and (ii) bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until they have completed their participation in the distribution.

**Other Relationships**

The Placement Agent and its respective affiliates have in the past and may in the future engage in investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. The Placement Agent has received, or may in the future receive, customary fees and commissions for these transactions.

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## DESCRIPTION OF SECURITIES

We are offering, on a “best efforts” basis, up to 48,676,012 of Common Units at an assumed price per unit of \$0.12, each consisting of (i) one share of our common stock, and (ii) one warrant to purchase one share of common stock, and Pre-Funded Units at an assumed price per unit of \$0.12, each consisting of (i) one pre-funded warrant to purchase one share of common stock and (ii) one warrant to purchase one share of common stock. Each warrant will entitle the holder to purchase one share of common stock. The common stock warrants will expire five years from the date of issuance.

The pre-funded warrants will be immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full.

For each Pre-Funded Unit we sell, the number of Common Units we are offering will be decreased on a one-for-one basis.

The following description is qualified in its entirety by the provisions of our articles of incorporation, as amended (including all certificates of designation relating to our preferred stock), and our bylaws, all of which are incorporated by reference as exhibits to our registration statement, of which this prospectus forms a part.

### **Common Stock**

The Company’s articles of incorporation, as amended, authorize us to issue 500,000,000 shares of common stock, par value \$0.001 per share, of which 183,207,747 shares are issued and outstanding as of July 8, 2020, and 20,000,000 shares of Preferred Stock, \$0.001 par value per share, none of which are outstanding.

### *Voting Rights*

Holders of our common stock are entitled to one vote for each share held of record on all matters on which stockholders are entitled to vote generally, including the election or removal of directors. The holders of our common stock do not have cumulative voting rights in the election of directors. The rights, powers, preferences and privileges of holders of our common stock are subject to those of the holders of our outstanding preferred stock and will be subject to those of the holders of any shares of our preferred stock we may authorize and issue in the future.

Our bylaws provide that the presence in person or by proxy of the holders of a majority of the votes entitled to be cast on a matter at a meeting shall constitute a quorum of stockholders for that matter. If a quorum exists, and unless a higher proportion of the votes is required pursuant to our articles of incorporation or applicable law, an action of the stockholders entitled to vote on a particular matter shall be approved if the votes cast in favor such action exceed the votes cast against such action. However, our bylaws further provide that directors are to be elected by a majority of the shares entitled to vote, either in person or by proxy, at the meeting held for the purpose of such election. Pursuant to our bylaws and Nevada law, a director may be removed by the vote of stockholders representing not less than two-thirds of the voting power of the issued and outstanding stock entitled to vote.

Our bylaws also permit stockholders to take action by written consent pursuant to Nevada law, which provides that any action required or permitted to be taken at a meeting of the stockholders may be taken without a meeting if, before or after the action, a written consent thereto is signed by stockholders holding at least a majority of the voting power, except that if a different proportion of voting power is required for such an action at a meeting, then that proportion of written consents is required.

### *Dividend Rights*

The holders of our common stock are entitled to receive such dividends as may be declared by our Board out of funds legally available for dividends. Our Board is not obligated to declare a dividend. Any future dividends will be subject to the discretion of our board of directors and will depend upon, among other things, future earnings, the operating and financial condition of our company, its capital requirements, general business conditions and other pertinent factors. We do not anticipate that dividends will be paid in the foreseeable future.

### *Miscellaneous Rights and Provisions*

In the event of our liquidation or dissolution, whether voluntary or involuntary, each share of our common stock is entitled to share ratably in any assets available for distribution to holders of our common stock after satisfaction of all liabilities.

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Our common stock is not convertible or redeemable and has no conversion rights. There are no conversions, redemption, sinking fund or similar provisions regarding our common stock.

Our common stock, after the fixed consideration thereof has been paid or performed, is not subject to assessment, and the holders of our common stock are not individually liable for the debts and liabilities of our company.

No stockholder shall be entitled as a matter of right to subscribe for or receive additional shares of any class of our stock, whether presently or hereafter authorized, or any bonds, debentures or securities convertible into stock, but such additional shares of stock or other securities convertible into stock may be issued or disposed of by our Board to such persons and on such terms as in its discretion it shall deem advisable.

Our bylaws provide that any provision of our bylaws may be amended by a majority vote of the stockholders at any annual meeting or at any special meeting called for that purpose. Our Board may amend the bylaws or adopt additional bylaws, but is not permitted to alter or repeal any bylaw adopted by our stockholders.

#### *Anti-Takeover Provisions*

Some features of the Nevada Revised Statutes (the “NRS”), which are further described below, may have the effect of deterring third parties from making takeover bids for control of our company or may be used to hinder or delay a takeover bid. This would decrease the chance that our stockholders would realize a premium over market price for their shares of common stock as a result of a takeover bid.

#### *Business Combinations and Acquisition of Control Shares*

Pursuant to provisions in our articles of incorporation, we have elected not to be governed by certain Nevada statutes that may have the effect of discouraging corporate takeovers.

Nevada’s “combinations with interested stockholders” statutes (NRS 78.411 through 78.444, inclusive) prohibit specified types of business “combinations” between certain Nevada corporations and any person deemed to be an “interested stockholder” for two years after such person first becomes an “interested stockholder” unless the corporation’s board of directors approves the combination (or the transaction by which such person becomes an “interested stockholder”) in advance, or unless the combination is approved by the board of directors and sixty percent of the corporation’s voting power not beneficially owned by the interested stockholder, its affiliates and associates. Furthermore, in the absence of prior approval certain restrictions may apply even after such two-year period. For purposes of these statutes, an “interested stockholder” is any person who is (1) the beneficial owner, directly or indirectly, of ten percent or more of the voting power of the outstanding voting shares of the corporation, or (2) an affiliate or associate of the corporation and at any time within the two previous years was the beneficial owner, directly or indirectly, of ten percent or more of the voting power of the then-outstanding shares of the corporation. The definition of the term “combination” is sufficiently broad to cover most significant transactions between a corporation and an “interested stockholder.” Our original articles of incorporation provided that these statutes will not apply to us and such provision remains in effect.

Nevada’s “acquisition of controlling interest” statutes (NRS 78.378 through 78.3793, inclusive) contain provisions governing the acquisition of a controlling interest in certain Nevada corporations. These “control share” laws provide generally that any person that acquires a “controlling interest” in certain Nevada corporations may be denied voting rights, unless a majority of the disinterested stockholders of the corporation elects to restore such voting rights. Our original articles of incorporation provided that these statutes will not apply to us and such provision remains in effect. Absent such a provision in our articles of incorporation or bylaws, these laws would apply to us if we were to have 200 or more stockholders of record (at least 100 of whom have addresses in Nevada appearing on our stock ledger) and do business in the State of Nevada directly or through an affiliated corporation, unless our articles of incorporation or bylaws in effect on the tenth day after the acquisition of a controlling interest provide otherwise. These laws provide that a person acquires a “controlling interest” whenever a person acquires shares of a subject corporation that, but for the application of these provisions of the NRS, would enable that person to exercise (1) one-fifth or more, but less than one-third, (2) one-third or more, but less than a majority or (3) a majority or more, of all of the voting power of the corporation in the election of directors. Once an acquirer crosses one of these thresholds, shares which it acquired in the transaction taking it over the threshold and within the 90 days immediately preceding the date when the acquiring person acquired or offered to acquire a controlling interest become “control shares” to which the voting restrictions described above apply.

In addition, NRS 78.139 also provides that directors may resist a change or potential change in control if the directors, by majority vote of a quorum, determine that the change is opposed to, or not in, the best interests of the corporation.

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**Preferred Stock**

Our articles of incorporation authorized the issuance of up to 20,000,000 shares of preferred stock in one or more series with such designations, voting powers, if any, preferences and relative, participating, optional or other special rights, and such qualifications, limitations and restrictions, as are determined by our Board in accordance with Nevada law. No shares of preferred stock are outstanding as of the date of this prospectus.

**Warrants**

As of July 8, 2020, we had outstanding warrants to purchase an aggregate of 22,268,750 shares of our common stock.

**Common Stock Warrants to be issued in this offering**

The following is a summary of the material terms of the warrants to be issued as part of the Common Units and Pre-Funded Units issued in this offering. This summary is not complete and is qualified in its entirety by reference to the warrants, the form of which has been filed as an exhibit to the registration statement of which this prospectus is a part. All warrants will be issued in book-entry, or uncertificated, form.

*Exercisability*

Each warrant will be exercisable at any time and will expire five years from the date of issuance. The warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and payment in full for the number of shares of our common stock purchased upon such exercise, except in the case of a cashless exercise as discussed below.

The number of shares of common stock issuable upon exercise of the warrants is subject to adjustment in certain circumstances, including a stock split of, stock dividend on, or a subdivision, combination or recapitalization of the common stock.

*Cashless Exercise*

If at the time of exercise there is no effective registration statement registering, or the prospectus contained therein is not available for issuance of, the shares issuable upon exercise of the warrant, the holder may only exercise the warrant on a cashless basis. When exercised on a cashless basis, a portion of the warrant is cancelled in payment of the purchase price payable in respect of the number of shares of our common stock purchasable upon such exercise.

*Exercise Price.*

Each warrant represents the right to purchase one share of common stock at an assumed exercise price of \$0.12 per share. In addition, the exercise price per share is subject to adjustment for stock dividends, distributions, subdivisions, combinations, or reclassifications. Subject to limited exceptions, a holder of warrants will not have the right to exercise any portion of the warrant to the extent that, after giving effect to the exercise, the holder, together with its affiliates, and any other person acting as a group together with the holder or any of its affiliates, would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to its exercise. The holder, upon notice to the Company, may increase or decrease the beneficial ownership limitation provisions of the warrant, provided that in no event shall the limitation exceed 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise of the warrant.



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### *Transferability.*

Subject to applicable laws and restrictions, a holder may transfer a warrant upon surrender of the warrant to us with a completed and signed assignment in the form attached to the warrant. The transferring holder will be responsible for any tax liability that may arise as a result of the transfer.

### *Rights as Stockholder.*

Except as set forth in the warrant, the holder of a warrant, solely in such holder's capacity as a holder of a warrant, will not be entitled to vote, to receive dividends, or to any of the other rights of our stockholders.

### *Fundamental Transactions.*

In the event we effect certain mergers, consolidations, sales of substantially all of our assets, tender or exchange offers, reclassifications or share exchanges in which our common stock is effectively converted into or exchanged for other securities, cash or property, we consummate a business combination in which another person acquires 50% of the outstanding shares of our common stock, or any person or group becomes the beneficial owner of 50% of the aggregate ordinary voting power represented by our issued and outstanding common stock, then, upon any subsequent exercise of the warrants, the holders of the warrants will have the right to receive any shares of the acquiring corporation or other consideration it would have been entitled to receive if it had been a holder of the number of shares of common stock then issuable upon exercise of the warrants. Additionally, as more fully described in the common warrants, in the event of certain fundamental transactions, the holders of the common warrants will be entitled to receive consideration in an amount equal to the Black Scholes value of the common warrants on the date of the consummation of such fundamental transaction.

### *Amendments and Waivers.*

The provisions of each warrant may be modified or amended or the provisions thereof waived with the written consent of us and the holder.

## **Pre-Funded Warrants to be issued in this offering**

### *Duration and Exercise Price*

Each pre-funded warrant offered hereby will have an initial exercise price per share equal to \$0.001. The pre-funded warrants will be immediately exercisable and may be exercised at any time until the pre-funded warrants are exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price.

### *Exercisability*

The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the pre-funded warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's pre-funded warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. Purchasers of pre-funded warrants in this offering may also elect prior to the issuance of the pre-funded warrants to those purchasers to have the initial exercise limitation set at 9.99% of our outstanding common stock.

### *Transferability*

Subject to applicable laws, the pre-funded warrants are separately tradeable immediately after issuance at the option of the holders and may be transferred at the option of the holders upon surrender of the pre-funded warrant to us together with the appropriate instruments of transfer.

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### *No Listing*

There is no established public trading market for the pre-funded warrants and we do not expect a market to develop. In addition, we do not intend to apply for listing of the pre-funded warrants on any securities exchange or trading system. Without an active market, the liquidity of the pre-funded warrants will be limited.

### *Fundamental Transactions*

In the event we effect certain mergers, consolidations, sales of substantially all of our assets, tender or exchange offers, reclassifications or share exchanges in which our common stock is effectively converted into or exchanged for other securities, cash or property, we consummate a business combination in which another person acquires 50% of the outstanding shares of our common stock, or any person or group becomes the beneficial owner of 50% of the aggregate ordinary voting power represented by our issued and outstanding common stock, then, upon any subsequent exercise of the pre-funded warrants, the holders of the pre-funded warrants will have the right to receive any shares of the acquiring corporation or other consideration it would have been entitled to receive if it had been a holder of the number of shares of common stock then issuable upon exercise of the pre-funded warrants.

### *Cashless Exercise*

If at the time of exercise there is no effective registration statement registering, or the prospectus contained therein is not available for issuance of, the shares issuable upon exercise of the pre-funded warrant, the holder may only exercise the pre-funded warrant on a cashless basis. When exercised on a cashless basis, a portion of the pre-funded warrant is cancelled in payment of the purchase price payable in respect of the number of shares of our common stock purchasable upon such exercise.

### *Rights as a Stockholder*

Except as otherwise provided in the pre-funded warrant or by virtue of a holder's ownership of shares of our common stock, the holders of the pre-funded warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their pre-funded warrants.

### *Amendments and Waivers*

The provisions of each pre-funded warrant may be modified or amended or the provisions thereof waived with the written consent of us and the holder.

### *No Fractional Shares*

No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the pre-funded warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we shall or shall cause, at our option, the payment of a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price of the pre-funded warrant per whole share or round such fractional share up to the nearest whole share.

### **Placement Agent Warrants**

In addition, we have agreed to issue to the placement agent the Placement Agent Warrants to purchase 7.0% of the aggregate number of shares of our common stock included to be sold in this offering, including shares of common stock issuable upon the exercise of pre-funded warrants. The Placement Agent Warrants will have a term of five years and an exercise price equal to 125% of the purchase price per share of common stock in this offering.

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## **BUSINESS**

### **History**

The Company was incorporated in the State of Nevada on March 16, 2011 as Load Guard Transportation, Inc., and subsequently changed its name to Load Guard Logistics, Inc. in 2012.

On October 31, 2014, Load Guard Logistics, Inc. (LGL) closed an Agreement and Plan of Merger, dated October 17, 2014 (the Merger Agreement), with Nemus Acquisition Corp. (Acquisition Sub), Nemus Bioscience, Inc. (Name Change Merger Sub), and Nemus (Nemus), pursuant to which Acquisition Sub merged with and into Nemus and Nemus survived as a wholly-owned subsidiary of LGL (the Merger). On November 3, 2014, LGL changed its name to Nemus Bioscience, Inc. by merging with Name Change Merger Sub.

On October 31, 2014, immediately prior to the consummation of the Merger, the Company entered into an Assignment and Assumption Agreement with LGT, Inc., a wholly owned subsidiary, pursuant to which the Company transferred all of its assets and liabilities to LGT.

On October 31, 2014, the Company entered into a Share Repurchase and Cancellation Agreement with LGT, Yosbani Mendez and Francisco Mendez, pursuant to which the Company repurchased 5,431,460 shares of its common stock from Yosbani Mendez and Francisco Mendez for a repurchase price of all of the issued and outstanding shares of LGT. Upon the repurchase, the Company cancelled all of such repurchased shares.

Prior to the Merger, we were a transportation and logistics company engaged primarily in hauling truckload shipments of general commodities in both interstate and intrastate commerce. Following the Merger, we became a biopharmaceutical company focused on the discovery, development and commercialization of cannabinoid-based therapeutics.

In January 2018, the Company entered into a securities purchase agreement with Emerald Health Sciences, pursuant to which Emerald Health Sciences purchased a majority of the outstanding equity in the Company, resulting in a change in control of the Company. As part of the transaction, the members of the Company's Board, with the exception of Dr. Brian Murphy, the Company's CEO, tendered their resignation, and Emerald Health Sciences appointed two nominees to the Board.

In October 2018, the Board appointed Dr. Avtar Dhillon, the Chairman, CEO and President of Emerald Health Sciences, as the Executive Chairman of the Company's Board. On December 17, 2019, the Board accepted the resignation of Dr. Avtar Dhillon, who offered his resignation as the Executive Chairman of the Board and the position of Chairman of the Finance and Business Development Committee of the Board. The Board also appointed Punit Dhillon, an existing member of the Board, as Chairman of the Board and as Chairman of the Finance and Business Development Committee of the Board, to fill the vacancies in such offices created by the resignation of Dr. Dhillon.

Effective March 25, 2019, the Company changed its name to Emerald Bioscience, Inc.

In August 2019, we formed a new subsidiary in Australia, EMBI Australia Pty Ltd. in order to qualify for the Australian government's research and development tax credit for research and development dollars spent in Australia. The primary purpose of EMBI Australia Pty Ltd. is to conduct clinical trials for our product candidates.

As of the date of this prospectus, the Company has devoted substantially all of its efforts to securing product licenses, carrying out research and development activities, building infrastructure and raising capital. We have not yet realized revenue from our planned principal operations.

### **Business Overview**

We are a biopharmaceutical company targeting the discovery, development and commercialization of cannabinoid-based therapeutics through a number of license agreements with the University of Mississippi ("UM"). UM holds the only contract to cultivate cannabis for research purposes on behalf of the Federal Government of the United States since 1968, and it has significant expertise in cannabis cultivation and the extraction, separation, processing and manufacture of cannabis extracts as well as the chemistry and physiology of cannabinoid molecules. We were established and continue to be, a development and commercialization partner of UM, working to bring the University's proprietary cannabinoid molecules through the development process.

### **Our Strategic Partnership**

In July 2013, we entered into a Memorandum of Understanding (the “MOU”), with UM to engage in joint research of extracting, manipulating, and studying cannabinoids in certain forms to develop intellectual property with the intention of creating and commercializing therapeutic medicines. The MOU provided that we own all intellectual property developed solely by our employees and will jointly own all intellectual property developed jointly between Emerald Bioscience and UM employees. The term of the MOU was five years and the parties agreed to enter into separate research agreements upon the identification of patentable technologies. This MOU resulted in the Company entering into several licenses and research agreements with UM related to a prodrug of tetrahydrocannabinol (“THC”) and an analog of cannabidiol (“CBD”). The term of the MOU expired in 2018 and was not renewed because the Company and UM had entered into a number of licenses for the aforementioned compounds.

***UM 5050 Pro-Drug and UM 8930 Analog Agreements***

In July 2018, the Company renewed its ocular licenses for UM 5050, related to the pro-drug formulation of tetrahydrocannabinol (“THC”), and UM 8930, related to an analog formulation of cannabidiol (“CBD”). On May 24, 2019, the ocular delivery licenses were replaced by “all fields of use” licenses for both UM 5050 and UM 8930 (the “License Agreements”). Pursuant to these license agreements, UM granted the Company an exclusive, perpetual license, including, with the prior written consent of UM, the right to sublicense, to intellectual property related to UM 5050 and UM 8930 for all fields of use.

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The License Agreements contain certain milestone payments, royalty and sublicensing fees payable by the Company, as defined therein. Each License Agreement provides for an annual maintenance fee of \$75,000 payable on the anniversary of the effective date. The upfront payment for UM 5050 is \$100,000 and the upfront payment for UM 8930 is \$200,000. In addition, in March 2020, the we were notified by the United States Patent and Trademark Office, that a notice of allowance was issued for the proprietary analog of cannabidiol, CBDVHS, under the UM 8930 License Agreement. As a result, we were required to pay UM a fee of \$200,000. The milestone payments payable for each license are as follows:

- i) \$100,000 paid within 30 days following the submission of the first Investigational New Drug Application to the Food and Drug Administration or an equivalent application to a regulatory agency anywhere in the world, for a product;
- ii) \$200,000 paid within 30 days following the first submission of a NDA, or an equivalent application to a regulatory agency anywhere in the world, for each product that is administered in a different route of administration from that of the early submitted product(s); and
- iii) \$400,000 paid within 30 days following the approval of a NDA, or an equivalent application to a regulatory agency anywhere in the world, for each product that is administered in a different route of administration from that of the early approved product(s).

The royalty percentage due on net sales under each License Agreement is in the mid-single digits. The Company must also pay to UM a portion of all

licensing fees received from any sublicensees, subject to a minimum royalty on net sales, and the Company is required to reimburse patent costs incurred by UM related to the licensed products. The royalty obligations apply by country and by licensed product, and end upon the later of the date that no valid claim of a licensed patent covers a licensed product in a given country, or 10 years after the first commercial sale of such licensed product in such country.

Each License Agreement continues, unless terminated, until the later of the expiration of the last to expire of the patents or patent applications within the licensed technology or the expiration of our payment obligations under the License Agreement. UM may terminate each License Agreement, by giving written notice of termination, upon the Company's material breach of the License Agreement, including failure to make payments or satisfy covenants, representations or warranties without cure, noncompliance, a bankruptcy event, the Company's dissolution or cessation of operations, the Company's failure to make reasonable efforts to commercialize at least one product or failure to keep at least one product on the market after the first commercial sale for a continuous period of one year, other than for reasons outside the Company's control, or the Company's failure to meet certain pre-established development milestones. The Company may terminate each License Agreement upon 60 days' written notice to UM.

As of July 8, 2020, with the exception of the fee due for the notice of allowance for CBDVHS, none of the other milestones under these license agreements have been met.

#### ***UM 5070 License Agreement***

In January 2017, we entered into a license agreement with UM pursuant to which UM granted us an exclusive, perpetual license, including the right to sublicense, to intellectual property related to a platform of cannabinoid-based molecules ("UM 5070"), to research, develop and commercialize products for the treatment of infectious diseases. The license agreement culminates roughly one year of screening and target molecule identification studies especially focused on therapy-resistant infectious organisms like Methicillin-resistant *Staphylococcus aureus* ("MRSA").

We paid UM an upfront license fee under the license agreement. Under the license agreement, we are also responsible for annual maintenance fees that will be credited against royalties in the current fiscal year, contingent milestone payments upon achievement of development and regulatory milestones, and royalties on net sales of licensed products sold for commercial use. The aggregate milestone payments due under the license agreement if all of the milestones are achieved is \$700,000 and the royalty percentage due on net sales is in the mid-single digits. We must also pay to UM a percentage of all licensing fees we receive from any sublicensees, subject to a minimum royalty on net sales by such sublicensees. Our royalty obligations apply on a country by country and licensed product by licensed product basis, and end upon the later of the date that no valid claim of a licensed patent covers a licensed product in a given country, or ten years after first commercial sale of such licensed product in such country.

The license agreement continues, unless terminated, until the later of the expiration of the last to expire of the patents or patent applications within the licensed technology or expiration of our payment obligations under the license. UM may terminate the license agreement, effective with the giving of notice, if: (a) we fail to pay any material amount payable to UM under the license agreement and do not cure such failure within 60 days after UM notifies us of such failure, (b) we materially breach any covenant, representation or warranty in the license agreement and do not cure such breach within 60 days after UM notifies us of such breach, (c) we fail to comply in any material respect with the terms of the license and do not cure such noncompliance within 60 days after UM notifies us of such failure, (d) we are subject to a bankruptcy event, (e) we dissolve or cease operations or (f) if after the first commercial sale of a product during the term of the license agreement, we materially fail to make reasonable efforts to commercialize at least one product or fail to keep at least one product on the market after the first commercial sale for a continuous period of 1 year, other than for reasons outside our control. We may terminate the license agreement upon 60 days' written notice to UM.

As of July 8, 2020, none of the milestones under this license agreement have been met.

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### Our Product Candidates

Cannabinoids are a class of chemically diverse compounds that are mainly found in extracts from the cannabis plant. These compounds express their physiological response by binding to specific cannabinoid receptors (CB1 and CB2), which are found throughout the body. Some cannabinoids have been observed to exert multiple effects on the human body, including, but not limited to: impacting the immune response, nervous system function and repair, gastrointestinal maintenance and motility, motor function in muscles, pancreatic functionality, modulating inflammation and tissue repair, blood sugar regulation, and integrity of function in the eye (including the optic nerve). Cannabis and specific cannabinoids have been studied widely, with limited published data suggesting the potential for these compounds to be used in treating many disorders or alleviating disease-associated symptoms.

We are focused on the development of early stage cannabinoid product candidates. The following table summarizes certain information regarding our cannabinoid product candidates:

Product Candidate	Indication	Development Status
NB1111	Glaucoma	Preclinical
NB2222	Multiple Ocular Targets	Preclinical
NB3111	MRSA	Research

#### ***NB1111***

Glaucoma is an ocular neuropathy associated with the initiation of programmed cell death, known as apoptosis, of the retinal ganglion cells (“RGCs”) of the optic nerve, resulting in progressive and irreversible loss of vision. Intraocular pressure (“IOP”) has been identified as an important risk factor in the pathogenesis of this disease. Elevated IOP can lead to damage of RGC axons through vascular ischemia by compromising blood flow to the cells, and physical crush injury as the elevated ocular pressure compresses these delicate cells. Cannabinoid receptors are highly concentrated in the eye, especially in organs of the anterior compartment that help regulate IOP, and the posterior compartment in the area of the retina and optic nerve. Stimulation of cannabinoid receptors by THC has been previously shown to lower IOP in both animal and human studies.

Our lead ocular compound is NB1111, a prodrug of THC. The molecule has been formulated to make the usually lipophilic THC more hydrophilic to allow for improved transport across membranes. In 2013 and 2014, UM conducted studies of the formulation in the rabbit ocular model which showed that the molecule was able to penetrate all chambers of the eye which could potentially broaden the proposed therapeutic indications of interest to diseases of the eye that affect the retina and optic nerve, such as macular degeneration or diabetic retinopathy. These studies also revealed that the formulation was able to achieve potentially therapeutic concentrations in the anterior compartment, vitreous humor, and posterior compartment of the normal rabbit eye, which is very similar to the human eye in anatomy and physiology. The rabbit ocular model is an accepted animal model for regulatory agencies when considering a candidate drug for human testing and this data will be submitted as part of the investigational new drug application (“IND”) to the FDA.

Additional studies using an alpha-chymotrypsin induced glaucoma model in rabbits were performed by UM in 2013 and 2014 under a grant from the National Institutes of Health (the “NIH”). Those studies showed that NB1111 was able to reduce IOP by 45% to 50%. Reduction in IOP was successful in an almost linear dose-responsive manner, with greater decline in IOP associated with higher dosage concentration. The decline in IOP observed in the rabbit model correlated to historical human data when patients were exposed to systemically administered THC via inhalational methods. The human studies were conducted by the NIH and the U.S. Army in the 1970’s where glaucoma patients for the NIH study and normal volunteers for the U.S. Army study were exposed to THC by smoking marijuana. Patients tested by the NIH exhibited a decline in IOP ranging from 35% to as high as 65%, correlated to the amount of THC in the plasma. Normal volunteers in the U.S. Army study also showed a decrease in IOP of approximately 10% to 20% in a setting

of normotension. While THC from smoking marijuana was able to reduce IOP in humans, the effect was short lived given the short half-life of the THC molecule. The half-life of the pro-drug used in the rabbit glaucoma model was longer, but still pointed to the need to formulate the pro-drug in a way to lengthen the half-life that would be consistent with once-daily dosing of a marketed product.

We examined the compound in further testing using a nanoparticle delivery system to prolong the drug's biologic half-life in late 2015 and 2016. The studies were conducted by UM and placed NB1111 into a solid lipid-nanoparticle system ("SLN") to deliver the drug to the eye using topical drop administration. The SLN delivery of NB1111 was administered to rabbits that underwent elevated IOP induction using the alpha-chymotrypsin model. Data from that experiment confirmed previous studies that showed administration of NB1111 resulted in a 45% reduction in IOP from baseline with a half-life consistent with five to six-times per day dosing. When NB1111 was administered via SLN delivery in normotensive animals, the lower concentration of NB1111 (0.4% equivalent THC) exhibited a decrease in IOP of approximately 20% while the higher concentration of NB1111 (0.6% equivalent THC) lowered IOP by a maximum of 38%. The use of SLN technology lengthened the physiologic half-life of NB1111 equivalent to dosing the drug two to three times a day. Subsequently, the formulation being developed for human studies will involve encapsulating the drug in a nanoemulsion complemented with the use of the emulsifier, Carbopol, to increase the residence time of the drug on the eye. Testing of this formulation in a normotensive animal model revealed statistically significant lowering of the IOP when compared to both latanoprost and timolol, as well as extended pharmacologic activity time that could possibly support once daily dosing.



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Further animal experimentation conducted in 2016-2017 examined both the penetration and concentration of NB1111 in key organs of the eye. The data revealed that IOP declined in a concentration-time dependent manner and could be correlated to the concentration of THC in organs regulating IOP, such as the trabecular meshwork in the anterior compartment and the retina-choroid in the posterior compartment. The data was important for demonstrating a direct causal relationship between the penetration and concentration of THC with IOP-lowering capability and the presence of THC in multiple compartments of the eye. Additionally, neither free-THC nor 11-hydroxy-THC (the main active metabolite of THC) was detected in the peripheral circulation of the test animals, indicating that the topical dosage of the test compound remained restricted to the eye.

In 2019, UM completed experiments showing that NB1111 was statistically superior in lowering IOP compared to the prostaglandin-based therapy, latanoprost, the current standard-of-care for treating glaucoma. Significance was reached across multiple timepoints during a seven-day course of dosing using a validated rabbit normotensive ocular model and NB1111 exerted pharmacologic activity consistent with once-daily to twice-daily dosing. Additionally, Glauconix Biosciences Inc. (“Glauconix”) completed their pilot study to research the mechanism of action and IOP-lowering ability of THC when administered into an *ex vivo* model of a 3D-human trabecular meshwork using both healthy and glaucomatous-derived tissues. The Glauconix study validated the mechanism of action of NB1111 in lowering IOP, a defining disease process of hypertensive glaucoma. Moreover, biomarkers associated with inflammation and fibrosis in both normal and tissues affected by glaucoma were significantly decreased, pointing to anti-inflammatory and anti-fibrotic activities that are often associated with the cannabinoid class of molecules in other disease-states; and data revealed that biomarkers associated with neovascularization, a disease process of new blood vessel formation that can damage the retina in a variety of ocular diseases, was also inhibited by

THC, prompting further study for the utility of this drug in diseases of the retina.

The manufacturing of the active pharmaceutical ingredient of NB1111 is conducted in the United States. Formulation of the eye drop for testing is also performed in the United States but can rely on regulatory-accepted excipients that can be sourced from countries outside the United States, such as China. In connection with the recent COVID-19 pandemic, there could possibly be an impact on sourcing materials that are part of the eye drop formulation, as well as impacting volunteer and/or patient recruitment in Australia for clinical studies. Therefore, we anticipate shifting our first in-human studies of the lead drug candidate, NB1111, from the second half of 2020, to the 2021 timeframe. The first-in-human studies are to be conducted in healthy volunteers and patients with glaucoma and ocular hypertension in Australia (the “Clinical Trial”). Initially, we plan to conduct single-ascending dose (“SAD”) and multiple-ascending dose (“MAD”) studies to establish physiological activity in humans to define a dosing therapeutic window and to validate an ocular formulation for larger follow-on studies. Subsequently, Phase 2 studies will be advanced provided initial human clinical data point to IOP lowering activity balanced by safety parameters. Phase 2 studies in glaucoma/ocular hypertension are expected to be conducted over 7 to 28 days with supporting safety labs monitored concurrently with dosing, including validated assays to detect any evidence of THC in the peripheral circulation of those dosed. Given that IOP data is objectively measured, we will decide whether to conduct a subsequent Phase 2b study or go directly to a larger Phase 3 clinical trial based on the quality of the data collected in the Phase 2a study and the advice provided by the FDA or other regulatory bodies.

#### **NB2222**

NB2222 is a prototype ocular formulation of the proprietary Emerald Bioscience CBD analog, CBDVHS. We have embarked on studies with UM exploring the utility of our drug candidate NB2222 as an eye drop emulsion for the potential treatment and management of several eye diseases, including uveitis, dry eye syndrome, macular degeneration and diabetic retinopathy. Data presented at the American Association of Pharmaceutical Scientists (AAPS) meeting held in November 2017, revealed that this early formulation of the CBD analog was able to penetrate multiple compartments of the eye, including reaching the retina and the optic nerve. Further testing will need to be conducted to assess biomarkers for the possible utility of this compound as a therapeutic agent.

In 2019, we announced that data generated by Glauconix showed significant anti-inflammatory and anti-fibrotic activity in ocular tissue with CBDVHS, when compared to CBD, indicating therapeutic potential as a neuroprotectant, especially in diseases of the retina. CBDVHS displayed a statistically significant potency when compared to CBD. Additionally, CBDVHS was not associated with elevating IOP at anti-fibrotic concentrations based on biomarker data.

In 2019, UM also completed pre-clinical experiments showing that NB2222 exhibited an ability to penetrate multiple chambers of the eye and reach the optic nerve. These findings support the therapeutic potential to provide ocular neuroprotection of retinal ganglion cells, an important goal in treating diseases which lead to vision loss. The data were published in the peer-reviewed Journal of Ocular Pharmacology and Therapeutics in a paper titled, “Analog Derivatization of Cannabidiol for Improved Ocular Permeation” (2019; volume 35 (5): 1-10).

In 2020, we expect to continue to advance our pre-clinical studies related to NB2222 and our proprietary CBD analog.

#### **NB3111**

MRSA was first described in 1961 after the introduction of the antibiotic, methicillin, and since that time, the prevalence of the organism has increased globally in both community and healthcare settings. The prevalence of MRSA in intensive care units in the United States has been estimated to be 60% (Am J Infect Control 2004; 32:470) with more than 90,000 invasive MRSA infections occurring annually in the United States resulting in more than 18,000 deaths (JAMA 2007; 298: 1763-71). Annual costs for treating MRSA in the United States are projected to exceed \$4 billion, accounting for a collective eight million extra hospital days annually (ISPOR; 10<sup>th</sup> Annual Meeting, Wash D.C., May 2005; Pew Foundation Research Brief, April, 2012).

MRSA is classically resistant to conventional antibiotics to treat staph infections such as fluoroquinolones, beta-lactams, and macrolides. Most patients who develop MRSA infections are usually colonized with either a community acquired strain (CA-MRSA) or healthcare-associated strain (HA-MRSA). Therefore, antibiotic development against MRSA can take three approaches: (a) decolonization, (b) treatment of localized soft tissue infections, or (c) systemic antibiotic for generalized sepsis.

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Cannabinoid molecules have been shown in *in vitro* studies conducted by third parties to possess anti-infective activity against a variety of MRSA strains. We entered into a research agreement with UM to explore this area in 2015 and have tested a variety of cannabinoids in various strengths, combinations, and delivery systems against a variety of MRSA species found in community, healthcare, and institutional settings such as nursing homes, correctional facilities, and military quarters. As discussed above in “Our Strategic Partnership – UM 5070 License Agreement,” in January 2017, we entered into a license agreement with UM pursuant to which UM granted us an exclusive, perpetual license, including the right to sublicense, to intellectual property related to UM 5070, a platform of cannabinoid-based molecules to research, develop and commercialize products for the treatment of infectious diseases.

### **Other Potential Products**

The Company continues to plan to work with UM to explore other potential indications and associated routes of administration based on the expanded UM 5050 and UM 8930 all fields licenses. The Company’s decision to advance a potential therapeutic candidate will be influenced by a number of criteria, including but not limited to pre-clinical data, synthesis and formulation capability as well as prevailing market conditions.

For example, in December 2019, we announced data generated by StemoniX, that CBDVHS was both pharmacologically and therapeutically distinct from CBD when studied in an *in vitro* human neural tissue model mimicking chemically-induced seizure-like hyperactivity. Additionally, CBDVHS was observed to gain potency in anti-seizure-like activity over the seven-day observation period, whereas the suppressive effect afforded by CBD dissipated by day three. In assessing safety parameters of CBDVHS, the molecule was not found to be toxic to the neurologic cells tested in multiple assays, both in acute and longer-term exposure.

### **Our Competitive Strengths**

Cannabis is subject to strict regulation in the United States. Cannabis and cannabis extracts are classified by the U.S. Drug Enforcement Administration (the “DEA”), as a Schedule I substance, which means that, under federal law, it has no established medicinal use and may not be marketed or sold in the United States. In addition, the United States is a party to the Single Convention on Narcotic Drugs, which imposes certain requirements and restrictions on member parties with respect to the cultivation and wholesale trade in cannabis. Since 1968, UM has held the only contract with the Federal Government to cultivate cannabis on its behalf for research purposes and holds the requisite DEA registrations authorizing it to engage in that activity. The contract, which is open for competitive bidding at periodic intervals, is administered by the National Institute on Drug Abuse (“NIDA”), an agency within the NIH. UM’s current contract was awarded in 2015 and runs for a base year of one year with four one-year options. Although in August 2016 the DEA announced that it would consider granting registrations for the cultivation of cannabis for research and development purposes outside of the NIDA contract process, we are not aware of any entity that has received such a registration under this process. As the sole contract holder since 1968, UM has developed significant expertise in the extraction, separation, processing and manufacture of cannabinoids. UM has also engaged in the cultivation of cannabis and the extraction of cannabinoids for purposes of developing drug product candidates apart from its role as NIDA contractor. We have entered into several research and license agreements with UM and view this collaborative association as a significant strategic advantage in the marketplace.

The only cannabinoid products that are currently approved as drugs in the United States and, to our knowledge, all cannabinoid products in late-stage development, are predominantly orally-delivered products. Cannabinoids, when ingested orally, are subject to significant first pass metabolism by the liver and potential drug-drug interactions, resulting in very high inter-patient and intra-patient variation in bioavailability which can potentially compromise both efficacy and safety. This has been published in the literature and in product labeling by regulatory agencies worldwide. These independent assessments correlate with highly variable response rates and safety profiles which, in some cases, have been deemed to have marginal clinical utility.

We have licensed from UM the rights to a pro-drug formulation of THC. Data from UM supports the delivery of the pro-drug through absorptive routes other than the gastrointestinal tract, which we believe has the potential to mitigate the issue of first-pass metabolism by the liver, potentially enhancing drug bioavailability and predictive pharmacokinetics.

We are also working with UM and other parties on methods to formulate and deliver a variety of other pharmaceutical-grade cannabinoids to better manage symptoms and/or treat diseases.

## **Our Business Strategy**

Our goal is to become a premier developer of prescriptive cannabinoid-based medicines for global markets with significant unmet medical needs. Our current operating strategy includes:

- selection of potential clinical targets based on internal and external published data, access to appropriate cannabinoids, and the impact of both developmental and market conditions;
- prioritization of product candidates based on the potential clinical utility of associated target indications;
- utilization, where feasible, of naturally-derived drug prototypes leading to synthetically produced cannabinoid derivatives optimized for development and commercialization;
- development and execution of an intellectual property strategy;
- development and advancement of our current product pipeline;
- outsourcing services, such as use of Clinical Research Organizations (“CROs”) and contract manufacturers for the API, where possible and appropriate;
- obtaining regulatory approval from the FDA, EMA, and other appropriate regulatory agencies for product candidates;
- research and development of additional target indications for cannabinoid product candidates; and
- partnering, out-licensing, or selling approved products, if any, to optimize Company efficiencies to bring state-of-the-art therapeutics to patients.

## **Sales and Marketing**

We have not established a sales, marketing or product distribution infrastructure because our lead product candidates are still in research, discovery or preclinical development stages. If and when we obtain approval to market any of our product candidates, we will evaluate what we believe to be the optimal commercialization path for the Company, the respective product candidate, and patients. Commercialization paths may include licensing, selling, or partnering with other commercial partners. We may also choose to build a commercial sales and marketing team for some or all of our product candidates.

## **Manufacturing**

We do not own or operate, and currently have no plans to establish, any manufacturing facilities for final manufacture. We currently rely, and expect to continue to rely, on third parties for the manufacture of our product candidates for preclinical and clinical testing, as well as for commercial manufacture of any products that we may commercialize.

We entered into agreements with AMRI in February 2016, July 2018 and April 2019 for the development and manufacture of our proprietary cannabinoid-based APIs. In late 2016, we finalized a commitment with Teewinot Life Sciences, working in conjunction with AMRI, to manufacture biosynthetically produced cannabinoids derivatives licensed from UM to be used in clinical trials or commercialized products. It is anticipated that the biosynthetically generated API will eventually form the basis of our drug candidates NB1111 in development for glaucoma and NB2222 for ocular diseases. In August 2019, the Company terminated its ongoing agreements with AMRI. The Company entered into an agreement with Noramco in February 2019 to develop scale-up synthesis methods and to manufacture the analog derivative, CBDVHS, and amended the agreement in August 2019 to include THCVHS.

For all of our future product candidates, we aim to identify and qualify manufacturers to provide the API and fill-and-finish services prior to submission of an NDA to the FDA. We expect to continue to develop drug candidates that can be produced cost-effectively at contract manufacturing facilities.

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### **Intellectual Property**

The success of most of our product candidates will depend in large part on our ability to:

- obtain and maintain patent and other legal protections for the proprietary technology, inventions and improvements we consider important to our business;
- prosecute our patent applications and defend any issued patents we obtain;
- preserve the confidentiality of our trade secrets; and
- operate without infringing the patents and proprietary rights of third parties.

We intend to continue to seek appropriate patent protection for certain of our product candidates, drug delivery systems, molecular modifications, as well as other proprietary technologies and their uses by filing patent applications in the United States and other selected global territories. We intend for these patent applications to cover, where possible, claims for medical uses, processes for isolation and preparation, processes for delivery and formulations.

As of the date of this prospectus, we have licensed from UM two U.S. patents as well as foreign counterparts in the United Kingdom, European Union, Japan, Hong Kong, Canada and Australia. The patents that we license cover composition of matter and preparation of delta-9 THC amino acid esters and their methods of use. These patents are expected to expire in 2034. Additionally, in March 2020, we were notified by the United States Patent and Trademark Office, that a notice of allowance has been issued for the proprietary analog of cannabidiol, CBDVHS. The official issuance date for the CBDVHS US patent will be July 2020. Therefore, the expiration date of the US patent for CBDVHS will be July 2040. Under our license agreements, UM retains ownership over the licensed patents and control over the maintenance and prosecution of the licensed patents and patent applications. We also rely upon unpatented trade secrets and know-how and continuing technological innovation to develop and maintain our proprietary and intellectual property position. We seek to protect our proprietary information, in part, using confidentiality agreements with our collaborators, scientific advisors, employees and consultants, and invention assignment agreements with our employees and selected consultants, scientific advisors and collaborators. The confidentiality agreements are designed to protect our proprietary information and, in the case of agreements or clauses requiring invention assignment, to grant us ownership of technologies that are developed through a relationship with a third-party.

### **Competition**

Our industry is characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. We face potential competition from many different sources, such as pharmaceutical companies, including generic drug companies, biotechnology companies, drug delivery companies and academic and research institutions. Many of our potential competitors have substantially greater financial, scientific, technical, intellectual property, regulatory and human resources than we do, and greater experience than we do commercializing products and developing product candidates, including obtaining FDA and other regulatory approvals for product candidates. Consequently, our competitors may develop products for indications we pursue that are more effective, better tolerated, more widely-prescribed or accepted, more useful and less costly, and they may also be more successful in manufacturing and marketing their products. We also face competition from third parties in recruiting and retaining qualified personnel, establishing clinical trial sites and enrolling patients for clinical trials and in identifying and acquiring or in-licensing new products and product candidates.

### **Government Regulation**

Government authorities in the United States, at the federal, state and local level, and in other countries, extensively regulate, among other things, the research, development, testing, manufacture, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, import and export of pharmaceutical products such as those we are developing. The processes for obtaining regulatory approvals in the United States and in foreign countries, along with subsequent compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources. A failure to comply with such laws and regulations or prevail in any enforcement action or litigation related to noncompliance could have a material adverse impact on our business, financial condition and results of operations and could cause the market value of our common stock to decline.

## ***Regulation of Cannabis and Cannabinoids***

### ***DEA Regulation***

Cannabis, cannabis extracts and some cannabinoids are regulated as “controlled substances” as defined in the Controlled Substances Act (the “CSA”), which establishes registration, security, recordkeeping, reporting, storage, distribution and other requirements administered by the DEA. The DEA is concerned with the control of handlers of controlled substances, and with the equipment and raw materials used in their manufacture and packaging, in order to prevent loss and diversion into illicit channels of commerce.

The DEA regulates controlled substances as Schedule I, II, III, IV or V substances. Schedule I substances by definition have no established medicinal use and may not be marketed or sold in the United States. A pharmaceutical product may be listed as Schedule II, III, IV or V, with Schedule II substances considered to present the highest risk of abuse and Schedule V substances the lowest relative risk of abuse among such substances. Cannabis, cannabis extracts and some cannabinoids are listed by the DEA as Schedule I controlled substances under the CSA. Consequently, their manufacture, shipment, storage, sale and use are subject to a high degree of regulation. Annual registration is required for any facility that manufactures, distributes, dispenses, imports or exports any controlled substance. The registration is specific to the particular location, activity and controlled substance schedule. For example, separate registrations are needed for import and manufacturing, and each registration will specify which schedules of controlled substances are authorized.

The DEA typically inspects a facility to review its security measures prior to issuing a registration. Security requirements vary by controlled substance schedule, with the most stringent requirements applying to Schedule I and Schedule II substances. Required security measures include background checks on employees and physical control of inventory through measures such as cages, surveillance cameras and inventory reconciliations. The registered entity must maintain records for the handling of all controlled substances and must make periodic reports to the DEA. These include, for example, distribution reports for Schedule I and II controlled substances, Schedule III substances that are narcotics, and other designated substances. The registered entity must also report thefts or losses of any controlled substance and obtain authorization to destroy any controlled substance. In addition, special authorization and notification requirements apply to imports and exports.

In addition, a DEA quota system controls and limits the availability and production of controlled substances in Schedule I or II. Distributions of any Schedule I or II controlled substance must also be accompanied by special order forms, with copies provided to the DEA. The DEA may adjust aggregate production quotas and individual production and procurement quotas from time to time during the year, although the DEA has substantial discretion in whether or not to make such adjustments. To meet its responsibilities, the DEA conducts periodic inspections of registered establishments that handle controlled substances. In the event of non-compliance, the DEA may seek civil penalties, refuse to renew necessary registrations, or initiate proceedings to revoke those registrations. In certain circumstances, violations could lead to criminal prosecution.

The DEA has conducted a scientific review of the chemical structure of CBDVHS and determined that CBDVHS is not a regulated chemical nor controlled substance under the CSA. This decision by the DEA may help the Company expand the network of clinical testing sites, permit a greater cross-section of patients to participate in studies of this drug, as well as speed the initiation of clinical trials. THCVHS remains a Schedule I, controlled substance, pending a request to re-schedule after completion of pivotal clinical trials resulting in a drug approval by the FDA.

### ***State Regulation***

The states also maintain separate controlled substance laws and regulations, including licensing, recordkeeping, security, distribution, and dispensing requirements. State authorities, including Boards of Pharmacy, regulate use of controlled substances in each state. Failure to maintain compliance with applicable requirements, particularly as manifested in the loss or diversion of controlled substances, can result in enforcement action that could have a material adverse effect on our business, operations and financial condition.

### ***The Single Convention on Narcotic Drugs 1961***

Many countries, including the United States, are parties to the 1961 Single Convention on Narcotic Drugs (the “Single Convention”), which is an international treaty that governs international trade and domestic control of narcotic substances, including cannabis and cannabis extracts. The Single Convention requires all parties to take measures to limit the production, manufacture, export, import, distribution of, trade in, and use and possession of cannabis exclusively to medical and scientific purposes. In particular, the Single Convention requires member countries to establish a government agency to oversee the cultivation of marijuana and establish a monopoly on the wholesale trade of marijuana, and it provides that this role must be filled by a single government agency if the member country’s constitution so permits.

Party members, including the United States, may interpret and implement their treaty obligations in a way that restricts our ability to develop and obtain marketing approval for our product candidates in accordance with our current plans and partnership with UM.

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### *NIDA*

Pursuant to the Single Convention, NIDA oversees the cultivation of research-grade cannabis for medicinal research on behalf of the United States Government. NIDA has historically fulfilled this obligation through a contract that it administers with UM. UM has been the sole NIDA contractor to grow cannabis for research purposes since 1968. The contract is open for competitive bidding at periodic intervals. Since 1999, the term of the contract has been five years. UM engaged in a competitive bidding process for the next contract interval and was awarded the contract in 2015. Under the NIDA contract, UM grows, harvests, stores, ships and analyzes cannabis of different varieties, as NIDA requires. In August 2016 the DEA announced that it would consider granting registrations for the cultivation of cannabis for research and development purposes outside of the NIDA contract process. We are not aware of any entity that has received such a registration under this process to date.

UM has represented that it also grows cannabis for purposes of researching cannabis extracts, and has in the past grown cannabis, purified cannabis extracts, and distributed extracts for purposes of developing product candidates, separate and apart from its contract with NIDA. UM has indicated that it conducted these activities pursuant to separate registrations from the DEA and that it plans to seek the necessary additional DEA registrations to conduct the contemplated activities in connection with our partnership, in compliance with applicable law and the United States' obligations under the Single Convention. However, there is a risk that regulatory authorities may disagree and decline to authorize UM to engage in these activities.

### ***U.S. Food and Drug Administration***

In the United States, pharmaceutical products are subject to extensive regulation by the FDA. The FDA regulates drugs under the FDCA and its implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject us to a variety of administrative or judicial sanctions, such as the FDA's refusal to approve pending NDAs, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with good laboratory practice ("GLP") regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- approval by an institutional review board ("IRB") at each clinical site before each trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with good clinical practice ("GCP") requirements to establish the safety and efficacy of the proposed drug for each indication;
- submission of a NDA to the FDA;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with cGMP requirements and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity; and
- FDA review and approval of the NDA.

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### *Preclinical Studies*

Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data and any available clinical data or literature, among other things, to the FDA as part of an IND. Some preclinical testing may continue even after the IND is submitted. An IND automatically becomes effective 30 days after receipt by the FDA unless, before that time, the FDA raises concerns or questions related to one or more proposed clinical trials and places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence.

### *Clinical Trials*

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, an IRB at each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution. Information about certain clinical trials must be submitted within specific timeframes to the NIH for public dissemination on their [www.clinicaltrials.gov](http://www.clinicaltrials.gov) website.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined:

- Phase 1: The drug is initially introduced into healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness.
- Phase 2: The drug is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.
- Phase 3: The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product, and to provide adequate information for the labeling of the product.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients.

### *Marketing Approval*

Assuming successful completion of the required clinical testing, the results of the preclinical and clinical studies, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of a NDA requesting approval to market the product for one or more indications. In most cases, the submission of a NDA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act ("PDUFA") guidelines that are currently in effect, the FDA has a goal of ten months from the date of "filing" of a standard NDA for a new molecular entity to review and act on the submission. This review typically takes at least twelve months from the date the NDA is submitted to the FDA because the FDA has approximately two months to make a "filing" decision. However, if issues arise during the review, the FDA may request additional information and the review period may be extended to permit the applicant to provide and the FDA to review that information, which may significantly extend this time period.



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In addition, under the Pediatric Research Equity Act of 2003 (“PREA”), as amended and reauthorized, certain NDAs or supplements to a NDA must contain data that is adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements.

The FDA also may require submission of REMS plan to ensure that the benefits of the drug outweigh its risks. The REMS plan could include medication guides, physician communication plans, assessment plans, and/or elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept a NDA for filing. In this event, the application must be resubmitted with the additional information requested. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews a NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product’s continued safety, quality and purity.

The FDA may refer an application for a novel drug to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving a NDA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving a NDA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP requirements.

The testing and approval process for a NDA requires substantial time, effort and financial resources, and each may take several years to complete. Data obtained from preclinical and clinical testing are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The FDA may not grant approval on a timely basis, or at all.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional clinical or preclinical testing in order for the FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA’s satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. For some products, such as our product candidates, an additional step of DEA review and scheduling is required.

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### *Post-Approval Requirements*

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims are subject to prior FDA review and approval. There also are continuing, annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as new application fees for supplemental applications with clinical data.

The FDA may impose a number of post-approval requirements as a condition of approval of a NDA. For example, the FDA may require post-marketing testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP requirements and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market.

Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program.

Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act ("PDMA"), which regulates the distribution of drugs and drug samples at the federal level and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution.

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***Exclusivity and Approval of Competing Products***

*Hatch Waxman Act*

Section 505 of the FDCA describes three types of marketing applications that may be submitted to the FDA to request marketing authorization for a new drug. A Section 505(b)(1) NDA is an application that contains full reports of investigations of safety and efficacy. A 505(b)(2) NDA is an application that contains full reports of investigations of safety and efficacy but where at least some of the information required for approval comes from investigations that were not conducted by or for the applicant and for which the applicant has not obtained a right of reference or use from the person by or for whom the investigations were conducted. This regulatory pathway enables the applicant to rely, in part, on the FDA's prior findings of safety and efficacy for an existing product, or published literature, in support of its application. Section 505(j) establishes an abbreviated approval process for a generic version of approved drug products through the submission of an Abbreviated New Drug Application ("ANDA"). An ANDA provides for marketing of a generic drug product that has the same active ingredients, dosage form, strength, route of administration, labeling, performance characteristics and intended use, among other things, to a previously approved product. ANDAs are termed "abbreviated" because they are generally not required to include preclinical (animal) and clinical (human) data to establish safety and efficacy. Instead, generic applicants must scientifically demonstrate that their product is bioequivalent to, or performs in the same manner as, the innovator drug through in vitro, in vivo, or other testing. The generic version must deliver the same amount of active ingredients into a subject's bloodstream in the same amount of time as the innovator drug and can often be substituted by pharmacists under prescriptions written for the reference listed drug.

*Hatch Waxman Patent Exclusivity*

In seeking approval for a drug through a NDA, applicants are required to list with the FDA each patent with claims that cover the applicant's product or a method of using the product. Upon approval of a drug, each of the patents listed in the application for the drug is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book. Drugs listed in the Orange Book can, in turn, be cited by potential competitors in support of approval of an ANDA or 505(b)(2) NDA.

The ANDA or 505(b)(2) NDA applicant is required to certify to the FDA concerning any patents listed for the approved product in the FDA's Orange Book, except for patents covering methods of use for which the ANDA applicant is not seeking approval. Specifically, the applicant must certify with respect to each patent that:

- the required patent information has not been filed;
- the listed patent has expired;
- the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or
- the listed patent is invalid, unenforceable or will not be infringed by the new product.

Generally, the ANDA or 505(b)(2) NDA cannot be approved until all listed patents have expired, except when the ANDA or 505(b)(2) NDA applicant challenges a listed drug. A certification that the proposed product will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable is called a Paragraph IV certification. If the applicant does not challenge the listed patents or indicate that it is not seeking approval of a patented method of use, the ANDA or 505(b)(2) NDA application will not be approved until all the listed patents claiming the referenced product have expired.

If the ANDA or 505(b)(2) NDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the application has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days after the receipt of notice of the Paragraph IV certification automatically prevents the FDA from approving the ANDA or 505(b)(2) NDA until the earlier of 30 months, expiration of the patent, settlement of the lawsuit or a decision in the infringement case that is favorable to the ANDA applicant.

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### *Hatch Waxman Non-Patent Exclusivity*

In addition to patent issues, market and data exclusivity provisions under the FDCA can delay the submission or the approval of certain applications for competing products. The FDCA provides a five-year period of non-patent data exclusivity within the United States to the first applicant to gain approval of a NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the activity of the drug substance. During the exclusivity period, the FDA may not accept for review an ANDA or a 505(b)(2) NDA submitted by another company that references the previously approved drug. However, an ANDA or 505(b)(2) NDA may be submitted after four years if it contains a Paragraph IV certification of patent invalidity or non-infringement. The FDCA also provides three years of marketing exclusivity for a NDA, 505(b)(2) NDA, or supplement to an existing NDA or 505(b)(2) NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant, are deemed by the FDA to be essential to the approval of the application or supplement. Three-year exclusivity may be awarded for changes to a previously approved drug product, such as new indications, dosages, strengths or dosage forms of an existing drug.

This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and, as a general matter, does not prohibit the FDA from approving ANDAs or 505(b)(2) NDAs for other versions of a drug. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA; however, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

### *Orphan Drug Designation and Exclusivity*

Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug intended to treat a disease or condition that affects populations of fewer than 200,000 individuals in the United States or, if it affects more than 200,000 individuals in the United States, there is no reasonable expectation that the cost of developing and making a drug product available in the United States for this type of disease or condition will be recovered from sales of the product. Orphan designation must be requested before submitting a NDA. Orphan designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications to market the same drug for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan exclusivity or inability to manufacture the product in sufficient quantities. The designation of such drug also entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers. Competitors, however, may receive approval of different products for the same indication for which the orphan product has exclusivity or obtain approval for the same product but for a different indication than that for which the orphan product has exclusivity.

### ***Federal and State Fraud and Abuse and Data Privacy and Security Laws and Regulations***

In addition to FDA restrictions on marketing of pharmaceutical products, federal and state fraud and abuse laws restrict business practices in the pharmaceutical industry. These laws include anti-kickback and false claims laws and regulations as well as data privacy and security laws and regulations.

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce or in return for purchasing, leasing, ordering, or arranging for or recommending the purchase, lease, or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The term “remuneration” has been broadly interpreted to include anything of value. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, and formulary managers on the other. Although there are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, the exemptions and safe harbors are drawn narrowly. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases, or recommendations may be subject to scrutiny if they do not meet the requirements of a statutory or regulatory exception or safe harbor. Several courts have interpreted the statute’s intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the statute has been violated. In addition, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

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The federal False Claims Act prohibits any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. A claim includes “any request or demand” for money or property presented to the U.S. government. A violation of the federal Anti-Kickback Statute also constitutes a false or fraudulent claim for purposes of the civil False Claims Act.

Several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies’ marketing of products for unapproved, and thus non-covered, uses. In addition, many states have similar fraud and abuse statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

The federal HIPAA also created federal criminal statutes that prohibit knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third party payors and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

Pharmaceutical companies are also subject to the civil monetary penalties statute, which imposes penalties against any person who is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent.

In addition, there has been a recent trend of increased federal and state regulation of payments made to physicians and other health care providers. The Patient Protection and Affordable Care Act, as amended by the ACA, signed into law on March 2010, created new federal requirements for reporting, by applicable manufacturers of covered drugs, payments and other transfers of value to physicians and teaching hospitals. Applicable manufacturers are also required to report annually to the government certain ownership and investment interests held by physicians and their immediate family members. In addition, certain states require implementation of commercial compliance programs and compliance with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, impose restrictions on marketing practices, and/or tracking and reporting of gifts, compensation and other remuneration or items of value provided to physicians and other health care professionals and entities.

We may also be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology and Clinical Health Act (“HITECH”) and its implementing regulations, imposes specified requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA’s privacy and security standards directly applicable to “business associates,” defined as independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney’s fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same requirements, thus complicating compliance efforts.

To the extent that any of our product candidates, once approved, are sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws, and implementation of corporate compliance programs and reporting of payments or other transfers of value to healthcare professionals.

The shifting commercial compliance environment and the need to build and maintain robust systems to comply with different compliance and/or reporting requirements in multiple jurisdictions increase the possibility that a healthcare company may violate one or more of the requirements. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and imprisonment, any of which could adversely affect our ability to operate our business and our financial results.

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### **Coverage and Reimbursement**

Significant uncertainty exists as to the coverage and reimbursement status of any drug products for which we obtain regulatory approval. In the United States and markets in other countries, sales of any products for which we receive regulatory approval for commercial sale will depend, in part, on the availability of coverage and reimbursement from third-party payors. Third-party payors include government authorities, managed care providers, private health insurers and other organizations. The process for determining whether a payor will provide coverage for a drug product may be separate from the process for setting the reimbursement rate that the payor will pay for the drug product. Third-party payors may limit coverage to specific drug products on an approved list, or formulary, which might not include all of the FDA-approved drugs for a particular indication. A decision by a third-party payor not to cover our products, if approved, could reduce physician utilization of our products once approved and have a material adverse effect on our sales, results of operations and financial condition. Moreover, a payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. By way of example, in the United States, the ACA contains provisions that may reduce the profitability of drug products, including, for example, increased rebates for drugs sold to Medicaid programs, extension of Medicaid rebates to Medicaid managed care plans, mandatory discounts for certain Medicare Part D beneficiaries, and annual fees based on pharmaceutical companies' share of sales to federal health care programs. In addition, recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed bills designed to, among other things, reform government program reimbursement methodologies. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our products once approved or additional pricing pressures.

We expect that the Trump administration will continue to seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. In January 2017, the House and Senate passed a budget resolution that authorizes congressional committees to draft legislation to repeal all or portions of the ACA and permits such legislation to pass with a majority vote in the Senate. President Trump has also recently issued an executive order in which he stated that it is his administration's policy to seek the prompt repeal of the ACA and directed executive departments and federal agencies to waive, defer, grant exemptions from, or delay the implementation of the burdensome provisions of the ACA to the maximum extent permitted by law. There is still uncertainty with respect to the impact President Trump's administration and the U.S. Congress may have, if any, and any changes will likely take time to unfold, and could have an impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. As such, we cannot predict what effect the ACA or other healthcare reform initiatives that may be adopted in the future will have on our business.

### **Foreign Regulation**

In order to market any product outside of the United States, we must comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy and governing, among other things, clinical trials and commercial sales and distribution of our products. While our management and many of our consultants are familiar with and have been responsible for gaining marketing approval in many countries, we have not reviewed the specific regulations in countries outside of the United States, as it pertains to cannabinoids.

### **Additional Regulation**

We are a reporting company with the Securities and Exchange Commission (the "SEC"), and, therefore, subject to the information and reporting requirements of the Exchange Act of 1934, as amended (the "Exchange Act") and other federal securities laws, and the compliance obligations of the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley Act"). In addition, our financial reporting is subject to United States generally accepted accounting principles ("U.S. GAAP"), and U.S. GAAP is subject to change over time.

We are also subject to federal, state and local laws and regulations applied to businesses generally. We believe that we are in conformity with all applicable laws in all relevant jurisdictions.

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## Employees

As of the date of this prospectus, we have a total of three full-time employees, two of whom have an M.D. degree. None of our employees are represented by a labor union or covered by a collective bargaining agreement. We have not experienced any work stoppages and we consider our relations with our employees to be good.

We anticipate that we will need to hire approximately four additional employees or independent contractors for our continued development efforts. We also intend to utilize independent contractors and outsourced services, such as CRO's, and third-party manufacturers, where possible and appropriate.

## Website

Our Internet website, which is located at <http://emeraldbio.life>, describes our company and our management and provides information about cannabis-based therapeutics. Information contained on our website is not incorporated by reference into, and should not be considered a part of, this prospectus.

## DESCRIPTION OF PROPERTY

### Principal Offices

Our principal executive offices and corporate offices are located at 130 North Marina Drive, Long Beach, CA 90803.

Our laboratory and office space previously consisted of approximately 3,415 square feet located at the Innovation Hub, Insight Park on the UM campus. Our lease expired on December 31, 2017 and our annual rent was approximately \$111,000, payable in equal monthly installments with annual escalations. Upon expiration, the Company did not renew the laboratory lease. The Company has retained office space in Long Beach, California under lease agreement at the rate of \$2,609 per month and in Oxford, Mississippi at the rate of \$300 per month.

## LEGAL PROCEEDINGS

None.

## MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

**Market Information.** Our common stock has been quoted on the OTCQB, under the symbol "EMBI". Previously, it traded under the symbol "NMUS" until March 25, 2019. There can be infrequent trading volume, which precipitates wide spreads in the "bid" and "ask" quotes of our common stock, on any given day. On July 8, 2020, the last reported sale price of our common stock on the OTCQB was \$0.15 per share.

The following table sets forth, for the quarters indicated, the high and low bid prices per share of our common stock on the OTCQB, reported by the Financial Industry Regulatory Authority Composite Feed or other qualified interdealer quotation medium. Such quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission, and may not represent actual transactions.

Quarter Ended	High	Low
July 1, 2020 through July 8, 2020	\$ 0.16	\$ 0.14
June 30, 2020	\$ 0.20	\$ 0.07
March 31, 2020	\$ 0.20	\$ 0.05
December 31, 2019	\$ 0.49	\$ 0.13
September 30, 2019	\$ 0.45	\$ 0.25
June 30, 2019	\$ 1.17	\$ 0.28
March 31, 2019	\$ 0.90	\$ 0.30
December 31, 2018	\$ 0.60	\$ 0.05
September 30, 2018	\$ 0.39	\$ 0.18
June 30, 2018	\$ 0.34	\$ 0.22
March 31, 2018	\$ 0.48	\$ 0.14
December 31, 2017	\$ 0.30	\$ 0.10
September 30, 2017	\$ 0.32	\$ 0.23
June 30, 2017	\$ 0.38	\$ 0.25
March 31, 2017	\$ 0.50	\$ 0.24

**Holders.** As of July 8, 2020, there were 59 stockholders of record. The number of stockholders of record does not include beneficial owners of our common stock, whose shares are held in the names of various dealers, clearing agencies, banks, brokers and other fiduciaries.

**Dividends.** We have never declared or paid a cash dividend on our common stock. We do not expect to pay cash dividends on our common stock in the foreseeable future. We currently intend to retain our earnings, if any, for use in our business. Any dividends declared in the future will be at the discretion of our Board and subject to any restrictions that may be imposed by our lenders.



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**Penny Stock Regulation.** Shares of our common stock will probably be subject to rules adopted by the SEC that regulate broker-dealer practices in connection with transactions in “penny stocks.” Penny stocks are generally equity securities with a price of less than \$5.00 (other than securities registered on certain national securities exchanges or quoted on the NASDAQ system, provided that current price and volume information with respect to transactions in those securities is provided by the exchange or system). The penny stock rules require a broker-dealer, prior to a transaction in a penny stock not otherwise exempt from those rules, deliver a standardized risk disclosure document prepared by the SEC, which contains the following:

- a description of the nature and level of risk in the market for penny stocks in both public offerings and secondary trading;
- a description of the broker’s or dealer’s duties to the customer and of the rights and remedies available to the customer with respect to violation to such duties or other requirements of securities’ laws;
- a brief, clear, narrative description of a dealer market, including “bid” and “ask” prices for penny stocks and the significance of the spread between the “bid” and “ask” price;
- a toll-free telephone number for inquiries on disciplinary actions;
- definitions of significant terms in the disclosure document or in the conduct of trading in penny stocks; and
- such other information and is in such form (including language, type, size and format), as the SEC shall require by rule or regulation.

Prior to effecting any transaction in penny stock, the broker-dealer also must provide the customer the following:

- the bid and offer quotations for the penny stock;
- the compensation of the broker-dealer and its salesperson in the transaction;
- the number of shares to which such bid and ask prices apply, or other comparable information relating to the depth and liquidity of the market for such stock; and
- monthly account statements showing the market value of each penny stock held in the customer’s account.

In addition, the penny stock rules require that prior to a transaction in a penny stock not otherwise exempt from those rules, the broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser’s written acknowledgment of the receipt of a risk disclosure statement, a written agreement to transactions involving penny stocks, and a signed and dated copy of a written suitability statement. These disclosure requirements may have the effect of reducing the trading activity in the secondary market for a stock that becomes subject to the penny stock rules. Holders of shares of our common stock may have difficulty selling those shares because our common stock will probably be subject to the penny stock rules.

## **MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our financial statements for the three months ended March 31, 2020 and March 31, 2019 (unaudited) and the year ended December 31, 2019 together with notes thereto. In addition to historical information, this discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of certain factors, including, but not limited, to those set forth under “Risk Factors” and elsewhere in this prospectus.*

*Unless otherwise provided in this prospectus, references to “we,” “us,” “our” and “Emerald Bioscience” in this discussion and analysis refer to Emerald Bioscience, Inc., a Nevada corporation formerly known as Nemus Bioscience, Inc. and Load Guard Logistics, Inc., together with its wholly-owned subsidiaries, Nemus, a California corporation, and EMBI Australia Pty Ltd., an Australian proprietary limited company.*

### **Overview**

We are a biopharmaceutical company targeting the discovery, development, and the commercialization of cannabinoid-based therapeutics, through a number of license agreements with the University of Mississippi (“UM”). UM holds the only contract to cultivate cannabis for research purposes on behalf of the Federal Government of the United States since 1968, and it has significant expertise in cannabis cultivation and the extraction, separation, process and manufacture of cannabis extracts as well as the chemistry and physiology of cannabinoid molecules. We strive to serve as UM’s partner for the development and commercialization of cannabinoid-based therapeutics, and the realization of this partnership will depend on the successful development of these compounds through the regulatory requirements of drug approval agencies, like the FDA in the United States and the EMA in the European Union.

Effective March 25, 2019, we changed the Company’s name from Nemus Bioscience, Inc. to Emerald Bioscience, Inc.

In August 2019, we formed a new subsidiary in Australia, EMBI Australia, in order to qualify for the Australian government’s research and development tax credit for research and development dollars spent in Australia. The primary purpose of EMBI Australia is to conduct clinical trials for our product candidates.



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### **Recent Events and Significant Contracts.**

#### Expansion of UM 5050 and UM 8930 Licenses from Ocular Delivery Only to All Fields of Use

On May 24, 2019, we executed two restated and amended license agreements with UM which expanded our use of UM 5050, a pro-drug of tetrahydrocannabinol (“THC”), and UM 8930, an analog of cannabidiol (“CBD”), from ocular delivery only to all fields of use. Pursuant to these license agreements, we have exclusive, perpetual, worldwide licenses related to UM 5050 and UM 8930. Additionally, with the prior written consent of UM, we have the right to sublicense the licensed intellectual property.

The all fields use for tetrahydrocannabinol-valine-hemisuccinate (“THCVHS”), the proprietary prodrug of THC, is expected to allow the Company to explore related uses for the active moiety of the prodrug, namely THC. Independent *in vitro* and *in vivo* studies have demonstrated the potential use of THC in a variety of potential indications based on the ability of the cannabinoid to act as an anti-inflammatory, anti-fibrotic, and/or inhibitor of neovascularization. The Company has generated data related to these effects using an *ex vivo* human tissue model of the eye. The prodrug technology employed in THCVHS is designed to enhance the bioavailability and pharmacokinetic predictability of the active part of the molecule, once introduced into the body through routes of administration currently being considered by the development team. Given the positive data accumulated to date in studies of the eye, the Company could explore additional central nervous system applications for THCVHS. The Company expects to develop strategic collaborations to identify and advance these applications.

The all fields use of cannabidiol-valine-hemisuccinate (“CBDVHS”), the analog of CBD, is expected to permit the Company to expand research and development into organ systems outside of the current ocular space. Potential disease targets over time could involve the central nervous system, the gastrointestinal tract, the endocrine/metabolic system, reproductive system diseases, or as yet unrecognized opportunities. This bioengineered version of CBD is expected to enlarge the disease target pool by virtue of new routes of administration into the body, thereby enhancing bioavailability. The determination by the DEA that CBDVHS is not a controlled substance permits the Company to enlarge the potential pool of clinical test sites and a more diverse patient pool in the study of disease. The Company expects to develop strategic collaborations to identify and advance these applications.

#### NB1111

The manufacturing of the active pharmaceutical ingredient of NB1111 is conducted in the United States. Formulation of the eye drop for testing is also performed in the United States but can rely on regulatory-accepted excipients that can be sourced from countries outside the United States, such as China. In connection with the recent COVID-19 pandemic, there could possibly be an impact on sourcing materials that are part of the eye drop formulation, as well as impacting volunteer and/or patient recruitment in Australia for clinical studies. Therefore, we anticipate shifting our first-in-human studies of the lead drug candidate, NB1111, from the second-half of 2020, to the 2021 timeframe. The first-in-human studies are expected to be conducted in both normal controls and patients with glaucoma or ocular hypertension in Australia (the “Clinical Trial”). During 2019, we achieved various milestones related to the research and development of NB1111, including the following UM completed experiments showing that NB1111 was statistically superior in lowering intraocular pressure (“IOP”) compared to the prostaglandin-based therapy, latanoprost, the current standard-of-care for treating glaucoma. Significance was reached across multiple timepoints during a seven-day course of dosing using a validated rabbit normotensive ocular model and NB1111 exerted pharmacologic activity consistent with twice-daily dosing:

- In August 2019, EMBI Australia Pty Ltd entered into a start-up agreement with Novotech (Australia) Pty Limited (“Novotech”). The start-up agreement is being entered into in connection with the launch of the Clinical Trial. The Company expects to pay approximately \$45,000 in professional fees and pass through costs in connection with the services provided for in the start-up agreement. Additionally, on September 26, 2019, EMBI Australia Pty Ltd and Novotech executed a Master Services Agreement and anticipate entering into project agreements covering all anticipated services to be provided by Novotech to the Company in connection with the Clinical Trial.
- In August 2019, EMBI Australia entered into a master service agreement and initial statement of work with Agilex Biolabs Pty Ltd (“Agilex”), pursuant to which Agilex would assist with the assay set up for the anticipated Clinical Trial.

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- In August 2019, we executed an agreement with Bioscience Laboratories, Inc. to complete Draize testing in advance of the anticipated Clinical Trial.
- Albany Molecular Research Inc. (“AMRI”) worked toward closing the synthesis validation pathway to manufacture cGMP API of THCVHS with validation of drug product purity. In turn, on April 30, 2019, we entered into an additional agreement with AMRI related to non-GMP synthesis of a demonstration batch of our pro-drug of THC. In August 2019, our manufacturing agreement with AMRI for THCVHS that was executed in July 2018 was replaced by the agreement with Noramco discussed below.
- On August 7, 2019, we entered into a first amendment to its agreement with Noramco to manufacture THCVHS (the “Noramco Agreement”, as amended from time to time). CBDVHS was being manufactured pursuant to the Noramco Agreement prior to the amendment. We paid \$257,800 upfront to add the manufacture of THCVHS to the Noramco Agreement and additional payments will be made upon Noramco’s shipping of the GMP active pharmaceutical ingredient to us. All other material terms of the Noramco Agreement remain the same.
- In January 2019, we engaged RRD International, LLC (“RRD”) to provide strategic ophthalmic 505(b)(2) regulatory planning, prepare a Pre-IND meeting briefing book, and schedule and represent us at the Pre-IND meeting with the FDA. In May 2019, we executed a change order to extend our work with RRD as we continue to progress toward our Pre-IND meeting. In August 2019, we executed an additional work order with RRD to assist us in preparing an investigator’s brochure to support the Clinical Trial.
- UM completed experiments showing that NB1111 was statistically superior in lowering intraocular pressure (“IOP”) compared to the prostaglandin-based therapy, latanoprost, the current standard-of-care for treating glaucoma. Significance was reached across multiple timepoints during a seven-day course of dosing using a validated rabbit normotensive ocular model and NB1111 exerted pharmacologic activity consistent with twice-daily dosing.
- Glauconix Biosciences Inc. (“Glauconix”) completed their pilot study to research the mechanism of action and IOP-lowering ability of THC when administered into an *ex vivo* model of a 3D-human trabecular meshwork using both healthy and glaucomatous-derived tissues. The Glauconix study validated the mechanism of action of NB1111 in lowering IOP, a defining disease process of hypertensive glaucoma. Additionally, biomarkers associated with inflammation and fibrosis in both normal and tissues affected by glaucoma were significantly decreased, pointing to anti-inflammatory and anti-fibrotic activities that are often associated with the cannabinoid class of molecules in other disease-states. Additionally, data revealed that biomarkers associated with neovascularization, a disease process of new blood vessel formation that can damage the retina in a variety of ocular diseases, was also inhibited by THC, prompting further study for the utility of this drug in diseases of the retina.
- In January 2019, we executed an agreement with Pharmaceuticals International, Inc. (“PII”) to conduct studies to determine options for producing a sterile dosage form which can be dosed in humans in a clinical study. PII will conduct appropriate formulation studies to determine storage and processing options. Pursuant to the terms of the agreement, we paid \$72,500 to initiate the project. After the initial evaluation, we have agreed to pay additional fees and expenses upon completion of certain milestones.

## NB2222

NB2222 is the ocular formulation of our proprietary CBD analog. We have embarked on studies with UM exploring the utility of our drug candidate NB2222 as an eye drop nanoemulsion for the potential treatment and management of several eye diseases, including but not limited to, uveitis, dry eye syndrome, macular degeneration and diabetic retinopathy.

In July 2019, we engaged Glauconix to conduct research as to whether CBD or CBDVHS is associated with an increase in IOP and, if so, what the potential mechanism of action would be by exposing the 3D-human trabecular meshwork tissue constructs to these molecules. The Company paid \$69,000 upfront and paid Glauconix an additional \$60,000 upon the completion of this study.

Additionally, in the second quarter of 2019, UM also completed pre-clinical experiments showing that NB2222 exhibited an ability to penetrate multiple chambers of the eye and reach the optic nerve. These findings support the therapeutic potential to provide ocular neuroprotection of retinal ganglion cells, an important goal in treating diseases which lead to vision loss. The data were published in the peer-reviewed Journal of Ocular Pharmacology and Therapeutics in a paper titled, “Analog Derivatization of Cannabidiol for Improved Ocular Permeation” (2019; volume 35 (5): 1-10).

In February 2019, we entered into the Noramco Agreement to provide manufacturing and product development services for our analog formulation of CBD. The Company paid \$146,386 upfront and additional payments will be made upon Noramco’s shipping of the active pharmaceutical ingredient to us.

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NB3111

NB3111 is a proprietary cannabinoid cocktail currently undergoing testing as an anti-infective agent against multiple strains of antibiotic resistant bacteria, particularly methicillin-resistant *Staphylococcus aureus* (“MRSA”). These studies look to examine the utility of cannabinoid-based therapies against a variety of MRSA strains and other gram-positive bacterial infections. We plan to continue to present data from these studies at an upcoming peer-reviewed scientific meeting focused on infectious diseases.

Other Development Programs

The Company plans to continue to work with UM to explore other potential indications and associated routes of administration to expand the UM5050 and UM 8930 licenses. The Company’s decision to advance a potential therapeutic candidate will be influenced by a number of criteria, including but not limited to, pre-clinical data, synthesis and formulation capability as well as prevailing market conditions.

In July 2019, the Company engaged StemoniX to evaluate CBD and CBDVHS (and possibly additional CBD-derivatives) in a human in vitro neural model with an application to epilepsy. The series of experiments are designed to provide insight into how these cannabinoids stabilize neuronal cells.

**Critical Accounting Policy and Estimates.**

Our Management’s Discussion and Analysis of Financial Condition and Results of Operations section discusses our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of income and expenses during the reporting period. On an on-going basis, management evaluates its estimates and judgments, including those related to accrued expenses, financing operations, and contingencies and litigation. Management bases its estimates and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. The most significant accounting estimates inherent in the preparation of our financial statements include estimates as to the appropriate carrying value of certain assets and liabilities which are not readily apparent from other sources. We consider certain accounting policies related to fair value measurements, convertible instruments, warrants issued in connection with financings, stock-based compensation expense, and earnings per share to be critical accounting policies that require the use of significant judgments and estimates relating to matters that are inherently uncertain and may result in materially different results under different assumptions and conditions.

Management assessed the critical accounting policies as disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019 and determined that there were no changes to our critical accounting policies and estimates during the three months ended March 31, 2020.

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***Recently Issued and Adopted Accounting Pronouncements***

See Note 2 to the accompanying condensed consolidated financial statements included in this prospectus for information on recently issued accounting pronouncements and recently adopted accounting pronouncements. While we expect certain recently adopted accounting pronouncements to impact our estimates in future periods, the impact upon adoption was not significant to our current estimates and operations.

**Results of Operations**

***For the three months ended March 31, 2020 and 2019***

**Revenues.** To date, we have not generated any revenues, and do not expect to generate any revenue from the sale of products in the near future.

**Operating expenses.** For the three months ended March 31, 2020, our total operating expenses were \$2,211,208 as compared to \$1,515,067 for the three months ended March 31, 2019. The increase in operating expenses was due to the items noted below:

**Research and development.** Research and development expenses for the three months ended March 31, 2020 were \$799,612, which consisted of expenses including salaries and benefits and consulting fees for the staff involved in our preclinical and clinical drug development activities, contract research and development fees paid to UM, fees related to contract manufacturing paid to Noramco, fees related to contract formulation work paid to PII, a \$200,000 license fee incurred under the UM 8930 Analog Agreement for the receipt for the first United States Patent and Trademark Office notice of allowance and the annual license maintenance fee for UM 5070. Research and development expenses for the three months ended March 31, 2019 were \$320,986, which consisted of the annual license maintenance fee for UM 5070, contract research and development fees paid to UM and Glauconix, regulatory consulting fees paid to RRD, and fees related contract manufacturing paid to AMRI and ElSohly Laboratories. The increase in research and development expenses was primarily due to increases in license fees and contract manufacturing and formulation expenses.

**General and administrative.** General and administrative expenses for the three months ended March 31, 2020 were \$1,411,596, which primarily consisted of salaries, stock compensation expense, general legal and patent related fees, consulting fees and professional fees related to the Company's capital raising efforts and regulatory filings. By comparison, general and administrative expenses for the three months ended March 31, 2019 were \$1,194,081, which primarily consisted of the same components. General and administrative expenses increased period over period primarily due to increased legal fees, higher accounting expenses related to the Company's increased fundraising efforts and additional investor relations fees.

**Other expense (income).** For the three months ended March 31, 2020, we had other expense of \$130,452 related primarily to interest expense of \$166,355 which was offset by a decrease in the fair value of our derivative liabilities of \$35,903 which was driven by the decrease in our stock price. The additional interest expense that we recognized during the three months ended March 31, 2020, as compared to the three months ended March 31, 2019 was related to the amortization of the debt discount and accrued interest associated with the outstanding balance under the Credit Agreement.

For the three months ended March 31, 2019, we had other expense of \$13,259,325 related primarily to the increase in fair value of our derivative liabilities which was driven by the increase in our stock price. In addition, we initiated drawdowns under the Credit Agreement which required us to bifurcate compound embedded derivatives and record an additional charge for the fair value of such instruments in excess of proceeds.

**Net loss and comprehensive loss.** For the three months ended March 31, 2020, we had a net loss of \$2,341,660 as compared to a net loss of \$14,774,392 for the three months ended March 31, 2019. The change was primarily attributable to a decrease in other expense which was partially offset by an increase in our operating expenses. We expect to incur net losses for the foreseeable future.





**For the years ended December 31, 2019 and 2018**

**Revenues.** To date, we have not generated any revenues, and do not expect to generate any revenue from the sale of products in the near future.

**Operating expenses.** For the year ended December 31, 2019, our total operating expenses were \$6,632,578 as compared to \$4,692,523 for the year ended December 31, 2018.

**Research and development.** Research and development expenses for the year ended December 31, 2019 were \$2,237,956, which consisted of upfront payments for the all fields of use licenses for UM 5050 and UM 8930, the annual license maintenance fee for UM 5070, salaries and benefits and consulting fees for the staff involved in our preclinical and clinical drug development activities, contract research and development fees paid to UM, Glauconix, StemoniX and Bioscience Laboratories, regulatory consulting fees paid to RRD, fees related to contract manufacturing paid to AMRI, Noramco and ElSohly Laboratories, fees related to contract formulation work paid to PII and fees paid to Novotech and Agilex in preparation of the Clinical Trial expected to launch in 2021.

Research and development expenses for the year ended December 31, 2018 were \$329,966, which consisted of the annual license maintenance fees for UM 5070, annual license maintenance fees for UM 5050 related to ocular delivery, annual license maintenance fees for UM 8930 related to ocular delivery, contract research and development fees and fees related to our contract with AMRI to manufacture our prodrug of THC.

For the year ended December 31, 2019, research and development expenses increased by \$1,907,990, as compared to the year ended December 31, 2018. The increase is primarily due to upfront payments for the all fields of use licenses for UM 5050 and UM 8930, contract manufacturing expenses, contract formulation expenses, regulatory fees, salaries and benefits and consulting fees for the staff involved in our preclinical and clinical drug development activities and contract research and development expenses, as the procurement of the Credit Agreement (as defined below) and funds raised through our November 2019 Common Stock Offering (as defined below) have allowed us to continue to focus on ramping up our research and development efforts.

**General and administrative.** General and administrative expenses for the year ended December 31, 2019 were \$4,394,622, which primarily consisted of salaries, consulting fees, stock-based compensation expense and professional fees associated with our costs of being a public company. General and administrative expenses for the year ended December 31, 2018 were \$4,362,557, which primarily consisted of the same components. General and administrative expenses remained relatively constant year over year.

**Other expense (income).** For the year ended December 31, 2019, we had non-operating income of \$7,686,003, which was comprised primarily of the following:

- \$9,734,759 of other income from the change in fair value of derivative liabilities which represents an overall decrease in the fair value of our derivative liabilities. The derivatives marked-to-market include the Series B and Emerald Health Sciences warrant liabilities and the compound derivative bifurcated from the Credit Agreement (as defined below). Several assumptions go into the third-party valuations for each of these instruments however the decrease in our stock price and valuation assumptions were all contributing factors to the decrease in the value of these instruments during the year ended December 31, 2019;
- \$322,644 of other expense was related to drawdowns initiated under the Credit Agreement which required us to bifurcate compound embedded derivatives and record an additional charge for the fair value of such instruments in excess of proceeds;
- interest expense of \$1,000,713 realized during the year ended December 31, 2019 due to the amortization of the debt discount and interest payments associated with the outstanding balance under the Credit Agreement which was entered into during the fourth quarter of 2018; and
- \$725,425 loss on extinguishment related to the prepayment of the Credit Agreement.

For the year ended December 31, 2018, we had non-operating expense of \$14,500,071, which was comprised primarily of the following:

- \$6,503,174 of other expense from the change in fair value of derivative liabilities which represents an overall increase in the fair value of our derivative liabilities. The derivatives marked-to-market include the conversion liabilities related to the Series B Preferred Stock and Secured Convertible Promissory Note - related party, the Series B and Emerald Health Sciences warrant liabilities and the compound derivative bifurcated from the Credit Agreement (defined below). A number of assumptions go into the third-party valuations for each of these instruments however the increase in our stock price, update to our volatility assumption and valuation assumptions were all contributing factors to the increase in the value of these instruments during the year ended December 31, 2018;
- \$7,174,634 represented a loss from the excess of the fair value of the warrants on the date of issuance over the proceeds received in the Emerald Health Sciences Financing (defined below);
- \$137,192 in financing costs related to the Emerald Health Sciences Financing;
- \$590,392 from a loss on extinguishment related to the Secured Convertible Promissory Note (as defined below); and
- \$94,763 from interest expense which includes non-cash interest expense from the amortization of the debt discounts and cash interest paid to debt holders.

**Net income (loss).** For the year ended December 31, 2019, we had net income of \$1,051,825 as compared to a net loss of \$19,194,236 for the year ended December 31, 2018. The net income generated during 2019 was driven by other income primarily related to a non-cash adjustment in derivative liabilities from the decrease in our stock price. We expect to incur net losses for the foreseeable future.

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### **Liquidity and Capital Resources.**

We have incurred operating losses and negative cash flows from operations since our inception and as of March 31, 2020, had an accumulated deficit of \$34,514,942, a stockholders' deficit of \$1,702,897 and a working capital deficit of \$995,853. We anticipate that we will continue to incur net losses into the foreseeable future in order to advance and develop several potential drug candidates into preclinical and clinical development activities and support our corporate infrastructure, which includes the costs associated with being a public company. We had cash of \$563,864 as of March 31, 2020, as compared to \$1,829,977 as of December 31, 2019. The decrease was primarily attributable to a decrease in financing activities during the quarter as compared to the three month period ended March 31, 2019, when the Company received \$3,990,699 in net proceeds from the Credit Agreement (as defined below). Without additional funding, management believes that we will not have enough funds to meet our obligations beyond one year after the date the Condensed Consolidated Financial Statements are issued. These conditions give rise to substantial doubt as to our ability to continue as a going concern.

On October 5, 2018, we secured a Credit Agreement with Emerald Health Sciences (the "Credit Agreement"), providing us with a credit facility of up to \$20,000,000. Under the Credit Agreement, we may draw a remaining amount of up to \$14,000,000 in advances from Emerald Health Sciences from time to time, each in a principal amount of at least \$250,000. The advances are subject to approval by our Board, which is controlled by the directors of Emerald Health Sciences. As such, we do not consider the facility available until advance requests are approved, drawn down and funded. As of March 31, 2020, we have effected three drawdowns under the Credit Agreement, each in the amount of \$2,000,000, for an aggregate principal amount of \$6,000,000 in advances, and have issued to Emerald Health Sciences warrants to purchase an aggregate of 7,500,000 shares of common stock at an exercise price of \$0.50 per share. On December 20, 2019, we entered into a Warrant Exercise Agreement with Emerald Health Sciences, pursuant to which Emerald Health Sciences has exercised 40,800,000 of such warrants and paid the aggregate exercise price of approximately \$4,080,000 for the related warrant shares in the form of a reduction of the corresponding amount of obligations outstanding under the Credit Agreement. Upon consummation of the transactions under the Warrant Exercise Agreement, the total outstanding principal amount excluding discounts under the Credit Agreement was \$2,014,500.

On April 22, 2020, we entered into a Paycheck Protection Program Promissory Note (the "PPP Note") in the principal amount of \$116,700 (the "PPP Loan") from City National Bank (the "PPP Loan Lender"). The PPP Loan was obtained pursuant to the Paycheck Protection Program (the "PPP") of the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") administered by the U.S. Small Business Administration ("SBA").

On April 29, 2020, we entered into an Amended and Restated Multi-Draw Credit Agreement with Emerald Health Sciences, which amends and restates the Credit Agreement, as reported in the current report on the Form 8-K filed with the SEC on April 29, 2020. The Amended Credit Agreement provides for a credit facility to us in the principal amount of up to \$20,000,000, which includes, without limitation, the advances totaling \$6,000,000 that were granted prior to the amendment and advances of at least \$150,000 for each of May, June and July 2020. Immediately upon entering into of the Amended Credit Agreement, we effected a fourth drawdown in the amount of \$150,000 (the "Drawdown") pursuant to the Amended Credit Agreement. The Drawdown bears an interest at 7% per annum and matures on October 5, 2022. We intend to use the net proceeds of the Drawdown for general corporate and working capital purposes.

Effective March 23, 2020, we approved a plan to defer up to 50% of the members of senior management's compensation indefinitely. Certain members of senior management have accepted the plan and the aggregate deferred compensation, together with a retention bonus of 10% of the amount being deferred will be payable to senior management when decided by the Board. Effective March 30, 2020, the Directors of the Company entered into agreements to defer payment of 100% of their Board of Director and committee fees indefinitely. The accrued fees, plus a 10% bonus of such accrued fees will be payable to the members of the Board within 30 days of the Board of Directors determining that we have been sufficiently financed to make such payments. These measures, in conjunction with management's plan to negotiate extended payment terms with its vendors and service providers and delay development work in conjunction with pushing back the initiation of its first-in-human studies of the lead drug candidate, NB1111, to the 2021 timeframe, is intended to slow cash burn. Our Board plans on further assessing our financial condition to determine what additional measures, if any, will be implemented. If we are unable to secure adequate additional funding, we may be forced to reduce spending further, liquidate assets where possible, suspend or curtail planned programs or cease operations.

In December 2019, a novel strain of coronavirus ("COVID-19") emerged in Wuhan, China. Since then, it has spread to the United States and infections have been reported around the world. On March 11, 2020, the World Health Organization declared the outbreak of COVID-19 as a global pandemic, which continues to spread throughout the United States, Australia and around the world, where the Company has operations and conducts laboratory research and clinical studies. In response to the outbreak, federal and state authorities in the United States have introduced various recommendations and measures to try to limit the pandemic, including travel restrictions, border closures, nonessential business closures, quarantines, self-isolations, shelters-in-place and social distancing. The COVID-19 outbreak and the response of governmental authorities to try to limit it are having a significant impact on the private sector and individuals, including unprecedented business, employment and significant economic disruptions to the global financial markets. These disruptions could impact our ability to raise additional capital and obtain the necessary funds.

Notably, we rely on third-party manufacturers to produce our product candidates. The manufacturing of the active pharmaceutical ingredient of NB1111 is conducted in the United States. Formulation of the eye drop for testing is also performed in the United States but can rely on regulatory-accepted excipients that can be sourced from countries outside the United States, such as China. In connection with the recent COVID-19 pandemic, there could possibly be an impact on sourcing materials that are part of the eye drop formulation, as well as impacting volunteer and/or patient recruitment in Australia for clinical studies. Therefore, we have shifted the expected start of our first-in-human studies of the lead drug candidate, NB1111, from the second half of 2020, to the 2021 timeframe.

The ultimate impact on us and overall delay in our drug product research and development is unknown, but our operations and financial



condition will suffer in the event of business interruptions, delayed clinical trials, production or a lack of laboratory resources due to the pandemic. As of the date of this filing, we are aware of the impact on our business as a result of COVID-19 but uncertain as to the extent of this impact on our condensed consolidated financial statements. There is uncertainty as to the duration and hence the potential impact. As a result, we are unable to estimate the potential impact on our business as of the date of this filing.

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*Going Concern*

Our independent registered public accounting firm has issued a report on our audited financial statements for the fiscal year ended December 31, 2019 that included an explanatory paragraph referring to our recurring operating losses and expressing substantial doubt in our ability to continue as a going concern. Our condensed consolidated financial statements have been prepared on a going concern basis, which assumes the realization of assets and

settlement of liabilities in the normal course of business. Our ability to continue as a going concern is dependent upon our ability to generate profitable operations in the future and/or to obtain the necessary financing to meet our obligations and repay our liabilities arising from normal business operations when they become due. The outcome of these matters cannot be predicted with any certainty at this time and raise substantial doubt that we will be able to continue as a going concern. Our condensed consolidated financial statements do not include any adjustments to the amount and classification of assets and liabilities that may be necessary should we be unable to continue as a going concern.

After considering the plans to alleviate substantial doubt, management has concluded that there is substantial doubt about the Company's ability to continue as a going concern within one year after the date that the financial statements are issued.

### **Off-Balance Sheet Arrangements**

There are no off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

### **MANAGEMENT**

The following table sets forth certain information as of the date of this prospectus, with respect to our directors, executive officers and significant employees.

<b>Name</b>	<b>Age</b>	<b>Position</b>
Dr. Brian S. Murphy	63	Chief Executive Officer, Director
Elena Traistaru	61	Chief Financial Officer
Dr. Dennis Kim	50	Chief Medical Officer
Punit Dhillon	40	Chairman, Director
Jim Heppell	65	Director

### **Biographies of Directors, Executive Officers and Significant Employees**

**Dr. Brian S. Murphy.** Dr. Murphy was appointed as our Chief Executive Officer and as a director in August 2015. Dr. Murphy was appointed as our Chief Medical Officer in October 2014, and relinquished Chief Medical Officer responsibilities when Dr. Kim was hired in August 2019. Dr. Murphy was the Chief Medical Officer of Nemus Sub from August 2014 to October 2014. From 2009 to August 2014, Dr. Murphy served as the Chief Medical Officer of Eiger Biopharmaceuticals. From 2003 to 2006, Dr. Murphy was Chief Medical Officer at Epiphany Biosciences. From 2003 to 2006, Dr. Murphy was Chief Medical Officer at Valeant Pharmaceuticals International (VRX) where his responsibilities also included oversight of Global Medical Affairs and Pharmacovigilance. Dr. Murphy also served as Medical Director, then Vice President of Marketing and Commercial Strategy of Hepatology for InterMune, Inc. (ITMN). From 2000 to 2002, Dr. Murphy was Medical Director of North America for Antivirals/Interferons/Transplant at Hoffmann-LaRoche. Prior to joining industry, Dr. Murphy was Assistant Professor of Medicine at New York Medical College and was Director of the Clinical Strategies Program at St. Vincent's Hospital in New York City, the lead hospital of the Catholic Healthcare Network of New York. Dr. Murphy is board-certified in internal medicine and completed his residency in internal medicine at Tufts-New England Medical Center and served as Chief Medical Resident in the Boston University program. Dr. Murphy completed parallel fellowship tracts at Harvard Medical School, one in internal medicine/clinical Epidemiology at the Massachusetts General Hospital and the other in Medical Ethics addressing issues of distributive justice and access to care at Brigham & Women's Hospital. Dr. Murphy earned his MD, MPH (general public health), and MS (pharmacology) degrees from New York Medical College and is a graduate of the Harvard School of Public Health (MPH in Health Policy and Management). He earned his MBA at the Columbia University Graduate School of Business. In making the decision to appoint Dr. Murphy to serve as a director, the Board considered, in addition to the criteria referred to above, his experience in the healthcare industry, current service as our Chief Executive Officer and his comprehensive knowledge of the Company, its business and operations.

**Elena Traistaru.** Ms. Traistaru was appointed as our Chief Financial Officer in May 2020. Ms. Traistaru formerly served as the Chief Financial Officer of Emerald Health Bioceuticals Inc., a Delaware corporation ("EHB") and an affiliate of the Company. She was appointed as Chief Financial Officer of EHB in October 2019 and served as EHB's Chief Financial Officer until April 2020. Ms. Traistaru has also served as the Corporate Controller for EHB and Emerald Health USA since November 2018. Ms. Traistaru has 30 years of diversified accounting finance experience in the biotechnology and pharmaceutical industries and telecommunications. Prior to joining EHB, Ms. Traistaru served as President and Chief Financial Officer of ET Accounting Consulting Service from February 2017 to October 2018, providing accounting consulting services to various businesses. Ms. Traistaru previously served as the U.S. Controller for Enigma Diagnostics, a developer of innovative molecular diagnostic technology, from February 2010 to February 2017, where she managed all aspects of accounting, finance, and human resources functions and supported the company's operations department. Ms. Traistaru holds a bachelor's degree in Accounting and Finance from Academy of Economic Studies, Bucharest, Romania.

**Dr. Dennis Kim.** Dr. Kim was appointed Chief Medical Officer in August 2019. He is a physician biotechnology executive with specialty training in endocrinology/metabolism spanning approximately 20 years of drug/product development and corporate strategy experience in the biotech and medical technology industries. Dr. Kim previously served as Chief Medical Officer of Emerald Health Sciences, Inc. Prior to that he was Chief Medical Officer at Zafgen, Inc. for over 7 years where he oversaw all aspects of clinical and medical affairs in the field of diabetes, obesity, and rare metabolic/genetic disorders. Prior to joining Zafgen, Dr. Kim held multiple senior-level positions at Orexigen Therapeutics (Sr. VP of Medical and Clinical Affairs), EnteroMedics (Chief Medical Officer) and Amylin Pharmaceuticals (Exec Director of Corporate Strategy). He holds an MD from the University of Health Sciences, The Chicago Medical School, an MBA from UCSD Rady School of Management and a B.S. in biology from the University of California at Los Angeles. His endocrinology/metabolism specialty fellowship training was completed at UCSD School of Medicine.

**Punit Dhillon.** Mr. Dhillon was appointed as a member of our Board in connection with the consummation of the investment in the Company by Emerald Health Sciences in 2018. On December 17, 2019, Mr. Dhillon was appointed as Chairman of our Board. Mr. Dhillon is currently a board member of Emerald Health Sciences, Inc., Emerald Health Therapeutics, Inc. (EMH), a TSX Venture Exchange listed company, and Arch Therapeutics Inc (OTCQB). Mr. Dhillon is a Co-founder of OncoSec Medical Incorporated (NASDAQ: ONCS) and was formerly a Director through February 2020 and the CEO through March 2018. Prior to OncoSec, Mr. Dhillon was the Vice President of Finance and Operations at Inovio Pharmaceuticals, Inc. (NASDAQ: INO) from September 2003 until March 2011. Mr. Dhillon has also previously been a consultant and board member for several TSX Venture Exchange listed early stage life science companies, which matured through advances in their development pipelines and subsequent M&A transactions. Prior to joining Inovio, Mr. Dhillon worked for a corporate finance law firm as a law clerk and worked with MDS Capital Corp. (now Lumira Capital Corp.). Mr. Dhillon is an active member in his community and places great value on helping future leaders overcome challenges through mentorship and education and is a co-founder and board member of Young Entrepreneurship Leadership Launchpad (YELL), a not-for-profit and charity organization based in Canada. Mr. Dhillon has a Bachelor of Arts with honors in Political Science and a minor in Business Administration from Simon Fraser University. Mr. Dhillon's experience in the biotechnology and pharmaceutical industry, and his experience with publicly traded companies were the primary qualifications that the Board considered in appointing him as a director of the Company.

**Jim Heppell.** Mr. Heppell was the founder, CEO and director of BC Advantage Life Sciences I Fund, which won the Canadian Venture Capital Deal of the Year Award in 2006 for having the highest realized return (23.4x its investment in Aspreva Pharmaceuticals) of any venture capital fund in Canada. Mr. Heppell has a Bachelor of Science degree in Microbiology and a law degree from the University of British Columbia. After being called to the Bar, he worked for six years with Fasken Martineau DuMoulin, during which time he was seconded to the BC Securities Commission for six months. Mr. Heppell then became President and Chief Executive Officer of Catalyst Corporate Finance Lawyers, a boutique corporate finance law firm that focused on assisting life science and technology companies. He is a past member of the Securities Policy Advisory Committee to the BCSC and is a Past-Chairman of

the Securities Section of the Canadian Bar Association (B.C. Branch). Mr. Heppell is currently a director of a number of public and private life science companies, including Emerald Health Sciences. The Board considered Mr. Heppell's significant experience with life science and technology companies in making the decision to appoint him as a director of the Company.

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**Section 16(a) Beneficial Ownership Reporting Compliance**

Section 16(a) of the Exchange Act requires our directors, executive officers, and any persons who own more than 10% of a registered class of our equity securities, to file reports of ownership and changes in ownership with the SEC. SEC regulation requires executive officers, directors and greater than 10%

stockholders to furnish us with copies of all Section 16(a) forms they file. Based solely on our review of the copies of such forms received by us, or written representations from certain reporting persons, we believe that during the year ended December 31, 2019, our executive officers, directors, and greater than 10% stockholders complied with all applicable filing requirements, except for one Form 4 for Emerald Health Sciences, which reported one transaction and was due on December 24, 2019 but was filed on January 28, 2020.

#### **Family Relationships**

There are no family relationships among our directors or executive officers.

#### **Term of Office of Directors**

Our directors are elected at each annual meeting of stockholders and serve until the next annual meeting of stockholders or until their successor has been duly elected and qualified, or until their earlier death, resignation or removal.

#### **Directors and Officers Involvement in Certain Legal Proceedings**

During the past ten years, our directors and executive officers have not been involved in any of the legal proceedings set forth in Item 401(f) of Regulation S-K promulgated by the SEC.

#### **Board and Committee Meetings**

During 2019, our Board met four times (including telephonic meetings) and took action by written consent 16 times. Each director attended at least 75% of the meetings held by the Board and by each committee on which he served while he was a director, either in person or by teleconference, during the year.

#### **Director Attendance at Annual Meetings**

Although we do not have a formal policy regarding attendance by members of our Board at each annual meeting of stockholders, we encourage all of our directors to attend.

#### **Audit Committee and Financial Expert**

On February 23, 2015, our Board established an audit committee that operates under a written charter that has been approved by our Board. The members of our audit committee are Mr. Punit Dhillon and Mr. Jim Heppell. Mr. Dhillon serves as chairman of the audit committee and our Board has determined that he is an “audit committee financial expert” as defined by applicable SEC rules. The Board has determined that Mr. Dhillon and Mr. Heppell are independent directors as that term is defined in Rule 5605(a)(2) of the Nasdaq Listing Rules, and we have determined that both Mr. Dhillon and Mr. Heppell as audit committee members meet the more stringent requirements under Rule 5605(c)(2) of the Nasdaq Listing Rules. Our audit committee met four times (including telephonic meetings) and took action by written consent one time in 2019.

Our audit committee is responsible for: (1) selection and oversight of our independent accountant; (2) establishing procedures for the receipt, retention and treatment of complaints regarding accounting, internal controls and auditing matters; (3) establishing procedures for the confidential, anonymous submission by our employees of concerns regarding accounting and auditing matters; (4) engaging outside advisors; and, (5) approving fees for the independent auditor and any outside advisors engaged by the audit committee. The Audit Committee Charter is filed as Exhibit 99.1 to our Report on Form 8-K filed on February 27, 2015.

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### **Compensation Committee**

On May 31, 2015, our Board established a compensation and compliance committee which operated under a written charter that was approved by the Board. In 2018, the Board dissolved the former compensation and compliance committee and established a new compensation committee which operates under a written charter approved by the Board. The members of our compensation committee are Mr. Punit Dhillon and Mr. Jim Heppell. Mr. Heppell serves as chairman of the compensation committee. Our compensation committee did not meet during 2019 (including telephonic meetings) and took action by written consent one time.

Our compensation committee is responsible for the oversight of, and the annual and ongoing review of, the Chief Executive Officer, the compensation of the senior management team, and the bonus programs in place for employees, which includes: (1) reviewing the performance of the Chief Executive Officer and such other senior officers as the Board may request, and determining the bonus entitlement for such officer or officers on an annual basis and recommending the same to the Board for approval; (2) determining the proposed annual compensation of our executive officers for each fiscal year and recommending the same to the Board for approval; (3) reviewing and discussing the bonus plan proposed for our senior management team with the Chief Executive Officer; (4) reviewing and discussing the terms and conditions of proposed grants of stock options to directors, employees, consultants and advisors with the Chief Executive Officer; (5) reviewing and recommending to the Board the compensation of the Board and committee members; (6) reviewing and discussing with the Chief Executive Officer the standard forms of employment and consulting contracts used by us; (7) reviewing and discussing with the Chief Executive Officer the general benefit plans in place for employees; (8) engaging and setting the compensation for independent counsel and other advisors and consultants; and (9) reviewing and assessing the adequacy of its Charter and submitting any recommended changes to our Board for its consideration and approval.

### **Nomination and Corporate Governance Committee**

In 2018, our Board established a nominating and corporate governance committee that operates under a written charter approved by the Board. The members of our nominating and corporate governance committee are Mr. Punit Dhillon and Mr. Jim Heppell. Mr. Heppell serves as chairman of the nominating and corporate governance committee. Our nominating and corporate governance committee did not meet or take action by written consent in 2019.

Our nominating and corporate governance committee is responsible for assisting the Board in (1) identifying qualified individuals to become Board members, consistent with criteria approved by the Board, (2) determining the composition of the Board and its committees, (3) selecting the director nominees for the next annual meeting of shareholders, (4) monitoring a process to assess Board, committee and management effectiveness, (5) aiding and monitoring management succession planning and (6) developing, recommending to the Board, implementing and monitoring policies and processes related to our corporate governance guidelines.

### **Finance and Business Development Committee**

In 2018, our Board established a finance and business development committee which operates under a written charter approved by the Board. The members of our finance and business development committee are Mr. Punit Dhillon and Mr. Jim Heppell. Mr. Punit Dhillon serves as chairman of the finance and business development committee. Our finance and business development committee did not meet and took action by written consent three times in 2019.

Our finance and business development committee is responsible for assisting the Board in (1) matters affecting our balance sheet, including capital structure strategies, debt and equity financings and working capital (2) analysis and assessment of financial and strategic aspects of major acquisitions and divestitures, collaborations and joint ventures, (3) formulating and recommending for approval to the Board our financial policies, including management of the financial affairs of the Company, (4) developing and maintaining relationships with investment banks, financial institutions and other investors and monitor developments in the capital markets and financing trends, and (5) evaluating and making recommendations to the Board concerning business

development opportunities.

#### **Nominations to the Board of Directors**

We do not have any defined policy or procedural requirements for shareholders to submit recommendations or nominations for directors. Our Board believes that, given the stage of our development, a specific nominating policy would be premature and of little assistance until our business operations develop to a more advanced level. We do not currently have any specific or minimum criteria for the election of nominees to the Board. The Board, with the help of its nomination and corporate governance committee, will assess all candidates, whether submitted by management or shareholders, and make recommendations for election or appointment.



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**Stockholder Communications**

We do not have a formal policy regarding stockholder communications with our Board. A shareholder who wishes to communicate with our Board may do so by directing a written request addressed to our Chief Executive Officer, at the address appearing on the first page of this filing.

**Code of Ethics**

On October 31, 2014, we adopted a formal code of ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, as well as our other officers, directors and employees. A copy of our code of ethics is available on our website at [www.emeraldbio.life](http://www.emeraldbio.life). We intend to disclose any future amendments to provisions of our code of ethics, or waivers of

provisions required to be disclosed under the rules of the SEC, on a current report on Form 8-K or at the same location on our website identified in the preceding sentence. Any amendment or waiver disclosed on our website will remain available on our website for at least 12 months after the initial disclosure.

## EXECUTIVE COMPENSATION

### Summary Compensation Table

The following table sets forth information concerning the compensation earned for services rendered to the Company for the fiscal years ended December 31, 2019 and 2018 of our named executive officers as determined in accordance with SEC rules.

SUMMARY COMPENSATION TABLE

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Stock Awards (\$ (1))	Option Awards (\$ (1))	Non-Equity Incentive Plan Compensation (\$)	Nonqualified Deferred Compensation Earnings (\$)	All Other Compensation (\$)	Total (\$)
Dr. Brian S. Murphy, CEO/CMO	2019	390,000	-	-	-	-	-	-	390,000
	2018	390,000	-	171,000	-	-	-	-	561,000
Elena Traistaru, CFO	2019	-	-	-	-	-	-	-	-
Dr. Dennis Kim, CMO	2019	119,812	-	-	164,985	-	-	-	284,797
	2018	-	-	-	-	-	-	-	-
Elizabeth M. Berecz, Former CFO (3)	2019	-	-	-	-	-	-	-	-
	2018	246,795	-	133,000	-	-	-	19,277	399,072
Avtar Dhillon, Former Executive Chairman (4)	2019	-	-	-	-	-	-	117,890	117,890
	2018	-	-	-	225,000	-	-	67,885	292,885
Cosmas N. Lykos, Former Chairman (2)(5)	2019	-	-	-	-	-	-	-	-
	2018	-	-	171,000	-	-	-	220,000	391,000
Douglas Cesario, Former CFO (6)	2019	250,000	-	-	-	-	-	-	250,000
	2018	174,038	-	169,884	200,772	-	-	-	544,694

- (1) Amounts reflect the full grant date fair value of restricted stock awards and stock options, computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by the named individual.
- (2) In June 2014, our subsidiary entered into an independent contractor agreement with K2C, Inc. ("K2C"), which is wholly owned by Mr. Lykos, pursuant to which the Company paid K2C a monthly fee for services performed by Mr. Lykos for the Company. The agreement expired on June 1, 2017 and was automatically renewed for one year pursuant to the terms of the agreement. The monthly fee under the agreement was \$10,000 until April 1, 2017, at which time it increased to a monthly fee of \$20,000. Under the agreement, Mr. Lykos was also eligible to participate in our health, death and disability insurance plans. In addition, beginning in 2015, Mr. Lykos was a participant in our change in control severance plan. Effective February 28, 2018, the Company terminated the independent contractor agreement.
- (3) Ms. Berecz separated from the Company, effective May 25, 2018, pursuant to a Separation Agreement and Release between the Company and Ms. Berecz.
- (4) Dr. Dhillon resigned as Chairman and member of the Board of Directors of the Company, effective December 17, 2019. For the year 2018, option awards granted to Dr. Dhillon represent compensation for services rendered as a member of our Board and other compensation includes \$45,000 earned under the Independent Contractor Agreement (defined below) and \$22,885 in fees earned for services rendered as a member of our Board. See "Director Compensation" below. For the year 2019, other compensation represents fees earned for services rendered as a member of our Board of Directors.
- (5) Mr. Lykos resigned from the Board, effective January 18, 2018, in connection with the consummation of the investment in the Company by Emerald Health Sciences.
- (6) Mr. Cesario separated from the Company, effective May 15, 2020, pursuant to a Separation and Release Agreement between the Company and Mr. Cesario.

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### **Employment and Severance Arrangements**

#### *Employment Agreements*

In August 2019, we entered into a letter agreement with Dr. Dennis Kim, our Chief Medical Officer. The agreement provides for an annual base salary of \$330,000 per year and an annual discretionary bonus target of up to 35% of annual salary. Pursuant to the agreement, Dr. Kim is entitled to receive the normal benefits available to other similarly situated executives and will be entitled to severance pay under circumstances. Dr. Kim's employment with the Company is at-will. Except for termination of Dr. Kim's employment for "Cause," by death or by "Disability" (as such terms are defined in the agreement), Dr. Kim will be entitled to payment of an amount equal to six months of his then-current base salary for the first full year of continuous employment with the Company or twelve months after the first full year. Dr. Kim may take on advisory and consulting roles for up to 20% of his time so long as such roles do not conflict with the performance of his duties and responsibilities with the Company.

Pursuant to Dr. Kim's agreement, Dr. Kim was granted a one-time sign-on award of options to purchase an aggregate of 736,541 shares of common stock of the Company pursuant to the Plan. Subject to continued employment with the Company, the stock options vest 25% 90 days after his employment commenced and the remaining 75% vests 1/33<sup>rd</sup> on each of the next 33 months thereafter.

The foregoing description of the employment agreements does not purport to be complete and is qualified in its entirety by reference to the full text of the employment agreements attached hereto as an exhibit and incorporated by reference herein.

#### *Severance Arrangements*

In February 2015, we adopted a change in control severance plan, in which our named executive officers participate, that provides for the payment of severance benefits if the executive's service is terminated within twelve months following a change in control, either due to a termination without cause or upon a resignation for good reason (as each term is defined in the plan).

In either such event, and provided the executive timely executes and does not revoke a general release of claims against the Company, he or she will be entitled to receive: (i) a lump sum cash payment equal to at least six months' of the executive's monthly compensation, plus an additional month for each full year of service over six years, (ii) Company-paid premiums for continued health insurance for a period equal to length of the cash severance period or, if earlier, when executive becomes covered under a subsequent employer's healthcare plan, and (iii) full vesting of all then-outstanding unvested stock options and restricted stock awards.

In January 2018, we entered into a restricted stock agreement (the "Restricted Stock Agreements") with each of Dr. Murphy, Elizabeth Berecz and Cosmas N. Lykos granting 900,000, 700,000 and 900,000 shares of restricted Common Stock, respectively. Each Restricted Stock Agreement provides that if the executive's employment or service is terminated by us without cause, or is terminated by the grantee for good reason, then the executive shall be entitled to receive a cash severance payment equal to six months of their base compensation, payable in substantially equal installments during the six-month period following the termination date.

In February 2018, we entered into a separation and release agreement with K2C, which provided for a lump sum payment of \$180,000 and the immediate vesting of 900,000 shares of restricted common stock granted pursuant to the Restricted Stock Agreement, 325,000 shares of restricted common stock granted on October 20, 2015, 125,000 options granted on November 21, 2014, in exchange for a release of claims and certain other agreements. In addition, K2C also holds 1,110,000 shares of fully vested common stock pursuant to the common stock purchase warrant agreement dated June 20, 2013.

In April 2018, we entered into a Separation Agreement and Release with Elizabeth Berecz, our former Chief Financial Officer. Pursuant to the agreement, Ms. Berecz agreed to certain ongoing cooperation obligations during a transition period and agreed to provide certain releases and waivers as contained in the agreement. As consideration under the agreement, the Company agreed to provide Ms. Berecz compensation and benefits as follows: (i) through May 25, 2018, Ms. Berecz's separation date, an annualized base salary at the rate in effect as of the date of the separation agreement; (ii) a lump sum gross payment of \$145,833, in consideration for the restrictive covenants contained in the separation agreement; and (iii) reimbursement for payments made by Ms. Berecz for COBRA coverage for a period of six (6) months following her separation date. In addition, the terms of the separation agreement provided for the immediate vesting of 700,000 shares of restricted common stock granted pursuant to Ms. Berecz's Restricted Stock Agreement, 350,000 shares of restricted common stock granted on October 20, 2015, and 250,000 options granted in October 2014 and November 2014.

In April 2020, the Company entered into a separation and release agreement with Douglas Cesario, our former Chief Financial Officer. Mr. Cesario's separation was effective May 15, 2020. Pursuant to the agreement, Mr. Cesario agreed to certain ongoing cooperation obligations and to provide certain releases and waivers as contained in the agreement. As consideration under the agreement, the Company agreed to provide Mr. Cesario compensation and benefits as follows: (i) through May 15, 2020, an annualized base salary at the rate in effect for him as of the date of the agreement; (ii) a gross payment of \$125,000 in consideration for the restrictive covenants contained in the agreement; and (iii) a continuation of health insurance benefits for a period of six months following May 15, 2020. In addition, 325,929 unvested stock options granted to Mr. Cesario were cancelled on May 15, 2020.

The foregoing descriptions of the separation agreements do not purport to be complete and are qualified in their entirety by reference to the full text of such separation agreements attached hereto as exhibits and incorporated by reference herein.

#### *Deferred Compensation*

Effective March 23, 2020, the Company approved a plan to defer up to 50% of the members of senior management's compensation indefinitely. Certain members of senior management have accepted the plan and the aggregate deferred compensation, together with a retention bonus of 10% of the amount being deferred will be payable to senior management when decided by the Board.

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**Outstanding Equity Awards at Calendar Year-End**

As of December 31, 2019, our named executive officers held the following outstanding Company equity awards.

Name	Option Awards					Stock Awards	
	Grant Date	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price	Option Expiration Date	Number of Shares of Stock Not Vested (#)	Market Value of Shares Not Vested (\$ (2))
Dr. Brian S. Murphy, (1)	10/31/2014	480,000	-	\$ 0.42	10/31/2024		
CEO/CMO (1)	11/21/2014	175,000	-	\$ 0.42	11/21/2024		
(7)	1/1/2018					450,000	58,725
Doug Cesario, Former CFO (3)(5)	5/25/2018	787,662	407,411	\$ 0.245	5/25/2028		
(4)	5/25/2018					643,501	83,977
Dr. Dennis Kim, CMO (8)	8/21/2019	217,614	518,927	\$ 0.300	8/21/2029		
Avtar Dhillon, Former Executive Chairman (6)	10/10/2018	1,000,000	-	\$ 0.305	10/10/2028		

- (1) The options specified above vest as follows: 20% of total vests on each anniversary of the grant date over five years, subject to the grantee's continued service. The options granted expire 10 years after the date of grant.
- (2) The market value of shares that have not vested is calculated based on the per share closing price of our common stock on December 31, 2019.
- (3) The options specified above vest as follows: 25% of total vests on the grant date and 1/33 each month thereafter on the anniversary of the grant date.
- (4) The restricted stock vests in full on the two-year anniversary of the grant date, subject to the grantee's continued service.
- (5) Mr. Cesario separated from the Company, effective May 15, 2020, pursuant to a Separation and Release Agreement between the Company and Mr. Cesario. On the date of separation, 325,929 unvested stock options were cancelled.
- (6) The options specified above vest in twelve equal monthly installments following the grant date.
- (7) The restricted stock vests 1/2 each year on the anniversary of the grant date and is subject to acceleration upon termination.
- (8) The options specified above vest as follows: 25% of the total vests 90 days after his employment commenced and the remaining 75% vests 1/33rd on each of the next 33 months thereafter.

#### *Non-Equity Incentive Plan Awards*

In May 2018, in connection with the appointment of Mr. Cesario, our former Chief Financial Officer, and pursuant to the terms of the Executive Employment Agreement between the Company and Mr. Cesario, we entered into a stock option award agreement with Mr. Cesario pursuant to which Mr. Cesario was granted non-qualified stock options to purchase an aggregate of 1,195,073 shares of the Company's common stock at an exercise price of \$0.245 per share on July 23, 2018. 25% of the options vested on the date of grant and the remaining 75% of the options vest 1/33 on each of the next 33 months thereafter. The options will fully vest upon a trigger event, including the sale of the Company or a merger that results in a change of control. In connection with Mr. Cesario's separation from the Company, 325,929 unvested stock options were cancelled on May 15, 2020.

#### *Exercises of Options*

There were no exercises of stock options by our named executive officers during the year ended December 31, 2019.

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**Director Compensation**

On October 10, 2018, the Company amended its policy for the compensation of its non-employee directors as follows:

- Each non-employee director will receive a cash retainer of \$40,000 on an annual basis, and the executive chair of the Board, if a non-employee director, will receive an additional \$40,000 retainer annually.
- Upon election to the Board, non-employee directors will receive a one-time award of 200,000 stock options which will vest in twelve equal monthly installments. In subsequent annual periods, each non-employee director will receive a grant of 100,000 common stock options which will vest in twelve equal monthly installments.

Non-employee directors who serve as members of special committees of the Board will receive additional compensation as follows:

- Audit Committee: \$5,000 per year (\$20,000 for the chair)
- Compensation Committee: \$2,500 per year (\$10,000 for the chair)
- Nominating and Corporate Governance Committee: \$1,000 per year (\$5,000 for the chair)
- Finance and Business Development Special Committee: \$40,000 per year for the chair (no compensation for other members)

Our directors received the following compensation for their service as directors of the Company during the fiscal year ended December 31, 2019.

<b>DIRECTOR COMPENSATION (1)</b>							
<b>Name</b>	<b>Fees Earned or Paid in Cash</b>	<b>Stock Awards \$ (2)</b>	<b>Option Awards \$ (2)</b>	<b>Non-Equity Incentive Plan Compensation \$</b>	<b>Non-Qualified Deferred Compensation Earnings \$</b>	<b>All Other Compensation \$</b>	<b>Total \$</b>
Punit Dhillon	65,005	-	-	-	-	-	65,005
Jim Heppell	60,000	-	-	-	-	-	60,000
Avtar Dhillon	117,890	-	-	-	-	-	117,890

- (1) Does not include compensation received for services provided as executive officers.
- (2) Each non-employee director is entitled to an annual grant of 100,000 common stock options that vest in twelve equal monthly installments. However, no option grants were approved by the Board for Directors in 2019. Amounts reflect the full grant date fair value of restricted stock awards and stock options, computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by the named individual. We provide information regarding the assumptions used to calculate the value of restricted stock awards and options granted to our directors in Note 2 and 6 to our Consolidated Financial Statements included elsewhere in this prospectus.

*Deferred Compensation*

Effective March 30, 2020, the Directors of the Company entered into agreements to defer payment of 100% of their Board of Director and committee fees indefinitely. The accrued fees, plus a 10% bonus of such accrued fees will be payable to the members of the Board within 30 days of the Board of Directors determining that the Company has been sufficiently financed to make such payments.

## Securities Authorized for Issuance under Equity Compensation Plans

The table below includes the following information as of December 31, 2019 for the Emerald Bioscience, Inc. 2014 Omnibus Incentive Plan. Shares available for issuance under the 2014 Omnibus Incentive Plan can be granted pursuant to stock options, stock appreciation rights, restricted stock, restricted stock unit awards, performance awards and other stock-based or cash-based awards, as selected by the plan administrator. For additional information about the 2014 Omnibus Incentive Plan, refer to Note 6 to our Consolidated Financial Statements included elsewhere in this prospectus.

Equity Compensation Plan Information			
Plan category	Number of shares of common stock to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of shares of common stock remaining available for future issuance under equity compensation plans (excluding shares of common stock reflected in column (a)) (c)
Equity compensation plans approved by security holders	3,317,642	\$ 0.33	13,128,381
Equity compensation plans not approved by security holders (1)	1,195,073	0.25	--
<b>Total</b>	<b>4,512,715</b>	<b>\$ 0.31</b>	<b>13,128,381</b>

(1) Reflects 1,195,073 shares of common stock issuable upon exercise of stock options granted to Mr. Cesario with an exercise price equal to \$0.245 pursuant to a Stock Option Agreement.

## Security Ownership of Certain Beneficial Owners and Management

The following table sets forth certain information with respect to beneficial ownership of our common stock, by:

- Each person known to be the beneficial owner of 5% or more of our outstanding common stock;
- Each executive officer;
- Each director; and
- All of the executive officers and directors as a group.

Beneficial ownership has been determined in accordance with Rule 13d-3 under the Exchange Act. Under this rule, certain shares may be deemed to be beneficially owned by more than one person (if, for example, persons share the power to vote or the power to dispose of the shares). In addition, shares are deemed to be beneficially owned by a person if the person has the right to acquire shares (for example, upon exercise of an option or warrant) within 60 days of the date as of which the information is provided. In computing the percentage ownership of any person, the amount of shares is deemed to include the amount of shares beneficially owned by such person by reason of such acquisition rights. As a result, the percentage of outstanding shares of any person as shown in the following table does not necessarily reflect the person's actual voting power at any particular date.

The information set forth in the table below is based on 183,207,747 shares of our common stock issued and outstanding on July 8, 2020.



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To our knowledge, except as indicated in the footnotes to this table and pursuant to applicable community property laws, the persons named in the table have sole voting and investment power with respect to all shares of common stock shown as beneficially owned by them. Unless otherwise indicated, the address of each beneficial owner listed below is 130 North Marina Drive, Long Beach, CA 90803.

<b>Name and Address of Beneficial Owner</b>	<b>Amount and Nature of Beneficial Ownership</b>	<b>Percent of Class</b>
Emerald Health Sciences Inc. (1)	126,587,114(2)	64.6%
Dr. Brian S. Murphy	1,930,000(3)	1.0%
Elena Traistaru	-	-
Dr. Dennis Kim	301,312(4)	*%
Punit Dhillon	200,000(5)	*%
Jim Heppell	200,000(6)	*%
All executive officers and directors as a group (5 persons)	2,631,312	1.4%

\* Denotes less than 1% of our outstanding shares of common stock.

(1) The address of this entity is Office 8262, The Landing, 200 – 375 Water St., Vancouver, British Columbia, Canada V6B 0M9.

(2) Includes (i) 113,953,917 shares of common stock, (ii) 7,500,000 shares issuable on exercise of warrants and (iii) 5,133,197 shares issuable upon the conversion of outstanding principal and accrued interest associated with the Credit Agreement.

(3) Includes (i) 655,000 shares of common stock underlying options that may be exercised within 60 days of July 8, 2020 and (ii) 1,275,000 shares of fully vested restricted stock.

(4) Includes 301,312 shares of common stock underlying options that may be exercised within 60 days of July 8, 2020.

(5) Includes 200,000 shares of common stock underlying options that may be exercised within 60 days of July 8, 2020.

(6) Includes 200,000 shares of common stock underlying options that may be exercised within 60 days of July 8, 2020.

**Changes in Control**

Our management is not aware of any arrangements which may result in “changes in control” as that term is defined by the provisions of Item 403(c) of Regulation S-K.

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**CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE**

**Transactions with Related Persons**

Except as specified below, there have been no other transactions with related persons in the last two fiscal years, or any currently proposed transaction, in which we were or are to be a participant and the amount involved exceeds the lesser of \$120,000 or 1% of the average of the Company's total assets as of December 31, 2019 and 2018, and in which any related person had or will have a direct or indirect material interest.

*K2C*

In June 2014, our subsidiary entered into an independent contractor agreement with K2C, which is wholly owned by Mr. Lykos, who served as the Chairman of our Board until January 16, 2018, pursuant to which the Company paid K2C a monthly fee for services performed by Mr. Lykos for the Company. The agreement expired on June 1, 2017 and was automatically renewed for one year pursuant to the terms of the agreement. The monthly fee under the agreement was \$10,000 and increased to \$20,000 effective April 1, 2017. In 2018, we paid K2C \$220,000. Under the agreement, Mr. Lykos was also eligible to participate in our health, death and disability insurance plans. The independent contractor agreement with K2C was terminated as of February 28, 2018.

In January 19, 2018, we entered into a Restricted Stock Agreement with K2C granting 900,000 Restricted Stock to K2C.

In February 28, 2018, we entered into a separation and release agreement with K2C, which provided for a lump sum payment of \$180,000 and the immediate vesting of 900,000 shares of restricted common stock granted pursuant to the Restricted Stock Agreement, 325,000 shares of restricted common stock granted on October 20, 2015, 125,000 options granted on November 21, 2014, in exchange for a release of claims and certain other agreements. In addition, K2C also holds 1,110,000 shares of fully vested common stock pursuant to the common stock purchase warrant agreement dated June 20, 2013.

*Elizabeth Berecz*

In April 2018, we entered into a Separation Agreement and Release with Elizabeth Berecz, our former Chief Financial Officer. Pursuant to the agreement, we agreed to provide Ms. Berecz compensation and benefits as follows: (i) through May 25, 2018, Ms. Berecz's separation date, an annualized base salary at the rate in effect as of the date of the separation agreement; (ii) a lump sum gross payment of \$145,833, in consideration for the restrictive covenants contained in the separation agreement; and (iii) reimbursement for payments made by Ms. Berecz for COBRA coverage for a period of six (6) months following her separation date. In addition, the terms of the separation agreement provided for the immediate vesting of 700,000 shares of restricted common stock granted pursuant to Ms. Berecz's Restricted Stock Agreement, 350,000 shares of restricted common stock granted on October 20, 2015, and 250,000 options granted in October 2014 and November 2014.

*Emerald Health Sciences*

On December 28, 2017, we entered into a Secured Promissory Note and Security Agreement for a convertible loan (the "Convertible Promissory Note") with Emerald Health Sciences. The Convertible Promissory Note provided for aggregate gross proceeds to the Company of up to \$900,000 and was secured by all of the Company's assets.

On January 19, 2018, \$900,000 funded under the Convertible Promissory Note converted into 9,000,000 shares of our common stock and the Convertible Promissory Note was terminated. Simultaneously, we entered into a Securities Purchase Agreement (the "Emerald Health Sciences Financing") in which we sold to Emerald Health Sciences 15,000,000 shares of common stock and a warrant to purchase 20,400,000 shares of common stock at an exercise price of \$0.10 for aggregate gross proceeds of \$1,500,000. The second closing under the Emerald Health Sciences Financing occurred on February 16, 2018, pursuant to which we issued and sold to Emerald Health Sciences 15,000,000 shares of our Common Stock, and a warrant to purchase 20,400,000 shares of Common Stock at an exercise price of \$0.10 per share for a term of five years, for aggregate gross proceeds of \$1,500,000.

On February 1, 2018, we entered into an Independent Contractor Agreement (the "Independent Contractor Agreement") with Emerald Health Sciences, pursuant to which Emerald Health Sciences agreed to provide such services as are mutually agreed between the Company and Emerald Health Sciences, including reimbursements for reasonable expenses incurred in the performance of the Independent Contractor Agreement. These services may include, but are not limited to, corporate advisory services and technical expertise in the areas of business development, marketing, investor relations, information technology and product development. The Independent Contractor Agreement has an initial term of ten years and specifies compensation which is agreed upon between the Company's chief executive officer and Emerald Health Sciences' Chairman, CEO and President on a month-to-month basis. The fee due under this agreement is payable on a monthly basis; however, if the Company is unable to make payments due to insufficient funds, then interest on the outstanding balance will accrue at a rate of 12% per annum, calculated semi-annually. Under this agreement, the Company incurred expenses of \$550,000 during the fiscal year ended December 31, 2018. As of December 19, 2019, all such expenses have been paid and the Independent Contractor Agreement was terminated effective December 31, 2019.

On February 6, 2018, the Company entered into a Consulting Agreement with Dr. Avtar Dhillon, the Chairman, Chief Executive Officer and President of Emerald Health Sciences. The services under the Consulting Agreement included, corporate finance and strategic business advisory. The Consulting Agreement had an initial term of one year and was renewable automatically unless terminated by either party. The agreement specified an annual fee of \$60,000 payable semi-monthly in installments and included reimbursement for reasonable expenses incurred in the performance of the services. The contractor was also entitled to a discretionary annual bonus, payable 120 days after each fiscal year end, to be determined by the Board upon its annual review. Under this agreement, we incurred expenses in the amount of \$45,000 during the fiscal year ended December 31, 2018. This Consulting Agreement was canceled on October 5, 2018 in connection with the Company's entry into the Credit Agreement with Emerald Health Sciences and Dr. Dhillon's appointment as the Executive Chairman of the Company's Board.

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On October 5, 2018, the Company entered into the Credit Agreement with Emerald Health Sciences. The Credit Agreement provides for a credit facility to the Company of up to \$20,000,000 and is unsecured. Advances under the Credit Agreement bear interest at an annual rate of 7% (payable quarterly in arrears) and mature on October 5, 2022. At Emerald Health Sciences' election, advances and unpaid interest may be converted into Common Stock at a fixed conversion price of \$0.30, subject to customary adjustments for stock splits, stock dividends, recapitalizations, etc. In connection with each advance under the Credit Agreement, the Company has agreed to issue Emerald Health Sciences warrants to purchase shares of common stock in an amount equal to 50% of the number of shares of common stock that each advance may be converted into. The warrants have an exercise price of \$0.50 per share, a term of five years and will be immediately exercisable upon issuance. The exercise price is subject to adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events or upon any distributions of assets, including cash, stock or other property to the Company's shareholders. On November 1, 2018, the Company effected an initial draw under the Credit Agreement in the amount of \$2,000,000 and issued Emerald Health Sciences a warrant to purchase 2,500,000 shares of common stock at an exercise price of \$0.50 per share, in accordance with the terms of the Credit Agreement. On February 1, 2019, the Company effected the second draw under the Credit Agreement in the amount of \$2,000,000 and issued Emerald Health Sciences a warrant to purchase 2,500,000 shares of common stock at an exercise price of \$0.50 per share, in accordance with the terms of the Credit Agreement. On March 29, 2019, the Company effected the third draw under the Credit Agreement in the amount of \$2,000,000 and issued Emerald Health Sciences a warrant to purchase 2,500,000 shares of common stock at an exercise price of \$0.50 per share, in accordance with the terms of the Credit Agreement. On December 20, 2019, the Company entered into a Warrant Exchange Agreement, pursuant to which Emerald Health Sciences has exercised 40.80 million of such warrants and paid the aggregate exercise price of approximately \$4.08 million for the related warrant shares in the form of a reduction of the corresponding amount of obligations outstanding under the Credit Agreement. Upon consummation of the transaction under the Warrant Exchange Agreement, the total outstanding principal amount excluding discounts under the Credit Agreement was \$2,014,500. We have the ability to continue borrowing under this Credit Agreement, however there is no guarantee of continued funding. A portion of the proceeds raised in this offering may be used to pay, in whole or in part, the principal and accrued interest on our Credit Agreement. See "Use of Proceeds." The net proceeds of each advance shall be used for general corporate purposes and are subject to approval by the Company's Board, which is controlled by the directors and principal executive officer of Emerald Health Sciences.

On December 19, 2019, the Company entered into an Independent Contractor Services Agreement with Dr. Avtar Dhillon, pursuant to which Dr. Dhillon will provide ongoing corporate finance and strategic business advisory services to the Company. In exchange for his services, Dr. Dhillon will receive a monthly fee of \$10,000, with (i) \$5,000 paid each month and (ii) \$5,000 accruing from the effective date and payable upon Company's completion of a material financing. The Board will review the monthly rate paid to Dr. Dhillon within 90 days of the end of each fiscal year. The Independent Contractor Services Agreement has an initial term of one year and will renew automatically thereafter unless terminated earlier by either party. The Independent Contractor Services Agreement may be terminated by either party for cause upon written notice to the other party if the other party defaults in the performance of the agreement in any material respect or materially breaches the terms of the agreement, or without cause upon 30 days' prior written notice to the other party.

On December 19, 2019, the Company entered into a Board Observer Agreement with Emerald Health Sciences. The Board Observer Agreement gives a right to Emerald Health Sciences to designate one observer to the Board of Directors of the Company for so long as Emerald Health Sciences maintains ownership of any securities in the Company. Under the Board Observer Agreement, the board observer will be permitted to attend all meetings (whether in person, telephonically or otherwise) of the Board in a non-voting, observer capacity. Emerald Health Sciences appointed Dr. Avtar Dhillon as an initial board observer. The Board Observer Agreement may be terminated by either party for cause upon written notice to the other party if the other party defaults in the performance of the agreement in any material respect or materially breaches the terms of the agreement, or without cause upon 30 days' prior written notice to the other party.

### *Douglas Cesario*

In April 2020, the Company entered into a separation and release agreement with Douglas Cesario, our former Chief Financial Officer. Mr. Cesario's separation was effective May 15, 2020. Pursuant to the agreement, Mr. Cesario agreed to certain ongoing cooperation obligations and to provide certain releases and waivers as contained in the agreement. As consideration under the agreement, the Company agreed to provide Mr. Cesario compensation and benefits as follows: (i) through May 15, 2020, an annualized base salary at the rate in effect for him as of the date of the agreement; (ii) a gross payment of \$125,000 in consideration for the restrictive covenants contained in the agreement; and (iii) a continuation of health insurance benefits for a period of six months following May 15, 2020. In addition, 325,929 unvested stock options granted to Mr. Cesario were cancelled on May 15, 2020.

### **Review, Approval and Ratification of Related Party Transactions**

Given our small size and limited financial resources, we have not adopted formal policies and procedures for the review, approval or ratification of transactions, such as those described above, with our executive officers, directors and significant stockholders. However, all of the transactions described above were approved and ratified by our Board. In connection with the approval of the transactions described above, our Board took into account several factors, including their fiduciary duties to the Company, the relationships of the related parties described above to the Company, the material facts underlying each transaction, the anticipated benefits to the Company and related costs associated with such benefits, whether comparable products or services were available, and the terms the Company could receive from an unrelated third party.

We intend to establish formal policies and procedures in the future, once we have sufficient resources and have appointed additional directors, so that such transactions will be subject to the review, approval or ratification of our Board, or an appropriate committee thereof. On a moving forward basis, our Board will continue to approve any related party transaction based on the criteria set forth above.

### **Conflicts Related to Other Business Activities**

The persons serving as our officers and directors have existing responsibilities and, in the future, may have additional responsibilities, to provide management and services to other entities in addition to us. As a result, conflicts of interest between us and the other activities of those persons may occur from time to time.

We will attempt to resolve any such conflicts of interest in our favor. Our officers and directors are accountable to us and our shareholders as fiduciaries, which requires that such officers and directors exercise good faith and integrity in handling our affairs. A shareholder may be able to institute legal action on our behalf or on behalf of that shareholder and all other similarly situated shareholders to recover damages or for other relief in cases of the resolution of conflicts in any manner prejudicial to us.

### **Director Independence**

We have determined that Punit Dhillon and Jim Heppell are independent members of our Board, as that term is defined in Rule 5605(a)(2) of the Nasdaq Listing Rules.





On October 31, 2014, our Board adopted an Insider Trading Policy applicable to all directors and officers. Insider trading generally refers to the buying or selling of a security in breach of a fiduciary duty or other relationship of trust and confidence while in possession of material, non-public information about the security. Insider trading violations may also include ‘tipping’ such information, securities trading by the person ‘tipped,’ and securities trading by those who misappropriate such information. The scope of insider trading violations can be wide reaching. As such, our Board has adopted an Insider Trading Policy that outlines the definitions of insider trading, the penalties and sanctions determined, and what constitutes material, non-public information. Illegal insider trading is against our policy as such trading can cause significant harm to the reputation for integrity and ethical conduct of our company. Individuals who fail to comply with the requirements of the policy are subject to disciplinary action, at our sole discretion, including dismissal for cause. All members of our Board and all executive officers are required to ratify the terms of this policy on an annual basis. Our Insider Trading Policy is available on our website at [www.emeraldbio.life](http://www.emeraldbio.life).

#### **EXPERTS**

Mayer Hoffman McCann P.C., our independent registered public accounting firm, has audited our consolidated balance sheets as of December 31, 2019 and 2018, and the related consolidated statements of comprehensive income (loss), stockholders’ equity (deficit) and cash flows for each of the two years in the period ended December 31, 2019, and the related notes, as set forth in their report, which report expresses an unqualified opinion and includes an explanatory paragraph relating to our ability to continue as a going concern. Such financial statements have been included in this prospectus and in this Registration Statement in reliance on the report of Mayer Hoffman McCann P.C. given on their authority as experts in accounting and auditing.

#### **LEGAL MATTERS**

The validity of our common stock offered hereby will be passed upon for us by Greenberg Traurig, LLP. The Placement Agent is being represented by Ellenoff Grossman & Schole LLP.

#### **INTERESTS OF NAMED EXPERTS AND COUNSEL**

No expert or counsel named in this prospectus as having prepared or certified any part of this prospectus or having given an opinion upon the validity of the securities being registered or upon other legal matters in connection with the registration or offering of the common stock was employed for such purpose on a contingency basis, or had, or is to receive, in connection with this offering, a substantial interest, direct or indirect, in us or any of our parents or subsidiaries, nor was any such person connected with us or any of our parents or subsidiaries as a promoter, managing or principal underwriter, voting trustee, director, officer, or employee.

#### **WHERE YOU CAN FIND ADDITIONAL INFORMATION**

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Such filings are available to the public over the internet at the SEC’s website at <http://www.sec.gov>.

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the securities offered under this prospectus. This prospectus, which forms a part of that registration statement, does not contain all information included in the registration statement. Certain information is omitted and you should refer to the registration statement and its exhibits.

You may review a copy of the registration statement at the SEC’s public reference room at 100 F Street, N.E. Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling the SEC at 1-800-SEC-0330. You may also read and copy any materials we file with the SEC at the SEC’s public reference room. Our filings and the registration statement can also be reviewed by accessing the SEC’s website at <http://www.sec.gov>.

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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and  
Stockholders of Emerald Bioscience, Inc. and Subsidiaries:

**Opinion on the Financial Statements**

We have audited the accompanying consolidated balance sheets of Emerald Bioscience, Inc. and Subsidiaries ("Company") as of December 31, 2019 and 2018, and the related consolidated statements of comprehensive income (loss), stockholders' equity (deficit), and cash flows for each of the two years in the period ended December 31, 2019, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

**Going Concern Uncertainty**

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has incurred recurring operating losses and is dependent on additional financing to fund operations. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are described in Note 1 to the financial statements. The financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from the outcome of this uncertainty.

**Basis for Opinion**

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Mayer Hoffman McCann P.C.

We have served as the Company's auditor since 2014.

Irvine, California  
March 20, 2020



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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**

	<b>December 31,</b>	
	<b>2019</b>	<b>2018</b>
<b>ASSETS</b>		
<b>Current assets</b>		
Cash	\$ 1,829,977	\$ 1,853,373
Restricted cash	4,538	4,512
Prepaid expenses	152,695	93,193
Other current assets	7,550	2,609
Total current assets	<u>1,994,760</u>	<u>1,953,687</u>
Property and equipment, net	1,983	3,445
Total assets	<u>\$ 1,996,743</u>	<u>\$ 1,957,132</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)</b>		
<b>Current liabilities</b>		
Accounts payable	\$ 129,809	\$ 15,597
Accounts payable to related party	10,000	-
Other current liabilities	420,406	184,461
Derivative liabilities	410,603	15,738,913
Total current liabilities	<u>970,818</u>	<u>15,938,971</u>
<b>Noncurrent liabilities</b>		
Convertible multi-draw credit agreement - related party, net of discount	387,070	1,360,960
Derivative liabilities, non-current	90,797	219,453
Total liabilities	<u>1,448,685</u>	<u>17,519,384</u>
<b>Commitments and contingencies (Note 10)</b>		
<b>Stockholders' equity (deficit)</b>		
Preferred stock, \$0.001 par value; 20,000,000 shares authorized; no shares issued and outstanding at December 31, 2019 and December 31, 2018	-	-
Common stock, \$0.001 par value; 500,000,000 shares authorized; 182,895,247 and 133,907,747 shares issued and outstanding at December 31, 2019 and December 31, 2018, respectively	182,895	133,908
Additional paid-in-capital	32,538,445	17,528,947
Accumulated deficit	(32,173,282)	(33,225,107)
Total stockholders' equity (deficit)	<u>548,058</u>	<u>(15,562,252)</u>
Total liabilities and stockholders' equity (deficit)	<u>\$ 1,996,743</u>	<u>\$ 1,957,132</u>

See accompanying notes to the consolidated financial statements.

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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)**

	<b>Year Ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
<b>Operating expenses</b>		
Research and development	\$ 2,237,956	\$ 329,966
General and administrative	4,394,622	4,362,557
Total operating expenses	6,632,578	4,692,523
<b>Operating loss</b>	(6,632,578)	(4,692,523)
<b>Other expense (income)</b>		
Change in fair value of derivative liabilities	(9,734,759)	6,503,174
Fair value of derivative liabilities in excess of proceeds	322,644	7,174,634
Financing transaction costs	-	137,192
Loss on extinguishment of debt - related party	725,425	590,392
Interest expense	1,000,713	94,763
Interest income	(26)	(84)
Total other expense (income), net	(7,686,003)	14,500,071
<b>Income (loss) before income taxes</b>	1,053,425	(19,192,594)
Provision for income taxes	1,600	1,642
<b>Net income (loss) and comprehensive income (loss)</b>	\$ 1,051,825	\$ (19,194,236)
<b>Earnings (loss) per common share:</b>		
Basic	\$ 0.01	\$ (0.16)
Diluted	\$ (0.05)	\$ (0.16)
<b>Weighted average shares of common stock outstanding used to compute earnings (loss) per share:</b>		
Basic	135,154,931	121,154,334
Diluted	169,560,265	121,154,334

See accompanying notes to the consolidated financial statements.

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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

	<b>Year Ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
<b>Cash flows from operating activities:</b>		
Net income (loss)	\$ 1,051,825	\$ (19,194,236)
Adjustments to reconcile net income (loss) to net cash used in operating activities:		
Depreciation	1,462	1,544
Loss on disposal of assets	-	803
Stock-based compensation expense	680,455	674,961
Change in fair value of derivative liabilities	(9,734,759)	6,503,174
Fair value of derivative liabilities in excess of proceeds	322,644	7,174,634
Financing transaction costs	-	137,192
Loss on extinguishment of debt - related party	725,425	590,392
Loss on common stock issuance from conversion of accrued interest	-	9,794
Amortization of debt discount	629,293	58,536
Changes in assets and liabilities:		
Prepaid expenses	(59,502)	198,235
Other current assets	(4,941)	(2,609)
Accounts payable	124,212	(85,324)
Accounts payable to related party	10,000	-
Other current liabilities	225,945	(10,110)
Net cash used in operating activities	(6,027,941)	(3,943,014)
<b>Cash flows from investing activities:</b>		
Purchases of property and equipment	-	(4,385)
Net cash used in investing activities	-	(4,385)
<b>Cash flows from financing activities:</b>		
Proceeds from the issuance of Common stock and warrants, net of \$80,628 and \$154,092 of issuance costs in 2019 and 2018, respectively	1,919,372	3,095,908
Proceeds from warrant exercises	4,080,000	98,700
Proceeds from secured convertible promissory note - related party	-	400,000
Proceeds from convertible multi-draw credit agreement - related party, net of issuance costs	3,990,699	1,946,293
Prepayment of convertible multi-draw credit agreement - related party	(3,985,500)	-
Net cash provided by financing activities	6,004,571	5,540,901
<b>Net (decrease) increase in cash and restricted cash</b>	(23,370)	1,593,502
<b>Cash and restricted cash, beginning of year</b>	\$ 1,857,885	\$ 264,383
<b>Cash and restricted cash, end of year</b>	<u>\$ 1,834,515</u>	<u>\$ 1,857,885</u>
<i>Supplemental disclosures of cash-flow information:</i>		
Reconciliation of cash and restricted cash:		
Cash	\$ 1,829,977	\$ 1,853,373
Restricted cash	4,538	4,512
Total cash and restricted cash shown in the consolidated statements of cash flows	<u>\$ 1,834,515</u>	<u>\$ 1,857,885</u>
Cash paid during the year for:		
Interest	\$ 371,420	\$ 23,334
Income taxes	1,600	1,642
<i>Supplemental disclosures of non-cash financing activities:</i>		
Beneficial conversion feature on convertible multi-draw credit agreement	\$ 1,584,850	\$ 90,080
Proceeds allocated to equity classified warrants issued with convertible multi-draw credit agreement	716,110	315,080

Fair value of compound derivative liability bifurcated from convertible multi-draw credit agreement	193,414	204,102
Reclassification of warrant liabilities to equity from exercise of warrants	6,077,698	1,539,866
Fair value of warrants issued in connection with financings	-	10,424,634
Conversion of outstanding preferred stock into common stock	-	1,947,228
Fair value of common stock issued in extinguishment of convertible debt and accrued interest	-	1,713,766
Conversion of outstanding preferred stock subject to redemption into common stock	-	828,915

See accompanying notes to the consolidated financial statements.

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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)**

<b>Convertible Series F Preferred Stock</b>		<b>Convertible Series D Preferred Stock</b>		<b>Redeemable Convertible Series B Preferred Stock</b>		<b>Stockholders' Equity (Deficit)</b>			
						<b>Common Stock</b>		<b>Additional Paid-In Capital</b>	<b>Accumulated Deficit</b>
<b>Shares</b>	<b>Amounts</b>	<b>Shares</b>	<b>Amounts</b>	<b>Shares</b>	<b>Amounts</b>	<b>Shares</b>	<b>Amounts</b>		<b>Total Stockholders' Equity (Deficit)</b>

<b>Balance, December 31, 2017</b>	<b><u>2,000</u></b>	<b><u>\$ 1,777,781</u></b>	<b><u>200</u></b>	<b><u>\$ 169,447</u></b>	<b><u>2,834</u></b>	<b><u>\$ 822,201</u></b>	<b><u>33,622,829</u></b>	<b><u>\$ 33,623</u></b>	<b><u>\$ 10,427,742</u></b>	<b><u>\$ (14,030,871 )</u></b>	<b><u>\$ (3,569,506 )</u></b>
Stock-based compensation expense	-	-	-	-	-	-	-	-	674,961	-	674,961
Common stock issued for services	-	-	-	-	-	-	3,143,501	3,143	(3,143 )	-	-
Issuance of common stock net of issuance costs of \$16,900	-	-	-	-	-	-	32,500,000	32,500	(49,400 )	-	(16,900 )
Conversion of Series B Preferred Stock and conversion liability into common stock at \$0.10 and \$0.001 per share	-	-	-	-	(2,834)	(822,201 )	28,385,000	28,385	800,530	-	828,915
Conversion of Series D Preferred Stock to common stock at \$0.10 per share	-	-	(200)	(169,447 )	-	-	2,000,000	2,000	167,447	-	169,447
Conversion of Series F Preferred Stock to common stock at \$0.10 per share	(2,000)	(1,777,781 )	-	-	-	-	20,000,000	20,000	1,757,781	-	1,777,781
Conversion of secured convertible promissory note - related party and accrued interest	-	-	-	-	-	-	9,037,667	9,038	1,714,522	-	1,723,560
Series B warrant exercises	-	-	-	-	-	-	5,218,750	5,219	1,633,347	-	1,638,566
Warrants issued in connection with convertible multi-draw credit agreement, related party	-	-	-	-	-	-	-	-	315,080	-	315,080
Beneficial conversion feature in connection with convertible multi-draw credit agreement - related party	-	-	-	-	-	-	-	-	90,080	-	90,080
Net loss for the year ended December 31, 2018	-	-	-	-	-	-	-	-	-	(19,194,236 )	(19,194,236 )
<b>Balance, December 31, 2018</b>	<b><u>-</u></b>	<b><u>\$ -</u></b>	<b><u>-</u></b>	<b><u>\$ -</u></b>	<b><u>-</u></b>	<b><u>\$ -</u></b>	<b><u>133,907,747</u></b>	<b><u>\$ 133,908</u></b>	<b><u>\$ 17,528,947</u></b>	<b><u>\$ (33,225,107 )</u></b>	<b><u>\$ (15,562,252 )</u></b>

Stock-based compensation expense	-	-	-	-	-	-	-	-	680,455	-	680,455
Issuance of common stock and warrants, net of issuance costs of \$80,628	-	-	-	-	-	-	8,000,000	8,000	1,911,372	-	1,919,372
Warrants issued in connection with convertible multi-draw credit agreement, related party	-	-	-	-	-	-	-	-	716,110	-	716,110
Beneficial conversion feature in connection with convertible multi-draw credit agreement - related party	-	-	-	-	-	-	-	-	1,584,850	-	1,584,850
Series B warrant exercises	-	-	-	-	-	-	187,500	187	144,188	-	144,375
Exercise of Emerald financing warrants	-	-	-	-	-	-	40,800,000	40,800	9,972,523	-	10,013,323
Net income for the year ended December 31, 2019	-	-	-	-	-	-	-	-	-	1,051,825	1,051,825
<b>Balance, December 31, 2019</b>	<u>-</u>	<u>\$ -</u>	<u>-</u>	<u>\$ -</u>	<u>-</u>	<u>\$ -</u>	<u>182,895,247</u>	<u>\$ 182,895</u>	<u>\$ 32,538,445</u>	<u>\$ (32,173,282)</u>	<u>\$ 548,058</u>

See accompanying notes to the consolidated financial statements.

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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**

**1. Nature of Operations and Business Activities**

*Nature of Operations*

Emerald Bioscience, Inc. (the “Company”) was initially incorporated in Nevada on March 16, 2011 as Load Guard Logistics, Inc. On October 31, 2014, the Company closed a reverse merger transaction (the “Merger”) pursuant to which Nemus, a California corporation (“Nemus Sub”), became the Company’s wholly-owned subsidiary, and the Company assumed the operations of Nemus Sub. Nemus Sub was incorporated in the State of California on July 17, 2012. On November 3, 2014, the Company changed its name to Nemus Bioscience, Inc. by merging with Nemus Sub.

In January 2018, the Company entered into a securities purchase agreement with Emerald Health Sciences, Inc. (“Emerald Health Sciences”) discussed in Note 5, pursuant to which Emerald Health Sciences purchased a majority of the equity interest in the Company, resulting in a change in control. As part of the transaction, the Company’s Board members, with the exception of Dr. Brian Murphy, the Company’s CEO/CMO, tendered their resignation and Emerald Health Sciences appointed two new nominees to the Board. Later, in October 2018, the Board appointed Dr. Avtar Dhillon, the Chairman, Chief Executive Officer and President of Emerald Health Sciences, as the Executive Chairman of the Company’s Board.

On February 11, 2019, the Company’s Board of Directors (the “Board”) and majority stockholder unanimously approved an amendment to the Company’s articles of incorporation to change the name of the Company to Emerald Bioscience, Inc. Effective March 25, 2019, the Company filed a Certificate of Amendment with the Nevada Secretary of State changing the Company’s name to Emerald Bioscience, Inc.

In August 2019, the Company formed a new subsidiary in Australia, EMBI Australia Pty Ltd., an Australian proprietary limited company (“EMBI Australia”), in order to qualify for the Australian government’s research and development tax credit for research and development dollars spent in Australia. The primary purpose of EMBI Australia is to conduct clinical trials for the Company’s product candidates.

On December 17, 2019, Dr. Avtar Dhillon resigned as the Chairman of the Company’s Board and the Company entered into a Board Observer Agreement with Emerald Health Sciences. Refer to Note 11 - Related Party Matters for additional information.

The Company is a biopharmaceutical company located in Long Beach, California that plans to research, develop and commercialize therapeutics derived from cannabinoids through several license agreements with the University of Mississippi (“UM”). UM is the only entity federally permitted and licensed to cultivate cannabis for research purposes in the United States.

As of December 31, 2019, the Company has devoted substantially all its efforts to securing product licenses, carrying out research and development, building infrastructure and raising capital. The Company has not yet realized revenue from its planned principal operations and is a number of years from potentially being able to do so.

*Liquidity and Going Concern*

The Company has incurred operating losses and negative cash flows from operations since inception and as of December 31, 2019, had an accumulated deficit of \$32,173,282. The Company anticipates that it will continue to incur operating losses into the foreseeable future in order to advance and develop a number of potential drug candidates into preclinical and clinical development activities and support its corporate infrastructure which includes the costs associated with being a public company. As of December 31, 2019 and filing date of our 2019 Annual Report on Form 10K, the Company had cash in the amount of \$1,829,977 and approximately \$667,000, respectively.

During the year ended December 31, 2019, the Company received net cash proceeds of \$3,990,699 from the Credit Agreement (defined below) with Emerald Health Sciences and raised \$1,919,372 in net proceeds pursuant to the sale of common stock and warrants under a registered direct offering. However, the Company’s cash flows from its financing efforts have been offset by cash used in operating activities of \$6,027,941 for the year ended December 31, 2019. As the Company approaches its first clinical trial, it expects to ramp up research and development spending and projects to increase cash used in operating activities. However, based on the Company’s current cash position and expected cash requirements, without obtaining additional



funding in the second quarter of 2020, management believes that the Company will not have enough funds to meet its obligations. These conditions give rise to substantial doubt as to the Company's ability to continue as a going concern. The accompanying Consolidated Financial Statements do not include any adjustments that might result from the outcome of this uncertainty.

The Company's continued existence is dependent on its ability to raise sufficient additional funding to cover operating expenses and to invest in research and development activities. On October 5, 2018, the Company entered into a Multi-Draw Credit Agreement (the "Credit Agreement") with Emerald Health Sciences (See Note 4). As of December 31, 2019, under the Credit Agreement, the Company may draw down up to the remaining amount under the Credit Agreement of \$14,000,000 from time to time in principal amounts of at least \$250,000. The drawdowns are subject to approval by the Company's Board, which is controlled by the directors of Emerald Health Sciences. We do not consider the facility available until advance requests are approved, drawn down and funded. The Credit Agreement is still in place, however, there is no guarantee of continued funding.

The Company plans to continue to pursue funding through public or private equity or debt financings, licensing arrangements, asset sales, government grants or other arrangements. However, the Company cannot provide any assurances that such additional funds will be available on reasonable terms, or at all. If the Company raises additional funds by issuing equity securities, substantial dilution to existing stockholders would result.

Effective March 23, 2020, the Company approved a plan to defer 50% of senior management's compensation indefinitely. If the members of senior management accept the plan, the aggregate deferred compensation, together with a retention bonus of 10% of the amount being deferred will be payable to senior management when decided by the Board. This measure, in conjunction with management's plan to negotiate extended payment terms with its vendors and service providers, is intended to slow cash burn. The Company's Board plans on further assessing the financial condition of the Company to determine what additional measures, if any, will be implemented. If the Company is unable to secure adequate additional funding, the Company may be forced to reduce spending further, liquidate assets where possible, suspend or curtail planned programs or cease operations.

On March 11, 2020, the World Health Organization declared the outbreak of a respiratory disease caused by a new COVID-19 as a "pandemic". Notably, the Company relies on third-party manufacturers to produce its product candidates. The manufacturing of the active pharmaceutical ingredient of NB1111 is conducted in the United States. Formulation of the eye drop for testing is also performed in the United States but can rely on regulatory-accepted excipients that can be sourced from countries outside the United States, such as China. In lieu of the recent pandemic of a COVID-19, there could possibly be an impact on sourcing materials that are part of the eye drop formulation, as well as impacting volunteer and/or patient recruitment in Australia for clinical studies. Therefore, the Company anticipates shifting its first-in-human studies of the lead drug candidate, NB1111, from the second half of 2020, to the 2021 timeframe. Additionally, COVID-19 has caused significant disruptions to the global financial markets which could impact the Company's ability to raise additional capital.

After considering the plans to alleviate substantial doubt, management has concluded that there is substantial doubt about the Company's ability to continue as a going concern within one year after the date that the financial statements are issued.

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## **2. Summary of Significant Accounting Policies**

### ***Basis of Presentation***

The preparation of financial statements in conformity with U.S. Generally Accepted Accounting Principles (“GAAP”) requires management to make estimates and assumptions that affect the amounts reported in the Consolidated Financial Statements and the accompanying notes. Actual results could differ from those estimates. Certain reclassifications have been made to prior year amounts to conform to the current year’s presentation. Such reclassifications had no net effect on the prior year’s total assets, total liabilities, total stockholders’ deficit, net loss, and cash flows.

### ***Use of Estimates***

The preparation of the Consolidated Financial Statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the Consolidated Financial Statements and the reported amounts of income and expense during the reporting period. Actual results could differ from those estimates. The most significant accounting estimates inherent in the preparation of the Company’s financial statements include estimates as to the appropriate carrying value of certain assets and liabilities, which are not readily apparent from other sources. Such estimates and judgments are utilized for stock-based compensation expense, equity securities, derivative liabilities, and debt with embedded features.

### ***Risks and Uncertainties***

The Company’s operations are subject to a number of risks and uncertainties, including but not limited to, changes in the general economy, the size and growth of the potential markets for any of the Company’s product candidates, results of research and development activities, uncertainties surrounding regulatory developments in the United States and Australia, and the Company’s ability to attract new funding.

### ***Cash and Cash Equivalents***

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. The carrying values of those investments approximate their fair value due to their short maturity and liquidity. Cash includes cash on hand and amounts on deposit with financial institutions, which amounts may at times exceed federally insured limits. The Company has not experienced any losses on such accounts and does not believe it is exposed to any significant credit risk. As of December 31, 2019, the Company has no cash equivalents.

### ***Restricted Cash***

A deposit of \$4,538 and \$4,512 as of December 31, 2019 and 2018, respectively, was restricted from withdrawal and held by a bank in the form of a certificate of deposit. This certificate serves as collateral for payment of the Company's credit cards.

### ***Fair Value Measurements***

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (the "exit price") in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. A fair value hierarchy based on three levels of inputs, of which the first two are considered observable, and the last is considered unobservable, is used to measure fair value:

- Level 1: Valuations for assets and liabilities traded in active markets from readily available pricing sources such as quoted prices in active markets for identical assets or liabilities.
- Level 2: Observable inputs (other than Level 1 quoted prices) such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3: Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The carrying values of the Company's financial instruments, with the exception of the Credit Agreement and derivative liabilities, including, cash, prepaid expenses, accounts payable, and other current liabilities approximate their fair value due to the short maturities of these financial instruments. The derivative liabilities are valued on a recurring basis utilizing Level 3 inputs.

Advances under the Credit Agreement are not recorded at fair value. However, fair value can be approximated and disclosed utilizing Level 3 inputs and independent third-party valuation techniques (See Note 3). As of December 31, 2019 and 2018, the fair value of the advances under the Credit Agreement was \$1,877,938 and \$3,176,824, respectively. The carrying amount of the liability at December 31, 2019 and 2018, was \$387,070 and \$1,360,960, respectively, and is included in Convertible multi-draw credit agreement - related party, net of discount in the Company's Consolidated Balance Sheets.

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***Property and Equipment, Net***

Property and equipment, net, consist primarily of computers and equipment. Expenditures for additions, renewals and improvements are capitalized at cost. Depreciation is computed on a straight-line method based on the estimated useful life of the related asset currently ranging from two to three years. Maintenance and repairs that do not extend the life of assets are charged to expense when incurred. When properties are disposed of, the related costs and accumulated depreciation are removed from the accounts and any gain or loss is reported in the period the transaction takes place.

Property and equipment are reviewed for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted cash flows expected to be generated by the asset. If the carrying amount exceeds its estimated future undiscounted cash flows, an impairment charge is recognized by the amount by which the carrying amount exceeds the fair value of the asset.

***Income Taxes***

The Company accounts for deferred income tax assets and liabilities based on differences between the financial reporting and tax bases of assets and liabilities, net operating loss carryforwards (the “NOLs”) and other tax credit carryforwards. These items are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the period that includes the enactment date. Any interest or penalties would be recorded in the Company’s Consolidated Statements of Comprehensive Income (Loss) in the period incurred. When necessary, the Company recognizes interest and penalties related to income tax matters in income tax expense.

The Company records a valuation allowance against deferred tax assets to the extent that it is more likely than not that some portion or all of the deferred tax assets will not be realized. In making such determinations, management considers all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. Due to the substantial doubt related to the Company’s ability to utilize its deferred tax assets, a valuation allowance for the full amount of the deferred tax assets has been established at December 31, 2019 and 2018. As a result of this valuation allowance, there are no income tax benefits reflected in the accompanying Consolidated Statements of Comprehensive Income (Loss) to offset pre-tax losses.

The Company recognizes a tax benefit from uncertain tax positions when it is more likely than not (50%) that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits of the position.

### ***Convertible Instruments***

The Company accounts for hybrid contracts with embedded conversion features in accordance with GAAP. ASC 815, *Derivatives and Hedging Activities* ("ASC 815") requires companies to bifurcate conversion options from their host instruments and account for them as free-standing derivative financial instruments according to certain criteria. The criteria includes circumstances in which (a) the economic characteristics and risks of the embedded derivative instrument are not clearly and closely related to the economic characteristics and risks of the host contract, (b) the hybrid instrument that embodies both the embedded derivative instrument and the host contract is not re-measured at fair value under otherwise applicable generally accepted accounting principles with changes in fair value reported in earnings as they occur and (c) a separate instrument with the same terms as the embedded derivative instrument would be considered a derivative instrument.

The Company accounts for convertible debt instruments with embedded conversion features in accordance with ASC 470-20, *Debt with Conversion and Other Options* ("ASC 470-20") if it is determined that the conversion feature should not be bifurcated from their host instruments. Under ASC 470-20, the Company records, when necessary, discounts to convertible notes for the intrinsic value of conversion options embedded in debt instruments based upon the difference between the fair value of the underlying common stock at the commitment date and the embedded effective conversion price. When the Company determines that the embedded conversion option should be bifurcated from its host instrument, the embedded feature is accounted for in accordance with ASC 815. Under ASC 815, a portion of the proceeds received upon the issuance of the hybrid contract is allocated to the fair value of the derivative. The derivative is subsequently marked to market at each reporting date based on current fair value, with the changes in fair value reported in the results of operations.

The Company also follows ASC 480-10, *Distinguishing Liabilities from Equity* ("ASC 480-10") when evaluating the accounting for its hybrid instruments. A financial instrument that embodies an unconditional obligation, or a financial instrument other than an outstanding share that embodies a conditional obligation, that the issuer must or may settle by issuing a variable number of its equity shares shall be classified as a liability (or an asset in some circumstances) if, at inception, the monetary value of the obligation is based solely or predominantly on any one of the following: (a) a fixed monetary amount known at inception (for example, a payable settled with a variable number of the issuer's equity shares); (b) variations in something other than the fair value of the issuer's equity shares (for example, a financial instrument indexed to the Standard and Poor's S&P 500 Index and settled with a variable number of the issuer's equity shares); or (c) variations inversely related to changes in the fair value of the issuer's equity shares (for example, a written put option that could be net share settled). Hybrid instruments meeting these criteria are not further evaluated for any embedded derivatives and are carried as a liability at fair value at each balance sheet date with a re-measurement reported in other (income) expense in the accompanying Consolidated Statements of Comprehensive Income (Loss).

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When determining short-term vs. long-term classification of derivative liabilities, the Company first evaluates the instruments' exercise provisions. Generally, if a derivative is a liability and exercisable within one year, it will be classified as short-term. However, because of the unique provisions and circumstances that may impact the accounting for derivative instruments, the Company carefully evaluates all factors that could potentially restrict the instrument from being exercised or create a situation where exercise would be considered remote. The Company re-evaluates its derivative liabilities at each reporting period end and make updates for any changes in facts and circumstances that may impact classification.

### ***Warrants Issued in Connection with Financings***

The Company generally accounts for warrants issued in connection with debt and equity financings as a component of equity, unless the warrants include a conditional obligation to issue a variable number of shares or there is a deemed possibility that the Company may need to settle the warrants in cash. For warrants issued with a conditional obligation to issue a variable number of shares or the deemed possibility of a cash settlement, the Company records the fair value of the warrants as a liability at each balance sheet date and records changes in fair value in other (income) expense in the Consolidated Statements of Comprehensive Income (Loss).

### ***Debt Issuance Costs and Interest***

Discounts related to bifurcated derivatives, freestanding instruments issued in bundled transactions, and issuance costs are recorded as a reduction to the carrying value of the debt and amortized over the life of the debt using the effective interest method. The Company makes changes to the effective interest rate, as necessary, on a prospective basis. For debt facilities that provide for multiple advances, the Company initially defers any issuance costs until the first advance is made and then amortizes the costs over the life of the facility.

### ***Research and Development Expenses and Licensed Technology***

Research and development costs are expensed when incurred. These costs may consist of external research and development expenses incurred under agreements with third-party contract research organizations and investigative sites, third-party manufacturing organizations and consultants; license fees; employee-related expenses, which include salaries and benefits for the personnel involved in the Company's preclinical and clinical drug development activities; facilities expense, depreciation and other allocated expenses; and equipment and laboratory supplies.

Costs incurred for the rights to use licensed technologies in the research and development process, including licensing fees and milestone payments, are charged to research and development expense as incurred in situations where the Company has not identified an alternative future use for the acquired

rights, and are capitalized in situations where there is an identified alternative future use. No cost associated with the use of licensed technologies has been capitalized to date.

### ***Stock-Based Compensation Expense***

Stock-based compensation expense is estimated at the grant date based on the fair value of the award, and the cost is recognized as expense ratably over the vesting period with forfeitures accounted for as they occur. The Company uses the Black-Scholes Merton option pricing model for estimating the grant date fair value of stock options using the following assumptions:

- Volatility - Stock price volatility is estimated over the expected term based on a blended rate of industry peers and the Company's actual stock volatility adjusted for periods in which significant financial variability was identified.
- Expected term - The expected term is based on a simplified method which defines the life as the weighted average of the contractual term of the options and the vesting period for each award.
- Risk-free rate - The risk-free interest rate for the expected term of the option is based on the average market rate on U.S. Treasury securities in effect during the period in which the awards were granted.
- Dividends - The dividend yield assumption is based on the Company's history and expectation of paying no dividends in the foreseeable future.

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***Comprehensive Income (Loss)***

Comprehensive income (loss) is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources. ASC 220 *Comprehensive Income* requires that an entity records all components of comprehensive income (loss), net of their related tax effects, in its financial statements in the period in which they are recognized. For the years ended December 31, 2019 and 2018, the comprehensive income (loss) was equal to net income (loss).

***Net Income (Loss) Per Share of Common Stock***

The Company applies FASB ASC No. 260, *Earnings per Share* in calculating its basic and diluted net income (loss) per share. Basic net income (loss) per share of common stock is computed by dividing net income (loss) available to common stockholders by the weighted-average number of shares of common stock outstanding for the period. The diluted net loss per share of common stock is computed by giving effect to all potential common stock equivalents outstanding for the period determined using the treasury stock method. For purposes of this calculation, options to purchase common stock, restricted stock subject to vesting, warrants to purchase common stock and common shares underlying convertible debt instruments were considered to be common stock equivalents. In periods with a reported net loss, such common stock equivalents are excluded from the calculation of diluted net loss per share of common stock if their effect is anti-dilutive. For additional information regarding the net income (loss) per share, see Note 7 “Net Income (Loss) per Share of Common Stock.”



## **Recent Accounting Pronouncements**

In December 2019, the FASB issued ASU No. 2019-12 *Income Taxes (Topic 740) Simplifying the Accounting for Income Taxes*. The Board issued this Update as part of its Simplification Initiative to improve areas of GAAP and reduce cost and complexity while maintaining usefulness. The main provisions remove certain exceptions, including the exception to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. In addition, the amendments simplify income tax accounting in the areas such as income-based franchise taxes, eliminating the requirements to allocate consolidated current and deferred tax expense in certain instances and a requirement that an entity reflects the effect of enacted changes in tax laws or rates in the annual effective tax rate computation in the interim period that includes the enactment date. For public companies, the standard is effective for fiscal years beginning after December 15, 2019, and interim periods therein. The Company plans to adopt this ASU on the effective date of January 1, 2020. The amendments in the update related to foreign subsidiaries will be applied on a modified retrospective basis, the amendments to franchise taxes will be applied on either a retrospective or modified retrospective basis and all other amendments will be applied on a prospective basis. The Company is still evaluating the impact from adopting this standard. However, because the Company's deferred tax assets and liabilities are fully reserved, it does not expect a material impact from the adoption of this standard.

In November 2018, the FASB issued ASU No. 2018-08 *Collaborative Arrangements (Topic 808)* intended to improve financial reporting around collaborative arrangements and align the current guidance under ASC 808 with ASC 606 *Revenue from Contracts with Customers*. The ASU affects all companies that enter into collaborative arrangements. The ASU clarifies when certain transactions between collaborative arrangement participants should be accounted for as revenue under Topic 606 and changes certain presentation requirements for transactions with collaborative arrangement participants that are not directly related to sales to third parties. For public companies, the standard is effective for fiscal years beginning after December 15, 2019, and interim periods therein. Earlier adoption is permitted for any annual or interim period for which consolidated financial statements have not yet been issued. The Company has not entered into any collaborative arrangements and therefore does not currently expect the adoption of this standard to have a material effect on its Consolidated Financial Statements. The Company plans to adopt this ASU on the effective date of January 1, 2020. Upon adoption, the Company will utilize the retrospective transition approach, as prescribed within this ASU.

## **Recently Adopted Accounting Standards**

In July 2017, the FASB issued ASU 2017-11, *Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815): I. Accounting for Certain Financial Instruments with Down Round Features; II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception* ("ASU 2017-11"). Part I of this update addresses the complexity of accounting for certain financial instruments with down round features. Down round features are features of certain equity-linked instruments (or embedded features) that result in the strike price being reduced on the basis of the pricing of future equity offerings. Current accounting guidance creates cost and complexity for entities that issue financial instruments (such as warrants and convertible instruments) with down round features that require fair value measurement of the entire instrument or conversion option. Part II of this update addresses the difficulty of navigating *Topic 480, Distinguishing Liabilities from Equity*, because of the existence of extensive pending content in the FASB Accounting Standards Codification. This pending content is the result of the indefinite deferral of accounting requirements about mandatorily redeemable financial instruments of certain nonpublic entities and certain mandatorily redeemable non-controlling interests. The amendments in Part II of this update do not have an accounting effect. The Company adopted this ASU on the effective date of January 1, 2019. The adoption of this standard using a retrospective cumulative-effect adjustment approach had no impact on the Company's accumulated deficit. The outstanding warrants issued in the Emerald Financing contain a down-round provision. However, in the absence of the down-round provision, these warrants would still require liability accounting and be considered derivatives (See Note 3). As such, the adoption of ASU 2017-11 on January 1, 2019, did not have an impact on the Company's Consolidated Financial Statements and Notes thereto.

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In February 2016, the FASB issued ASU No. 2016-02 *Leases* (Topic 842). In January, July and December 2018, and in March 2019, the FASB issued additional amendments to the new lease guidance relating to transition and clarification. This ASU requires most lessees to recognize right-of-use assets and lease liabilities and recognize expenses in a manner similar to current accounting standards. For public companies, the standard is effective for fiscal years beginning after December 15, 2018 and interim periods therein. The Company adopted this ASU on the effective date of January 1, 2019. Pursuant to ASU 2018-11, issued in July 2018, the Company elected to use the effective date as of the date of application for transition. Upon adoption, there was no cumulative effect recorded to the accumulated deficit, as the Company has no lease terms in excess of one year. The Company has elected the short-term lease practical expedient under the ASU, which resulted in no change to the current recognition accounting under ASC 840.

### 3. Warrants and Derivative Liabilities

#### *Warrants*

There are significant judgments and estimates inherent in the determination of the fair value of the Company's warrants. These judgments and estimates include assumptions regarding the Company's future operating performance, the time to completing a liquidity event and the determination of the appropriate valuation methods. If the Company had made different assumptions, the fair value of the warrants could have been significantly different (See Note 2).

Warrants vested and outstanding as of December 31, 2019 are summarized as follows:

Source	Exercise Price	Term (Years)	Number of Warrants Vested and Outstanding
Pre 2015 Common Stock Warrants	\$ 1.00	6-10	4,000,000
2015 Common Stock Warrants	\$ 1.15-5.00	5-10	442,000
Common Stock Warrants to Series B Stockholders	\$ 0.00	5	1,031,250
2016 Common Stock Warrants to Service Providers	\$ 1.15	10	40,000
2016 Series C Common Stock Warrants to Placement Agent	\$ 0.40	5	125,000
2017 Series D Common Stock Warrants to Placement Agent	\$ 0.25	5	480,000
2017 Common Stock Warrants to Service Provider	\$ 0.41	5	125,000
2018 Emerald Financing Warrants	\$ 0.10	5	3,400,000
Emerald Multi-Draw Credit Agreement Warrants	\$ 0.50	5	7,500,000
2019 Common Stock Warrants	\$ 0.35	5	8,000,000
<b>Total warrants vested and outstanding as of December 31, 2019</b>			<b>25,143,250</b>

#### *2019 Common Stock Warrants*

During the year ended December 31, 2019, the Company issued 8,000,000 fully vested common stock warrants to investors, in conjunction with the November 2019 Common Stock Offering discussed below (See Note 5). The warrants are equity classified at issuance and the Company allocated an

aggregate of \$722,208 of the gross proceeds to the warrants on a relative fair value basis. The warrants vested immediately and had an estimated aggregate fair value of \$1,130,400 utilizing the Black-Scholes option pricing model with the following assumptions:

	<b>At Issuance</b>
Dividend yield	0.00 %
Volatility factor	93.08 %
Risk-free interest rate	1.62 %
Expected term (years)	5.0
Underlying common stock price	\$ 0.22

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*Emerald Multi-Draw Credit Agreement Warrants*

During the year ended December 31, 2019, the Company issued 5,000,000 fully vested common stock warrants to Emerald Health Sciences, in conjunction with advances under the Credit Agreement discussed below (See Note 4). The warrants are equity classified at issuance and the Company allocated an aggregate of \$716,110 of the gross proceeds to the warrants on a relative fair value basis. The proceeds allocated to the warrants were recorded as discounts to each advance and are being amortized over the term of the debt. The warrants vested immediately and had an estimated aggregate fair value of \$1,830,573 utilizing the Black-Scholes option pricing model with the following assumptions:

**At Issuance**

Dividend yield	0.00 %
Volatility factor	91.6-92.1 %
Risk-free interest rate	2.23-2.51 %
Expected term (years)	5.0
Underlying common stock price	\$ 0.33-0.69

On November 1, 2018, the Company issued 2,500,000 fully vested common stock warrants to Emerald Health Sciences, in conjunction with the first advance on the Credit Agreement discussed below (See Note 4). The warrants are equity classified at issuance and the Company allocated \$315,080 of the gross proceeds to the warrants on a relative fair value basis. The proceeds allocated to the warrants was recorded as a discount to the November 1, 2018 advance and are being amortized over the term of the debt. The warrants vested immediately and had an estimated fair value of \$593,629 utilizing the Black-Scholes option pricing model with the following assumptions:

	At Issuance
Dividend yield	0.00 %
Volatility factor	92.5 %
Risk-free interest rate	2.96 %
Expected term (years)	5.0
Underlying common stock price	\$ 0.36

#### 2018 Emerald Financing Warrants

In January and February 2018, the Company issued an aggregate of 40,800,000 and 3,400,000 fully vested common stock warrants to Emerald Health Sciences and an accredited investor, respectively, in conjunction with the Emerald Financing discussed below (See Note 5). The Company reviewed the warrants for liability or equity classification under the guidance of ASC 480-10, *Distinguishing Liabilities from Equity*, and concluded that these warrants should be classified as liabilities. See the additional discussion below, *Derivative Liabilities- Emerald Financing Warrant Liability*. On December 20, 2019, Emerald Health Sciences paid the aggregate exercise price of \$4,080,000 in the form of a reduction of the corresponding amount of obligations outstanding under the Credit Agreement to exercise 40,800,000 Emerald Financing Warrants.

#### Derivative Liabilities

The following tables summarize the activity of derivative liabilities for the periods indicated:

	Year Ended December 31, 2019				
	December 31, 2018, Fair Value of Derivative Liabilities	Fair Value of Derivative Liabilities Issued	Change in Fair value of Liabilities	Reclassification of Derivatives to Equity or Extinguishment	December 31, 2019, Fair Value of Derivative Liabilities
Emerald Multi-Draw Credit Agreement - compound derivative liability <sup>(1)</sup>	\$ 219,453	\$ 516,058	\$ (484,147 )	\$ (160,567 ) *	\$ 90,797
Emerald Financing - warrant liability <sup>(2)</sup>	15,251,413	-	(9,042,066 )	(5,933,323 )	276,024
Series B - warrant liability <sup>(3)</sup>	487,500	-	(208,546 )	(144,375 )	134,579
<b>Total derivative liabilities</b>	<b>\$ 15,958,366</b>	<b>\$ 516,058</b>	<b>\$ (9,734,759 )</b>	<b>\$ (6,238,265 )</b>	<b>\$ 501,400</b>
Less, noncurrent portion of derivative liabilities	(219,453 )				(90,797 )
<b>Current balance of derivative liabilities</b>	<b>\$ 15,738,913</b>				<b>\$ 410,603</b>

\*This amount has been included in the calculation of the extinguishment loss recorded in connection with the prepayment of the Emerald Credit Agreement as described in Note 4 below.

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	Year Ended December 31, 2018				
	December 31, 2017, Fair Value of Derivative Liabilities	Fair Value of Derivative Liabilities Issued	Change in Fair value of Derivative Liabilities**	Reclassification of Derivatives to Equity	December 31, 2018, Fair Value of Derivative Liabilities
Emerald Multi-Draw Credit Agreement - compound derivative liability <sup>(1)</sup>	\$ -	\$ 204,102	\$ 15,351	\$ -	\$ 219,453
Emerald Financing - warrant liability <sup>(2)</sup>	-	10,424,634	4,826,779	-	15,251,413
Series B - warrant liability <sup>(3)</sup>	551,322	-	1,476,044	(1,539,866)	487,500
Emerald Convertible Promissory Note - conversion liability <sup>(4)</sup>	265,000	360,000	185,000	(810,000)	-
Series B Preferred Stock - conversion liability <sup>(5)</sup>	6,715	-	-	(6,715)	-
<b>Total derivative liabilities</b>	<b>\$ 823,037</b>	<b>\$ 10,988,736</b>	<b>\$ 6,503,174</b>	<b>\$ (2,356,581)</b>	<b>\$ 15,958,366</b>
Less, noncurrent portion of derivative liabilities	(551,322)				(219,453)
<b>Current balance of derivative liabilities</b>	<b>\$ 271,715</b>				<b>\$ 15,738,913</b>

*\*\*The change in fair value of derivative liabilities for the year ended December 31, 2018, relate partially to the Company determining it had sufficient trading activity to utilize the actual volatility of the trading of the Company's common stock as an input to the volatility assumption when computing the fair value of derivative liabilities. The volatility assumption was updated as of October 1, 2018 to incorporate the Company's own volatility with six similar companies to develop a blended average. The Company had previously estimated the volatility assumption by averaging the volatility of six similar entities which had resulted in a lower volatility. The increase in value of the volatility assumption has led to a higher valuation of the derivative liabilities as disclosed below.*

*Emerald Multi-Draw Credit Agreement Compound Derivative Liability (1)*

In connection with the advances under the Credit Agreement (See Note 4), the Company bifurcated a compound derivative liability related to a contingent interest feature and acceleration upon default provision (contingent put option) provided to Emerald Health Sciences. The Company's estimate of fair value of the compound derivative liability was determined by using a differential cash flows valuation model, wherein the fair value of the underlying debt facility and its conversion right are estimated both with and without the presence of the contingent interest feature, holding all other assumptions constant. The resulting difference between the estimated fair values in both scenarios is the estimated fair value of the compound derivative. The fair value of the underlying debt facility is estimated by calculating the expected cash flows with consideration of the estimated probability of a change in control transaction, defined as an event of default by the agreement, and applying the expected default interest rate from the date of such default through maturity. The expected cash flows are then discounted back to the reporting date using a benchmark market yield. The conversion right component of the compound derivative is measured using a standard Black-Scholes model for each payment period. Because Emerald Health Sciences would forgo the contingent interest if the contingent put option was exercised upon an event of default, the value ascribed to the contingent put option within the compound derivative is de minimis.

*Emerald Financing Warrant Liability (2)*

In January and February 2018, the Company issued 44,200,000 warrants to purchase common stock in conjunction with the Emerald Financing discussed above. The warrants vest immediately and have an exercise price of \$0.10 per share with a term of five years and are exercisable in cash or through a cashless exercise provision. The warrants contain an anti-dilution protection feature provided to the investors if the Company subsequently issues or sells any shares of common stock, stock options, or convertible securities at a price less than the exercise price of \$0.10. The exercise price is automatically adjusted down to the price of the instrument being issued. In addition, the warrants contain a contingent put option if the Company undergoes a subsequent financing that results in a change in control. The warrant holders also have the right to participate in subsequent financing transactions on an as-if converted basis.

In December 2019, Emerald Health Sciences paid the aggregate exercise price of \$4,080,000 in the form of a reduction of the corresponding amount of obligations outstanding under the Credit Agreement to exercise 40,800,000 Emerald Financing Warrants. Under the Warrant Exercise Agreement

between the Company and Emerald Health Sciences, the proceeds from the warrants were first applied directly to the accrued interest balance at the exercise date with the remainder applied to the oldest outstanding principal balances under the Credit Agreement. Immediately prior to exercise, the warrants were adjusted to fair value which considered the closing trading price on the exercise date (See Note 4).

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The Company reviewed the warrants for liability or equity classification under the guidance of ASC 480-10, *Distinguishing Liabilities from Equity*, and concluded that the warrants should be classified as a liability and re-measured to fair value at the end of each reporting period. The Company also reviewed the warrants under ASC 815, *Derivatives and Hedging/Contracts in Entity's Own Equity*, and determined that the warrants also meet the



definition of a derivative. With the assistance of a third-party valuation specialist, the Company valued the warrant liabilities utilizing the Monte Carlo valuation method pursuant to the accounting guidance of ASC 820-10, *Fair Value Measurements*. On the closing dates, the Company estimated that the fair value of the warrants issued on January 19, 2018 and February 16, 2018 was \$4,717,211 and \$5,707,423, respectively.

The warrant liabilities were valued using Monte Carlo simulations conducted at the closing dates of January 19, 2018 and February 16, 2018 and at the balance sheet dates using the following assumptions:

	December 31, 2019	December 31, 2018	At Issuance
Dividend yield	0.00 %	0.00 %	0.00 %
Volatility factor	79.5 %	92.1-92.4 %	70.0 %
Risk-free interest rate	1.62 %	2.49 %	2.45-2.60 %
Expected term (years)	3.13	4.05-4.13	5.0
Underlying common stock price	\$ 0.13	\$ 0.40	\$ 0.29-0.30

Because fair value assigned to the warrants exceeded the proceeds received in the Emerald Financing, none of the consideration was allocated to common stock and the Company recorded an adjustment for the difference between the fair value of the warrant liabilities and the total proceeds received to other expense in the Consolidated Statements Comprehensive Income (Loss) for the year ended December 31, 2018 as follows:

	Closing		
	January 2018	February 2018	Total
Initial fair value of Emerald Financing Warrant Liability	\$ 4,717,211	\$ 5,707,423	\$ 10,424,634
Less: proceeds from the Emerald Financing	1,500,000	1,750,000	3,250,000
<b>Excess over proceeds adjustment</b>	<b>3,217,211</b>	<b>\$ 3,957,423</b>	<b>\$ 7,174,634</b>

In addition, because the aggregate proceeds were allocated to the fair value of the Emerald Financing warrant liability, issuance costs totaling \$137,192 were charged to other expense during the year ended December 31, 2018.

#### *Series B Warrant Liability (3)*

In conjunction with the Redeemable Convertible Series B Preferred Stock financing, the Company issued the 2015 Series B Financing Warrants originally exercisable at a price of \$1.15 per share. The warrants are exercisable in cash or through a cashless exercise provision and contain certain cash redemption rights. The Series B warrants also had a “down-round” protection feature if the Company subsequently issued or sold any shares of common stock, stock options, or convertible securities at a price less than the current exercise price. The down round provision was triggered and automatically adjusted down to \$0.10 on December 28, 2017, after the Company entered into the Convertible Promissory Note (See Note 4) and again to \$0.00 on January 19, 2018, as a result of the Emerald Financing (See Note 5). The strike price for these warrants is now permanently reset. However, because the remaining warrant holders still have certain cash redemption rights upon the occurrence of certain fundamental transactions, as defined in the Series B warrant agreements, the warrants continue to require liability classification. Subsequent to the repricing that occurred as a result of the Emerald Financing, the warrants have been valued using a Black Scholes Merton Option Pricing Model.

To compute the fair value of the warrants, the Company utilized the following assumptions in the Black Scholes Merton Option Pricing Model for the periods indicated:

	As of December 31,	
	2019	2018
Dividend yield	0.00 %	0.00 %
Volatility factor	79.2 %	93.0 %
Risk-free interest rate	1.60 %	2.79 %
Expected term (years)	0.64	1.64-1.65
Underlying common stock price	\$ 0.13	\$ 0.40

In January 2018, 987,000 Series B warrants were exercised at a price of \$0.10 resulting in cash proceeds to the Company of \$98,700. Prior to exercise, these Series B Warrants were adjusted to fair value using a Black Scholes Merton Option Pricing Model which considered the closing trading price on the exercise dates. For the year ended December 31, 2019 and for the period from January 19, 2018 through December 31, 2018, 187,500 and 4,231,750 Series B warrants were exercised for no consideration. Prior to exercise, these Series B Warrants were adjusted to fair value using a Black Scholes Merton Option Pricing Model which considered the closing trading price on the exercise dates. Because the exercise price of these options had been reset to \$0.00, the fair value derived from the valuation model approximated the market value of the Company’s common stock on the exercise dates.

#### *Emerald Convertible Promissory Note Conversion Liability (4)*

In connection with the Convertible Promissory Note (See Note 4), the Company bifurcated a conversion liability related to an embedded conversion feature with a down-round protection provision. The Company valued the conversion liability pursuant to the accounting guidance of ASC 820-10, *Fair Value Measurements*, as of the financing date of each closing utilizing the Black Scholes valuation model and the following assumptions:

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	January 19, 2018
Dividend yield	0.00 %
Volatility factor	70.0 %
Risk-free interest rate	1.29 %
Expected term (years)	0.003
Underlying common stock price	\$ 0.19

The fair value of the conversion liability on January 19, 2018 was \$360,000. In connection with the Emerald Financing discussed in Note 5 below, the Convertible Promissory Note was converted, and the conversion liability was extinguished with the debt.

*Series B Preferred Stock Conversion Liability (5)*

On August 20, 2015, in connection with the Redeemable Convertible Series B Preferred Stock financing, the Company bifurcated a conversion liability related to the down-round protection provided to the Series B investors. The value of this embedded derivative was determined utilizing a “with and without” method by valuing the Series B Preferred Stock with and without the down-round protection. During the first fiscal quarter of 2018, all the remaining Series B Preferred Stock was converted to common stock and as a result, the Series B conversion liability was reduced to zero. The reduction of this liability totaling \$6,715 was recorded to equity during the year ended December 31, 2018.

**4. Convertible Debt - Related Party**

The Company’s Convertible Debt with Emerald Health Sciences consists of the following:

	As of December 31,	
	2019	2018
Total principal value	\$ 2,014,500	\$ 2,000,000
Unamortized debt discount	(1,622,344)	(587,617)
Unamortized debt issuance costs	(5,086)	(51,423)
<b>Carrying value of total convertible debt - related party</b>	<b>\$ 387,070</b>	<b>\$ 1,360,960</b>
Less, noncurrent portion	(387,070)	(1,360,960)
<b>Current convertible debt - related party</b>	<b>\$ -</b>	<b>\$ -</b>

The Company’s interest expense consists of the following:

	Year Ended December 31,	
	2019	2018
Interest expense - stated rate	\$ 371,420	\$ 26,433
Non-cash interest expense:		
Amortization of debt discount	616,383	56,253
Amortization of transaction costs	12,910	2,283
Other interest expense	-	9,794
	<b>\$ 1,000,713</b>	<b>\$ 94,763</b>

*Multi-Draw Credit Agreement*

On October 5, 2018, the Company entered into the Credit Agreement with Emerald Health Sciences, a related party (See Note 11). The Credit Agreement provides for a credit facility to the Company of up to \$20,000,000 and is unsecured. Advances under the Credit Agreement bear interest at an annual rate of 7% (payable quarterly in arrears) and mature on October 5, 2022. At Emerald Health Sciences’ election, advances and unpaid interest may be converted into common stock at a fixed conversion price of \$0.40, subject to customary adjustments for stock splits, stock dividends, recapitalizations, etc. As of December 31, 2019, the unused portion of the credit facility is \$14,000,000. The drawdowns are subject to approval by the Company’s Board, which is controlled by the directors of Emerald Health Sciences. As such, we do not consider the facility available until advance requests are approved, drawn down and funded. The Credit Agreement is still in place, however, there is no guarantee of continued funding.

The Credit Agreement provides for customary events of default which may result in the acceleration of the maturity of the advances in addition to, but not limited to, cross acceleration to certain other indebtedness of the Company or a change in control. In the case of an event of default arising from specified events of bankruptcy or insolvency or reorganization, all outstanding advances will become due and payable immediately without further action or notice. If any other event of default under the Credit Agreement occurs or is continuing, Emerald Health Sciences may, by written notice, terminate its commitment to make any advances and/or declare all the advances with any other amounts payable due immediately. If any amount under the Credit Agreement is not paid when due, such overdue amount shall bear interest at an annual default interest rate of the applicable rate plus 10%, until such amount is paid in full.

In connection with each advance under the Credit Agreement, the Company agreed to issue to Emerald Health Sciences warrants to purchase shares of common stock in an amount equal to 50% of the number of shares of common stock that each advance may be converted into. The warrants have an exercise price of \$0.50 per share, a term of five years and are immediately exercisable upon issuance. The exercise price is subject to adjustment in the

event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events or upon any distributions of assets, including cash, stock or other property to the Company's stockholders (See Note 3).

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In accounting for each convertible advance and the warrants issued under the Credit Agreement, the Company allocates the proceeds between the debt host and the freestanding warrants on a relative fair value basis for each advance. On the date of each advance, if the effective conversion rate of the debt

is less than the market value of the Company's common stock, the Company records a beneficial conversion feature as a discount to the debt and an increase to additional paid-in capital. The debt discounts related to the warrants, beneficial conversion features and compound derivatives, if any, are being amortized over the term of the Credit Agreement using the effective interest rate method. Amortization of the debt discount is recognized as non-cash interest expense and the compound derivatives related to the contingent interest feature and acceleration upon default provision are remeasured at fair value in subsequent periods in the Company's Consolidated Balance Sheets.

On November 1, 2018, the initial advance under Credit Agreement was made for \$2,000,000 and the Company issued 2,500,000 warrants (See Note 3). In accounting for the convertible advances and warrants under the Credit Agreement, \$1,684,920 of the proceeds was allocated to the debt and \$315,080 was allocated to equity classified warrants. A beneficial conversion feature of \$90,080 and a compound derivative liability of \$204,102 were also recorded.

During the year ended December 31, 2019, the Company initiated two advances under Credit Agreement, each in the amount of \$2,000,000, for an aggregate principal amount of \$4,000,000, and the Company issued an aggregate of 5,000,000 warrants to Emerald Health Sciences (See Note 3). In accounting for the convertible advances and warrants issued under the Credit Agreement, an aggregate amount of \$3,283,890 was allocated to the debt and \$716,110 was allocated to equity classified warrants. A beneficial conversion feature of \$1,584,850 and compound derivative liabilities of an aggregate of \$516,058 have been recorded (See Note 3). Of the \$516,058 in compound derivatives, \$322,644 was recorded as other expense in the Consolidated Statements of Comprehensive Income (Loss) for the year ended December 31, 2019, as the value of the beneficial conversion feature exceeded the proceeds allocated to the third draw.

Aggregate financing costs of \$63,007 incurred in connection with the Credit Agreement have been recorded as a discount to the debt host and are being amortized using the effective interest rate method and recognized as non-cash interest expense over the term of the Credit Agreement.

During the year ended December 31, 2019, the Company used \$3,985,500 in proceeds from the exercise of the 2018 Emerald Financing Warrants (Note 3) to prepay a portion of the principal balance on the Credit Agreement. In connection with the prepayment, the Company recorded an extinguishment loss of \$725,425. The extinguishment loss was calculated as the difference between the fair value of the consideration paid to extinguish the debt and carrying value of the debt host plus the related compound derivative liability.

For the years ended December 31, 2019 and 2018, the effective interest rate related to the Credit Agreement was 32.05% and 10.57%, respectively. As of December 31, 2019, the unamortized debt discount will be amortized over a remaining period of 2.76 years. The fair value of the underlying shares of the Credit Agreement was \$657,231 at December 31, 2019. As of December 31, 2019, the if-converted value did not exceed the principal balance.

#### *Secured Convertible Promissory Note*

On December 28, 2017, the Company entered into a convertible Secured Promissory Note and Security Agreement with Emerald Health Sciences (the "Convertible Promissory Note"). The Convertible Promissory Note provided for aggregate gross proceeds to the Company of up to \$900,000 and was secured by all the Company's assets. Drawdowns on the Convertible Promissory Note were interest-bearing at an annual rate of 12% (compounding semi-annually), payable at maturity. The Convertible Promissory Note matured upon the earlier of June 30, 2018 or upon a default event, as defined, and elected by Emerald Health Sciences. At Emerald Health Sciences' election, drawdowns and unpaid interest were convertible into common stock at a conversion price of \$0.10, subject to a full-ratchet antidilution right. The Convertible Promissory Note was automatically converted upon the occurrence of the private placement transaction with Emerald Health Sciences (the Emerald Financing) in January 2018.

The Company received proceeds of \$500,000 on December 28, 2017, and on January 19, 2018 the Company received the remaining \$400,000 in funding as it had satisfied the conditions required. These conditions required receipt of conversion notices from all the existing Series B stockholders to convert their preferred shares to common stock. Such conversions occurred in January and February of 2018. On each financing date, the Company bifurcated a conversion liability from the Convertible Promissory Note related to the embedded conversion feature with a down-round protection provision (See Note 3). This resulted in a conversion liability of \$265,000 at the first financing date which was one trading day prior to December 31, 2017. The second funding in January 2018 resulted in an additional conversion liability of \$360,000. The conversion liabilities were recorded as a discount to the debt at each draw down date and were being amortized to interest expense.

On January 19, 2018, in conjunction with the Emerald Financing (See Note 5), the Convertible Promissory Note was automatically converted into common stock at a conversion price of \$0.10 per share for 9,000,000 shares of common stock. Upon conversion, the debt and associated conversion liability were extinguished, resulting in a loss on extinguishment of \$590,392 which was recorded to other expense for the year ended December 31, 2018. For the year ended December 31, 2018, the effective interest rate related to the Convertible Promissory Note was 13.94%.

## **5. Stockholders' Equity (Deficit) and Capitalization**

### ***Common Stock***

On November 14, 2018, the Company amended its articles of incorporation to increase the number of authorized shares of common stock available for issuance to 500,000,000.

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### *November 2019 Common Stock Offering*

In November 2019, the Company sold in a registered direct offering an aggregate of 8,000,000 shares of its common stock, par value \$0.001 per share, and warrants to purchase 8,000,000 shares of common stock (Note 3). The aggregate net proceeds of the transaction were \$1,919,372.

### *Warrant Exercises*

During the year ended December 31, 2019, Emerald Health Sciences exercised 40,800,000 2018 Emerald Financing Warrants with an intrinsic value of \$4,284,000, which resulted in the issuance of 40,800,000 shares of common stock.

During the year ended December 31, 2018, the Series B warrant holders exercised warrants with an intrinsic value of \$144,375, which resulted in the issuance of 187,500 shares of common stock.

### *Emerald Financing*

On January 19, 2018, the Company entered into a Securities Purchase Agreement pursuant to which the Company sold to Emerald Health Sciences 15,000,000 shares of common stock and a warrant to purchase 20,400,000 shares of common stock at an exercise price of \$0.10 for aggregate gross proceeds of \$1,500,000 (the “Emerald Financing”). This transaction also resulted in the conversion of the \$900,000 Convertible Promissory Note (Note 4). As part of the transaction, the Company’s Board members, with the exception of Dr. Brian Murphy, the Company’s CEO/CMO, tendered their resignation and Emerald Health Sciences appointed two new nominees to the Board. The Securities Purchase Agreement also provides that in the case of a subsequent financing in which the purchase price is less than \$0.10 per share, Emerald Health Sciences shall be issued additional shares in order to protect against anti-dilution.

The second closing under the Emerald Financing occurred on February 16, 2018, pursuant to which the Company issued and sold to Emerald Health Sciences 15,000,000 shares of the Company’s common stock, and a warrant to purchase 20,400,000 shares of common stock at an exercise price of \$0.10 per share for a term of five years. In addition, an accredited investor purchased 2,500,000 shares of common stock and a warrant to purchase 3,400,000 shares of common stock at an exercise price of \$0.10 per share for a term of five years. The Company received aggregate gross proceeds of \$1,750,000 from the second closing. In connection with the private placement, the Company incurred issuance costs of \$154,092, of which \$137,192 was allocated to the warrant liability and expensed during the period and \$16,900 was recorded as a reduction to additional paid-in capital from the issuance of common stock.

### *Conversion of Preferred Stock*

During the year ended December 31, 2018, all remaining Preferred Series B, D, and F shares were converted to common stock as follows:

- For the year ended December 31, 2018, 2,833.55 shares of Series B Preferred stock were converted, resulting in the issuance of 28,385,000 shares of common stock.
- For the year ended December 31, 2018, 200 shares of Series D Preferred stock were converted, resulting in the issuance of 2,000,000 shares of common stock.
- For the year ended December 31, 2018, 2,000 shares of Series F Preferred stock were converted, resulting in the issuance of 20,000,000 shares of common stock.

### *Preferred Stock*

The Company has 20,000,000 authorized shares of preferred stock, with a par value of \$0.001 per share. As of December 31, 2019, there were no shares of preferred stock issued and outstanding.

During the year ended December 31, 2018, all remaining Preferred Series B, D, and F shares that were previously issued and outstanding were converted to common stock.

## **6. Stock-Based Compensation**

### *Stock Incentive Plan*

On October 31, 2014, after the closing of the Merger, the Board approved the Company’s 2014 Omnibus Incentive Plan (the “2014 Plan”). The 2014 Plan initially reserved 3,200,000 shares for future grants. In October 2018, the Company increased the share reserve under the 2014 Plan to equal 10% of the number of issued and outstanding shares of common stock of the Company. The 2014 Plan authorizes the issuance of awards including stock options,

stock appreciation rights, restricted stock, stock units and performance units to employees, directors, and consultants of the Company. As of December 31, 2019, the shares available for future grant under the 2014 Plan are as follows:

	<b>Shares Available for Grant</b>
<b>Available as of December 31, 2018</b>	<b>9,142,273</b>
Share pool increase	4,898,750
Forfeited	153,125
Cancelled	196,875
Granted	(1,262,642)
<b>Available as of December 31, 2019</b>	<b><u>13,128,381</u></b>

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*Stock Options*

Options granted under the 2014 Plan expire no later than ten years from the date of grant. Options granted under the 2014 Plan may be either incentive or non-qualified stock options. For incentive and non-qualified stock option grants, the option price shall be at least 100% of the fair value on the date of grants, as determined by the Company's Board of Directors. If at any time the Company grants an option, and the optionee directly or by attribution owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company, the option price shall be at least 110% of the fair value and shall not be exercisable more than five years after the date of grant.

Options granted under the 2014 Plan may be immediately exercisable if permitted in the specific grant approved by the Board of Directors and, if exercised early may be subject to repurchase provisions. The shares issued generally vest over a period of one to five years from the date of grant.

The following is a summary of option activities under the Company's 2014 Plan for the year ended December 31, 2019:



	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value*
<b>Outstanding, December 31, 2018</b>	<b>2,405,000</b>	<b>\$ 0.33</b>	<b>8.71</b>	
Granted	1,262,642	0.30		
Cancelled	(196,875 )	0.26		
Forfeited	(153,125 )	0.26		
<b>Outstanding, December 31, 2019</b>	<b>3,317,642</b>	<b>\$ 0.33</b>	<b>8.34</b>	<b>\$ -</b>
<b>Exercisable, December 31, 2019</b>	<b>2,399,356</b>	<b>\$ 0.34</b>	<b>7.84</b>	<b>\$ -</b>
<b>Vested and expected to vest, December 31, 2019</b>	<b>3,317,642</b>	<b>\$ 0.33</b>	<b>8.34</b>	<b>\$ -</b>

\*The aggregate intrinsic value is the sum of the amounts by which the quoted market price of the Company's stock exceeded the exercise price of the stock options at December 31, 2019 for those stock options for which the quoted market price was in excess of the exercise price ("in-the-money options").

The weighted-average grant-date fair value of stock options granted for the years ended December 31, 2019 and 2018 was \$0.22 and \$0.30, respectively. The total fair value of the stock options that vested during the years ended December 31, 2019 and 2018 was \$473,030 and \$418,688, respectively.

The fair value of each stock option grant was estimated on the date of grant using the Black-Scholes option-pricing model under the following assumptions:

	Year Ended December 31,	
	2019	2018
Dividend yield	0.00 %	0.00 %
Risk-free interest rate	1.49 %	3.06-3.10 %
Expected term (years)	5.65	5.27-5.58
Volatility	93.72 %	70.00-93.60 %

#### *Restricted Stock Awards*

There was no restricted stock award ("RSA") activity under the Company's 2014 Plan during the year ended December 31, 2019.

On February 28, 2018, in conjunction with the signing of the K2C separation agreement discussed in Note 11 below, Mr. Lykos' RSAs amounting to 325,000 shares vested immediately resulting in a Type III award modification and a credit to stock compensation of \$98,042 for the year ended December 31, 2018 due to a lower fair value of those shares as of the modification date.

On May 25, 2018, in conjunction with the signing of her separation agreement, the former Nemus CFO, Ms. Elizabeth Berez's RSA's amounting to 350,000 shares vested immediately resulting in a Type III award modification and a credit to stock compensation of \$97,183 for the year ended December 31, 2018 due to a lower fair value of those shares as of the modification date as compared to the fair value immediately prior to acceleration.

#### *Awards Granted Outside the 2014 Plan*

##### *Options*

There was no option activity outside of the 2014 Plan during the year ended December 31, 2019.

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On May 25, 2018, the Company entered into Stock Option Agreement with Douglas Cesario, CFO, granting 1,195,073 stock options with an exercise price equal to \$0.245 and a grant date fair value of \$200,772 or \$0.26 per share based on the following assumptions estimated on the date of grant using the Black-Scholes option-pricing model:

	<b>At Issuance</b>
Dividend Yield	0.00 %
Risk-free interest rate	2.79 %
Expected term (in years)	5.54
Volatility	70 %

The options vested 25% on July 23, 2018, and the remaining 75% will vest 1/33 on each of the next 33 months thereafter. Options will fully vest upon a triggering event, including a sale of the Company or a merger that results in a change of control. At December 31, 2019, these options have a remaining contractual life of 8.57 years. At December 31, 2019, 760,501 options are exercisable and have no intrinsic value. At December 31, 2019, 1,195,073 options are vested and are expected to vest and have no intrinsic value.

The total fair value of stock options that vested during the years ended December 31, 2019 and 2018 were \$54,756 and \$73,008, respectively.

### *Restricted Stock Awards*

On January 18, 2018, the Company entered into Restricted Stock Agreements with each of Dr. Murphy, Elizabeth Berecz, CFO, and Cosmas N. Lykos, the Company's Founder granting 900,000, 700,000, and 900,000 shares of restricted common stock, respectively, with a fair value of \$475,000. These agreements were issued outside of the 2014 Omnibus Incentive Plan. The restricted stock vests in equal 50% installments on the first and second anniversaries of the grant date, subject to continued employment with the Company through the applicable vesting date. Each Restricted Stock Agreement provides that if an executive's employment or service is terminated by the Company without cause, or is terminated by the grantee for good reason, then the executive shall be entitled to receive a cash severance payment equal to six months of their base compensation, payable in substantially equal installments during the six-month period following the separation along with accelerated vesting of all outstanding stock awards.

On February 28, 2018, in conjunction with the signing of the K2C separation agreement discussed in Note 8 below, Mr. Lykos' Restricted stock awards amounting to 900,000 shares became immediately vested resulting in a Type III award modification and stock compensation expense of \$216,000 for the year ended December 31, 2018, due to an increase in the fair value of the award immediately before and after the modification date.

On May 25, 2018, in conjunction with the signing of her separation agreement discussed above, the Company's former CFO, Ms. Elizabeth Berecz's Restricted stock awards amounting to 700,000 shares became immediately vested resulting in the recording of compensation expense of \$184,800 for the year ended December 31, 2018, due to an increase in the fair value of the award immediately before and after the modification date.

The following is a summary of RSA activity outside of the Company's 2014 Plan during the year ended December 31, 2019:

	<b>Number of Shares</b>	<b>Weighted Average Grant Date Fair Value</b>
<b>Unvested, December 31, 2018</b>	<b>900,000</b>	<b>\$ 0.19</b>
Granted	-	-
Released	(450,000)	0.19
<b>Unvested, December 31, 2019</b>	<b>450,000</b>	<b>\$ 0.19</b>

### *Stock-Based Compensation Expense*

The Company recognizes stock-based compensation expense using the straight-line method over the requisite service period. For the years ended December 31, 2019 and 2018, the Company recognized stock-based compensation expense of \$680,455 and \$674,961, respectively (including compensation expense for RSAs discussed above), which was recorded as a general and administrative expense in the Consolidated Statements of Comprehensive Income (Loss). The total amount of unrecognized compensation cost was \$312,405 as of December 31, 2019. This amount will be recognized over a weighted-average period of 2.07 years.

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**7. Net Income (Loss) Per Share of Common Stock**

The following tables are a reconciliation of the numerators and denominators used in the calculation of basic and diluted net income (loss) per share computations:

**For the Year Ended December 31, 2019**

	<b>Income (Numerator)</b>	<b>Shares (Denominator)</b>	<b>Per-Share Amount</b>
Net income	\$ 1,051,825		
<b>Basic EPS</b>			
Income available to common stockholders	1,051,825	135,154,931	\$ 0.01
<b>Effect of Dilutive Securities</b>			
Unvested restricted stock		858,856	
Options		392,784	
Warrants		447,431	
Warrants – liability classified	(9,250,612)	32,706,263	
<b>Diluted EPS</b>			
Loss available to common stockholders + assumed conversions	\$ (8,198,787)	169,560,265	\$ (0.05)

**For the Year Ended December 31, 2018**

	<b>Income (Numerator)</b>	<b>Shares (Denominator)</b>	<b>Per-Share Amount</b>
Net loss	\$ (19,194,236)		
<b>Basic and Diluted EPS</b>			
Loss available to common stockholders	\$ (19,194,236)	121,154,334	\$ (0.16)

The following outstanding shares of common stock equivalents were excluded from the computation of diluted net loss per share of common stock for the periods presented because including them would have been anti-dilutive:

	<b>Year Ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
Stock options	4,119,931	3,600,073
Unvested restricted stock	234,645	1,543,501
Common shares underlying convertible debt	5,036,250	5,000,000
Warrants	20,712,000	53,130,750

## 8. Income Taxes

The components of income (loss) before the income tax provision (benefit) consist of the following:

	<b>Year Ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
US	\$ 1,120,521	\$ (19,192,594)
Foreign	(67,096)	-
<b>Pre-tax income (loss) from operations</b>	<b>\$ 1,053,425</b>	<b>\$ (19,192,594)</b>

Under the FASB's accounting guidance related to income tax positions, among other things, the impact of an uncertain income tax position on the income tax return must be recognized at the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. Additionally, the guidance provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

The Company had no accrual for interest or penalties on the Company's Balance Sheets at December 31, 2019 and 2018, and has not recognized interest and/or penalties in the Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2019 or 2018.

The Company is subject to taxation in the United States and California. The Company's tax years for 2016 (federal) and 2015 (California) and 2019 (Australia) and forward are subject to examination by the United States, California and Australia tax authorities.

At December 31, 2019, the Company had federal and California NOLs aggregating \$13,213,037 and \$24,481,423, respectively, which, if not used, it will begin to expire from 2033 and the Company had federal NOLs that do not expire but utilization is limited to 80% of taxable income for any given tax year in the amount of \$11,275,349. At December 31, 2019, the Company had Australia NOLs aggregating \$67,096 which do not expire.

Utilization of the domestic NOL will be subject to a substantial annual limitation due to ownership change limitations that may have occurred, or that could occur in the future, as required by Section 382 of the Internal Revenue Code of 1986, as amended (the Code), as well as similar state provisions. These ownership changes may limit the amount of NOLs that can be utilized annually to offset future taxable income and tax, respectively. In general, an "ownership change" as defined by Section 382 of the Code results from a transaction or series of transactions over a three-year period resulting in an ownership change of more than 50 percentage points of the outstanding stock of a company by certain stockholders.

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Upon the occurrence of an ownership change under Section 382 as outlined above, utilization of the NOLs are subject to an annual limitation under Section 382 of the Code, which is determined by first multiplying the value of the Company's stock at the time of the ownership change by the applicable long-term, tax-exempt rate, and then could be subject to additional adjustments, as required. Any limitation may result in expiration of a portion of the NOL before utilization. The multiple ownership changes may have already occurred as the Company raised capital through the issuance of stock. However, due to the existence of the valuation allowance for deferred tax assets, any potential change in ownership will not impact the Company's effective tax rate.

The tax effects of temporary differences and carryforwards that give rise to significant portions of the deferred income tax assets are as follows:

	As of December 31,	
	2019	2018
<b>Current deferred tax assets/(liabilities):</b>		
State taxes	\$ 336	\$ 345
Capitalized research and development costs	-	10,327
Other	112,222	187,377
Net operating loss	6,434,544	5,104,432
<b>Gross deferred tax assets</b>	<b>6,547,102</b>	<b>5,302,481</b>
Valuation allowance	(6,206,450)	(5,302,481)
<b>Net deferred tax assets</b>	<b>\$ 340,652</b>	<b>\$ -</b>
<b>Deferred tax liabilities</b>		
Note discount	\$ (340,652)	\$ -
<b>Total deferred tax liabilities</b>	<b>(340,652)</b>	<b>-</b>
<b>Net deferred tax assets</b>	<b>\$ -</b>	<b>\$ -</b>

The provision for income taxes on earnings subject to income taxes differs from the statutory Federal rate at December 31, 2019 and 2018, due to the following:

	As of December 31,	
	2019	2018
Expected income tax benefit at federal statutory tax rate	\$ 221,219	\$ (4,030,454)
State income taxes, net of federal benefit	(434,881)	(319,816)
Change in fair value of warrants	(1,874,873)	2,869,116
Change in valuation allowance	1,469,187	1,286,995
Uncertain tax positions	436,145	-
Change in compound derivative	(101,671)	3,224
Loss on extinguishment of debt	117,198	123,982
Stock compensation	121,289	67,966
Rate adjustment	49,338	-
Other permanent difference	(1,351)	629
<b>Provision for Income Taxes</b>	<b>\$ 1,600</b>	<b>\$ 1,642</b>

The Company records a valuation allowance against deferred tax assets to the extent that it is more likely than not that some portion, or all of, the deferred tax assets will not be realized. Due to the substantial doubt related to the Company's ability to utilize its deferred tax assets, a valuation allowance for the full amount of the deferred tax assets has been established at December 31, 2019. As a result of this valuation allowance, there are no income tax benefits reflected in the accompanying statement of operations to offset pre-tax losses.

The Tax Cuts and Jobs Act of 2017 subjects a U.S. shareholder to tax on global intangible low-taxed income ("GILTI") earned by certain foreign subsidiaries. The FASB Staff Q&A, Topic 740, No. 5, Accounting for Global Intangible Low-Taxed Income, states that an entity can make an accounting policy election to recognize deferred taxes for temporary basis differences expected to reverse as GILTI in future years or to provide for the tax expense related to GILTI in the year the tax is incurred as a period expense only. The Company elects to provide for the tax expense related to GILTI in the year the tax is incurred as a period expense only.

A reconciliation of the beginning and ending amounts of unrecognized tax positions are as follows:

	As of December 31,	
	2019	2018
Unrecognized tax positions, beginning of the year	\$ -	\$ -
Gross increase - current period tax positions	552,082	-
<b>Unrecognized tax positions, end of year</b>	<b>\$ 552,082</b>	<b>\$ -</b>

If recognized, none of the unrecognized tax positions would impact the Company's income tax benefit or effective tax rate as long as the Company's net deferred tax assets remain subject to a full valuation allowance. The Company does not expect any significant increases or decreases to the Company's unrecognized tax positions within the next twelve months.

## 9. Significant Contracts - University of Mississippi

### UM 5050 Pro-Drug and UM 8930 Analog Agreements

In July 2018, the Company renewed its ocular licenses for UM 5050, related to the pro-drug formulation of tetrahydrocannabinol ("THC"), and UM 8930, related to an analog formulation of cannabidiol ("CBD"). On May 24, 2019, the ocular delivery licenses were replaced by "all fields of use" licenses for both UM 5050 and UM 8930 (collectively, the "License Agreements"). Pursuant to the License Agreements, UM granted the Company an exclusive,

perpetual license, including, with the prior written consent of UM, the right to sublicense, to intellectual property related to UM 5050 and UM 8930 for all fields of use.

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The License Agreements contain certain milestone payments, royalty and sublicensing fees payable by the Company, as defined therein. Each License Agreement provides for an annual maintenance fee of \$75,000 payable on the anniversary of the effective date. The upfront payment for UM 5050 is



\$100,000 and the upfront payment for UM 8930 is \$200,000. Additionally, there is also a \$200,000 fee due within 30 days upon receipt of the first United States Patent and Trademark Office Notice of Allowance for UM 8930. The milestone payments payable for each license are as follows:

- i) \$100,000 paid within 30 days following the submission of the first Investigational New Drug Application to the Food and Drug Administration or an equivalent application to a regulatory agency anywhere in the world, for a product;
- ii) \$200,000 paid within 30 days following the first submission of an NDA, or an equivalent application to a regulatory agency anywhere in the world, for each product that is administered in a different route of administration from that of the early submitted product(s); and
- iii) \$400,000 paid within 30 days following the approval of an NDA, or an equivalent application to a regulatory agency anywhere in the world, for each product that is administered in a different route of administration from that of the early approved product(s).

The royalty percentage due on net sales under each License Agreement is in the mid-single digits. The Company must also pay to UM a portion of all licensing fees received from any sublicensees, subject to a minimum royalty on net sales, and the Company is required to reimburse patent costs incurred by UM related to the licensed products. The royalty obligations apply by country and by licensed product, and end upon the later of the date that no valid claim of a licensed patent covers a licensed product in a given country, or ten years after the first commercial sale of such licensed product in such country.

Each License Agreement continues, unless terminated, until the later of the expiration of the last to expire of the patents or patent applications within the licensed technology or the expiration of the Company's payment obligations under such License Agreement. UM may terminate each License Agreement, by giving written notice of termination, upon the Company's material breach of such License Agreement, including failure to make payments or satisfy covenants, representations or warranties without cure, noncompliance, a bankruptcy event, the Company's dissolution or cessation of operations, the Company's failure to make reasonable efforts to commercialize at least one product or failure to keep at least one product on the market after the first commercial sale for a continuous period of one year, other than for reasons outside the Company's control, or the Company's failure to meet certain pre-established development milestones. The Company may terminate each License Agreement upon 60 days' written notice to UM.

As of December 31, 2019, none of the milestones under the license agreements have been met.

#### ***UM 5070 License Agreement***

In January 2017, the Company entered into a license agreement with UM pursuant to which UM granted us an exclusive, perpetual license, including the right to sublicense, to intellectual property related to a platform of cannabinoid-based molecules ("UM 5070"), to research, develop and commercialize products for the treatment of infectious diseases. The license agreement culminates roughly one year of screening and target molecule identification studies especially focused on therapy-resistant infectious organisms like Methicillin-resistant *Staphylococcus aureus* ("MRSA").

The Company paid UM an upfront license fee under the license agreement. Under the license agreement, the Company is also responsible for annual maintenance fees that will be credited against royalties in the current fiscal year, contingent milestone payments upon achievement of development and regulatory milestones, and royalties on net sales of licensed products sold for commercial use. The aggregate milestone payments due under the license agreement if all the milestones are achieved is \$700,000 and the royalty percentage due on net sales is in the mid-single digits. The Company must also pay to UM a percentage of all licensing fees we receive from any sublicensees, subject to a minimum royalty on net sales by such sublicensees. The Company's royalty obligations apply on a country by country and licensed product by licensed product basis, and end upon the later of the date that no valid claim of a licensed patent covers a licensed product in a given country, or ten years after first commercial sale of such licensed product in such country.

The license agreement continues, unless terminated, until the later of the expiration of the last to expire of the patents or patent applications within the licensed technology or expiration of the Company's payment obligations under the license. UM may terminate the license agreement, effective with the giving of notice, if: (a) the Company fails to pay any material amount payable to UM under the license agreement and do not cure such failure within 60 days after UM notifies us of such failure, (b) the Company materially breaches any covenant, representation or warranty in the license agreement and do not cure such breach within 60 days after UM notifies the Company of such breach, (c) the Company fails to comply in any material respect with the terms of the license and do not cure such noncompliance within 60 days after UM notifies us of such failure, (d) the Company is subject to a bankruptcy event, (e) the Company dissolves or ceases operations or (f) if after the first commercial sale of a product during the term of the license agreement, the Company materially fails to make reasonable efforts to commercialize at least one product or fail to keep at least one product on the market after the first commercial sale for a continuous period of one year, other than for reasons outside of the Company's control. The Company may terminate the license agreement upon 60 days' written notice to UM.

As of December 31, 2019, none of the milestones under this license agreement have been met.

### **10. Commitments and Contingencies**

#### ***Legal Matters***

##### ***General Litigation and Disputes***

From time to time, in the normal course of our operations, we may be a party to litigation and other dispute matters and claims. Litigation can be expensive and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict. An unfavorable outcome to any legal matter, if material, could have a materially adverse effect on our operations or our financial position, liquidity or results of operations. As of December 31, 2019, there were no pending or threatened lawsuits or claims that could reasonably be expected to have a material effect on the Company's financial position or results of operations.

##### ***Government Proceedings***

Like other companies in the pharmaceutical industry, we are subject to extensive regulation by national, state and local government agencies in the United States. As a result, interaction with government agencies occurs in the normal course of our operations. It is possible that criminal charges and substantial fines and/or civil penalties or damages could result from any government investigation or proceeding. As of December 31, 2019, the Company had no proceedings or inquiries.

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***Change in Control Severance Plan***

In February 2015, we adopted a change in control severance plan, in which our named executive officers participate, that provides for the payment of severance benefits if the executive's service is terminated within twelve months following a change in control, either due to a termination without cause or upon resignation for a good reason (as each term is defined in the plan).

In either such event, and provided the executive timely executes and does not revoke a general release of claims against the Company, he or she will be entitled to receive: (i) a lump sum cash payment equal to at least six months of the executive's monthly compensation, plus an additional month for each full year of service over six years, (ii) Company-paid premiums for continued health insurance for a period equal to the length of the cash severance period or, if earlier, when executive becomes covered under a subsequent employer's healthcare plan, and (iii) full vesting of all then-outstanding unvested stock options and restricted stock awards.

**11. Related Party Matters**

***K2C, Inc.***

In June 2014, the Company's U.S. subsidiary entered into an independent contractor agreement with K2C, Inc. ("K2C"), which is wholly owned by the Company's former Executive Chairman and Co-Founder, Mr. Cosmas N. Lykos, pursuant to which the Company paid K2C a monthly fee for services performed by Mr. Lykos for the Company. The agreement expired on June 1, 2017, and was automatically renewed for one year pursuant to the terms of the agreement. The monthly fee under the agreement was \$10,000 and increased to \$20,000 effective April 1, 2017.

In February 2018, the Company entered into a separation and release agreement with K2C, which provided for a lump sum payment of \$180,000 and the immediate vesting of 900,000 shares of restricted common stock granted on January 18, 2018, 325,000 shares of restricted common stock granted on October 20, 2015, and 125,000 options granted on November 21, 2014, in exchange for a release of claims and certain other agreements. During the year ended December 31, 2018, the Company recognized additional stock-based compensation expense of \$112,270 for these restricted stock and option awards.

For the year ended December 31, 2019, no expense was incurred under this agreement. For the year ended December 31, 2018, total expense incurred under this agreement was \$220,000 (including the previously discussed lump sum payment). Under the separation agreement, Mr. Lykos was allowed to participate in the Company's health, death and disability insurance plans for six months subsequent to K2C's separation.

***Emerald Health Sciences***

On February 1, 2018, the Company entered into an Independent Contractor Agreement with Emerald Health Sciences, pursuant to which Emerald Health Sciences agreed to provide such services as are mutually agreed between the Company and Emerald Health Sciences, including reimbursement for reasonable expenses incurred in the performance of the Independent Contractor Agreement. These services included, but were not limited to, corporate advisory services and technical expertise in the areas of business development, marketing, investor relations, information technology and product development. The Independent Contractor Agreement had an initial term of 10 years and specified compensation which was agreed upon between the Company's Chief Executive Officer and Emerald Health Sciences' Chairman, CEO and President on a month-to-month basis. The fee due under this agreement was payable on a monthly basis. Under this agreement, for the years ended December 31, 2019 and 2018, the Company incurred expenses of \$542,000 and \$550,000, respectively. At December 31, 2019, the Company has accrued \$10,000 in expense under this agreement. Effective December 31, 2019, the Independent Contractor Agreement has been terminated.

On February 6, 2018, the Company entered into a Consulting Agreement with Dr. Avtar Dhillon, the Chairman, Chief Executive Officer and President of Emerald Health Sciences. The services under the Consulting Agreement included corporate finance and strategic business advisory services. The Consulting Agreement had an initial term of one year and was renewable automatically unless terminated by either party. The agreement specified an annual fee of \$60,000, payable semi-monthly in installments, and included reimbursement for reasonable expenses incurred in the performance of the services. Under the agreement, Dr. Avtar Dhillon was also entitled to a discretionary annual bonus, payable 120 days after each fiscal year-end, to be determined by the Board upon its annual review. Under this agreement, for the year ended December 31, 2018, the Company incurred \$45,000. The Consulting Agreement was canceled on October 5, 2018 in connection with the Company's entry into the Credit Agreement with Emerald Health Sciences (See Note 4) and Dr. Avtar Dhillon's appointment as the Executive Chairman of the Company's Board.

On December 17, 2019, Dr. Avtar Dhillon resigned as the Chairman of the Board and the position of Chairman of the Finance and Business Development Committee of the Board. Concurrently, the Company entered into a Board Observer Agreement with Emerald Health Sciences to allow Dr. Dhillon to continue as a representative of Emerald Health Sciences as a non-voting observer in future meetings of the Board.

On December 19, 2019, the Company entered into an Independent Contractor Services Agreement with Dr. Avtar Dhillon, pursuant to which Dr. Dhillon will provide ongoing corporate finance and strategic business advisory services to the Company. In exchange for his services, Dr. Dhillon will receive a monthly fee of \$10,000, with (i) \$5,000 paid each month and (ii) \$5,000 accruing from the effective date and payable upon the Company's completion of a material financing. The Board will review the monthly rate paid to Dr. Dhillon within 90 days of the end of each fiscal year. The Independent Contractor Services Agreement has an initial term of one year and will renew automatically thereafter unless terminated earlier by either party. The Independent Contractor Services Agreement may be terminated by either party for cause upon written notice to the other party if the other party defaults in the performance of the agreement in any material respect or materially breaches the terms of the agreement, or without cause upon 30 days' prior written notice to the other party.

**12. Subsequent Events**

In March 2020, the Company was notified by the United States Patent and Trademark Office, that a notice of allowance has been issued for the proprietary analog of cannabidiol, CBDVHS, under the UM 8930 License Agreement. As a result, the Company is required to pay UM a fee of \$200,000 within 30 days from when the notice was received (Note 9).

Refer to Note 1 for disclosure of the salary deferral program that was put in place during March 2020.

**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED BALANCE SHEETS**  
**(UNAUDITED)**

	<b>March 31, 2020 (Unaudited)</b>	<b>December 31, 2019 (Note 2)</b>
<b>ASSETS</b>		
<b>Current assets</b>		
Cash	\$ 563,864	\$ 1,829,977
Restricted cash	4,538	4,538
Prepaid expenses	99,067	152,695
Other current assets	3,888	7,550
Total current assets	<u>671,357</u>	<u>1,994,760</u>
Property and equipment, net	1,618	1,983
Total assets	<u>\$ 672,975</u>	<u>\$ 1,996,743</u>
<b>LIABILITIES AND STOCKHOLDERS' (DEFICIT) EQUITY</b>		
<b>Current liabilities</b>		
Accounts payable	\$ 937,266	\$ 129,809
Accounts payable to related party	40,903	10,000
Accrued interest due to related party	35,645	-
Other current liabilities	405,344	420,406
Derivative liabilities	248,052	410,603
Total current liabilities	1,667,210	970,818
<b>Noncurrent liabilities</b>		
Convertible multi-draw credit agreement - related party, net of discount	517,780	387,070
Derivative liabilities, non-current	190,882	90,797
Total liabilities	<u>2,375,872</u>	<u>1,448,685</u>
<b>Commitments and contingencies</b>		
<b>Stockholders' (deficit) equity</b>		
Preferred stock, \$0.001 par value; 20,000,000 shares authorized; no shares issued and outstanding at March 31, 2020 and December 31, 2019	-	-
Common stock, \$0.001 par value; 500,000,000 shares authorized; 183,207,747 and 182,895,247 shares issued and outstanding at March 31, 2020 and December 31, 2019, respectively	183,208	182,895
Additional paid-in-capital	32,628,837	32,538,445
Accumulated deficit	<u>(34,514,942)</u>	<u>(32,173,282)</u>
Total stockholders' (deficit) equity	<u>(1,702,897)</u>	<u>548,058</u>
Total liabilities and stockholders' (deficit) equity	<u>\$ 672,975</u>	<u>\$ 1,996,743</u>

See accompanying notes to the condensed consolidated financial statements.

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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS**  
**(UNAUDITED)**

	<b>For the Three Months Ended March 31,</b>	
	<b>2020</b>	<b>2019</b>
<b>Operating expenses</b>		
Research and development	\$ 799,612	\$ 320,986
General and administrative	1,411,596	1,194,081
Total operating expenses	<u>2,211,208</u>	<u>1,515,067</u>
<b>Operating loss</b>	<u>(2,211,208)</u>	<u>(1,515,067)</u>
<b>Other expense (income)</b>		
Change in fair value of derivative liabilities	(35,903)	12,820,618
Fair value of derivative liabilities in excess of proceeds	-	322,644
Interest expense	166,355	116,063
Total other expense, net	<u>130,452</u>	<u>13,259,325</u>
<b>Net loss and comprehensive loss</b>	<u>\$ (2,341,660)</u>	<u>\$ (14,774,392)</u>
<b>Loss per common share:</b>		
Basic	\$ (0.01)	\$ (0.11)
Diluted	<u>\$ (0.01)</u>	<u>\$ (0.11)</u>
<b>Weighted average shares of common stock outstanding used to compute loss per share:</b>		
Basic	182,256,966	132,729,246
Diluted	<u>183,737,415</u>	<u>132,729,246</u>

See accompanying notes to the condensed consolidated financial statements.

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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**  
**(UNAUDITED)**

	<b>For the Three Months Ended</b>	
	<b>March 31,</b>	
	<b>2020</b>	<b>2019</b>
<b>Cash flows from operating activities:</b>		
Net loss	\$ (2,341,660)	\$ (14,774,392)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	365	366
Stock-based compensation expense	64,142	171,493
Change in fair value of derivative liabilities	(35,903)	12,820,618
Fair value of derivative liabilities in excess of proceeds	-	322,644
Amortization of debt discount	130,710	56,952
Changes in assets and liabilities:		
Prepaid expenses	53,628	(208,619)
Other current assets	3,662	-
Accounts payable	807,457	152,684
Accounts payable to related party	30,903	-
Accrued interest due to related party	35,645	-
Other current liabilities	(15,062)	27,134
Net cash used in operating activities	(1,266,113)	(1,431,120)
<b>Cash flows from financing activities:</b>		
Proceeds from convertible multi-draw credit agreement - related party, net of issuance costs	-	3,990,699
Net cash provided by financing activities	-	3,990,699
<b>Net (decrease) increase in cash and restricted cash</b>	<b>(1,266,113)</b>	<b>2,559,579</b>
<b>Cash and restricted cash, beginning of year</b>	<b>\$ 1,834,515</b>	<b>\$ 1,857,885</b>
<b>Cash and restricted cash, end of year</b>	<b>\$ 568,402</b>	<b>\$ 4,417,464</b>
<i>Supplemental disclosures of cash-flow information:</i>		
Reconciliation of cash and restricted cash:		
Cash	\$ 563,864	\$ 4,412,952
Restricted cash	4,538	4,512
Total cash and restricted cash shown in the consolidated statements of cash flows	\$ 568,402	\$ 4,417,464
<b>Cash paid during the year for:</b>		
Interest	\$ -	\$ 59,111
<i>Supplemental disclosures of non-cash financing activities:</i>		
Beneficial conversion feature on convertible multi-draw credit agreement	\$ -	\$ 1,584,850
Proceeds allocated to equity classified warrants issued with convertible multi-draw credit agreement	-	716,110
Fair value of compound derivative liability bifurcated from convertible multi-draw credit agreement	-	193,414
Reclassification of warrant liabilities to equity from exercise of warrants	26,563	-

See accompanying notes to the condensed consolidated financial statements.

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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)**  
**(UNAUDITED)**

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amounts			
<b>Balance, January 1, 2019</b>	<b><u>133,907,747</u></b>	<b><u>\$ 133,908</u></b>	<b><u>\$ 17,528,947</u></b>	<b><u>\$ (33,225,107)</u></b>	<b><u>\$ (15,562,252)</u></b>
Stock-based compensation expense	-	-	171,493	-	171,493
Warrants issued in connection with convertible multi-draw credit agreement, related party	-	-	716,110	-	716,110
Beneficial conversion feature in connection with convertible multi-draw credit agreement - related party	-	-	1,584,850	-	1,584,850
Net loss for the three months ended March 31, 2019	-	-	-	(14,774,392)	(14,774,392)
<b>Balance, March 31, 2019</b>	<b><u>133,907,747</u></b>	<b><u>\$ 133,908</u></b>	<b><u>\$ 20,001,400</u></b>	<b><u>\$ (47,999,499)</u></b>	<b><u>\$ (27,864,191)</u></b>
	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amounts			
<b>Balance, January 1, 2020</b>	<b><u>182,895,247</u></b>	<b><u>\$ 182,895</u></b>	<b><u>\$ 32,538,445</u></b>	<b><u>\$ (32,173,282)</u></b>	<b><u>\$ 548,058</u></b>
Stock-based compensation expense	-	-	64,142	-	64,142
Series B warrant exercises	312,500	313	26,250	-	26,563
Net loss for the three months ended March 31, 2020	-	-	-	(2,341,660)	(2,341,660)
<b>Balance, March 31, 2020</b>	<b><u>183,207,747</u></b>	<b><u>\$ 183,208</u></b>	<b><u>\$ 32,628,837</u></b>	<b><u>\$ (34,514,942)</u></b>	<b><u>\$ (1,702,897)</u></b>

See accompanying notes to the condensed consolidated financial statements.

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**EMERALD BIOSCIENCE, INC. AND SUBSIDIARIES**  
**NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**(UNAUDITED)**

**1. Nature of Operations and Business Activities**

***Nature of Operations***

Emerald Bioscience, Inc. (the “Company”) was initially incorporated in Nevada on March 16, 2011 as Load Guard Logistics, Inc. On October 31, 2014, the Company closed a reverse merger transaction (the “Merger”) pursuant to which Nemus, a California corporation (“Nemus Sub”), became the Company’s wholly-owned subsidiary, and the Company assumed the operations of Nemus Sub. Nemus Sub was incorporated in the State of California on July 17, 2012. On November 3, 2014, the Company changed its name to Nemus Bioscience, Inc. by merging with Nemus Sub.

In January 2018, the Company entered into a securities purchase agreement with Emerald Health Sciences, Inc. (“Emerald Health Sciences”), pursuant to which Emerald Health Sciences purchased a majority of the equity interest in the Company, resulting in a change in control (the “Emerald Financing”). As part of the transaction, the Company’s Board members, with the exception of Dr. Brian Murphy, the Company’s CEO/CMO, tendered their resignation and Emerald Health Sciences appointed two new nominees to the Board. Later, in October 2018, the Board appointed Dr. Avtar Dhillon, the Chairman, Chief Executive Officer and President of Emerald Health Sciences, as the Executive Chairman of the Company’s Board.

On February 11, 2019, the Company’s Board of Directors (the “Board”) and majority stockholder unanimously approved an amendment to the Company’s articles of incorporation to change the name of the Company to Emerald Bioscience, Inc. Effective March 25, 2019, the Company filed a Certificate of Amendment with the Nevada Secretary of State changing the Company’s name to Emerald Bioscience, Inc.

In August 2019, the Company formed a new subsidiary in Australia, EMBI Australia Pty Ltd., an Australian proprietary limited company (“EMBI Australia”), in order to qualify for the Australian government’s research and development tax credit for research and development dollars spent in Australia. The primary purpose of EMBI Australia is to conduct clinical trials for the Company’s product candidates.

On December 17, 2019, Dr. Avtar Dhillon resigned as the Chairman of the Company’s Board and the Company entered into a Board Observer Agreement with Emerald Health Sciences. Refer to Note 7 - Related Party Matters for additional information.

The Company is a biopharmaceutical company located in Long Beach, California that plans to research, develop and commercialize therapeutics derived from cannabinoids through several license agreements with the University of Mississippi (“UM”). UM is the only entity federally permitted and licensed to cultivate cannabis for research purposes in the United States.

As of March 31, 2020, the Company has devoted substantially all its efforts to securing product licenses, carrying out research and development, building infrastructure and raising capital. The Company has not yet realized revenue from its planned principal operations and is a number of years from potentially being able to do so.

***Liquidity and Going Concern***

The Company has incurred operating losses and negative cash flows from operations since inception and as of March 31, 2020, had an accumulated deficit of \$34,514,942, a stockholders’ deficit of \$1,702,897 and a working capital deficit of \$995,853. The Company anticipates that it will continue to incur operating losses and negative cash flows from operations into the foreseeable future in order to advance and develop a number of potential drug candidates into preclinical and clinical development activities and support its corporate infrastructure which includes the costs associated with being a public company. As of March 31, 2020, the Company had unrestricted cash in the amount of \$563,864 as compared to \$1,829,977 as of December 31, 2019. As of the date of this filing the Company’s unrestricted cash position has decreased further to \$228,000 plus an additional \$87,000 of restricted cash including \$82,000 of remaining funds from a recently funded Paycheck Protection Program Promissory Note (the “PPP Note”) as discussed below.

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As the Company approaches its first clinical trial, it expects to ramp up research and development spending and projects to increase cash used in operating activities. However, based on the Company's current cash position and expected cash requirements, without obtaining additional funding during the second quarter of 2020, management believes that the Company will not have enough funds to meet its current obligations or commence clinical studies. These conditions give rise to substantial doubt as to the Company's ability to continue as a going concern. The accompanying Condensed Consolidated Financial Statements do not include any adjustments that might result from the outcome of this uncertainty.

The Company's continued existence is dependent on its ability to raise sufficient additional funding to cover operating expenses and to invest in research and development activities. On October 5, 2018, the Company entered into a Multi-Draw Credit Agreement (the "Credit Agreement") with Emerald Health Sciences (See Note 4).

On April 29, 2020, the Company entered into an Amended and Restated Multi-Draw Credit Agreement (the "Amended Credit Agreement") with Emerald Health Sciences, which amends and restates the Credit Agreement. The Amended Credit Agreement provides for a credit facility in the principal amount of up to \$20,000,000, which includes, without limitation, the advances totaling \$6,000,000 that were granted prior to the amendment and advances of at least \$150,000 for each of May, June and July 2020.

Prior to the date of the Amended Credit Agreement, the Company had made three drawdowns in an aggregate principal amount of \$6,000,000, and had issued to Emerald Health Sciences warrants to purchase an aggregate of 7,500,000 shares of common stock of the Company at an exercise price of \$0.50 per share of Common Stock, in accordance with the terms of the Credit Agreement.

Immediately upon entering into the Amended Credit Agreement, the Company effected a fourth advance in the amount of \$150,000. The advance bears an interest at 7% per annum and matures on October 5, 2022. The Company intends to use the net proceeds of the advance for general corporate and working capital purposes. The Lender has elected that the fourth advance will not be convertible into shares of Common Stock and gave notice to the Company that no warrant will be issued in connection with the advance at this time.

On April 22, 2020, the Company entered into a Paycheck Protection Program Promissory Note (the "PPP Note") in the principal amount of \$116,700 (the "PPP Loan") from City National Bank (the "PPP Loan Lender"). The PPP Loan was obtained pursuant to the Paycheck Protection Program (the "PPP") of the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") administered by the U.S. Small Business Administration ("SBA"). Funds from the PPP Loan may only be used by the Company for payroll costs, costs for continuing group healthcare benefits, mortgage interest payments, rent, utility and interest on any other debt obligations that were incurred before February 15, 2020. All or a portion of principal of the PPP Loan may be forgiven by the SBA and the PPP Loan Lender upon application by the Company within 60 days but not later than 120 days after loan approval and upon documentation of expenditures in accordance with the SBA requirements.

The Company plans to continue to pursue funding through public or private equity or debt financings, licensing arrangements, asset sales, government grants or other arrangements. However, the Company cannot provide any assurances that such additional funds will be available on reasonable terms, or at all. If the Company raises additional funds by issuing equity securities, substantial dilution to existing stockholders would result.

Effective March 23, 2020, the Company approved a plan to defer up to 50% of the members of senior management's compensation indefinitely. Certain members of senior management have accepted the plan and the aggregate deferred compensation, together with a retention bonus of 10% of the amount being deferred will be payable to senior management when decided by the Board. Effective March 30, 2020, the Directors of the Company entered into agreements to defer payment of 100% of their Board of Director and committee fees indefinitely. The accrued fees, plus a 10% bonus of such accrued fees will be payable to the members of the Board within 30 days of the Board of Directors determining that the Company has been sufficiently financed to make such payments. These measures, in conjunction with management's plan to negotiate extended payment terms with its vendors and service providers and delay development work in conjunction with pushing back the initiation of its first-in-human studies of the lead drug candidate, NB1111, to the 2021 timeframe, is intended to slow cash burn. The Company's Board plans on further assessing the financial condition of the Company to determine what additional measures, if any, will be implemented. If the Company is unable to secure adequate additional funding, the Company may be forced to reduce spending further, liquidate assets where possible, suspend or curtail planned programs or cease operations.



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In December 2019, a novel strain of coronavirus (“COVID-19”) emerged in Wuhan, China. Since then, it has spread to the United States and infections have been reported around the world. On March 11, 2020, the World Health Organization declared the outbreak of COVID-19 as a global pandemic, which continues to spread throughout the United States, Australia and around the world, where the Company has operations and conducts laboratory research and clinical studies. In response to the outbreak, federal and state authorities in the United States have introduced various recommendations and measures to try to limit the pandemic, including travel restrictions, border closures, nonessential business closures, quarantines, self-isolations, shelters-in-place and social distancing. The COVID-19 outbreak and the response of governmental authorities to try to limit it are having a significant impact on the private sector and individuals, including unprecedented business, employment and significant economic disruptions to the global financial markets. These disruptions are likely to impact the Company’s ability to raise additional capital and obtain the necessary funds.

Notably, the Company relies on third-party manufacturers to produce its product candidates. The manufacturing of the active pharmaceutical ingredient of NB1111 is conducted in the United States. Formulation of the eye drop for testing is also performed in the United States but can rely on regulatory-accepted excipients that can be sourced from countries outside the United States, such as China. In lieu of the recent pandemic of a COVID-19, there could possibly be an impact on sourcing materials that are part of the eye drop formulation, as well as impacting volunteer and/or patient recruitment in Australia for clinical studies. Therefore, the Company has shifted its first-in-human studies of NB1111 from the second half of 2020, to the 2021 timeframe.

After considering the plans to alleviate substantial doubt, management has concluded that there is substantial doubt about the Company’s ability to continue as a going concern within one year after the date that the financial statements are issued.

## **2. Summary of Significant Accounting Policies**

### ***Basis of Presentation***

In the opinion of management, the accompanying Unaudited Condensed Consolidated Financial Statements have been prepared on a consistent basis with the Company’s Audited Consolidated Financial Statements for the fiscal year ended December 31, 2019, and include all adjustments, consisting of only normal recurring adjustments, necessary to fairly state the information set forth herein. The Condensed Consolidated Financial Statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission (“SEC”) and therefore, omit certain information and footnote disclosure necessary to present the financial statements in accordance with generally accepted accounting principles in the United States (“GAAP”).

The results of operations for the three months ended March 31, 2020 are not necessarily indicative of the results to be expected for the year ending December 31, 2020 or any future periods. The Condensed Consolidated Balance Sheet as of December 31, 2019 was derived from the Company’s audited financial statements as of December 31, 2019, which are included in the Company’s Annual Report on Form 10-K filed with the SEC on March 20, 2020. The unaudited financial statements included in this Quarterly Report on Form 10-Q should be read in conjunction with the audited consolidated financial statements and notes thereto included in the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2019, which includes a broader discussion of the Company’s business and the risks inherent therein.

Certain reclassifications have been made to prior year amounts to conform to the current period’s presentation. Such reclassifications had no net effect on total assets, total liabilities, total stockholders’ equity, net losses and cash flows.

### ***Use of Estimates***

The preparation of the Condensed Consolidated Financial Statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the Condensed Consolidated Financial Statements and the reported amounts of income and expense during the reporting period. Actual results could differ from those estimates. The most significant accounting estimates inherent in the preparation of the Company’s financial statements include estimates as to the appropriate carrying value of certain assets and liabilities, which are not readily apparent from other sources. Such estimates and judgments are utilized for stock-based compensation expense, equity securities, derivative liabilities, and debt with embedded features.

### ***Risks and Uncertainties***

The Company's operations are subject to a number of risks and uncertainties, including but not limited to, changes in the general economy, the size and growth of the potential markets for any of the Company's product candidates, results of research and development activities, uncertainties surrounding regulatory developments in the United States and Australia, and the Company's ability to attract new funding.

### ***Fair Value Measurements***

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (the "exit price") in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. A fair value hierarchy based on three levels of inputs, of which the first two are considered observable, and the last is considered unobservable, is used to measure fair value:

Level 1: Valuations for assets and liabilities traded in active markets from readily available pricing sources such as quoted prices in active markets for identical assets or liabilities.

Level 2: Observable inputs (other than Level 1 quoted prices) such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.

Level 3: Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The carrying values of the Company's financial instruments, with the exception of the Credit Agreement and derivative liabilities, including, cash, prepaid expenses, accounts payable, and other current liabilities approximate their fair value due to the short maturities of these financial instruments. The derivative liabilities are valued on a recurring basis utilizing Level 3 inputs.

Advances under the Credit Agreement are not recorded at fair value. However, fair value can be approximated and disclosed utilizing Level 3 inputs and independent third-party valuation techniques (See Note 3). As of March 31, 2020 and December 31, 2019, the fair value of the advances under the Credit Agreement was \$1,639,245 and \$1,877,938, respectively. The carrying amount of the liability at March 31, 2020 and December 31, 2019, was \$517,780 and \$387,070, respectively, and is included in Convertible multi-draw credit agreement - related party, net of discount in the Company's Condensed Consolidated Balance Sheets.

### ***Convertible Instruments***

The Company accounts for hybrid contracts with embedded conversion features in accordance with GAAP. ASC 815, *Derivatives and Hedging Activities* ("ASC 815") requires companies to bifurcate conversion options from their host instruments and account for them as free-standing derivative financial instruments according to certain criteria. The criteria includes circumstances in which (a) the economic characteristics and risks of the embedded derivative instrument are not clearly and closely related to the economic characteristics and risks of the host contract, (b) the hybrid instrument that embodies both the embedded derivative instrument and the host contract is not re-measured at fair value under otherwise applicable generally accepted accounting principles with changes in fair value reported in earnings as they occur and (c) a separate instrument with the same terms as the embedded derivative instrument would be considered a derivative instrument.

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The Company accounts for convertible debt instruments with embedded conversion features in accordance with ASC 470-20, *Debt with Conversion and Other Options* ("ASC 470-20") if it is determined that the conversion feature should not be bifurcated from their host instruments. Under ASC 470-20, the Company records, when necessary, discounts to convertible notes for the intrinsic value of conversion options embedded in debt instruments based upon the difference between the fair value of the underlying common stock at the commitment date and the embedded effective conversion price. When the Company determines that the embedded conversion option should be bifurcated from its host instrument, the embedded feature is accounted for in accordance with ASC 815. Under ASC 815, a portion of the proceeds received upon the issuance of the hybrid contract is allocated to the fair value of the derivative. The derivative is subsequently marked to market at each reporting date based on current fair value, with the changes in fair value reported in the results of operations.

The Company also follows ASC 480-10, *Distinguishing Liabilities from Equity* ("ASC 480-10") when evaluating the accounting for its hybrid instruments. A financial instrument that embodies an unconditional obligation, or a financial instrument other than an outstanding share that embodies a conditional obligation, that the issuer must or may settle by issuing a variable number of its equity shares shall be classified as a liability (or an asset in some circumstances) if, at inception, the monetary value of the obligation is based solely or predominantly on any one of the following: (a) a fixed monetary amount known at inception (for example, a payable settled with a variable number of the issuer's equity shares); (b) variations in something other than the fair value of the issuer's equity shares (for example, a financial instrument indexed to the Standard and Poor's S&P 500 Index and settled with a variable number of the issuer's equity shares); or (c) variations inversely related to changes in the fair value of the issuer's equity shares (for example, a written put option that could be net share settled). Hybrid instruments meeting these criteria are not further evaluated for any embedded derivatives and are carried as a liability at fair value at each balance sheet date with a re-measurement reported in other expense (income) in the accompanying Condensed Consolidated Statements of Comprehensive Loss.

When determining the short-term vs. long-term classification of derivative liabilities, the Company first evaluates the instruments' exercise provisions. Generally, if a derivative is a liability and exercisable within one year, it will be classified as short-term. However, because of the unique provisions and circumstances that may impact the accounting for derivative instruments, the Company carefully evaluates all factors that could potentially restrict the instrument from being exercised or create a situation where exercise would be considered remote. The Company re-evaluates its derivative liabilities at each reporting period end and makes updates for any changes in facts and circumstances that may impact classification.

### ***Warrants Issued in Connection with Financings***

The Company generally accounts for warrants issued in connection with debt and equity financings as a component of equity, unless the warrants include a conditional obligation to issue a variable number of shares or there is a deemed possibility that the Company may need to settle the warrants in cash. For warrants issued with a conditional obligation to issue a variable number of shares or the deemed possibility of a cash settlement, the Company records the fair value of the warrants as a liability at each balance sheet date and records changes in fair value in other expense (income) in the Condensed Consolidated Statements of Comprehensive Loss.

### ***Debt Issuance Costs and Interest***

Discounts related to bifurcated derivatives, freestanding instruments issued in bundled transactions, and issuance costs are recorded as a reduction to the carrying value of the debt and amortized over the life of the debt using the effective interest method. The Company makes changes to the effective interest rate, as necessary, on a prospective basis. For debt facilities that provide for multiple advances, the Company initially defers any issuance costs until the first advance is made and then amortizes the costs over the life of the facility.

### ***Research and Development Expenses and Licensed Technology***

Research and development costs are expensed when incurred. These costs may consist of external research and development expenses incurred under agreements with third-party contract research organizations and investigative sites, third-party manufacturing organizations and consultants; license fees; employee-related expenses, which include salaries and benefits for the personnel involved in the Company's preclinical and clinical drug development activities; facilities expense, depreciation and other allocated expenses; and equipment and laboratory supplies.





charged to research and development expense as incurred in situations where the Company has not identified an alternative future use for the acquired rights, and are capitalized in situations where there is an identified alternative future use. No cost associated with the use of licensed technologies has been capitalized to date.

### ***Stock-Based Compensation Expense***

Stock-based compensation expense is estimated at the grant date based on the fair value of the award, and the cost is recognized as expense ratably over the vesting period with forfeitures accounted for as they occur. The Company uses the Black-Scholes Merton option pricing model for estimating the grant date fair value of stock options using the following assumptions:

- Volatility - Stock price volatility is estimated over the expected term based on a blended rate of industry peers and the Company's actual stock volatility adjusted for periods in which significant financial variability was identified.
- Expected term - The expected term is based on a simplified method which defines the life as the weighted average of the contractual term of the options and the vesting period for each award.
- Risk-free rate - The risk-free interest rate for the expected term of the option is based on the average market rate on U.S. Treasury securities in effect during the period in which the awards were granted.
- Dividends - The dividend yield assumption is based on the Company's history and expectation of paying no dividends in the foreseeable future.

### ***Net Income (Loss) Per Share of Common Stock***

The Company applies FASB ASC No. 260, *Earnings per Share* in calculating its basic and diluted net income (loss) per share. Basic net income (loss) per share of common stock is computed by dividing net income (loss) available to common stockholders by the weighted-average number of shares of common stock outstanding for the period. The diluted net loss per share of common stock is computed by giving effect to all potential common stock equivalents outstanding for the period determined using the treasury stock method. For purposes of this calculation, options to purchase common stock, restricted stock subject to vesting, warrants to purchase common stock and common shares underlying convertible debt instruments are considered to be common stock equivalents. The following outstanding shares of common stock equivalents were excluded from the computation of diluted net loss per share of common stock for the periods presented because including them would have been anti-dilutive:

	<b>Three Months Ended March 31,</b>	
	<b>2020</b>	<b>2019</b>
Stock options	4,512,715	3,600,073
Unvested restricted stock	643,501	1,093,501
Common shares underlying convertible debt	5,125,363	15,000,000
Warrants	23,593,356	58,130,750

### ***Recent Accounting Pronouncements***

In December 2019, the FASB issued ASU No. 2019-12 *Income Taxes* (Topic 740) simplifying the Accounting for Income Taxes. The Board issued this update as part of its Simplification Initiative to improve areas of GAAP and reduce cost and complexity while maintaining usefulness of the financial statements. The main provisions remove certain exceptions, including the exception to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. In addition, the amendments simplify income tax accounting in the areas such as income-based franchise taxes, eliminating the requirements to allocate consolidated current and deferred tax expense in certain instances and a requirement that an entity reflects the effect of enacted changes in tax laws or rates in the annual effective tax rate computation in the interim period that includes the enactment date. For public companies, the standard is effective for fiscal years beginning after December 15, 2020, and interim periods therein, with early adoption permitted. The Company plans to adopt this ASU on the effective date of January 1, 2021. However, it may adopt the update earlier if circumstances arise making early adoption favorable to the Company. The amendments in the update related to foreign subsidiaries will be applied on a modified retrospective basis, the amendments to franchise taxes will be applied on either a retrospective or modified retrospective basis and all other amendments will be applied on a prospective basis. The Company is still evaluating the impact from adopting this standard. However, because the Company's deferred tax assets and liabilities are fully reserved, it does not expect a material impact from the adoption of this standard.

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**Recently Adopted Accounting Standards**

In November 2018, the FASB issued ASU No. 2018-08 *Collaborative Arrangements* (Topic 808) intended to improve financial reporting around collaborative arrangements and align the current guidance under ASC 808 with ASC 606 *Revenue from Contracts with Customers*. The ASU affects all companies that enter into collaborative arrangements. The ASU clarifies when certain transactions between collaborative arrangement participants should be accounted for as revenue under Topic 606 and changes certain presentation requirements for transactions with collaborative arrangement participants that are not directly related to sales to third parties. The Company has adopted this ASU on the effective date of January 1, 2020. Upon adoption, the Company utilized the retrospective transition approach, as prescribed within this ASU, however, the Company does not currently have any collaborative arrangements as such, there was no impact to its Condensed Consolidated Financial Statements from adoption.

**3. Warrants and Derivative Liabilities**

**Warrants**

There are significant judgments and estimates inherent in the determination of the fair value of the Company's warrants. These judgments and estimates include assumptions regarding the Company's future operating performance, the time to completing a liquidity event and the determination of the appropriate valuation methods. If the Company had made different assumptions, the fair value of the warrants could have been significantly different (See Note 2).

Warrants vested and outstanding as of March 31, 2020 are summarized as follows:

Source	Exercise Price	Term (Years)	Number of Warrants Vested and Outstanding
Pre 2015 Common Stock Warrants	\$ 1.00	6-10	4,000,000
2015 Common Stock Warrants	\$ 1.15-5.00	5-10	442,000
Common Stock Warrants to Series B Stockholders	\$ 0.00	5	718,750
2016 Common Stock Warrants to Service Providers	\$ 1.15	10	40,000
2016 Series C Common Stock Warrants to Placement Agent	\$ 0.40	5	125,000
2017 Series D Common Stock Warrants to Placement Agent	\$ 0.25	5	480,000
2017 Common Stock Warrants to Service Provider	\$ 0.41	5	125,000
2018 Emerald Financing Warrants	\$ 0.10	5	3,400,000
Emerald Multi-Draw Credit Agreement Warrants	\$ 0.50	5	7,500,000
2019 Common Stock Warrants	\$ 0.35	5	8,000,000
<b>Total warrants vested and outstanding as of March 31, 2020</b>			<b>24,830,750</b>

*Emerald Multi-Draw Credit Agreement Warrants*

During the three months ended March 31, 2019, the Company issued 5,000,000 fully vested common stock warrants to Emerald Health Sciences, in conjunction with advances under the Credit Agreement discussed below (See Note 4). The warrants are equity classified at issuance and the Company allocated an aggregate of \$716,110 of the gross proceeds to the warrants on a relative fair value basis. The proceeds allocated to the warrants were recorded as discounts to each advance and are being amortized over the term of the debt. The warrants vested immediately and had an estimated aggregate fair value of \$1,830,573 utilizing the Black-Scholes Merton option pricing model with the following assumptions:

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	At Issuance
Dividend yield	0.00%
Volatility factor	91.6-92.1%
Risk-free interest rate	2.23-2.51%
Expected term (years)	5.0
Underlying common stock price	\$ 0.33-0.69

**Derivative Liabilities**

The following tables summarize the activity of derivative liabilities for the periods indicated:

	Three Months Ended March 31, 2020				
	December 31, 2019, Fair Value of Derivative Liabilities	Fair Value of Derivative Liabilities Issued	Change in Fair value of Liabilities	Reclassification of Derivatives to Equity	March 31, 2020, Fair Value of Derivative Liabilities
Emerald Multi-Draw Credit Agreement - compound derivative liability <sup>(1)</sup>	\$ 90,797	\$ -	\$ 100,085	\$ -	\$ 190,882
Emerald Financing - warrant liability <sup>(2)</sup>	276,024	-	(81,879)	-	194,145
Series B - warrant liability <sup>(3)</sup>	134,579	-	(54,109)	(26,563)	53,907
<b>Total derivative liabilities</b>	<b>\$ 501,400</b>	<b>\$ -</b>	<b>\$ (35,903)</b>	<b>\$ (26,563)</b>	<b>\$ 438,934</b>
Less, noncurrent portion of derivative liabilities	(90,797)				(190,882)
<b>Current balance of derivative liabilities</b>	<b>\$ 410,603</b>				<b>\$ 248,052</b>

	Three Months Ended March 31, 2019				
	December 31, 2018, Fair Value of Derivative Liabilities	Fair Value of Derivative Liabilities Issued	Change in Fair value of Derivative Liabilities	Reclassification of Derivatives to Equity	March 31, 2019, Fair Value of Derivative Liabilities
Emerald Multi-Draw Credit Agreement - compound derivative liability <sup>(1)</sup>	\$ 219,453	\$ 516,058	\$ 227,858	\$ -	\$ 963,369
Emerald Financing - warrant liability <sup>(2)</sup>	15,251,413	-	12,239,322	-	27,490,735
Series B - warrant liability <sup>(3)</sup>	487,500	-	353,438	-	840,938
<b>Total derivative liabilities</b>	<b>\$ 15,958,366</b>	<b>\$ 516,058</b>	<b>\$ 12,820,618</b>	<b>\$ -</b>	<b>\$ 29,295,042</b>
Less, noncurrent portion of derivative liabilities	(219,453)				(963,369)
<b>Current balance of derivative liabilities</b>	<b>\$ 15,738,913</b>				<b>\$ 28,331,673</b>



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*Emerald Multi-Draw Credit Agreement Compound Derivative Liability (1)*

In connection with the advances under the Credit Agreement (See Note 4), the Company bifurcated a compound derivative liability related to a contingent interest feature and acceleration upon default provision (contingent put option) provided to Emerald Health Sciences. The Company's estimate of fair value of the compound derivative liability was determined by using a differential cash flows valuation model, wherein the fair value of the underlying debt facility and its conversion right are estimated both with and without the presence of the contingent interest feature, holding all other assumptions constant. The resulting difference between the estimated fair values in both scenarios is the estimated fair value of the compound derivative. The fair value of the underlying debt facility is estimated by calculating the expected cash flows with consideration of the estimated probability of a change in control transaction, defined as an event of default by the agreement, and applying the expected default interest rate from the date of such default through maturity. The expected cash flows are then discounted back to the reporting date using a benchmark market yield. The conversion right component of the compound derivative is measured using a standard Black-Scholes model for each payment period. Because Emerald Health Sciences would forgo the contingent interest if the contingent put option was exercised upon an event of default, the value ascribed to the contingent put option within the compound derivative is de minimis.

In determining the fair value of the debt and contingent interest feature the Company used the following assumptions at the balance sheet date:

	<b>March 31, 2020</b>
Volatility factor	79.8%
Benchmarked yield	18.46%
Remaining term (years)	2.55
Underlying common stock price	\$ 0.08

*Emerald Financing Warrant Liability (2)*

In January and February 2018, the Company issued 44,200,000 warrants to purchase common stock in conjunction with the Emerald Financing. The warrants vest immediately and have an exercise price of \$0.10 per share with a term of five years and are exercisable in cash or through a cashless exercise provision. The warrants contain an anti-dilution protection feature provided to the investors if the Company subsequently issues or sells any shares of common stock, stock options, or convertible securities at a price less than the exercise price of \$0.10. The exercise price is automatically adjusted down to the price of the instrument being issued. In addition, the warrants contain a contingent put option if the Company undergoes a subsequent financing that results in a change in control. The warrant holders also have the right to participate in subsequent financing transactions on an as-if converted basis.

In December 2019, Emerald Health Sciences paid the aggregate exercise price of \$4,080,000 in the form of a reduction of the corresponding amount of obligations outstanding under the Credit Agreement to exercise 40,800,000 Emerald Financing Warrants. Under the Warrant Exercise Agreement between the Company and Emerald Health Sciences, the proceeds from the warrants were first applied directly to the accrued interest balance at the exercise date with the remainder applied to the oldest outstanding principal balances under the Credit Agreement. Immediately prior to exercise, the warrants were adjusted to fair value which considered the closing trading price on the exercise date (See Note 4).

The Company reviewed the warrants for liability or equity classification under the guidance of ASC 480-10, *Distinguishing Liabilities from Equity*, and concluded that the warrants should be classified as a liability and re-measured to fair value at the end of each reporting period. The Company also reviewed the warrants under ASC 815, *Derivatives and Hedging/Contracts in Entity's Own Equity*, and determined that the warrants also meet the definition of a derivative. With the assistance of a third-party valuation specialist, the Company valued the warrant liabilities utilizing the Monte Carlo valuation method pursuant to the accounting guidance of ASC 820-10, *Fair Value Measurements*.

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The warrant liabilities were valued using Monte Carlo simulations conducted at the balance sheet dates using the following assumptions:

	<b>March 31, 2020</b>	<b>December 31, 2019</b>
Dividend yield	0.00%	0.00%
Volatility factor	81.4%	79.5%
Risk-free interest rate	0.28%	1.62%
Expected term (years)	2.88	3.13
Underlying common stock price	\$ 0.08	\$ 0.13

*Series B Warrant Liability (3)*

In conjunction with the Redeemable Convertible Series B Preferred Stock financing, the Company issued the 2015 Series B Financing Warrants originally exercisable at a price of \$1.15 per share. The warrants are exercisable in cash or through a cashless exercise provision and contain certain cash redemption rights. The Series B warrants also had a “down-round” protection feature if the Company subsequently issued or sold any shares of common stock, stock options, or convertible securities at a price less than the current exercise price. The down round provision was triggered and automatically adjusted down to \$0.10 on December 28, 2017, after the Company entered into the Convertible Promissory Note (See Note 4) and again to \$0.00 on January 19, 2018, as a result of the Emerald Financing. The strike price for these warrants is now permanently reset. However, because the remaining warrant holders still have certain cash redemption rights upon the occurrence of certain fundamental transactions, as defined in the Series B warrant agreements, the warrants continue to require liability classification. Subsequent to the repricing that occurred as a result of the Emerald Financing, the warrants have been valued using a Black Scholes Merton Option Pricing Model.

To compute the fair value of the warrants, the Company utilized the following assumptions in the Black Scholes Merton Option Pricing Model for the periods indicated:

	<b>As of March 31, 2020</b>	<b>As of December 31, 2019</b>
Dividend yield	0.00%	0.00%
Volatility factor	79.8%	79.2%
Risk-free interest rate	0.13%	1.60%
Expected term (years)	0.39	0.64
Underlying common stock price	\$ 0.08	\$ 0.13

During the three months ended March 31, 2020, 312,500 Series B Common Stock Warrants with an intrinsic value of \$26,563 were exercised for no consideration per share, which resulted in the issuance of 312,500 shares of common stock. Prior to exercise, these Series B Warrants were adjusted to fair value using a Black Scholes Merton Option Pricing Model which considered the closing trading price on the exercise dates. Because the exercise price of these options had been reset to \$0.00, the fair value derived from the valuation model approximated the market value of the Company’s common stock on the exercise dates.

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**4. Convertible Debt - Related Party**

The Company's Convertible Debt with Emerald Health Sciences consists of the following:

	As of March 31, 2020	As of December 31, 2019
Total principal value	\$ 2,014,500	\$ 2,014,500
Unamortized debt discount	(1,491,997)	(1,622,344)
Unamortized debt issuance costs	(4,723)	(5,086)
<b>Carrying value of total convertible debt - related party</b>	<b>\$ 517,780</b>	<b>\$ 387,070</b>
Less, noncurrent portion	(517,780)	(387,070)
<b>Current convertible debt - related party</b>	<b>\$ -</b>	<b>\$ -</b>

The Company's interest expense consists of the following:

	Three Months Ended March 31, 2020	2019
Interest expense - stated rate	\$ 35,645	\$ 59,111
Non-cash interest expense:		
Amortization of debt discount	130,347	53,979
Amortization of transaction costs	363	2,973
	<b>\$ 166,355</b>	<b>\$ 116,063</b>

*Multi-Draw Credit Agreement*

On October 5, 2018, the Company entered into the Credit Agreement with Emerald Health Sciences, a related party (See Note 7). The Credit Agreement provides for a credit facility to the Company of up to \$20,000,000 and is unsecured. Advances under the Credit Agreement bear interest at an annual rate of 7% (payable quarterly in arrears) and mature on October 5, 2022. At Emerald Health Sciences' election, advances and unpaid interest may be converted into common stock at a fixed conversion price of \$0.40, subject to customary adjustments for stock splits, stock dividends, recapitalizations, etc. As of March 31, 2020, the unused portion of the credit facility is \$14,000,000. The drawdowns are subject to approval by the Company's Board, which is controlled by the directors of Emerald Health Sciences. As such, we do not consider the facility available until advance requests are approved, drawn down and funded. The Credit Agreement is still in place, however, there is no guarantee of continued funding.

The Credit Agreement provides for customary events of default which may result in the acceleration of the maturity of the advances in addition to, but not limited to, cross acceleration to certain other indebtedness of the Company or a change in control. In the case of an event of default arising from specified events of bankruptcy or insolvency or reorganization, all outstanding advances will become due and payable immediately without further action or notice. If any other event of default under the Credit Agreement occurs or is continuing, Emerald Health Sciences may, by written notice, terminate its commitment to make any advances and/or declare all the advances with any other amounts payable due immediately. If any amount under the Credit Agreement is not paid when due, such overdue amount shall bear interest at an annual default interest rate of the applicable rate plus 10%, until such amount is paid in full.

In connection with each advance under the Credit Agreement, the Company agreed to issue to Emerald Health Sciences warrants to purchase shares of common stock in an amount equal to 50% of the number of shares of common stock that each advance may be converted into. The warrants have an exercise price of \$0.50 per share, a term of five years and are immediately exercisable upon issuance. The exercise price is subject to adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events or upon any distributions of assets, including cash, stock or other property to the Company's stockholders (See Note 3).

In accounting for each convertible advance and the warrants issued under the Credit Agreement, the Company allocates the proceeds between the debt host and the freestanding warrants on a relative fair value basis for each advance. On the date of each advance, if the effective conversion rate of the debt is less than the market value of the Company's common stock, the Company records a beneficial conversion feature as a discount to the debt and an increase to additional paid-in capital. The debt discounts related to the warrants, beneficial conversion features and compound derivatives, if any, are being amortized over the term of the Credit Agreement using the effective interest rate method. Amortization of the debt discount is recognized as non-cash interest expense and the compound derivatives related to the contingent interest feature and acceleration upon default provision are remeasured at fair value in subsequent periods in the Company's Condensed Consolidated Balance Sheets.

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On November 1, 2018, the initial advance under Credit Agreement was made for \$2,000,000 and the Company issued 2,500,000 warrants (See Note 3). In accounting for the convertible advances and warrants under the Credit Agreement, \$1,684,920 of the proceeds was allocated to the debt and \$315,080 was allocated to equity classified warrants. A beneficial conversion feature of \$90,080 and a compound derivative liability of \$204,102 were also recorded.

During the three months ended March 31, 2019, the Company initiated two advances under Credit Agreement, each in the amount of \$2,000,000, for an aggregate principal amount of \$4,000,000, and the Company issued an aggregate of 5,000,000 warrants to Emerald Health Sciences (See Note 3). In accounting for the convertible advances and warrants issued under the Credit Agreement, an aggregate amount of \$3,283,890 was allocated to the debt and \$716,110 was allocated to equity classified warrants. A beneficial conversion feature of \$1,584,850 and compound derivative liabilities of an aggregate of \$516,058 have been recorded (See Note 3). Of the \$516,058 in compound derivatives, \$322,644 was recorded as other expense in the Condensed Consolidated Statements of Comprehensive Loss for the three months ended March 31, 2019, as the value of the beneficial conversion feature exceeded the proceeds allocated to the third draw.

Aggregate financing costs of \$63,007 incurred in connection with the Credit Agreement have been recorded as a discount to the debt host and are being amortized using the effective interest rate method and recognized as non-cash interest expense over the term of the Credit Agreement.

During the year ended December 31, 2019, the Company used \$3,985,500 in proceeds from the exercise of the 2018 Emerald Financing Warrants to prepay a portion of the principal balance on the Credit Agreement. In connection with the prepayment, the Company recorded an extinguishment loss of \$725,425 in the fourth quarter of 2019. The extinguishment loss was calculated as the difference between the fair value of the consideration paid to extinguish the debt and carrying value of the debt host plus the related compound derivative liability.

As of March 31, 2020, the unamortized debt discount will be amortized over a remaining period of approximately 2.52 years. The fair value of the underlying shares of the convertible multi draw credit agreement was \$377,719 at March 31, 2020. As of March 31, 2020, the if-converted value did not exceed the principal balance.

## **5. Stock-Based Compensation**

### ***Stock Incentive Plan***

On October 31, 2014, after the closing of the Merger, the Board approved the Company's 2014 Omnibus Incentive Plan (the "2014 Plan"). The 2014 Plan initially reserved 3,200,000 shares for future grants. In October 2018, the Company increased the share reserve under the 2014 Plan to equal 10% of the number of issued and outstanding shares of common stock of the Company. The 2014 Plan authorizes the issuance of awards including stock options, stock appreciation rights, restricted stock, stock units and performance units to employees, directors, and consultants of the Company. As of March 31, 2020, the Company had 13,159,631 shares available for future grant under the 2014 Plan.

### ***Stock Options***

There was no option activity under the Company's 2014 Plan during the three months ended March 31, 2020.

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*Restricted Stock Awards*

There was no restricted stock award (“RSA”) activity under the Company’s 2014 Plan during the three months ended March 31, 2020.

***Awards Granted Outside the 2014 Plan***

*Options*

There was no option activity outside of the 2014 Plan during the three months ended March 31, 2020.

*Restricted Stock Awards*

The following is a summary of RSA activity outside of the Company’s 2014 Plan during the three months ended March 31, 2020:

	Number of Shares	Weighted Average Grant Date Fair Value
<b>Unvested, December 31, 2019</b>	<b>450,000</b>	<b>\$ 0.19</b>
Granted	-	-
Released	(450,000)	0.19
<b>Unvested, March 31, 2020</b>	<b>-</b>	<b>\$ -</b>

### ***Stock-Based Compensation Expense***

The Company recognizes compensation expense using the straight-line method over the requisite service period. For the three months ended March 31, 2020 and 2019, the Company recognized stock-based compensation expense of \$64,142 and \$171,493, respectively (including compensation expense for RSAs discussed above), which was recorded as a general and administrative expense in the Condensed Consolidated Statements of Comprehensive Loss. The total amount of unrecognized compensation cost was \$248,264 as of March 31, 2020. This amount will be recognized over a weighted average period of 1.74 years.

### **6. Significant Contracts - University of Mississippi**

#### ***UM 5050 Pro-Drug and UM 8930 Analog Agreements***

In July 2018, the Company renewed its ocular licenses for UM 5050, related to the pro-drug formulation of tetrahydrocannabinol (“THC”), and UM 8930, related to an analog formulation of cannabidiol (“CBD”). On May 24, 2019, the ocular delivery licenses were replaced by “all fields of use” licenses for both UM 5050 and UM 8930 (collectively, the “License Agreements”). Pursuant to the License Agreements, UM granted the Company an exclusive, perpetual license, including, with the prior written consent of UM, the right to sublicense, to intellectual property related to UM 5050 and UM 8930 for all fields of use.

The License Agreements contain certain milestone payments, royalty and sublicensing fees payable by the Company, as defined therein. Each License Agreement provides for an annual maintenance fee of \$75,000 payable on the anniversary of the effective date. The upfront payment for UM 5050 is \$100,000 and the upfront payment for UM 8930 is \$200,000. In addition, in March 2020, the Company was notified by the United States Patent and Trademark Office, that a notice of allowance was issued for the proprietary analog of cannabidiol, CBDVHS, under the UM 8930 License Agreement. As a result, the Company was required to pay UM a fee of \$200,000. The milestone payments payable for each license are as follows:

- i) \$100,000 paid within 30 days following the submission of the first Investigational New Drug Application to the Food and Drug Administration or an equivalent application to a regulatory agency anywhere in the world, for a product;
- ii) \$200,000 paid within 30 days following the first submission of an NDA, or an equivalent application to a regulatory agency anywhere in the world, for each product that is administered in a different route of administration from that of the early submitted product(s); and
- iii) \$400,000 paid within 30 days following the approval of an NDA, or an equivalent application to a regulatory agency anywhere in the world, for each product that is administered in a different route of administration from that of the early approved product(s).



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The royalty percentage due on net sales under each License Agreement is in the mid-single digits. The Company must also pay to UM a portion of all licensing fees received from any sublicensees, subject to a minimum royalty on net sales, and the Company is required to reimburse patent costs incurred by UM related to the licensed products. The royalty obligations apply by country and by licensed product, and end upon the later of the date that no valid claim of a licensed patent covers a licensed product in a given country, or ten years after the first commercial sale of such licensed product in such country.

Each License Agreement continues, unless terminated, until the later of the expiration of the last to expire of the patents or patent applications within the licensed technology or the expiration of the Company's payment obligations under such License Agreement. UM may terminate each License Agreement, by giving written notice of termination, upon the Company's material breach of such License Agreement, including failure to make payments or satisfy covenants, representations or warranties without cure, noncompliance, a bankruptcy event, the Company's dissolution or cessation of operations, the Company's failure to make reasonable efforts to commercialize at least one product or failure to keep at least one product on the market after the first commercial sale for a continuous period of one year, other than for reasons outside the Company's control, or the Company's failure to meet certain pre-established development milestones. The Company may terminate each License Agreement upon 60 days' written notice to UM.

As of March 31, 2020, with the exception of the fee due for the notice of allowance for CBDVHS, none of the other milestones under these license agreements have been met.

#### ***UM 5070 License Agreement***

In January 2017, the Company entered into a license agreement with UM pursuant to which UM granted us an exclusive, perpetual license, including the right to sublicense, to intellectual property related to a platform of cannabinoid-based molecules ("UM 5070"), to research, develop and commercialize products for the treatment of infectious diseases. The license agreement culminates roughly one year of screening and target molecule identification studies especially focused on therapy-resistant infectious organisms like Methicillin-resistant *Staphylococcus aureus* ("MRSA").

The Company paid UM an upfront license fee under the license agreement. Under the license agreement, the Company is also responsible for annual maintenance fees that will be credited against royalties in the current fiscal year, contingent milestone payments upon achievement of development and regulatory milestones, and royalties on net sales of licensed products sold for commercial use. The aggregate milestone payments due under the license agreement if all the milestones are achieved is \$700,000 and the royalty percentage due on net sales is in the mid-single digits. The Company must also pay to UM a percentage of all licensing fees we receive from any sublicensees, subject to a minimum royalty on net sales by such sublicensees. The Company's royalty obligations apply on a country by country and licensed product by licensed product basis, and end upon the later of the date that no valid claim of a licensed patent covers a licensed product in a given country, or ten years after first commercial sale of such licensed product in such country.

The license agreement continues, unless terminated, until the later of the expiration of the last to expire of the patents or patent applications within the

licensed technology or expiration of the Company's payment obligations under the license. UM may terminate the license agreement, effective with the giving of notice, if: (a) the Company fails to pay any material amount payable to UM under the license agreement and do not cure such failure within 60 days after UM notifies us of such failure, (b) the Company materially breaches any covenant, representation or warranty in the license agreement and do not cure such breach within 60 days after UM notifies the Company of such breach, (c) the Company fails to comply in any material respect with the terms of the license and do not cure such noncompliance within 60 days after UM notifies us of such failure, (d) the Company is subject to a bankruptcy event, (e) the Company dissolves or ceases operations or (f) if after the first commercial sale of a product during the term of the license agreement, the Company materially fails to make reasonable efforts to commercialize at least one product or fail to keep at least one product on the market after the first commercial sale for a continuous period of one year, other than for reasons outside of the Company's control. The Company may terminate the license agreement upon 60 days' written notice to UM.

As of March 31, 2020, none of the milestones under this license agreement have been met.

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## **7. Related Party Matters**

### ***Emerald Health Sciences***

On February 1, 2018, the Company entered into an Independent Contractor Agreement with Emerald Health Sciences, pursuant to which Emerald Health Sciences agreed to provide such services as are mutually agreed between the Company and Emerald Health Sciences, including reimbursement for reasonable expenses incurred in the performance of the Independent Contractor Agreement. These services included, but were not limited to, corporate advisory services and technical expertise in the areas of business development, marketing, investor relations, information technology and product development. The Independent Contractor Agreement had an initial term of 10 years and specified compensation which was agreed upon between the Company's Chief Executive Officer and Emerald Health Sciences' Chairman, CEO and President on a month-to-month basis. The fee due under this agreement was payable on a monthly basis. Effective December 31, 2019, the Independent Contractor Agreement was terminated. As of March 31, 2020, the Company maintains an accrual of \$7,032 in expenses under the Independent Contractor Agreement which have yet to be paid. Under this agreement,

no expenses were incurred for the three months ended March 31, 2020. For the three months ended March 31, 2019, the Company incurred expenses of \$150,000.

On December 17, 2019, Dr. Avtar Dhillon resigned as the Chairman of the Board and the position of Chairman of the Finance and Business Development Committee of the Board. Concurrently, the Company entered into a Board Observer Agreement with Emerald Health Sciences to allow Dr. Dhillon to continue as a representative of Emerald Health Sciences as a non-voting observer in future meetings of the Board.

On December 19, 2019, the Company entered into an Independent Contractor Services Agreement with Dr. Avtar Dhillon, pursuant to which Dr. Dhillon will provide ongoing corporate finance and strategic business advisory services to the Company. In exchange for his services, Dr. Dhillon will receive a monthly fee of \$10,000, with (i) \$5,000 paid each month and (ii) \$5,000 accruing from the effective date and payable upon the Company's completion of a material financing. The Board will review the monthly rate paid to Dr. Dhillon within 90 days of the end of each fiscal year. The Independent Contractor Services Agreement has an initial term of one year and will renew automatically thereafter unless terminated earlier by either party. The Independent Contractor Services Agreement may be terminated by either party for cause upon written notice to the other party if the other party defaults in the performance of the agreement in any material respect or materially breaches the terms of the agreement, or without cause upon 30 days' prior written notice to the other party. On March 30, 2020, the Company and Dr. Dhillon amended the Independent Contractor Services Agreement by agreeing to accrue 100% of Dr. Dhillon's consulting fees until the Board of Directors determines that the Company has been sufficiently financed to make such payments at which point the Company agrees to pay Dr. Dhillon all of his accrued consulting fees, and a bonus of 10% of his accrued consulting fees, less applicable tax and other withholdings. As of March 31, 2020, the Company has accrued \$33,871 in expense related to the Independent Contractor Services Agreement.

## **8. Subsequent Events**

### ***Amended and Restated Multi-Draw Credit Agreement***

On April 29, 2020, the Company entered into an Amended and Restated Multi-Draw Credit Agreement with Emerald Health Sciences, which amends and restates the Credit Agreement, dated October 5, 2018. The Amended Credit Agreement provides for a credit facility in the principal amount of up to \$20,000,000, which includes, without limitation, the advances totaling \$6,000,000 that were granted prior to the amendment and advances of at least \$150,000 for each of May, June and July 2020.

In connection with each advance under the Amended Credit Agreement, the Company shall, absent the Lender's notice not to issue any warrant, continue to issue to Emerald Health Sciences, a warrant to purchase up to the number of shares of the Common Stock of the Company equal to the dollar amount of such advance divided by 0.50. However, warrants issued under the Amended Credit Agreement will have an exercise price of \$0.35 per share of Common Stock. Warrants issued prior to the date of the Amended Credit Agreement shall not be modified, amended or altered by the terms of the Amended Credit Agreement and shall remain in full force and effect.

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Emerald Health Science will, in its sole discretion, at the time of an advance, determine as to whether such advance will or will not be convertible into shares of Common Stock in the future. Advances under the Amended Credit Agreement are convertible into shares of Common Stock at a reduced fixed conversion price of \$0.25 per share of Common Stock. However, the conversion price of all advances outstanding under the Credit Agreement as of the date of the Amended Credit Agreement shall be deemed convertible by the Lender at a conversion price of \$0.40 per share of Common Stock as set forth in the Existing Credit Agreement.

Pursuant to the Amended Credit Agreement, the Company and the Lender have agreed to terminate that certain Registration Rights Agreement, dated as of October 5, 2018, by and between the Company and the Lender, and the Lender has agreed to defer all interest accrued and/or due under the Amended Credit Agreement, beginning the quarter ended June 30, 2020, until the Company completes a capital raise of at least \$5,000,000. All other material terms of the Credit Agreement, including, without limitation, the maturity date and interest rate, remain the same in the Amended Credit Agreement.

Immediately upon entering into the Amended Credit Agreement, the Company effected a fourth advance in the amount of \$150,000. The advance bears an interest at 7% per annum and matures on October 5, 2022. The Company intends to use the net proceeds of the advance for general corporate and working capital purposes. The Lender has elected that the fourth advance will not be convertible into shares of Common Stock and gave notice to the Company that no warrant will be issued in connection with the advance at this time.

### ***Paycheck Protection Program Promissory Note***

On April 22, 2020, the Company entered into a PPP Note in the principal amount of \$116,700 from the PPP Loan Lender. The PPP Loan was obtained pursuant to the PPP of the CARES Act administered by the SBA.

The PPP Loan was disbursed by the PPP Loan Lender to the Company on April 24, 2020 and will mature two years from the Disbursement Date. The PPP Loan bears an interest at 1.00% per annum and is payable monthly commencing seven months from the Disbursement Date. The PPP Loan may be prepaid at any time prior to maturity with no prepayment penalties. Funds from the PPP Loan may only be used by the Company for payroll costs, costs for continuing group healthcare benefits, mortgage interest payments, rent, utility and interest on any other debt obligations that were incurred before February 15, 2020.

All or a portion of principal of the PPP Loan may be forgiven by the SBA and the PPP Loan Lender upon application by the Company within 60 days but not later than 120 days after loan approval and upon documentation of expenditures in accordance with the SBA requirements. Under the CARES Act, loan forgiveness is available for the sum of documented payroll costs, covered rent payments, and covered utilities during the eight-week period commencing on the date of loan approval. For purposes of the CARES Act, payroll costs exclude compensation of an individual employee in excess of \$100,000, prorated annually. Not more than 25% of the forgiveness amount may be for non-payroll costs. Forgiveness is reduced if full-time headcount declines, or if salaries and wages of employees with salaries of \$100,000 or less annually are reduced by more than 25%. After approval of the forgiveness amount and six-month deferral period, the PPP Loan Lender will provide the Company with written notification of re-amortization of the PPP Loan and the remaining balance.

### ***Separation of Chief Financial Officer***

On April 29, 2020, the Company entered into a separation and release agreement (the “Separation Agreement”) with Douglas Cesario, Chief Financial Officer. Mr. Cesario’s separation will be effective May 15, 2020 (the “Separation Date”), and he will remain the Company’s principal financial officer until the Separation Date.

Pursuant to the Separation Agreement, Mr. Cesario has agreed to certain ongoing cooperation obligations and to provide certain releases and waivers as contained in the Separation Agreement. As consideration under the Separation Agreement, the Company has agreed to provide Mr. Cesario compensation and benefits as follows: (i) through the Separation Date, an annualized base salary at the rate in effect for him as of the date of the Separation Agreement; (ii) a gross payment of \$125,000 in consideration for the restrictive covenants contained in the Separation Agreement; and (iii) a continuation of health insurance benefits for a period of six months following the Separation Date.

In connection with the termination of the Company’s Chief Financial Officer 325,929 unvested stock options will be cancelled on May 15, 2020.

### ***Events subsequent to the original issuance of the condensed consolidated financial statements (unaudited)***

On June 17, 2020, the Company effected the fifth advance in the amount of \$300,000. The advance bears interest at 7% per annum and matures on October 5, 2022. The Company intends to use the net proceeds for general corporate and working capital purposes. The Lender has elected that this advance will not be convertible into shares of Common Stock and gave notice to the Company that no warrant will be issued in connection with the advance.

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**EMERALD BIOSCIENCE, INC.**

**Up to 48,676,012 Common Units, each consisting of  
One Share of Common Stock and  
One Warrant to Purchase One Share of Common Stock or  
Pre-Funded Units each consisting of One Pre-Funded Warrant to Purchase One Share of  
Common Stock and One Warrant to Purchase One Share of Common Stock**

**PROSPECTUS**

**Emerald Bioscience, Inc.  
130 North Marina Drive  
Long Beach, CA 90803  
(949) 480-9051**

**July \_\_, 2020**

**PART II**  
**INFORMATION NOT REQUIRED IN THE PROSPECTUS**

**Item 13. Other Expenses of Issuance and Distribution.**

The following is an itemized statement of the estimated amounts of all expenses payable by us in connection with the registration of the common stock, other than underwriting discounts and commissions. All amounts are estimates except the SEC registration fee and FINRA filing fee.

SEC Registration Fee	\$ 1,623
FINRA Filing Fee	\$ 2,375
Accounting Fees and Expenses	\$ 35,000
Legal Fees and Expenses	\$ 50,000
Miscellaneous Expenses	\$ 28,800
Total	<u>\$ 117,798</u>

**Item 14. Indemnification of Directors and Officers.**

Nevada Revised Statutes 78.138(7) provides that, subject to limited statutory exceptions and unless the articles of incorporation or an amendment thereto (in each case filed on or after October 1, 2003) provide for greater individual liability, a director or officer is not individually liable to a corporation or its stockholders or creditors for any damages as a result of any act or failure to act in his or her capacity as a director or officer unless it is proven that: (i) the act or failure to act constituted a breach of his or her fiduciary duties as a director or officer and (ii) the breach of those duties involved intentional misconduct, fraud or a knowing violation of law. However, Section 4 of our Articles of Incorporation provides, among other things, that our officers and directors shall not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as an officer or a director, except for liability:

- ☐ for acts or omissions not in good faith or which involve intentional misconduct, fraud or a knowing violation of law; or
- ☐ for unlawful payments of dividends or unlawful stock purchase or redemption by us.

Section 5 of our Articles of Incorporation and Section 5 of our Bylaws also provides that our officers and directors shall be indemnified and held harmless by us to the fullest extent permitted by the provisions of the Nevada Revised Statutes.

We have entered into indemnification agreements with each of our directors and executive officers that require us to indemnify these persons against expenses, judgments, fines, settlements and other amounts actually and reasonably incurred (including expenses of a derivative action) in connection with any proceeding, whether actual or threatened, to which any such person may be made a party by reason of the fact that the person is or was a director or officer of our Company or any of our affiliated enterprises.

We also maintain any policy of directors' and officers' liability insurance that insures its directors and officers against the cost of defense, settlement or payment of a judgment under any circumstances.

**Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable.**



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**Item 15. Recent Sales of Unregistered Securities**

There have been no sales of unregistered securities within the last three years, which would be required to be disclosed pursuant to Item 701 of Regulation S-K, except for the following:

On October 26, 2016, we sold 500 shares of Series C Preferred Stock to two investors at a purchase price of \$500,000, or \$1,000 for each preferred share. The shares of Series C Preferred Stock were issued in a transaction which the Company believe satisfies the requirements of that exemption from the registration and prospectus delivery requirements of the Securities Act, which exemption is specified by the provisions of Section 4(2) the Securities Act and Rule 506 of Regulation D promulgated pursuant to the Securities Act by the SEC. The investors have represented that they are accredited investors, as that term is defined in Regulation D, and that they are acquiring the securities for investment purposes only and not with a view to or for sale in connection with any distribution thereof.

On November 1, 2016, we issued to a service provider warrants to purchase 40,000 shares of common stock with an exercise price of \$1.15 per share that expire in November 2021 in exchange for financial advisory services. The warrants were issued in a transaction which we believe satisfies the requirements of that exemption from the registration and prospectus delivery requirements of the Securities Act, which exemption is specified by the provisions of Section 4(2) of the Securities Act.

On November 9, 2016, we issued to a placement agent warrants to purchase up to 125,000 shares of common stock with an exercise price of \$0.40 per share that expire in November 2021. The warrants were issued in a transaction which we believe satisfies the requirements of that exemption from the registration and prospectus delivery requirements of the Securities Act, which exemption is specified by the provisions of Section 4(2) of the Securities Act.

On January 3 and January 9, 2017, we sold 500 and 700 shares of Series D Preferred Stock, respectively, to certain accredited investors for gross proceeds to us of \$1,200,000, or \$1,000 for each preferred share. The shares of Series D Preferred Stock were issued in a transaction which the Company believe satisfies the requirements of that exemption from the registration and prospectus delivery requirements of the Securities Act, which exemption is specified by the provisions of Section 4(2) of the Securities Act and Rule 506 of Regulation D promulgated pursuant to the Securities Act by the SEC. The investors have represented that they are accredited investors, as that term is defined in Regulation D, and that they are acquiring the securities for investment purposes only and not with a view to or for sale in connection with any distribution thereof.

On January 10, 2017, we issued to a placement agent a warrant to purchase up to 480,000 shares of common stock with an exercise price of \$0.25 per share that expires in January 9, 2022. The warrant was issued in a transaction which we believe satisfies the requirements of that exemption from the registration and prospectus delivery requirements of the Securities Act, which exemption is specified by the provisions of Section 4(2) of the Securities Act.

On February 8, 2017, we issued to a service provider a warrant to purchase up to 125,000 shares of common stock with an exercise price of \$0.41 per share that expires in February 2022 in exchange for financial advisory services. The warrant was issued in a transaction which we believe satisfies the requirements of that exemption from the registration and prospectus delivery requirements of the Securities Act, which exemption is specified by the provisions of Section 4(2) of the Securities Act.

On November 1, 2017, we sold 2,000 shares of Series F Preferred Stock to certain accredited investors for gross proceeds to us of \$2,000,000, or \$1,000 for each preferred share. The shares of Series F Preferred Stock were issued in a transaction which the Company believe satisfies the requirements of that exemption from the registration and prospectus delivery requirements of the Securities Act, which exemption is specified by the provisions of Section 4(2) of the Securities Act and Rule 506 of Regulation D promulgated pursuant to the Securities Act by the SEC. The investors have represented that they are accredited investors, as that term is defined in Regulation D, and that they are acquiring the securities for investment purposes only and not with a view to or for sale in connection with any distribution thereof.

On January 18, 2018, we entered into restricted stock agreements with each of Dr. Murphy, Elizabeth Berecz and Cosmas N. Lykos granting 900,000, 700,000 and 900,000 shares of restricted Common Stock, respectively. The shares of restricted Common Stock were issued in transactions exempt from registration under Section 4(a)(2) of the Securities Act and Rule 506(b) of Regulation D.





certain accredited investors for gross proceeds to us of \$3,250,000. Additionally, 9,000,000 shares of common stock were issued to one of the accredited investors upon the conversion of a secured convertible promissory note in the principal amount of \$900,000. The shares of common stock and warrants were issued in a transaction which the Company believe satisfies the requirements of that exemption from the registration and prospectus delivery requirements of the Securities Act, which exemption is specified by the provisions of Section 4(2) of the Securities Act and Rule 506 of Regulation D promulgated pursuant to the Securities Act by the SEC. The investors have represented that they are accredited investors, as that term is defined in Regulation D, and that they are acquiring the securities for investment purposes only and not with a view to or for sale in connection with any distribution thereof.

On May 31, 2018, the Company entered into a stock option award agreement with Douglas Cesario pursuant to which Mr. Cesario was granted non-qualified stock options to purchase an aggregate of 1,195,073 shares of the Company's common stock at an exercise price of \$0.245 per share on July 23, 2018. The issuance and sale of these options was exempt from registration under Section 4(a)(2) of the Securities Act and Rule 506(b) of Regulation D promulgated thereunder, because the transaction did not involve a public offering.

Pursuant to the terms of a Multi-Draw Credit Agreement, dated October 5, 2018 (the "Credit Agreement") by and between the Company and Emerald Health Sciences, Inc. ("Emerald"), the Company issued to Emerald (i) convertible securities convertible into 5,000,000 shares of the Company's common stock and a warrant to purchase 2,500,000 shares of common stock of the Company at an exercise price of \$0.50 on November 1, 2018, (ii) convertible securities convertible into 5,000,000 shares of the Company's common stock and a warrant to purchase 2,500,000 shares of common stock of the Company at an exercise price of \$0.50 on February 1, 2019 and (iii) convertible securities convertible into 5,000,000 shares of the Company's common stock and a warrant to purchase 2,500,000 shares of common stock of the Company at an exercise price of \$0.50 on March 29, 2019. The issuance of the convertible securities and warrants were exempt from the registration requirements of the Securities Act, pursuant to the exemption for transactions by an issuer not involved in any public offering under Section 4(a)(2) of the Securities Act and Rule 506 of Regulation D promulgated thereunder and corresponding state securities laws.

On April 29, 2020, the Company entered into an Amended and Restated Multi-Draw Credit Agreement (the "Amended Credit Agreement") with Emerald, which amends and restates the Credit Agreement. The Amended Credit Agreement provides for a credit facility in the principal amount of up to \$20,000,000, which includes, without limitation, the advances totaling \$6,000,000 that were granted prior to the amendment and advances of at least \$150,000 for each of May, June and July 2020. In connection with each advance under the Amended Credit Agreement, the Company shall, absent the Lender's notice not to issue any warrant, continue to issue to Emerald Health Sciences, a warrant to purchase up to the number of shares of the Common Stock of the Company equal to the dollar amount of such advance divided by 0.50. However, warrants issued under the Amended Credit Agreement will have an exercise price of \$0.35 per share of Common Stock. Warrants issued prior to the date of the Amended Credit Agreement shall not be modified, amended or altered by the terms of the Amended Credit Agreement and shall remain in full force and effect.

Emerald will, in its sole discretion, at the time of an advance, determine as to whether such advance will or will not be convertible into shares of Common Stock in the future. Advances under the Amended Credit Agreement are convertible into shares of Common Stock at a reduced fixed conversion price of \$0.25 per share of Common Stock. However, the conversion price of all advances outstanding under the Credit Agreement as of the date of the Amended Credit Agreement shall be deemed convertible by the Lender at a conversion price of \$0.40 per share of Common Stock as set forth in the Existing Credit Agreement.

Pursuant to the Amended Credit Agreement, the Company and the Lender have agreed to terminate that certain Registration Rights Agreement, dated as of October 5, 2018, by and between the Company and the Lender, and the Lender has agreed to defer all interest accrued and/or due under the Amended Credit Agreement, beginning the quarter ended June 30, 2020, until the Company completes a capital raise of at least \$5,000,000. All other material terms of the Credit Agreement, including, without limitation, the maturity date and interest rate, remain the same in the Amended Credit Agreement.

Immediately upon entering into the Amended Credit Agreement, the Company effected a fourth advance in the amount of \$150,000. The advance bears an interest at 7% per annum and matures on October 5, 2022. The Company intends to use the net proceeds of the advance for general corporate and working capital purposes. The Lender has elected that the fourth advance will not be convertible into shares of Common Stock and gave notice to the Company that no warrant will be issued in connection with the advance at this time.

On June 17, 2020, the Company effected a fifth advance in the amount of \$300,000. The advance bears an interest at 7% per annum and matures on October 5, 2022. The Company intends to use the net proceeds of the advance for general corporate and working capital purposes. The Lender has elected that the fourth advance will not be convertible into shares of Common Stock and gave notice to the Company that no warrant will be issued in connection with the advance at this time.

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**Item 16. Exhibits**

(a) The exhibits listed in the following Exhibit Index are filed as part of this Registration Statement.

<b>Exhibit Number</b>	<b>Description of Exhibit</b>
<a href="#">1.1*</a>	<a href="#">Placement Agency Agreement</a>
<a href="#">3.1</a>	<a href="#">Articles of Incorporation of Registrant, as amended (1)</a>
<a href="#">3.2</a>	<a href="#">Bylaws of Registrant (2)</a>
<a href="#">4.1</a>	<a href="#">Form of Warrants issued by Emerald Bioscience, Inc. to certain security holders to purchase an aggregate of 3,000,000 shares of common stock (3)</a>
<a href="#">4.2</a>	<a href="#">Form of Warrants issued by Emerald Bioscience, Inc. to certain security holders to purchase an aggregate of 1,000,000 shares of commons stock (3)</a>
<a href="#">4.3</a>	<a href="#">Form of Common Stock Purchase Warrant to certain security holders to purchase shares of common stock (4)</a>
<a href="#">4.4</a>	<a href="#">Form of Warrant dated April 25, 2015 issued by Emerald Bioscience, Inc. to holder to purchase 100,000 shares of common stock (5)</a>
<a href="#">4.5</a>	<a href="#">Form of Warrant dated April 29, 2015 issued by Emerald Bioscience, Inc. to holder to purchase 90,000 shares of common stock (6)</a>
<a href="#">4.6</a>	<a href="#">Form of Warrant dated April 26, 2015 issued by Emerald Bioscience, Inc. to holder to purchase 6,000 shares of common stock (6)</a>
<a href="#">4.7</a>	<a href="#">Form of Warrant dated June 8, 2015 issued by Emerald Bioscience, Inc. to holder to purchase 10,000 shares of common stock (7)</a>
<a href="#">4.8</a>	<a href="#">Form of Warrant to certain security holders to purchase shares of common stock (5)</a>
<a href="#">4.9</a>	<a href="#">Registration Rights Agreement, dated January 7, 2015, by and between Emerald Bioscience, Inc. and certain investors (8)</a>
<a href="#">4.10</a>	<a href="#">Form of Warrant (9)</a>
<a href="#">4.11</a>	<a href="#">Form of Warrant (33)</a>
<a href="#">4.12*</a>	<a href="#">Form of Common Stock Purchase Warrant</a>
<a href="#">4.13*</a>	<a href="#">Form of Pre-Funded Common Stock Purchase Warrant</a>
<a href="#">4.14*</a>	<a href="#">Form of Placement Agent Common Stock Purchase Warrant</a>
<a href="#">5.1*</a>	<a href="#">Opinion of Greenberg Traurig, LLP</a>
<a href="#">10.1†</a>	<a href="#">Emerald Bioscience, Inc. 2014 Omnibus Incentive Plan (3)</a>
<a href="#">10.2†</a>	<a href="#">Form of Stock Option Agreement under 2014 Omnibus Incentive Plan (3)</a>
<a href="#">10.3</a>	<a href="#">Memorandum of Understanding, dated July 31, 2013, between Emerald Bioscience, Inc. and University of Mississippi, National Center for Natural Products Research (3)</a>
<a href="#">10.9**</a>	<a href="#">License Agreement, dated September 29, 2014, between Emerald Bioscience, Inc. and the University of Mississippi, School of Pharmacy (3)</a>
<a href="#">10.10**</a>	<a href="#">License Agreement, dated September 29, 2014, between Emerald Bioscience, Inc. and the University of Mississippi, School of Pharmacy (3)</a>
<a href="#">10.11**</a>	<a href="#">License Agreement, dated September 29, 2014, between Emerald Bioscience, Inc. and the University of Mississippi, School of Pharmacy (3)</a>
<a href="#">10.12</a>	<a href="#">Lease Agreement dated September 1, 2014 between University of Mississippi Research Foundation, Inc. and Emerald Bioscience, Inc. (3)</a>
<a href="#">10.13</a>	<a href="#">Center Tower Lease dated October 13, 2014, by and between Emerald Bioscience, Inc. and Center Tower Associates LLC. (3)</a>
<a href="#">10.17</a>	<a href="#">Common Stock Purchase Agreement, dated January 7, 2015, by and between Emerald Bioscience, Inc. and certain investors (8)</a>
<a href="#">10.19†</a>	<a href="#">Form of Indemnification Agreement (10)</a>
<a href="#">10.20†</a>	<a href="#">Emerald Bioscience, Inc. Officer Change in Control Severance Plan (11)</a>
<a href="#">10.21</a>	<a href="#">Form of Registration Rights Agreement between Emerald Bioscience, Inc. and certain investors (5)</a>
<a href="#">10.22†</a>	<a href="#">Form of Restricted Stock Award Agreement under 2014 Omnibus Incentive Plan (12)</a>
<a href="#">10.23**</a>	<a href="#">License Agreement, dated December 14, 2015, between Emerald Bioscience, Inc. and the University of Mississippi, School of Pharmacy (13)</a>
<a href="#">10.24**</a>	<a href="#">License Agreement, dated December 14, 2015, between Emerald Bioscience, Inc. and the University of Mississippi, School of Pharmacy (13)</a>
<a href="#">10.25**</a>	<a href="#">Letter Agreement with Albany Molecular Research Inc. dated February 5, 2016 (14)</a>
<a href="#">10.26</a>	<a href="#">Form of Securities Purchase Agreement between Emerald Bioscience, Inc. and certain investors (15)</a>





<a href="#"><u>10.27</u></a>	<a href="#"><u>Form of Registration Rights Agreement between Emerald Bioscience, Inc. and certain investors (15)</u></a>
<a href="#"><u>10.28</u></a>	<a href="#"><u>Form of Lock-up Agreement between Emerald Bioscience, Inc. and certain shareholders (16)</u></a>
<a href="#"><u>10.29</u></a>	<a href="#"><u>Form of Securities Purchase Agreement between Emerald Bioscience, Inc. and certain investors (17)</u></a>
<a href="#"><u>10.30</u></a>	<a href="#"><u>Form of Registration Rights Agreement between Emerald Bioscience, Inc. and certain investors (17)</u></a>
<a href="#"><u>10.31</u></a>	<a href="#"><u>Form of Lock-up Agreement between Emerald Bioscience, Inc. and certain shareholders (18)</u></a>
<a href="#"><u>10.32**</u></a>	<a href="#"><u>License Agreement, dated January 10, 2017, between Emerald Bioscience, Inc. and the University of Mississippi, School of Pharmacy (19)</u></a>
<a href="#"><u>10.33</u></a>	<a href="#"><u>Securities Purchase Agreement, dated May 3, 2017, between Emerald Bioscience, Inc. and Schneider Finance LLC (20)</u></a>
<a href="#"><u>10.34</u></a>	<a href="#"><u>Financial Guarantee dated May 3, 2017 (21)</u></a>
<a href="#"><u>10.35</u></a>	<a href="#"><u>Form of Securities Purchase Agreement (22)</u></a>
<a href="#"><u>10.36</u></a>	<a href="#"><u>Form of Registration Rights Agreement (22)</u></a>
<a href="#"><u>10.37†</u></a>	<a href="#"><u>Form of Restricted Stock Agreement (23)</u></a>
<a href="#"><u>10.38</u></a>	<a href="#"><u>Securities Purchase Agreement (23)</u></a>
<a href="#"><u>10.39</u></a>	<a href="#"><u>Convertible Bridge Promissory Note (24)</u></a>
<a href="#"><u>10.40</u></a>	<a href="#"><u>Independent Contractor Termination Agreement and Release (25)</u></a>
<a href="#"><u>10.41</u></a>	<a href="#"><u>Independent Contractor Agreement (25)</u></a>
<a href="#"><u>10.42†</u></a>	<a href="#"><u>Employment Agreement, dated May 25, 2018, between Emerald Bioscience, Inc. and Douglas Cesario (26)</u></a>
<a href="#"><u>10.43†</u></a>	<a href="#"><u>Stock Option Agreement, dated May 25, 2018, between Emerald Bioscience, Inc. and Douglas Cesario (26)</u></a>
<a href="#"><u>10.44**</u></a>	<a href="#"><u>Letter Agreement, dated July 31, 2018, by and between Emerald Bioscience, Inc. and Albany Molecular Research Inc. (27)</u></a>
<a href="#"><u>10.45</u></a>	<a href="#"><u>Multi-Draw Credit Agreement, dated October 5, 2018, by and between Emerald Bioscience, Inc. and Emerald Health Sciences, Inc. (28)</u></a>
<a href="#"><u>10.46</u></a>	<a href="#"><u>Registration Rights Agreement, dated October 5, 2018, by and between Emerald Bioscience, Inc. and Emerald Health Sciences, Inc. (28)</u></a>
<a href="#"><u>10.47†</u></a>	<a href="#"><u>Amendment No. 1 to 2014 Omnibus Incentive Plan (28)</u></a>
<a href="#"><u>10.48**</u></a>	<a href="#"><u>Master Development and Clinical Supply Agreement, dated February 26, 2019, by and between Emerald Bioscience, Inc. and Noramco, Inc. (29)</u></a>
<a href="#"><u>10.49**</u></a>	<a href="#"><u>Restated and Amended License Agreement, dated as of May 24, 2019 by and between the Company and University of Mississippi, School of Pharmacy (30)</u></a>
<a href="#"><u>10.50**</u></a>	<a href="#"><u>Restated and Amended License Agreement, dated as of May 24, 2019 by and between the Company and University of Mississippi, School of Pharmacy (30)</u></a>
<a href="#"><u>10.51**</u></a>	<a href="#"><u>First Amendment to Master Development and Clinical Supply Agreement, dated as of August 7, 2019 by and between the Company and Noramco, Inc. (31)</u></a>
<a href="#"><u>10.52**</u></a>	<a href="#"><u>Start-Up Agreement, dated as of August 23, 2019, by and between EMBI Australia Pty Ltd and Novotech (Australia) Pty Limited. (32)</u></a>
<a href="#"><u>10.53†</u></a>	<a href="#"><u>Employment Agreement, dated as of August 16, 2019, by and between the Company and Dr. Dennis D. Kim.</u></a>
<a href="#"><u>10.54</u></a>	<a href="#"><u>Form of Securities Purchase Agreement, dated as of November 20, 2019, between the Company and certain purchasers set forth in the signature page thereto (33)</u></a>
<a href="#"><u>10.55</u></a>	<a href="#"><u>Amended and Restated Multi-Draw Credit Agreement, dated April 29, 2020, by and between Emerald Bioscience, Inc. and Emerald Health Sciences, Inc. (34)</u></a>
<a href="#"><u>10.56†</u></a>	<a href="#"><u>Separation and Release Agreement, dated April 29, 2020, between Emerald Bioscience, Inc. and Doug Cesario (34)</u></a>
<a href="#"><u>10.57*</u></a>	<a href="#"><u>Form of Securities Purchase Agreement</u></a>
<a href="#"><u>21.1* **</u></a>	<a href="#"><u>Subsidiaries of the Registrant</u></a>
<a href="#"><u>23.1*</u></a>	<a href="#"><u>Consent of Mayer Hoffman McCann P.C.</u></a>
<a href="#"><u>23.2</u></a>	<a href="#"><u>Consent of Greenberg Traurig, LLP (included in Exhibit 5.1)</u></a>
<a href="#"><u>24.1 +</u></a>	<a href="#"><u>Powers of Attorney</u></a>
<a href="#"><u>101.ins††</u></a>	<a href="#"><u>Instance Document</u></a>
<a href="#"><u>101.sch†††</u></a>	<a href="#"><u>XBRL Taxonomy Schema Document</u></a>
<a href="#"><u>101.cal††</u></a>	<a href="#"><u>XBRL Taxonomy Calculation Linkbase Document</u></a>
<a href="#"><u>101.def††</u></a>	<a href="#"><u>XBRL Taxonomy Definition Linkbase Document</u></a>
<a href="#"><u>101.lab††</u></a>	<a href="#"><u>XBRL Taxonomy Label Linkbase Document</u></a>
<a href="#"><u>101.pre††</u></a>	<a href="#"><u>XBRL Taxonomy Presentation Linkbase Document</u></a>

(1) Included as exhibit to our Quarterly Report on Form 10-Q filed on May 10, 2019

(2) Included as exhibit to our Registration Statement on Form S-1 filed on January 30, 2013



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- (3) Included as exhibit to our Current Report on Form 8-K filed on November 3, 2014.
- (4) Included as exhibit to our Current Report on Form 8-K filed April 7, 2015.
- (5) Included as exhibit to our Current Report on Form 8-K filed August 20, 2015.
- (6) Included as exhibit to our Quarterly Report on Form 10-Q filed May 13, 2015.
- (7) Included as exhibit to our Quarterly Report on Form 10-Q filed August 14, 2015.
- (8) Included as exhibit to our Current Report on Form 8-K filed on January 9, 2015.
- (9) Included as exhibit to our Annual Report on Form 10-K filed on March 14, 2019.
- (10) Included as exhibit to our Current Report on Form 8-K filed on January 12, 2015.
- (11) Included as exhibit to our Current Report on Form 8-K filed on February 27, 2015.
- (12) Included as exhibit to our Current Report on Form 8-K filed on October 22, 2015.
- (13) Included as exhibit to our Current Report on Form 8-K filed on December 18, 2015.
- (14) Included as exhibit to our Annual Report on Form 10-K filed on March 21, 2016.
- (15) Included as exhibit to our Current Report on Form 8-K filed on October 26, 2016.
- (16) Included as exhibit to our Current Report on Form 8-K filed on October 27, 2016.
- (17) Included as exhibit to our Current Report on Form 8-K filed on December 29, 2016.
- (18) Included as exhibit to our Current Report on Form 8-K filed on January 10, 2017.
- (19) Included as exhibit to our Current Report on Form 8-K/A filed on January 20, 2017.
- (20) Included as exhibit to our Current Report on Form 8-K filed on May 4, 2017.
- (21) Included as exhibit to our Current Report on Form 8-K filed on July 11, 2017.
- (22) Included as exhibit to our Current Report on Form 8-K filed on November 2, 2017.
- (23) Included as exhibit to our Current Report on Form 8-K filed on January 22, 2018.
- (24) Included as exhibit to our Current Report on Form 8-K filed on January 3, 2018.
- (25) Included as exhibit to our Annual Report on Form 10-K filed on March 19, 2018.
- (26) Included as exhibit to our Current Report on Form 8-K filed on June 1, 2018.
- (27) Included as exhibit to our Current Report on Form 8-K filed on August 1, 2018.
- (28) Included as exhibit to our Current Report on Form 8-K filed on October 12, 2018.
- (29) Included as exhibit to our Current Report on Form 8-K filed on March 4, 2019.
- (30) Included as exhibit to our Current Report on Form 8-K filed on May 29, 2019.
- (31) Included as exhibit to our Current Report on Form 8-K filed on August 8, 2019.
- (32) Included as exhibit to our Current Report on Form 8-K filed on August 27, 2019.
- (33) Included as exhibit to our Current Report on Form 8-K filed on November 21, 2019.
- (34) Included as exhibit to our Current Report on Form 8-K filed on April 29, 2020.

\* Filed herewith

\*\* Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment pursuant to Rule 24b-2 under the Securities Exchange Act of 1934.

\*\*\* To be filed by amendment or a Current Report on Form 8-K

+ Previously filed

† Management contract or compensatory plan or arrangement.

†† In accordance with Regulation S-T, XBRL (Extensible Business Reporting Language) information is furnished and not filed or a part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, and is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not otherwise subject to liability under these sections.

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**Item 17. Undertakings**

(a) The undersigned Registrant hereby undertakes:

(1) to file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) to reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement; provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement.

(2) that, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this Registration Statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;

(iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

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(b) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

(c) The undersigned Registrant hereby undertakes that:

(1) for purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this Registration Statement as of the time it was declared effective.

(2) for the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(d) that, for the purpose of determining liability under the Securities Act to any purchaser:

(1) if the issuer is relying on Rule 430B:

(i) each prospectus filed by the undersigned issuer pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(2) if the issuer is relying on Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

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**SIGNATURES**

Pursuant to the requirements of the Securities Act, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned thereunto duly authorized in the City of Long Beach, State of California on July 28, 2020.

**Emerald Bioscience, Inc.  
a Nevada corporation**

July 28, 2020

By: /s/ Brian S. Murphy  
Its: Dr. Brian S. Murphy  
Chief Executive Officer, Director  
(Principal Executive Officer)

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

By: /s/ Brian S. Murphy July 28, 2020  
Dr. Brian S. Murphy  
Its: Chief Executive Officer, Director

By: /s/ Elena Traistaru July 28, 2020  
Elena Traistaru  
Chief Financial Officer  
(Principal Financial and Accounting Officer)

By: \* July 28, 2020  
Jim Heppell  
Its: Director

By: \* July 28, 2020  
Punit Dhillon  
Its: Chairman

By: /s/ Brian S. Murphy July 28, 2020  
Brian S. Murphy  
Attorney-in-fact



July 20, 2020

STRICTLY CONFIDENTIAL

Emerald Bioscience, Inc.  
130 North Marina Drive  
Long Beach, CA 90803

Attn: Brian Murphy, M.D., Chief Executive Officer

Dear Dr. Brian Murphy:

This letter agreement (this “Agreement”) constitutes the agreement between Emerald Bioscience, Inc. (the “Company”) and H.C. Wainwright & Co., LLC (“Wainwright”), that Wainwright shall serve as the exclusive agent, advisor or underwriter in any offering (each, an “Offering”) of securities of the Company (the “Securities”) during the Term (as hereinafter defined) of this Agreement. The terms of each Offering and the Securities issued in connection therewith shall be mutually agreed upon by the Company and Wainwright and nothing herein implies that Wainwright would have the power or authority to bind the Company and nothing herein implies that the Company shall have an obligation to issue any Securities. It is understood that Wainwright’s assistance in an Offering will be subject to the satisfactory completion of such investigation and inquiry into the affairs of the Company as Wainwright deems appropriate under the circumstances and to the receipt of all internal approvals of Wainwright in connection with the transaction. The Company expressly acknowledges and agrees that Wainwright’s involvement in an Offering is strictly on a reasonable best efforts basis and that the consummation of an Offering will be subject to, among other things, market conditions. The execution of this Agreement does not constitute a commitment by Wainwright to purchase the Securities and does not ensure a successful Offering of the Securities or the success of Wainwright with respect to securing any other financing on behalf of the Company. Wainwright may retain other brokers, dealers, agents or underwriters on its behalf in connection with an Offering.

A. Compensation; Reimbursement. At the closing of each Offering (each, a “Closing”), the Company shall compensate Wainwright as follows:

1. *Cash Fee.* The Company shall pay to Wainwright a cash fee, or as to an underwritten Offering an underwriter discount, equal to 7.5% of the aggregate gross proceeds raised in each Offering; provided, however, that the cash fee will be reduced to 6.0% with respect to any aggregate gross proceeds raised from the investors who are listed on Exhibit A hereto.
2. *Warrant Coverage.* The Company shall issue to Wainwright or its designees at each Closing, warrants (the “Wainwright Warrants”) to purchase that number of shares of common stock of the Company equal to 7.0% of the aggregate number of shares of common stock (or common stock equivalent, if applicable, but shall not include any shares of common stock underlying warrants issued in each Offering (other than pre-funded warrants)) placed in each Offering (and if an Offering includes a “greenshoe” or “additional investment” component, such number of shares of common stock underlying such “greenshoe” or “additional investment” component, with the Wainwright Warrants issuable upon the exercise of such component). If the Securities included in an Offering are convertible, the Wainwright Warrants shall be determined by dividing the gross proceeds raised in such Offering by the Offering Price (as defined hereunder). The Wainwright Warrants shall be in a customary form reasonably acceptable to Wainwright and the Company, have a term of five (5) years and an exercise price equal to 125% of the offering price per share (or unit, if applicable) in the applicable Offering and if such offering price is not available, the market price of the common stock on the date an Offering is commenced (such price, the “Offering Price”). If warrants are issued to investors in an Offering, the Wainwright Warrants shall have the same terms as the warrants issued to investors in the applicable Offering, except that such Wainwright Warrants shall have an exercise price equal to 125% of the Offering Price.

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Member: FINRA/SIPC

3. *Expense Allowance.* Out of the proceeds of each Closing, the Company also agrees to pay Wainwright (a) a management fee equal to 1.0% of the gross proceeds raised in each Offering; (b) \$25,000 for non-accountable expenses; (c) up to \$75,000 for fees and expenses of legal counsel and other out-of-pocket expenses; plus the additional amount payable by the Company pursuant to Paragraph D.3 hereunder and, if applicable, the costs associated with the use of a third-party electronic road show service (such as NetRoadshow); provided, however, that such amount in no way limits or impairs the indemnification and contribution provisions of this Agreement. Such Expense Allowance shall be payable immediately upon (but only in the event of) the closing of an Offering.
4. *Tail.* Wainwright shall be entitled to compensation under clauses (1) and (2) hereunder, calculated in the manner set forth therein, with respect to any public or private offering or other financing or capital-raising transaction of any kind (“Tail Financing”) to the extent that such financing or capital is provided to the Company by investors whom Wainwright had contacted during the Term or introduced to the Company during the Term, if such Tail Financing is consummated at any time within the 12-month period following the expiration or termination of this Agreement; provided, however, that any of the investors who are listed on Exhibit B hereto shall be excluded from this Paragraph A.4.
5. *Right of First Refusal.* If, from the date hereof until the 9-month anniversary following consummation of each Offering, the Company or any of its subsidiaries (a) decides to finance using a manager or agent, Wainwright (or any affiliate designated by Wainwright) shall have the right to act as sole book-runner, sole manager, sole placement agent or sole agent with respect to such financing; or (b) decides to raise funds by means of a public offering (including at-the-market facility) or a private placement or any other capital-raising financing of equity, equity-linked or debt securities using an underwriter or placement agent, Wainwright (or any affiliate designated by Wainwright) shall have the right to act as sole book-running manager, sole underwriter or sole placement agent for such financing. If Wainwright or one of its affiliates decides to accept any such engagement, the agreement governing such engagement will contain, among other things, provisions for customary fees for transactions of similar size and nature and the provisions of this Agreement, including indemnification, which are appropriate to such a transaction; provided, however, that this Paragraph A.5 shall not apply to (i) any financing by the Company whereby the Company does not engage an underwriter, placement agent or other broker-dealer, (ii) any financing with the participation of non-U.S. institutional investors (other than Israeli investors or any offshore investor controlled by a U.S. institutional investor), or (iii) a Strategic Transaction. For the purpose of this Agreement, Strategic Transaction means the issuance of securities in connection with a license, partnership or other strategic transaction; provided that any such issuance shall only be to a person which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities ((i) through (iii), the “Excluded Transaction”). For the avoidance of doubt, Paragraph A.4 shall apply with respect to any Excluded Transaction.

**B. Term and Termination of Engagement; Exclusivity.** The term of Wainwright's exclusive engagement will begin on the date hereof and end on the earlier of (i) four (4) months thereafter and (ii) upon consummation of the first Offering (the "Term"). Notwithstanding anything to the contrary contained herein, the Company agrees that the provisions relating to the payment of fees, reimbursement of expenses, right of first refusal, tail, indemnification and contribution, confidentiality, conflicts, independent contractor and waiver of the right to trial by jury will survive any termination or expiration of this Agreement. Notwithstanding anything to the contrary contained herein, the Company has the right to terminate the Agreement for cause in compliance with FINRA Rule 5110(f)(2)(D)(ii). The exercise of such right of termination for cause eliminates the Company's obligations with respect to the provisions relating to the tail fees and right of first refusal. Notwithstanding anything to the contrary contained in this Agreement, in the event that an Offering pursuant to this Agreement shall not be carried out for any reason whatsoever during the Term, the Company shall be obligated to pay to Wainwright its actual and accountable out-of-pocket expenses related to an Offering (including the fees and disbursements of Wainwright's legal counsel) up to an aggregate of \$25,000. During Wainwright's engagement hereunder: (i) the Company will not, and will not permit its representatives to, other than in coordination with Wainwright, contact or solicit institutions, corporations or other entities or individuals as potential purchasers of the Securities and (ii) the Company will not pursue any financing transaction which would be in lieu of an Offering; provided, that the Company shall not be restricted from pursuing a Strategic Transaction or financing outside of the United States (other than Israel) and without the participation on any U.S. institutional investors (or any offshore investor controlled by a U.S. institutional investor). Furthermore, the Company agrees that during Wainwright's engagement hereunder, all direct inquiries from prospective investors will be referred to Wainwright and will be deemed to have been contacted by Wainwright in connection with an Offering. Additionally, except as set forth hereunder, the Company represents, warrants and covenants that no brokerage or finder's fees or commissions are or will be payable by the Company or any subsidiary of the Company to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other third-party with respect to any Offering.

C. Information; Reliance. The Company shall furnish, or cause to be furnished, to Wainwright all information requested by Wainwright for the purpose of rendering services hereunder and conducting due diligence (all such information being the “Information”). In addition, the Company agrees to make available to Wainwright upon request from time to time the officers, directors, accountants, counsel and other advisors of the Company. The Company recognizes and confirms that Wainwright (a) will use and rely on the Information, including any documents provided to investors in each Offering (the “Offering Documents”) which shall include any Purchase Agreement (as defined hereunder), and on information available from generally recognized public sources in performing the services contemplated by this Agreement without having independently verified the same; (b) does not assume responsibility for the accuracy or completeness of the Offering Documents or the Information and such other information; and (c) will not make an appraisal of any of the assets or liabilities of the Company. Upon reasonable request, the Company will meet with Wainwright or its representatives to discuss all information relevant for disclosure in the Offering Documents and will cooperate in any investigation undertaken by Wainwright thereof, including any document included or incorporated by reference therein. At each Offering, at the request of Wainwright, the Company shall deliver such legal letters (including, without limitation, negative assurance letters), opinions, comfort letters, officers’ and secretary certificates and good standing certificates, all in form and substance satisfactory to Wainwright and its counsel as is customary for such Offering. Wainwright shall be a third party beneficiary of any representations, warranties, covenants and closing conditions made by the Company in any Offering Documents, including representations, warranties, covenants and closing conditions made to any investor in an Offering.

D. Related Agreements. At each Offering, the Company shall enter into the following additional agreements:

1. *Underwritten Offering*. If an Offering is an underwritten Offering, the Company and Wainwright shall enter into a customary underwriting agreement in form and substance satisfactory to Wainwright and its counsel.
2. *Best Efforts Offering*. If an Offering is on a best efforts basis, the sale of Securities to the investors in the Offering will be evidenced by a purchase agreement (“Purchase Agreement”) between the Company and such investors in a form reasonably satisfactory to the Company and Wainwright. Wainwright shall be a third party beneficiary with respect to the representations and warranties included in the Purchase Agreement. Prior to the signing of any Purchase Agreement, officers of the Company with responsibility for financial affairs will be available to answer inquiries from prospective investors.
3. *Escrow, Settlement and Closing*. If each Offering is not settled via delivery versus payment (“DVP”), the Company and Wainwright shall enter into an escrow agreement with a third party escrow agent pursuant to which Wainwright’s compensation and expenses shall be paid from the gross proceeds of the Securities sold. If the Offering is settled in whole or in part via DVP, Wainwright shall arrange for its clearing agent to provide the funds to facilitate such settlement. The Company shall pay Wainwright closing costs, which shall also include the reimbursement of the out-of-pocket cost of the escrow agent or clearing agent, as applicable, which closing costs shall not exceed \$12,900.



4. *FINRA Amendments.* Notwithstanding anything herein to the contrary, in the event that Wainwright determines that any of the terms provided for hereunder shall not comply with a FINRA rule, including but not limited to FINRA Rule 5110, then the Company shall agree to amend this Agreement (or include such revisions in the final underwriting agreement) in writing upon the request of Wainwright to comply with any such rules; provided that any such amendments shall not provide for terms that are less favorable to the Company than are reflected in this Agreement.

E. Confidentiality. In the event of the consummation or public announcement of any Offering, Wainwright shall have the right to disclose its participation in such Offering, including, without limitation, the Offering at its cost of “tombstone” advertisements in financial and other newspapers and journals.

F. Indemnity.

1. In connection with the Company’s engagement of Wainwright hereunder, the Company hereby agrees to indemnify and hold harmless Wainwright and its affiliates, and the respective controlling persons, directors, officers, members, shareholders, agents and employees of any of the foregoing (collectively the “Indemnified Persons”), from and against any and all claims, actions, suits, proceedings (including those of shareholders), damages, liabilities and expenses incurred by any of them (including the reasonable fees and expenses of counsel), as incurred, whether or not the Company is a party thereto (collectively a “Claim”), that are (A) related to or arise out of (i) any actions taken or omitted to be taken (including any untrue statements made or any statements omitted to be made) by the Company, or (ii) any actions taken or omitted to be taken by any Indemnified Person in connection with the Company’s engagement of Wainwright, or (B) otherwise relate to or arise out of Wainwright’s activities on the Company’s behalf under Wainwright’s engagement, and the Company shall reimburse any Indemnified Person for all expenses (including the reasonable fees and expenses of counsel) as incurred by such Indemnified Person in connection with investigating, preparing or defending any such claim, action, suit or proceeding, whether or not in connection with pending or threatened litigation in which any Indemnified Person is a party. The Company will not, however, be responsible for any Claim that is finally judicially determined to have resulted from the gross negligence or willful misconduct of any person seeking indemnification for such Claim. The Company further agrees that no Indemnified Person shall have any liability to the Company for or in connection with the Company’s engagement of Wainwright except for any Claim incurred by the Company as a result of such Indemnified Person’s gross negligence or willful misconduct.

2. The Company further agrees that it will not, without the prior written consent of Wainwright, settle, compromise or consent to the entry of any judgment in any pending or threatened Claim in respect of which indemnification may be sought hereunder (whether or not any Indemnified Person is an actual or potential party to such Claim), unless such settlement, compromise or consent includes an unconditional, irrevocable release of each Indemnified Person from any and all liability arising out of such Claim.
3. Promptly upon receipt by an Indemnified Person of notice of any complaint or the assertion or institution of any Claim with respect to which indemnification is being sought hereunder, such Indemnified Person shall notify the Company in writing of such complaint or of such assertion or institution but failure to so notify the Company shall not relieve the Company from any obligation it may have hereunder, except and only to the extent such failure results in the forfeiture by the Company of substantial rights and defenses. If the Company is requested by such Indemnified Person, the Company will assume the defense of such Claim, including the employment of counsel for such Indemnified Person and the payment of the fees and expenses of such counsel, provided, however, that such counsel shall be satisfactory to the Indemnified Person and provided further that if the legal counsel to such Indemnified Person reasonably determines that the use of counsel chosen by the Company to represent the Indemnified Person would present such counsel with a conflict of interest or if the defendant in, or target of, any such Claim, includes an Indemnified Person and the Company, and legal counsel to such Indemnified Person reasonably concludes that there may be legal defenses available to it or other Indemnified Persons different from or in addition to those available to the Company, such Indemnified Person will employ its own separate counsel (including local counsel, if necessary) to represent or defend him, her or it in any such Claim and the Company shall pay the reasonable fees and expenses of such counsel. If such Indemnified Person does not request that the Company assume the defense of such Claim, such Indemnified Person will employ its own separate counsel (including local counsel, if necessary) to represent or defend him, her or it in any such Claim and the Company shall pay the reasonable fees and expenses of such counsel. Notwithstanding anything herein to the contrary, if the Company fails timely or diligently to defend, contest, or otherwise protect against any Claim, the relevant Indemnified Person shall have the right, but not the obligation, to defend, contest, compromise, settle, assert crossclaims, or counterclaims or otherwise protect against the same, and shall be fully indemnified by the Company therefor, including without limitation, for the reasonable fees and expenses of its counsel and all amounts paid as a result of such Claim or the compromise or settlement thereof. In addition, with respect to any Claim in which the Company assumes the defense, the Indemnified Person shall have the right to participate in such Claim and to retain his, her or its own counsel therefor at his, her or its own expense.

4. The Company agrees that if any indemnity sought by an Indemnified Person hereunder is held by a court to be unavailable for any reason then (whether or not Wainwright is the Indemnified Person), the Company and Wainwright shall contribute to the Claim for which such indemnity is held unavailable in such proportion as is appropriate to reflect the relative benefits to the Company, on the one hand, and Wainwright on the other, in connection with Wainwright's engagement referred to above, subject to the limitation that in no event shall the amount of Wainwright's contribution to such Claim exceed the amount of fees actually received by Wainwright from the Company pursuant to Wainwright's engagement. The Company hereby agrees that the relative benefits to the Company, on the one hand, and Wainwright on the other, with respect to Wainwright's engagement shall be deemed to be in the same proportion as (a) the total value paid or proposed to be paid or received by the Company pursuant to the applicable Offering (whether or not consummated) for which Wainwright is engaged to render services bears to (b) the fee paid or proposed to be paid to Wainwright in connection with such engagement.
5. The Company's indemnity, reimbursement and contribution obligations under this Agreement (a) shall be in addition to, and shall in no way limit or otherwise adversely affect any rights that any Indemnified Person may have at law or at equity and (b) shall be effective whether or not the Company is at fault in any way.

G. Limitation of Engagement to the Company. The Company acknowledges that Wainwright has been retained only by the Company, that Wainwright is providing services hereunder as an independent contractor (and not in any fiduciary or agency capacity) and that the Company's engagement of Wainwright is not deemed to be on behalf of, and is not intended to confer rights upon, any shareholder, owner or partner of the Company or any other person not a party hereto as against Wainwright or any of its affiliates, or any of its or their respective officers, directors, controlling persons (within the meaning of Section 15 of the Securities Act or Section 20 of the Securities Exchange Act of 1934, as amended (the "Exchange Act")), employees or agents. Unless otherwise expressly agreed in writing by Wainwright, no one other than the Company is authorized to rely upon this Agreement or any other statements or conduct of Wainwright, and no one other than the Company is intended to be a beneficiary of this Agreement. The Company acknowledges that any recommendation or advice, written or oral, given by Wainwright to the Company in connection with Wainwright's engagement is intended solely for the benefit and use of the Company's management and directors in considering a possible Offering, and any such recommendation or advice is not on behalf of, and shall not confer any rights or remedies upon, any other person or be used or relied upon for any other purpose. Wainwright shall not have the authority to make any commitment binding on the Company. The Company, in its sole discretion, shall have the right to reject any investor introduced to it by Wainwright.

H. Limitation of Wainwright's Liability to the Company. Wainwright and the Company further agree that neither Wainwright nor any of its affiliates or any of its or their respective officers, directors, controlling persons (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act), employees or agents shall have any liability to the Company, its security holders or creditors, or any person asserting claims on behalf of or in the right of the Company (whether direct or indirect, in contract, tort, for an act of negligence or otherwise) for any losses, fees, damages, liabilities, costs, expenses or equitable relief arising out of or relating to this Agreement or the services rendered hereunder, except for losses, fees, damages, liabilities, costs or expenses that arise out of or are based on any action of or failure to act by Wainwright and that are finally judicially determined to have resulted solely from the gross negligence or willful misconduct of Wainwright.

I. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be fully performed therein. Any disputes that arise under this Agreement, even after the termination of this Agreement, will be heard only in the state or federal courts located in the City of New York, State of New York. The parties hereto expressly agree to submit themselves to the jurisdiction of the foregoing courts in the City of New York, State of New York. The parties hereto expressly waive any rights they may have to contest the jurisdiction, venue or authority of any court sitting in the City and State of New York. In the event Wainwright or any Indemnified Person is successful in any action, or suit against the Company, arising out of or relating to this Agreement, the final judgment or award entered shall be entitled to have and recover from the Company the costs and expenses incurred in connection therewith, including its reasonable attorneys' fees. Any rights to trial by jury with respect to any such action, proceeding or suit are hereby waived by Wainwright and the Company.

J. Notices. All notices hereunder will be in writing and sent by certified mail, hand delivery, overnight delivery, fax or e-mail, if sent to Wainwright, at the address set forth on the first page hereof, e-mail: [notices@hewco.com](mailto:notices@hewco.com), Attention: Head of Investment Banking, and if sent to the Company, to the address set forth on the first page hereof, e-mail: [ella@emeraldbio.life](mailto:ella@emeraldbio.life), Attention: Ella Traistaru. Notices sent by certified mail shall be deemed received five days thereafter, notices sent by hand delivery or overnight delivery shall be deemed received on the date of the relevant written record of receipt, notices delivered by fax shall be deemed received as of the date and time printed thereon by the fax machine and notices sent by e-mail shall be deemed received as of the date and time they were sent.

K. Conflicts. The Company acknowledges that Wainwright and its affiliates may have and may continue to have investment banking and other relationships with parties other than the Company pursuant to which Wainwright may acquire information of interest to the Company. Wainwright shall have no obligation to disclose such information to the Company or to use such information in connection with any contemplated transaction.

L. Anti-Money Laundering. To help the United States government fight the funding of terrorism and money laundering, the federal laws of the United States require all financial institutions to obtain, verify and record information that identifies each person with whom they do business. This means Wainwright must ask the Company for certain identifying information, including a government-issued identification number (e.g., a U.S. taxpayer identification number) and such other information or documents that Wainwright considers appropriate to verify the Company's identity, such as certified articles of incorporation, a government-issued business license, a partnership agreement or a trust instrument.

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M. Miscellaneous. The Company represents and warrants that it has all requisite power and authority to enter into and carry out the terms and provisions of this Agreement and the execution, delivery and performance of this Agreement does not breach or conflict with any agreement, document or instrument to which it is a party or bound. This Agreement shall not be modified or amended except in writing signed by Wainwright and the Company. This Agreement shall be binding upon and inure to the benefit of both Wainwright and the Company and their respective assigns, successors, and legal representatives. This Agreement constitutes the entire agreement of Wainwright and the Company with respect to the subject matter hereof and supersedes any prior agreements with respect to the subject matter hereof. If any provision of this Agreement is determined to be invalid or unenforceable in any respect, such determination will not affect such provision in any other respect, and the remainder of the Agreement shall remain in full force and effect. This Agreement may be executed in counterparts (including facsimile or electronic counterparts), each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

\*\*\*\*\*

In acknowledgment that the foregoing correctly sets forth the understanding reached by Wainwright and the Company, please sign in the space provided below, whereupon this letter shall constitute a binding Agreement as of the date indicated above.

Very truly yours,

**H.C. WAINWRIGHT & CO., LLC**

By: /s/ Edward D. Silvera

Name: Edward D. Silvera

Title: Chief Operating Officer

Date: 7/20/2020

Accepted and Agreed:

**Emerald Bioscience, Inc.**

By: /s/ Dr. Brian Murphy

Name: Dr. Brian Murphy

Title: Chief Executive Officer





**Exhibit A**

Investors subject to a reduced cash fee

- i. Individual retail investors who prior to the date hereof have invested in the Company;

- ii. Anson Investments (and any of their affiliates); and
- iii. Intracoastal Capital (and any of their affiliates).

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Member: FINRA/SIPC

**Exhibit B**  
**Investors excluded from tail**

- i. Individual retail investors who prior to the date hereof have invested in the Company; and
- ii. Raphael Lazo; and
- iii. Argonaut Advisors (and any of their affiliates).



PURSUANT TO THE TERMS OF SECTION 2(A) OF THIS WARRANT, ALL OR A PORTION OF THIS WARRANT MAY HAVE BEEN EXERCISED, AND THEREFORE THE ACTUAL NUMBER OF WARRANT SHARES REPRESENTED BY THIS WARRANT MAY BE LESS THAN THE AMOUNT SET FORTH ON THE FACE HEREOF.

**COMMON STOCK PURCHASE WARRANT  
EMERALD BIOSCIENCE, INC.**

Warrant Shares:

Initial Exercise Date: \_\_\_\_\_, 2020

THIS COMMON STOCK PURCHASE WARRANT (the “**Warrant**”) certifies that, for value received, \_\_\_\_\_ or its assigns (the “**Holder**”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the “**Initial Exercise Date**”) and on or prior to and on or prior to 5:00 p.m. (New York City time) on \_\_\_\_\_<sup>1</sup> (the “**Termination Date**”) but not thereafter, to subscribe for and purchase from Emerald Bioscience, Inc., a Nevada corporation (the “**Company**”), up to \_\_\_\_\_ shares (as subject to adjustment hereunder, the “**Warrant Shares**”) of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

“**Affiliate**” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

“**Board of Directors**” means the board of directors of the Company.

“**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to “stay at home”, “shelter-in-place”, “non-essential employee” or any other similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in The City of New York are generally are open for use by customers on such day.

“**Commission**” means the United States Securities and Exchange Commission.

“**Common Stock**” means the common stock of the Company, par value \$0.001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

“**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“**Person**” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“**Registration Statement**” means the Company’s registration statement on Form S-1 (File No. 333-239826).

“**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“**Subsidiary**” means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

“**Trading Day**” means a day on which the Common Stock is traded on a Trading Market.

“**Trading Market**” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

“**Transfer Agent**” means \_\_\_\_\_, the current transfer agent of the Company, with a mailing address of \_\_\_\_\_ and a facsimile number of \_\_\_\_\_, and any successor transfer agent of the Company.

<sup>1</sup> Insert the date that is the five (5) year anniversary of the Initial Exercise Date, provided that, if such date is not a Trading Day, insert the immediately following Trading Day.

Section 2.      Exercise.

a )      Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company (or such other office or agency of the Company as it may designate by notice in writing to the registered Holder at the address of the Holder appearing on the books of the Company) of a duly executed facsimile copy or PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “**Notice of Exercise**”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Business Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b )      Exercise Price. The exercise price per share of the Common Stock under this Warrant shall be \$ \_\_\_, subject to adjustment hereunder (the “**Exercise Price**”).

c )      Cashless Exercise. If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

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“**Bid Price**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“**VWAP**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder’s or its designee’s balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system (“**DWAC**”) if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the “**Warrant Share Delivery Date**”). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, “**Standard Settlement Period**” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered on or prior to 12:00 p.m. (New York City time) on the Initial Exercise Date, which may be delivered at any time after \_\_\_\_\_<sup>2</sup>, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Initial Exercise Date and the Initial Exercise Date shall be the Warrant Share Delivery Date for purposes hereunder.

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<sup>2</sup> Insert time and date of execution of the Securities Purchase Agreement

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder.

For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000 in Common Stock. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

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e ) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "**Attribution Parties**")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within two Trading Days confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "**Beneficial Ownership Limitation**" shall be 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

### Section 3. Certain Adjustments.

a ) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

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b) [Reserved]

c) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the “**Purchase Rights**”), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder’s right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution, to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

e) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company (and all of its Subsidiaries, taken as a whole), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder’s option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying the same type or form of consideration (and in the same proportion), at the Black Scholes Value (as defined below) of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction. “**Black Scholes Value**” means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (“**Bloomberg**”) determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public announcement of the applicable Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the greater of (x) the last VWAP immediately prior to the public announcement of such Fundamental Transaction and (y) the last VWAP immediately prior to the consummation of such Fundamental Transaction and (D) a remaining option time equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date and (E) a zero cost of borrow. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds within the later of (i) five Business Days of the Holder’s election and (ii) the date of consummation of the Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “**Successor Entity**”) to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3(e) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor

Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein.

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f) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

g) Notice to Holder.

i) Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii) Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the

Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 15 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

h ) Voluntary Adjustment By Company. Subject to the rules and regulations of the Trading Market, the Company may at any time during the term of this Warrant, subject to the prior written consent of the Holder, reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the board of directors of the Company.

#### Section 4. Transfer of Warrant.

a ) Transferability. This Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b ) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c ) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “**Warrant Register**”), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

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Section 5. Miscellaneous.

a ) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a "cashless exercise" pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b ) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c ) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then, such action may be taken or such right may be exercised on the next succeeding Business Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e ) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

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f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant or the Purchase Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h ) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Purchase Agreement.

i ) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant



Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

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*(Signature Page Follows)*

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IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

EMERALD BIOSCIENCE, INC.

By: \_\_\_\_\_  
Name:  
Title:

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**COMMON STOCK PURCHASE WARRANT  
NOTICE OF EXERCISE**

TO: EMERALD BIOSCIENCE, INC.

(1) The undersigned hereby elects to purchase \_\_\_\_\_ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only required if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

☐ in lawful money of the United States; or

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

\_\_\_\_\_

The Warrant Shares shall be delivered to the following DWAC Account Number:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing

Entity: \_\_\_\_\_ *Signature*

*of Authorized Signatory of Investing*

Entity: \_\_\_\_\_ Name of

Authorized

Signatory: \_\_\_\_\_ Title

of Authorized

Signatory: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**COMMON STOCK PURCHASE WARRANT**

**ASSIGNMENT FORM**

*(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)*

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name:

\_\_\_\_\_  
(Please

Address:

\_\_\_\_\_  
Print)

Phone Number:

Email Address:

\_\_\_\_\_  
(Please

Dated: \_\_\_\_\_

Holder's Signature:

\_\_\_\_\_  
Print)

\_\_\_\_\_  
Holder's Address:

\_\_\_\_\_

\_\_\_\_\_

PURSUANT TO THE TERMS OF SECTION 2(A) OF THIS WARRANT, ALL OR A PORTION OF THIS WARRANT MAY HAVE BEEN EXERCISED, AND THEREFORE THE ACTUAL NUMBER OF WARRANT SHARES REPRESENTED BY THIS WARRANT MAY BE LESS THAN THE AMOUNT SET FORTH ON THE FACE HEREOF.

**PRE-FUNDED COMMON STOCK PURCHASE WARRANT  
EMERALD BIOSCIENCE, INC.**

Warrant Shares: \_\_\_\_\_

Initial Exercise Date: \_\_\_\_\_, 2020

THIS PRE-FUNDED COMMON STOCK PURCHASE WARRANT (the “**Warrant**”) certifies that, for value received, or its assigns (the “**Holder**”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the “**Initial Exercise Date**”) until this Warrant is exercised in full (the “**Termination Date**”) but not thereafter, to subscribe for and purchase from Emerald Bioscience, Inc., a Nevada corporation (the “**Company**”), up to \_\_\_\_\_ shares (as subject to adjustment hereunder, the “**Warrant Shares**”) of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

“**Affiliate**” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

“**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to “stay at home”, “shelter-in-place”, “non-essential employee” or any other similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in The City of New York are generally open for use by customers on such day.

“**Commission**” means the United States Securities and Exchange Commission.

“**Common Stock**” means the common stock of the Company, par value \$0.001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

“**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“**Person**” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“**Registration Statement**” means the Company’s registration statement on Form S-1 (File No. 333-239826).

“**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“**Subsidiary**” means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

“**Trading Day**” means a day on which the Common Stock is traded on a Trading Market.

“**Trading Market**” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

“**Transfer Agent**” means \_\_\_\_\_, the current transfer agent of the Company, with a mailing address of \_\_\_\_\_ and a facsimile number of \_\_\_\_\_, and any successor transfer agent of the Company.

Section 2. Exercise.

a) Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company (or such other office or agency of the Company as it may designate by notice in writing to the registered Holder at the address of the Holder appearing on the books of the Company) of a duly executed facsimile copy or PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “**Notice of Exercise**”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Business Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) Exercise Price. The aggregate exercise price of this Warrant, except for a nominal exercise price of \$0.001 per Warrant Share, was pre-funded to the Company on or prior to the Initial Exercise Date and, consequently, no additional consideration (other than the nominal exercise price of \$0.001 per Warrant Share) shall be required to be paid by the Holder to any Person to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-paid aggregate exercise price under any circumstance or for any reason whatsoever, including in the event this Warrant shall not have been exercised prior to the Termination Date. The remaining unpaid exercise price per share of Common Stock under this Warrant shall be \$0.001, subject to adjustment hereunder (the “**Exercise Price**”).

c) Cashless Exercise. This Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

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“**Bid Price**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“**VWAP**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder’s or its designee’s balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system (“**DWAC**”) if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the “**Warrant Share Delivery Date**”). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, “**Standard Settlement Period**” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered on or prior to 12:00 p.m. (New York City time) on the Initial Exercise Date, which may be delivered at any time after \_\_\_\_\_<sup>1</sup>, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Initial Exercise Date and the Initial Exercise Date shall be the Warrant Share Delivery Date for purposes hereunder.

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<sup>1</sup> Insert time and date of execution of the Securities Purchase Agreement

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder.

For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000 in Common Stock. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

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e ) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "**Attribution Parties**")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within two Trading Days confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "**Beneficial Ownership Limitation**" shall be 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

### Section 3. Certain Adjustments.

a ) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

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b) [Reserved]

c) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the “**Purchase Rights**”), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder’s right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution, to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

e) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company (and all of its Subsidiaries, taken as a whole), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “**Successor Entity**”) to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3(e) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein.

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purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

g) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 15 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

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Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b ) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c ) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “**Warrant Register**”), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

Section 5. Miscellaneous.

a ) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c ) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then, such action may be taken or such right may be exercised on the next succeeding Business Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

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Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e ) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any



such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant or the Purchase Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Purchase Agreement.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

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j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

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*(Signature Page Follows)*

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IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

EMERALD BIOSCIENCE, INC.

By:

Name:

Title:

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**COMMON STOCK PURCHASE WARRANT  
NOTICE OF EXERCISE**

TO: EMERALD BIOSCIENCE, INC.

(1) The undersigned hereby elects to purchase \_\_\_\_\_ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only required if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

☐ in lawful money of the United States; or

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

\_\_\_\_\_

The Warrant Shares shall be delivered to the following DWAC Account Number:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing  
Entity: \_\_\_\_\_ *Signature*  
*of Authorized Signatory of Investing*  
Entity: \_\_\_\_\_ Name of  
Authorized  
Signatory: \_\_\_\_\_ Title  
of Authorized  
Signatory: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**COMMON STOCK PURCHASE WARRANT  
ASSIGNMENT FORM**

*(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)*

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name:

\_\_\_\_\_  
(Please

Address:

\_\_\_\_\_  
Print)

Phone Number:

Email Address:

\_\_\_\_\_  
(Please

Dated: \_\_\_\_\_,

Holder's Signature: \_\_\_\_\_

\_\_\_\_\_  
Print)

Holder's Address:

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PURSUANT TO THE TERMS OF SECTION 2(A) OF THIS WARRANT, ALL OR A PORTION OF THIS WARRANT MAY HAVE BEEN EXERCISED, AND THEREFORE THE ACTUAL NUMBER OF WARRANT SHARES REPRESENTED BY THIS WARRANT MAY BE LESS THAN THE AMOUNT SET FORTH ON THE FACE HEREOF.

**PLACEMENT AGENT COMMON STOCK PURCHASE WARRANT  
EMERALD BIOSCIENCE, INC.**

Warrant Shares: \_\_\_\_\_

Initial Exercise Date: \_\_\_\_\_, 2020

THIS PLACEMENT AGENT COMMON STOCK PURCHASE WARRANT (the “**Warrant**”) certifies that, for value received, \_\_\_\_\_ or its assigns (the “**Holder**”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the “**Initial Exercise Date**”) and on or prior to and on or prior to 5:00 p.m. (New York City time) on \_\_\_\_\_<sup>1</sup> (the “**Termination Date**”) but not thereafter, to subscribe for and purchase from Emerald Bioscience, Inc., a Nevada corporation (the “**Company**”), up to \_\_\_\_\_ shares (as subject to adjustment hereunder, the “**Warrant Shares**”) of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b). This Warrant is issued pursuant to that certain Engagement Agreement, by and between the Company and H.C. Wainwright & Co., LLC, dated as of July 20, 2020.

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Securities Purchase Agreement (the “Purchase Agreement”), dated February \_\_\_, 2020, among the Company and the purchasers signatory thereto.

Section 2. Exercise.

a) Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company (or such other office or agency of the Company as it may designate by notice in writing to the registered Holder at the address of the Holder appearing on the books of the Company) of a duly executed facsimile copy or PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “**Notice of Exercise**”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Business Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) Exercise Price. The exercise price per share of the Common Stock under this Warrant shall be \$\_\_\_\_<sup>2</sup>, subject to adjustment hereunder (the “**Exercise Price**”).

<sup>1</sup> Insert the date that is the five (5) year anniversary of the effective date of the registration statement, provided that, if such date is not a Trading Day, insert the immediately preceding Trading Day.

<sup>2</sup> 125% of the offering price.



c) Cashless Exercise. If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing  $[(A-B)(X)]$  by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

“**Bid Price**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“**VWAP**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder’s or its designee’s balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system (“**DWAC**”) if the Company is then a participant in such system and either (A) there is an

effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "**Warrant Share Delivery Date**"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "**Standard Settlement Period**" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

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ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery

obligations hereunder.

For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000 in Common Stock. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

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v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the

payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

e ) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "**Attribution Parties**")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within two Trading Days confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "**Beneficial Ownership Limitation**" shall be 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

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Section 3.      Certain Adjustments.

a )      Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b)      [Reserved]

c )      Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d)      Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise, other than cash (including, without limitation, any distribution of stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "**Distribution**"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution, to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

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e ) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company (and all of its Subsidiaries, taken as a whole), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder’s option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value (as defined below) of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, that, if the Fundamental Transaction is not within the Company’s control, including not approved by the Company’s Board of Directors, Holder shall only be entitled to receive from the Company or any Successor Entity the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Stock will be deemed to have received common stock of the Successor Entity (which Entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction. **“Black Scholes Value”** means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (**“Bloomberg”**) determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public announcement of the applicable Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the greater of (x) the last VWAP immediately prior to the public announcement of such Fundamental Transaction and (y) the last VWAP immediately prior to the consummation of such Fundamental Transaction and (D) a remaining option time equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date and (E) a zero cost of borrow. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds within the later of (i) five Business Days of the Holder’s election and (ii) the date of consummation of the Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the **“Successor Entity”**) to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3(e) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein.

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f ) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

g) Notice to Holder.

i . Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 15 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

h) Voluntary Adjustment By Company. Subject to the rules and regulations of the Trading Market, the Company may at any time during the term of this Warrant, subject to the prior written consent of the Holder, reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the board of directors of the Company.

Section 4. Transfer of Warrant.

a) Transferability. Pursuant to FINRA Rule 5110(g)(1), neither this Warrant nor any Warrant Shares issued upon exercise of this Warrant shall be sold, transferred, assigned, pledged or hypothecated, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of the securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of the offering pursuant to which this Warrant is being issued, except the transfer of any security:

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- (i) by operation of law or by reason of reorganization of the Company;
- (ii) to any FINRA member firm participating in the offering and the officers and partners thereof, if all securities so transferred remain subject to the lock-up restriction in this Section 4(a) for the remainder of the time period;
- (iii) if the aggregate amount of securities of the Company held by the Holder or related person do not exceed 1% of the securities being offered;
- (iv) that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund, and participating members in the aggregate do not own more than 10% of the equity in the fund; or
- (v) the exercise or conversion of any security, if all securities received remain subject to the lock-up restriction in this Section 4(a) for the remainder of the time period.

Subject to the foregoing restriction, this Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

a ) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

b ) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “**Warrant Register**”), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

#### Section 5. Miscellaneous.

a ) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c ) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then, such action may be taken or such right may be exercised on the next succeeding Business Day.

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d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e ) Jurisdiction. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be determined in accordance with the provisions of the Purchase Agreement.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant or the Purchase Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h ) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered to the address of the Holder in the Warrant Register.

i ) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

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k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n ) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

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(Signature Page Follows)

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IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

EMERALD BIOSCIENCE, INC.

By: \_\_\_\_\_  
Name:  
Title:

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**COMMON STOCK PURCHASE WARRANT  
NOTICE OF EXERCISE**

TO: EMERALD BIOSCIENCE, INC.

(1) The undersigned hereby elects to purchase \_\_\_\_\_ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only required if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

☐ in lawful money of the United States; or

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

\_\_\_\_\_

The Warrant Shares shall be delivered to the following DWAC Account Number:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing

Entity: \_\_\_\_\_ *Signature*

*of Authorized Signatory of Investing*

Entity: \_\_\_\_\_ Name of

Authorized

Signatory: \_\_\_\_\_ Title

of Authorized

Signatory: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**COMMON STOCK PURCHASE WARRANT  
ASSIGNMENT FORM**

*(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)*

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name:

\_\_\_\_\_  
(Please

Address:

\_\_\_\_\_  
Print)

Phone Number:

Email Address:

\_\_\_\_\_  
(Please

Dated: \_\_\_\_\_,

Holder's Signature: \_\_\_\_\_

\_\_\_\_\_  
Print)

Holder's Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_





July 28, 2020

Board of Directors  
Emerald Bioscience, Inc.  
130 North Marina Drive  
Long Beach, CA 90803

**Re: Emerald Bioscience, Inc.  
Amendment No. 1 to Registration Statement on Form S-1**

Ladies and Gentlemen:

We act as counsel to Emerald Bioscience, Inc., a Nevada corporation (the "Company"), in connection with registration statement on Form S-1 (Registration No. 333-239826), filed on July 13, 2020 by the Company with the Securities Exchange Commission (the "SEC") under the Securities Act of 1933, as amended (the "Securities Act"), as amended by Pre-Effective Amendment No. 1 filed with the SEC on July 28, 2020 (as so amended, the "Registration Statement"). The Registration Statement relates to the registration under the Securities Act of (i) up to **48,676,012** units (the "Units") consisting of (A) common units ("Common Units"), each consisting of (x) one share of Common Stock, \$0.001 par value per share, of the Company (the "Common Stock"), and (y) one warrant ("Common Warrant") to purchase shares of Common Stock of the Company, or (B) pre-funded units ("Pre-Funded Units") each consisting of (x) one pre-funded warrant ("Pre-Funded Warrant") to purchase one share of Common Stock and (y) one Common Warrant, and (iii) Placement Agent's warrants to purchase shares of Common Stock of the Company (the "Placement Agent Warrants") and together with the Common Warrants and the Pre-Funded Warrants, the "Warrants"). The shares of Common Stock underlying the Common Warrants, the shares of Common Stock underlying the Pre-Funded Warrants and the shares of Common Stock underlying the Placement Agent Warrants are collectively referred to herein as the "Shares". The Units, the Common Stock, the Shares and the Warrants, are referred to herein collectively as the "Securities."

For the purpose of rendering this opinion, we examined originals or copies of such documents as deemed to be relevant. In conducting our examination, we assumed, without investigation, the genuineness of all signatures, the correctness of all certificates, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted as certified or photostatic copies, the authenticity of the originals of such copies, and the accuracy and completeness of all records made available to us by the Company.

Our opinion is limited solely to matters set forth herein. The law covered by the opinions expressed herein is limited to the Federal Law of the United States and the laws applicable to the State of Nevada. Further, our opinion is based solely upon existing laws, rules, and regulations, and we undertake no obligation to advise you of any changes that may be brought to our attention after the date hereof.

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Based upon and subject to the foregoing, and assuming that (a) the Registration Statement becomes and remains effective, and the prospectus which is a part of the Registration Statement (the “Prospectus”), and the Prospectus delivery requirements with respect thereto, fulfill all of the requirements of the Securities Act, throughout all periods relevant to the opinion; (b) the Securities will be offered in the manner and on the terms identified or referred to in the Registration Statement, including all amendments thereto; and (c) all offers and sales of the Securities will be made in compliance with the securities laws of the states having jurisdiction thereof, we are of the opinion that the Securities have been duly authorized, and if, as, and when issued by the Company in accordance with and in the manner described in the Prospectus (as amended and supplemented through the date of issuance) and, in the case of the Shares, when issued in accordance with the terms of the applicable Warrants, will be validly issued, fully paid and non-assessable, and, with respect to the Warrants, will be legally binding obligations of the Company in accordance with their terms except: (a) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors’ rights generally and by general equitable principles (regardless of whether enforceability is considered in a proceeding in equity or at law); (b) as enforceability of any indemnification or contribution provision may be limited under the Federal and state securities laws; and (c) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefor may be brought.

We hereby consent in writing to the reference to this firm under the caption “Legal Matters” in the Prospectus and the use of our opinion as an exhibit to the Registration Statement and any amendment thereto. By giving such consent, we do not thereby admit that we come within the category of persons where consent is required under Section 7 of the Securities Act or the rules and regulations of the SEC.

This opinion is rendered pursuant to Item 601(b)(5)(i) of Regulation S-K under the Securities Act and may not be used, circulated, quoted or relied upon for any other purpose. This opinion is given as of the date set forth above, and we assume no obligation to update or supplement the opinions contained herein to reflect any facts or circumstances which may hereafter come to our attention, or any changes in laws which may hereafter occur.

Very truly yours,

/s/ Greenberg Traurig, LLP  
GREENBERG TRAURIG, LLP

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**SECURITIES PURCHASE AGREEMENT**

This Securities Purchase Agreement (this “Agreement”) is dated as of July \_\_\_\_, 2020, between Emerald Bioscience, Inc., a Nevada corporation (the “Company”), and each purchaser identified on the signature pages hereto (each, including its successors and assigns, a “Purchaser” and collectively the “Purchasers”).

WHEREAS, subject to the terms and conditions set forth in this Agreement and pursuant to an effective registration statement under the Securities Act of 1933, as amended (the “Securities Act”), the Company desires to issue and sell to each Purchaser, and each Purchaser, severally and not jointly, desires to purchase from the Company, securities of the Company as more fully described in this Agreement.

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration the receipt and adequacy of which are hereby acknowledged, the Company and each Purchaser agree as follows:

**ARTICLE I.**  
**DEFINITIONS**

1.1 Definitions. In addition to the terms defined elsewhere in this Agreement, for all purposes of this Agreement, the following terms have the meanings set forth in this Section 1.1:

“Acquiring Person” shall have the meaning ascribed to such term in Section 4.5.

“Action” shall have the meaning ascribed to such term in Section 3.1(j).

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person as such terms are used in and construed under Rule 405 under the Securities Act.

“Board of Directors” means the board of directors of the Company.

“Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Closing” means the closing of the purchase and sale of the Securities pursuant to Section 2.1.

“Closing Date” means the Trading Day on which all of the Transaction Documents have been executed and delivered by the applicable parties thereto, and all conditions precedent to (i) the Purchasers’ obligations to pay the Subscription Amount and (ii) the Company’s obligations to deliver the Securities, in each case, have been satisfied or waived, but in no event later than the second (2<sup>nd</sup>) Trading Day following the date hereof.

“Commission” means the United States Securities and Exchange Commission.

“Common Stock” means the common stock of the Company, par value \$0.001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

“Common Stock Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“Common Units” means each common unit consisting of (i) one Share (as defined below), and (ii) one Common Warrant (as defined below) to purchase one (1) Common Warrant Share (as defined below).

“Common Unit Purchase Price” equals \$ \_\_\_ per each Common Unit, subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement.

“Common Warrants” means, collectively, the Common Stock purchase warrants delivered to the Purchasers at the Closing in accordance with Section 2.2(a) hereof, which Common Warrants shall be exercisable immediately and have a term of exercise equal to \_\_\_ years, in the form of Exhibit A-1 attached hereto.

“Common Warrant Shares” means the shares of Common Stock issuable upon exercise of the Common Warrants.

“Company Counsel” means Greenberg Traurig, LLP, with offices located at 1201 K Street, Suite 1100, Sacramento, CA 95814.

“Disclosure Schedules” means the Disclosure Schedules of the Company delivered concurrently herewith.

“Disclosure Time” means, (i) if this Agreement is signed on a day that is not a Trading Day or after 9:00 a.m. (New York City time) and before midnight (New York City time) on any Trading Day, 9:01 a.m. (New York City time) on the Trading Day immediately following the date hereof, unless otherwise instructed as to an earlier time by the Placement Agent, and (ii) if this Agreement is signed between midnight (New York City time) and 9:00 a.m. (New York City time) on any Trading Day, no later than 9:01 a.m. (New York City time) on the date hereof, unless otherwise instructed as to an earlier time by the Placement Agent.

0302. “EGS” means Ellenoff Grossman & Schole LLP, with offices located at 1345 Avenue of the Americas, New York, New York 10105-

“Evaluation Date” shall have the meaning ascribed to such term in Section 3.1(s).

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Exempt Issuance” means the issuance of (a) shares of Common Stock or options to employees, officers or directors of the Company pursuant to any stock or option plan duly adopted for such purpose, by a majority of the non-employee members of the Board of Directors or a majority of the members of a committee of non-employee directors established for such purpose for services rendered to the Company, (b) securities upon the exercise or exchange of or conversion of any Securities issued hereunder and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities (other than in connection with stock splits or combinations) or to extend the term of such securities, (c) securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, provided that such securities are issued as “restricted securities” (as defined in Rule 144) and carry no registration rights that require or permit the filing of any registration statement in connection therewith during the prohibition period in Section 4.11(a) herein, and provided that any such issuance shall only be to a Person (or to the equityholders of a Person) which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities, and (d) up to \$\_\_\_\_\_ of Units, including Shares, Pre-Funded Warrants, and Common Warrants issued to other purchasers pursuant to the Prospectus concurrently with the Closing at the applicable Common Unit Purchase Price or Pre-Funded Unit Purchase Price.

“FCPA” means the Foreign Corrupt Practices Act of 1977, as amended.

“FDA” shall have the meaning ascribed to such term in Section 3.1(hh).

“FDCA” shall have the meaning ascribed to such term in Section 3.1(hh).

“GAAP” shall have the meaning ascribed to such term in Section 3.1(h).

“Indebtedness” shall have the meaning ascribed to such term in Section 3.1(aa).

“Intellectual Property Rights” shall have the meaning ascribed to such term in Section 3.1(p).

“Liens” means a lien, charge, pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction.

“Material Adverse Effect” shall have the meaning assigned to such term in Section 3.1(b).

“Material Permits” shall have the meaning ascribed to such term in Section 3.1(n).

“Participation Maximum” shall have the meaning ascribed to such term in Section 4.11(a).

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Pharmaceutical Product” shall have the meaning ascribed to such term in Section 3.1(hh).

“Placement Agent” means H.C. Wainwright & Co., LLC.

“Pre-Funded Units” means each pre-funded unit consisting of (i) one Pre-Funded Warrant (as defined below) to initially purchase one Pre-Funded Warrant Share (as defined below), and (ii) one Common Warrant to purchase one (1) Common Warrant Share.

“Pre-Funded Unit Purchase Price” equals \$ \_\_\_ per each Pre-Funded Unit, subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement.

“Pre-Funded Warrants” means, collectively, the Pre-Funded Common Stock purchase warrants delivered to the Purchasers at the Closing in accordance with Section 2.2(a) hereof, which Pre-Funded Warrants shall be exercisable immediately and shall expire when exercised in full, in the form of Exhibit C attached hereto.

“Pre-Funded Warrant Shares” means the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants.

“Proceeding” means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened.

“Prospectus” means the final prospectus filed for the Registration Statement.

“Prospectus Supplement” means the supplement to the Prospectus complying with Rule 424(b) of the Securities Act that is filed with the Commission and delivered by the Company to each Purchaser at the Closing.

“Purchaser Party” shall have the meaning ascribed to such term in Section 4.8.

“Registration Statement” means the effective registration statement with Commission file No. 333-231951 which registers the sale of the Shares, the Warrants and the Warrant Shares to the Purchasers.

“Required Approvals” shall have the meaning ascribed to such term in Section 3.1(e).

“Rule 144” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“Rule 424” means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“SEC Reports” shall have the meaning ascribed to such term in Section 3.1(h).

“Securities” means the Units, the Shares, the Warrants and the Warrant Shares.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Shares” means the shares of Common Stock issued or issuable to each Purchaser pursuant to this Agreement.

“Short Sales” means all “short sales” as defined in Rule 200 of Regulation SHO under the Exchange Act (but shall not be deemed to include locating and/or borrowing shares of Common Stock).

“Subscription Amount” means, as to each Purchaser, the aggregate amount to be paid for the Common Units and/or the Pre-Funded Units purchased hereunder as specified below such Purchaser’s name on the signature page of this Agreement and next to the heading “Subscription Amount,” in United States dollars and in immediately available funds.

“Subsidiary” means any subsidiary of the Company as set forth on Schedule 3.1(a), and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

“Trading Day” means a day on which the principal Trading Market is open for trading.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

“Transaction Documents” means this Agreement, the Warrants, all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means ClearTrust LLC, the current transfer agent of the Company, with a mailing address of 16540 Pointe Village Drive, Suite 210, Lutz, Florida 33558 and a facsimile number of \_\_\_\_\_, and any successor transfer agent of the Company.

“Units” means, collectively, the Common Units and the Pre-Funded Units.

“Variable Rate Transaction” shall have the meaning ascribed to such term in Section 4.11(b).

“Warrants” means, collectively, the Common Warrants and the Pre-Funded Warrants.

“Warrant Shares” means the Common Warrant Shares and the Pre-Funded Warrant Shares.

## **ARTICLE II.**

### **PURCHASE AND SALE**

2.1 Closing. On the Closing Date, upon the terms and subject to the conditions set forth herein, substantially concurrent with the execution and delivery of this Agreement by the parties hereto, the Company agrees to sell, and the Purchasers, severally and not jointly, agree to purchase, up to an aggregate of \$ \_\_\_\_\_ of Common Units; provided, however, that, to the extent that a Purchaser determines, in its sole discretion, that such Purchaser (together with such Purchaser's Affiliates, and any Person acting as a group together with such purchaser or any of such Holder's Affiliates) would beneficially own in excess of the Beneficial Ownership Limitation, or as such Purchaser may otherwise choose, in lieu of purchasing Common Units such Purchaser may elect to purchase Pre-Funded Units in lieu of Common Units in such manner to result in the same aggregate purchase price being paid by such Purchaser to the Company. The “Beneficial Ownership Limitation” shall be 4.99% (or, at the election of the Purchaser at Closing, 9.99%) of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of the Securities on the Closing Date. Each Purchaser's Subscription Amount as set forth on the signature page hereto executed by such Purchaser shall be made available for “Delivery Versus Payment” settlement with the Company or its designee. The Company shall deliver to each Purchaser its respective Shares and/or Pre-Funded Warrants (as applicable to such Purchaser) and a Common Warrant as determined pursuant to Section 2.2(a), and the Company and each Purchaser shall deliver the other items set forth in Section 2.2 deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.2 and 2.3, the Closing shall occur at the offices of EGS or such other location as the parties shall mutually agree. Unless otherwise directed by the Placement Agent, settlement of the Shares shall occur via “Delivery Versus Payment” (“DVP”) (i.e., on the Closing Date, the Company shall issue the Shares registered in the Purchasers' names and addresses and released by the Transfer Agent directly to the account(s) at the Placement Agent identified by each Purchaser; upon receipt of such Shares, the Placement Agent shall promptly electronically deliver such Shares to the applicable Purchaser, and payment therefor shall be made by the Placement Agent (or its clearing firm) by wire transfer to the Company). Notwithstanding the foregoing, with respect to any Notice(s) of Exercise (as defined in the Pre-Funded Warrants) delivered on or prior to 12:00 p.m. (New York City time) on the Closing Date, which may be delivered at any time after the time of execution of the this Agreement, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Closing Date and the Closing Date shall be the Warrant Share Delivery Date (as defined in the Pre-Funded Warrants) for purposes hereunder. Each Purchaser acknowledges that, concurrently with the Closing and pursuant to the Prospectus, the Company may sell up to \$ \_\_\_\_\_ of additional Units to purchasers not party to this Purchase Agreement, and will issue to each such purchaser such additional Shares and Common Warrants and/or Pre-Funded Warrants and Common Warrants in the same form and at the same Common Unit Purchase Price or Pre-Funded Unit Purchase Price.







2.2 Deliveries.

(a) On or prior to the Closing Date, the Company shall deliver or cause to be delivered to each Purchaser the following:

(i) this Agreement duly executed by the Company;

(ii) a legal opinion of Company Counsel, substantially in the form of Exhibit B attached hereto;

(iii) subject to the last sentence of Section 2.1, the Company shall have provided each Purchaser with the Company's wire instructions, on Company letterhead and executed by the Chief Executive Officer or Chief Financial Officer;

(iv) subject to the last sentence of Section 2.1, a copy of the irrevocable instructions to the Transfer Agent instructing the Transfer Agent to deliver on an expedited basis via The Depository Trust Company Deposit or Withdrawal at Custodian system ("DWAC") Shares equal to the portion of such Purchaser's Subscription Amount applicable to Common Units divided by the Common Unit Purchase Price, registered in the name of such Purchaser;

(v) for each Purchaser of Pre-Funded Units, a Pre-Funded Warrant registered in the name of such Purchaser to purchase up to a number of Shares equal to the portion of such Purchaser's Subscription Amount applicable to Pre-Funded Units divided by the Pre-Funded Unit Purchase Price;

(vi) a Common Warrant registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to 100% of the aggregate number of Units purchased by such Purchaser on the date hereof;

(vii) the Prospectus and Prospectus Supplement (which may be delivered in accordance with Rule 172 under the Securities Act).

(b) On or prior to the Closing Date, each Purchaser shall deliver or cause to be delivered to the Company the following:

(i) this Agreement duly executed by such Purchaser; and

(ii) such Purchaser's Subscription Amount with regard to the Pre-Funded Units purchased by such Purchaser, if any, by wire transfer to the account specified by the Company in Section 2.2(a)(iii) above, or as otherwise agreed by the Company and the Placement Agent; and

(iii) such Purchaser's Subscription Amount with regard to the Common Units purchased by such Purchaser, which shall be made available for "Delivery Versus Payment" settlement with the Company or its designee.

### 2.3 Closing Conditions.

(a) The obligations of the Company hereunder in connection with the Closing are subject to the following conditions being met:

(i) the accuracy in all material respects (or, to the extent representations or warranties are qualified by materiality or Material

Adverse Effect, in all respects) on the Closing Date of the representations and warranties of the Purchasers contained herein (unless as of a specific date therein in which case they shall be accurate as of such date);

(ii) all obligations, covenants and agreements of each Purchaser required to be performed at or prior to the Closing Date shall have been performed; and

(iii) the delivery by each Purchaser of the items set forth in Section 2.2(b) of this Agreement.

(b) The respective obligations of the Purchasers hereunder in connection with the Closing are subject to the following conditions being met:

(i) the accuracy in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) when made and on the Closing Date of the representations and warranties of the Company contained herein (unless as of a specific date therein in which case they shall be accurate as of such date);

(ii) all obligations, covenants and agreements of the Company required to be performed at or prior to the Closing Date shall have been performed;

(iii) the delivery by the Company of the items set forth in Section 2.2(a) of this Agreement;

(iv) there shall have been no Material Adverse Effect with respect to the Company since the date hereof; and

(v) from the date hereof to the Closing Date, trading in the Common Stock shall not have been suspended by the Commission or the Company's principal Trading Market, and, at any time prior to the Closing Date, trading in securities generally as reported by Bloomberg L.P. shall not have been suspended or limited, or minimum prices shall not have been established on securities whose trades are reported by such service, or on any Trading Market, nor shall a banking moratorium have been declared either by the United States or New York State authorities nor shall there have occurred any material outbreak or escalation of hostilities or other national or international calamity of such magnitude in its effect on, or any material adverse change in, any financial market which, in each case, in the reasonable judgment of such Purchaser, makes it impracticable or inadvisable to purchase the Securities at the Closing.

**ARTICLE III.**  
**REPRESENTATIONS AND WARRANTIES**

3.1 Representations and Warranties of the Company. Except as set forth in the Disclosure Schedules, which Disclosure Schedules shall be deemed a part hereof and shall qualify any representation or otherwise made herein to the extent of the disclosure contained in the corresponding section of the Disclosure Schedules, the Company hereby makes the following representations and warranties to each Purchaser:

(a) Subsidiaries. All of the direct and indirect subsidiaries of the Company are set forth on Schedule 3.1(a). The Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any Liens, and all of the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities. If the Company has no subsidiaries, all other references to the Subsidiaries or any of them in the Transaction Documents shall be disregarded.

(b) Organization and Qualification. The Company and each of the Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in: (i) a material adverse effect on the legality, validity or enforceability of any Transaction Document, (ii) a material adverse effect on the results of operations, assets, business, prospects or condition (financial or otherwise) of the Company and the Subsidiaries, taken as a whole, or (iii) a material adverse effect on the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document (any of (i), (ii) or (iii), a "Material Adverse Effect") and no Proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

(c) Authorization; Enforcement. The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by this Agreement and each of the other Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement and each of the other Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and thereby have been duly authorized by all necessary action on the part of the Company and no further action is required by the Company, the Board of Directors or the Company's stockholders in connection herewith or therewith other than in connection with the Required Approvals. This Agreement and each other Transaction Document to which it is a party has been (or upon delivery will have been) duly executed by the Company and, when delivered in accordance with the terms hereof and thereof, will constitute the valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(d) No Conflicts. The execution, delivery and performance by the Company of this Agreement and the other Transaction Documents to which it is a party, the issuance and sale of the Securities and the consummation by it of the transactions contemplated hereby and thereby do not and will not (i) conflict with or violate any provision of the Company's or any Subsidiary's certificate or articles of incorporation, bylaws or other organizational or charter documents, or (ii) conflict with, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, result in the creation of any Lien upon any of the properties or assets of the Company or any Subsidiary, or give to others any rights of termination, amendment, anti-dilution or similar adjustments, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, credit facility, debt or other instrument (evidencing a Company or Subsidiary debt or otherwise) or other understanding to which the Company or any Subsidiary is a party or by which any property or asset of the Company or any Subsidiary is bound or affected, or (iii) subject to the Required Approvals, conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company or a Subsidiary is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company or a Subsidiary is bound or affected; except in the case of each of clauses (ii) and (iii), such as could not have or reasonably be expected to result in a Material Adverse Effect.





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(e) Filings, Consents and Approvals. The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority or other Person in connection with the execution, delivery and performance by the Company of the Transaction Documents, other than: (i) the filings required pursuant to Section 4.4 of this Agreement, (ii) the filing with the Commission of the Prospectus Supplement, (iii) application(s) to each applicable Trading Market for the listing of the Shares and Warrant Shares for trading thereon in the time and manner required thereby, and (iv) such filings as are required to be made under applicable state securities laws (collectively, the “Required Approvals”).

(f) Issuance of the Securities; Registration. The Securities are duly authorized and, when issued and paid for in accordance with the applicable Transaction Documents, will be duly and validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Warrant Shares, when issued in accordance with the terms of the Warrants, will be validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Company has reserved from its duly authorized capital stock the maximum number of shares of Common Stock issuable pursuant to this Agreement and the Warrants. The Company has prepared and filed the Registration Statement in conformity with the requirements of the Securities Act, which became effective on July \_\_, 2020 (the “Effective Date”), including the Prospectus, and such amendments and supplements thereto as may have been required to the date of this Agreement. The Registration Statement is effective under the Securities Act and no stop order preventing or suspending the effectiveness of the Registration Statement or suspending or preventing the use of the Prospectus has been issued by the Commission and no proceedings for that purpose have been instituted or, to the knowledge of the Company, are threatened by the Commission. The Company, if required by the rules and regulations of the Commission, shall file the Prospectus with the Commission pursuant to Rule 424(b). At the time the Registration Statement and any amendments thereto became effective, at the date of this Agreement and at the Closing Date, the Registration Statement and any amendments thereto conformed and will conform in all material respects to the requirements of the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading; and the Prospectus and any amendments or supplements thereto, at the time the Prospectus or any amendment or supplement thereto was issued and at the Closing Date, conformed and will conform in all material respects to the requirements of the Securities Act and did not and will not contain an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(g) Capitalization. The capitalization of the Company as of the date hereof is as set forth on Schedule 3.1(g), which Schedule 3.1(g) shall also include the number of shares of Common Stock owned beneficially, and of record, by Affiliates of the Company as of the date hereof. The Company has not issued any capital stock since its most recently filed periodic report under the Exchange Act, other than pursuant to the exercise of employee stock options under the Company's stock option plans, the issuance of shares of Common Stock to employees pursuant to the Company's employee stock purchase plans and pursuant to the conversion and/or exercise of Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as a result of the purchase and sale of the Securities, there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any shares of Common Stock or the capital stock of any Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents or capital stock of any Subsidiary. The issuance and sale of the Securities will not obligate the Company or any Subsidiary to issue shares of Common Stock or other securities to any Person (other than the Purchasers). There are no outstanding securities or instruments of the Company or any Subsidiary with any provision that adjusts the exercise, conversion, exchange or reset price of such security or instrument upon an issuance of securities by the Company or any Subsidiary. There are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. All of the outstanding shares of capital stock of the Company are duly authorized, validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. No further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Securities. There are no stockholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's stockholders.

(h) SEC Reports; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, together with the Prospectus and the Prospectus Supplement,

being collectively referred to herein as the “SEC Reports”) on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Company has never been an issuer subject to Rule 144(i) under the Securities Act. The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved (“GAAP”), except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments.

(i) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Reports, except as set forth on Schedule 3.1(i), (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company's financial statements pursuant to GAAP or disclosed in filings made with the Commission, (iii) the Company has not altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock and (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company stock option plans. The Company does not have pending before the Commission any request for confidential treatment of information. Except for the issuance of the Securities contemplated by this Agreement or as set forth on Schedule 3.1(i), no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its Subsidiaries or their respective businesses, prospects, properties, operations, assets or financial condition that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made or deemed made that has not been publicly disclosed at least 1 Trading Day prior to the date that this representation is

made.

(j) Litigation. There is no action, suit, inquiry, notice of violation, proceeding or investigation pending or, to the knowledge of the Company, threatened against or affecting the Company, any Subsidiary or any of their respective properties before or by any court, arbitrator, governmental or administrative agency or regulatory authority (federal, state, county, local or foreign) (collectively, an “Action”) which (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or the Securities or (ii) could, if there were an unfavorable decision, have or reasonably be expected to result in a Material Adverse Effect. Neither the Company nor any Subsidiary, nor any director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal or state securities laws or a claim of breach of fiduciary duty. There has not been, and to the knowledge of the Company, there is not pending or contemplated, any investigation by the Commission involving the Company or any current or former director or officer of the Company. The Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company or any Subsidiary under the Exchange Act or the Securities Act.

(k) Labor Relations. No labor dispute exists or, to the knowledge of the Company, is imminent with respect to any of the employees of the Company, which could reasonably be expected to result in a Material Adverse Effect. None of the Company's or its Subsidiaries' employees is a member of a union that relates to such employee's relationship with the Company or such Subsidiary, and neither the Company nor any of its Subsidiaries is a party to a collective bargaining agreement, and the Company and its Subsidiaries believe that their relationships with their employees are good. To the knowledge of the Company, no executive officer of the Company or any Subsidiary, is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant in favor of any third party, and the continued employment of each such executive officer does not subject the Company or any of its Subsidiaries to any liability with respect to any of the foregoing matters. The Company and its Subsidiaries are in compliance with all U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(l) Compliance. Neither the Company nor any Subsidiary: (i) is in default under or in violation of (and no event has occurred that has not



been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary received notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or violation has been waived), (ii) is in violation of any judgment, decree or order of any court, arbitrator or other governmental authority or (iii) is or has been in violation of any statute, rule, ordinance or regulation of any governmental authority, including without limitation all foreign, federal, state and local laws relating to taxes, environmental protection, occupational health and safety, product quality and safety and employment and labor matters, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

(m) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with all federal, state, local and foreign laws relating to pollution or protection of human health or the environment (including ambient air, surface water, groundwater, land surface or subsurface strata), including laws relating to emissions, discharges, releases or threatened releases of chemicals, pollutants, contaminants, or toxic or hazardous substances or wastes (collectively, "Hazardous Materials") into the environment, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials, as well as all authorizations, codes, decrees, demands, or demand letters, injunctions, judgments, licenses, notices or notice letters, orders, permits, plans or regulations, issued, entered, promulgated or approved thereunder ("Environmental Laws"); (ii) have received all permits licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses; and (iii) are in compliance with all terms and conditions of any such permit, license or approval where

in each clause (i), (ii) and (iii), the failure to so comply could be reasonably expected to have, individually or in the aggregate, a Material Adverse Effect.

(n) Regulatory Permits. The Company and the Subsidiaries possess all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities necessary to conduct their respective businesses as described in the SEC Reports, except where the failure to possess such permits could not reasonably be expected to result in a Material Adverse Effect ("Material Permits"), and neither the Company nor any Subsidiary has received any notice of proceedings relating to the revocation or modification of any Material Permit.

(o) Title to Assets. The Company and the Subsidiaries have good and marketable title in fee simple to all real property owned by them and good and marketable title in all personal property owned by them that is material to the business of the Company and the Subsidiaries, in each case free and clear of all Liens, except for (i) Liens as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries and (ii) Liens for the payment of federal, state or other taxes, for which appropriate reserves have been made therefor in accordance with GAAP and, the payment of which is neither delinquent nor subject to penalties. Any real property and facilities held under lease by the Company and the Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and the Subsidiaries are in compliance.

(p) Intellectual Property. The Company and the Subsidiaries have, or have rights to use, all patents, patent applications, trademarks, trademark applications, service marks, trade names, trade secrets, inventions, copyrights, licenses and other intellectual property rights and similar rights necessary or required for use in connection with their respective businesses as described in the SEC Reports and which the failure to so have could have a Material Adverse Effect (collectively, the "Intellectual Property Rights"). None of, and neither the Company nor any Subsidiary has received a notice (written or otherwise) that any of, the Intellectual Property Rights has expired, terminated or been abandoned, or is expected to expire or terminate or be abandoned, within two (2) years from the date of this Agreement. Neither the Company nor any Subsidiary has received, since the date of the latest audited financial statements included within the SEC Reports, a written notice of a claim or otherwise has any knowledge that the Intellectual Property Rights violate or infringe upon the rights of any Person, except as could not have or reasonably be expected to not have a Material Adverse Effect. To the knowledge of the Company, all such Intellectual Property Rights are enforceable and there is no existing infringement by another Person of any of the Intellectual Property Rights. The Company and its Subsidiaries have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their intellectual properties, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(q) Insurance. The Company and the Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are prudent and customary in the businesses in which the Company and the Subsidiaries are engaged, including, but not limited to, directors and officers insurance coverage at least equal to the aggregate Subscription Amount. Neither the Company nor any Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business without a significant increase in cost.

(r) Transactions With Affiliates and Employees. Except as set forth on Schedule 3.1(r), none of the officers or directors of the Company or any Subsidiary and, to the knowledge of the Company, none of the employees of the Company or any Subsidiary is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, providing for the borrowing of money from or lending of money to or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee, stockholder, member or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock option agreements under any stock option plan of the Company.

(s) Sarbanes-Oxley: Internal Accounting Controls. The Company and the Subsidiaries are in compliance with any and all applicable requirements of the Sarbanes-Oxley Act of 2002 that are effective as of the date hereof, and any and all applicable rules and regulations promulgated by the Commission thereunder that are effective as of the date hereof and as of the Closing Date. The Company and the Subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company and the Subsidiaries have established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the Company and the Subsidiaries and designed such disclosure controls and procedures to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms. The Company's certifying officers have evaluated the effectiveness of the disclosure controls and procedures of the Company and the Subsidiaries as of the end of the period covered by the most recently filed periodic report under the Exchange Act (such date, the "Evaluation Date"). The Company presented in its most recently filed periodic report under the Exchange Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no changes in the internal control over financial reporting (as such term is defined in the Exchange Act) of the Company and its Subsidiaries that have materially affected, or is reasonably likely to materially affect, the internal control over financial reporting of the Company and its Subsidiaries.

(t) Certain Fees. Except as set forth in the Prospectus Supplement, no brokerage or finder's fees or commissions are or will be payable by the Company or any Subsidiary to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. The Purchasers shall have no obligation with respect to any fees or with respect to any claims made by or on behalf of other Persons for fees of a type contemplated in this Section that may be due in connection with the transactions contemplated by the Transaction Documents.

(u) Investment Company. The Company is not, and is not an Affiliate of, and immediately after receipt of payment for the Securities, will not be or be an Affiliate of, an "investment company" within the meaning of the Investment Company Act of 1940, as amended. The Company shall conduct its business in a manner so that it will not become an "investment company" subject to registration under the Investment Company Act of 1940, as amended.

(v) Registration Rights. No Person has any right to cause the Company or any Subsidiary to effect the registration under the Securities Act of any securities of the Company or any Subsidiary.

(w) Listing and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the Commission is contemplating terminating such registration. The Company has not, in the 12 months preceding the date hereof, received notice from any Trading Market on which the Common Stock is or has been listed or quoted to the effect that the Company is not in compliance with the listing or maintenance requirements of such Trading Market. The Company is, and has no reason to believe that it will not in the foreseeable future continue to be, in compliance with all such listing and maintenance requirements. The Common Stock is currently eligible for electronic transfer through the Depository Trust Company or another established clearing corporation and the Company is current in payment of the fees to the Depository Trust Company (or such other established clearing corporation) in connection with such electronic transfer.

(x) Application of Takeover Protections. The Company and the Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company's certificate of incorporation (or similar charter documents) or the laws of its state of incorporation that is or could become applicable to the Purchasers as a result of the Purchasers and the Company fulfilling their obligations or exercising their rights under the Transaction Documents, including without limitation as a result of the Company's issuance of the Securities and the Purchasers' ownership of the Securities.

(y) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, the Company confirms that neither it nor any other Person acting on its behalf has provided any of the Purchasers or their agents or counsel with any information that it believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the Prospectus Supplement. The Company understands and confirms that the Purchasers will rely on the foregoing representation in effecting transactions in securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Purchasers regarding the Company and its Subsidiaries, their respective businesses and the transactions contemplated hereby, including the Disclosure Schedules to this Agreement, is true and correct and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading. The press releases disseminated by the Company during the twelve months preceding the date of this Agreement taken as a whole do not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made and when made, not misleading. The Company acknowledges and agrees that no Purchaser makes or has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3.2 hereof.

(z) No Integrated Offering. Assuming the accuracy of the Purchasers' representations and warranties set forth in Section 3.2, neither the Company, nor any of its Affiliates, nor any Person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause this offering of the Securities to be integrated with prior offerings by the Company for purposes of any applicable shareholder approval provisions of any Trading Market on which any of the securities of the Company are listed or designated.

(aa) Solvency. Based on the consolidated financial condition of the Company as of the Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder, (i) the fair saleable value of the Company's assets exceeds the amount that will be required to be paid on or in respect of the Company's existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company's assets do not constitute unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). The Company has no knowledge of any facts or circumstances which lead it to believe that it will file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within one year from the Closing Date. Schedule 3.1(aa) sets forth as of the date hereof all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments. For the purposes of this Agreement, "Indebtedness" means (x) any liabilities for borrowed money or amounts owed in excess of \$50,000 (other than trade accounts payable incurred in the ordinary course of business), (y) all guaranties, endorsements and other contingent obligations in respect of indebtedness of others, whether or not the same are or should be reflected in the Company's consolidated balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (z) the present value of any lease payments in excess of \$50,000 due under leases required to be capitalized in accordance with GAAP. Neither the Company nor any Subsidiary is in default with respect to any Indebtedness.

(bb) Tax Status. Except for matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect, the Company and its Subsidiaries each (i) has made or filed all United States federal, state and local income and all foreign income and franchise tax returns, reports and declarations required by any jurisdiction to which it is subject, (ii) has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations and (iii) has set aside on its books provision reasonably adequate for the payment of all material taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company or of any Subsidiary know of no basis for any such claim.

(cc) Foreign Corrupt Practices. Neither the Company nor any Subsidiary, nor to the knowledge of the Company or any Subsidiary, any agent or other person acting on behalf of the Company or any Subsidiary, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company or any Subsidiary (or made by any person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of FCPA.

(dd) Accountants. The Company's accounting firm is set forth on Schedule 3.1(dd) of the Disclosure Schedules. To the knowledge and belief of the Company, such accounting firm (i) is a registered public accounting firm as required by the Exchange Act and (ii) shall express its opinion with respect to the financial statements to be included in the Company's Annual Report for the fiscal year ending December 31, 2019.

(ee) Acknowledgment Regarding Purchasers' Purchase of Securities. The Company acknowledges and agrees that each of the Purchasers is acting solely in the capacity of an arm's length purchaser with respect to the Transaction Documents and the transactions contemplated thereby. The Company further acknowledges that no Purchaser is acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated thereby and any advice given by any Purchaser or any of their respective representatives or agents in connection with the Transaction Documents and the transactions contemplated thereby is merely incidental to the Purchasers' purchase of the Securities. The Company further represents to each Purchaser that the Company's decision to enter into this Agreement and the other Transaction Documents has been based solely on the independent evaluation of the transactions contemplated hereby by the Company and its representatives.

(ff) Acknowledgment Regarding Purchaser's Trading Activity. Anything in this Agreement or elsewhere herein to the contrary notwithstanding (except for Sections 3.2(f) and 4.13 hereof), it is understood and acknowledged by the Company that: (i) none of the Purchasers has been asked by the Company to agree, nor has any Purchaser agreed, to desist from purchasing or selling, long and/or short, securities of the Company, or "derivative" securities based on securities issued by the Company or to hold the Securities for any specified term; (ii) past or future open market or other transactions by any Purchaser, specifically including, without limitation, Short Sales or "derivative" transactions, before or after the closing of this or future private placement transactions, may negatively impact the market price of the Company's publicly-traded securities; (iii) any Purchaser, and counter-parties in "derivative" transactions to which any such Purchaser is a party, directly or indirectly, presently may have a "short" position in the Common Stock, and (iv) each Purchaser shall not be deemed to have any affiliation with or control over any arm's length counter-party in any "derivative" transaction. The Company further understands and acknowledges that (y) one or more Purchasers may engage in hedging activities at various times during the period that the Securities are outstanding, including, without limitation, during the periods that the value of the Warrant Shares deliverable with respect to Securities are being determined, and (z) such hedging activities (if any) could reduce the value of the existing stockholders' equity interests in the Company at and after the time that the hedging activities are being conducted. The Company acknowledges that such aforementioned hedging activities do not constitute a breach of any of the Transaction Documents.



(gg) Regulation M Compliance. The Company has not, and to its knowledge no one acting on its behalf has, (i) taken, directly or indirectly, any action designed to cause or to result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any of the Securities, (ii) sold, bid for, purchased, or, paid any compensation for soliciting purchases of, any of the Securities, or (iii) paid or agreed to pay to any Person any compensation for soliciting another to purchase any other securities of the Company, other than, in the case of clauses (ii) and (iii), compensation paid to the Company's placement agent in connection with the placement of the Securities.

(hh) FDA. As to each product subject to the jurisdiction of the U.S. Food and Drug Administration ("FDA") under the Federal Food, Drug and Cosmetic Act, as amended, and the regulations thereunder ("FDCA") that is manufactured, packaged, labeled, tested, distributed, sold, and/or marketed by the Company or any of its Subsidiaries (each such product, a "Pharmaceutical Product"), such Pharmaceutical Product is being manufactured, packaged, labeled, tested, distributed, sold and/or marketed by the Company in compliance with all applicable requirements under FDCA and similar laws, rules and regulations relating to registration, investigational use, premarket clearance, licensure, or application approval, good manufacturing practices, good laboratory practices, good clinical practices, product listing, quotas, labeling, advertising, record keeping and filing of reports, except where the failure to be in compliance would not have a Material Adverse Effect. There is no pending, completed or, to the Company's knowledge, threatened, action (including any lawsuit, arbitration, or legal or administrative or regulatory proceeding, charge, complaint, or investigation) against the Company or any of its Subsidiaries, and none of the Company or any of its Subsidiaries has received any notice, warning letter or other communication from the FDA or any other governmental entity, which (i) contests the premarket clearance, licensure, registration, or approval of, the uses of, the distribution of, the manufacturing or packaging of, the testing of, the sale of, or the labeling and promotion of any Pharmaceutical Product, (ii) withdraws its approval of, requests the recall, suspension, or seizure of, or withdraws or orders the withdrawal of advertising or sales promotional materials relating to, any Pharmaceutical Product, (iii) imposes a clinical hold on any clinical investigation by the Company or any of its Subsidiaries, (iv) enjoins production at any facility of the Company or any of its Subsidiaries, (v) enters or proposes to enter into a consent decree of permanent injunction with the Company or any of its Subsidiaries, or (vi) otherwise alleges any violation of any laws, rules or regulations by the Company or any of its Subsidiaries, and which, either individually or in the aggregate, would have a Material Adverse Effect. The properties, business and operations of the Company have been and are being conducted in all material respects in accordance with all applicable laws, rules and regulations of the FDA. The Company has not been informed by the FDA that the FDA will prohibit the marketing, sale, license or use in the United States of any product proposed to be developed, produced or marketed by the Company nor has the FDA expressed any concern as to approving or clearing for marketing any product being developed or proposed to be developed by the Company.

(ii) Stock Option Plans. Each stock option granted by the Company under the Company's stock option plan was granted (i) in accordance with the terms of the Company's stock option plan and (ii) with an exercise price at least equal to the fair market value of the Common Stock on the date such stock option would be considered granted under GAAP and applicable law. No stock option granted under the Company's stock option plan has been backdated. The Company has not knowingly granted, and there is no and has been no Company policy or practice to knowingly grant, stock options prior to, or otherwise knowingly coordinate the grant of stock options with, the release or other public announcement of material information regarding the Company or its Subsidiaries or their financial results or prospects.

(jj) Office of Foreign Assets Control. Neither the Company nor any Subsidiary nor, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company or any Subsidiary is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department ("OFAC").

(kk) U.S. Real Property Holding Corporation. The Company is not and has never been a U.S. real property holding corporation within the meaning of Section 897 of the Internal Revenue Code of 1986, as amended, and the Company shall so certify upon Purchaser's request.

(ll) Bank Holding Company Act. Neither the Company nor any of its Subsidiaries or Affiliates is subject to the Bank Holding Company Act of 1956, as amended (the "BHCA") and to regulation by the Board of Governors of the Federal Reserve System (the "Federal Reserve"). Neither the Company nor any of its Subsidiaries or Affiliates owns or controls, directly or indirectly, five percent (5%) or more of the outstanding shares of any class of voting securities or twenty-five percent or more of the total equity of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve. Neither the Company nor any of its Subsidiaries or Affiliates exercises a controlling influence over the management or policies of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve.

(mm) Money Laundering. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record-keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, applicable money laundering statutes and applicable rules and regulations thereunder (collectively, the "Money Laundering Laws"), and no Action or Proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company or any Subsidiary, threatened.

3.2 Representations and Warranties of the Purchasers. Each Purchaser, for itself and for no other Purchaser, hereby represents and warrants as of the date hereof and as of the Closing Date to the Company as follows (unless as of a specific date therein, in which case they shall be accurate as of such date):

(a) Organization; Authority. Such Purchaser is either an individual or an entity duly incorporated or formed, validly existing and in good standing under the laws of the jurisdiction of its incorporation or formation with full right, corporate, partnership, limited liability company or similar power and authority to enter into and to consummate the transactions contemplated by the Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of the Transaction Documents and performance by such Purchaser of the transactions contemplated by the Transaction Documents have been duly authorized by all necessary corporate, partnership, limited liability company or similar action, as applicable, on the part of such Purchaser. Each Transaction Document to which it is a party has been duly executed by such Purchaser, and when delivered by such Purchaser in accordance with the terms hereof, will constitute the valid and legally binding obligation of such Purchaser, enforceable against it in accordance with its terms, except: (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(b) Understandings or Arrangements. Such Purchaser is acquiring the Securities as principal for its own account and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities (this representation and warranty not limiting such Purchaser's right to sell the Securities pursuant to the Registration Statement or otherwise in compliance with applicable federal and state securities laws). Such Purchaser is acquiring the Securities hereunder in the ordinary course of its business.

(c) Purchaser Status. At the time such Purchaser was offered the Securities, it was, and as of the date hereof it is, and on each date on which it exercises any Warrants, it will be an "accredited investor" as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7) or (a)(8) under the Securities Act.

(d) Experience of Such Purchaser. Such Purchaser, either alone or together with its representatives, has such knowledge, sophistication and experience in business and financial matters so as to be capable of evaluating the merits and risks of the prospective investment in the Securities, and has so evaluated the merits and risks of such investment. Such Purchaser is able to bear the economic risk of an investment in the Securities and, at the present time, is able to afford a complete loss of such investment.

(e) Access to Information. Such Purchaser acknowledges that it has had the opportunity to review the Transaction Documents (including all exhibits and schedules thereto) and the SEC Reports and has been afforded, (i) the opportunity to ask such questions as it has deemed necessary of, and to receive answers from, representatives of the Company concerning the terms and conditions of the offering of the Securities and the merits and risks of investing in the Securities; (ii) access to information about the Company and its financial condition, results of operations, business, properties, management and prospects sufficient to enable it to evaluate its investment; and (iii) the opportunity to obtain such additional information that the Company possesses or can acquire without unreasonable effort or expense that is necessary to make an informed investment decision with respect to the investment. Such Purchaser acknowledges and agrees that neither the Placement Agent nor any Affiliate of the Placement Agent has provided such Purchaser with any information or advice with respect to the Securities nor is such information or advice necessary or desired. Neither the Placement Agent nor any Affiliate has made or makes any representation as to the Company or the quality of the Securities and the Placement Agent and any Affiliate may have acquired non-public information with respect to the Company which such Purchaser agrees need not be provided to it. In connection with the issuance of the Securities to such Purchaser, neither the Placement Agent nor any of its Affiliates has acted as a financial advisor or fiduciary to such Purchaser.

(f) Certain Transactions and Confidentiality. Other than consummating the transactions contemplated hereunder, such Purchaser has not, nor has any Person acting on behalf of or pursuant to any understanding with such Purchaser, directly or indirectly executed any purchases or sales, including Short Sales, of the securities of the Company during the period commencing as of the time that such Purchaser first received a term sheet (written or oral) from the Company or any other Person representing the Company setting forth the material pricing terms of the transactions contemplated hereunder and ending immediately prior to the execution hereof. Notwithstanding the foregoing, in the case of a Purchaser that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's assets, the representation set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement. Other than to other Persons party to this Agreement or to such Purchaser's representatives, including, without limitation, its officers, directors, partners, legal and other advisors, employees, agents and Affiliates, such Purchaser has maintained the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction). Notwithstanding the foregoing, for the avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to locating or borrowing shares in order to effect Short Sales or similar transactions in the future.

The Company acknowledges and agrees that the representations contained in this Section 3.2 shall not modify, amend or affect such Purchaser's right to rely on the Company's representations and warranties contained in this Agreement or any representations and warranties contained in any other Transaction Document or any other document or instrument executed and/or delivered in connection with this Agreement or the consummation of the transactions contemplated hereby. Notwithstanding the foregoing, for the avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to locating or borrowing shares in order to effect Short Sales or similar transactions in the future.

**ARTICLE IV.**  
**OTHER AGREEMENTS OF THE PARTIES**

4.1 Warrant Shares. If all or any portion of a Warrant is exercised at a time when there is an effective registration statement to cover the issuance or resale of the Warrant Shares or if the Warrant is exercised via cashless exercise, the Warrant Shares issued pursuant to any such exercise shall be issued free of all legends. If at any time following the date hereof the Registration Statement (or any subsequent registration statement registering the sale or resale of the Warrant Shares) is not effective or is not otherwise available for the sale or resale of the Warrant Shares, the Company shall immediately notify the holders of the Warrants in writing that such registration statement is not then effective and thereafter shall promptly notify such holders when the registration statement is effective again and available for the sale or resale of the Warrant Shares (it being understood and agreed that the foregoing shall not limit the ability of the Company to issue, or any Purchaser to sell, any of the Warrant Shares in compliance with applicable federal and state securities laws). The Company shall use best efforts to keep a registration statement (including the Registration Statement) registering the issuance or resale of the Warrant Shares effective during the term of the Warrants.

4.2 Furnishing of Information. Until the earliest of the time that (i) no Purchaser owns Securities or (ii) the Warrants have expired, the Company covenants to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to the Exchange Act even if the Company is not then subject to the reporting requirements of the Exchange Act.

4.3 Integration. The Company shall not sell, offer for sale or solicit offers to buy or otherwise negotiate in respect of any security (as defined in Section 2 of the Securities Act) that would be integrated with the offer or sale of the Securities for purposes of the rules and regulations of any Trading Market such that it would require shareholder approval prior to the closing of such other transaction unless shareholder approval is obtained before the closing of such subsequent transaction.

4.4 Securities Laws Disclosure: Publicity. The Company shall (a) by the Disclosure Time, issue a press release disclosing the material terms of the transactions contemplated hereby, and (b) file a Current Report on Form 8-K, including the Transaction Documents as exhibits thereto, with the Commission within the time required by the Exchange Act. From and after the issuance of such press release, the Company represents to the Purchasers that it shall have publicly disclosed all material, non-public information delivered to any of the Purchasers by the Company or any of its Subsidiaries, or any of their respective officers, directors, employees or agents in connection with the transactions contemplated by the Transaction Documents. In addition, effective upon the issuance of such press release, the Company acknowledges and agrees that any and all confidentiality or similar obligations under any agreement, whether written or oral, between the Company, any of its Subsidiaries or any of their respective officers, directors, agents, employees or Affiliates on the one hand, and any of the Purchasers or any of their Affiliates on the other hand, shall terminate. The Company and each Purchaser shall consult with each other in issuing any other press releases with respect to the transactions contemplated hereby, and neither the Company nor any Purchaser shall issue any such press release nor otherwise make any such public statement without the prior consent of the Company, with respect to any press release of any Purchaser, or without the prior consent of each Purchaser, with respect to any press release of the Company, which consent shall not unreasonably be withheld or delayed, except if such disclosure is required by law, in which case the disclosing party shall promptly provide the other party with prior notice of such public statement or communication. Notwithstanding the foregoing, the Company shall not publicly disclose the name of any Purchaser, or include the name of any Purchaser in any filing with the Commission or any regulatory agency or Trading Market, without the prior written consent of such Purchaser, except (a) as required by federal securities law in connection with the filing of final Transaction Documents with the Commission and (b) to the extent such disclosure is required by law or Trading Market regulations, in which case the Company shall provide the Purchasers with prior notice of such disclosure permitted under this clause (b).

4.5 Shareholder Rights Plan. No claim will be made or enforced by the Company or, with the consent of the Company, any other Person, that any Purchaser is an “Acquiring Person” under any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or similar anti-takeover plan or arrangement in effect or hereafter adopted by the Company, or that any Purchaser could be deemed to trigger the provisions of any such plan or arrangement, by virtue of receiving Securities under the Transaction Documents or under any other agreement between the Company and the Purchasers.

4.6 Non-Public Information. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, which shall be disclosed pursuant to Section 4.4, the Company covenants and agrees that neither it, nor any other Person acting on its behalf will provide any Purchaser or its agents or counsel with any information that constitutes, or the Company reasonably believes constitutes, material non-public information, unless prior thereto such Purchaser shall have consented to the receipt of such information and agreed with the Company to keep such information confidential. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company. To the extent that the Company delivers any material, non-public information to a Purchaser without such Purchaser’s consent, the Company hereby covenants and agrees that such Purchaser shall not have any duty of confidentiality to the Company, any of its Subsidiaries, or any of their respective officers, directors, agents, employees or Affiliates, or a duty to the Company, any of its Subsidiaries or any of their respective officers, directors, agents, employees or Affiliates not to trade on the basis of, such material, non-public information, provided that the Purchaser shall remain subject to applicable law. To the extent that any notice provided pursuant to any Transaction Document constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company.

4.7 Use of Proceeds. Except as set forth on Schedule 4.7 attached hereto, the Company shall use the net proceeds from the sale of the Securities hereunder for working capital purposes and shall not use such proceeds: (a) for the satisfaction of any portion of the Company’s debt (other than payment of trade payables in the ordinary course of the Company’s business and prior practices), (b) for the redemption of any Common Stock or Common Stock Equivalents, (c) for the settlement of any outstanding litigation or (d) in violation of FCPA or OFAC regulations.

4.8 Indemnification of Purchasers. Subject to the provisions of this Section 4.8, the Company will indemnify and hold each Purchaser and its directors, officers, shareholders, members, partners, employees and agents (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title), each Person who controls such Purchaser (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, shareholders, agents, members, partners or employees (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title) of such controlling persons (each, a “Purchaser Party”) harmless from any and all losses, liabilities, obligations, claims, contingencies, damages, costs and expenses, including all judgments, amounts paid in settlements, court costs and reasonable attorneys’ fees and costs of investigation that any such Purchaser Party may suffer or incur as a result of or relating to (a) any breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents or (b) any action instituted against the Purchaser Parties in any capacity, or any of them or their respective Affiliates, by any stockholder of the Company who is not an Affiliate of such Purchaser Party, with respect to any of the transactions contemplated by the Transaction Documents (unless such action is solely based upon a material breach of such Purchaser Party’s representations, warranties or covenants under the Transaction Documents or any agreements or understandings such Purchaser Party may have with any such stockholder or any violations by such Purchaser Party of state or federal securities laws or any conduct by such Purchaser Party which is finally judicially determined to constitute fraud, gross negligence or willful misconduct). If any action shall be brought against any Purchaser Party in respect of which indemnity may be sought pursuant to this Agreement, such Purchaser Party shall promptly notify the Company in writing, and the Company shall have the right to assume the defense thereof with counsel of its own choosing reasonably acceptable to the Purchaser Party. Any Purchaser Party shall have the right to employ separate counsel in any such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Purchaser Party except to the extent that (i) the employment thereof has been specifically authorized by the Company in writing, (ii) the Company has failed after a reasonable period of time to assume such defense and to employ counsel or (iii) in such action there is, in the reasonable opinion of counsel, a material conflict on any material issue between the position of the Company and the position of such Purchaser Party, in which case the Company shall be responsible for the reasonable fees and expenses of no more than one such separate counsel. The Company will not be liable to any Purchaser Party under this Agreement (y) for any settlement by a Purchaser Party effected without the Company’s prior written consent, which shall not be unreasonably withheld or delayed; or (z) to the extent, but only to the extent that a loss, claim, damage or liability is attributable to any Purchaser Party’s breach of any of the representations, warranties, covenants or agreements made by such Purchaser Party in this Agreement or in the other Transaction Documents. The indemnification required by this Section 4.8 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or are incurred. The indemnity agreements contained herein shall be in addition to any cause of action or similar right of any Purchaser Party against the Company or others and any liabilities the Company may be subject to pursuant to law.

4.9 Reservation of Common Stock. As of the date hereof, the Company has reserved and the Company shall continue to reserve and keep available at all times, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue Shares pursuant to this Agreement and Warrant Shares pursuant to any exercise of the Warrants.

4.10 Listing of Common Stock. The Company hereby agrees to use best efforts to maintain the listing or quotation of the Common Stock on the Trading Market on which it is currently listed, and concurrently with the Closing, the Company shall apply to list or quote all of the Shares and Warrant Shares on such Trading Market and promptly secure the listing of all of the Shares and Warrant Shares on such Trading Market. The Company further agrees, if the Company applies to have the Common Stock traded on any other Trading Market, it will then include in such application all of the Shares and Warrant Shares, and will take such other action as is necessary to cause all of the Shares and Warrant Shares to be listed or quoted on such other Trading Market as promptly as possible. The Company will then take all action reasonably necessary to continue the listing and trading of its Common Stock on a Trading Market and will comply in all respects with the Company's reporting, filing and other obligations under the bylaws or rules of the Trading Market. The Company agrees to maintain the eligibility of the Common Stock for electronic transfer through the Depository Trust Company or another established clearing corporation, including, without limitation, by timely payment of fees to the Depository Trust Company or such other established clearing corporation in connection with such electronic transfer.

4.11 Subsequent Equity Sales.

(a) From the date hereof until 30 days after the Closing Date, neither the Company nor any Subsidiary shall issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of Common Stock or Common Stock Equivalents.

(b) From the date hereof until the one-year anniversary of the Closing Date, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction. "Variable Rate Transaction" means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon and/or varies with the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock or (ii) enters into, or effects a transaction under, any agreement, including, but not limited to, an equity line of credit, whereby the Company may issue securities at a future determined price. Any Purchaser shall be entitled to obtain injunctive relief against the Company to preclude any such issuance, which remedy shall be in addition to any right to collect damages.

(c) Notwithstanding the foregoing, this Section 4.11 shall not apply in respect of an Exempt Issuance, except that no Variable Rate Transaction shall be an Exempt Issuance.



4.12 Equal Treatment of Purchasers No consideration (including any modification of this Agreement) shall be offered or paid to any Person to amend or consent to a waiver or modification of any provision of this Agreement unless the same consideration is also offered to all of the parties to this Agreement. For clarification purposes, this provision constitutes a separate right granted to each Purchaser by the Company and negotiated separately by each Purchaser, and is intended for the Company to treat the Purchasers as a class and shall not in any way be construed as the Purchasers acting in concert or as a group with respect to the purchase, disposition or voting of Securities or otherwise.

4.13 Certain Transactions and Confidentiality Each Purchaser, severally and not jointly with the other Purchasers, covenants that neither it nor any Affiliate acting on its behalf or pursuant to any understanding with it will execute any purchases or sales, including Short Sales of any of the Company's securities during the period commencing with the execution of this Agreement and ending at such time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4. Each Purchaser, severally and not jointly with the other Purchasers, covenants that until such time as the transactions contemplated by this Agreement are publicly disclosed by the Company pursuant to the initial press release as described in Section 4.4, such Purchaser will maintain the confidentiality of the existence and terms of this transaction and the information included in the Disclosure Schedules. Notwithstanding the foregoing and notwithstanding anything contained in this Agreement to the contrary, the Company expressly acknowledges and agrees that (i) no Purchaser makes any representation, warranty or covenant hereby that it will not engage in effecting transactions in any securities of the Company after the time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4, (ii) no Purchaser shall be restricted or prohibited from effecting any transactions in any securities of the Company in accordance with applicable securities laws from and after the time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4 and (iii) no Purchaser shall have any duty of confidentiality or duty not to trade in the securities of the Company to the Company or its Subsidiaries after the issuance of the initial press release as described in Section 4.4. Notwithstanding the foregoing, in the case of a Purchaser that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's assets, the covenant set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement.

4.14 Capital Changes. Until the one year anniversary of the Closing Date, the Company shall not undertake a reverse or forward stock split or reclassification of the Common Stock without the prior written consent of the Purchasers holding a majority in interest of the Shares.

4.15 Exercise Procedures. The form of Notice of Exercise included in the Warrants set forth the totality of the procedures required of the Purchasers in order to exercise the Warrants. No additional legal opinion, other information or instructions shall be required of the Purchasers to exercise their Warrants. Without limiting the preceding sentences, no ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise form be required in order to exercise the Warrants. The Company shall honor exercises of the Warrants and shall deliver Warrant Shares in accordance with the terms, conditions and time periods set forth in the Transaction Documents.

## **ARTICLE V.**

### **MISCELLANEOUS**

5.1 Termination. This Agreement may be terminated by any Purchaser, as to such Purchaser's obligations hereunder only and without any effect whatsoever on the obligations between the Company and the other Purchasers, by written notice to the other parties, if the Closing has not been consummated on or before the fifth (5<sup>th</sup>) Trading Day following the date hereof; provided, however, that no such termination will affect the right of any party to sue for any breach by any other party (or parties).

5.2 Fees and Expenses. Except as expressly set forth in the Transaction Documents to the contrary, each party shall pay the fees and expenses of its advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party incident to the negotiation, preparation, execution, delivery and performance of this Agreement. The Company shall pay all Transfer Agent fees (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company and any exercise notice delivered by a Purchaser), stamp taxes and other taxes and duties levied in connection with the delivery of any Securities to the Purchasers.

5.3 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, the Prospectus and the Prospectus Supplement, contain the entire understanding of the parties with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules.

5.4 Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be deemed given and effective on the earliest of: (a) the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or email attachment at the email address as set forth on the signature pages attached hereto at or prior to 5:30 p.m. (New York City time) on a Trading Day, (b) the next Trading Day after the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or email attachment at the email address as set forth on the signature pages attached hereto on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (c) the second (2<sup>nd</sup>) Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service or (d) upon actual receipt by the party to whom such notice is required to be given. The address for such notices and communications shall be as set forth on the signature pages attached hereto. To the extent that any notice provided pursuant to any Transaction Document constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

5.5 Amendments; Waivers. No provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Company and Purchasers which purchased at least 50.1% in interest of the sum of (i) the Shares and (ii) the Warrant Shares initially issuable upon exercise of the Pre-Funded Warrants based on the initial Subscription Amounts hereunder or, in the case of a waiver, by the party against whom enforcement of any such waived provision is sought, provided that if any amendment, modification or waiver disproportionately and adversely impacts a Purchaser (or group of Purchasers), the consent of such disproportionately impacted Purchaser (or group of Purchasers) shall also be required. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right. Any proposed amendment or waiver that disproportionately, materially and adversely affects the rights and obligations of any Purchaser relative to the comparable rights and obligations of the other Purchasers shall require the prior written consent of such adversely affected Purchaser. Any amendment effected in accordance with this Section 5.5 shall be binding upon each Purchaser and holder of Securities and the Company.

5.6 Headings. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof.

5.7 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns. The Company may not assign this Agreement or any rights or obligations hereunder without the prior written consent of each Purchaser (other than by merger). Any Purchaser may assign any or all of its rights under this Agreement to any Person to whom such Purchaser assigns or transfers any Securities, provided that such transferee agrees in writing to be bound, with respect to the transferred Securities, by the provisions of the Transaction Documents that apply to the "Purchasers."

5.8 No Third-Party Beneficiaries. The Placement Agent shall be the third party beneficiary of the representations and warranties of the Company in Section 3.1 and the representations and warranties of the Purchasers in Section 3.2. This Agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns and is not for the benefit of, nor may any provision hereof be enforced by, any other Person, except as otherwise set forth in Section 4.8 and this Section 5.8.

5.9 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of the Transaction Documents shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Action or Proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such Action or Proceeding is improper or is an inconvenient venue for such Proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such Action or Proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If any party shall commence an Action or Proceeding to enforce any provisions of the Transaction Documents, then, in addition to the obligations of the Company under Section 4.8, the prevailing party in such Action or Proceeding shall be reimbursed by the non-prevailing party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such Action or Proceeding.

5.10 Survival. The representations and warranties contained herein shall survive the Closing and the delivery of the Securities.

5.11 Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to each other party, it being understood that the parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a “.pdf” format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or “.pdf” signature page were an original thereof.

5.12 Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

5.13 Rescission and Withdrawal Right. Notwithstanding anything to the contrary contained in (and without limiting any similar provisions of) any of the other Transaction Documents, whenever any Purchaser exercises a right, election, demand or option under a Transaction Document and the Company does not timely perform its related obligations within the periods therein provided, then such Purchaser may rescind or withdraw, in its sole discretion from time to time upon written notice to the Company, any relevant notice, demand or election in whole or in part without prejudice to its future actions and rights; provided, however, that, in the case of a rescission of an exercise of a Warrant, the applicable Purchaser shall be required to return any shares of Common Stock subject to any such rescinded exercise notice concurrently with the return to such Purchaser of the aggregate exercise price paid to the Company for such shares and the restoration of such Purchaser's right to acquire such shares pursuant to such Purchaser's Warrant (including, issuance of a replacement warrant certificate evidencing such restored right).

5.14 Replacement of Securities. If any certificate or instrument evidencing any Securities is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation thereof (in the case of mutilation), or in lieu of and substitution therefor, a new certificate or instrument, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction. The applicant for a new certificate or instrument under such circumstances shall also pay any reasonable third-party costs (including customary indemnity) associated with the issuance of such replacement Securities.

5.15 Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, each of the Purchasers and the Company will be entitled to specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any loss incurred by reason of any breach of obligations contained in the Transaction Documents and hereby agree to waive and not to assert in any Action for specific performance of any such obligation the defense that a remedy at law would be adequate.

5.16 Payment Set Aside. To the extent that the Company makes a payment or payments to any Purchaser pursuant to any Transaction Document or a Purchaser enforces or exercises its rights thereunder, and such payment or payments or the proceeds of such enforcement or exercise or any part thereof are subsequently invalidated, declared to be fraudulent or preferential, set aside, recovered from, disgorged by or are required to be refunded, repaid or otherwise restored to the Company, a trustee, receiver or any other Person under any law (including, without limitation, any bankruptcy law, state or federal law, common law or equitable cause of action), then to the extent of any such restoration the obligation or part thereof originally intended to be satisfied shall be revived and continued in full force and effect as if such payment had not been made or such enforcement or setoff had not occurred.

5.17 Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under any Transaction Document are several and not joint with the obligations of any other Purchaser, and no Purchaser shall be responsible in any way for the performance or non-performance of the obligations of any other Purchaser under any Transaction Document. Nothing contained herein or in any other Transaction Document, and no action taken by any Purchaser pursuant hereto or thereto, shall be deemed to constitute the Purchasers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by the Transaction Documents. Each Purchaser shall be entitled to independently protect and enforce its rights including, without limitation, the rights arising out of this Agreement or out of the other Transaction Documents, and it shall not be necessary for any other Purchaser to be joined as an additional party in any Proceeding for such purpose. Each Purchaser has been represented by its own separate legal counsel in its review and negotiation of the Transaction Documents. For reasons of administrative convenience only, each Purchaser and its respective counsel have chosen to communicate with the Company through EGS. EGS does not represent any of the Purchasers and only represents the Placement Agent. The Company has elected to provide all Purchasers with the same terms and Transaction Documents for the convenience of the Company and not because it was required or requested to do so by any of the Purchasers. It is expressly understood and agreed that each provision contained in this Agreement and in each other Transaction Document is between the Company and a Purchaser, solely, and not between the Company and the Purchasers collectively and not between and among the Purchasers.

5.18 Liquidated Damages. The Company's obligations to pay any partial liquidated damages or other amounts owing under the Transaction Documents is a continuing obligation of the Company and shall not terminate until all unpaid partial liquidated damages and other amounts have been paid notwithstanding the fact that the instrument or security pursuant to which such partial liquidated damages or other amounts are due and payable shall have been canceled.

5.19 Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

5.20 Construction. The parties agree that each of them and/or their respective counsel have reviewed and had an opportunity to revise the Transaction Documents and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of the Transaction Documents or any amendments thereto. In addition, each and every reference to share prices and shares of Common Stock in any Transaction Document shall be subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement.

**5.21 WAIVER OF JURY TRIAL. IN ANY ACTION, SUIT, OR PROCEEDING IN ANY JURISDICTION BROUGHT BY ANY PARTY AGAINST ANY OTHER PARTY, THE PARTIES EACH KNOWINGLY AND INTENTIONALLY, TO THE GREATEST EXTENT PERMITTED BY APPLICABLE LAW, HEREBY ABSOLUTELY, UNCONDITIONALLY, IRREVOCABLY AND EXPRESSLY WAIVES FOREVER TRIAL BY JURY.**

*(Signature Pages Follow)*

IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.  
**emerald bioscience, inc.**

Address for Notice:

By: \_\_\_\_\_  
Name:  
Title:

E-Mail:  
Fax:

With a copy to (which shall not constitute notice):

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK  
SIGNATURE PAGE FOR PURCHASER FOLLOWS]

[PURCHASER SIGNATURE PAGES TO EMBI SECURITIES PURCHASE AGREEMENT]

IN WITNESS WHEREOF, the undersigned have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

Name of Purchaser: \_\_\_\_\_  
*Signature of Authorized Signatory of* \_\_\_\_\_  
*Purchaser:* \_\_\_\_\_  
Name of Authorized Signatory: \_\_\_\_\_  
Title of Authorized Signatory: \_\_\_\_\_  
Email Address of Authorized Signatory: \_\_\_\_\_  
Facsimile Number of Authorized Signatory: \_\_\_\_\_  
Address for Notice to Purchaser: \_\_\_\_\_

Address for Delivery of Warrants to Purchaser (if not same as address for notice):

Subscription Amount: \$ \_\_\_\_\_

**Common Units:** \_\_\_\_\_

Shares: \_\_\_\_\_

Common Warrant Shares: \_\_\_\_\_ Beneficial Ownership Blocker ☐ 4.99% or ☐ 9.99%

**Pre-Funded Units:** \_\_\_\_\_

Pre-Funded Warrant Shares: \_\_\_\_\_ Beneficial Ownership Blocker ☐ 4.99% or ☐ 9.99%

Common Warrant Shares: \_\_\_\_\_ Beneficial Ownership Blocker ☐ 4.99% or ☐ 9.99%

EIN Number: \_\_\_\_\_



**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

As independent registered public accountants, we hereby consent to the inclusion in this Amendment No. 1 to Registration Statement on Form S-1 (No. 333-239826) of our report dated March 20, 2020, relating to the consolidated financial statements of **Emerald Bioscience, Inc. and Subsidiaries** (the “Company”) as of December 31, 2019 and 2018 and for the years then ended, (which report includes an explanatory paragraph relating to the uncertainty of the Company’s ability to continue as a going concern), appearing in the Company’s Annual Report on Form 10-K for the year ended December 31, 2019. We also consent to the reference to our Firm under the caption “Experts” in the Prospectus, which is part of said Registration Statement.

*/s/ Mayer Hoffman McCann P.C.*

Irvine, California  
July 28, 2020