

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

Biocept, Inc.

(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction of  
incorporation or organization)

8071  
(Primary Standard Industrial  
Classification Code Number)

80-0943522  
(I.R.S. Employer  
Identification Number)

5810 Nancy Ridge Drive  
San Diego, CA 92121  
(858) 320-8200

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

Michael W. Nall  
Chief Executive Officer and President  
Biocept, Inc.  
5810 Nancy Ridge Drive  
San Diego, CA 92121  
(858) 320-8200

(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, 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 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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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 pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Securities being Registered	Proposed Maximum Aggregate Offering Price (1) (2)	Amount of Registration Fee (5)
Shares of common stock, \$0.0001 par value per share	\$10,000,000	\$1,212
Warrants to purchase shares of common stock(3)		
Shares of common stock issuable upon exercise of the Warrants	\$10,000,000	\$1,212
Pre-Funded Warrants to purchase shares of common stock	(4)	
Shares of common stock issuable upon exercise of the Pre-Funded Warrants (3)		
<b>Total</b>	<b>\$20,000,000</b>	<b>\$2,424</b>

- (1) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended, or the Securities Act.
- (2) Pursuant to Rule 416, the securities being registered hereunder include such indeterminate number of additional securities as may be issuable to prevent dilution resulting from stock splits, stock dividends or similar transactions.
- (3) No fee is required pursuant to Rule 457(i) under the Securities Act.

- (4) 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 offering price of any Pre-Funded Warrants offered and sold in the offering, and, as such, the proposed maximum aggregate 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 \$10,000,000.
- (5) \$2,424 of which was previously paid.

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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 that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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**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 DECEMBER 10, 2018**



**9,708,737 Shares of Common Stock**

**Or**

**Pre-Funded Warrants to Purchase up to 9,708,737 Shares of Common Stock**

**Warrants to Purchase up to 9,708,737 Shares of Common Stock**

Biocept, Inc. is offering 9,708,737 shares of common stock and warrants to purchase up to 9,708,737 shares of our common stock, at an assumed combined offering price of \$1.03 per share of common stock and accompanying warrant (the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018). Each share of our common stock is being sold together with a warrant to purchase one share of our common stock. Each warrant will have an exercise price per share of not less than 100% of the last reported sale price of our common stock on the trading day immediately preceding the pricing of this offering, will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. The shares of our common stock and warrants are immediately separable and will be issued separately, but will be purchased together in this offering.

We are also offering to those purchasers, if any, whose purchase of our common stock in this offering would otherwise result in such purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of our outstanding common stock immediately following the consummation of this offering, the opportunity, in lieu of purchasing common stock, to purchase pre-funded warrants to purchase shares of our common stock, or Pre-Funded Warrants. The purchase price of each Pre-Funded Warrant will equal the price per share at which shares of our common stock are being sold to the public in this offering, minus \$0.01, and the exercise price of each Pre-Funded Warrant will equal \$0.01 per share of common stock. For each Pre-Funded Warrant purchased in this offering in lieu of common stock, we will reduce the number of shares of common stock being sold in the offering by one. Pursuant to this prospectus, we are also offering the shares of common stock issuable upon the exercise of the warrants and Pre-Funded Warrants offered hereby.

Each Pre-Funded Warrant is exercisable for one share of our common stock (subject to adjustment as provided for therein) at any time at the option of the holder until such Pre-Funded Warrant is exercised in full, provided that the holder will be prohibited from exercising Pre-Funded Warrants for shares of our common stock if, as a result of such exercise, the holder, together with its affiliates, would own more than 4.99% of the total number of shares of our common stock then issued and outstanding. However, any holder may increase such percentage to any other percentage not in excess of 9.99%, provided that any increase in such percentage shall not be effective until 61 days after such notice to us.

Our common stock is listed on The Nasdaq Capital Market under the symbol "BIOC." On December 7, 2018, the last reported sale price of our common stock on The Nasdaq Capital Market was \$1.03 per share. There is no established trading market for the warrants or Pre-Funded Warrants and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the warrants or Pre-Funded Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the warrants and the Pre-Funded Warrants will be limited.

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012, and, as such, we have elected to take advantage of certain reduced public company reporting requirements for this prospectus and future filings.

You should read this prospectus, together with additional information described under the headings "Incorporation of Certain Information by Reference" and "Where You Can Find More Information," carefully before you invest in any of our securities.

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Investing in our securities involves a high degree of risk. See “[Risk Factors](#)” beginning on page 6 of this prospectus for a discussion of information that should be considered in connection with an investment in our securities.

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.

	Per Share	Per Pre-Funded Warrant	Per Warrant	Total (No Exercise) (1)	Total (Full Exercise) (1)
Public offering price	\$		\$	\$	\$
Underwriting discounts and commissions(1)					
Proceeds, before expenses, to us	\$		\$	\$	\$

(1) See “Underwriting” on page 16 for additional disclosure regarding underwriting discounts and commissions and reimbursement of expenses.

We have granted the underwriters an option for a period of 45 days from the date of this prospectus to purchase up to an additional shares of common stock and/or warrants to purchase shares of common stock at the public offering price, less the underwriting discount.

We anticipate that delivery of the shares, Pre-Funded Warrants and warrants against payment will be made on or about , 2018.

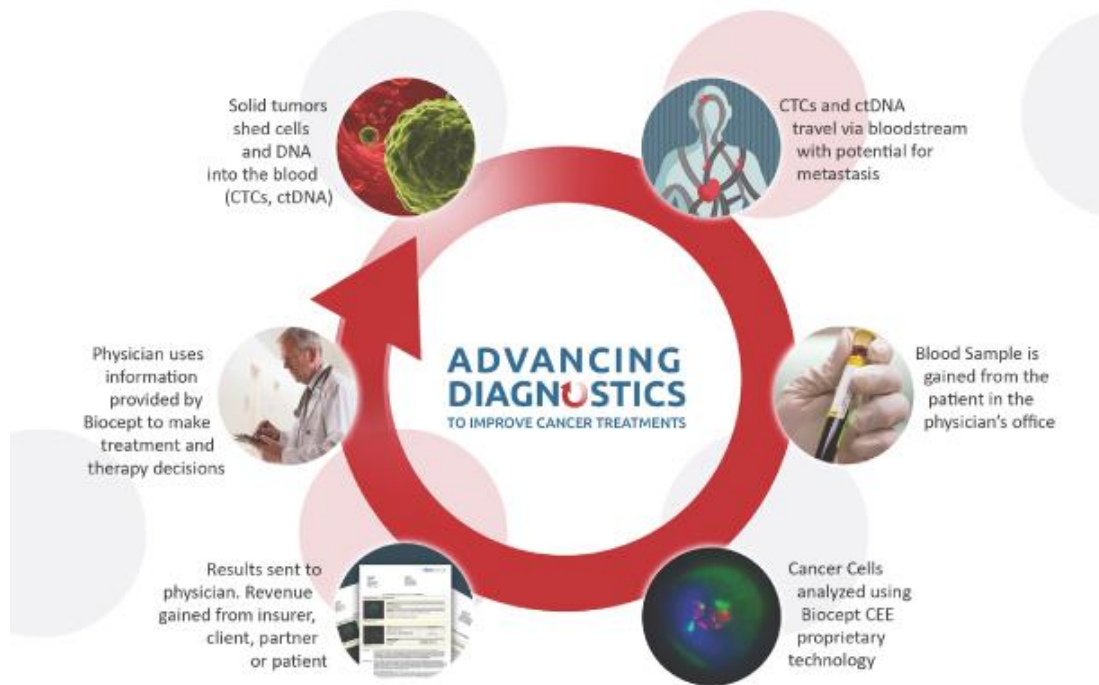
Book-Running Manager

Maxim Group LLC

Co-Manager

Dawson James Securities, Inc.

The date of this prospectus is , 2018.



**The CEE Solution**  
**Personalized Medicine from a Liquid Biopsy**

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We have not, and the underwriters have not, authorized anyone to provide you with information that is different from that contained in this prospectus or in any free writing prospectus we may authorize to be delivered or made available to you. When you make a decision about whether to invest in our securities, you should not rely upon any information other than the information in this prospectus or in any free writing prospectus that we may authorize to be delivered or made available to you. Neither the delivery of this prospectus nor the sale of our securities means that the information contained in this prospectus or any free writing prospectus is correct after the date of this prospectus or such free writing prospectus. This prospectus is not an offer to sell or the solicitation of an offer to buy our securities in any circumstances under which the offer or solicitation is unlawful.

For investors outside the United States: We have not, and the underwriters have not, taken any action that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities covered hereby and the distribution of this prospectus outside the United States.

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market share, is based on information from our own management estimates and research, as well as from industry and general publications and research, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry and assumptions based on such information and knowledge, which we believe to be reasonable. Our management estimates have not been verified by any independent source, and we have not independently verified any third-party information. In addition, assumptions and estimates of our and our industry's future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "[Risk Factors](#)." These and other factors could cause our future performance to differ materially from our assumptions and estimates. See "[Special Note Regarding Forward-Looking Statements](#)."

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to the registration statement of which this prospectus is a part were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

We use in this prospectus our BIOCEPT logo, for which a United States trademark application has been filed. This prospectus also includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, trademarks and tradenames referred to in this prospectus appear (after the first usage) without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

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## SUMMARY

*This summary highlights information contained elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our common stock. You should read this entire prospectus carefully, especially the “[Risk Factors](#)” section of this prospectus before making an investment decision.*

### Our Company

We are an early stage molecular oncology diagnostics company that develops and commercializes proprietary circulating tumor cell, or CTC, and circulating tumor DNA, or ctDNA, assays utilizing a standard blood sample, or “liquid biopsy.” Our current and planned assays are intended to provide information to aid healthcare providers to identify specific oncogenic alterations that may qualify a subset of cancer patients for targeted therapy at diagnosis, progression or used for monitoring in order to identify specific resistance mechanisms. Sometimes traditional procedures, such as surgical tissue biopsies, result in tumor tissue that is insufficient and/or unable to provide the molecular subtype information necessary for clinical decisions. Our assays, performed on blood, have the potential to provide more contemporaneous information on the characteristics of a patient’s disease when compared with tissue biopsy and radiographic imaging.

Our current assays and our planned future assays focus on key solid tumor indications utilizing our Target-Selector™ liquid biopsy technology platform for the biomarker analysis of CTCs and ctDNA from a standard blood sample. Our patented Target-Selector CTC offering is based on an internally developed microfluidics-based cell capture and analysis platform, with enabling features that change how information provided by CTC testing is used by clinicians. Our CTC technology could also be validated on cerebral spinal fluid in order to provide information for patients with central nervous system (CNS) tumors both primary and metastatic. Our patented Target-Selector ctDNA technology enables detection of mutations and genome alterations with enhanced sensitivity and specificity, and is applicable to nucleic acid from ctDNA, and could potentially be validated for other sample types such as bone marrow, pleural effusions, ascitic fluid, tissue (surgical resections and/or biopsies) or cerebrospinal fluid. Our Target-Selector CTC and ctDNA platforms provide both biomarker detection as well as monitoring capabilities and require only a patient blood sample. We believe that our Target-Selector platform technology has the potential to be developed and commercialized as in vitro diagnostic (IVD) test kits, and we are currently pursuing this strategy.

At our corporate headquarters facility located in San Diego, California, we operate a clinical laboratory that is certified under the Clinical Laboratory Improvement Amendments of 1988, or CLIA, and accredited by the College of American Pathologists, or CAP. We also performed research and development that led to our current assays, and continue to perform research and development for our planned assays, at this same facility. In addition, we manufacture our microfluidic channels, related equipment and certain reagents. The assays we offer and intend to offer are classified as laboratory developed tests, or LDTs, under CLIA regulations. CLIA certification is required before any clinical laboratory, including ours, may perform testing on human specimens for the purpose of obtaining information for the diagnosis, prevention, or treatment of disease or the assessment of health. In addition, we participate in and have received CAP accreditation, which includes rigorous biennial laboratory inspections and adherence to specific quality standards.

Our primary sales strategy is to engage medical oncologists and other physicians in the United States at private and group practices, hospitals, laboratories and cancer centers. In addition, we market our clinical trial and research services to pharmaceutical and biopharmaceutical companies and clinical research organizations. Additionally, commencing in October 2017, our pathology partnership program, branded as Empower TC™, provides the unique ability for pathologists to participate in the interpretation of liquid biopsy results and is available to pathology practices and hospital systems throughout the United States. Further, sales to laboratory supply distributors of our proprietary blood collection tubes, or BCTs, commenced during the three months ending June 30, 2018, which allow for the intact transport of liquid biopsy samples for research use only, or RUO, from regions around the world. We also plan to develop and market kits containing our patented and proprietary Target Selector testing to laboratories and researchers worldwide.

Our revenue generating efforts are focused in three areas:

- medical oncologists, surgical oncologists, pulmonologists, pathologists and other physicians who use the biomarker information we provide in order to determine the best treatment plan for their patients;
- laboratory services utilizing both our CTC and ctDNA testing in order to help pharmaceutical and biopharmaceutical companies developing drug candidate therapies to treat cancer; and
- licensing and/or selling our proprietary testing and/or technologies, including our BCTs, to partners in the United States and abroad.

## Risks That We Face

An investment in our common stock involves a high degree of risk. You should carefully consider the risks summarized below. The risks are discussed more fully in the “[Risk Factors](#)” section of this prospectus immediately following this prospectus summary. These risks include, but are not limited to, the following:

- we are an early stage company with a history of substantial net losses. We have never been profitable and we have an accumulated deficit of approximately \$214.4 million (as of September 30, 2018);
- we expect to incur net losses in the future, and we may never achieve sustained profitability;
- we need to raise additional capital to continue as a going concern;
- our failure to meet the continued listing requirements of The Nasdaq Capital Market could result in a de-listing of our common stock;
- our financial condition may be materially adversely affected in an event of default under our credit facility;
- our sale of our common stock may cause substantial dilution to our existing stockholders and could cause the price of our common stock to decline;
- our business depends upon our ability to increase sales of our current products and assays and to develop and commercialize other products and assays;
- our business depends on executing on our sales and marketing strategy for our products and diagnostic assays and gaining acceptance of our current products and assays and future products and assays in the market, for which we expect to continue to incur significant expenses;
- our business depends on our ability to continually develop new products and diagnostic assays and enhance our current products assays and future products and assays, for which we expect to continue to incur significant expenses;
- our business depends on our ability to effectively compete with other products and diagnostic assays, methods and services that now exist or may hereafter be developed;
- our business depends on our senior management;
- our business depends on our ability to attract and retain scientists, clinicians and sales personnel with extensive experience in oncology, who are in short supply;
- our business depends on our ability to enter into agreements with commercialization partners, who may not perform adequately or be locatable, for the sales, marketing and commercialization of our current products and assays and our planned future products and assays;
- we expect to expand our business internationally, which would increase our exposure to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States;
- our financial condition may be materially adversely affected by healthcare policy changes, including legislation reforming the United States health care system;
- our business depends on being able to obtain coverage and adequate reimbursement from governmental and other third-party payers for assays and services;
- our business depends on satisfying any applicable United States (including Food and Drug Administration) and international regulatory requirements with respect to products, assays and services, and many of these requirements are new and still evolving; and
- we need to obtain or maintain patents or other appropriate protection for the intellectual property utilized in our current and planned products, assays and services, and we must avoid infringement of third-party intellectual property.

## Company Information

We maintain our principal executive offices at 5810 Nancy Ridge Drive, San Diego, California 92121. Our telephone number is (858) 320-8200 and our website address is [www.biocept.com](http://www.biocept.com). The information contained in, or that can be accessed through, our



website is not incorporated into and is not part of this prospectus. We were incorporated in California on May 12, 1997 and reincorporated as a Delaware corporation on July 30, 2013.

### **Implications of Being an Emerging Growth Company**

As a company with less than \$1.07 billion in gross revenues during our last fiscal year, we qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act, or JOBS Act, enacted in April 2012. An “emerging growth company” may take advantage of reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act;
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We may take advantage of these provisions until December 31, 2019. However, if certain events occur prior to December 31, 2019, including if we become a “large accelerated filer,” our annual gross revenues exceed \$1.07 billion or we issue more than \$1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company before such date.

We have elected to take advantage of certain of the reduced disclosure obligations and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than the information you might receive from other public reporting companies in which you hold equity interests.

## **The Offering**

<b>Common stock offered by us</b>	9,708,737 shares (assuming a combined public offering price of \$1.03 per share and related warrant, the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018).
<b>Pre-Funded Warrants offered by us</b>	<p>We are also offering to those purchasers, if any, whose purchase of common stock in this offering would otherwise result in such purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of our outstanding common stock immediately following the consummation of this offering, the opportunity, in lieu of purchasing common stock, to purchase Pre-Funded Warrants to purchase up to 9,708,737 shares of our common stock. The purchase price of each Pre-Funded Warrant will equal the price per share at which the shares of common stock are being sold to the public in this offering, minus \$0.01, and the exercise price of each Pre-Funded Warrant will be \$0.01 per share of common stock. Each Pre-Funded Warrant will be exercisable immediately upon issuance and will not expire. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of such Pre-Funded Warrants. See “Description of the Securities We are Offering—Pre-Funded Warrants” for a discussion on the terms of the Pre-Funded Warrants.</p> <p>Each Pre-Funded Warrant is exercisable for one share of our common stock (subject to adjustment as provided therein) at any time at the option of the holder, provided that the holder will be prohibited from exercising its Pre-Funded Warrant for shares of our common stock if, as a result of such exercise, the holder, together with its affiliates, would own more than 4.99% of the total number of shares of our common stock then issued and outstanding. However, any holder may increase such percentage to any other percentage not in excess of 9.99%, provided that any increase in such percentage shall not be effective until 61 days after such notice to us.</p>
<b>Warrants offered by us</b>	Warrants to purchase up to 9,708,737 shares of our common stock (assuming a combined public offering price of \$1.03 per share and related warrant, the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018). Each share of our common stock is being sold together with a warrant to purchase one share of our common stock. Each warrant will have an exercise price per share of not less than 100% of the last reported sale price of our common stock on the trading day immediately preceding the pricing of this offering, will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of such warrants.
<b>Common stock outstanding after this offering</b>	13,645,963 shares (assuming a combined public offering price of \$1.03 per share and related warrant, the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018) (or 23,354,700 shares if the warrants sold in this offering are exercised in full). The foregoing assumes only shares of common stock are sold in this offering. For each Pre-Funded Warrant purchased in this offering in lieu of common stock, we will reduce the number of shares of common stock being sold in the offering by one.
<b>Use of proceeds</b>	Based on an assumed combined public offering price of \$1.03 per share and related warrant (the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018), we estimate that the net proceeds from our sale of shares of our common stock and warrants in this offering will be approximately \$9.1 million, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We currently expect to use the net proceeds from this offering for general corporate purposes and to fund ongoing operations and expansion of our business. For additional information please refer to the section entitled “ <a href="#">Use of Proceeds</a> ” on page 9 of this prospectus.

**Risk Factors**

Investing in our securities involves a high degree of risk. You should carefully review and consider the “[Risk Factors](#)” section of this prospectus for a discussion of factors to consider before deciding to invest in shares of our common stock.

**Market Symbol and trading**

Our common stock is listed on The Nasdaq Capital Market under the symbol “BIOC.” There is no established trading market for the warrants or Pre-Funded Warrants and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the warrants or Pre-Funded Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the warrants and Pre-Funded Warrants will be limited.

Unless otherwise stated, all information contained in this prospectus assumes no investor purchased Pre-Funded Warrants in lieu of common stock sold in this offering.

The number of shares of our common stock to be outstanding after this offering is based on 3,937,226 shares of our common stock outstanding as of September 30, 2018 and excludes as of such date:

- up to 7,005 shares of common stock issuable upon the conversion of Series A Convertible Preferred Stock outstanding as of September 30, 2018;
- 114,641 shares of our common stock issuable upon the exercise of stock options, with a weighted-average exercise price of \$72.02 per share;
- 360 shares of our common stock issuable upon the settlement of outstanding restricted stock units;
- 4,814,927 shares of our common stock issuable upon the exercise of outstanding warrants, with a weighted-average exercise price of \$5.44 per share; and
- 194,649 other shares of our common stock reserved for future issuance under our 2013 Amended and Restated Equity Incentive Plan.

## RISK FACTORS

*A purchase of shares of our common stock is an investment in our securities and involves a high degree of risk. You should carefully consider the risks and uncertainties and all other information contained in or incorporated by reference in this prospectus, including the risks and uncertainties discussed under “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2017, our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, our Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2018. All of these risk factors are incorporated by reference herein in their entirety. If any of these risks actually occur, our business, financial condition and results of operations would likely suffer. In that case, the market price of our common stock could decline, and you may lose part or all of your investment in our company. Additional risks of which we are not presently aware or that we currently believe are immaterial may also harm our business and results of operations.*

### **Risks Relating to This Offering**

***If you purchase our securities in this offering, you may incur immediate and substantial dilution in the book value of your shares.***

The combined public offering price per share of our common stock and related warrant may be substantially higher than the net tangible book value per share of our common stock immediately prior to the offering. After giving effect to the assumed sale of \_\_\_\_\_ shares of our common stock and related warrants in this offering, at an assumed combined public offering price of \$1.03 per share and related warrant (the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018), and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us and attributing no value to the warrants sold in this offering, purchasers of our common stock in this offering will incur immediate dilution of \$(0.29) per share in the net tangible book value of the common stock they acquire. In the event that you exercise your warrants, you may experience additional dilution to the extent that the exercise price of the warrants is higher than the tangible book value per share of our common stock. For a further description of the dilution that investors in this offering may experience, see “Dilution.”

In addition, to the extent that outstanding stock options or warrants have been or may be exercised or other shares issued, you may experience further dilution.

***We have broad discretion in the use of the net proceeds we receive from this offering and may not use them effectively.***

Our management will have broad discretion in the application of the net proceeds we receive in this offering, including for any of the purposes described in the section entitled “[Use of Proceeds](#),” and you will not have the opportunity as part of your investment decision to assess whether our management is using the net proceeds appropriately. Because of the number and variability of factors that will determine our use of our net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business and cause the price of our common stock to decline. Pending their use, we may invest our net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders.

***Future sales of substantial amounts of our common stock could adversely affect the market price of our common stock.***

We may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. If additional capital is raised through the sale of equity or convertible debt securities, or perceptions that those sales could occur, the issuance of these securities could result in further dilution to investors purchasing our common stock in this offering or result in downward pressure on the price of our common stock, and our ability to raise capital in the future.

***Holders of our warrants and Pre-Funded Warrants will have no rights as a common stockholder until they acquire our common stock.***

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

***The warrants may not have any value.***

Each warrant will have an exercise price of not less than 100% of the last reported sale price of our common stock as of the close of the trading day immediately preceding the pricing of this offering and will expire on the fifth anniversary of the date they first become exercisable. In the event our common stock price does not exceed the exercise price of the warrants during the period when the warrants are exercisable, the warrants may not have any value.

***There is no public market for the warrants to purchase shares of our common stock or Pre-Funded Warrants being offered in this offering.***

There is no established public trading market for the warrants or Pre-Funded Warrants 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 warrants or Pre-Funded Warrants on any national securities exchange or other nationally recognized trading system, including The Nasdaq Capital Market. Without an active trading market, the liquidity of the warrants and Pre-Funded Warrants will be limited.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements, which reflect our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described under the sections entitled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in our Annual Report on Form 10-K for the year ended December 31, 2017, our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, our Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2018, which are incorporated by reference herein. Forward-looking statements are identified by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. Readers are cautioned not to place undue reliance on these forward-looking statements, which are based on the information available to management at this time and which speak only as of this date. Examples of our forward-looking statements include:

- our ability to increase sales of our products, assays and services;
- our ability to continually develop new products, diagnostic assays, services and enhance our current products, assays and services and future products, assays, and services;
- our ability to effectively compete with other products, diagnostic assays, methods and services that now exist or may hereafter be developed;
- our ability to expand our business internationally;
- our ability to obtain coverage and adequate reimbursement from governmental and other third-party payers for assays and services;
- our expectations regarding the use of our existing cash and the expected net proceeds of this offering;
- our ability to enter into agreements with commercialization partners for the sales, marketing and commercialization of our current products, assays and services, and our planned future products, assays and services;
- our ability to satisfy any applicable United States and international regulatory requirements with respect to products, assays and services; and
- our ability to obtain or maintain patents or other appropriate protection for the intellectual property utilized in our current and planned products, assays and services.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. The forward-looking statements contained in this prospectus are excluded from the safe harbor protection provided by the Private Securities Litigation Reform Act of 1995 and Section 27A of the Securities Act of 1933, as amended, or the Securities Act.

This prospectus also incorporates by reference estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

## USE OF PROCEEDS

We estimate that the net proceeds of this offering will be approximately \$9.1 million assuming the sale of 9,708,737 shares of our common stock and warrants to purchase up to 9,708,737 shares of our common stock at an assumed combined public offering price of \$1.03 per share and related warrant (the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018), after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the warrants. Each \$0.25 increase (decrease) in the assumed combined public offering price of \$1.03 per share would increase (decrease) the net proceeds to us from this offering by approximately \$2.3 million, assuming the number of shares and warrants offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares of our common stock and warrants we are offering. An increase (decrease) of 1 million in the number of shares sold in this offering would increase (decrease) the expected net proceeds of the offering to us by approximately \$1.0 million, assuming that the assumed combined public offering price per share and the related warrant coverage remains the same. We currently intend to use the net proceeds of the offering for general corporate purposes and to fund ongoing operations and expansion of our business, including, but not limited to, initiatives to:

- fund our commercial strategy;
- complete a physician portal for our pathology partnership strategy;
- launch our pharma partnership strategy;
- implement laboratory automation initiatives; and
- outsource microchannel manufacturing.

## DILUTION

If you purchase shares of our common stock in this offering, you may experience dilution to the extent of the difference between the combined public offering price per share and related warrant in this offering and our as adjusted net tangible book value per share immediately after this offering assuming no value is attributed to the warrants, and such warrants are accounted for and classified as equity. Net tangible book value per share is equal to the amount of our total tangible assets, less total liabilities, divided by the number of outstanding shares of our common stock. As of September 30, 2018, our net tangible book value was approximately \$8.9 million, or approximately \$2.27 per share.

After giving effect to the assumed sale by us of 9,708,737 shares of our common stock (assuming no Pre-Funded Warrants in lieu of common stock issued) and warrants to purchase up to 9,708,737 shares of our common stock in this offering at an assumed combined public offering price of \$1.03 per share and related warrant (the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018), after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2018 would have been approximately \$18.0 million, or approximately \$1.32 per share. This represents an immediate decrease in net tangible book value of \$0.95 per share to existing stockholders and an immediate increase in net tangible book value of \$0.29 per share to new investors purchasing shares of our common stock and related warrants in this offering, attributing none of the assumed combined public offering price to the warrants offered hereby. The following table illustrates this per share dilution:

Assumed combined public offering price per share and related warrant		\$ 1.03
Net tangible book value per share as of September 30, 2018	\$ 2.27	
Decrease in net tangible book value per share after this offering	<u>(0.95)</u>	
As adjusted net tangible book value per share after this offering		1.32
Dilution per share to new investors		<u>\$ (0.29)</u>

A \$0.25 increase in the assumed combined public offering price of \$1.03 per share and related warrant would result in an increase (decrease) in our as adjusted net tangible book value of approximately \$11.4 million, or approximately \$(0.78) per share, and would result in an increase in net tangible book value to new investors of approximately \$0.21 per share, assuming that the number of shares of our common stock and related warrants sold by us remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. A decrease of \$0.25 in the assumed combined public offering price of \$1.03 per share and related warrant would result in an increase (decrease) in our as adjusted net tangible book value of approximately \$6.8 million, or approximately \$(1.11) per share, and would result in an increase in net tangible book value to new investors of approximately \$0.38 per share, assuming that the number of shares of our common stock and related warrants sold by us remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We may also increase or decrease the number of shares of common stock and related warrants we are offering from the assumed number of shares of common stock and related warrants set forth above. An increase of 1.0 million in the assumed number of shares of common stock and related warrants sold by us in this offering would result in an increase (decrease) in our as adjusted net tangible book value of approximately \$10.1 million, or approximately \$(0.97) per share, and would result in an increase in net tangible book value to new investors of approximately \$0.27 per share, assuming that the assumed combined public offering price remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. A decrease of 1.0 million in the assumed number of shares of common stock and related warrants sold by us in this offering would result in an increase (decrease) in our as adjusted net tangible book value of approximately \$8.1 million, or approximately \$(0.92) per share, and would result in an increase in the net tangible book value to new investors of approximately \$0.32 per share, assuming that the assumed combined public offering price remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The information discussed above is illustrative only and will adjust based on the actual public offering price, the actual number of shares and related warrants sold in this offering and other terms of this offering determined at pricing.

The foregoing discussion and table do not take into account further dilution to new investors that could occur upon the exercise of outstanding options or warrants having a per share exercise price less than the per share offering price to the public in this offering. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.



The table and discussion above are based on 3,937,226 shares of our common stock outstanding as of September 30, 2018 and excludes as of such date:

- up to 7,005 shares of common stock issuable upon the conversion of Series A Convertible Preferred Stock outstanding as of September 30, 2018;
- 114,641 shares of our common stock issuable upon the exercise of stock options, with a weighted-average exercise price of \$72.02 per share;
- 360 shares of our common stock issuable upon the settlement of outstanding restricted stock units;
- 4,814,927 shares of our common stock issuable upon the exercise of outstanding warrants, with a weighted-average exercise price of \$5.44 per share; and
- 194,649 other shares of our common stock reserved for future issuance under our 2013 Amended and Restated Equity Incentive Plan.

## **DIVIDEND POLICY**

We have never declared dividends on our equity securities, and currently do not plan to declare dividends on shares of our common stock in the foreseeable future. We expect to retain our future earnings, if any, for use in the operation and expansion of our business. Subject to the foregoing, the payment of cash dividends in the future, if any, will be at the discretion of our board of directors and will depend upon such factors as earnings levels, capital requirements, our overall financial condition and any other factors deemed relevant by our board of directors.

## DESCRIPTION OF THE SECURITIES WE ARE OFFERING

As of the date of this prospectus, our amended certificate of incorporation authorizes us to issue 150,000,000 shares of common stock, par value \$0.0001 per share, and 5,000,000 shares of preferred stock, par value \$0.0001 per share.

We are offering 9,708,737 shares of our common stock together with warrants to purchase up to an aggregate of 9,708,737 shares of our common stock (based on an assumed combined offering price of \$1.03, the last reported sale price of our common stock on The Nasdaq Capital Market on December 7, 2018). Each share of our common stock is being sold together with a warrant to purchase one share of common stock. The shares of our common stock and related warrants will be issued separately. We are also registering the shares of our common stock issuable from time to time upon exercise of the warrants offered hereby.

The following description of our capital stock is not complete and is subject to and qualified in its entirety by our amended certificate of incorporation and amended and restated bylaws, which are filed as exhibits to the registration statement of which this prospectus is a part, and by the relevant provisions of the Delaware General Corporation Law.

### Common Stock

The holders of our common stock are entitled to the following rights:

*Voting Rights.* Holders of our common stock are entitled to one vote per share in the election of directors and on all other matters on which stockholders are entitled or permitted to vote. Holders of our common stock are not entitled to cumulative voting rights.

*Dividend Rights.* Subject to the terms of any then outstanding series of preferred stock, the holders of our common stock are entitled to dividends in the amounts and at times as may be declared by the board of directors out of funds legally available therefor.

*Liquidation Rights.* Upon liquidation or dissolution, holders of our common stock are entitled to share ratably in all net assets available for distribution to stockholders after we have paid, or provided for payment of, all of our debts and liabilities, and after payment of any liquidation preferences to holders of any then outstanding shares of preferred stock.

*Other Matters.* Holders of our common stock have no redemption, conversion or preemptive rights pursuant to our amended certificate of incorporation or amended and restated bylaws. There are no sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to the rights of the holders of shares of any series of preferred stock that we may issue in the future.

*Outstanding Registration Rights.* Under the terms of the warrants issued to certain designees of the representative of the underwriters in connection with our initial public offering, the holders have the right to include its shares of common stock in any registration statement we file. If we register any securities for public sale, the holder will have the right to include its shares of common stock in the registration statement, provided that the underwriters of any such underwritten offering will have the right to limit the number of shares to be included in the registration statement. These piggyback registration rights expire on February 4, 2021.

All of our outstanding shares of common stock are fully paid and nonassessable.

Our common stock is listed on Nasdaq under the symbol “BIOC.”

### Pre-Funded Warrants

The following summary of certain terms and provisions of the Pre-Funded Warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by the provisions of, the Pre-Funded Warrant. Prospective investors should carefully review the terms and provisions of the form of Pre-Funded Warrant for a complete description of the terms and conditions of the Pre-Funded Warrants.

The term “pre-funded” refers to the fact that the purchase price of our common stock in this offering includes almost the entire exercise price that will be paid under the Pre-Funded Warrants, except for a nominal remaining exercise price of \$0.01. The purpose of the Pre-Funded Warrants is to enable investors that may have restrictions on their ability to beneficially own more than

4.99% (or, upon election of the holder, 9.99%) of our outstanding common stock following the consummation of this offering the opportunity to invest capital into the Company without triggering their ownership restrictions, by receiving Pre-Funded Warrants in lieu of our common stock which would result in such ownership of more than 4.99% (or 9.99%), and receive the ability to exercise their option to purchase the shares underlying the Pre-Funded Warrants at such nominal price at a later date.

*Duration.* The Pre-Funded Warrants offered hereby will entitle the holders thereof to purchase shares of our common stock at a nominal exercise price of \$0.01 per share, commencing immediately on the date of issuance.

*Exercise Limitation.* A holder will not have the right to exercise any portion of the Pre-Funded Warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% (or, upon election of the holder, 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. However, any holder may increase or decrease such percentage, provided that any increase will not be effective until the 61<sup>st</sup> day after such election.

*Exercise Price.* The Pre-Funded Warrants will have an exercise price of \$0.01 per share. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

*Transferability.* Subject to applicable laws, the Pre-Funded Warrants may be offered for sale, sold, transferred or assigned without our consent.

*Exchange Listing.* There is no established 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 the listing of the Pre-Funded Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the Pre-Funded Warrants will be limited.

*Fundamental Transactions.* If a fundamental transaction occurs, then the successor entity will succeed to, and be substituted for us, and may exercise every right and power that we may exercise and will assume all of our obligations under the Pre-Funded Warrants with the same effect as if such successor entity had been named in the Pre-Funded Warrant itself. If holders of our common stock are given a 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 consideration it receives upon any exercise of the Pre-Funded Warrant following such fundamental transaction.

*Rights as a Stockholder.* Except as otherwise provided in the Pre-Funded Warrants or by virtue of such holder's ownership of shares of our common stock, the holder of a Pre-Funded Warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the Pre-Funded Warrant.

## **Warrants**

The following summary of certain terms and provisions of the warrants offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the warrant, the form of which has been filed as an exhibit to the registration statement of which this prospectus is a part. Prospective investors should carefully review the terms and provisions of the form of warrant for a complete description of the terms and conditions of the warrants.

*Form.* The warrants will be issued as individual warrant agreements to the investors.

*Exercisability.* The warrants are exercisable at any time after their original issuance, expected to be \_\_\_\_\_, 2018, and at any time up to the date that is five years after their original 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, at any time a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is effective and available for the issuance of such shares, or an exemption from registration under the Securities Act is available for the issuance of such shares, by payment in full in immediately available funds for the number of shares of common stock purchased upon such exercise. If a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is not effective or available and an exemption from registration under the Securities Act is not available for the issuance of such shares, the holder may, in its sole discretion, elect to exercise the warrant through a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of common stock determined according to the formula set forth in the warrant. No fractional shares of common stock will be issued in connection with the exercise of a warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

*Exercise Limitation.* A holder will not have the right to exercise any portion of the warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% (or, upon election of the holder, 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 warrants. However, any holder may increase or decrease such percentage, provided that any increase will not be effective until the 61<sup>st</sup> day after such election.

*Exercise Price.* The warrants will have an exercise price of \$            per share. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

*Transferability.* Subject to applicable laws, the warrants may be offered for sale, sold, transferred or assigned without our consent.

*Exchange Listing.* There is no established trading market for the warrants and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the warrants will be limited.

*Fundamental Transactions.* If a fundamental transaction occurs, then the successor entity will succeed to, and be substituted for us, and may exercise every right and power that we may exercise and will assume all of our obligations under the warrants with the same effect as if such successor entity had been named in the warrant itself. If holders of our common stock are given a 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 consideration it receives upon any exercise of the warrant following such fundamental transaction.

*Rights as a Stockholder.* Except as otherwise provided in the warrants or by virtue of such holder's ownership of shares of our common stock, the holder of a warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the warrant.

#### **Transfer Agent**

The transfer agent of our common stock being offered hereby is Continental Stock Transfer & Trust Company.

## UNDERWRITING

We have entered into an underwriting agreement with the underwriters named below with respect to the shares of our common stock and related warrants and Pre-Funded Warrants and related warrants subject to this offering. Subject to certain conditions, we have agreed to sell to the underwriters, and the underwriters have agreed to purchase, the number of shares of our common stock, pre-funded warrants and corresponding warrants provided below opposite each underwriter's name. Maxim Group LLC and Dawson James Securities, Inc. are acting as the representatives of the underwriters.

Underwriter	Number of Shares	Number of Pre-Funded Warrants	Number of Warrants
Maxim Group LLC			
Dawson James Securities, Inc.			
Total			

The underwriters are offering the shares of our common stock and related warrants and Pre-Funded Warrants and related warrants subject to their acceptance of our common stock, the Pre-Funded Warrants and the warrants from us and subject to prior sale. The underwriting agreement provides that the obligations of the underwriters to pay for and accept delivery of the shares of our common stock and related warrants and Pre-Funded Warrants and related warrants offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of our common stock and related warrants and Pre-Funded Warrants and related warrants if any such shares of our common stock and related warrants or Pre-Funded Warrants and related warrants are taken.

We have granted the underwriters an option for a period of 45 days from the date of this prospectus to purchase up to an additional \_\_\_\_\_ shares of common stock and/or warrants to purchase \_\_\_\_\_ shares of common stock at the public offering price, less the underwriting discount.

### Underwriter Compensation

We have agreed to pay the underwriters an aggregate fee equal to 7.0% of the gross proceeds of this offering and expect the net proceeds from this offering to be approximately \$ \_\_\_\_\_ after deducting \$ \_\_\_\_\_ in underwriting commissions and \$ \_\_\_\_\_ in our other estimated offering expenses. We have also agreed to pay the underwriters an accountable expense allowance for certain of the underwriters' expenses relating to the offering up to a maximum aggregate amount of \$85,000, including the underwriters' legal fees incurred in this offering.

We have paid an expense deposit of \$25,000 to Maxim which will be applied against actual, out-of-pocket accountable expenses that will be paid by us to the underwriters in connection with this offering. Any portion of the \$25,000 expense deposit paid to Maxim will be returned to us to the extent that offering expenses are not actually incurred by the underwriters in compliance with FINRA Rule 5110(f)(2)(C).

### Discounts and Expenses

The underwriters have advised us that they propose to offer the shares of our common stock, Pre-Funded Warrants and related warrants to the public at the respective public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of \$ \_\_\_\_\_ per share of our common stock and related warrant or \$ \_\_\_\_\_ per Pre-Funded Warrants and related warrants. After this offering, the public offering price and concession to dealers may be changed by the representative. No such change shall change the amount of proceeds to be received by us as set forth on the cover page of this prospectus. The shares of our common stock, Pre-Funded Warrants and related warrants are offered by the underwriters as stated herein, subject to receipt and acceptance by them and subject to their right to reject any order in whole or in part. The underwriters have informed us that they do not intend to confirm sales to any accounts over which they exercise discretionary authority.

The following table shows the public offering price, underwriting discount payable to the underwriters by us and proceeds before expenses to us, assuming both no exercise and full exercise of the underwriters' option to purchase additional shares of common stock and/or warrants. The underwriting commissions are equal to the combined public offering price per share, Pre-Funded Warrants and

related warrants, less the amount per share the underwriters pay us for the shares of common stock, Pre-Funded Warrants and warrants:

	Per Share	Per Pre-Funded Warrant	Per Warrant	Total (No Exercise)	Total (Full Exercise)
Public offering price	\$		\$	\$	\$
Underwriting discounts and commissions					
Proceeds, before expenses, to us	\$		\$	\$	\$

In addition, we have agreed to reimburse the underwriters for reasonable out-of-pocket expenses not to exceed \$85,000 in the aggregate. We will also pay \$45,000 to Chardan Capital Markets, LLC for financial advisory services in connection with this offering. Chardan will not participate in the selling efforts for this offering. We estimate that total expenses payable by us in connection with this offering, other than the underwriting discount referred to above, will be approximately \$200,000.

### Indemnification

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act.

### Lock-up Agreements

We have agreed, subject to limited exceptions, for a period of 75 days after the closing of this offering, and our officers and directors have agreed, subject to limited exceptions, for a period of 90 days after the closing of this offering, not to offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise dispose of, directly or indirectly any shares of common stock or any securities convertible into or exchangeable for our common stock either owned as of the date of the underwriting agreement or thereafter acquired without the prior written consent of Maxim Group LLC and Dawson James Securities, Inc. Maxim Group LLC and Dawson James Securities, Inc. may, in their sole discretion and at any time or from time to time before the termination of the lock-up period, without notice, release all or any portion of the securities subject to lock-up agreements.

### Price Stabilization, Short Positions and Penalty Bids

In connection with the offering the underwriters may engage in stabilizing transactions, over-allotment transactions, syndicate covering transactions and penalty bids in accordance with Regulation M under the Exchange Act:

- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.
- Over-allotment involves sales by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase, which creates a syndicate short position. The short position may be either a covered short position or a naked short position. In a covered short position, the number of shares over-allotted by the underwriters is not greater than the number of shares that they may purchase in the over-allotment option. In a naked short position, the number of shares involved is greater than the number of shares in the over-allotment option. The underwriters may close out any covered short position by either exercising their over-allotment option and/or purchasing shares in the open market.

- Syndicate covering transactions involve purchases of the common stock in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of shares to close out the short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option. A naked short position occurs if the underwriters sell more shares than could be covered by the over-allotment option. This position can only be closed out by buying shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering.
- Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the common stock originally sold by the syndicate member is purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of the common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. These transactions may be discontinued at any time.

Neither we nor the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our shares of common stock. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that any transaction, if commenced, will not be discontinued without notice.

## **Electronic Distribution**

This prospectus in electronic format may be made available on websites or through other online services maintained by the underwriters, or by their affiliates. Other than this prospectus in electronic format, the information on the underwriters' websites and any information contained in any other websites maintained by the underwriters is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the underwriters in their capacity as underwriters, and should not be relied upon by investors.

## **Other**

From time to time, the underwriters and/or their affiliates have provided, and may in the future provide, various investment banking and other financial services for us for which services it has received and, may in the future receive, customary fees.

Except for the services provided in connection with this offering and other than as described below, the underwriters have not provided any investment banking or other financial services during the 180-day period preceding the date of this prospectus.

On September 20, 2018, the Company completed an offering of 642,438 shares of the Company's common stock and pre-funded warrants to purchase up to an aggregate of 120,000 shares of its common stock. The shares were sold at a purchase price of \$3.285 per share and the pre-funded warrants were sold at a purchase price of \$3.275 per pre-funded warrant which represents the per share purchase price for the shares less the \$0.01 per share exercise price for each such pre-funded warrant. In addition, in a concurrent private placement, the Company issued to purchasers a warrant to purchase one share of the Company's common stock for each share and pre-funded warrant purchased for cash in the offering. All warrants issued in the offering have an exercise price of \$3.16 per share, are exercisable upon the six-month anniversary of issuance and expire five years from such date. Maxim Group LLC and Dawson James Securities, Inc. acted as placement agents in connection with such offering (the "September 2018 Offering").

In connection with the September 2018 Offering, we agreed, for a period of twelve months following the commencement of sales of such offering, to grant Maxim Group LLC the right of first refusal to act as lead managing underwriter and book runner and/or lead placement agent, with at least eighty percent of the economics, and to grant Dawson James Securities, Inc. the right of first refusal to act as a co-placement agent or underwriter or co-manager, with at least twenty percent of the economics, for any and all future equity, equity-linked or debt offerings undertaken by us during such period.



## **Notice to Prospective Investors in Canada**

This prospectus constitutes an “exempt offering document” as defined in and for the purposes of applicable Canadian securities laws. No prospectus has been filed with any securities commission or similar regulatory authority in Canada in connection with the offer and sale of the securities. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon this prospectus or on the merits of the securities and any representation to the contrary is an offence.

**Canadian investors are advised that this prospectus has been prepared in reliance on section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (“NI 33-105”). Pursuant to section 3A.3 of NI 33-105, this prospectus is exempt from the requirement that the Company and the underwriter(s) provide Canadian investors with certain conflicts of interest disclosure pertaining to “connected issuer” and/or “related issuer” relationships that may exist between the Company and the underwriter(s) as would otherwise be required pursuant to subsection 2.1(1) of NI 33-105.**

### **Resale Restrictions**

The offer and sale of the securities in Canada is being made on a private placement basis only and is exempt from the requirement that the Company prepares and files a prospectus under applicable Canadian securities laws. Any resale of securities acquired by a Canadian investor in this offering must be made in accordance with applicable Canadian securities laws, which may vary depending on the relevant jurisdiction, and which may require resales to be made in accordance with Canadian prospectus requirements, pursuant to a statutory exemption from the prospectus requirements, in a transaction exempt from the prospectus requirements or otherwise under a discretionary exemption from the prospectus requirements granted by the applicable local Canadian securities regulatory authority. These resale restrictions may under certain circumstances apply to resales of the securities outside of Canada.

### **Representations of Purchasers**

Each Canadian investor who purchases securities will be deemed to have represented to the Company, the underwriters and to each dealer from whom a purchase confirmation is received, as applicable, that the investor is (i) purchasing as principal, or is deemed to be purchasing as principal in accordance with applicable Canadian securities laws, for investment only and not with a view to resale or redistribution; (ii) an “accredited investor” as such term is defined in section 1.1 of National Instrument 45-106 *Prospectus Exemptions* or, in Ontario, as such term is defined in section 73.3(1) of the *Securities Act* (Ontario); and (iii) is a “permitted client” as such term is defined in section 1.1 of National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*.

### **Taxation and Eligibility for Investment**

Any discussion of taxation and related matters contained in this prospectus does not purport to be a comprehensive description of all of the tax considerations that may be relevant to a Canadian investor when deciding to purchase the securities and, in particular, does not address any Canadian tax considerations. No representation or warranty is hereby made as to the tax consequences to a resident, or deemed resident, of Canada of an investment in the securities or with respect to the eligibility of the securities for investment by such investor under relevant Canadian federal and provincial legislation and regulations.

### **Rights of Action for Damages or Rescission**

Securities legislation in certain of the Canadian jurisdictions provides certain purchasers of securities pursuant to an offering memorandum (such as this prospectus), including where the distribution involves an “eligible foreign security” as such term is defined in Ontario Securities Commission Rule 45-501 *Ontario Prospectus and Registration Exemptions* and in Multilateral Instrument 45-107 *Listing Representation and Statutory Rights of Action Disclosure Exemptions*, as applicable, with a remedy for damages or rescission, or both, in addition to any other rights they may have at law, where the offering memorandum, or other offering document that constitutes an offering memorandum, and any amendment thereto, contains a “misrepresentation” as defined under applicable Canadian securities laws. These remedies, or notice with respect to these remedies, must be exercised or delivered, as the case may be, by the purchaser within the time limits prescribed under, and are subject to limitations and defenses under, applicable Canadian securities legislation. In addition, these remedies are in addition to and without derogation from any other right or remedy available at law to the investor.

## Language of Documents

Upon receipt of this document, each Canadian investor hereby confirms that it has expressly requested that all documents evidencing or relating in any way to the sale of the securities described herein (including for greater certainty any purchase confirmation or any notice) be drawn up in the English language only. *Par la réception de ce document, chaque investisseur canadien confirme par les présentes qu'il a expressément exigé que tous les documents faisant foi ou se rapportant de quelque manière que ce soit à la vente des valeurs mobilières décrites aux présentes (incluant, pour plus de certitude, toute confirmation d'achat ou tout avis) soient rédigés en anglais seulement.*

## Offers Outside the United States

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

## **LEGAL MATTERS**

The validity of the shares of common stock being offered by this prospectus will be passed upon for us by Cooley LLP, San Diego, California. The underwriters are being represented by Ellenoff Grossman & Schole LLP, New York, New York.

## **EXPERTS**

Mayer Hoffman McCann P.C., our independent registered public accounting firm, has audited our balance sheets as of December 31, 2016 and 2017, and the related statements of operations and comprehensive loss, changes in shareholders' equity and cash flows for each of the two years in the period ended December 31, 2017, as set forth in their report. We have incorporated by reference our financial statements 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.

## **WHERE YOU CAN FIND MORE INFORMATION**

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock being offered by this prospectus. This prospectus does not contain all of the information in the registration statement and its exhibits. For further information with respect to us and the common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You can read our SEC filings, including the registration statement, over the Internet at the SEC's website at [www.sec.gov](http://www.sec.gov). You may also read and copy any document we file with the SEC at its public reference facilities at 100 F Street NE, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities. You may also request a copy of these filings, at no cost, by writing us at 5810 Nancy Ridge Drive, San Diego, California 92121 or telephoning us at (858) 320-8200.

We are subject to the information and periodic reporting requirements of the Exchange Act, and we file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information are available for inspection and copying at the public reference room and website of the SEC referred to above. We maintain a website at <http://www.biocept.com>. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not incorporated by reference in, and is not part of, this prospectus.

## INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference the information and reports we file with it, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is an important part of this prospectus. We incorporate by reference, as of their respective dates of filing, the documents listed below that we have filed with the SEC and any documents that we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and prior to the termination of the offering of securities under this prospectus:

- our Annual Report on Form 10-K and Amendment No. 1 to our Annual Report on Form 10-K/A for the year ended December 31, 2017 (other than information furnished rather than filed), filed with the SEC on March 28, 2018 and April 30, 2018, respectively;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2018, June 30, 2018, and September 30, 2018 (other than information furnished rather than filed), filed with the SEC on May 15, 2018, August 14, 2018, and November 14, 2018, respectively;
- our Current Reports on Form 8-K (other than information furnished rather than filed), filed with the SEC on January 23, 2018, January 30, 2018, February 12, 2018, April 6, 2018, July 3, 2018, July 6, 2018, July 25, 2018, August 13, 2018, September 8, 2017 and September 24, 2018;
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 from our definitive proxy statement on Schedule 14A (other than information furnished rather than filed) filed with the SEC on May 29, 2018; and
- the description of our common stock, which is registered under Section 12 of the Exchange Act, in our registration statement on Form 8-A, filed with the SEC on January 28, 2014 (File No. 001-36284), including any amendments or reports filed for the purpose of updating such description.

Upon request, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered a copy of the documents incorporated by reference into this prospectus. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus, at no cost by writing or telephoning us at the following address:

Biocept, Inc.  
5810 Nancy Ridge Drive  
San Diego, California 92121  
Telephone: (858) 320-8200

You also may access these filings on our Internet site at [www.biocept.com](http://www.biocept.com). Our web site and the information contained on that site, or connected to that site, are not incorporated into this prospectus or the Registration Statement on Form S-1.

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**9,708,737 Shares of Common Stock**  
**or**  
**Pre-Funded Warrants to Purchase up to 9,708,737 Shares of Common Stock**  
**Warrants to Purchase up to 9,708,737 Shares of Common Stock**



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**PROSPECTUS**

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*Book-Running Manager*

**Maxim Group LLC**

*Co-Manager*

**Dawson James Securities, Inc.**

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## PART II

### INFORMATION NOT REQUIRED IN PROSPECTUS

#### Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than underwriting discounts, paid or payable by Biocept, Inc., or the Registrant, in connection with the sale and distribution of the securities being registered. All amounts are estimated except the SEC registration fee.

Item	Amount
SEC registration fee	\$ 2,424
Legal fees and expenses	
Accounting fees and expenses	
Printing and engraving expenses	
Transfer agent and registrar fees and expenses	
Miscellaneous fees and expenses	
<b>Total</b>	<b>\$ 200,000</b>

#### Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act.

The Registrant's amended certificate of incorporation provides for indemnification of its directors and executive officers to the maximum extent permitted by the Delaware General Corporation Law, and the Registrant's amended and restated bylaws provide for indemnification of its directors and executive officers to the maximum extent permitted by the Delaware General Corporation Law.

In addition, the Registrant has entered into indemnification agreements with each of its current directors and executive officers. These agreements will require the Registrant to indemnify these individuals to the fullest extent permitted under Delaware law against liabilities that may arise by reason of their service to the Registrant and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. The Registrant also intends to enter into indemnification agreements with its future directors and executive officers.

#### Item 15. Recent Sales of Unregistered Securities.

Since January 1, 2015, the Registrant made sales of the unregistered securities discussed below. The offers, sales and issuances of the securities described below were exempt from registration under the Securities Act by virtue of Section 4(a)(2) of the Securities Act and/or, in the case of compensatory issuances, Securities Act Rule 701, and/or, in the case of conversions, Section 3(a)(9) of the Securities Act.

##### *2018 Registered Direct and Private Warrant Issuance*

On September 20, 2018, the Registrant entered into a Securities Purchase Agreement with certain purchasers identified on the signature pages thereto, pursuant to which the Registrant offered pursuant to an effective shelf registration statement on Form S-3 an aggregate of 642,438 shares of common stock and pre-funded warrants to purchase 120,000 shares of common stock, for aggregate gross proceeds to the Registrant of approximately \$2.5 million, before deducting fees to the placement agents and other estimated offering expenses payable by the Registrant. In a concurrent private placement, the Registrant issued Series A Common Stock Purchase Warrants to purchase an aggregate of 762,438 shares of our common stock that are exercisable beginning on the six-month anniversary of the date of issuance at an exercise price of \$3.16 per share and will expire on the five year anniversary of the initial exercise date. Maxim Group LLC acted as the lead placement agent and Dawson James Securities, Inc. acted as co-placement agent for the Registrant, each on a "reasonable best efforts" basis, in connection with the offering, and received a cash fee of 7.0% of the gross proceeds paid to the Registrant for the securities and reimbursement of certain out-of-pocket expenses.

### ***Ally Bridge Private Placement***

On August 9, 2017, the Registrant entered into a common stock and warrant purchase agreement with Ally Bridge LB Healthcare Master Fund Limited pursuant to which the Registrant issued and sold in a private placement an aggregate of 48,889 shares of common stock, together with a warrant to purchase an additional 47,821 shares of common stock, for an aggregate purchase price of approximately \$2.2 million. The warrant has an exercise price per share equal to \$45.00, is immediately exercisable and will expire on the fifth anniversary of the original issuance date.

Pursuant to the common stock and warrant purchase agreement, the Registrant agreed to file a registration statement to cover the resale of the shares of common stock issued to Ally Bridge LB Healthcare Master Fund Limited, as well as the shares of common stock issuable upon exercise of the warrant issued to Ally Bridge LB Healthcare Master Fund Limited, and to keep such registration statement effective until the date on which all of the 96,710 shares registered for resale under the registration statement have been sold or can be sold publicly without condition or restriction under Rule 144 under the Securities Act.

### ***2017 Registered Direct and Private Warrant Issuance***

On March 28, 2017, the Registrant entered into a Securities Purchase Agreement with certain purchasers identified on the signature pages thereto, pursuant to which the Registrant sold, in a registered direct offering, an aggregate of 144,000 shares of common stock at a negotiated purchase price of \$64.50 per share, pursuant to an effective shelf registration statement on Form S-3. The Registrant received aggregate gross proceeds of approximately \$9.3 million, before deducting fees to the placement agent and other offering expenses payable by the Registrant. In a concurrent private placement, the Registrant also sold to the purchasers a warrant to purchase one half of a share of common stock for each share purchased for cash in the offering. The warrants sold in the offering are exercisable beginning on the six-month anniversary of the date of issuance at an exercise price of \$75.00 per share and will expire five years following the date they become exercisable. The warrants are exercisable on a “cashless” basis in certain circumstances. Roth Capital Partners, LLC acted as the lead placement agent for the offering, and WestPark Capital and Chardan Capital acted as co-placement agents and were entitled to a cash fee of 6.0% of the gross proceeds paid to the Registrant in the offering and reimbursement of certain out-of-pocket expenses.

### ***Aspire Capital, LLC Transaction***

On December 21, 2015, the Registrant issued to Aspire Capital, LLC 1,843 shares of common stock as a commitment fee and sold to Aspire Capital, LLC 6,945 shares of common stock at \$144.00 per share for gross proceeds of \$1,000,000. Subsequently, the Registrant sold to Aspire Capital, LLC an aggregate of 5,772 shares of common stock for total proceeds of \$544,051.

### ***Compensatory Issuances***

In 2015, the Registrant granted 14,709 common stock options (at a \$180.30 weighted-average exercise price per share).

In 2016, the Registrant granted 9,679 common stock options (at a \$75.30 weighted-average exercise price per share) and 5,527 common stock restricted stock units to service providers.

In 2017, the Registrant granted 58,501 common stock options (at a \$44.70 weighted average exercise price per share) and 11,666 common stock restricted stock units to service providers.

In the nine months ended September 30, 2018, the Registrant granted 58,994 common stock options (at a \$2.96 weighted average exercise price per share) to service providers and no common stock restricted stock units were issued to service providers.

### ***Conversions and Exercises***

In February 2015:

- Warrants for an aggregate 88,889 shares of the Registrant’s common stock were issued to participants, including several insiders, of the Registrant’s February 2015 public offering and are exercisable at a price of \$140.40 per

share, with total proceeds of \$9,760,060 received from the exercises of such warrants subsequent to February 13, 2015. Each of the members of the Registrant's Board of Directors participated in the Registrant's February 2015 public offering, purchasing an aggregate 1,575 shares of the Registrant's common stock and warrants to purchase up to an aggregate of 1,575 shares of the Registrant's common stock for a total purchase price of \$177,500. The following persons received the following numbers of such warrants:

- O Affiliate of David F. Hale, Chairman—444
- O Affiliate of Edward Neff, former Director—444
- O Bruce A. Huebner, Director—133
- O Bruce E. Gerhardt, Director—222
- O Marsha A. Chandler, Director—22
- O Michael W. Nall, President and CEO, Director—133
- O M. Faye Wilson, Director—44
- O Retirement account of Ivor Royston, M.D., Director—133

## Item 16. Exhibits and Financial Statement Schedules.

### (a) Exhibits

The following exhibits are being filed with this Registration Statement:

Exhibits:	Description
1.1*	<a href="#">Form of Underwriting Agreement.</a>
3.1	<a href="#">Certificate of Amendment of Certificate of Incorporation (incorporated by reference to Exhibit 3.1.4 of the Registrant's Current Report on Form 8-K, filed with the SEC on February 14, 2014).</a>
3.2	<a href="#">Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</a>
3.3	<a href="#">Certificate of Amendment of Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 29, 2016).</a>
3.4	<a href="#">Amendment to Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 29, 2017).</a>
3.5	<a href="#">Certificate of Amendment to Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on July 6, 2018).</a>
3.6	<a href="#">Certificate of Designation of Preference, Rights and Limitations of Series A Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on August 13, 2018).</a>
4.1	Reference is made to Exhibits <a href="#">3.1</a> , <a href="#">3.2</a> , <a href="#">3.3</a> , <a href="#">3.4</a> , <a href="#">3.5</a> and <a href="#">3.6</a>
4.2	<a href="#">Specimen Common Stock certificate of Biocept, Inc. (incorporated by reference to Exhibit 4.3 of the Registrant's Annual Report on Form 10-K, filed with the SEC on March 28, 2017).</a>
4.3	<a href="#">Form of Representative's Warrant, dated February 10, 2014 (incorporated by reference to Exhibit 4.2 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), as amended, filed with the SEC on November 20, 2013).</a>
4.4	<a href="#">Form of Warrant issued to the lenders under the Loan and Security Agreement, dated as of April 30, 2014, by and among Biocept, Inc., Oxford Finance LLC, as collateral agent, and the lenders party thereto from time to time, including Oxford Finance LLC (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on May 6, 2014).</a>
4.5	<a href="#">Form of Warrant to Purchase Common Stock (incorporated by reference to Exhibit 4.5 of the Registrant's Registration Statement on Form S-1 (File No. 333-201437), filed with the SEC on February 6, 2015).</a>
4.6	<a href="#">Warrant to Purchase Preferred Stock, dated September 10, 2012, issued by the Registrant in favor of ARE-SD Region No. 18, LLC (incorporated by reference to Exhibit 10.11.3 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</a>



- 4.7 [Warrant to Purchase Common Stock, dated September 10, 2013, issued by the Registrant in favor of ARE-SD Region No. 18, LLC \(incorporated by reference to Exhibit 10.11.6 of the Registrant's Registration Statement on Form S-1 \(File No. 333-191323\), filed with the SEC on September 23, 2013\).](#)
- 4.8 [Warrant to Purchase Preferred Stock dated as of January 21, 2009, issued by the Registrant in favor of Goodman Co. Ltd. \(incorporated by reference to Exhibit 10.17.1 of the Registrant's Registration Statement on Form S-1 \(File No. 333-191323\), filed with the SEC on September 23, 2013\).](#)
- 4.9 [Warrant to Purchase Common Stock dated as of July 31, 2013, issued by the Registrant in favor of Goodman Co. Ltd. \(incorporated by reference to Exhibit 10.17.3 of the Registrant's Registration Statement on Form S-1 \(File No. 333-191323\), filed with the SEC on September 23, 2013\).](#)
- 4.10 [Form of Warrant to Purchase Preferred Stock, issued by the Registrant in favor of various investors under the Note and Warrant Purchase Agreement dated as of January 13, 2012 \(incorporated by reference to Exhibit 10.19.3 of the Registrant's Registration Statement on Form S-1 \(File No. 333-191323\), filed with the SEC on September 23, 2013\).](#)
- 4.11 [Form of Amendment of Warrant to Purchase Preferred Stock, dated as of September 13, 2013 \(incorporated by reference to Exhibit 10.19.4 of the Registrant's Registration Statement on Form S-1 \(File No. 333-191323\), filed with the SEC on September 23, 2013\).](#)
- 4.12 [Form of Warrant to Purchase Common Stock, issued by the Registrant in favor of various investors under the Note and Warrant Purchase Agreement dated as of June 28, 2013 \(incorporated by reference to Exhibit 10.20.2 of the Registrant's Registration Statement on Form S-1 \(File No. 333-191323\), filed with the SEC on September 23, 2013\).](#)
- 4.13 [Form of Warrant to Purchase Common Stock, issued by the Registrant in favor of various guarantors under the Reimbursement Agreement dated as of July 11, 2013 \(incorporated by reference to Exhibit 10.21.1 of the Registrant's Registration Statement on Form S-1 \(File No. 333-191323\), filed with the SEC on September 23, 2013\).](#)
- 4.14 [Form of Common Stock Purchase Warrant issued to the investors under the Securities Purchase Agreement, dated April 29, 2016, by and among Biocept, Inc. and the purchasers signatory thereto \(incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on April 29, 2016\).](#)
- 4.15 [Form of Warrant to Purchase Common Stock \(incorporated by reference to Exhibit 4.16 of the Registrant's Post-Effective Amendment to Registration Statement on Form S-1 \(File No. 333-213111\), filed with the SEC on October 14, 2016\).](#)
- 4.16 [Form of Common Stock Purchase Warrant issued to the investors under the Securities Purchase Agreement, dated March 28, 2017, by and among Biocept, Inc. and the purchasers signatory thereto \(incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on March 30, 2017\).](#)
- 4.17 [Common Stock Purchase Warrant issued by the Registrant in favor of Ally Bridge LB Healthcare Master Fund Limited under the Common Stock and Warrant Purchase Agreement dated August 9, 2017 \(incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on August 10, 2017\).](#)
- 4.18 [Common Stock Purchase Warrant issued in favor of Dawson James Securities, Inc. under the Securities Purchase Agreement dated December 5, 2017 \(incorporated by reference to Exhibit 4.18 of the Registrant's Registration Statement on Form S-1 \(File No. 333-221648\), filed with the SEC on January 22, 2018\).](#)
- 4.19 [Form of Warrant to Purchase Common Stock issued to the investors under the Securities Purchase Agreement, dated January 26, 2018 \(incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on January 30, 2018\).](#)
- 4.20 [Warrant Agency Agreement dated August 13, 2018 by and between the Registrant and Continental Stock Transfer & Trust Company \(incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on August 13, 2018\).](#)
- 4.21 [Form of Series 1 Common Stock Purchase Warrant \(incorporated by reference to Exhibit 3.6 of the Registrant's Registration Statement on Form S-1 \(File No. 333-225147\), filed with the SEC on July 11, 2018\).](#)
- 4.22 [Form of Pre-Funded Warrant \(incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 24, 2018\).](#)

4.23	<a href="#"><u>Form of Series A Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.2 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 24, 2018).</u></a>
4.24	<a href="#"><u>Form of Series B Common Stock Warrant (previously filed).</u></a>
4.25	<a href="#"><u>Form of Pre-Funded Warrant (previously filed).</u></a>
5.1*	<a href="#"><u>Opinion of Cooley LLP.</u></a>
10.1+	<a href="#"><u>2007 Equity Incentive Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.2+	<a href="#"><u>Form of Stock Option Grant Notice and Option Agreement under 2007 Equity Incentive Plan (incorporated by reference to Exhibit 10.1.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.3+	<a href="#"><u>Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement under 2007 Equity Incentive Plan (incorporated by reference to Exhibit 10.1.2 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.4+	<a href="#"><u>Form of Indemnification Agreement between the Registrant and its officers and directors (incorporated by reference to Exhibit 10.3 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.5+	<a href="#"><u>Form of Indemnity Agreement between Biocept, Inc., a California corporation, and its officers and directors (incorporated by reference to Exhibit 10.4 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.6+	<a href="#"><u>Employment Agreement, between the Registrant and Michael W. Nall, effective as of August 26, 2013 (incorporated by reference to Exhibit 10.6 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.7+	<a href="#"><u>Employment Agreement, between the Registrant and Lyle J. Arnold, dated April 30, 2011(incorporated by reference to Exhibit 10.7 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.8	<a href="#"><u>Lease, between the Registrant and Nexus Equity VIII LLC, dated March 31, 2004 (incorporated by reference to Exhibit 10.11 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), as amended, filed with the SEC on November 5, 2013).</u></a>
10.9	<a href="#"><u>First Amendment to Lease, between the Registrant and ARE-SD Region No. 18, LLC, dated November 1, 2011(incorporated by reference to Exhibit 10.11.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.10	<a href="#"><u>Second Amendment to Lease, between the Registrant and ARE-SD Region No. 18, LLC, dated September 10, 2012 (incorporated by reference to Exhibit 10.11.2 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.11	<a href="#"><u>Third Amendment to Lease, between the Registrant and ARE-SD Region No. 18, LLC, dated as of January 31, 2013, and effective as of January 1, 2013 (incorporated by reference to Exhibit 10.11.4 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.12	<a href="#"><u>Fourth Amendment to Lease, between the Registrant and ARE-SD Region No. 18, LLC, dated as of September 10, 2013, and effective as of August 1, 2013 (incorporated by reference to Exhibit 10.11.5 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
10.13	<a href="#"><u>Assignment and Exclusive Cross-License Agreement between the Registrant and Aegea Biotechnologies, Inc. dated June 2, 2012 (incorporated by reference to Exhibit 10.22 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), as amended, filed with the SEC on January 30, 2014).</u></a>
10.14	<a href="#"><u>Loan and Security Agreement by and among Biocept, Inc., Oxford Finance LLC, as collateral agent, and the lenders party thereto from time to time, including Oxford Finance LLC, dated as of April 30, 2014 (incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on May 6, 2014).</u></a>
10.15+	<a href="#"><u>2014 Annual Incentive Plan (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on August 8, 2014).</u></a>

10.16+	<a href="#"><u>First Amendment to Employment Agreement by and between the Registrant and Michael W. Nall, dated November 6, 2015 (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on November 9, 2015).</u></a>
10.17+	<a href="#"><u>Employment Agreement between the Registrant and Timothy Kennedy, dated July 25, 2016 (incorporated by reference to Exhibit 99.2 to the Registrant's Current Report on Form 8-K, filed with the SEC on July 27, 2016).</u></a>
10.18	<a href="#"><u>Second Amendment to Loan and Security Agreement by and among Biocept, Inc., Oxford Finance LLC, as collateral agent, and the lenders party thereto from time to time, including Oxford Finance LLC, dated as of June 30, 2016 (incorporated by reference to Exhibit 10.3 to the Registrant's quarterly report on Form 10-Q, filed with the SEC on August 5, 2016).</u></a>
10.19	<a href="#"><u>Third Amendment to Loan and Security Agreement by and among Biocept, Inc., Oxford Finance LLC, as collateral agent, and the lenders party thereto from time to time, including Oxford Finance LLC, dated as of June 28, 2017 (incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on August 14, 2017).</u></a>
10.20+	<a href="#"><u>Second Amendment to Employment Agreement by and between the Registrant and Michael W. Nall dated November 1, 2017 (incorporated by reference to Exhibit 10.22 of the Registrant's Registration Statement on Form S-1 (File no. 333-21648), filed with the SEC on January 22, 2018).</u></a>
10.21+	<a href="#"><u>Biocept, Inc. Amended and Restated 2013 Equity Incentive Plan, Form of Stock Option Grant Notice, Option Agreement, Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit agreement for use thereunder (incorporated by reference to Exhibit 99.1 of the Registrant's Registration Statement on Form S-8, filed with the SEC on October 19, 2018).</u></a>
21.1	<a href="#"><u>List of Subsidiaries (incorporated by reference to Exhibit 21.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).</u></a>
23.1*	<a href="#"><u>Consent of Mayer Hoffman McCann P.C.</u></a>
23.2*	Consent of Cooley LLP (included in Exhibit <a href="#"><u>5.1</u></a> ).
24.1	<a href="#"><u>Power of Attorney (previously filed).</u></a>

\* Filed herewith.

+ Indicates management contract or compensatory plan.

*(b) Financial Statement Schedules*

No financial statement schedules are provided because the information called for is not required or is shown either in the financial statements or the notes thereto.

**Item 17. Undertakings**

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 SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(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.

(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 under the Securities Act to any purchaser: 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.

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 SEC 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.

## 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 San Diego, California, on the 10th day of December 2018.

BIOCEPT, INC.

By: /s/ Michael W. Nall  
Michael W. Nall  
Chief Executive Officer and President

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.

Signature	Title	Date
<u>/s/ Michael W. Nall</u> Michael W. Nall	Chief Executive Officer, President and Director (Principal Executive Officer)	December 10, 2018
<u>/s/ Timothy C. Kennedy</u> Timothy C. Kennedy	Chief Financial Officer, Senior VP of Operations and Secretary (Principal Financial Officer and Principal Accounting Officer)	December 10, 2018
<u>/s/ David F. Hale*</u> David F. Hale	Chairman and Director	December 10, 2018
<u>/s/ Marsha A. Chandler*</u> Marsha A. Chandler	Director	December 10, 2018
<u>/s/ Bruce E. Gerhardt*</u> Bruce E. Gerhardt	Director	December 10, 2018
<u>/s/ Bruce A. Huebner*</u> Bruce A. Huebner	Director	December 10, 2018
<u>/s/ Ivor Royston*</u> Ivor Royston	Director	December 10, 2018
<u>/s/ M. Faye Wilson*</u> M. Faye Wilson	Director	December 10, 2018

\* By: /s/ Timothy C. Kennedy  
Timothy C. Kennedy  
Attorney-in-fact

Maxim Group LLC  
Investment Banking  
405 Lexington Avenue, 2nd Fl.  
New York, NY 10174

Dawson James Securities, Inc.  
1 North Federal Highway, Suite 500  
Boca Raton, FL 33432

*As Representatives of the  
Several underwriters, if any, named in Schedule I hereto*

Ladies and Gentlemen:

The undersigned, BIOCEPT, INC., a company incorporated under the laws of Delaware (collectively with its subsidiaries and affiliates, including, without limitation, all entities disclosed or described in the Registration Statement as being subsidiaries or affiliates of BIOCEPT, INC., the “Company”), hereby confirms its agreement (this “Agreement”) with the several underwriters (such underwriters, including the Representatives (as defined below), the “Underwriters” and each an “Underwriter”) named in Schedule I hereto for which MAXIM GROUP LLC (“Maxim”) and DAWSON JAMES SECURITIES, INC. (“DJ”) are acting as representatives to the several Underwriters (in such capacity, the “Representatives” and each a “Representative” and if there are no Underwriters other than the Representatives, references to multiple Underwriters shall be disregarded and the term Representatives as used herein shall have the same meaning as Underwriter) on the terms and conditions set forth herein.

It is understood that the several Underwriters are to make a public offering of the Public Securities as soon as the Representatives deem it advisable to do so. The Public Securities are to be initially offered to the public at the public offering price set forth in the Prospectus. The Representatives may from time to time thereafter change the public offering price and other selling terms.

It is further understood that you will act as the Representatives for the Underwriters in the offering and sale of the Closing Securities and, if any, the Option Securities in accordance with this Agreement.

## **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:

“Action” shall have the meaning ascribed to such term in Section 3.1(k).

“Affiliate” means with respect to any Person, any other Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with such 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 Closing Securities pursuant to Section 2.1.

“Closing Date” means the hour and the date on the Trading Day on which all conditions precedent to (i) the Underwriters’ obligations to pay the Closing Purchase Price and (ii) the Company’s obligations to deliver the Closing Securities, in each case, have been satisfied or waived, but in no event later than 10:00 a.m. (New York City time) on the second (2<sup>nd</sup>) Trading Day following the date hereof or at such earlier time as shall be agreed upon by the Representatives and the Company.

“Closing Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b), which aggregate purchase price shall be net of underwriting discounts and commissions.

“Closing Securities” shall have the meaning ascribed to such term in Section 2.1(a)(ii).

“Closing Shares” shall have the meaning ascribed to such term in Section 2.1(a)(i).

“Closing Warrants” shall have the meaning ascribed to such term in Section 2.1(a)(ii).

“Commission” means the United States Securities and Exchange Commission.

“Common Stock” means the common stock of the Company, par value \$0.0001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

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“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.

“Company Auditor” means Mayer Hoffman McCann P.C., with offices located at 10616 Scripps Summit Court, San Diego, California 92131.

“Company Counsel” means Cooley LLP, with offices located at 4401 Eastgate Mall, San Diego, CA 92121.

“Disclosure Schedules” means the Disclosure Schedules of the Company delivered concurrently herewith.

“Effective Date” means the date and time as of which the Registration Statement, or the most recent post-effective amendment thereto, became effective, or is deemed to have become effective by the Commission, in accordance with the rules and regulations under the Securities Act.

“EGS” means Ellenoff Grossman & Schole LLP, with offices located at 1345 Avenue of the Americas, New York, New York 10105.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Execution Date” shall mean the date on which the parties execute and enter into this Agreement.

“Exempt Issuance” means the issuance of (a) shares of Common Stock, restricted stock, restricted stock units 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 automatic price resets, stock splits, adjustments or combinations as set forth in such securities) or to extend the term of such securities and (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 4.21(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

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business is investing in securities.

“FCPA” means the Foreign Corrupt Practices Act of 1977, as amended.

“FINRA” means the Financial Industry Regulatory Authority.

“GAAP” shall have the meaning ascribed to such term in Section 3.1(i).

“Indebtedness” means (a) 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), (b) 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 (c) the present value of any lease payments in excess of \$50,000 due under leases required to be capitalized in accordance with GAAP.

“Intellectual Property Rights” shall have the meaning ascribed to such term in Section 3.1(q).

“Liens” means a lien, charge, pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction.

“Lock-Up Agreements” means the lock-up agreements that are delivered on the date hereof by each of the Company’s officers and directors, in the form of Exhibit A attached hereto.

“Material Adverse Effect” shall have the meaning assigned to such term in Section 3.1(b).

“Material Permit” shall have the meaning ascribed to such term in Section 3.1(o).

“Offering” shall have the meaning ascribed to such term in Section 2.1(c).

“Option Closing Date” shall have the meaning ascribed to such term in Section 2.2(c).

“Option Closing Purchase Price” shall have the meaning ascribed to such term in Section 2.2(b), which aggregate purchase price shall be net of the underwriting discounts and commissions.

“Option Securities” shall have the meaning ascribed to such term in Section 2.2(a)(ii).

“Option Shares” shall have the meaning ascribed to such term in Section 2.2(a)(i).

“Option Warrants” shall have the meaning ascribed to such term in Section 2.2(a).

“Over-Allotment Option” shall have the meaning ascribed to such term in Section 2.2(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.

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“Pre-Funded Warrants” means, collectively, the Pre-Funded Common Stock purchase warrants delivered to the Underwriters in accordance with Section 2.1(a) in the form attached hereto as Exhibit D-2.

“Preliminary Prospectus” shall have the meaning ascribed to such term in Section 3.1(f).

“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” shall have the meaning ascribed to such term in Section 3.1(f).

“Public Securities” means, collectively, the Closing Securities and, if any, the Option Securities.

“Registration Statement” shall have the meaning ascribed to such term in Section 3.1(f).

“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(i).

“Securities” means the Closing Securities, the Option Securities and the Warrant Shares.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Share Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b).

“Shares” means, collectively, the shares of Common Stock delivered to the Underwriters in accordance with Section 2.1(a)(i) and Section 2.2(a).

“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 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 or the New York Stock Exchange (or any successors to any of the foregoing).

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“Traditional Warrants” means, collectively, the Common Stock purchase warrants delivered to the Underwriters in accordance with Section 2.1(a)(ii) and Section 2.2, which Warrants shall be exercisable immediately and have a term of exercise equal to five (5) years, in the form of Exhibit D-1 attached hereto.

“Transaction Documents” means this Agreement and all exhibits and schedules hereto, the Warrants, the Lock-Up Agreements, and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means Continental Stock Transfer & Trust Company, the current transfer agent of the Company, with a mailing address of 17 Battery Place, New York, New York 10004 and a facsimile number of (212) 616-7615, and any successor transfer agent of the Company.

“Variable Rate Transaction” shall have the meaning ascribed to such term in Section 4.21(b).

“Warrant Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b).

“Warrant Shares” means the shares of Common Stock issuable upon exercise of the Warrants.

**“Warrants”** means, collectively, the Pre-Funded Warrants and the Traditional Warrants.

**ARTICLE II.**  
**PURCHASE AND SALE**

## 2.1 Closing.

(a) Upon the terms and subject to the conditions set forth herein, the Company agrees to sell in the aggregate (i) [ ] shares of Common Stock, (ii) Pre-Funded Warrants exercisable for an aggregate of [ ] shares of Common Stock, and (iii) Traditional Warrants exercisable for an aggregate of [ ] shares of Common Stock, and each Underwriter agrees to purchase, severally and not jointly, at the Closing, the following securities of the Company:

(i) the number of shares of Common Stock (the “Closing Shares”) set forth opposite the name of such Underwriter on Schedule I hereof;

(ii) Pre-Funded Warrants to purchase up to the number of shares of Common Stock set forth opposite the name of such Underwriter on Schedule I hereof, which shall have an exercise price equal to **\$0.01** (subject to adjustment therein) (collectively, with the Traditional Warrants delivered at Closing, the “Closing Warrants” and, collectively with the Closing Shares, the “Closing Securities”); and

(iii) Traditional Warrants to purchase up to the number of shares of Common Stock and shares underlying the Pre-Funded Warrants set forth opposite the name of such Underwriter on Schedule I hereof, which shall have an exercise price of \$[ ] (subject to adjustment as provided therein).

(b) The aggregate purchase price for the Closing Securities shall equal the amount set forth opposite the name of such Underwriter on Schedule I hereto (the “Closing Purchase Price”). The combined purchase price for one Closing Share and a Traditional Warrant to purchase [ ] Warrant Share shall be \$[ ] which shall be allocated as \$[ ] per Closing Share (the “Share Purchase Price”) and \$[ ] per Traditional Warrant (the “Warrant Purchase Price”). The combined purchase price for one Pre-Funded Warrant and a Traditional Warrant to purchase [ ] Warrant Share shall be \$[ ], which shall be allocated as \$[ ] per Pre-Funded Warrant and \$[ ] per Traditional Warrant.

(c) On the Closing Date, each Underwriter shall deliver or cause to be delivered to the Company, via wire transfer, immediately available funds equal to such Underwriter’s Closing Purchase Price and the Company shall deliver to, or as directed by, such Underwriter its respective Closing Securities and the Company shall deliver the other items required pursuant to Section 2.3 deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.3 and 2.4, the Closing shall occur at the offices of EGS or such other location as the Company and Representatives shall mutually agree. The Public Securities are to be offered initially to the public at the offering price set forth on the cover page of the Prospectus (the “Offering”).

(d) The Company acknowledges and agrees that, with respect to any Notice(s) of Exercise (as defined in the Pre-Funded Warrants) delivered by a Holder (as defined in the Pre-Funded Warrants) on or prior to 12:00 p.m. (New York City time) on the Closing Date, which Notice(s) of Exercise may be delivered at any time after the time of execution of this Agreement, the Company shall deliver the Warrant Shares (as defined in the Pre-Funded Warrants) subject to such notice(s) to the Holder by 4:00 p.m. (New York City time) on the Closing Date. The Company acknowledges and agrees that the Holders are third-party beneficiaries of this covenant of the Company.

## 2.2 Over-Allotment Option.

(a) For the purposes of covering any over-allotments in connection with the distribution and sale of the Closing Securities, the Representatives are hereby granted an option (the “Over-Allotment Option”) to purchase, in the aggregate, up to [ ] shares of Common Stock (the “Option Shares”) and Traditional Warrants to purchase up to [ ] shares of Common Stock (the “Option Warrants”) and, collectively with the Option Shares, the “Option Securities”) which may be purchased in any combination of Option Shares and/or Option Warrants at the Share Purchase Price and/or Warrant Purchase Price, respectively.

(b) In connection with an exercise of the Over-Allotment Option, (a) the purchase price to be paid for any Option Shares is equal to the product of the Share Purchase Price multiplied by the number of Option Shares to be purchased and (b) the purchase price to be paid for any Option Warrants is equal to the product of the Warrant Purchase Price multiplied by the number of Option Warrants to be purchased (the aggregate purchase price to be paid on an Option Closing Date, the “Option Closing Purchase Price”).

(c) The Over-Allotment Option granted pursuant to this Section 2.2 may be exercised by the Representatives as to all (at any time) or any part (from time to time) of the Option Securities within 45 days after the Execution Date. An Underwriter will not be under any obligation to purchase any Option Securities prior to the exercise of the Over-Allotment Option

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by the Representatives. The Over-Allotment Option granted hereby may be exercised by the giving of oral notice to the Company from the Representatives, which must be confirmed in writing by overnight mail or facsimile or other electronic transmission setting forth the number of Option Shares and/or Option Warrants to be purchased and the date and time for delivery of and payment for the Option Securities (each, an “Option Closing Date”), which will not be later than the earlier of (i) 45 days after the Execution Date and (ii) two (2) full Business Days after the date of the notice or such other time as shall be agreed upon by the Company and the Representative, at the offices of EGS or at such other place (including remotely by facsimile or other electronic transmission) as shall be agreed upon by the Company and the Representative. If such delivery and payment for the Option Securities does not occur on the Closing Date, each Option Closing Date will be as set forth in the notice. Upon exercise of the Over-Allotment Option, the Company will become obligated to convey to the Underwriters, and, subject to the terms and conditions set forth herein, the Underwriters will become obligated to purchase, the number of Option Shares and/or Option Warrants specified in such notice. The Representatives may cancel the Over-Allotment Option at any time prior to the expiration of the Over-Allotment Option by written notice to the Company.

2.3 Deliveries. The Company shall deliver or cause to be delivered to each Underwriter (if applicable) the following:

- (a) At the Closing Date, the Closing Shares and, as to each Option Closing Date, if any, the applicable Option Shares, which shares shall be delivered via The Depository Trust Company Deposit or Withdrawal at Custodian system for the accounts of the several Underwriters;
  - (b) At the Closing Date, the Closing Warrants and, as to each Option Closing Date, if any, the applicable Option Warrants in certificated form registered in the name or names and in such authorized denominations as the applicable Underwriter may request in writing at least one Business Day prior to the Closing Date and, if any, each Option Closing Date;
  - (c) At the Closing Date, legal opinions of Company Counsel addressed to the Underwriters, including, without limitation, a negative assurance letter, substantially in the form of Exhibit A attached hereto and as to the Closing Date and as to each Option Closing Date, if any, bring-down opinions from Company Counsel in form and substance reasonably satisfactory to counsel for the Representatives, including, without limitation, a negative assurance letter, addressed to the Underwriters and in form and substance satisfactory to counsel for the Representatives;
  - (d) Contemporaneously herewith, a cold comfort letter, addressed to the Underwriters and in form and substance satisfactory in all respects to the Representatives from the Company Auditor dated, respectively, as of the date of this Agreement and a bring-down letter dated as of the Closing Date and each Option Closing Date, if any;
  - (e) On the Closing Date and on each Option Closing Date, the duly executed and delivered Officer’s Certificate, substantially in the form required by Exhibit B attached hereto;
  - (f) On the Closing Date and on each Option Closing Date, the duly executed and delivered Secretary’s Certificate, substantially in the form required by Exhibit C attached hereto; and
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(g) Contemporaneously herewith, the duly executed and delivered Lock-Up Agreements.

(h) At the Closing Date and at each Option Closing Date, the duly executed and delivered certificate (addressed to the Underwriters) of its General Counsel/ Compliance and Privacy Officer with respect to certain regulatory matters dated as of the Closing Date, and in form and substance satisfactory to counsel for the Representative.

(i) At the Closing Date and at each Option Closing Date, the duly executed and delivered opinion (addressed to the Underwriters) of Company Counsel, counsel for the Company with respect to certain intellectual property matters dated as of the Closing Date and each Option Closing Date, if any, and in form and substance satisfactory to counsel for the Representative.

(j) Such other certificates, opinions or documents as the Underwriters and Underwriters' Counsel may have reasonably requested.

2.4 Closing Conditions. The respective obligations of each Underwriter hereunder in connection with the Closing and each Option Closing Date are subject to the following conditions being met:

(a) the accuracy in all material respects when made and on the date in question (other than representations and warranties of the Company already qualified by materiality, which shall be true and correct in all respects) of the representations and warranties of the Company contained herein (unless as of a specific date therein);

(b) all obligations, covenants and agreements of the Company required to be performed at or prior to the date in question shall have been performed;

(c) the delivery by the Company of the items set forth in Section 2.3 of this Agreement;

(d) the Registration Statement shall be effective on the date of this Agreement and at each of the Closing Date and each Option Closing Date, if any, no stop order suspending the effectiveness of the Registration Statement shall have been issued and no proceedings for that purpose shall have been instituted or shall be pending or contemplated by the Commission and any request on the part of the Commission for additional information shall have been complied with to the reasonable satisfaction of the Representatives;

(e) by the Execution Date, if required by FINRA, the Underwriters shall have received a notice of no objections from FINRA as to the amount of compensation allowable or payable to and the terms and arrangements for acting as the Underwriters as described in the Registration Statement;

(f) the Closing Shares, the Option Shares and the Warrant Shares have been approved for listing on the Trading Market; and

(g) prior to and on each of the Closing Date and each Option Closing Date, if any: (i) there shall have been no material adverse change or development involving a prospective material adverse change in the condition or prospects or the business activities, financial or otherwise, of

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the Company from the latest dates as of which such condition is set forth in the Registration Statement, the General Disclosure Package and Prospectus; (ii) no action suit or proceeding, at law or in equity, shall have been pending or threatened against the Company or any Affiliate of the Company before or by any court or federal or state commission, board or other administrative agency wherein an unfavorable decision, ruling or finding may materially adversely affect the business, operations, prospects or financial condition or income of the Company, except as set forth in the Registration Statement, the General Disclosure Package and Prospectus; (iii) no stop order applicable to the Company shall have been issued under the Securities Act and no proceedings therefor shall have been initiated or threatened by the Commission; (iv) the Company has not incurred any material liabilities or obligations, direct or contingent, nor has it entered into any material transactions not in the ordinary course of business, other than pursuant to this Agreement and the transactions referred to herein; (v) the Company has not paid or declared any dividends or other distributions of any kind on any class of its capital stock; (vi) the Company has not altered its method of accounting; and (vii) the Registration Statement, the General Disclosure Package and the Prospectus and any amendments or supplements thereto shall contain all material statements which are required to be stated therein in accordance with the Securities Act and the rules and regulations thereunder and shall conform in all material respects to the requirements of the Securities Act and the rules and regulations thereunder, and neither the Registration Statement, the General Disclosure Package nor the Prospectus nor any amendment or supplement thereto shall 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, in light of the circumstances under which they were made, not misleading.

If any of the conditions specified in this Section 2.4 shall not have been fulfilled when and as required by this Agreement, or if any of the certificates, opinions, written statements or letters furnished to the Representatives or to Representatives' counsel pursuant to this Section 2.4 shall not be reasonably satisfactory in form and substance to the Representatives and to Representatives' counsel, all obligations of the Underwriters hereunder may be cancelled by the Representatives at, or at any time prior to, the consummation of the Closing. Notice of such cancellation shall be given to the Company in writing or orally. Any such oral notice shall be confirmed promptly thereafter in writing.

### **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 represents and warrants to the Underwriters as of the Execution Date, as of the Closing Date and as of each Option Closing Date, if any, as follows:

(a) Subsidiaries. All of the 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

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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 to which it is a party 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 the Company 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, 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

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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.

(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 filing with the Commission of the Prospectus, (ii) such filings as are required to be made under applicable state securities laws and (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 (collectively, the “Required Approvals”).

(f) Registration Statement. The Company has filed with the Commission the Registration Statement, including any related Preliminary Prospectus or Prospectuses, for the registration of the Securities under the Securities Act, which Registration Statement has been prepared by the Company in conformity with the requirements of the Securities Act and the rules and regulations of the Commission under the Securities Act. The registration of the Common Stock under the Exchange Act has been declared effective by the Commission on the date hereof. Copies of such Registration Statement and of each amendment thereto, if any, including the related Preliminary Prospectuses, heretofore filed by the Company with the Commission have been delivered to the Underwriters. The term “Registration Statement” means such registration statement on Form S-1 (File No. 333-228566), as amended, as of the relevant Effective Date, including financial statements, all exhibits and any information deemed to be included or incorporated by reference therein, including any information deemed to be included pursuant to Rule 430A or Rule 430B of the Securities Act and the rules and regulations thereunder, as applicable. If the Company files a registration statement to register a portion of the Securities and relies on Rule 462(b) of the Securities Act and the rules and regulations thereunder for such registration statement to become effective upon filing with the Commission (the “Rule 462 Registration Statement”), then any reference to the “Registration Statement” shall be deemed to include the Rule 462 Registration Statement, as amended from time to time. The term “Preliminary Prospectus” as used herein means a preliminary prospectus as contemplated by Rule 430 or Rule 430A of the Securities Act and the rules and regulations thereunder as included at any time as part of, or deemed to be part of or included in, the Registration Statement. The term “Prospectus” means the final prospectus in connection with this Offering as first filed with the Commission pursuant to Rule 424(b) of the Securities Act and the rules and regulations thereunder or, if no such filing is required, the form of final prospectus included in the Registration Statement at the Effective Date, except that if any revised prospectus or prospectus supplement shall be provided to the Representatives by the Company for use in connection with the Securities which differs from the Prospectus (whether or not such revised prospectus or prospectus supplement is required to be filed by the Company pursuant to Rule 424(b)), the term “Prospectus” shall also refer to such revised prospectus or prospectus supplement, as the case may be, from and after the time it is first provided to the Representatives for such use. Any reference herein to the terms “amend”, “amendment” or “supplement” with respect to the Registration Statement, any Preliminary Prospectus or the Prospectus shall be deemed to refer to and include: (i) the filing of any document under the Exchange Act after the Effective Date, the date of such Preliminary Prospectus or the date of the Prospectus, as the case may be, which is incorporated therein by reference, and (ii) any such document so filed. All references in this Agreement to the Registration Statement, a Preliminary Prospectus and the Prospectus, or any amendments or supplements to any of the foregoing shall be deemed to include any copy thereof

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filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System (“EDGAR”). The term “General Disclosure Package” means, collectively, the Permitted Free Writing Prospectus(es) (as defined below) issued at or prior to the date hereof, the most recent preliminary prospectus related to this offering, and the information included on Schedule I hereto.

(g) Issuance of Securities. The Public 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 are duly authorized and, 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 Securities are not and will not be subject to the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company. All corporate action required to be taken for the authorization, issuance and sale of the Securities has been duly and validly taken. The Securities conform in all material respects to all statements with respect thereto contained in the Registration Statement, the General Disclosure Package and the Prospectus.

(h) Capitalization. The capitalization of the Company as of the date hereof is as set forth on Schedule 3.1(h). 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 such rights which have been waived prior to the date hereof. 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 the 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 Underwriters). 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. The authorized shares of the Company conform in all material respects to all statements relating thereto contained in the Registration Statement, the General Disclosure Package and the Prospectus. The offers and sales of the Company’s securities were at all relevant times either registered under the

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Securities Act and the applicable state securities or Blue Sky laws or, based in part on the representations and warranties of the purchasers, exempt from such registration requirements. No further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Securities. Except as set forth on Schedule 3.1(h), 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.

(i) **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, 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. The selected financial data set forth under the caption "Selected Financial Data" in the SEC Reports fairly present, on the basis stated in such SEC Reports, the information included therein. The agreements and documents described in the Registration Statement, the Preliminary Prospectus, the General Disclosure Package, the Prospectus, and the SEC Reports conform in all material aspects to the descriptions thereof contained therein and there are no agreements or other documents required by the Securities Act and the rules and regulations thereunder to be described in the Registration Statement, the Preliminary Prospectus, the General Disclosure Package, the Prospectus or the SEC Reports or to be filed with the Commission as exhibits to the Registration Statement, that have not been so described or filed. Each agreement or other instrument (however characterized or described) to which the Company is a party or by which it is or may be bound or affected and (i) that is referred to in the Registration Statement, the General Disclosure Package, the Prospectus or the SEC Reports, or (ii) is material to the Company's business, has been duly authorized and validly executed by the Company, is in full force and effect in all material respects and is enforceable against the Company and, to the Company's knowledge, the other parties thereto, in accordance with its terms, except (x) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors' rights generally, (y) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws, and (z) that the remedy of specific performance and injunctive and other forms of equitable

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relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefore may be brought. None of such agreements or instruments has been assigned by the Company, and neither the Company nor, to the best of the Company's knowledge, any other party is in default thereunder and, to the best of the Company's knowledge, no event has occurred that, with the lapse of time or the giving of notice, or both, would constitute a default thereunder. To the best of the Company's knowledge, performance by the Company of the material provisions of such agreements or instruments will not result in a violation of any existing applicable law, rule, regulation, judgment, order or decree of any governmental agency or court, domestic or foreign, having jurisdiction over the Company or any of its assets or businesses, including, without limitation, those relating to environmental laws and regulations.

(j) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof, (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 and the issuance of Common Stock Equivalents as disclosed in the SEC Reports. 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(j), 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. Unless otherwise disclosed in an SEC Report filed prior to the date hereof, the Company has not: (i) issued any securities or incurred any liability or obligation, direct or contingent, for borrowed money; or (ii) declared or paid any dividend or made any other distribution on or in respect to its capital stock.

(k) Litigation. There has not been, and to the knowledge of the Company there is not pending or contemplated, any 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, to the Company's knowledge, 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. To the knowledge of the Company, there has not been, and there is not pending or contemplated, any investigation by the Commission involving the Company or any current or former director or

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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.

(l) 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 that would reasonably be expected to have a Material Adverse Effect. 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.

(m) 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.

(n) 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.

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(o) Regulatory Permits. The Company and the Subsidiaries possess all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities, including, without limitation, those administered by the U.S. Food and Drug Administration (“FDA”) of the U.S. Department of Health and Human Services, the Centers for Medicare & Medicaid Services (“CMA”), or by any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA or CMS 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 (each, a “Material Permit”), and neither the Company nor any Subsidiary has received any notice of proceedings relating to the revocation or modification of any Material Permit. The disclosures in the Registration Statement concerning the effects of federal, state, local and all foreign regulation on the Company’s business as currently contemplated are correct in all material respects.

(p) 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.

(q) 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, except where such action would not reasonably be expected to have a Material Adverse Effect. Other than as specifically described in the SEC Reports, 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 Company’s products or planned products as described in the SEC Reports 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.

(r) 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

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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. 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.

(s) Transactions With Affiliates and Employees. Except as set forth on Schedule 3.1(s), 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.

(t) Sarbanes-Oxley; Internal Accounting Controls. The Company and the Subsidiaries are in material 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.

(u) Certain Fees. Except as set forth in the Registration Statement, the General Disclosure Package and Prospectus, no brokerage or finder's fees or commissions are or will be payable by the Company, any Subsidiary or Affiliate of the Company to any broker, financial

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advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. There are no other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its stockholders that may affect the Underwriters' compensation, as determined by FINRA. Other than payments to the Underwriters for this Offering or as disclosed on Schedule 3.1(u), the Company has not made and has no agreements, arrangements or understanding to make any direct or indirect payments (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the 180-day period preceding the initial filing of the Registration Statement through the 90-day period after the Effective Date. None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein.

(v) 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.

(w) 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, other than those rights that have been disclosed in the Registration Statement or have been waived or satisfied.

(x) 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. Except as set forth on Schedule 3.1(x), 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. Except as set forth on Schedule 3.1(x), 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 of the Depository Trust Company (or such other established clearing corporation) in connection with such electronic transfer.

(y) 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 as a result of the Underwriters and the Company fulfilling their obligations or exercising their rights under the Transaction Documents.

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(z) Disclosure; 10b-5. The Registration Statement (and any further documents to be filed with the Commission) contains all exhibits and schedules as required by the Securities Act. Each of the Registration Statement and any post-effective amendment thereto, if any, at the time it became effective, complied in all material respects with the Securities Act and the Exchange Act and the applicable rules and regulations under the Securities Act and did not and, as amended or supplemented, if applicable, will not, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Preliminary Prospectus and the Prospectus, each as of its respective date, comply in all material respects with the Securities Act and the Exchange Act and the applicable rules and regulations. The Prospectus, as amended or supplemented, did not and will not contain as of the date thereof any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. As of its date and the date hereof, the General Disclosure Package did not and does not include any untrue statement of a material fact or omitted to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The SEC Reports, when they were filed with the Commission, conformed in all material respects to the requirements of the Securities Act and the Exchange Act, as applicable, and the applicable rules and regulations, and none of such documents, when they were filed with the Commission, contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein (with respect to the SEC Reports incorporated by reference in the Prospectus), in light of the circumstances under which they were made not misleading; and any further documents so filed and incorporated by reference in the Prospectus, when such documents are filed with the Commission, will conform in all material respects to the requirements of the Exchange Act and the applicable rules and regulations, as applicable, and will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made not misleading. No post-effective amendment to the Registration Statement reflecting any facts or events arising after the date thereof which represent, individually or in the aggregate, a fundamental change in the information set forth therein is required to be filed with the Commission. There are no documents required to be filed with the Commission in connection with the transaction contemplated hereby that (x) have not been filed as required pursuant to the Securities Act or (y) will not be filed within the requisite time period. There are no contracts or other documents required to be described in the Preliminary Prospectus or Prospectus, or to be filed as exhibits or schedules to the Registration Statement, which have not been described or filed as required. 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 light of the circumstances under which they were made and when made, not misleading.

(aa) No Integrated Offering. 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.

(bb) Solvency. Except as set forth on Schedule 3.1(bb), 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

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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(bb) 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. Neither the Company nor any Subsidiary is in default with respect to any Indebtedness.

(cc) 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. The provisions for taxes payable, if any, shown on the financial statements filed with or as part of the Registration Statement are sufficient for all accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. The term "taxes" mean all federal, state, local, foreign, and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments, or charges of any kind whatsoever, together with any interest and any penalties, additions to tax, or additional amounts with respect thereto. The term "returns" means all returns, declarations, reports, statements, and other documents required to be filed in respect to taxes.

(dd) 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. The Company has taken reasonable steps to ensure that its accounting controls and procedures are sufficient to cause the Company to comply in all material respects with the FCPA.

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(ee) Accountants. To the knowledge and belief of the Company, the Company Auditor (i) is an independent 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, 2018.

(ff) Regulatory. All preclinical and clinical studies conducted by or on behalf of the Company that are material to the Company and its Subsidiaries, taken as a whole, are or have been adequately described in the SEC Reports in all material respects. The clinical and preclinical studies conducted by or on behalf of the Company and its Subsidiaries that are described in the SEC Reports or the results of which are referred to in the SEC Reports were and, if still ongoing, are being conducted in material compliance with all laws and regulations applicable thereto in the jurisdictions in which they are being conducted. The descriptions in the SEC Reports of the results of such studies are accurate and complete in all material respects and fairly present the data derived from such studies, and the Company has no knowledge of, or reason to believe that, any clinical study the aggregate results of which are inconsistent with or otherwise call into question the results of any clinical study conducted by or on behalf of the Company and its Subsidiaries that are described in the SEC Reports or the results of which are referred to in the SEC Reports. Except as disclosed in the SEC Reports, the Company has not received any written notices or statements from the U.S. Food and Drug Administration, the European Medicines Agency or any other governmental agency or authority requiring, requesting or suggesting termination, suspension or material modification for or of any clinical or preclinical studies that are described in the SEC Reports or the results of which are referred to in the SEC Reports. Except as disclosed in the SEC Reports, the Company has not received any written notices or statements from any governmental agency, and otherwise has no knowledge of, or reason to believe that any license, approval, permit or authorization to conduct any clinical trial of any potential product of the Company has been, will be or may be suspended, revoked, modified or limited. 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. For purposes of this Section, "Pharmaceutical Product" means each product subject to the jurisdiction of the FDA under the Federal Food, Drug and Cosmetic Act, as amended, and the regulations thereunder that is manufactured, packaged, labeled, tested, distributed, sold, and/or marketed by the Company or any of its Subsidiaries.

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(gg) 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.

(hh) 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.

(ii) 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 the Representatives' request.

(jj) 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 (25%) 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.

(kk) 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, suit 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.

(ll) D&O Questionnaires. To the Company's knowledge, all information contained in the questionnaires most recently completed by each of the Company's directors and officers is true and correct in all respects and the Company has not become aware of any information which would cause the information disclosed in such questionnaires become inaccurate and incorrect.

(mm) FINRA Affiliation. No officer, director or any beneficial owner of 5% or more of the Company's shares of Common Stock or Common Stock Equivalents has any direct or indirect affiliation or association with any FINRA member (as determined in accordance with the rules and regulations of FINRA) that is participating in the Offering. Except for securities purchased on the open market, no Company Affiliate is an owner of stock or other securities of any member of FINRA. No Company Affiliate has made a subordinated loan to any member of

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FINRA. No proceeds from the sale of the Securities (excluding underwriting compensation as disclosed in the Registration Statement and the Prospectus) will be paid to any FINRA member, any persons associated with a FINRA member or an affiliate of a FINRA member. Except as disclosed in the Prospectus, the Company has not issued any warrants or other securities or granted any options, directly or indirectly, to the Representatives or any of the Underwriters named on Schedule I hereto within the 180-day period prior to the initial filing date of the Prospectus. Except as disclosed in the Registration Statement and except for securities issued to the Representatives as disclosed in the Prospectus and securities sold by the Representatives on behalf of the Company, no person to whom securities of the Company have been privately issued within the 180-day period prior to the initial filing date of the Prospectus is a FINRA member, is a person associated with a FINRA member or is an affiliate of a FINRA member. No FINRA member participating in the Offering has a conflict of interest with the Company. For this purpose, a “conflict of interest” exists when a FINRA member, the parent or affiliate of a FINRA member or any person associated with a FINRA member in the aggregate beneficially own 5% or more of the Company’s outstanding subordinated debt or common equity, or 5% or more of the Company’s preferred equity. “FINRA member participating in the Offering” includes any associated person of a FINRA member that is participating in the Offering, any member of such associated person’s immediate family and any affiliate of a FINRA member that is participating in the Offering. “Any person associated with a FINRA member” means (1) a natural person who is registered or has applied for registration under the rules of FINRA and (2) a sole proprietor, partner, officer, director, or branch manager of a FINRA member, or other natural person occupying a similar status or performing similar functions, or a natural person engaged in the investment banking or securities business who is directly or indirectly controlling or controlled by a FINRA member. When used in this Section 3.1(mm) the term “affiliate of a FINRA member” or “affiliated with a FINRA member” means an entity that controls, is controlled by or is under common control with a FINRA member. The Company will advise the Representatives and EGS if it learns that any officer, director or owner of 5% or more of the Company’s outstanding shares of Common Stock or Common Stock Equivalents is or becomes an affiliate or associated person of a FINRA member firm.

(nn) Officers’ Certificate. Any certificate signed by any duly authorized officer of the Company and delivered to the Representatives or EGS shall be deemed a representation and warranty by the Company to the Underwriters as to the matters covered thereby.

(oo) Board of Directors. The qualifications of the persons serving as board members and the overall composition of the Board of Directors comply with the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder applicable to the Company and the rules of the Trading Market. At least one member of the Board of Directors qualifies as a “financial expert” as such term is defined under the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder and the rules of the Trading Market. In addition, at least a majority of the persons serving on the Board of Directors qualify as “independent” as defined under the rules of the Trading Market.

(pp) ERISA. The Company is not a party to an “employee benefit plan,” as defined in Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”), which: (i) is subject to any provision of ERISA and (ii) is or was at any time maintained, administered or contributed to by the Company or any of its ERISA Affiliates (as defined hereafter). These plans are referred to collectively herein as the “Employee Plans.” An “ERISA Affiliate” of any person or entity means any other person or entity which, together with that person or entity, could be treated as a single employer under Section 414(b), (c), (m) or (o) of the

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Internal Revenue Code of 1986, as amended (the “Code”). Each Employee Plan has been maintained in material compliance with its terms and the requirements of applicable law. No Employee Plan is subject to Title IV of ERISA. The Registration Statement, Preliminary Prospectus and the Prospectus identify each employment, severance or other similar agreement, arrangement or policy and each material plan or arrangement required to be disclosed pursuant to the Rules and Regulations providing for insurance coverage (including any self-insured arrangements), workers’ compensation, disability benefits, severance benefits, supplemental unemployment benefits, vacation benefits or retirement benefits, or deferred compensation, profit-sharing, bonuses, stock options, stock appreciation rights or other forms of incentive compensation, or post-retirement insurance, compensation or benefits, which: (i) is not an Employee Plan; (ii) is entered into, maintained or contributed to, as the case may be, by the Company or any of its ERISA Affiliates; and (iii) covers any officer or director or former officer or director of the Company or any of its ERISA Affiliates. These agreements, arrangements, policies or plans are referred to collectively as “Benefit Arrangements.” Each Benefit Arrangement has been maintained in material compliance with its terms and with the requirements of applicable law. Except as disclosed in the Registration Statement, Preliminary Prospectus and the Prospectus, there is no liability in respect of post-retirement health and medical benefits for retired employees of the Company or any of its ERISA Affiliates, other than medical benefits required to be continued under applicable law. No “prohibited transaction” (as defined in either Section 406 of ERISA or Section 4975 of the Code) has occurred with respect to any Employee Plan; and each Employee Plan that is intended to be qualified under Section 401(a) of the Code is so qualified, and nothing has occurred, whether by action or by failure to act, which could cause the loss of such qualification.

#### **ARTICLE IV. OTHER AGREEMENTS OF THE PARTIES**

4.1 Amendments to Registration Statement. The Company has delivered, or will as promptly as practicable deliver, to the Underwriters complete conformed copies of the Registration Statement and of each consent and certificate of experts, as applicable, filed as a part thereof, and conformed copies of the Registration Statement (without exhibits), the Prospectus, as amended or supplemented, and the General Disclosure Package in such quantities and at such places as an Underwriter reasonably requests. Neither the Company nor any of its directors and officers has distributed and none of them will distribute, prior to the Closing Date, any offering material in connection with the offering and sale of the Securities other than the Prospectus, the General Disclosure Package and the Registration Statement. The Company shall not file any such amendment or supplement to which the Representatives shall reasonably object in writing.

4.2 Federal Securities Laws.

(a) Compliance. During the time when a Prospectus is required to be delivered under the Securities Act, the Company will use its best efforts to comply with all requirements imposed upon it by the Securities Act and the rules and regulations thereunder and the Exchange Act and the rules and regulations thereunder, as from time to time in force, so far as necessary to permit the continuance of sales of or dealings in the Securities in accordance with the provisions hereof and the Prospectus. If at any time when a Prospectus relating to the Securities is required to be delivered under the Securities Act, any event shall have occurred as a result of which, in the opinion of counsel for the Company or counsel for the Underwriters, the Prospectus, as then amended or supplemented, includes an untrue statement of a material fact or omits to state any

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material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, or if it is necessary at any time to amend the Prospectus to comply with the Securities Act, the Company will notify the Underwriters promptly and prepare and file with the Commission, subject to Section 4.1 hereof, an appropriate amendment or supplement in accordance with Section 10 of the Securities Act.

(b) Exchange Act Registration. For a period of three years from the Execution Date, the Company will use its best efforts to maintain the registration of the Common Stock and Warrants under the Exchange Act. The Company will not deregister the Common Stock and Warrants under the Exchange Act without the prior written consent of the Representatives.

(c) Free Writing Prospectuses. The Company represents and agrees that it has not made and will not make any offer relating to the Securities that would constitute an issuer free writing prospectus, as defined in Rule 433 of the rules and regulations under the Securities Act, without the prior written consent of the Representative. Any such free writing prospectus consented to by the Representatives is herein referred to as a “Permitted Free Writing Prospectus.” The Company represents that it will treat each Permitted Free Writing Prospectus as an “issuer free writing prospectus” as defined in rule and regulations under the Securities Act, and has complied and will comply with the applicable requirements of Rule 433 of the Securities Act, including timely Commission filing where required, legending and record keeping.

4.3 Delivery to the Underwriters of Prospectuses. The Company will deliver to the Underwriters, without charge, from time to time during the period when the Prospectus is required to be delivered under the Securities Act or the Exchange Act such number of copies of each Prospectus as the Underwriters may reasonably request and, as soon as the Registration Statement or any amendment or supplement thereto becomes effective, deliver to you two original executed Registration Statements, including exhibits, and all post-effective amendments thereto and copies of all exhibits filed therewith or incorporated therein by reference and all original executed consents of certified experts.

4.4 Effectiveness and Events Requiring Notice to the Underwriters. The Company will use its best efforts to cause the Registration Statement to remain effective with a current prospectus until the later of nine (9) months from the Execution Date and the date on which the Warrants are no longer outstanding, and will notify the Underwriters and holders of the Warrants immediately and confirm the notice in writing: (i) of the effectiveness of the Registration Statement and any amendment thereto; (ii) of the issuance by the Commission of any stop order or of the initiation, or the threatening, of any proceeding for that purpose; (iii) of the issuance by any state securities commission of any proceedings for the suspension of the qualification of the Securities for offering or sale in any jurisdiction or of the initiation, or the threatening, of any proceeding for that purpose; (iv) of the mailing and delivery to the Commission for filing of any amendment or supplement to the Registration Statement or Prospectus; (v) of the receipt of any comments or request for any additional information from the Commission; and (vi) of the happening of any event during the period described in this Section 4.4 that, in the judgment of the Company, makes any statement of a material fact made in the Registration Statement, the General Disclosure Package or the Prospectus untrue or that requires the making of any changes in the Registration Statement, the General Disclosure Package or the Prospectus in order to make the statements therein, in light of the circumstances under which they were made, not misleading. If the Commission or any state securities commission shall enter a stop order or suspend such qualification at any time, the Company will make every reasonable effort to obtain promptly the lifting of such order.

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4.5 Review of Financial Statements. For a period of five (5) years from the Execution Date, the Company, at its expense, shall cause its regularly engaged independent registered public accountants to review (but not audit) the Company's financial statements for each of the first three fiscal quarters prior to the announcement of quarterly financial information.

4.6 Reports to the Underwriters; Expenses of the Offering.

(a) Periodic Reports, etc. For a period of three years from the Execution Date, the Company will furnish or make available to the Underwriters copies of such financial statements and other periodic and special reports as the Company from time to time furnishes generally to holders of any class of its securities and also promptly furnish or make available to the Underwriters: (i) a copy of each periodic report the Company shall be required to file with the Commission; (ii) a copy of every press release and every news item and article with respect to the Company or its affairs which was released by the Company; (iii) a copy of each Form 8-K prepared and filed by the Company; (iv) a copy of each registration statement filed by the Company under the Securities Act; (v) such additional documents and information with respect to the Company and the affairs of any future Subsidiaries of the Company as the Representatives may from time to time reasonably request; provided that the Underwriters shall each sign, if requested by the Company, a Regulation FD compliant confidentiality agreement which is reasonably acceptable to the Representatives in connection with such Underwriter's receipt of such information. Documents filed with the Commission pursuant to its EDGAR system shall be deemed to have been delivered to the Underwriters pursuant to this Section.

(b) Transfer Sheets. For a period of three years from the Execution Date, the Company shall retain the Transfer Agent or a transfer and registrar agent acceptable to the Representatives and will furnish to the Underwriters at the Company's sole cost and expense such transfer sheets of the Company's securities as an Underwriter may reasonably request, including the daily and monthly consolidated transfer sheets of the Transfer Agent and the DTC.

(c) Trading Reports. During such time as the Closing Shares and Warrant Shares are listed on the Trading Market, the Company shall provide to the Underwriters, at the Company's expense, such reports published by the Trading Market relating to price and trading of such securities, as the Underwriters shall reasonably request.

(d) General Expenses Related to the Offering. The Company hereby agrees to pay on each of the Closing Date and each Option Closing Date, if any, to the extent not paid at the Closing Date, all expenses incident to the performance of the obligations of the Company under this Agreement, including, but not limited to: (a) all filing fees and communication expenses relating to the registration of the Securities to be sold in the Offering (including the Option Securities) with the Commission; (b) all FINRA Public Offering Filing System fees associated with the review of the Offering by FINRA; all fees and expenses relating to the listing of such Closing Shares, Option Shares and Warrant Shares on the Trading Market and such other stock exchanges as the Company and the Representatives together determine; (c) all fees, expenses and disbursements relating to the registration or qualification of such Securities under the "blue sky" securities laws of such states and other foreign jurisdictions as the Representatives may reasonably designate; (d) the costs of all mailing and printing of the underwriting documents (including, without limitation, the Underwriting Agreement, any Blue Sky Surveys and, if appropriate, any Agreement Among Underwriters, any agreements with Selected Dealers, Underwriters' Questionnaire and Power of Attorney), Registration Statements, Prospectuses and

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all amendments, supplements and exhibits thereto and as many preliminary and final Prospectuses as the Representatives may reasonably deem necessary; (e) the costs of preparing, printing and delivering the Securities; (f) fees and expenses of the Transfer Agent for the Securities (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company); (g) stock transfer and/or stamp taxes, if any, payable upon the transfer of securities from the Company to the Underwriters; (h) the fees and expenses of the Company's accountants; (i) the fees and expenses of the Company's legal counsel and other agents and representatives; (j) the Underwriters' costs of mailing prospectuses to prospective investors; (k) all fees, expenses and disbursements relating to background checks of the Company's officers and directors; (l) the fees and expenses associated with the Underwriters' use of i-Deal's book-building, prospectus tracking and compliance software (or other similar software) for the Offering; and (m) the Company's actual "road show" expenses for the Offering. The Underwriters may also deduct from the net proceeds of the Offering payable to the Company on the Closing Date, or each Option Closing Date, if any, all out-of-pocket fees, expenses and disbursements (including legal fees and expenses) of the Underwriters incurred as a result of providing services related to the Offering to be paid by the Company to the Underwriters; *provided, however*, that all such costs and expenses pursuant to this Section 4.6(d) and otherwise which are incurred by the Underwriters shall not exceed \$85,000 in the aggregate (\$25,000 of which has been paid prior to the Execution Date).

4.7 Application of Net Proceeds. The Company will apply the net proceeds from the Offering received by it in a manner consistent with the application described under the caption "Use Of Proceeds" in the Prospectus.

4.8 Delivery of Earnings Statements to Security Holders. The Company will make generally available to its security holders as soon as practicable, but not later than the first day of the fifteenth full calendar month following the Execution Date, an earnings statement (which need not be certified by independent public or independent certified public accountants unless required by the Securities Act or the rules and regulations under the Securities Act, but which shall satisfy the provisions of Rule 158(a) under Section 11(a) of the Securities Act) covering a period of at least twelve consecutive months beginning after the Execution Date.

4.9 Stabilization. Neither the Company, nor, to its knowledge, any of its employees, directors or shareholders (without the consent of the Representatives) has taken or will take, directly or indirectly, any action designed to or that has constituted or that might reasonably be expected to cause or result in, under the Exchange Act, or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities.

4.10 Internal Controls. The Company will maintain a system of internal accounting controls sufficient to provide reasonable assurances that: (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary in order to permit preparation of financial statements in accordance with GAAP and to maintain accountability for assets; (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 existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

4.11 Accountants. For a period of three (3) years from the Effective Date, the Company shall continue to retain an independent registered public accounting firm. The Underwriters acknowledge that the Company Auditor is acceptable to the Underwriters.

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4.12 FINRA. The Company shall advise the Underwriters (who shall make an appropriate filing with FINRA) if it is aware that any officer, director, 5% or greater shareholder of the Company or Person that received the Company's unregistered equity securities in the past 180 days is or becomes an affiliate or associated person of a FINRA member firm prior to the earlier of the termination of this Agreement or the conclusion of the distribution of the Offering.

4.13 No Fiduciary Duties. The Company acknowledges and agrees that the Underwriters' responsibility to the Company is solely contractual and commercial in nature, based on arms-length negotiations and that neither the Underwriters nor their affiliates or any selected dealer shall be deemed to be acting in a fiduciary capacity, or otherwise owes any fiduciary duty to the Company or any of its affiliates in connection with the Offering and the other transactions contemplated by this Agreement. Notwithstanding anything in this Agreement to the contrary, the Company acknowledges that the Underwriters may have financial interests in the success of the Offering that are not limited to the difference between the price to the public and the purchase price paid to the Company by the Underwriters for the shares and the Underwriters have no obligation to disclose, or account to the Company for, any of such additional financial interests. The Company hereby waives and releases, to the fullest extent permitted by law, any claims that the Company may have against the Underwriters with respect to any breach or alleged breach of fiduciary duty.

4.14 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 of the Warrant Shares or if the Warrant is exercised via cashless exercise at a time when such Warrant Shares would be eligible for resale under Rule 144 by a non-affiliate of the Company, the Warrant Shares issued pursuant to any such exercise shall be issued free of all restrictive 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 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 of the Warrant Shares (it being understood and agreed that the foregoing shall not limit the ability of the Company to issue, or any holder thereof to sell, any of the Warrant Shares in compliance with applicable federal and state securities laws).

4.15 Board Composition and Board Designations. The Company shall ensure that: (i) the qualifications of the persons serving as board members and the overall composition of the Board of Directors comply with the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder and with the listing requirements of the Trading Market and (ii) if applicable, at least one member of the Board of Directors qualifies as a "financial expert" as such term is defined under the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder.

4.16 Securities Laws Disclosure; Publicity. At the request of the Representatives, by 9:00 a.m. (New York City time) on the date hereof, the Company shall issue a press release disclosing the material terms of the Offering. The Company and the Representatives shall consult with each other in issuing any press releases with respect to the Offering, and neither the Company nor any Underwriter shall issue any such press release nor otherwise make any such public statement without the prior consent of the Company, with respect to any other press release of such Underwriter, or without the prior consent of such Underwriter, 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

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communication. The Company will not issue press releases or engage in any other publicity, without the Representatives' prior written consent, for a period ending at 5:00 p.m. (New York City time) on the first business day following the 40th day following the Closing Date, other than normal and customary releases issued in the ordinary course of the Company's business.

4.17        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 Underwriter of the Securities 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 Underwriter of Securities could be deemed to trigger the provisions of any such plan or arrangement, by virtue of receiving Securities.

4.18        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 Option Shares pursuant to the Over-Allotment Option and Warrant Shares pursuant to any exercise of the Warrants.

4.19        Listing of Common Stock. The Common Stock has been approved for trading on the Trading Market. The Company agrees to use its best efforts to effect and maintain the trading of the Common Stock on the Trading Market for at least three (3) years after the Closing Date.

4.20        Right of First Refusal. For the avoidance of doubt, the Underwriters shall continue to be entitled to the terms and conditions of the right of first refusal as granted on September 20, 2018 and set forth in Section 9 of the placement agency agreement dated September 20, 2018 by and among Maxim, DJ and the Company.

4.21        Subsequent Equity Sales.

(a)        From the date hereof until seventy-five (75) 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 sixty (60) days after 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 Underwriter 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.

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(c) Notwithstanding the foregoing, this Section 4.20 shall not apply in respect of an Exempt Issuance, except that no Variable Rate Transaction shall be an Exempt Issuance.

4.22 Capital Changes. Until sixty (60) days after 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 Maxim.

4.23 Research Independence. The Company acknowledges that each Underwriter's research analysts and research departments, if any, are required to be independent from their respective investment banking divisions and are subject to certain regulations and internal policies, and that such Underwriter's research analysts may hold and make statements or investment recommendations and/or publish research reports with respect to the Company and/or the offering that differ from the views of its investment bankers. The Company hereby waives and releases, to the fullest extent permitted by law, any claims that the Company may have against such Underwriter with respect to any conflict of interest that may arise from the fact that the views expressed by their independent research analysts and research departments may be different from or inconsistent with the views or advice communicated to the Company by such Underwriter's investment banking divisions. The Company acknowledges that each Representative is a full service securities firm and as such from time to time, subject to applicable securities laws, may effect transactions for its own account or the account of its customers and hold long or short position in debt or equity securities of the Company.

## **ARTICLE V. DEFAULT BY UNDERWRITERS**

If on the Closing Date or any Option Closing Date, if any, any Underwriter shall fail to purchase and pay for the portion of the Closing Securities or Option Securities, as the case may be, which such Underwriter has agreed to purchase and pay for on such date (otherwise than by reason of any default on the part of the Company), the Representatives, or if a Representative is the defaulting Underwriter, the non-defaulting Underwriters, shall use their reasonable efforts to procure within 36 hours thereafter one or more of the other Underwriters, or any others, to purchase from the Company such amounts as may be agreed upon and upon the terms set forth herein, the Closing Securities or Option Securities, as the case may be, which the defaulting Underwriter or Underwriters failed to purchase. If during such 36 hours the Representatives shall not have procured such other Underwriters, or any others, to purchase the Closing Securities or Option Securities, as the case may be, agreed to be purchased by the defaulting Underwriter or Underwriters, then (a) if the aggregate number of Closing Securities or Option Securities, as the case may be, with respect to which such default shall occur does not exceed 10% of the Closing Securities or Option Securities, as the case may be, covered hereby, the other Underwriters shall be obligated, severally, in proportion to the respective numbers of Closing Securities or Option Securities, as the case may be, which they are obligated to purchase hereunder, to purchase the Closing Securities or Option Securities, as the case may be, which such defaulting Underwriter or Underwriters failed to purchase, or (b) if the aggregate number of Closing Securities or Option Securities, as the case may be, with respect to which such default shall occur exceeds 10% of the Closing Securities or Option Securities, as the case may be, covered hereby, the Company or the Representatives will have the right to terminate this Agreement without liability on the part of the non-defaulting Underwriters or of the Company except to the extent provided in Article VI hereof. In the event of a default by any Underwriter or Underwriters, as set forth in this Article V, the applicable Closing Date may be postponed for such period, not exceeding seven days, as the Representatives, or if a Representative is the defaulting Underwriter, the non-defaulting Underwriters, may determine in order that the required changes in the Prospectus or in any other documents or arrangements may be effected. The term "Underwriter" includes any person substituted for

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a defaulting Underwriter. Any action taken under this Section shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

## **ARTICLE VI. INDEMNIFICATION<sup>11</sup>**

6.1 Indemnification of the Underwriters. The Company shall indemnify and hold harmless each Underwriter, its affiliates, the directors, officers, employees and agents of such Underwriter and each person, if any, who controls such Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act from and against any and all losses, claims, liabilities, expenses and damages (including any and all investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding between any of the indemnified parties and any indemnifying parties or between any indemnified party and any third party, or otherwise, or any claim asserted), to which they, or any of them, may become subject under the Securities Act, the Exchange Act or other federal or state statutory law or regulation, at common law or otherwise, insofar as such losses, claims, liabilities, expenses or damages arise out of or are based on (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), including the information deemed to be a part of the Registration Statement at the time of effectiveness and at any subsequent time pursuant to Rules 430A and 430B of the Securities Act and the rules and regulations thereunder, as applicable, or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading or (ii) any untrue statement or alleged untrue statement of a material fact contained in any preliminary prospectus, any preliminary prospectus supplement, any Permitted Free Writing Prospectus or the Prospectus (or any amendment or supplement to any of the foregoing) or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading or (iii) any untrue statement or alleged untrue statement of a material fact contained in any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Securities, including any roadshow or investor presentations made to investors by the Company (whether in person or electronically) (collectively, Marketing Materials) or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading or (iv) in whole or in part any inaccuracy in any material respect in the representations and warranties of the Company contained herein; *provided, however*, that the Company shall not be liable to the extent that such loss, claim, liability, expense or damage is based on any untrue statement or omission or alleged untrue statement or omission made in reliance on and in conformity with Underwriters' Information. This indemnity agreement will be in addition to any liability that the Company might otherwise have. For all purposes of this Agreement, the information set forth in the Prospectus in the "Electronic Distribution" and "Price Stabilization, Short Positions and Penalty Bids" sections under the caption "Underwriting" constitutes the only information (the "Underwriters' Information") relating to the Underwriters furnished in writing to the Company by the Underwriters through the Representatives specifically for inclusion in the preliminary prospectus, the Registration Statement or the Prospectus.

6.2 Indemnification of the Company. Each Underwriter, severally and not jointly, agrees to indemnify and hold harmless the Company, its affiliates, the directors, officers, employees and agents of

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<sup>11</sup> Subject to further EGS review.

the Company and each other person or entity, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, against any losses, liabilities, claims, damages and expenses whatsoever, as incurred (including but not limited to reasonable attorneys' fees and any and all reasonable expenses whatsoever, incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim whatsoever, and any and all amounts paid in settlement of any claim or litigation), joint or several, to which they or any of them may become subject under the Securities Act, the Exchange Act or otherwise, insofar as such losses, liabilities, claims, damages or expenses (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement at the time of effectiveness and at any subsequent time pursuant to Rules 430A and 430B of the Securities Act and the rules and regulations thereunder, any Preliminary Prospectus, the Prospectus, or any amendment or supplement to any of them, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that any such loss, liability, claim, damage or expense (or action in respect thereof) arises out of or is based upon any such untrue statement or alleged untrue statement or omission or alleged omission made therein in reliance upon the Underwriters' Information; provided, however, that in no case shall any Underwriter be liable or responsible for any amount in excess of the underwriting discount and commissions applicable to the Securities purchased by such Underwriter hereunder.

6.3 Indemnification Procedures. Any party that proposes to assert the right to be indemnified under this Section 6 shall, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 6, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party shall not relieve the indemnifying party from any liability that it may have to any indemnified party under the foregoing provisions of this Section 6 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable out-of-pocket costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (i) the employment of counsel by the indemnified party has been authorized in writing by one of the indemnifying parties in connection with the defense of such action, (ii) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (iii) the indemnified party has reasonably concluded that a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party shall not have the right to direct the defense of such action on behalf of the indemnified party), (iv) the indemnifying party does not diligently defend the action after assumption of the defense, or (v) the indemnifying party has not in fact employed counsel satisfactory to the indemnified party to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel shall be at the expense of the indemnifying party or parties. It is understood that the

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indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges shall be reimbursed by the indemnifying party promptly as they are incurred. An indemnifying party shall not be liable for any settlement of any action or claim effected without its written consent (which consent will not be unreasonably withheld or delayed). No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 6 (whether or not any indemnified party is a party thereto), unless (x) such settlement, compromise or consent (i) includes an unconditional release of each indemnified party from all liability arising or that may arise out of such claim, action or proceeding and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party, and (y) the indemnifying party confirms in writing its indemnification obligations hereunder with respect to such settlement, compromise or judgment. Notwithstanding the foregoing, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 6(a) effected without its written consent if (A) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request, (B) such indemnifying party shall have received notice of the terms of such settlement at least 30 days prior to such settlement being entered into and (iii) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

6.4 Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 6 is applicable in accordance with its terms but for any reason is held to be unavailable, the Company and the Underwriters shall contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than the Underwriters, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who may also be liable for contribution), to which the Company and the Underwriter may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters on the other from the offering of the Securities pursuant to this Agreement. The relative benefits received by the Company and the Underwriters shall be deemed to be in the same proportion as (x) the total proceeds from the Offering (net of underwriting discount and commissions but before deducting expenses) received by the Company bears to (y) the underwriting discount and commissions received by the Underwriters, in each case as set forth in the table on the cover page of the Prospectus. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Underwriters, on the other, with respect to the statements or omissions which resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Underwriters, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to this Section 6.4 were to be determined by pro rata allocation or by any other method of allocation (even if the

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Underwriters were treated as one entity for such purpose) which does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense or damage, or action in respect thereof, referred to above in this Section 6.4 shall be deemed to include, for purpose of this Section 6.4, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this Section 6.4, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions received by it. No person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 6.4, any person who controls a party to this Agreement within the meaning of the Securities Act will have the same rights to contribution as that party, and each officer of the Company who signed the Registration Statement will have the same rights to contribution as the Company, and each director, officer, employee, counsel or agent of an Underwriter will have the same rights to contribution as such Underwriter, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 6.4, will notify any such party or parties from whom contribution may be sought, but the omission so to notify will not relieve the party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 6.4. The obligations of the Underwriters to contribute pursuant to this Section 6.4 are several in proportion to the respective number of Securities to be purchased by each of the Underwriters hereunder and not joint. No party will be liable for contribution with respect to any action or claim settled without its written consent (which consent will not be unreasonably withheld).

6.5        Survival. The indemnity and contribution agreements contained in this Section 6 and the representations and warranties of the Company contained in this Agreement shall remain operative and in full force and effect regardless of (i) any investigation made by or on behalf of any Underwriter or any controlling Person thereof, (ii) acceptance of any of the Securities and payment therefor or (iii) any termination of this Agreement.

## **ARTICLE VII. MISCELLANEOUS**

### 7.1        Termination.

(a)        Termination Right. The Representatives shall have the right to terminate this Agreement at any time prior to any Closing Date, (i) if any domestic or international event or act or occurrence has materially disrupted, or in their opinion will in the immediate future materially disrupt, general securities markets in the United States; or (ii) if trading on any Trading Market shall have been suspended or materially limited, or minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required by FINRA or by order of the Commission or any other government authority having jurisdiction, or (iii) if the United States shall have become involved in a new war or an increase in major hostilities, or (iv) if a banking moratorium has been declared by a New York State or federal authority, or (v) if a moratorium on foreign exchange trading has been declared which materially adversely impacts the United States securities markets, or (vi) if the Company shall have sustained a material loss by fire, flood, accident, hurricane, earthquake, theft, sabotage or other calamity or malicious act which, whether or not such loss shall have been insured, will, in the Representatives' opinion, make it inadvisable to proceed with the delivery of the Securities, or (vii) if the Company is in

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material breach of any of its representations, warranties or covenants hereunder, or (viii) if the Representatives shall have become aware after the date hereof of such a material adverse change in the conditions or prospects of the Company, or such adverse material change in general market conditions as in the Representatives' judgment would make it impracticable to proceed with the offering, sale and/or delivery of the Securities or to enforce contracts made by the Underwriters for the sale of the Securities.

(b) Expenses. In the event this Agreement shall be terminated pursuant to Section 7.1(a), within the time specified herein or any extensions thereof pursuant to the terms herein, the Company shall be obligated to pay to Maxim its actual and accountable out of pocket expenses related to the transactions contemplated herein then due and payable up to \$85,000 (\$25,000 of which has been paid prior to the Execution Date) (provided, however, that such expense cap in no way limits or impairs the indemnification and contribution provisions of this Agreement).

(c) Indemnification. Notwithstanding any contrary provision contained in this Agreement, any election hereunder or any termination of this Agreement, and whether or not this Agreement is otherwise carried out, the provisions of Article VI shall not be in any way effected by such election or termination or failure to carry out the terms of this Agreement or any part hereof.

7.2 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, any Preliminary Prospectus and the Prospectus, 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. Notwithstanding anything herein to the contrary, the Engagement Agreement, dated November 27, 2018 ("Engagement Agreement"), by and between the Company and Maxim, shall continue to be effective and the terms therein, including, without limitation, Section 14 with respect to any future offerings, shall continue to survive and be enforceable by Maxim in accordance with its terms, provided that, in the event of a conflict between the terms of the Engagement Agreement and this Agreement, the terms of this Agreement shall prevail.

7.3 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 date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or e-mail attachment at the email address 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 date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or e-mail attachment at the e-mail 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.

7.4 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 Maxim. 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.

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7.5                    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.

7.6                    Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns.

7.7                    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, suit 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 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 either 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 Article VI, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

7.8                    Survival. The representations and warranties contained herein shall survive the Closing and the Option Closing, if any, and the delivery of the Securities.

7.9                    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.

7.10                  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

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restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

7.11                    Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, the Underwriters 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.

7.12                    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.

7.13                    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.

7.14                    **WAIVER OF JURY TRIAL.** IN ANY ACTION, SUIT, OR PROCEEDING IN ANY JURISDICTION BROUGHT BY ANY PARTY AGAINST ANY OTHER PARTY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY, THE PARTIES EACH KNOWINGLY AND INTENTIONALLY, TO THE GREATEST EXTENT PERMITTED BY APPLICABLE LAW, HEREBY ABSOLUTELY, UNCONDITIONALLY, IRREVOCABLY AND EXPRESSLY WAIVE FOREVER ANY RIGHT TO TRIAL BY JURY.

*(Signature Pages Follow)*

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If the foregoing correctly sets forth the understanding between the Underwriters and the Company, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement among the Company and the several Underwriters in accordance with its terms.

Very truly yours,

**BIOCEPT, INC.**

By:

Name:

Title:

Address for Notice:

Copy to:

Accepted by the Representatives, acting for themselves and as  
Representatives of the Underwriters named on Schedule I hereto,  
as of the date first above written:

**MAXIM GROUP LLC**

By:

Name: Clifford A. Teller

Title: Executive Managing Director, Investment Banking

Address for Notice:

405 Lexington Avenue  
New York, NY 10174  
Facsimile: (212) 895-3783  
Attention: Clifford A. Teller

**DAWSON JAMES SECURITIES, INC.**

By:

Name: Robert D. Keyser, Jr.

Title: Chief Executive Officer

Address for Notice:

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1 North Federal Highway, Suite 500  
Boca Raton, FL 33432  
Attention: Robert D. Keyser, Jr., CEO  
Email: bob@dawsonjames.com

Copy to:

Ellenoff Grossman & Schole LLP  
1345 Avenue of the Americas  
New York, NY 10105  
Facsimile: (212) 370-7889  
Attention: Barry I. Grossman

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SCHEDULE I

SCHEDULE OF UNDERWRITERS

<u>Underwriters</u>	<u>Closing Shares</u>	<u>Traditional Warrants</u>	<u>Pre-Funded Warrants</u>	<u>Closing Purchase Price</u>
Maxim Group LLC				
Dawson James Securities, Inc.				

Total

Charles J. Bair  
+1 858 550 6142  
cbair@cooley.com

## Exhibit 5.1

December 10, 2018

Biocept, Inc.  
5810 Nancy Ridge Drive, Suite 150  
San Diego, CA 92121

Ladies and Gentlemen:

You have requested our opinion, as counsel to Biocept, Inc., a Delaware corporation (the “**Company**”), in connection with the filing by the Company of a Registration Statement (No. 333-228566) on Form S-1 (the “**Registration Statement**”) with the Securities and Exchange Commission, including a related prospectus filed with the Registration Statement (the “**Prospectus**”), covering a public offering of (i) up to \$10 million of shares (the “**Shares**”) of common stock of the Company (the “**Common Stock**”) and pre-funded warrants (the “**Pre-Funded Warrants**”) to purchase shares of Common Stock (the “**Pre-Funded Warrant Shares**”) and (ii) warrants (the “**Purchase Warrants**”, and, collectively with the Pre-Funded Warrants, the “**Warrants**”) to purchase up to \$10 million of shares of Common Stock (the “**Purchase Warrant Shares**”, and, collectively with the Pre-Funded Warrant Shares, the “**Warrant Shares**”). This opinion relates to (i) Shares and Pre-Funded Warrants relating to up to 20,000,000 shares of Common Stock and (ii) Purchase Warrants exercisable for up to 20,000,000 shares of Common Stock. The Shares, the Warrants and the Warrant Shares are to be sold by the Company as described in the Registration Statement and the Prospectus.

In connection with this opinion, we have examined and relied upon the Registration Statement and Prospectus, the form of Purchase Warrant, the form of Pre-Funded Warrant, the Company's Certificate of Incorporation, as amended, its Amended and Restated Bylaws and the originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness and authenticity of all documents submitted to us as originals, and the conformity to originals of all documents submitted to us as copies thereof and the due execution and delivery of all documents by all persons other than the Company where due execution and delivery are a prerequisite to the effectiveness thereof. In addition, we have assumed that the Board of Directors of the Company or a pricing committee thereof has taken action to set the sale price of the Shares and Warrants and the exercise price of the Warrants.

With regard to our opinion regarding the Warrants and the Warrant Shares, we express no opinion to the extent that, notwithstanding its current reservation of shares of Common Stock, future issuances of securities, including the Warrant Shares, of the Company and/or antidilution adjustments to outstanding securities, including the Warrants, of the Company cause the Warrants to be exercisable for more shares of Common Stock than the number that then remain authorized but unissued.

With regard to our opinion concerning the Warrants constituting valid and binding obligations of the Company:

(i) Our opinion is subject to, and may be limited by, (a) applicable bankruptcy, reorganization, insolvency, moratorium, fraudulent conveyance, debtor and creditor, and similar laws which relate to or affect creditors' rights generally, and (b) general principles of equity (including, without limitation, concepts

of materiality, reasonableness, good faith and fair dealing) regardless of whether considered in a proceeding in equity or at law.

(ii) Our opinion is subject to the qualification that the availability of specific performance, an injunction or other equitable remedies is subject to the discretion of the court before which the request is brought.

(iii) We express no opinion as to any provision of the Warrants that: (a) provides for liquidated damages, buy-in damages, monetary penalties, prepayment or make-whole payments or other economic remedies to the extent such provisions may constitute unlawful penalties, (b) relates to advance waivers of claims, defenses, rights granted by law, or notice, opportunity for hearing, evidentiary requirements, statutes of limitations, trial by jury, or procedural rights, (c) restricts non-written modifications and waivers, (d) provides for the payment of legal and other professional fees where such payment is contrary to law or public policy, (e) relates to exclusivity, election or accumulation of rights or remedies, (f) authorizes or validates conclusive or discretionary determinations, or (g) provides that provisions of the Warrants are severable to the extent an essential part of the agreed exchange is determined to be invalid and unenforceable.

(iv) We express no opinion as to whether a state court outside of the State of New York or a federal court of the United States would give effect to the choice of New York law or jurisdiction provided for in the Warrants.

Our opinion herein is expressed solely with respect to the General Corporation Law of the State of Delaware and, as to the Warrants constituting valid and legally binding obligations of the Company, the laws of the State of New York. Our opinion is based on these laws as in effect on the date hereof. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation. Further, we have assumed the Exercise Price (as defined in the Warrants) will not be adjusted to an amount below the par value per share of the Common Stock.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that (i) the Shares, when sold in accordance with the Registration Statement and the Prospectus, will be validly issued, fully paid and nonassessable, (ii) provided that the Warrants have been duly executed and delivered by the Company to the purchasers thereof against payment therefor, the Warrants, when issued and sold as contemplated in the Registration Statement and the Prospectus will be valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms, and (iii) the Warrant Shares, when issued and paid for in accordance with the terms of the Warrants, will be validly issued, fully paid and nonassessable.

We consent to the reference to our firm under the caption "Legal Matters" in the Prospectus and to the filing of this opinion as an exhibit to the Registration Statement.

Very truly yours,

COOLEY LLP

By: /s/ Charles J. Bair  
Charles J. Bair, Partner



**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

As independent registered public accountants, we hereby consent to the incorporation by reference in this Amendment No. 1 to Registration Statement No. 333-228566 on Form S-1 and related Prospectus, of our report dated March 28, 2018, relating to the financial statements of **Biocept, Inc.**, as of and for the years ended December 31, 2017 and 2016 (which report includes an explanatory paragraph relating to the uncertainty of the Company's ability to continue as a going concern). We also consent to the reference to us under the heading "Experts" in the Prospectus which is part of this Registration Statement.

/s/ Mayer Hoffman McCann P.C.  
San Diego, California  
December 10, 2018