

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

POST EFFECTIVE AMENDMENT NO. 1
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Stellar Biotechnologies, Inc.

(Exact name of registrant as specified in its charter)

British Columbia, Canada
*(State or other jurisdiction of
Incorporation or organization)*

2834
*(Primary Standard Industrial
Classification Code Number)*

N/A
*(IRS Employer
Identification Number)*

**332 E. Scott Street
Port Hueneme, California 93041
(805) 488-2800**

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

**Kathi Niffenegger
Chief Financial Officer
Stellar Biotechnologies, Inc.
332 E. Scott Street
Port Hueneme, California 93041
(805) 488-2800**

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

Copies to:

**Barbara A. Jones, Esq.
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Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement becomes effective.

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

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

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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

Accelerated filer

Non-accelerated
filer

Smaller reporting
company

Emerging growth
company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying

with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

This Post-Effective Amendment No. 1 (this “Post-Effective Amendment”) to the registration statement on Form S-1 (File No. 333-224314 (the “Registration Statement”) of Stellar Biotechnologies, Inc. (“we,” “us,” “our,” “Stellar” or the “Company”) is being filed pursuant to Section 10(a)(3) of the Securities Act of 1933, as amended (the “Securities Act”) to update the Registration Statement by, among other things, including the information contained in our Annual Report on Form 10-K for the fiscal year ended September 30, 2018 (the “Annual Report on Form 10-K”) which was filed with the Securities and Exchange Commission (the “Commission” or the “SEC”) on November 30, 2018.

The Registration Statement was declared effective by the Commission on May 10, 2018. The closing of the transaction contemplated by the Registration Statement occurred on May 15, 2018. We issued a total of 1,388,396 units (each unit contained one common share and one warrant to purchase one common share) and 687,076 pre-funded units (each pre-funded unit contained one pre-funded warrant to purchase one common share and one warrant to purchase one common share).

This Post-Effective Amendment covers the offer and sale by the Company of the common shares that are issuable upon the exercise of the warrants that are described in the preceding paragraph. No further offer or sale is being made by the Company of the units that are described in the preceding paragraph. In addition, this Post-Effective Amendment covers common shares that are issuable upon the exercise of warrants issued to H.C. Wainwright & Co., LLC, our exclusive placement agent in the offering.

We previously paid to the Commission the entire registration fee relating to the Common Shares that are the subject of this Post-Effective Amendment.

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 is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED DECEMBER 4, 2018

PRELIMINARY PROSPECTUS

**Stellar Biotechnologies, Inc.
668,382 Common Shares**

We are offering an aggregate of 668,382 common shares that are issuable upon the exercise of 668,382 warrants. The 668,382 common shares consist of (i) 523,099 common shares underlying outstanding warrants exercisable at \$2.65 per share (subject to customary adjustments for share splits, dividends and similar events), or the common share purchase warrants, and (ii) 145,283 common shares underlying outstanding warrants exercisable at \$3.3125 per share (subject to customary adjustments for share splits, dividends and similar events), or the placement agent warrants, that were issued to H.C. Wainwright & Co., LLC, our exclusive placement agent in the offering. The common share purchase warrants and the placement agent warrants are collectively referred to as the warrants. We issued the warrants, on May 15, 2018 as part of our public offering of units and pre-funded units of the Company. No securities are being offered by this prospectus other than the common shares that will be issued upon the exercise of the warrants.

Our common shares are listed on the Nasdaq Capital Market under the symbol “SBOT.” The last reported sale price of our common shares on December 3, 2018 was \$1.28 per share.

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 comply with certain reduced public company reporting requirements for this prospectus and future filings. See “Prospectus Summary – Implications of Being an Emerging Growth Company.”

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 our securities.

Investing in our securities involves a high degree of risk. These risks are described in the “Risk Factors” section on page 6 of this prospectus. You should also consider the risk factors described or referred to in any documents incorporated by reference in this prospectus, and in an applicable prospectus supplement, before investing in these 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.

The date of this prospectus is , 2018.

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You should rely only on the information contained in this prospectus or in any related free writing prospectus filed by us with the SEC. We have not authorized anyone to provide you with any information or to make any representation not contained in this prospectus or incorporated by reference. We do not take any responsibility for, and can provide no assurance as to the reliability of, any information that others may provide to you. This prospectus is not an offer to sell or an offer to buy securities in any jurisdiction where offers and sales are not permitted. The information in this prospectus is accurate only as of its date, regardless of the time of delivery of this prospectus or any sale of common shares. You should not assume that the information contained in this prospectus or any prospectus supplement or free writing prospectus is accurate as of any date other than the date on the front cover of those documents, or that the information contained in any document incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

We have not done anything that would permit a public offering of the common shares 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 common shares and the distribution of this prospectus outside of the United States.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere or incorporated by reference in this prospectus and does not contain all of the information you should consider in making your investment decision. You should read this summary together with the more detailed information, including our financial statements and the related notes, contained or incorporated by reference in this prospectus. You should carefully consider, among other things, the matters discussed in “Risk Factors” included elsewhere in this prospectus, the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and related notes, each included in our Annual Report on Form 10-K for the year ended September 30, 2018, filed with the SEC on November 30, 2018, which is incorporated by reference herein, as updated by subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act, before making an investment decision. You should also read and consider the information in the documents to which we have referred you in “Where You Can Find Additional Information” And “Incorporation of Certain Information by Reference.” As used in this prospectus, “Stellar,” “the Company,” “we,” “us,” and “our” refer to Stellar Biotechnologies, Inc. and our consolidated subsidiaries, except where the context otherwise requires.

Business Overview

Our Company

We are a biotechnology company engaged in the aquaculture, research and development, manufacture and commercialization of KLH. KLH is an immune-stimulating protein with an extensive history of safe and effective use in immunological applications.

Immunotherapies (also known as therapeutic vaccines) are an emerging class of treatments that involve using the body’s own immune system to target and treat disease. Today, multiple companies and institutions are developing drugs that combine disease-targeting agents with KLH. These disease-targeting agents do not evoke a robust immune response by themselves and thus require conjugation to a carrier molecule like KLH.

The versatility of the KLH molecule and its use in multiple drug development pipelines provide numerous commercial opportunities for us. KLH is currently utilized in immunotherapies in clinical or pre-clinical development for Alzheimer’s disease, metastatic breast cancer, type 1 diabetes, dermatomyositis, systemic lupus erythematosus, ovarian cancer and various other cancers and diseases. The successful commercialization of one or more of these drug development pipelines, especially in a major indication, could have a significant impact on the industry’s ability to produce sufficient quantities of KLH. The protein is derived only from the Giant Keyhole Limpet, a scarce ocean mollusk that is native to a limited stretch of Pacific Ocean coastline. Due in part to the inherent limitations of utilizing of wild sources of KLH, we believe that aquaculture production methods, like the methods we practice, will be required to provide scalable, fully traceable supplies of KLH.

Based upon our specialized knowledge of aquaculture science and KLH, we have built unique land-based aquaculture, laboratory and production facilities in Port Hueneme, California, and developed production and manufacturing processes to produce clinical-grade KLH using Current Good Manufacturing Practices (GMP). Using our proprietary aquaculture technology, we can support the marine mollusk from embryo to protein-producing adult, and we now support multiple generations of limpets grown entirely within our land-based aquaculture facility. We believe that other KLH suppliers do not have this capability and thus are reliant on scarce, wild populations of limpets.

We market and sell our KLH products under the brand Stellar KLH. Our customers and partners include multinational biotechnology and pharmaceutical companies, academic institutions, clinical research organizations and research centers. We have multiple agreements to license and supply Stellar KLH and other technology in exchange for fees, revenues or royalties. Our customers manage and fund all product development and regulatory submissions for their respective drug products that utilize our KLH protein.

Summary of Risks

Our business is subject to a number of risks and uncertainties that you should understand before making an investment decision. For example, we have a history of net losses, we expect to continue to incur net losses and we may not achieve or maintain profitability. Furthermore, we have limited cash flow to sustain our operations. We have historically relied upon the sale of common shares to help fund our operations and meet our obligations and presently expect to continue to do so in the future as and when we consider appropriate, subject to market conditions and the availability of favorable terms. In the near term our ability to generate revenues will depend solely on the commercial success of Stellar KLH, which depends upon its market acceptance by purchasers in the pharmaceutical market and the future market demand and medical need for products and research utilizing KLH. At present, KLH is used only for research and clinical trial purposes, and there is no commercially approved drug product or drug product submitted in a pending marketing application that incorporates KLH as an ingredient. As a result, no marketing authority has reviewed our drug master file (DMF) for KLH as a product ingredient or inspected Stellar. As of September 30, 2018, we have an accumulated deficit of \$50.4 million since inception. We have incurred substantial net losses since our inception, including net losses of \$5.04 million and \$5.03 million for the years ended September 30, 2018 and 2017, respectively. We expect to incur additional losses as we continue to invest in our research and development programs and move forward with our scale-up plans and commercialization activities. Additional risks are discussed more fully in the section entitled “Risk Factors” following this prospectus summary. These risks include, but are not limited to, the following:

- We have a history of net losses and limited cash flow to sustain our operations.
- We depend heavily on the success and market acceptance of KLH and we may never recoup our investment into its research and development.
- Our customers face uncertainties related to regulatory approval, which could reduce the market for our products.
- Our business is geographically concentrated and if a catastrophic event, such as a hurricane, an earthquake or coastal flooding, were to impact our facilities, our business may be disrupted which could result in serious harm to our business, results of operations and financial condition.
- Government and geopolitical changes may impede the implementation of our strategy outside the United States.
- Our joint venture with Neovacs involves numerous risks that could adversely impact our financial results.
- Our expansion plans include the design and development of aquaculture infrastructure and KLH production in Mexico which presents substantial risks to our business and personnel. We may never recoup our investment into this location.
- Our sales in international markets subject us to foreign currency exchange and other risks and costs, which could harm our business.
- We compete with other companies in KLH production and manufacturing that may have greater resources than we do.
- We may not be able to meet demand for KLH from either internally raised or ocean harvest sources.
- We may not be able to manufacture our products in commercial quantities and currently depend on third parties for certain steps in our manufacturing operations, which could prevent us from marketing our products.
- We have been, and expect to continue to be in the future, significantly dependent on collaboration and supply agreements for the development and sales of Stellar KLH.
- We have limited marketing, sales and distribution experience and capabilities. We will need to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our products.
- We rely on the significant experience and specialized expertise of our Chief Executive Officer and other members of our senior management team, and we will need to hire and retain other highly skilled personnel to maintain and grow our business.
- We are subject to the risk of product liability claims, for which we may not have, or be able to obtain, adequate insurance coverage.

- Our activities are subject to regulation in the United States and in the foreign jurisdictions in which we operate. Failure to comply with applicable laws and regulations could adversely impact our operations.
- We may face environmental risks related to handling regulated substances and hazardous materials.
- The inability to protect our intellectual property rights could result in competitive harm to our Company.
- Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.
- We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.
- The price of our common shares may be subject to substantial volatility.
- If we cannot meet Nasdaq's continuing listing requirements and Nasdaq rules, Nasdaq may delist our securities, which would negatively affect our Company and the price of our securities.
- We may require additional financing or financings, which would result in substantial dilution to existing shareholders.
- We could be deemed a "passive foreign investment company" in the future, which could have negative consequences for U.S. investors.
- We are governed by the corporate laws in British Columbia, Canada which in some cases have a different effect on shareholders than the corporate laws in Delaware.
- We are an "emerging growth company" under the JOBS Act of 2012 and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common shares less attractive to investors.
- As a smaller reporting company, we cannot be certain if such reduced disclosure will make our common shares less attractive to investors.

THE OFFERING

The following summary contains basic information about the offering and the securities we are offering and is not intended to be complete. It does not contain all the information that is important to you. For a more complete understanding of the securities we are offering, please refer to the section of this prospectus titled "Description of Securities We are Offering."

Common shares offered by us	We are offering an aggregate of 668,382 common shares that are issuable upon the exercise of 668,382 warrants. The 668,382 common shares consist of (i) 523,099 common shares underlying outstanding common share purchase warrants exercisable at \$2.65 per share (subject to customary adjustments described below), and (ii) 145,283 common shares underlying outstanding placement agent warrants exercisable at \$3.3125 per share (subject to customary adjustments described below).
Description of warrants	The warrants are exercisable beginning May 15, 2018 and expire on the five year anniversary of May 15, 2018. The initial exercise prices per share described above are subject to customary adjustments in the event of recapitalization events, share dividends, share splits, share combinations, reclassifications, reorganizations or similar events affecting our common shares.
Common shares outstanding prior to this offering	5,330,715 common shares as of November 28, 2018.
Common shares to be outstanding after this offering	5,999,097 common shares, assuming exercise of all warrants.
Use of proceeds	Assuming that all warrants are exercised for 668,382 common shares on a cash basis, we will receive gross proceeds of approximately \$1,867,462 and net proceeds, after deducting estimated offering expenses, of approximately \$1,809,962. We intend to use the net proceeds from this offering for general corporate purposes, including working capital. No assurance can be given as to the number of warrants, if any, that will be exercised. We will not receive any proceeds from the sale of the shares that are purchased upon the exercise of the warrants.
Nasdaq Capital Market trading symbol	SBOT
Listing	Our common shares are listed for trading on the Nasdaq Capital Market. There is no established trading market for the warrants and we do not intend to list the warrants on any exchange or other trading or quotation system.
Risk Factors	See "Risk Factors" on page 6 of this prospectus to read about factors you should consider before buying common shares.

The number of common shares that will be outstanding after this offering is based on 5,330,715 shares outstanding as of November 28, 2018, and excludes:

- 70,498 common shares issuable upon exercise of options to purchase our common shares outstanding as of November 28, 2018 at a weighted average exercise price of \$25.42 per share;
- 157,645 additional common shares reserved as of November 28, 2018 for future issuance under our 2017 Incentive Compensation Plan;
- 180,805 common shares issuable upon exercise of warrants to purchase our common shares outstanding as of November 28, 2018 at an exercise price of \$31.50 per share;
- 3,166,228 common shares issuable upon exercise of warrants to purchase our common shares as of November 28, 2018 at an exercise price of \$2.65 per share; and

- 78,545 common shares issuable upon exercise of warrants to purchase our common shares as of November 28, 2018 at an exercise price of \$3.31 per share.

Implications of Being an Emerging Growth Company

As a company with less than \$1.07 billion in revenue 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(b) 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 shareholder approval of any golden parachute payments not previously approved.

We may take advantage of these provisions until September 30, 2021. However, if certain events occur prior to September 30, 2021, 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 shareholders may be different than the information you might receive from other public reporting companies in which you hold equity interests.

Smaller Reporting Company

We are currently a “smaller reporting company” as defined by Rule 12b-2 of the Exchange Act, and are thus allowed to provide simplified executive compensation disclosures in our filings, are exempt from the provisions of Section 404(b) of the Sarbanes-Oxley Act requiring that an independent registered public accounting firm provide an attestation report on the effectiveness of internal control over financial reporting and have certain other reduced disclosure obligations with respect to our SEC filings.

Corporate Information

We operate through our wholly-owned subsidiary, Stellar Biotechnologies, Inc., a California corporation which was organized September 9, 1999. Our website address is www.stellarbiotechnologies.com. The contents of our website are not part of this prospectus for any purpose or otherwise incorporated by reference. Our website address is included for information only.

Our logo, Stellar KLH™ and other trademarks or service marks of ours appearing in this prospectus are our property. This prospectus contains additional trade names, trademarks and service marks of other companies. We do not intend our use or display of other companies’ trade names, trademarks or service marks to imply relationships with, or endorsement or sponsorship of us by, these other companies.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks and uncertainties set forth below, together with all of the other information set forth in this prospectus and incorporated by reference, before investing in our securities. If any of these risks actually occur, our business, financial condition, results of operations and future prospects could be materially and adversely affected. In that event, the price of our securities could decline, and you could lose part or all of your investment.

Risks Related to this Offering and Ownership of Our Securities

An investment in our common shares is extremely speculative and there can be no assurance of any return on any such investment.

An investment in our common shares is extremely speculative and there is no assurance that investors will obtain any return on their investment. Investors will be subject to substantial risks involved in an investment in us, including the risk of losing their entire investment.

The price of our common shares may be subject to substantial volatility.

Although our common shares are listed on The Nasdaq Capital Market in the United States, there can be no assurance that an active trading market for our common shares will be maintained on Nasdaq, or that the volume of trading will be sufficient to allow for timely trades. Investors may not be able to sell our common shares quickly or at the latest market price if trading in our shares is not active or if trading volume is limited. In addition, if trading volume in our common shares is limited, trades of relatively small numbers of shares may have a disproportionate effect on the market price of our common shares.

Furthermore, the stock market is subject to significant price and volume fluctuations, and the price of our common shares has been in the past, and may continue in the future to be subject to wide fluctuations in response to several factors, including:

- our quarterly or annual operating results;
- our cash and cash equivalents position;
- changes in our earnings estimates;
- investment recommendations by securities analysts following our business or our industry;
- additions or departures of key personnel;
- changes in the business, earnings estimates or market perceptions of our competitors;
- our failure to achieve operating results consistent with securities analysts' projections;
- announcements or the expectation of raising additional financing;
- sales of our common shares by us, our insiders or other shareholders;
- the status of our listing on the Nasdaq;
- changes in industry, general market or economic conditions; and
- announcements of legislative or regulatory changes in the United States and in other countries where we transact business.

The stock markets in general, and the small-cap biotech market, in particular, have experienced extreme price and volume fluctuations in recent years that have significantly affected the quoted prices of the securities of many companies, including companies in our industry. The changes often appear to occur without regard to specific operating performance. The price of our common shares could fluctuate based upon factors that have little or nothing to do with our company and these fluctuations could materially reduce our share price.

Our common shares are thinly traded and there may not be an active, liquid trading market for our common shares.

There is no guarantee that an active trading market for our common shares will be maintained on Nasdaq, or that the volume of trading will be sufficient to allow for timely trades. Investors may not be able to sell our common shares quickly or at the latest market price if trading in our shares is not active or if trading volume is limited. In addition, if trading volume in our common shares is limited, trades of relatively small numbers of shares may have a disproportionate effect on the market price of our common shares.

If we cannot meet Nasdaq’s continuing listing requirements and Nasdaq rules, Nasdaq may delist our securities, which could negatively affect our Company and the price of our securities.

Although our shares are currently listed on Nasdaq, in the future, we may not be able to meet the continued listing requirements of Nasdaq, which require, among other things, a minimum bid price of \$1.00 per share for common shares listed on the exchange. If we are unable to satisfy the Nasdaq criteria for maintaining our listing, our securities could be subject to delisting. Without a Nasdaq listing, shareholders may have a difficult time getting a quote for the sale or purchase of our shares, the sale or purchase of our shares would likely be made more difficult, and the trading volume and liquidity of our shares could decline. Delisting from Nasdaq could also result in negative publicity and could make it more difficult for us to raise additional capital. If our common shares are delisted by Nasdaq, our common shares may be eligible to trade on an over-the-counter quotation system where an investor may find it more difficult to sell our shares or obtain accurate quotations as to the market value of our common shares. We cannot assure you that our common shares, if delisted from Nasdaq, will be listed on another national securities exchange or quoted on an over-the-counter quotation system.

We may require additional financing or financings, which would result in substantial dilution to existing shareholders.

While the Company plans to finance company operations for at least the next twelve months with cash on hand and product sales, management expects to continue incurring losses for the foreseeable future and may need to raise additional capital to pursue our business plan. In addition, we may decide to expand operations, undertake strategic acquisitions or determine some other business need. Financing could include debt and/or equity financings, including transactions with strategic customers and partners that may include debt and/or equity arrangements. Such sources of financing may not be available on acceptable terms, if at all. Failure to obtain such financing may cause us to curtail or cease operations and/or result in delay or indefinite postponement of research and development of our Stellar KLH, expansion initiatives, capital expenditures and other operational priorities. Any transaction involving the issuance of previously authorized but unissued common shares, or securities convertible into common shares, could result in dilution, possibly substantial, to present and prospective holders of common shares and may be on terms less favorable to us.

We could be deemed a “passive foreign investment company” in the future, which could have negative consequences for U.S. investors.

We would be designated as a “passive foreign investment company”, or a PFIC, under the meaning of Section 1297 of the United States Internal Revenue Code of 1986, as amended, or the Code, if (a) 75% or more of our gross income is “passive income” (generally, dividends, interest, rents, royalties and gains from the disposition of assets producing passive income) in any taxable year, or (b) at least 50% of the average value of our assets produce, or are held for the production of, passive income. If we are designated a PFIC for any taxable year during which a U.S. shareholder holds our common shares, it would likely result in materially adverse U.S. federal income tax consequences for such U.S. shareholder, including, but not limited to, any gain from the sale of our common shares would be taxed as ordinary income, as opposed to capital gain, and such gain and certain distributions on our common shares would be subject to an interest charge, except in certain circumstances. In addition, U.S. shareholders should be aware that there can be no assurances that we would be able to satisfy the record keeping requirements that apply to a PFIC, or that we would supply U.S. shareholders with the information that such U.S. shareholders require to make certain elections available under the Code that are intended to mitigate the adverse tax consequences of the PFIC rules. The PFIC rules are extremely complex. A U.S. shareholder of our common shares is encouraged to consult a tax advisor regarding the PFIC rules and the U.S. federal income tax consequences of the acquisition, ownership and disposition of our common shares.

We are governed by the corporate laws in British Columbia, Canada which in some cases have a different effect on shareholders than the corporate laws in Delaware.

The material differences between the British Columbia Business Corporations Act (BCBCA) as compared to the Delaware General Corporation Law (DGCL) which may be of most interest to shareholders include the following: (i) for material corporate transactions (such as amalgamations, other extraordinary corporate transactions, amendments to the notice of articles and amendments to the Articles), the BCBCA generally requires a two-thirds majority vote by shareholders (and, in addition, especially where the holders of a class of shares are being affected differently from others, approval will be required by holders of two-thirds of the shares of such class voting in a meeting called for that purpose), whereas the DGCL generally only requires a majority vote of shareholders for similar material corporate transactions; (ii) quorum for shareholders meetings is not prescribed under the BCBCA and is 33-1/3% under our Articles (to assure compliance with Nasdaq corporate governance requirements); whereas, under the DGCL, quorum requires the holders of a majority of the shares entitled to vote to be present; and (iii) our Articles require a two-thirds majority vote of shareholders to pass a resolution for one or more directors to be removed, whereas the DGCL requires only the affirmative vote of a majority of the shareholders. Accordingly, certain provisions of our corporate governance under the laws of British Columbia may be disadvantageous to our shareholders.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents we incorporate by reference into this prospectus contain certain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act and, as such, may involve known and unknown risks, uncertainties and assumptions. Forward-looking statements are based upon our current expectations, speak only as of the date hereof, and are subject to change. Forward-looking statements are those that predict or describe future events or trends and that do not relate solely to historical matters. You can generally identify forward-looking statements as those statements containing the words “anticipate,” “believe,” “plan,” “estimate,” “expect,” “intend,” “may,” “will,” “would,” “could,” “should,” “might,” “potential,” “continue” or other similar expressions.

Specifically, this prospectus contains forward-looking statements regarding:

- the availability of funds and resources to pursue our research and development projects,
- the successful and timely completion of preclinical or clinical studies by third parties in which our products are utilized,
- our ability to meet the goals of our joint ventures and strategic partnerships, the degree of market acceptance for our products or for other companies’ products in which our products are components,
- our ability to take advantage of business opportunities in the pharmaceutical industry,
- changes in our strategy or development plans,
- our ability to protect our intellectual property,
- uncertainties related to governmental regulations and regulatory processes,
- the volatility of our common share price,
- the effect of competition,
- the effect of technological changes,
- reliance on key personnel,
- our ability to successfully estimate the impact of certain accounting and tax matters, and
- general changes in economic or business conditions.

You should not rely on our forward-looking statements as they are not a guarantee of future performance. There can be no assurance that forward-looking statements will prove to be accurate because the matters they describe are subject to assumptions, known and unknown risks, uncertainties and other unpredictable factors, many of which are beyond our control. Our actual results could differ materially and adversely from those expressed in any forward-looking statements as a result of various factors, some of which are listed under the “Risk Factors” section and elsewhere in this prospectus. Risks and uncertainties include, among others, the availability of funds and resources to pursue our research and development projects, the successful and timely completion of preclinical or clinical studies by third parties in which our products are utilized, our ability to meet the goals of our joint ventures and strategic partnerships, the degree of market acceptance for our products or for other companies’ products in which our products are components, our ability to take advantage of business opportunities in the pharmaceutical industry, changes in our strategy or development plans, our ability to protect our intellectual property, uncertainties related to governmental regulations and regulatory processes, the volatility of our common share price, the effect of competition, the effect of technological changes, reliance on key personnel, and general changes in economic or business conditions. Except as required by law, we undertake no obligation to update forward-looking statements.

USE OF PROCEEDS

Assuming that all warrants are exercised for 668,382 common shares on a cash basis, we will receive gross proceeds of approximately \$1,867,462 and net proceeds, after deducting estimated offering expenses, of approximately \$1,809,962. We intend to use the net proceeds from this offering for general corporate purposes, including working capital. No assurance can be given as to the number of warrants, if any, that will be exercised.

DESCRIPTION OF SECURITIES WE ARE OFFERING

The following is a brief description of the common shares we are offering and of the warrants pursuant to which they may be acquired. This summary does not purport to be complete in all respects. This description is subject to and qualified entirely by the terms of our Amended and Restated Articles, which we refer to as our Articles, copies of which have been filed with the Commission and are also available upon request from us.

Common Shares

We are authorized to issue an unlimited number of common shares, no par value. As of November 28, 2018, we had 5,330,715 common shares issued and outstanding. Holders of our common shares are entitled to one vote per share on all matters to be voted upon by our shareholders. Our Articles do not authorize cumulative voting. A majority of two-thirds of the votes cast is required for the passage of a special resolution or a special separate resolution.

The holders of our common shares are entitled to receive dividends, if any, as may be declared from time to time by our Board of Directors out of funds legally available for the payment of dividends, subject to the rights of any series of preferred shares. In the event of a liquidation, dissolution or winding up, the holders of our common shares are entitled to share ratably in all assets remaining after payment of the preferential amounts, if any, to which the holders of our preferred shares, if any, are entitled. Our common shares have no preemptive, conversion or other subscription rights. There are no redemption or sinking fund provisions applicable to our common shares. All of our outstanding common shares are fully paid and non-assessable.

Warrants

The following summary of certain terms and provisions of the warrants, is not complete and is subject to, and qualified in its entirety by, the provisions of the warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms 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.

Duration and Exercise Price

The 523,009 common share purchase warrants each has an initial exercise price per share equal to \$2.65 and the 145,283 placement agent warrants each has an initial exercise price per share equal to \$3.3125. The warrants are immediately exercisable and will expire on the five year anniversary of the original issuance date. The exercise price and number of common shares issuable upon exercise is subject to customary adjustment in the event of share dividends, share splits, reorganizations or similar events affecting our common shares and the exercise price.

Cashless Exercise

If, at the time a holder exercises its warrants, a registration statement registering the issuance of the common shares underlying the warrants under the Securities Act is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of common shares determined according to a formula set forth in the warrants.

Exercisability

The warrants are exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of our common shares purchased upon such exercise (except in the case of a cashless exercise as discussed above). A holder (together with its affiliates) may not exercise any portion of the warrant to the extent that the holder would own more than 4.99% (or, at the election of a purchaser prior to issuance of the warrant, 9.99%) of the outstanding common shares immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding shares after exercising the holder's warrants up to 9.99% of the number of our common shares outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants.

Fractional Shares

No fractional common shares will be issued upon the exercise of the warrants. Rather, the number of common shares to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Transferability

Subject to applicable laws, a warrant may be transferred at the option of the holder upon surrender of the warrant to us together with the appropriate instruments of transfer.

Exchange Listing

We do not intend to list the warrants on any securities exchange or nationally recognized trading system.

Rights as a Shareholder

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

Fundamental Transaction

In the event of a fundamental transaction which is approved by our Board, the holders of the warrants have the right to require us or a successor entity to redeem the warrant for cash in the amount of the Black-Scholes value of the unexercised portion of the warrant on the date of the consummation of the fundamental transaction. In the event of a fundamental transaction which is not approved by our Board, the holders of the warrants have the right to require us or a successor entity to redeem the warrant for the consideration paid in the fundamental transaction in the amount of the Black Scholes value of the unexercised portion of the warrant on the date of the consummation of the fundamental transaction.

PLAN OF DISTRIBUTION

Pursuant to the terms and conditions of the warrants, common shares will be issued to warrant holders who properly exercise the warrants and deliver the payment of the exercise price of such warrants.

Listing

Our common shares are listed on the Nasdaq Capital Market under the symbol "SBOT."

Transfer Agent and Registrar

The transfer agent and registrar for our common shares is Computershare Investor Services, Inc.

LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon for us by McMillan LLP, Vancouver, British Columbia, and certain other matters will be passed upon for us by Greenberg Traurig, LLP, Los Angeles, California.

EXPERTS

The consolidated financial statements of Stellar Biotechnologies, Inc. incorporated in this Registration Statement on Form S-1 by reference have been audited by Moss Adams LLP, an independent registered public accounting firm, as stated in their report, which is incorporated by reference herein. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed a registration statement on Form S-1 with the SEC covering the common shares that we are offering by this prospectus upon the exercise of warrants. This prospectus does not include all of the information contained in the registration statement. You should refer to the registration statement and its exhibits for additional information. Whenever we make reference in this prospectus to any of our contracts, agreements or other documents, the references are not necessarily complete and you should refer to the exhibits filed or documents incorporated by reference as part of the registration statement for copies of the actual contract, agreement or other document.

We file annual, quarterly and other periodic reports, proxy statements and other information with the SEC. You can read our SEC filings, including this registration statement, over the Internet at the SEC's website at www.sec.gov.

Our Internet address is www.stellarbiotechnologies.com. There we make available free of charge, on or through the investor relations section of our website, annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with the SEC. The information found on our website is not part of this prospectus and investors should not rely on any such information in deciding whether to invest.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus.

We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (Commission File No. 001-37619):

- our Annual Report on Form 10-K for the year ended September 30, 2018, which was filed with the SEC on November 30, 2018;
- our Current Report on Form 8-K, which was filed with the SEC on October 2, 2018; and
- the description of our common shares contained in the Registration Statement on Form 8-A12B, which was filed with the SEC on November 3, 2015.

Additionally, all documents filed by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) prior to effectiveness of this registration statement, and (ii) after the effective date of this registration statement and before the termination or completion of any offering hereunder, shall be deemed to be incorporated by reference into this prospectus from the respective dates of filing of such documents, except that we do not incorporate any document or portion of a document that is "furnished" to the SEC, but not deemed "filed."

Documents incorporated by reference are available from us without charge. We will provide to any person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the reports or documents that have been incorporated by reference in the prospectus contained in the registration statement but not delivered in the prospectus. Any such requests should be directed to our Corporate Secretary (written or oral) at our executive offices at 332 E. Scott Street, Port Hueneme, California 93041, telephone: (805) 488-2800. You may also access these documents on our Internet site at www.stellarbiotechnologies.com.

Stellar Biotechnologies, Inc.

668,382 Common Shares

PROSPECTUS

, 2018

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 13. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated costs and expenses, payable by the Company in connection with the registration and sale of the securities being registered other than estimated fees and commissions in connection with our public offering.

	Amount
SEC registration fee	\$ 0
Accounting fees and expenses	5,000
Legal fees and expenses	50,000
Transfer agent fees and expenses	500
Printing and mailing expenses	1,000
Miscellaneous fees and expenses	1,000
Total expenses	\$ 57,500

ITEM 14. Indemnification of Directors and Officers.

Subject to the British Columbia Business Corporations Act, or the Act, our directors, former directors and alternate directors and their heirs and legal personal representatives are indemnified against any judgment, penalty or fine awarded or imposed in, or an amount paid in settlement of, a stipulated legal or investigative proceeding, as set forth in our Articles. In addition, our Articles provide that we may, subject to any restrictions in the Act, indemnify any person.

Under the Act, we may indemnify (a) a current or former director or officer of the Company; (b) a current or former director or officer of another corporation at a time when that corporation is or was an affiliate of the Company; (c) a current or former director or officer of another corporation who holds or held such position at the request of the Company; or (d) an individual who at the request of the Company, is or was, or holds or held a position equivalent to that of, a director, or officer of a partnership, trust, joint venture or other unincorporated entity, (collectively, an "Eligible Party"). In certain circumstances an Eligible Party will include the heirs and personal or other legal representatives of an Eligible Party. We may indemnify an Eligible Party against any Eligible Penalty (defined below) to which the Eligible Party is or may be liable. After the final disposition of an Eligible Proceeding (defined below), we may pay all Expenses (defined below) actually and reasonably incurred by the Eligible Party in connection with such Proceeding (defined below) and must pay all such Expenses actually and reasonably incurred by the Eligible Party in connection with such Proceeding if the Eligible Party has not been reimbursed for those Expenses and is wholly successful on the merits or otherwise in the outcome of the Proceeding. Among other circumstances, we shall not indemnify or cover the Expenses of an Eligible Party if the Eligible Party did not act honestly and in good faith with a view to the best interests of the Company or if the Eligible Party (other than in connection with a civil Proceeding) did not have reasonable grounds for believing that the Eligible Party's conduct in respect of which the Proceeding was brought was lawful. Further, we cannot indemnify or cover the Expenses of an Eligible Party in respect of any Proceeding brought by or on behalf of the Company against an Eligible Party. The Supreme Court of British Columbia may, among other things, on the applications of a corporation or an Eligible Party, order indemnification by the Company of any liability or expense incurred by an Eligible Party.

"Eligible Penalty" means a judgment, penalty or fine awarded or imposed in, or an amount paid in settlement of, an Eligible Proceeding.

"Eligible Proceeding" means any legal proceeding or investigative action, whether current, threatened, pending or completed (each, a "Proceeding"), in which an Eligible Party, or any of the Eligible Party's heirs and personal or other legal representatives (i) is or may be joined as a party, or (ii) is or may be liable for or in respect of a judgment, penalty or fine in, or Expenses related to, such Proceeding, in each case by reason of the Eligible Party's being or having been a director or officer of, or holding or having held a position equivalent to that of a director or officer of, the Company, one of its current or former subsidiaries or affiliates, or another entity at the Company's request.

"Expenses" includes costs, charges and expenses, including legal and other fees, but does not include judgments, penalties, fines or amounts paid in settlement of a Proceeding.

We have also entered into separate indemnification agreements with each of our directors and executive officers, which are intended to indemnify our directors and executive officers to the fullest extent permitted under the Securities Act, subject to certain exceptions. Our obligations under such separate indemnification agreements are in addition to our indemnification obligations under the Act and our charter documents.

We maintain a directors' and officers' liability insurance policy, which insures directors and officers of the Company and its subsidiaries for losses as a result of claims based upon the directors' and officers' acts or omissions, including liabilities arising under the Securities Act. The policy also reimburses us for payments made pursuant to the indemnity provisions under the Act and our charter documents.

ITEM 15. Recent Sales of Unregistered Securities.

Set forth below is information regarding our securities granted in the three years preceding the filing of this registration statement that were not registered under the Securities Act.

On May 24, 2018, we entered into a Warrant Exercise Agreement pursuant to which warrant holders exercised warrants to purchase 1,122,076 of our common shares at an exercise price of \$2.65 per share. In consideration, we issued 1,122,076 Series A Warrants and 2,244,152 Series B Warrants. In connection with the Warrant Exercise Agreement, we also issued 78,545 Series A Warrants to H.C. Wainwright & Co., LLC. We received gross proceeds of approximately \$3 million. Our issuance of our warrants was made in reliance on Section 4(a)(2) of the Securities Act.

On June 26, 2017, the Board issued an aggregate of 54,834 performance shares remaining under its performance share plan to the Company's President, CEO and Chairman, a director of the company and another eligible participant in the plan. Since all performance shares under the plan have been issued, the plan was terminated. Our issuance of performance shares was made in reliance on Section 4(a)(2) of the Securities Act.

On June 30, 2016, we entered into Securities Purchase Agreements for the issuance and sale of an aggregate of 241,071 of our common shares, no par value, at a price of \$28.00 per share in a registered direct offering. In a concurrent private placement, we agreed to sell to such investors warrants to purchase up to an aggregate of 180,805 common shares with an exercise price of \$31.50 per share. We received gross proceeds of \$6.75 million. Our issuance of our common shares and warrants was made in reliance on Section 4(a)(2) of the Securities Act.

During the three months ended December 31, 2015, warrant holders exercised warrants to purchase 60,572 of our common shares, at an exercise price of CDN \$28.00. We received an aggregate of \$1,291,183 as consideration for the exercise of the previously-issued warrants. Our issuance of our warrants was made in reliance on Section 4(a)(2) of the Securities Act.

ITEM 16. Exhibits and Financial Statement Schedules.

(a) The exhibits listed under the caption "Exhibit Index" following the signature page are filed herewith or incorporated by reference herein.

(b) All schedules have been omitted because the information required to be set forth in the schedules is either not applicable or is shown in the financial statements or notes thereto incorporated by reference herein.

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 Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement; and
 - (iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the registration statement is on Form S-1, Form S-3, Form SF-3 or Form F-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement;

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - (ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (5) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement 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; and

- (6) Insofar as indemnification for liabilities arising under the Securities Act of 1933 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 of 1933, the Registrant has duly caused this Post-Effective Amendment No. 1 to Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Port Hueneme, State of California, December 4, 2018.

Stellar Biotechnologies, Inc.

By: /s/ Frank R. Oates

Name: Frank R. Oakes

Title: President, Chief Executive Officer and Chairman

Pursuant to the requirements of the Securities Act of 1933, this Post-Effective Amendment No. 1 to the Registration Statement on Form S-1 has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Frank R. Oakes</u> Frank R. Oakes	President, Chief Executive Officer and Chairman (Principal Executive Officer)	December 4, 2018
<u>/s/ Kathi Niffenegger</u> Kathi Niffenegger, CPA	Chief Financial Officer and Corporate Secretary (Principal Financial and Accounting Officer)	December 4, 2018
* <u>Deborah F. Aghib, Ph.D.</u>	Director	December 4, 2018
* <u>Tessie M. Che, Ph.D.</u>	Director	December 4, 2018
* <u>Paul Chun</u>	Director	December 4, 2018
* <u>David L. Hill, Ph.D.</u>	Director	December 4, 2018
* <u>Charles V. Olson, D. Sc.</u>	Director	December 4, 2018
* <u>Mayank D. Sampat</u>	Director	December 4, 2018
*By <u>/s/ Frank R. Oakes</u> Frank R. Oakes Attorney-in-Fact		

EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
<u>3.1</u>	<u>Certificate of Incorporation of the Company, dated June 12, 2007 (included as Exhibit 1(a) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference).</u>
<u>3.2</u>	<u>Certificate of Amendment of the Company, dated April 15, 2008 (included as Exhibit 1(b) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference).</u>
<u>3.3</u>	<u>Certificate of Continuation of the Company, dated November 25, 2009 (included as Exhibit 1(c) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference).</u>
<u>3.4</u>	<u>Certificate of Change of Name of the Company, dated April 7, 2010 (included as Exhibit 1(f) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference).</u>
<u>3.5</u>	<u>Amended and Restated Articles of the Company, dated April 9, 2018 (included as Exhibit 3.1 to the Company's Current Report on Form 8-K filed on April 11, 2018, and incorporated herein by reference).</u>
<u>3.6</u>	<u>Notice of Articles of the Company, dated April 13, 2018 (included as Exhibit 3.6 to the Company's Annual Report on Form 10-K filed on November 30, 2018, and incorporated herein by reference).</u>
<u>4.1</u>	<u>Form of Warrant dated June 30, 2016 (included as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 30, 2016, and incorporated herein by reference).</u>
<u>4.2</u>	<u>Form of Warrant (included as Exhibit 4.2 to the Company's Registration Statement on Form S-1 filed on May 8, 2018, and incorporated herein by reference).</u>
<u>4.3</u>	<u>Form of Pre-Funded Warrant (included as Exhibit 4.3 to the Company's Registration Statement on Form S-1 filed on May 8, 2018, and incorporated herein by reference).</u>
<u>4.4</u>	<u>Form of Placement Agent Warrant (included as Exhibit 4.4 to the Company's Registration Statement on Form S-1 filed on May 8, 2018, and incorporated herein by reference).</u>
<u>4.5</u>	<u>Form of Series A Common Share Purchase Warrant (included as Exhibit 10.2 to the Company's Current Report on Form 8-K filed on May 29, 2018, and incorporated herein by reference).</u>
<u>4.6</u>	<u>Form of Series B Common Share Purchase Warrant (included as Exhibit 10.3 to the Company's Current Report on Form 8-K filed on May 29, 2018, and incorporated herein by reference).</u>
<u>4.7</u>	<u>Form of Placement Agent Warrant (included as Exhibit 10.4 to the Company's Current Report on Form 8-K filed on May 29, 2018, and incorporated herein by reference).</u>
<u>5.1</u>	<u>Opinion of McMillan LLP (included as Exhibit 5.1 to the Company's Registration Statement on Form S-1 filed on May 8, 2018, and incorporated herein by reference).</u>
<u>10.1</u>	<u>Patent Assignment and Royalty Agreement between the Company and Frank Oakes, dated August 6, 2002 (included as Exhibit 4(a) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference).</u>
<u>10.2</u>	<u>Sublease Agreement (Units 3, 4 and 5) between the Company and the Port Hueneme Surplus Property Authority, dated October 2, 2000 (included as Exhibit 4(j) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference).</u>
<u>10.3</u>	<u>Sublease Agreement (Unit 7) between the Company and the Port Hueneme Surplus Property Authority, dated March 21, 2005 (included as Exhibit 4(k) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference).</u>

- [10.4](#) [Lease Agreement between the Company and Beachport Center, dated March 29, 2011 \(included as Exhibit 4\(l\) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference\).](#)
- [10.5](#) [Research Collaboration Agreement between the Company and Bayer Innovation GmbH, dated August 27, 2009 \(included as Exhibit 4\(16\) to the Company's Amendment No. 2 to its Registration Statement on Form 20-F filed on July 5, 2012, and incorporated herein by reference\).](#)
- [10.6 #](#) [Joint Venture Agreement, dated May 11, 2016, by and among the Company and Neovacs, S.A. \(included as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 17, 2016, and incorporated herein by reference\).](#)
- [10.7](#) [License Agreement between the Company and University of Guelph, dated July 24, 2013 \(included as Exhibit 99.1 to the Company's Report on Form 6-K filed on August 30, 2013, and incorporated herein by reference\).](#)
- [10.8 @](#) [Fixed Share Option Plan dated December 18, 2013 \(included as Exhibit 10.11 to the Company's Annual Report on Form 10-K filed on November 14, 2014, and incorporated herein by reference\).](#)
- [10.9 @](#) [2017 Incentive Compensation Plan \(included as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 29, 2017, and incorporated herein by reference\).](#)
- [10.10 @](#) [Performance Share Plan dated April 9, 2010 \(included as Exhibit 10\(d\) to the Company's Registration Statement on Form 20-F filed on February 3, 2012, and incorporated herein by reference\).](#)
- [10.11](#) [Advance Notice Policy, adopted October 31, 2013 \(included as Exhibit 10.14 to the Company's Annual Report on Form 10-K filed on November 14, 2014, and incorporated herein by reference\).](#)
- [10.12](#) [Amendment One to Lease Agreement between the Company and Beachport Center, dated June 24, 2014 \(included as Exhibit 10.15 to the Company's Annual Report on Form 10-K filed on November 14, 2014, and incorporated herein by reference\).](#)
- [10.13](#) [Sublease Amendment No. 2 \(Units 4 and 5\) to Sublease Agreement between the Company and the Port Hueneme Surplus Property Authority, dated October 2, 2010 \(included as Exhibit 10.16 to the Company's Annual Report on Form 10-K filed on November 14, 2014, and incorporated herein by reference\).](#)
- [10.14](#) [Sublease Amendment No. 1 \(Unit 7\) to Sublease Agreement between the Company and the Port Hueneme Surplus Property Authority, dated March 21, 2010 \(included as Exhibit 10.17 to the Company's Annual Report on Form 10-K filed on November 14, 2014, and incorporated herein by reference\).](#)
- [10.15](#) [Collaboration Agreement by and between Stellar Biotechnologies, Inc. and Amaran Biotechnology dated December 7, 2013 \(included as Exhibit 10.18 to Amendment No. 2 of the Company's Annual Report on Form 10-K filed on September 9, 2015, and incorporated herein by reference\).](#)
- [10.16](#) [Collaboration Agreement, dated July 27, 2015, by and between Stellar Biotechnologies, Inc. and Ostiones Guerrero SA de CV \(included as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on July 30, 2015, and incorporated herein by reference\).](#)
- [10.17](#) [Sublease Amendment No. 1 \(Units 4 and 5\) to Sublease Agreement between the Company and the Port Hueneme Surplus Property Authority, and establishment of new commencement date for Sublease Agreement \(Unit 7\) between the Company and the Port Hueneme Surplus Property Authority, dated October 31, 2005 \(included as Exhibit 10.20 to the Company's Annual Report on Form 10-K filed on December 14, 2015, and incorporated herein by reference\).](#)
- [10.18](#) [Sublease Amendment No. 3 \(Units 4 and 5\) to Sublease Agreement between the Company and the Port Hueneme Surplus Property Authority, dated June 4, 2015 \(included as Exhibit 10.21 to the Company's Annual Report on Form 10-K filed on December 14, 2015, and incorporated herein by reference\).](#)

- [10.19](#) [Sublease Amendment No. 2 \(Unit 7\) to Sublease Agreement between the Company and the Port Hueneme Surplus Property Authority, dated June 4, 2015 \(included as Exhibit 10.22 to the Company's Annual Report on Form 10-K filed on December 14, 2015, and incorporated herein by reference\).](#)
- [10.20](#) [Form of Securities Purchase Agreement, dated June 30, 2016 \(included as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 30, 2016, and incorporated herein by reference\).](#)
- [10.21](#) [Form of Securities Purchase Agreement \(included as Exhibit 10.21 to the Company's Registration Statement on Form S-1 filed on May 8, 2018, and incorporated herein by reference\).](#)
- [10.22](#) [Form of Warrant Exercise Agreement, dated May 24, 2018 \(included as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 29, 2018, and incorporated herein by reference\).](#)
- [14.1](#) [Code of Ethics and Business Conduct \(included as Exhibit 14.1 to the Company's Annual Report on Form 10-K filed on December 1, 2017, and incorporated herein by reference\).](#)
- [21](#) [Subsidiaries of Stellar Biotechnologies, Inc. \(included as Exhibit 21 to the Company's Annual Report on Form 10-K filed on December 1, 2017, and incorporated herein by reference\).](#)
- [23.1](#) [Consent of Moss Adams LLP \(filed herewith\).](#)
- [23.2](#) [Consent of McMillan LLP \(included as Exhibit 23.3 to the Company's Registration Statement on Form S-1 filed on May 8, 2018, and incorporated herein by reference\).](#)
- [24.1](#) [Power of Attorney \(previously filed\).](#)
- @ Management contract or compensatory plan or arrangement.
- # Confidential treatment has been granted for certain portions of this exhibit. Original copies have been filed separately with the Securities and Exchange Commission pursuant to Rule 24B-2 of the Securities Exchange Act of 1934, as amended.

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Post-Effective Amendment No. 1 to Registration Statement on Form S-1 (No. 333-224314) of Stellar Biotechnologies, Inc. of our report dated November 30, 2018, relating to the consolidated financial statements of Stellar Biotechnologies, Inc., which report appears in the Form 10-K of Stellar Biotechnologies, Inc. for the year ended September 30, 2018, and to the reference to our firm under the heading “Experts” in the Prospectus, which is part of this Registration Statement.

/s/ Moss Adams LLP

San Diego, California
December 4, 2018
