

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K/A

Amendment No. 1

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2018

TRANSITION REPORT PURSUANT TO SECTIONS 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 001-32188

ORAGENICS, INC.

(Exact name of registrant as specified in its charter)

Florida
(State or Other Jurisdiction of
Incorporation or Organization)

4902 Eisenhower Blvd., Suite 125
Tampa, FL
(Address of Principal Executive Offices)

59-3410522
(IRS Employer
Identification No.)

33634
(Zip Code)

813-286-7900

(Issuer's Telephone Number, Including Area Code)

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class	Name of each exchange on which registered
Common Stock \$0.001 par value per share	NYSE AMERICAN

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes No

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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.

- | | |
|---|---|
| <input type="checkbox"/> Large accelerated filer | <input type="checkbox"/> Accelerated filer |
| <input checked="" type="checkbox"/> Non-accelerated filer | <input checked="" type="checkbox"/> Smaller reporting company |
| | <input type="checkbox"/> 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.

Indicate by check mark whether the registrant is a shell company (as defined in Exchange Act Rule 12b-2). Yes No

The aggregate market value of the voting stock held by non-affiliates of the registrant, was approximately \$2,894,038 computed based upon a last sales price of \$1.38 as reported by the NYSE American as of June 30, 2018.

As of April 23, 2019, there were 46,112,303 shares of the registrant's Common Stock outstanding.

Note Regarding Reverse Stock Splits

Effective January 19, 2018, we filed an amendment to our Amended and Restated Articles of Incorporation with the Secretary of State of the State of Florida to effect a reverse split of our authorized and outstanding common stock at a ratio of one for ten. All historical share and per share amounts reflected in this report have been adjusted to reflect the reverse stock split.

Documents Incorporated By Reference

None.

EXPLANATORY NOTE

The sole purpose of this Amendment No. 1 on Form 10-K/A is to amend our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 (the "Original 10-K"), which was filed with the Securities and Exchange Commission ("SEC") on March 29, 2019, to include the information required by Part III, Items 10 through 14. The information required by Items 10-14 of Part III is no longer being incorporated by reference to the Proxy Statement relating to the Company's 2019 Annual Meeting of Shareholders. This information was previously omitted from the Original Form 10-K in reliance on General Instruction G(3) to Form 10-K, which permits the information in the above referenced items to be incorporated in the Form 10-K by reference from a definitive proxy statement if such statement is filed no later than 120 days after the Company's fiscal year end. The Company is filing this Amendment to include the Part III information in its Form 10-K because the Company does not expect to file a definitive proxy statement containing this information before the expiration of the 120-day period.

This Amendment amends and restates in its entirety Items 10, 11, 12, 13 and 14 of Part III of the Original Form 10-K, and it deletes the reference on the cover of the Original Form 10-K to the incorporation by reference to portions of the definitive proxy statement into Part III of the Original Form 10-K. Except as expressly set forth herein, the Amendment does not reflect events occurring after the date of the Original Form 10-K or modify or update any of the other disclosures contained therein in any way other than as required to reflect the amendments discussed above. Accordingly, this Amendment should be read in conjunction with the Original Form 10-K and the Company's other filings with the SEC.

In addition, as required by Rule 12b-15 under the Exchange Act, new certifications by our principal executive officer and principal financial officer are filed as exhibits to this Annual Report on Form 10-K/A.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

Directors and Executive Officers

The following table sets forth the names, ages and titles of the Company's Directors, executive officers, key employees and the position they each hold with the Company.

Name	Age	Position
Dr. Frederick W. Telling, Ph.D.	67	Chairman and Director
Alan Joslyn, Ph.D.	60	President, Chief Executive Officer and Director
Robert C. Koski	60	Director
Charles L. Pope	67	Director
Dr. Alan W. Dunton, M.D.	64	Director
Michael Sullivan	62	Chief Financial Officer, Secretary and Treasurer
Dr. Martin Handfield	47	Senior Vice President Discovery Research

Directors of the Company

Dr. Frederick W. Telling. Dr. Telling was elected Chairman of the Board of Directors on February 4, 2011. He has served as a Director since June 2010. Dr. Telling retired from Pfizer Inc. in June 2007 after 30 years of service. At Pfizer Dr. Telling served as its Corporate Vice President and Vice President of Corporate Strategic Planning and Policy. Dr. Telling also serves on the boards of various civic and non-profit organizations. Dr. Telling holds a B.A. degree in History and Economics from Hamilton College and a MA degree in Industrial and Labor Relations and a PhD in Economics and Public Policy from Cornell University.

Dr. Telling brings to our Board an extensive array of business and industry experience as well as experience as a director of public companies.

Alan F. Joslyn, Ph.D. Dr. Joslyn has served as a Director of our company since June 2016. Since 2009 he has served as Board member of Synergy Pharmaceuticals (NASDAQ: SGYP). Since 2014, Dr. Joslyn has been a partner in Lazarus Pharmaceuticals, LL. From March 2010 to April 2014, Dr. Joslyn served as CEO and a Director of Sentinella Pharmaceuticals and from August 2009 to October 2012 as CEO and Director of Edusa Pharmaceuticals, both privately held biotechnology companies. From March 2007 to March 2009, Dr. Joslyn served as President and Chief Executive Officer of Mt. Cook Pharma and as Senior Vice President of Research & Development at Penwest Pharmaceuticals from 2004 to 2007. From 1995 to 2004, Dr. Joslyn held a number of leadership positions within Johnson & Johnson focusing on development of gastroenterology products including Propulsid®, Motilium®, Aciphex® and prucalopride. Dr. Joslyn received his B.S. in medicinal chemistry, B.A. in biology and Ph.D. in biochemical pharmacology from the State University of New York at Buffalo.

Dr. Joslyn brings to our Board over two decades of experience in the pharmaceutical industry and extensive expertise in gastroenterology and infectious disease product development.

Charles L. Pope. Mr. Pope has served as a Director since June 2010. Mr. Pope served as the Chief Financial Officer of Palm Bancorp, Inc. from June 2009 to June 2012. From September 2007 through June 2009, Mr. Pope served as the Chief Financial Officer of Aerosonic Inc., a manufacturer of aviation products. Mr. Pope served as the Chief Financial Officer of Reptron Inc., a manufacturer of electronic products, from March 2005 through June 2007. From March 2002 to March 2005, Mr. Pope served as Chief Financial Officer of SRI/Surgical Express, Inc. From February 2001 to March 2002, Mr. Pope served as Chief Financial Officer of Innovaro, Inc. (formerly UTEK Corporation NYSE AMERICAN: INV) a public company. Mr. Pope served as a director of Innovaro, Inc. from March 2010 to August 2012. Mr. Pope also served as a director of Inuvo, Inc. from July 2008 through July 2018. Prior to this time, Mr. Pope served as a Partner in the Audit and Financial Advisory Consulting Divisions of PricewaterhouseCoopers LLP, and he was also a Partner in the Accounting and SEC Directorate in PricewaterhouseCoopers LLP's New York City office. Mr. Pope holds a B.S. degree in Economics and Accounting from Auburn University and is a Certified Public Accountant in Florida.

Mr. Pope brings to our Board over three decades of experience in the finance and accounting fields. In addition, Mr. Pope also has experience serving as a director of public companies.

Dr. Alan W. Dunton. Dr. Dunton has served as a Director of Oragenics, Inc. since April 2011. He is the principal owner of Danerius, LLC, a biotechnology consulting company which he founded in 2006. In addition to Oragenics, he is currently a Director of the public biotechnology company, Palatin, Inc. (AMEX: PTN). Dr. Dunton is also a member of the Board of Members or Directors of Cytogel Pharma, a privately-held firm in Darien, Connecticut. He previously served as a Director of Sancilio and Company, MediciNova and Targacept, Inc. Dr. Dunton is also a member of the Board of Director of CorMedix, Inc. (CRMD), a publicly traded biotechnology company in Berkeley Heights, New Jersey since March 2019. Dr. Dunton has held significant senior positions in major pharmaceutical companies. Most recent was from November 2015 through March 2018 as the Senior Vice President of Research, Development and Regulatory Affairs of Purdue Pharma L.P., a private pharmaceutical company. From January 2007 until March 2009, Dr. Dunton served as President and Chief Executive Officer of Panacos Pharmaceuticals, Inc. He was the non-Executive Chairman and Director of EpiCept, Inc. (OTC MKTS: EPCT) a public biotechnology company developing products for cancer, pain and inflammatory conditions. In 2005, Dr. Dunton served as the Non-Executive Chairman of the Board of Directors of ActivBiotics, Inc., a private biopharmaceutical company. Previously, he was the President and Chief Executive Officer of Metaphore Pharmaceuticals, Inc. from 2003 until 2006, when it merged with ActivBiotics. From 2004 until 2005, Dr. Dunton served as a member of the board of directors of Vicuron Pharmaceuticals until it was acquired by Pfizer, Inc. In 2002, Dr. Dunton served as President, Chief Operating Officer and a director of Emisphere Technologies, Inc., a biopharmaceutical company. From 1994 to 2001, Dr. Dunton was a senior executive in various capacities in the Pharmaceuticals Group of Johnson & Johnson. From 1999 to 2001, Dr. Dunton was President and Managing Director of The Janssen Research Foundation, a Johnson & Johnson company. From 1998 to 1999, he served as Group Vice President of Global Clinical Research and Development of Janssen. Prior to joining Janssen, Dr. Dunton was Vice President of Global Clinical Research and Development at the R.W. Johnson Pharmaceutical Research Institute, also a Johnson & Johnson company. Prior to joining Johnson & Johnson, Dr. Dunton held positions in clinical research and development at Syntex Corporation, CIBA-GEIGY Corporation and Hoffmann La Roche Inc. Dr. Dunton holds a MD degree from New York University School of Medicine, where he completed his residency in internal medicine. He also was a Fellow in Clinical Pharmacology at the New York Hospital/Cornell University Medical Center.

Dr. Dunton brings to our Board a significant depth of experience in the pharmaceutical industry that will be invaluable to the Company as we continue to develop biotechnology assets.

Robert C. Koski. Mr. Koski has served as a Director since June 2009. Mr. Koski has practiced as an attorney with the Koski Firm, a sole proprietorship located in Atlanta, Georgia since 1992, where his practice includes litigation and tax law. Mr. Koski has also served as a partner in the Koski Family Limited Partnership, which beneficially owns an interest in the Company, and as a director of the Koski Family Foundation since December 1996. Mr. Koski holds a B.A. degree in Philosophy and English from Colgate University, a JD from Emory School of Law and an LLM degree in Taxation and Litigation from Emory University.

Mr. Koski brings to our Board over two decades of experience in the legal field as a practicing attorney. In addition to his legal experience, Mr. Koski's educational background provides a foundation for leadership and consensus-building.

Executive Management

Alan F. Joslyn, Ph.D. The biography of Dr. Joslyn is included above.

Michael Sullivan. Mr. Sullivan, age 62, has served as our Interim Principal Executive Officer from October 30, 2014 until June 5, 2016 and served as our Chief Financial Officer, Secretary and Treasurer since February 6, 2012. Mr. Sullivan has held senior level financial positions for several publicly and privately held businesses including Utek Corporation, eANGLER, and HSN Direct International Limited. Most recently, he was the Group Financial Officer for the Investigative Services and Litigation Consulting Services segment of First Advantage Corporation a firm specializing in talent acquisition solutions where he streamlined the employee recruitment process. Mr. Sullivan is a Florida Certified Public Accountant. He graduated from the Florida State University with a Bachelor of Science in Accounting and a Master of Business Administration.

Key Employee

Dr. Martin Handfield. Dr. Handfield, age 47, is, the Company's Senior Vice President of Discovery Research and previously has served as our Director of Research and Development. Dr. Handfield has served the Company since January 2009. Prior to joining our Company, Dr. Handfield held a position as Tenured Associate Professor at the Center for Molecular Microbiology and the Department of Oral Biology at the University of Florida College of Dentistry, where he co-invented IVIAT and co-founded *ivi* Gene Corp. and Epicure Corp. to commercialize this and related technologies. Dr. Handfield holds a B.S. degree in Biochemistry, and a MS degree and PhD in Microbiology and Immunology from the Université Laval College of Medicine in Canada, and did postdoctoral training at the University of Florida.

Our executive officers serve at the pleasure of our Board of Directors until their successors are elected or qualified and subject, in certain cases to employment agreements we have entered into with our officers. Our new chief Executive Officer and President Dr. Alan Joslyn and Mr. Sullivan, our Chief Financial Officer and Dr. Handfield, our Senior Vice President of Discovery Research, each have employment agreements with us. See "Executive Compensation—Employment Contracts and Change in Control Arrangements."

Board of Directors and Committees

Our property, affairs and business are under the general management of our Board of Directors as provided by the laws of the State of Florida and our Bylaws.

The Board of Directors conducts its business through meetings of the full Board and through committees of the Board. The Board of Directors has appointed standing Audit, Compensation and Nominating and Governance Committees of the Board of Directors.

The Board periodically reviews the size of the Board and recommends any changes it determines to be appropriate given our needs. Under our Bylaws, the number of members on the Board may be increased or decreased by resolution of the Board.

Independence of Directors

Our common stock is listed on a national securities exchange, the NYSE American. Accordingly, in determining whether our Directors are independent, we are required to comply with the rules of the NYSE American. We also expect to continue to comply with securities and other laws and regulations regarding the independence of directors, including those adopted under Section 301 of the Sarbanes-Oxley Act and Rule 10A-3 under the Securities and Exchange Act of 1934 with respect to the independence of Audit Committee members. The NYSE American listing standards define an "independent director" generally as a person, other than an officer of a company, who does not, in the view of the company's Board of Directors, have a relationship with the company that would interfere with the director's exercise of independent judgment. The Board has affirmatively determined that each of the following directors, constituting a majority of the Board, is independent within the meaning of the NYSE MKT listing standards:

Dr. Frederick W. Telling
Charles L. Pope
Dr. Alan Dunton

Such independence definition includes a series of objective tests, including that the director is not an executive officer employee of the company and has not engaged in various types of business dealings with the company. In addition, as further required by the NYSE American listing standards, the Board has made a subjective determination as to each independent director that no relationships exist which, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. As of June 24, 2016, the Board determined that Robert Koski no longer met the NYSE requirements for independence as a result of the Company's sale of its consumer probiotic business to ProBiora Health, a company owned and controlled by, Christine Koski, a former director, and sister of Robert Koski.

Audit Committee Financial Expert

The Audit Committee members currently consist of Mr. Charles Pope, Dr. Frederick Telling and Dr. Alan Dunton with Mr. Pope serving as Chairman. The Board has affirmatively determined that each such person met the independence requirements for audit committee purposes based on the more stringent independence standards imposed by applicable NYSE American and SEC rules. In addition, the Board of Directors has determined that Mr. Pope is an "audit committee financial expert" as that term is defined in Item 407(d)(5) of Regulation S-K promulgated under the Securities and Exchange Act of 1934. In March 2004, the Audit Committee adopted a written charter which was modified on April 24, 2007 and on December 29, 2009. The Company believes that its Audit Committee Charter complies with the requirements related to Sarbanes-Oxley and a current copy of the Audit Committee Charter is available on our website <http://ir.oragenics.com/governance-docs>.

Code of Ethics

We have adopted a code of ethics known as the Company Operating Principles, which is applicable to all of our directors and employees, including our principal executive officer and our principal financial officer. A copy of the Company Operating Principles can be found on our website at www.oragenics.com. Any future amendments to, or waivers from, the Company Operating Principles will be posted on our website.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934 requires the Company's officers and Directors and any persons who beneficially own more than ten percent of the Company's Common Stock to file reports of ownership and changes in ownership of such securities with the Securities and Exchange Commission Officers, Directors and beneficial owners of more than ten percent of the Common Stock are required by applicable regulations to furnish the Company with copies of all Section 16(a) forms they file. Based solely on its review of copies of forms furnished to the Company and written representations from the executive officers and directors, the Company believes, all persons subject to the reporting requirements with regard to the Common Stock complied with the applicable filing requirements during 2018.

ITEM 11. EXECUTIVE COMPENSATION.

Director Compensation

The Director Compensation program for 2018 consisted of the following:

Non-employee directors

Cash Compensation. The Director compensation program for 2018 provided that all non-employee Directors would receive an annual base fee for service on the Board of \$45,000. In addition, the Chairperson of the Board and of our Audit Committee, Compensation Committee and Nominating Committee would also receive annual fees of \$40,000, \$20,000, \$15,000 and \$10,000 respectively. All non-employee Directors serving on our Audit Committee, Compensation Committee and Nominating Committee (other than as the Chairperson) would receive an annual fee of \$10,000, \$7,500, and \$5,000, respectively, in connection with such committee service. In addition, from time to time, the Board may establish special committees and in connection therewith determine the cash compensation that would be paid to the directors serving on a special committee at the time of the establishment of such committee. All fees for Board service are generally paid on or before the last business day of each quarter.

The Board is expecting to meet in-person for a minimum of four meetings each year. To the extent, the Board meets in excess of six in-person meetings an additional per meeting fee would also be considered to be paid to each director by the Board for such additional in-person meeting. To the extent the Board determines to establish a special committee or a special committee was previously established and continues to function, the Board would determine the cash compensation payable to each director serving on any such special committee.

Equity Compensation-New Director. Equity compensation is issued to Directors upon joining our Board. Non-employee Directors receive a stock option for the purchase of 500 shares of our common stock at an exercise price per share equal to the fair market value per share on date they became a Director, which will immediately vest and be exercisable for ten years, subject to early termination under the terms of the 2012 Incentive Plan.

Annual Equity Compensation Awards. As part of the Director Compensation Program each non-employee director receives an annual award of (i) 4,000 shares of restricted stock and (ii) an award of 8,000 stock options. On June 22, 2018, the Board approved as part of the Director Compensation Program an annual award of 4,000 restricted shares common stock to each of the Company's non-employee directors, under the 2012 Incentive Plan. Pursuant to the terms of the award, the restricted shares were immediately vested. In addition, and substantially consistent with the Director Compensation Program, on June 22, 2018, the Board approved stock option awards in the amount of 14,000 to each of the Company's non-employee directors, under the 2012 Incentive Plan at an exercise price of \$1.52 per share, the closing price on June 22, 2018, the date of the grant. The Board determined to increase the annual award of options by 6,000 shares due to the significant amount of additional time the non-employee directors were required to spend on Company business and financing matters. The options are subject to time-based vesting in equal annual installments over a one-year period on the anniversary of the date of the grant, provided that the recipient remains a director of the Company through the vesting date. The stock option and restricted stock awards are subject to the standard terms and conditions of the Company's form of stock option and restricted stock agreements which include earlier vesting upon a change in control of the Company.

Discretionary Awards. As part of the Director Compensation Program, the Board may also make discretionary equity-based awards from time to time under our 2012 Incentive Plan. On September 27, 2018, the Board of Directors approved one-time discretionary stock option award under the 2012 Incentive Plan providing the right to acquire 125,000 shares of common stock, to each of the Company's non-employee directors, under the 2012 Incentive Plan at an exercise price of \$0.73 per share, the closing price on September 27, 2018, the date of grant. The options vest immediately. The Board determined to make the award of options due to the extraordinary amount of time that was devoted by the Board to the Company's public offering in July 2018.

Minimum dollar value stock ownership requirements. Each non-employee director receiving the above equity-based awards will be subject to a minimum dollar value stock ownership holding requirement with respect to the awards received as well as all prior equity awards under the 2012 Incentive Plan which requirement is intended to align the ability to sell shares with the performance of the Company's stock price. The non-employee Directors will each be subject to a minimum dollar value stock ownership requirement equal to six times the annual Board retainer (\$270,000) which dollar threshold they would be precluded from selling shares of Company stock acquired from the Company under its 2012 Incentive Plan.

Reimbursement of Expenses. Non-employee Directors are also reimbursed for expenses incurred in connection with their attendance at Board or committee meetings and reasonable out-of-pocket business expenses associated with their Board service.

Long-term Incentive Compensation. The Company did not have a Long-Term Incentive Compensation plan in place performance in 2018 for its Non-Employee Directors.

The following table sets forth the compensation of our non-employee Directors in 2018. For Dr. Joslyn, our Chief Executive Officer and only management director, no separate compensation is paid for his service as a director. For a summary of Dr. Joslyn's compensation see the Summary Compensation Table.

Director Compensation Table

Name	Fees earned or paid in cash (1)	Stock Awards (2)	Option awards (3)	All other compensation (4)	Total
Dr. Frederick W. Telling	\$ 113,125	\$ 6,080	\$ 111,140	\$ —	\$ 230,345
Robert C. Koski	\$ 45,000	\$ 6,080	\$ 111,140	\$ —	\$ 162,220
Charles L. Pope	\$ 82,500	\$ 6,080	\$ 111,140	\$ —	\$ 199,720
Dr. Alan W. Dunton	\$ 69,375	\$ 6,080	\$ 111,140	\$ —	\$ 186,595

- (1) Amounts represent cash compensation earned by our Non-employee Directors during 2018 in connection with their Board service.
- (2) As part of the Company's non-employee Director compensation program, each non-employee Director was granted an award of 4,000 restricted shares of Company common stock under the Company's 2012 Incentive Plan. The restricted shares vested immediately. The grant date fair value of these shares was \$1.52 per share.
- (3) The amounts in this column represent the aggregate grant date fair value computed in accordance with Financial Accounting Standards Board Accounting Standards Codification, Topic 718, Compensation—Stock Compensation (ASC 718). As part of the Company's non-employee Director Compensation Program, each non-employee Director was awarded 8,000 stock options in 2018 and an additional 6,000 options, under the Company's 2012 Incentive Plan at an exercise price of \$1.52 per share, the closing price on the June 22, 2018, the date of grant. The options are subject to time-based vesting over a one-year period on the anniversary of the date of the grant provided that the recipient remains a director of the Company through the vesting date. The stock option awards are subject to the standard terms and conditions of the Company's form of stock option agreement which includes earlier vesting upon a change in control of the Company. As part of the Company's Non-employee Director Compensation Program, the Board made a discretionary award to each non-employee Director of 125,000 stock options in 2018, under the Company's 2012 Incentive Plan at an exercise price of \$0.73 per share, the closing price on September 27, 2018, the date of grant. The options vest immediately. The stock option awards are subject to the standard terms and conditions of the Company's form of stock option agreement. As of the end of the year non-employee directors, Telling, Koski, Pope and Dunton have aggregate options to acquire, 169,500, 169,000, 169,500 and 169,500, respectively and there are no stock awards outstanding for any non-employee director.
- (4) No other compensation was paid to the non-employee Directors except for reimbursement for travel expenses to Board meetings and other Board related meetings.

Our Compensation Committee and our Board of Directors use market data as one means of evaluating and establishing Board remuneration. In 2018, the Committee did not complete a formal compensation study or have a formal benchmarking policy, but instead relied upon its general knowledge of this industry when reviewing and considering market data. In March 2019, the Compensation Committee engaged Korn Ferry, as a compensation consultant (“Korn Ferry”), and has assessed Korn Ferry’s independence pursuant to SEC rules and concluded that no conflict of interest exists that would prevent Korn Ferry from independently advising the Compensation Committee. Korn Ferry advises the Compensation Committee on matters related to executive compensation, board remuneration and related governance matters. The Compensation Committee and Board will incorporate a more formal review of the competitive market into its 2019 director compensation process.

Employee Directors

The Director Compensation Program provides that employee Directors receive no additional compensation in connection with their board service. There was one employee Director in 2018.

Executive Compensation

Compensation Practices and Risk

The following “Compensation Discussion and Analysis” section describes generally our compensation policies and practices that are applicable for executive and management employees. We use common variable compensation designs across all of our business units and divisions, with a significant focus on corporate and business financial performance as generally described in this Annual Report.

Compensation Discussion and Analysis

The Compensation Committee of the Company’s Board of Directors is responsible for establishing and evaluating the Company’s policies governing the compensation of its executive officers, including its named executive officers. The Compensation Committee reviews and proposes recommendations to the Board of Directors regarding the compensation to be paid to the Chief Executive Officer. In addition, the Compensation Committee reviews and approves the compensation to be paid to all other executive officers. The Compensation Committee ensures that the total compensation paid to the Company’s executive officers is fair, reasonable and competitive.

Compensation Objective

The Company’s executive compensation programs are designed to achieve the following objectives:

- Attract and retain talented and experienced executive officers;
- Motivate and reward executive officers whose knowledge, skills, performance and business relationships are critical to the Company’s success;
- Align the interests of the Company’s executive officers and shareholders by motivating executive officers to ultimately increase shareholder value;
- Compensate the Company’s executive officers to manage the Company’s business to meet its short term and long-range goals;
- Ensure fairness among the executive officers by recognizing the contributions each executive officer makes to the Company’s success; and
- Provide a competitive compensation package which includes some pay for performance factors.

Role of Others in Compensation Decisions

The Compensation Committee makes all of the decisions with respect to the compensation received by the Company’s executive officers other than the Company’s chief executive officer which the Committee reviews and proposes recommendations to the Board of Directors. The Compensation Committee meets outside the presence of all of the Company’s executive officers to consider appropriate compensation recommendations for the Company’s chief executive officer. For all other executive officers, the Compensation Committee meets outside the presence of

all executive officers except for the Company's chief executive officer. The Company's chief executive officer periodically reviews each of the other executive officers' performance with the Compensation Committee and makes recommendations to the Compensation Committee with respect to any appropriate changes in base salary, bonus and grants of long-term equity incentive awards for the executive officers, excluding himself. Based in part on these recommendations and other considerations, the Compensation Committee reviews and approves such compensation arrangements of the Company's executive officers other than the Company's chief executive officer. The Compensation Committee also annually analyzes the chief executive officer's performance and determines his salary, annual cash bonus and grants of long-term equity incentive awards and makes recommendations to the Board of Directors. The Compensation Committee reviews and makes recommendation to the Board of Directors regarding all new equity related incentive plans for senior management.

Our Compensation Committee and our Board of Directors use market data as one means of evaluating and establishing executive pay. In 2018, the Committee did not complete a formal compensation study or have a formal bench marking policy, but instead relied upon its general knowledge of this industry when reviewing and considering market data. In March 2019, the Compensation Committee engaged Korn Ferry, as a compensation consultant ("Korn Ferry"), and has assessed Korn Ferry's independence pursuant to SEC rules and concluded that no conflict of interest exists that would prevent Korn Ferry from independently advising the Compensation Committee. Korn Ferry advises the Compensation Committee on matters related to executive compensation, board remuneration and related governance matters. The Compensation Committee will incorporate a more formal review of the competitive market into its 2019 executive compensation process.

Our Compensation Committee believes that, given the competitiveness of our industry and our Company culture, our base compensation, annual cash bonuses and equity programs are flexible enough to reward the achievement of clearly defined corporate goals and are sufficient to retain our existing executive officers and to hire new executive officers with the appropriate qualifications and experience.

Consideration of Most Recent Shareholder Advisory Vote on Executive Compensation

The Compensation Committee also considers the results of the Company's most recent shareholder advisory vote on executive compensation. At the Company's previous annual meeting, the Company's shareholders voted in favor of the compensation of our named executive officers: approximately 98.3% of the shares represented in person or by proxy having voted in favor of the program. In light of these results, the Compensation Committee decided to substantially continue to continue the executive compensation program in 2018. The Board of Directors previously determined that future shareholder advisory votes on executive compensation will be submitted to shareholders of the Company annually until the next required advisory vote on the frequency of conducting advisory votes on executive compensation.

Clawback Policy

In order to further align management's interests with those of shareholders and to support the Company's governance practices, the Board of Directors adopted a recoupment policy applicable to annual bonuses and other short-term and long-term incentive compensation based on financial targets ("Incentive Compensation") received by current and former executive officers of the Company and such other senior executives/employees of the Company who may from time to time be deemed subject to the policy by the Board of Directors ("Covered Executive"). The policy provides that if, as a result of a restatement of the Company's financial statements due to the Company's material noncompliance with any financial reporting requirement under the securities laws, a Covered Executive received more Incentive Compensation than the Covered Executive would have received absent the incorrect financial statements, the Company shall recover said excess Incentive Compensation (defined as the excess of (i) the actual amount of Incentive Compensation paid to the Covered Executive over (ii) the Incentive Compensation that would have been paid based on the restated financial results during the three-year period preceding the date on which the Company is required to prepare such restatement). The policy also provides that if the Board of Directors makes a determination in its sole discretion that a Covered Executive engaged in Misconduct (as defined below), the Board of Directors may require reimbursement or forfeiture of all or part of the Incentive Compensation received by the Covered Executive. The Board of Directors may use its judgment in determining the amount to be recovered. Misconduct is defined as (i) conviction of a felony, (ii) material breach of any agreement with the Company, (iii) material breach of any Company policy or code, (iv) act of theft, embezzlement or fraud, (v) misrepresentation or misstatement of financial or performance results, and (vi) any other act or event that the Board of Directors has determined that recoupment is appropriate.

2018 Executive Compensation Components

For the fiscal year ended December 31, 2018, the principal components of compensation for the Company's executive officers were:

- Annual base salary;
- Bonus;
- Long-term equity-based incentive compensation;
- Other benefits.

Annual Base Salary

Base salary is designed to attract and retain experienced executive officers who can drive the achievement of the Company's goals. While the initial base salary for the Company's executive officers was determined by an assessment based upon the responsibilities of the position, the expected contribution of the position to our business, the experience and skill required for the position, and competition in the marketplace for the talent; the factors used in determining increases in base salary include individual performance, changes in role and/or responsibility and changes in the competitive market environment. The Compensation Committee periodically reviews the base salary for each executive officer.

Bonus

The Company established performance-based bonus targets for its named executive officers in 2018. See "Bonus Plan 2018" below.

Long-Term Equity Incentive Compensation

The Company awards long-term equity incentive awards to executive officers, including the named executive officers, as part of its total compensation package. These awards are consistent with the Company's pay for performance principles and align the interests of the executive officers to the interests of the Company's shareholders. The Compensation Committee reviews and approves the amount of each award to be granted to each named executive officer. Long-term equity incentive awards are made pursuant to the 2012 Incentive Plan.

The Company's long-term equity incentives are currently in the form of options to acquire its common stock. Stock option awards provide the Company's executive officers with the right to purchase shares of its common stock at a fixed exercise price for a period of up to ten years under the 2012 Incentive Plan. Stock options are granted under the 2012 Incentive Plan at a price not less than the prevailing market value at the time of grant and will have realizable value only if the Company's stock price increases. Stock options are earned on the basis of continued service to the Company and generally vest over a number of years or based upon other specific performance-based criteria.

The Company's long-term equity incentive also can be in the form of restricted share awards of the Company's common stock under the 2012 Incentive Plan. Restricted stock awards provide the Company's executive officers with the shares of its common stock subject to certain restrictions and/or vesting requirements. Restricted stock shares will be earned on the basis of continued service to the Company and will vest as set forth in the separate award agreements.

The Compensation Committee determines the amount and features of the stock options and/or restricted stock, if any, to be awarded to executive officers. The Compensation Committee evaluates a number of criteria, including the past service of each such executive officer to the Company, the present and potential contributions of such executive officer to the Company's success and such other factors as the Compensation Committee shall deem relevant in connection with accomplishing the purposes of the 2012 Incentive Plan, including the executive officer's current stock holdings, years of service, position with the Company and other factors. The Compensation Committee will not apply a formula assigning specific weights to any of these factors when making its determination.

Other Benefits

Retirement Benefits. The Company maintains a Simple Individual Retirement Arrangement plan in which all full-time employees, including the Company's named executive officers, are eligible to participate. The Company provides this plan to help its employees save some amount of their cash compensation for retirement in a tax efficient manner. The Company does not provide an option for its employees to invest in the Company's stock under the 401k plan. The Company matches 100% of the employee's contribution up to a maximum of 3% of the employee's compensation.

Health and Welfare Benefits. All full-time employees, including our named executive officers, may participate in the Company's health and welfare benefit programs, including medical, dental and vision care coverage as may be provided and applicable to all employees.

Perquisites. We do not provide perquisites or other personal benefits to our named executive officers other than those that we provide to our employees.

Employment Agreements

During 2018, the Company had employment agreements in effect with Dr. Alan Joslyn, Mr. Michael Sullivan, and Dr. Martin Handfield. The Company entered into employment agreements with these officers to ensure that they would perform their respective roles with the Company for an extended period of time. In addition, the Company also considered the critical nature of each of their positions and the Company's need to retain them when the Company committed to these agreements. See "Employment Contracts and Change in Control Arrangements."

Bonus Plan 2018

On June 22, 2018, the Board of Directors (the "Board") of Oragenics approved the 2018 cash bonus program for Dr. Alan Joslyn, Mr. Michael Sullivan, and Dr. Martin Handfield recommended by the Compensation Committee. Under such cash bonus program, Dr. Joslyn, Mr. Sullivan, and Dr. Handfield are eligible for cash bonuses of up to \$175,000, \$76,650 and \$48,900 respectively, equaling up to 50%, 35% and 25% of their respective base salaries (each a "Bonus Target").

The bonuses payable to Dr. Joslyn are to be based upon the achievement of the following objectives:

- (i) Up to 55% of the Bonus Target for financial performance objectives related to the Company's raising capital, strategic initiatives and budgeting and management;
- (ii) Up to 30% of the Bonus Target for objectives related to AG013 clinical trials; and
- (iii) Up to 15% of the Bonus Target for objectives related to lantibiotic program developments.

The bonuses payable to Mr. Sullivan are to be based upon the achievement of the following objectives:

- (i) Up to 85 % of the Bonus Target for financial performance objectives related to the Company's raising capital, strategic initiatives, and budgeting and management;
- (ii) Up to 10% of the Bonus Target for objectives related to AG013 clinical trials; and
- (iii) Up to 5% of the Bonus Target for objectives related to lantibiotic program developments.

The bonuses payable to Dr. Handfield are to be based upon the achievement of the following objectives:

- (i) Up to 15% of the Bonus Target for objectives related to the Company's strategic initiatives and management; and
 - (ii) Up to 85% of the Bonus Target for objectives related to lantibiotic program developments.
-

2018 Compensation Decisions

The Company believes that the total compensation paid to its named executive officers for the fiscal year ended December 31, 2018 achieved the overall objectives of its executive compensation program. In accordance with its overall objectives, executive compensation for 2018 was competitive with other similarly-sized companies. The Compensation Committee took the following key compensation actions in 2018:

- ***Determination of Annual Base Salaries***

The Compensation Committee did not authorize or approve any changes in the annual salary for any of the Company's named executive officers during 2018.

- ***Determination of Equity Awards:***

We made stock option grants to Dr. Joslyn, Mr. Sullivan, and Dr. Handfield of 28,000, 18,000, and 16,000 shares of common, respectively, under the Company's 2012 Incentive Plan at an exercise price of \$1.52 per share, the closing price on the June 22, 2018, the date of grant. The options are subject to time-based vesting on the one-year anniversary of the date of the grant. In addition, we made stock option grants to Dr. Joslyn, Mr. Sullivan, and Dr. Handfield of 400,000, 250,000, and 220,000 shares of common stock, respectively, under the Company's 2012 Equity Plan at an exercise price of \$0.73 per share, the closing price of the Company's common stock on September 27, 2018, the date of the grant. One-third of the options vested immediately, with the remainder vesting in equal annual installments over a two-year period on the first and second anniversaries of the date of the grant.

- ***Determination of Cash Bonus-2018***

We made performance-based cash bonus awards pursuant to the terms of the Bonus Plan 2018 to Dr. Joslyn, Mr. Sullivan, and Dr. Handfield of \$140,000, \$72,818, and \$39,120, respectively, based upon their performance during 2018. These performance-based cash bonus awards were made in December of 2018.

2017 Compensation Decisions

- ***Determination of Cash Bonus-2017:***

We made discretionary cash bonus awards to Dr. Joslyn, Mr. Sullivan, and Dr. Handfield of \$105,000, \$53,655, and \$20,000, respectively, based upon their performance during 2017. These discretionary cash bonus payments were determined and made in May of 2018 after the Company was able to raise additional capital.

Summary Compensation Table

The following table sets forth the aggregate compensation in 2018 and 2017 for services in all capacities paid or accrued by the Company to Dr. Alan Joslyn, Mr. Michael Sullivan, our Chief Financial Officer, and our next most highly compensated officers who earned more than \$100,000 in total salary and bonus during the fiscal year ended December 31, 2018 (the "Named Executive Officers").

Name and principal position	Year	Salary	Bonus(1)	Stock Awards (2)	Option Awards (2)	All Other Compensation (3)	Total
Dr. Alan Joslyn President and Chief Executive Officer	2018	\$ 350,000	\$ 140,000	\$ —	\$ 330,280	\$ 14,703	\$ 834,983
	2017	\$ 350,000	\$ 105,000	\$ 2,462	\$ 93,607	\$ 10,500	\$ 561,569
Michael O. Sullivan Chief Financial Officer	2018	\$ 219,000	\$ 72,818	\$ —	\$ 207,180	\$ 6,570	\$ 505,568
	2017	\$ 219,000	\$ 53,655	\$ —	\$ 84,974	\$ 6,570	\$ 364,199
Dr. Martin Handfield Senior Vice President Discovery Research	2018	\$ 195,600	\$ 39,120	\$ —	\$ 182,560	\$ 5,868	\$ 423,148
	2017	\$ 195,600	\$ 20,000	\$ —	\$ 15,948	\$ 5,868	\$ 237,416

- The amounts in this column for 2018 represent a performance-based cash bonus award made pursuant to the terms of the Bonus Plan 2018 which was earned and paid in 2018. The amounts reflected for 2017 reflect a discretionary cash bonus award based upon the executive's performance during 2017 that was not determined and paid until May 2018 and as such the 2017 amounts have been updated to reflect these payments.
- The amounts in this column represent the aggregate grant date fair value computed in accordance with Financial Accounting Standards Board Accounting Standards Codification, Topic 718, Compensation—Stock Compensation (ASC 718). On June 22, 2018, Dr. Joslyn, Mr. Sullivan, and Dr. Handfield were awarded stock options of 28,000, 18,000, and 16,000 shares of common, respectively, under the 2012 Incentive Plan at an exercise price of \$1.52 per share, the closing price on the June 22, 2018, the date of grant. The options are subject to time-based vesting in equal annual installments over a one-year period on the anniversary of the date of the grant, provided that each of Dr. Joslyn, Mr. Sullivan and Dr., Handfield continued their employment with the Company through such dates. In addition, we made stock option grants to Dr. Joslyn, Mr. Sullivan, and Dr. Handfield of 400,000, 250,000, and 220,000 shares of common, respectively, under the 2012 Incentive Plan at an exercise price of \$0.73 per share, the closing price on the September 27, 2018, the date of grant. One-third of the options vested immediately, with the remainder vesting in equal annual installments over a two-year period on the first and second anniversaries of the date of the grant, provided that each of Dr. Joslyn, Mr. Sullivan and Dr., Handfield continued their employment with the Company through such dates. Under Securities and Exchange Commission rules relating to executive compensation disclosure, the amounts shown exclude the impact of estimated forfeitures related to service-based vesting conditions. Fair values relating to share grants have been determined under ASC 718 and were calculated using the common stock closing price on the date of grant and multiplying that price by the number of shares subject to the share grant. The equity-based compensation expense relating to the stock grants is recognized over the requisite service period of the grant. For option awards, we utilize the Black-Scholes option pricing model to determine the fair value on the date of the grant multiplied by the number of options subject to the option grants in accordance with ASC 718. The stock-based compensation expense relating to the stock option grants is recognized over the requisite service period of the grant and the amounts included in the Option Awards column do not reflect compensation actually received by the named executive officers. For information on the assumptions used to calculate the fair value of stock option grants, refer to Footnote 8 - "Stock Compensation Plan" in our financial statements for the year ended December 31, 2018.
- Amounts in this column for Dr. Joslyn, Mr. Sullivan and Dr. Handfield represent the Company's matching contributions to our Simple IRA retirement plan. The retirement plan requires us to match employee contributions up to the first 3% of compensation earned. For Dr. Joslyn, the amount reflected includes \$4,203 amount reimbursed by the Company for Dr. Joslyn's expense in commuting to the Company's headquarters in Tampa, Florida. Such reimbursement amount is included in Dr. Joslyn's compensation.

The Compensation Committee believes that our future success depends, in large part, upon our ability to

Outstanding Equity Awards

The following table provides information concerning unexercised options outstanding as of December 31, 2018:

Name	Number of securities underlying unexercised options (#) exercisable	Number of securities underlying unexercised options (#) unexercisable	Option exercise price (\$)	Option expiration date
Dr. Alan Joslyn President and Chief Executive Officer	133,333	266,667 (1)	0.73	9/27/2028
	4,667	28,000 (3)	1.52	6/22/2028
	30,000	9,333 (2)	3.70	6/22/2027
Michael O. Sullivan Chief Financial Officer	83,333	166,667 (1)	0.73	9/27/2028
	5,834	18,000 (3)	1.52	6/22/2028
	20,000	11,666 (2)	3.70	6/22/2027
	4,000		13.20	3/16/2025
	2,500		8.80	12/8/2024
	4,500		8.60	10/30/2024
	4,500		12.00	2/10/2022
Dr. Martin Handfield Senior Vice President of Discovery Research	73,333	146,667 (1)	0.73	9/27/2028
	4,667	16,000 (3)	1.52	6/22/2028
	15,000	9,663 (2)	3.70	6/27/2027
	4,000		13.20	3/16/2025
	1,680		8.80	12/8/2024
	1,250		15.00	9/27/2021
	250	428	54.00	12/1/2019
		54.00	12/1/2019	

- (1) Represents awards that are time vested with each award vesting evenly on an annual basis over two years, subject to earlier vesting upon a change in control as defined in the award agreements.
- (2) Represents awards that are time vested with each award vesting evenly on an annual basis over three years, subject to earlier vesting upon a change in control as defined in the award agreements.
- (3) Represents awards that are time vested with each award vesting evenly on an annual basis over one year, subject to earlier vesting upon a change in control as defined in the award agreements.

Employment Contracts and Change in Control Arrangements

Employment Agreement—Dr. Joslyn

We have entered into an Executive Employment Agreement dated as of June 6, 2016, with Dr. Alan Joslyn pursuant to which Dr. Joslyn serves as our President and Chief Executive. The employment term is a one-year term with an automatic 12-month extension thereafter unless either party provides the other 30 days' prior written notice of its intention not to renew the employment agreement.

Dr. Joslyn received a one-time signing bonus of \$25,000 upon execution of the employment agreement and is currently entitled to receive an annual base salary of \$350,000 which is subject to annual review and adjustment by the Company's Board of Directors. He is eligible to receive annual performance bonus from the Company of up to fifty percent (50%) of his annual base salary based upon appropriate Company-based and individual-based targets specified by the Compensation Committee of the Board, in its discretion, as approved by the full Board of Directors. Dr. Joslyn is also entitled to participate in our employee benefit plans on terms comparable to other full-time employees as well as four weeks paid vacation annually.

The employment agreement also provided for Dr. Joslyn to be granted equity awards under the Company's 2012 Incentive Plan consisting of (i) stock options to purchase 30,000 shares of the Company's common stock at an exercise price equal to \$5.50 per share which stock options shall vest in six installments of 5,000 shares each every six months after June 6, 2016, provided that he has continued his employment with the Company through such dates, and (ii) 3,000 shares of restricted stock of the Company, vesting in two installments on the six month and twelve month anniversaries of June 6, 2016. All of the performance bonuses, as well as any equity awards which are granted to Dr. Joslyn or which become vested as a result of the satisfaction of financial performance goals of the Company, are subject to the Company's policy on recoupment or clawback of executive incentive compensation.

Dr. Joslyn is subject to a covenant not to disclose our confidential information during his employment term and an assignment of intellectual property rights. Also, during his employment term and for a period of 12 months thereafter, Dr. Joslyn covenants not to compete with us and not to solicit any of our customers, vendors or employees. If Dr. Joslyn breaches any of these covenants, the Company will be entitled to injunctive relief.

If Dr. Joslyn's employment is terminated by us for Cause (as defined in his employment agreement) or by Dr. Joslyn during the term of the agreement, he will be entitled to receive his (i) his then-current annual base salary through the date of termination; (ii) any reimbursable expenses for which he has not yet been reimbursed as of the date of termination; and (iii) any other rights and vested benefits (if any) provided under employee benefit plans and programs of the Company, determined in accordance with the applicable terms and provisions of such plans and programs ("Accrued Compensation").

If Dr. Joslyn's employment is terminated by us without "Cause", subject to his execution of a release of claims against us, and in addition to the payment of the Accrued Compensation, the Company is obligated to make payments to Dr. Joslyn within 60 days after his termination date equal to six months of his annual base salary, as in effect at the termination date, plus any earned but unpaid bonus (the "Additional Severance Payments").

The employment agreement also contains change of control provisions providing that if Dr. Joslyn's employment with the Company is terminated by the Company without Cause during the period of ninety (90) days following a Change in Control (as that term is defined below) of the Company, in lieu of the Additional Severance Payments described above, Dr. Joslyn will be entitled to receive a severance payment equal to the sum of (i) six (6) months of his annual base salary, at the higher of the base salary rate in effect on the date of termination or the base salary rate in effect immediately before the effective date of the Change of Control, and (ii) his Performance Bonus for the year which includes the effective date of the Change in Control, payable at the target level of performance, which will be paid in a single lump sum after his execution and non-revocation of the Release. In addition, he will also receive in the same payment the amount of any performance bonus that, as of the date of termination, has been earned by Dr. Joslyn but has not yet been paid by the Company. If Dr. Joslyn holds any stock options or other stock awards granted under the Company's 2012 Incentive Plan which are not fully vested at the time his employment with the Company is terminated by the Company without Cause during the period of ninety (90) days following a Change in Control, such equity awards shall become fully vested as of the termination date. For purposes of the employment agreement, the term "Change in Control" means a transaction or series of transactions which constitutes a sale of

control of the Company, a change in effective control of the Company, or a sale of all or substantially all of the assets of the Company, or a transaction which qualifies as a “change in ownership” or “change in effective control” of the Company or a “change in ownership of substantially all of the assets” of the Company under the standards set forth in Treasury Regulation section 1.409A-3(i)(5).

Dr. Joslyn’s employment agreement also provides that each of the payments and benefits under the agreement are subject to compliance with Section 409A of the Code and it includes time of payment language intended to comply with Section 409A requirements.

Amendment to Dr. Joslyn’s Employment Agreement

On June 8, 2018 we entered into an amendment to Dr. Joslyn’s employment agreement which extended the term of his agreement to June 6, 2020. All other terms of his employment agreement remained in full force and effect.

Employment Agreements—Mr. Sullivan and Dr. Handfield

We have entered into employment agreements with our Chief Financial Officer, Mr. Michael Sullivan and Dr. Martin Handfield, our Senior Vice-President of Research and Development (the “Employment Agreements”). The annual base salaries provided in the Employment Agreements are payable in installments consistent with our normal payroll practices. Mr. Sullivan and Dr. Handfield are also eligible under the Employment Agreements to receive annual bonuses during the term at the discretion of the Compensation Committee and the Board of Directors with Mr. Sullivan’s employment agreement providing for such a discretionary bonus of up to 35% of his base salary and with Dr. Handfield’s employment agreement providing for a discretionary bonus component, which the Compensation Committee has set as up to 25% of his base salary.

The Employment Agreements are terminable at any time by either party and if the executive officer is involuntarily terminated by us, he shall receive his base salary and vacation pay each accrued through the date of termination, and any nonforfeitable benefits earned and payable to him under the terms of the employee handbook (which applies to all employees) and benefits available under any applicable incentive plan in which the executive participates. In addition, if the executive officer’s separation from employment is not voluntary and without cause, we would be obligated to pay the executive officer six months of his annual base salary as severance and the executive shall be entitled to out placement services. If the executive officer is terminated for cause, he shall be entitled to receive his base salary and accrued vacation due through the date of termination and any nonforfeitable benefits already earned and payable to the executive under the terms of the employee handbook or other applicable incentive plans maintained by us. Cause is defined in the Employment Agreements as any action that is illegal, immoral, or improper that reflects on the Company, the employee, or the ability of either to function optimally. If the executive officer voluntarily resigns, he shall be entitled to this base salary and accrued vacation due through the date of termination (including any mutually agreed upon notice period) and any nonforfeitable benefits already earned and payable to the executive officer employee under the terms of the employee handbook or other incentive plans maintained by us.

If the executive officer dies during the term of employment with us, his estate shall be paid his salary as it would have accrued over a period of thirty days after the executive officer’s death. We shall also extend the executive officer’s right to exercise vested stock options for six months. In the event the executive officer becomes disabled (as defined in the then applicable short and long-term disability insurance policies) we shall pay to the executive officer his salary as it would have accrued over a period of 30 days after the executive became so disabled and we shall extend the executive officer’s right to exercise vested stock options for six months.

The Employment Agreements also each include non-disclosure and Company ownership of invention provisions, as well as a provision providing for the Company to defend and indemnify the executive if the executive is named as a defendant in any lawsuit regarding any action taken within the scope of employment.

In the event of a change in control, any stock options or other awards granted (other than performance awards) under our 2012 Incentive Plan shall become immediately vested in full and, in the case of stock options, exercisable in full. If the change in control results in an involuntary separation from employment of the executive officer within 180 days following a change in control, the executive officer would be entitled to (i) receive six months of salary and the extension of his benefits (excluding vacation time and paid time off) and (ii) exercise vested options for six months from the date of separation. Under the Employment Agreements, "involuntary separation of employment" means (i) termination without cause, (ii) any reduction in responsibilities of office altering the status of the executive officer as an employee, or (iii) the duplication of the executive officer's position by an equivalent executive in an acquiring entity; and "change in control" means the sale of the entire company, or substantially all of its assets, or the sale of the business unit employing an individual which results in the termination of employment or subsequent transfer of the employment relationship to another legal entity, or entity, or single party acquiring more shares than are owned by the Koski Family Limited Partnership, including its members and their immediate families, including spouses and their children.

On February 20, 2015, we entered into an amended and restated employment agreement, effective January 1, 2015, with Mr. Sullivan. The terms of Mr. Sullivan's amended and restated employment agreement were substantially similar to those of the previous agreement disclosed above except for:

1. The percentage of base salary eligible for bonus awards was set as previously disclosed for Mr. Sullivan at up to 35% of base salary.
 2. A provision was added in Mr. Sullivan's agreement to provide for the clawback of bonuses pursuant to the Board's adoption of a clawback policy. In the A&R Employment Agreement Mr. Sullivan acknowledges and agrees that any incentive-based compensation paid to him will be subject to clawback or repayment to the extent such clawback or repayment is required by the terms of the Company's recoupment, clawback or similar policy as may be in effect from time to time, or as required by law.
 3. A provision was added whereby Mr. Sullivan would be required to release the Company as a condition to receiving any severance benefit provided by his A&R Employment Agreement with the form of release added and attached as an exhibit to his A&R Employment Agreement.
 4. The definition of a change of control in the prior agreement was revised to align it with the definition of a change in control set forth in the Company's 2012 Incentive Plan as follows:
 - (i) Any "person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) becomes the "beneficial owner" (as defined in Rule 13d 3 of the Exchange Act), directly or indirectly, of securities of the Company representing fifty percent (50%) or more of the total voting power represented by the Company's then outstanding voting securities;
 - (ii) The consummation of the sale or disposition by the Company of all or substantially all of the Company's assets;
 - (iii) A change in the composition of the Board occurring within a two-year period, as a result of which fewer than a majority of the directors are Incumbent Directors. "Incumbent Directors" means directors who either (A) are Directors as of the effective date of this Agreement, or (B) are elected, or nominated for election, to the Board with the affirmative votes of at least a majority of the Directors at the time of such election or nomination (but will not include an individual whose election or nomination is in connection with an actual or threatened proxy contest relating to the election of directors to the Company); or
 - (iv) The consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its parent) at least fifty percent (50%) of the total voting power represented by the voting securities of the Company or such surviving entity or its parent outstanding immediately after such merger or consolidation.
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ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The following table sets forth information about beneficial ownership of our Common Stock as of April 29, 2019 (unless otherwise noted) by (i) each shareholder that has indicated in public filings that the shareholder beneficially owns more than five percent of the Common Stock, (ii) each of the Company’s directors and named officers and (iii) all directors and officers as a group. Except as otherwise noted, each person listed below, either alone or together with members of the person’s family sharing the same household, had, to our knowledge, sole voting and investment power with respect to the shares listed next to the person’s name.

Name and address(1)	Number of shares beneficially owned	Percentage of ownership (2)
5% shareholders		
CVI Investments, Inc. (3)	4,000,000	8.7%
Anson Funds Management LP (4)	4,000,000	8.7%
Intracoastal Capital LLC (5)	3,858,977	7.8%
Koski Family Limited Partnership (6)	2,580,365	5.5%
Randall J. Kirk (7)	1,548,165	3.4%
Directors and officers		
Alan Joslyn (8)	337,000	*
Robert C. Koski (9)(6)	2,328,344	5.0%
Charles L. Pope (10)	197,608	*
Dr. Alan Dunton (11)	230,761	*
Dr. Frederick W. Telling (12)	709,038	1.5%
Michael Sullivan (13)	158,255	*
(All Directors and officers as a group 6 persons) (14)	3,961,006	8.3%

* Beneficial ownership percentage is less than 1%.

- (1) Except as indicated, the address of the person named in the table is c/o Oragenics, Inc., 4902 Eisenhower Blvd., Suite 125, Tampa, Florida 33634.
- (2) In computing the number of shares beneficially owned by a person and the percentage ownership of that person, shares of the Common Stock subject to options or warrants held by that person that are currently exercisable or will become exercisable within 60 days after April 29, 2019, are deemed outstanding, while the shares are not deemed outstanding for purposes of computing percentage ownership of any other person. Except as otherwise indicated, and subject to applicable community property laws, the persons named in the table have sole voting and investment power with respect to all shares of the Common Stock held by them. Applicable percentage ownership is based on 46,112,303 shares of the Common Stock outstanding as of April 29, 2019. The inclusion in the table above of any shares deemed beneficially owned does not constitute an admission of beneficial ownership of those shares.
- (3) Based upon information provided by CVI Investments, Inc. (“CVI”), in its Schedule 13G filing with the SEC on March 29, 2019, 4,000,000 shares of our common stock held directly by CVI. Heights Capital Management, Inc., the authorized agent of CVI has discretionary authority to vote and dispose of the shares held by CVI and may be deemed to be the beneficial owner of these shares. The address for CVI Investments, Inc. is P.O. Box 309GT, Uglund House, South Church Street, George Town Grand Cayman, KY1-1104 Cayman Islands. Excludes 4,000,000 warrants that are subject to a 4.99% ownership blocker, pursuant to which shares of our common stock may not be issued to the extent such issuance would cause CVI to beneficially own more than 4.99% of our outstanding common stock. The address for Heights Capital Management, Inc. is 101 California Street, Suite 3250, San Francisco, California 94111.
- (4) Based upon information provided by Anson Funds Management LP (Anson Funds”) in its Schedule 13G filing with the SEC on March 29, 2019, 4,000,000 shares of our common stock are held directly by Anson Funds. Anson Funds Management LP and Anson Advisors Inc. serve as co-investment advisors (the “Fund”). Anson Funds Management LP and Anson Advisors Inc. serve as co-investment advisors to the Fund and may direct the vote and disposition of the 4,000,000 shares of Common Stock held by the Fund. As the general partner of Anson Funds Management LP, Anson Management GP LLC may direct the vote and disposition of

- the 4,000,000 shares of Common Stock held by the Fund. As the principal of Anson Fund Management LP and Anson Management GP LLC, Mr. Bruce Winson may direct the vote and disposition of the 4,000,000 shares of Common Stock held by the Fund. As directors of Anson Advisors Inc., Mr. Amin Nathoo and Mr. Moez Kassam may each direct the vote and disposition of the 4,000,000 shares of Common Stock held by the Fund. Excludes 4,000,000 warrants that are subject to a 4.99% ownership blocker, pursuant to which shares of our common stock may not be issued to the extent such issuance would cause Anson Funds to beneficially own more than 4.99% of our outstanding common stock. The address for Anson Funds Management LP, Anson Management GP LLC and Mr. Winson is 5950 Berkshire Lane, Suite 210, Dallas, Texas 75225. The address for Anson Advisors Inc., Mr. Nathoo and Mr. Kassam is 155 University Ave, Suite 207, Toronto, Ontario, M5H 3B7.
- (5) Based upon information provided by Intracoastal Capital LLC (“Intracoastal”) in its Schedule 13G filing with the SEC on April 1, 2019, Intracoastal is the beneficial owner of 3,858,977 shares of Common Stock, which consisted of (i) 525,643 shares of Common Stock held by Intracoastal, (ii) 1,666,667 shares of Common Stock issuable upon exercise of Series 1 Warrant and (iii) 1,666,667 shares of Common Stock issuable upon exercise of Series 2 Warrant. Mr. Mitchell P. Kopin is the manager of Intracoastal and the Schedule 13G is filed on behalf of Mr. Daniel Asher, Mr. Kopin and Intracoastal. The warrants are also subject to a 9.99% ownership blocker, pursuant to which shares of our common stock may not be issued to the extent such issuance would cause Intracoastal to beneficially own more than 9.99% of our outstanding common stock. The principal business office of Mr. Kopin and Intracoastal is 245 Palm Trail, Delray Beach, Florida 33483. The principal business office of Mr. Asher is 111 W. Jackson Boulevard, Suite 2000, Chicago, Illinois 60604.
- (6) Based upon information provided by the Koski Family Limited Partnership, or KFLP, in the amendment to its Schedule 13D filing with the SEC on February 14, 2019 and Form 4 filing of September 18 and October 1, 2018, includes (i) 1,286,483 shares held directly by the KFLP, and (ii) 157,254 shares held directly by KFLP partner Christine Koski, (iii) 277,839 shares held directly by KFLP partner Robert Koski, (iv) 2,800 shares held directly by KFLP partner Koski Management, Inc. (solely owned by Beverly Koski), (v) 91,967 shares held directly by KFLP partner, Thomas Koski, and (vi) 53,086 shares held in trusts which Robert Koski serves as sole trustee (See Note 6 below), (vii) 169,000 option shares able to be acquired upon the exercise of currently exercisable stock options granted pursuant to our Director Compensation program to Robert Koski through April 29, 2019, (viii) 300,000 shares able to be acquired by the KFLP upon conversion of Series B Convertible Preferred Stock, and (ix) 241,936 shares able to be acquired by the KFLP upon exercise of warrants. Christine L. Koski, Robert C. Koski, Thomas L. Koski and Beverly Koski (as sole owner of Koski Management, Inc.) share voting and investment powers as general partners of the KFLP. The address for the KFLP is 3525 Turtle Creek Boulevard, Unit 19-B, Dallas, Texas 75219.
- (7) Based upon information provided by Schedule 13D filings with the SEC, dated June 12, 2012, August 3, 2012, October 2, 2013, November 2, 2013, December 26, 2013 and November 13, 2017 and Form 4 dated July 5, 2016 the number of shares includes (i) 1,448,109 shares owned directly by Intrexon Corporation (“Intrexon”) that is controlled by Mr. Randal J. Kirk, and (ii) 100,056 shares owned directly by NRM VII Holdings, I, LLC, a Virginia Limited Liability Company that is also controlled by Mr. Kirk. Mr. Kirk is the Chairman and Chief Executive Officer of Intrexon and over which Mr. Kirk, directly and through certain affiliates, has voting and dispositive power of a majority of the outstanding capital stock. Mr. Kirk may therefore be deemed to have voting and dispositive power over the 100,056 shares of common stock owned by NRM Holdings and the 1,448,109 shares of common stock owned by Intrexon. Mr. Kirk disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein. Mr. Kirk’s principal business office is The Governor Tyler, 1881 Grove Avenue, Radford, Virginia 24141. Intrexon’s address as reflected in Schedule 13D is 20358 Seneca Meadows Parkway, Germantown, Maryland 20876. Excluded from the shareholdings reflected in the table are 113,941 shares of Series C, Non-Voting, Non-Convertible, Preferred Stock owned by Intrexon with a stated value of \$33,847 per share. These shares have an accruing dividend of 12% per year payable in additional shares of Series C Preferred Stock. On January 25, 2018 we paid a dividend on our Series C Preferred Stock to Intrexon of 1.733 shares for the portion of the 2017 the Series C Preferred that was outstanding. In January of 2019, we paid a dividend on our Series C Preferred Stock to Intrexon of 12.208 shares of the Company’s Series C Preferred Stock. The accruing dividend on the Series C Preferred Stock automatically increases to 20% per year after May 10, 2019. The Series C Preferred Stock ranks senior to Common Stock, Series A Preferred Stock, Series B Preferred Stock and to all other equity securities issued by the Corporation from time to time as to rights upon liquidation, dissolution or winding up of the Company, whether voluntarily or involuntarily.
- (8) Includes 200,667 shares able to be acquired pursuant to currently exercisable stock options, 66,666 shares able to be acquired upon the exercise of warrants and excludes 271,333 shares subject to options that vest thereafter.
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- (9) In addition to the shares reflected as directly owned by the KFLP, described in Note 3, the share amounts also includes: (i) 277,839 shares owned directly by Mr. Koski, and (ii) 53,086 shares owned directly by trusts for which Mr. Koski serves as sole trustee as follows: the Robert Clayton Koski Trust for the benefit of Anthony James Hunter (10,760 shares); The Robert Clayton Koski Trust for the benefit of Hunter Buchanan Koski (10,760 shares); The Robert Clayton Koski Trust for the benefit of Clayton Ward Bennett (10,000 shares); and The Robert Clayton Koski Trust for the benefit of Robert Edward Koski (10,760 shares) and the Robert Clayton Koski Trust for the benefit of Elyse Margaux Koski (10,806 shares).
 - (10) Includes 169,500 shares able to be acquired pursuant to currently exercisable stock options through April 29, 2019.
 - (11) Includes (i) 169,500 shares able to be acquired pursuant to currently exercisable stock options through April 29, 2019 and (ii) 20,000 shares able to be acquired upon the exercise of warrants.
 - (12) Includes (i) 169,500 shares able to be acquired pursuant to currently exercisable stock options through April 29, 2019 and (ii) 200,000 shares able to be acquired upon the exercise of warrants.
 - (13) Includes 144,000 shares able to be acquired pursuant to currently exercisable stock options through April 29, 2019 and excludes 172,500 shares subject to options that vest thereafter.
 - (14) Excludes 157,254 shares owned directly by Christine Koski, 2,800 shares owned directly by Koski Management, Inc. (solely owned by Beverly Koski), and 91,967 shares owned directly by Thomas Koski, which are not directors or employees of the Company, but are general partners of the KFLP. If such shares were included the beneficial ownership percentage of the group would be 8.9%.
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Securities Authorized for Issuance under Equity Compensation Plans

Our 2012 Incentive Plan, which is currently our only equity compensation plan, has been approved by our stockholders. The following table sets forth certain information as of December 31, 2018 with respect to the 2012 Incentive Plan:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options (A)	Weighted-Average Exercise Price of Outstanding Options (B)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (A)) (C)
Equity compensation plans approved by stockholders:			
2012 Equity Incentive Plan	1,812,133	\$ 1.89	197,117
Equity compensation plans not approved by stockholders: (1)			
None	—	\$ —	—
Total:	<u>1,812,133</u>	<u>\$ 1.89</u>	<u>197,117</u>

(1) The Company does not have any equity compensation plans that have not been approved by shareholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

SEC rules require us to disclose any transaction or currently proposed transaction in which we are a participant and in which any related person has or will have a direct or indirect material interest involving an amount that exceeds the lesser of \$120,000 or one percent (1%) of the average of the Company's total assets as of the end of last two completed fiscal years. A related person is any executive officer, director, nominee for director, or holder of 5% or more of the Company's common stock, or an immediate family member of any of those persons.

The Audit Committee of the Board of Directors (or, to the extent applicable, our disinterested directors) is responsible for reviewing all transactions between the Company and any officer or Director of the Company or any entity in which an officer or Director has a material interest. Any such transactions must be on terms no less favorable than those that could be obtained on an arms-length basis from independent third parties.

Financing Transactions

The Lantibiotic Exclusive Channel Collaboration Agreement with Intrexon Corporation ("Intrexon")

On June 5, 2012, we entered into the Lantibiotic ECC with Intrexon that governs a "channel collaboration" arrangement in which we will use Intrexon's advanced transgene and cell engineering platforms for the development and production of lantibiotics, a class of peptide antibiotics that are naturally produced in Gram-positive bacteria and contain the characteristic polycyclic thioether amino acids lanthionine and methylanthionine (collectively, the "Lantibiotics Program"). The Lantibiotic ECC establishes committees comprised of our representatives and Intrexon representatives that will govern activities related to the Lantibiotics Program in the areas of project establishment, chemistry, manufacturing and controls matters, clinical and regulatory matters, commercialization efforts and intellectual property matters. Currently, the Joint Steering Committee has established projects for the Lantibiotics Program and established the priorities, as well as approved the budgets for such projects.

The Lantibiotic ECC grants us an exclusive worldwide license to use patents and other intellectual property of Intrexon in connection with the research, development, use, importing, exporting, manufacture, sale, and offer for sale of drug products involving the direct administration to humans or companion animals of a lantibiotic for the prevention or treatment of infectious disease ("Oragenics Products"). Such license is exclusive with respect to any clinical development, selling, offering for sale or other commercialization of Oragenics Products, and otherwise is non-exclusive. Subject to limited exceptions, we may not sublicense the rights described without Intrexon's written consent.

Under the Lantibiotic ECC, and subject to certain exceptions, we are responsible for, among other things, funding the further anticipated development of lantibiotics toward the goal of commercialization, conducting nonclinical and clinical development of candidate lantibiotics, as well as for other aspects of manufacturing and the commercialization of the product(s). Among other things, Intrexon is responsible for technology discovery efforts, cell-engineering development, certain aspects of the manufacturing process, and costs of filing, prosecution and maintenance of Intrexon's patents. Under the Lantibiotic ECC Intrexon has the option to perform any manufacturing activities in connection with the Lantibiotic Program that relate to the use of Intrexon material, the manufacture of bulk drug products, the manufacturing of bulk quantities, other components of Oragenics Products, or any earlier steps in the manufacturing process for Oragenics Products. To the extent Intrexon so elects, a separate manufacturing and supply agreement may be entered into between Intrexon and the Company.

In November of 2017 we amended the Lantibiotic ECC to: (i) consolidate the development milestone payments into one payment of \$25,000,000, being due six months after receiving FDA approval of a New Drug Application, (ii) reduce the sublicense revenue percentage we would have had to pay from 50% to 25% of sublicensing revenue, (iii) reduce the royalty rate from 25% of Product Profit to 10% of Net Sales, (iv) revise the form of milestone payments from being share based or cash at our election to only cash, and (v) commit that Diligent Efforts (as defined in the Lantibiotic ECC) in pursuing the Lantibiotic Program would be deemed satisfied in 2018 provided that at least \$1,200,000 was expended for the advancement of the Lantibiotic Program.

Pursuant to the terms of the amendment, we will pay Intrexon on a quarterly basis 10% of Net Sales derived in that quarter from the sale of products developed from the Lantibiotic ECC, calculated on an Oragenics Product-by-Oragenics Product basis and we will pay Intrexon on a quarterly basis 25% of revenue obtained in that quarter from a sublicensor in the event of a sublicensing arrangement.

We have agreed to indemnify and hold Intrexon harmless from any damages caused as a result of (i) our negligence or willful misconduct, (ii) the use, handling, storage, or transport of Intrexon Materials (as defined in the Lantibiotic ECC), (iii) our breach of a material representation, warranty or covenant in the Lantibiotic ECC, or (iv) the design, development, manufacture, regulatory approval, handling, storage, transport, distribution, sale or other disposition of any Oragenics Product.

Intrexon may terminate the Lantibiotic ECC if we fail to use diligent efforts to develop and commercialize Oragenics Products or if we elect not to pursue the development of a Lantibiotics Program identified by Intrexon that is a "Superior Therapy" as defined in the Lantibiotic ECC. We may voluntarily terminate the Lantibiotic ECC at any time upon 90 days written notice to Intrexon.

Upon termination of the Lantibiotic ECC, we may continue to develop and commercialize any Oragenics Product that has been, at the time of termination:

- commercialized by us;
- approved by regulatory authorities;
- a subject of an application for regulatory approval that is pending before the applicable regulatory authority; or
- the subject of at least an ongoing Phase 1, Phase 2 or Phase 3 clinical trial in the Field (in the case of a termination by Intrexon due to an uncured material breach by the Company or a voluntary termination by us).

Our obligation to pay 10% of Net Sales, 25% of sublicensing revenue and the milestone payments described below with respect to these "retained" products as well as to use diligent efforts to develop and commercialize these "retained" Oragenics Products will survive termination of the Lantibiotic ECC.

In addition, in partial consideration for each party's execution and delivery of the Lantibiotic ECC, we entered into a Stock Issuance Agreement with Intrexon. Pursuant to the Stock Issuance Agreement, we issued to Intrexon 439,243 shares of our common stock as an initial technology access fee, in consideration for the execution and delivery of the Lantibiotic ECC and granted Intrexon certain equity participation rights and registration rights.

The registration rights granted to Intrexon in the Stock Issuance Agreement by us consisted of "piggyback registration" rights which permit Intrexon to participate in any firm commitment underwritten offering of securities by us, subject to underwriter cutbacks and lockups. In addition, we are precluded from granting registration rights in connection with a private placement unless (i) all shares held by Intrexon are, at the time of such private placement, included on a registration statement, or (ii) we agree, in connection with such private placement, to grant Intrexon the right to include on the registration statement a number of Intrexon's Company shares equal to one half of the number of shares to be registered on behalf of the other holders or prospective holders.

Pursuant to the Stock Issuance Agreement, Intrexon is also entitled, at its election, to participate in future securities offerings by us that constitute "qualified financings" and purchase securities equal to 30% of the number of shares of common stock or other securities sold in such offering (exclusive of Intrexon's purchase). For this purpose, a "qualified financing" means a sale of common stock or equity securities convertible into common stock in a public or private offering, raising gross proceeds of at least \$1,000,000, where the sale of shares is either registered under the Securities Act of 1933, as amended, at the time of issuance or we agree to register the resale of such shares.

In November of 2017, the Stock Issuance Agreement and the Lantibiotic ECC were amended. Under the terms of the amendment, the Company has agreed to make certain payments, in cash, to Intrexon upon our achievement of designated milestones. The milestone events and amounts payable are as follows:

- (i) a one-time payment of twenty-five million United States dollars (\$25,000,000) within six (6) months of the achievement of the Regulatory Approval Milestone Event meaning receiving approval from the FDA of a New Product Application for an Oragenics Product (or equivalent regulatory action in a foreign jurisdiction);
- (ii) a one-time payment of five million United States dollars (\$5,000,000) within six (6) months of the achievement of the New Indication Milestone Event meaning receiving approval from the FDA of a Supplemental FDA Application (or an equivalent filing with another equivalent regulatory agency) which Supplemental FDA Application sought approval of an indication for use of the Oragenics Product other than the current regulatory-approved indication; and
- (iii) a one-time payment of five million United States dollars (\$5,000,000) within six (6) months of the achievement of the New Product Milestone Event meaning receiving approval from the FDA of a New Product Application that is deemed to be a different drug product than the first Oragenics Product that was clinically pursued under the Lantibiotics Program.

None of the Lantibiotic ECC milestones had been achieved as of December 31, 2018.

On July 21, 2016, the Lantibiotics ECC was amended to revise the definition of Field in view of a provisional patent application filing between Intrexon and Oragenics and to further clarify Oragenics' rights under the Lantibiotic ECC to genetically modified *Streptococcus mutans* that express Lantibiotic(s).

During the year ended December 31, 2018 we paid cash of \$-0-, and during the year ended December 31, 2017, we paid cash of \$594 and issued Series C Preferred Stock with a value of \$1,188, to Intrexon relating to work performed under the Lantibiotics ECC.

June 2015-The Oral Mucositis Exclusive Channel Collaboration Agreement with Intrexon and Intrexon Actobiotics NV

On June 9, 2015, we entered into an Oral Mucositis ECC with Intrexon and Actobiotics, a wholly-owned subsidiary of Intrexon, through which we intend to research, develop and commercialize products, including the continued development and commercialization of AG013, for use in the treatment of oral mucositis in humans through the administration of an effector via genetically modified bacteria, but, in any case, excluding the delivery of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer (collectively, the "Program"). Contemporaneously with the Oral Mucositis ECC, we and Intrexon also entered into a Stock Issuance Agreement (the "SIA") which authorized the issuance of the Technology Access Fee and the future stock issuance of our Common Stock to Intrexon upon the achievement of designated milestones. We issued a Convertible Note in the amount of \$5,000,000 as payment of the technology access fee associated with the Oral Mucositis ECC which was payable, at our option, in cash or shares of our common stock. The convertible note, including accrued interest, was repaid in December 2015 through the issuance of 338,101 shares of our common stock.

The Oral Mucositis ECC governs the "channel collaboration" arrangement in which we will use Intrexon's proprietary technology relating to the identification, design and production of genetically modified bacteria for the purpose of developing the Program. The Oral Mucositis ECC provides for the establishment of committees comprised from us and Intrexon representatives that will govern activities in the areas of project establishment, chemistry, manufacturing and controls, clinical and regulatory matters, commercialization efforts, and intellectual property.

The Oral Mucositis ECC grants us an exclusive worldwide license to utilize Intrexon's and Actobiotics' intellectual property to develop and commercialize products, including the continued development and commercialization of AG013, for use in the treatment of oral mucositis in humans through the administration of an effector via genetically modified bacteria, but, in any case, excluding the delivery of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer (the "Field"). It also grants us an exclusive license in the Field under all Information Controlled by Actobiotics (or otherwise by Intrexon) and existing as of the Effective Date relating to the regulatory approval of AG013, including regulatory filings, data, clinical trial reports, and rights thereunder.

Under the Oral Mucositis ECC, and subject to certain exceptions, we are responsible for, among other things, funding the further anticipated development of products toward the goal of commercialization, conducting preclinical and clinical development of candidate products, as well as for other aspects of manufacturing and the commercialization of the product(s). Among other things, Intrexon is responsible for technology discovery efforts, cell-engineering development, and certain aspects of the manufacturing process.

In November of 2017 we amended the Oral Mucositis ECC to: (i) consolidate the development milestone payments into one payment of \$27,500,000 being due within six months after receiving FDA approval of a New Product Application; (ii) reduce the sublicense revenue percentage we would have had to pay from 50% to 25% of sublicensing revenue; and (iii) revise the field in which we have exclusive rights to our Oral Mucositis product candidate for the treatment of Oral Mucositis to clarify that we have an exclusive for the treatment of Oral Mucositis in humans regardless of etiology.

Pursuant to the terms of the Oral Mucositis ECC, as amended, we are obligated to pay Intrexon on a quarterly basis 12% of the net sales derived from the sale of products developed from the exclusive channel collaboration. We are also obligated to pay Intrexon on a quarterly basis 25% of revenue obtained in that quarter from a sublicensor in the event of a sublicensing arrangement.

We have agreed to indemnify and hold Intrexon harmless from any damages caused as a result of (i) our negligence or willful misconduct, (ii) the use, handling, storage, or transport of Intrexon Materials (as defined in the Oral Mucositis ECC) or materials that are Actobiotics IP (as defined in the Oral Mucositis ECC), (iii) our breach of a material representation, warranty or covenant in the Oral Mucositis ECC, or (iv) the design, development, manufacture, regulatory approval, handling, storage, transport, distribution, sale or other disposition of any Orogenics Product.

We may voluntarily terminate the Oral Mucositis ECC upon 90 days written notice to Intrexon. Intrexon may also terminate the Oral Mucositis ECC if we breach and fail to cure the breach within 60 days or we do not pursue development of a Superior Therapy identified by Intrexon that is a "Superior Therapy" as defined in the Oral Mucositis ECC.

Upon termination of the ECC, we may continue to develop and commercialize any Orogenics Product that, at the time of termination that satisfies at least one of the following criteria:

- (i) the particular Orogenics Product is being sold by the Company triggering profit sharing payments under the Oral Mucositis ECC to Intrexon;
 - (ii) the particular Orogenics Product has received regulatory approval;
 - (iii) the particular Orogenics Product is a subject of an application for regulatory approval in the Field covered by the ECC that is pending before the applicable regulatory authority;
 - (iv) the particular Orogenics Product is AG013, and such Orogenics Product has been the subject of at least one completed Phase 2 clinical trial (as such is defined by relevant FDA guidelines) during the Term; or
 - (v) the particular Orogenics Product other than AG013 and such Orogenics Product is the subject of at least an ongoing Phase 1, Phase 2 or Phase 3 clinical trial in the Field.
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Our obligation to pay 12% of net sales, 25% of sublicensing revenue and the milestone payments described below with respect to these “retained” products as well as to use diligent efforts to develop and commercialize these “retained” Oragenics Products will survive termination of the Oral Mucositis ECC.

In November of 2017, the Stock Issuance Agreement and the Oral Mucositis ECC were amended. Under the terms of the amendment, the Company has agreed to make certain payments to Intrexon upon our achievement of designated milestones in the form of shares of our Common Stock (based upon the fair market value of the shares otherwise required to be issued) unless the issuance of such shares would reasonably likely cause Intrexon to consolidate our financial statements with Intrexon’s financial statements, or at our option make a cash payment to Intrexon. The milestone events and amounts payable are as follows:

- (i) a one-time payment of twenty-seven million five hundred thousand United States dollars (\$27,500,000) within six (6) months of the achievement of the Regulatory Approval Milestone Event meaning receiving approval from the FDA of a New Product Application for an Oragenics Product (or equivalent regulatory action in a foreign jurisdiction);
- (ii) a one-time payment of five million United States dollars (\$5,000,000) within six (6) months of the achievement of the New Indication Milestone Event meaning receiving approval from the FDA of a Supplemental FDA Application (or an equivalent filing with another equivalent regulatory agency) which Supplemental FDA Application sought approval of an indication for use of the Oragenics Product other than the current regulatory-approved indication; and
- (iii) a one-time payment of five million United States dollars (\$5,000,000) within six (6) months of the achievement of the New Product Milestone Event meaning receiving approval from the FDA of a New Product Application that is deemed to be a different drug product than the first Oragenics Product that was clinically pursued under the Lantibiotics Program.

None of the Oral Mucositis ECC milestones had been achieved as of December 31, 2018.

During the year ended December 31, 2018 we paid cash of \$ 460,056, and during the year ended December 31, 2017, we paid cash of \$524,026 and issued Series C Preferred Stock with a value of \$763,189, to Intrexon under the Oral Mucositis ECC to develop and commercialize AG013.

Effective January 1, 2018, Intrexon assigned its interest in the Oral Mucositis ECC and Stock Issuance Agreement (excluding Intrexon’s standstill obligation) to its wholly owned subsidiary, ActoBio Therapeutics, Inc.

The June 30, 2016 Private Placement

On June 30, 2016, the Company closed on a private placement of 904,568 shares of its common stock to three accredited investors. The investors in the private placement consisted of Company shareholders, the Koski Family Limited Partnership (“KFLP”) (581,508 shares) and Intrexon Corporation (“Intrexon”) (226,142 shares), as well as the Company’s Chairman, Dr. Frederick Telling (96,918 shares). Approximately \$4.667 million was raised of which \$2,000,000 was payable by the KFLP under a note payable on or before September 30, 2016. On September 15, 2016, the note payable with the KFLP was amended. Under the terms of the amendment, the KFLP paid \$1,000,000 on September 30, 2016 which was first applied to accrued interest and then to the outstanding principal balance. In addition, the amendment extended the maturity date on the remaining principal balance of the note payable to December 31, 2016 and increased the interest rate on the note payable from 3% per annum to 6% per annum. On December 29, 2016, the KFLP made a payment of \$1,000,000 which was first applied to accrued interest and then to the outstanding principal balance. The note was paid in full in March of 2017. The private placement was approved by the Company’s audit committee and disinterested directors.

Sale of Consumer Probiotics Business

On June 27, 2016, the Company completed the sale of its consumer probiotics business to ProBiora Health, LLC, (“ProBiora Health”) an entity owned by Ms. Christine L. Koski, a director at the time of the transaction. The purchase price was \$1,700,000 in cash of which \$1,250,000 was paid at closing and \$450,000 was payable on or before July 31, 2016. The note accrued interest at the rate of 1% per annum and was paid in full on July 29, 2016. In connection with the sale, ProBiora Health assumed certain liabilities. ProBiora Health is obligated to pay the Company contingent consideration annually over a 10-year period based on a percentage of sales of products using the Purchased Assets, with a maximum obligation to the Company of \$2,000,000. The Company has received no contingent consideration from ProBiora Health in 2018 and 2017.

The transaction was approved by a special committee of the Company’s board of directors consisting solely of disinterested directors and Griffin Securities rendered a fairness opinion in connection with the transaction. Ms. Koski, a director since 2009, and a significant shareholder of the Company through the Koski Family Limited Partnership, resigned as a director of the Company upon completion of the sale. In addition, the Company entered into a Transition Services Agreement (the “Transition Agreement”) with ProBiora Health. Under the terms of the Transition Agreement, the Company will provide accounting, inventory management, shipping, logistics, customer, vendor, supplier, general business support, IT, pharmacovigilance, quality assurance, regulatory, and clinical services to ProBiora Health. In exchange for the services, ProBiora Health paid the Company three percent (3%) of its net sales of all ProBiora3 products sold during the term of the Transition Agreement. The term of the Transition Agreement was for a ninety-day (90) period. The Company also sublet space to ProBiora Health at the rate of \$1,623 per month through February 2017. The Company also provided fulfillment services to ProBiora Health during the term that the sublease is in effect. The Company received compensation for those services in an amount equal to the direct costs in providing such services. During the twelve months ended December 31, 2018 and 2017, we received \$0- and \$10,388, respectively, from ProBiora Health pursuant to such arrangements.

Intrexon Debt Conversion into Series C Non-Convertible Stock and ECC Amendments

In November of 2017, the Company entered into a Debt Conversion Agreement (the “Intrexon Debt Conversion Agreement”) with Intrexon pursuant to which Intrexon exchanged a \$2.4 million unsecured non-convertible promissory note previously issued by the Company to Intrexon (the “Intrexon Note”), the accrued interest on the Intrexon Note and trade payables owed by the Company (collectively the “Debt”) in the aggregate amount of approximately \$3.4 million for equity in the form of 100 shares of Series C, Non-Voting, Non-Convertible Preferred Stock (the “Series C Non-Convertible Preferred Stock”) issued by the Company to Intrexon. The Series C, Non-Voting, Non-Convertible, Preferred Stock have a stated value of \$33,847 per share. These shares have an accruing dividend of 12% per year. On January 25, 2018 we paid a dividend on our Series C Preferred Stock to Intrexon of 1.733 shares for the portion of the 2017 the Series C Preferred was outstanding. In January of 2019, we paid a dividend on our Series C Preferred Stock to Intrexon of 12.208 shares of the Company’s Series C Preferred Stock. The accruing dividend increases to 20% per year after May 10, 2019. The Intrexon Debt Conversion Agreement includes customary representations, warranties and covenants.

Simultaneously with the Intrexon Debt Conversion Agreement, the Company and Intrexon amended the Oral Mucositis ECC and the Oral Mucositis Stock Issuance Agreement, and the Lantibiotic ECC and Lantibiotic ECC Stock Issuance Agreement as described above.

The July 17, 2018 Underwritten Public Offering

On July 17, 2018, we closed an underwritten public offering of units for gross proceeds of approximately \$13.8 million, which includes the full exercise of the underwriter’s over-allotment option to purchase additional shares and warrants, prior to deducting underwriting discounts and commissions and offering expenses payable by us. The Company’s non-employee directors, Frederick Telling and Alan Dunton participated in the Public Offering through the purchase of 100,000 shares and 20,000 shares, respectively, of the Company’s common stock and warrants to purchase 100,000 shares and 20,000 shares, respectively, of the Company’s common stock.

The offering was comprised of Class A Units, priced at a public offering price of \$1.00 per unit, with each unit consisting of one share of common stock and a seven-year warrant to purchase one share of common stock with an exercise price of \$1.00 per share (each, a “Warrant” and collectively, the “Warrants”), and Class B Units, priced at a public offering price of \$1.00 per unit, with each unit comprised of one share of series D preferred stock (the “Series D Preferred Stock”), which is convertible into one share of common stock, and a Warrant. The conversion price of the Series D Preferred Stock issued in the transaction as well as the exercise price of the Warrants are fixed and do not contain any variable pricing features or any price based anti-dilutive features. The Series D Preferred Stock issued in this transaction included a beneficial ownership blocker but has no dividend rights (except to the extent that dividends are also paid on the common stock), liquidation preference or other preferences over common stock, and, with certain exceptions, has no voting rights. The securities comprising the units were immediately separable and have been issued separately.

At the closing of our underwritten public offering, a total of 4,436,000 shares of common stock, 9,364,000 shares of Series D Preferred Stock convertible into 9,364,000 shares of common stock, and warrants to acquire 13,800,000 shares of common stock were issued inclusive of the underwriter’s exercise of their over-allotment option to purchase 1,800,000 shares of common stock and warrants to acquire 1,800,000 shares of common stock at \$1.00 per share.

Since the closing of our underwritten public offering all of the shares of Series D Preferred Stock that were issued have been converted into shares of our common stock in accordance with the terms for conversion and 9,505,500 warrants were exercised for cash generating approximately \$9.5 million in proceeds to us.

The March 25, 2019 Underwritten Public Offering

On March 25, 2019 we closed on an underwritten public offering of 16,666,668 shares of our common stock, par value \$0.001 per share (the “Common Stock”), together with Series 1 Warrants to purchase up to an aggregate of 8,333,334 shares of our common stock (the “Series 1 Warrants”) and Series 2 Warrants to purchase up to an aggregate of 8,333,334 shares of our common stock (the “Series 2 Warrants”), at a price to the public of \$0.75 per share and related warrants (the “Public Offering”). We also granted the Underwriter a 30-day option to purchase up to an additional 2,500,000 additional shares of common stock (the “Option Shares”) and/or Series 1 Warrants to purchase up to 1,250,000 shares of common stock and Series 2 Warrants to purchase up to 1,250,000 shares of common stock (the “Option Warrants”).

Each Series 1 Warrant has an exercise price of \$0.75 per share of common stock and will expire on the earlier of (1) the eighteen-month anniversary of the date of issuance and (2) twenty-one trading days following the Company’s release of top-line data related to its Phase 2 double blind, placebo controlled clinical trial of AG013. Each Series 2 Warrant has an exercise price of \$0.90 per share of common stock and will expire five years following the date of issuance.

Dr. Frederick Telling, Dr. Alan Joslyn, participated in the Public Offering through the purchase of 100,000 shares and 66,667 shares, respectively, of the Company’s common stock and Series 1 warrants to purchase 50,000 shares and 33,333 shares, and Series 2 warrants to purchase 50,000 shares and 33,333 shares respectively, of the Company’s common stock. Dr. Telling and Dr. Joslyn’s participation was approved by our Audit Committee.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

The following table provides the aggregate fees billed for professional services rendered by the Company's principal accountants, Mayer Hoffman McCann P.C. ("MHM"), in the categories indicated during each of the past two fiscal years ended December 31:

Services Rendered	2018	2017
Audit Fees (1)	\$ 155,000	\$ 130,500
Audit-Related Fees (2)	—	—
Tax Fees (3)	9,250	9,000
All Other Fees (4)	—	—
	<u>\$ 164,250</u>	<u>\$ 139,500</u>

- (1) *Audit Fees.* This category includes fees for professional services provided in conjunction with the audit of the Company's financial statements and with the audit of management's assessment of internal control over financial reporting and the effectiveness of internal control over financial reporting, review of the Company's quarterly financial statements, assistance and review of documents filed with the Securities and Exchange Commission, consents, and comfort letters and attestation services provided in connection with statutory and other regulatory filings and engagements.
- (2) *Audit-Related Fees.* This category includes fees for assurance and related professional services associated with due diligence related to mergers and acquisitions, consultation on accounting standards or transactions, internal control reviews and assistance with internal control reporting requirements, services related to the audit of employee benefit plans, and other attestation services not required by statute or regulation.
- (3) *Tax Fees.* This category includes fees for professional services provided related to tax compliance, tax planning and tax advice.
- (4) *All Other Fees.* There were no other fees paid to Mayer Hoffman McCann P.C.

Mayer Hoffman McCann P.C., leases substantially all of its personnel, who work under the control of shareholders, from wholly-owned subsidiaries of CBIZ, Inc., in an alternative practice structure.

Pre-Approval Policy

The Audit Committee approves in advance all audit and non-audit services to be performed by the Company's independent registered public accounting firm. The Audit Committee considers whether the provision of any proposed non-audit services is consistent with the Securities and Exchange Commission rules on auditor independence and has pre-approved certain specified audit and non-audit services to be provided by MHM for up to twelve (12) months from the date of the pre-approval. If there are any additional services to be provided, a request for pre-approval must be submitted by management to the Audit Committee for its consideration.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

- (a) The following documents were filed as part of the Original Filing:
1. Financial Statements. The financial statements of Gritstone Oncology, Inc. included in Part II, Item 8 of the Original Filing.
 2. Financial Statement Schedules. All schedules were omitted from the Original Filing because they were not applicable or the required information was shown in the financial statements or notes thereto.
 3. Exhibits. The exhibits listed on the Exhibit Index of the Original Filing.
- (b) The exhibit list in the Exhibit Index immediately preceding the signature page of this Amendment are being filed as part of this Amendment.
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EXHIBIT INDEX

Exhibit number	Exhibit description	Form	Incorporated by Reference		Filing date	Filed herewith
			File no.	Exhibit		
1.1	Placement Agency Agreement dated as of April 6, 2018.	8-K	001-32188	1.1	4/10/18	
1.2	Form of Underwriting Agreement.	S-1/A	333-224950	1.1	7/9/18	
1.3	Underwriting Agreement dated March 21, 2019.	8-K	001-32188	1.1	3/25/19	
3.1	Amended and Restated Articles of Incorporation as amended prior to December 29, 2017 (including certificates of designation of Series A, B and C Preferred Stock)	8-K	001-32188	3.1	12/29/17	
3.2	Articles of Amendment to Amended and Restated Articles of Incorporation dated effective December 29, 2017	8-K	001-32188	3.2	12/29/17	
3.3	Articles of Amendment to Amended and Restated Articles of Incorporation effective January 19, 2018	8-K	001-32188	3.1	1/19/18	
3.4	Articles of Amendment to Amended and Restated Articles of Incorporation.	8-K	001-32188	3.4	6/26/18	
3.5	Form of Certificate of Designation of Series D Preferred Stock.	S-1/A	333-224950	4.1	7/9/18	
3.6	Bylaws	SB-2	333-100568	3.2	10/16/02	
3.7	First Amendment to Bylaws	8-K	001-32188	3.1	6/9/10	
3.8	Second Amendment to Bylaws	8-K	001-32188	3.1	8/24/10	
4.1	Specimen Stock Certificate	10-K	001-32188	4.1	3/29/19	
4.2	Form of Investor Warrant.	8-K	001-32188	4.1	4/10/18	
4.3	Form of Warrant to purchase shares of Common Stock.	S-1/A	333-224950	4.2	7/9/18	
4.4	Form of Series 1 Warrant	8-K	001-32188	4.1	3/25/19	
4.5	Form of Series 2 Warrant	8-K	001-32188	4.2	3/25/19	

Exhibit number	Exhibit description	Form	Incorporated by Reference		Filing date	Filed herewith
			File no.	Exhibit		
10.1	Standard Exclusive License Agreement with Sublicensing Terms between the Company and the University of Florida Research Foundation, Inc. effective June 22, 2000 (the "MU1140 License Agreement")	SB-2	333-100568	10.5	10/16/02	
10.2	First Amendment to the MU1140 License Agreement dated September 15, 2000	SB-2	333-100568	10.6	10/16/02	
10.3	Second Amendment to the MU1140 License Agreement dated June 10, 2002	SB-2	333-100568	10.7	10/16/02	
10.4	Third Amendment to the MU1140 License Agreement dated September 25, 2002	SB-2	333-100568	10.4	10/16/02	
10.5	Fourth Amendment to the Antimicrobial Polypeptide License Agreement dated March 2003	SB-2/A-3	333-100568	10.36	4/9/03	
10.6	Fifth Amendment to the Antimicrobial Polypeptide License Agreement dated April 19, 2013	8-K	001-32188	10.1	4/23/13	
10.7	Exclusive Channel Collaboration Agreement by and between Oragenics, Inc. and Intrexon Corporation dated as of June 5, 2012 ("Lantibiotic ECC").*	8-K	001-32188	10.1	6/11/12	
10.8	Amendment No. 1 to the Lantibiotic ECC between Oragenics, Inc. and Intrexon Corporation dated July 21, 2016.	10Q	001-32188	10.10	8/15/16	
10.9	Amendment No. 2 to the Lantibiotic ECC between Oragenics, Inc. and Intrexon Corporation dated November 8, 2017.	8-K	001-32188	10.6	11/9/17	
10.10	Stock Issuance Agreement by and between Oragenics, Inc. and Intrexon Corporation dated as of June 5, 2012 ("Lantibiotic SIA").	8-K	001-32188	10.2	6/11/12	
10.11	Amendment to Lantibiotic SIA by and between Oragenics, Inc. and Intrexon Corporation dated as of November 8, 2017.	8-K	001-32188	10.8	11/9/17	
10.12	Exclusive Channel Collaboration Agreement with Intrexon Corporation dated June 9, 2015, as amended and subsequently assigned to ActoBio Therapeutics, Inc., a wholly owned subsidiary of Intrexon Corporation	10-Q	001-32188	10.2	8/13/18	
10.13	Stock Purchase and Issuance Agreement by and between Oragenics, Inc. and Intrexon Corporation dated as of June 9, 2015 ("Oral Mucositis SIA").*	8-K	001-32188	10.2	7/11/15	
10.14	Amendment No. 1 to Oral Mucositis SIA by and between Oragenics, Inc. and Intrexon Corporation dated as of May 10, 2017.	8-K	001-32188	10.5	5/11/17	

Exhibit number	Exhibit description	Form	Incorporated by Reference		Filing date	Filed herewith
			File no.	Exhibit		
10.15	Amendment No. 2 to Oral Mucositis SIA by and between Orogenics, Inc. and Intrexon Corporation dated as of November 8, 2017.	8-K	001-32188	10.14	11/9/17	
10.16	Notice of Assignment to Oral Mucositis SIA by and between Orogenics, Inc. and Intrexon Corporation between Orogenics, Inc. and Intrexon Corporation, effective January 1, 2018.	10-K	001-32188	10.20	2/16/18	
10.17	Joinder to Assignment of Oral Mucositis SIA by and between Orogenics, Inc. and Intrexon Corporation between Orogenics, Inc. and Intrexon Corporation, effective January 1, 2018.	10-K	001-32188	10.21	2/16/18	
10.18	Lease Agreement between the Company and Hawley-Wiggins LLC dated October 28, 2011 (13700 Progress Blvd, Alachua, FL 32615).	10-K	001-32188	10.20	4/16/12	
10.19	Amendment to Lease Agreement between the Company and Hawley-Wiggins LLC dated July 13, 2014 (13700 Progress Blvd, Alachua, FL 32615).	10-Q	001-32188	10.2	8/7/14	
10.20	2012 Equity Incentive Plan. +	8-K	001-32188	4.1	10/25/12	
10.21	First Amendment to 2012 Equity Incentive Plan. +	8-K	001-32188	4.2	5/5/17	
10.22	Second Amendment to 2012 Equity Incentive Plan. +	8-K	001-32188	4.3	12/29/17	
10.23	Third Amendment to 2012 Equity Incentive Plan. +	8-K	001-32188	4.4	6/26/18	
10.24	Form of Employee Stock Option Agreement. +	10-K	001-32188	10.26	3/26/13	
10.25	Form of Consultant Stock Option Agreement. +	10-K	001-32188	10.27	3/26/13	
10.26	Form of Notice of Grant of Stock Options and Stock Option Award Agreement (Employee). +	8-K	001-32188	10.1	3/18/15	
10.27	Form of Notice of Grant of Stock Options and Stock Option Award Agreement (Directors). +	8-K	001-32188	10.2	3/18/15	
10.28	Form of Director Restricted Stock Award Agreement. +	8-K	001-32188	10.3	3/18/15	
10.29	Amended and Restated Executive Employment Agreement between the Company and Michael Sullivan dated effective January 1, 2015. +	8-K	001-32188	10.1	2/25/15	
10.30	Executive Employment Agreement between the Company and Martin Handfield dated May 11, 2010. +	10-Q	001-32188	10.16	11/14/11	

Exhibit number	Exhibit description	Form	Incorporated by Reference		Filing date	Filed herewith
			File no.	Exhibit		
10.31	Executive Employment Agreement between the Company and Alan Joslyn dated effective June 6, 2016. +	8-K	001-32188	10.1	6/6/16	
10.32	First Amendment to Employment Agreement between the Company and Alan Joslyn effective June 6, 2018. +	8-K	001-32188	10.1	6/11/18	
10.33	Form of Securities Purchase Agreement, dated as of April 6, 2018, by and among Oragenics, Inc. and the Investors.	8-K	001-32188	10.1	4/10/18	
23.1	Consent of Mayer Hoffinan McCann P.C., an independent public accounting firm.	10-K	001-32188	23.1	3/29/19	
24.1	Powers of Attorney (included on signature page).	10-K	001-32188	24.1	3/29/19	
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14 and Rule 15d-14(a), promulgated under the Securities and Exchange Act of 1934, as amended.					X
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14 and Rule 15d-14(a), promulgated under the Securities and Exchange Act of 1934, as amended.					X
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Chief Executive Officer).	10-K	001-32188	32.1	3/29/19	
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Chief Financial Officer).	10-K	001-32188	32.2	3/29/19	
101.INS	XBRL Instance Document	10-K	001-32188		3/29/19	
101.SCH	XBRL Taxonomy Extension Schema	10-K	001-32188		3/29/19	
101.CAL	XBRL Taxonomy Extension Calculation Linkbase	10-K	001-32188		3/29/19	
101.DEF	XBRL Taxonomy Extension Definition Linkbase	10-K	001-32188		3/29/19	
101.LAB	XBRL Taxonomy Extension Label Linkbase	10-K	001-32188		3/29/19	
101.PRE	XBRL Taxonomy Extension Presentation Linkbase	10-K	001-32188		3/29/19	

- * Confidential treatment has been granted as to certain portions of this exhibit pursuant to Rule 406 of the Securities Act of 1933, as amended, or Rule 24b-2 of the Securities Exchange Act of 1934, as amended.
 - + Executive management contract or compensatory plan or arrangement.
-

SIGNATURES

Pursuant to the requirements of Section 13 and 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Amendment No. 1 to the report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: April 29, 2019

ORAGENICS, INC.

By: /s/ Alan Joslyn
Alan Joslyn
President and Chief Executive Officer

Certification Pursuant to Securities Exchange Act Rules 13a-14 and 15d-14 as adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Alan Joslyn, Chief Executive Officer, certify that:

1. I have reviewed this Amendment No. 1 to Annual Report on Form 10-K/A of Oragenics, Inc.; and
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.

April 29, 2019

/s/ Alan Joslyn

Alan Joslyn

Chief Executive Officer (Principal Executive Officer)

Certification Pursuant to Securities Exchange Act Rules 13a-14 and 15d-14 as adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Michael Sullivan, Chief Financial Officer, certify that:

1. I have reviewed this Amendment No. 1 to Annual Report on Form 10-K/A of Oragenics, Inc.; and
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.

April 29, 2019

/s/ Michael Sullivan
Michael Sullivan
Chief Financial Officer (Principal Financial Officer)