

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

**Amendment No. 1 to
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

ORAGENICS, INC.
(Exact name of registrant as specified in its charter)

Florida
(State or other jurisdiction of
incorporation or organization)

2836
(Primary Standard Industrial
Classification Code Number)

59-3410522
(I.R.S. Employer
Identification No.)

**3000 Bayport Drive, Suite 685
Tampa, Florida 33607
(813) 286-7900**

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

John N. Bonfiglio
Chief Executive Officer and President
Oragenics, Inc.
3000 Bayport Drive, Suite 685
Tampa, Florida 33607
(813) 286-7900

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

With copies to:

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Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

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

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

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

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

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

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be Registered(1)	Proposed Maximum Offering Price per Share(3)	Proposed Maximum Aggregate Offering Price(3)	Amount of Registration Fee
Common Stock, par value \$0.001 per share	9,437,834(2)	\$2.27	\$21,423,884	\$2,456(4)

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), the shares being registered hereunder include such indeterminate number of shares of our Common Stock as may be issuable with respect to the shares being registered hereunder to prevent dilution by reason of any stock dividend, stock split, recapitalization or other similar transaction.
- (2) All 9,437,834 shares of Common Stock are to be offered by the Selling Shareholders named herein and were acquired in connection with a private placement consummated by registrant.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933, as amended based upon the closing price per share of our Common Stock as reported on the OTC Bulletin Board, on August 30, 2012.
- (4) Previously paid.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THE REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(A) OF THE SECURITIES ACT OF 1933, OR UNTIL THIS REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SECTION 8(A), MAY DETERMINE.

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The information in this prospectus is not complete and may be changed. This prospectus is included in a registration statement that we filed with the Securities and Exchange Commission. The Selling Shareholders cannot sell these securities under this registration statement until this registration statement becomes effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, dated September 21, 2012

PROSPECTUS

ORAGENICS, INC.

9,437,834 Shares of Common Stock

This prospectus relates to the resale by the investors listed in the section titled “Selling Shareholders”, and we refer to the investors as the Selling Shareholders (the “Selling Shareholders”) of up to 9,437,834 shares of our Common Stock, par value \$0.001 per share (the “Common Stock”). The Common Stock was acquired by the Selling Shareholders in connection with a private placement offering we completed in July 2012 (the “July 2012 Private Placement”). We are registering the resale of the Common Stock as required by the Registration Rights Agreement we entered into with the Selling Shareholders in connection with the July 2012 Private Placement (the “Registration Rights Agreement”).

The Selling Shareholders may offer and sell or otherwise dispose of the shares described in this prospectus from time to time through public or private transaction at prevailing market prices, at prices related to such prevailing market prices, at varying prices determined at the time of sale, at negotiated prices, or at fixed prices. See “Plan of Distribution” beginning on page 32 for more information.

We will not receive any of the proceeds from the Common Stock sold by the Selling Shareholders.

We have agreed to pay certain expenses in connection with this registration statement and to indemnify the Selling Shareholders against certain liabilities. The Selling Shareholders will pay all underwriting discounts and selling commissions, if any, in connection with the sale of the shares of Common Stock.

Our Common Stock is traded on the OTC Bulletin Board under the symbol “ORNI.” On August 30, 2012, the last reported sale price of our Common Stock was \$2.27 per share.

Investing in the Securities involves a high degree of risk. See the section entitled “ [Risk Factors](#)” beginning on page 5 of this prospectus.

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

The date of this prospectus September , 2012.

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ABOUT THIS PROSPECTUS

You should rely only on the information contained or incorporated by reference in this prospectus. Neither we nor the Selling Shareholders have authorized anyone to provide you with information that is different from such information. If anyone provides you with different or inconsistent information, you should not rely on it. The Selling Shareholders are offering to sell Common Stock only in jurisdictions where offers and sales are permitted. You should not assume that the information we have included in this prospectus is accurate as of any date other than the date of this prospectus or that any information we have incorporated by reference is accurate as of any date other than the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since that date.

The Selling Shareholders are offering the Common Stock only in jurisdictions where such issuances are permitted. The distribution of this prospectus and the issuance of the Common Stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the issuance of the Common Stock and the distribution of this prospectus outside the United States. This prospectus does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, the Common Stock offered by this prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

It is important for you to read and consider all of the information contained in this prospectus in making your investment decision. To understand the offering fully and for a more complete description of the offering you should read this entire document carefully, including particularly the “Risk Factors” section beginning on page 5. You also should read and consider the information in the documents to which we have referred you in the sections entitled “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference”.

As used in this prospectus, unless the context requires otherwise, the terms “we”, “us”, “our”, or “the Company” refer to Orogenics, Inc. and its subsidiaries on a consolidated basis. References to “Selling Shareholders” refers to those shareholders listed herein under “Selling Shareholders” and their successors, assignees and permitted transferees.

ABOUT FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), about the Company and its subsidiaries. These forward-looking statements are intended to be covered by the safe harbor for forward-looking statements provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical fact, and can be identified by the use of forward-looking terminology such as “believes”, “expects”, “may”, “will”, “could”, “should”, “projects”, “plans”, “goal”, “targets”, “potential”, “estimates”, “pro forma”, “seeks”, “intends”, or “anticipates” or the negative thereof or comparable terminology. Forward-looking statements include discussions of strategy, financial projections, guidance and estimates (including their underlying assumptions), statements regarding plans, objectives, expectations or consequences of various transactions, and statements about the future performance, operations, products and services of the Company and its subsidiaries. We caution our shareholders and other readers not to place undue reliance on such statements.

Our businesses and operations are and will be subject to a variety of risks, uncertainties and other factors. Consequently, actual results and experience may materially differ from those contained in any forward-looking statements. Such risks, uncertainties and other factors that could cause actual results and experience to differ from those projected include, but are not limited to, the risk factors set forth in the section entitled “Risk Factors” beginning on page 5 of this prospectus and elsewhere in the documents incorporated by reference in this prospectus, including our Annual Report on Form 10-K for the year ended December 31, 2011.

All written or oral forward-looking statements attributable to us or any person acting on our behalf made after the date of this prospectus are expressly qualified in their entirety by the risk factors and cautionary statements contained in and incorporated by reference into this prospectus. Unless legally required, we do not undertake any obligation to release publicly any revisions to such forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

PROSPECTUS SUMMARY

The following summary highlights selected information contained elsewhere in this prospectus and in the documents incorporated by reference in this prospectus and does not contain all the information you will need in making your investment decision. You should read carefully this entire prospectus and the documents incorporated by reference in this prospectus before making an investment decision, especially the information presented under the heading "Risk Factors."

Business

We are a biopharmaceutical company focused primarily on oral health products and novel antibodies. Within oral health we are commercializing our oral health probiotic blend, ProBiora3 and we are also developing our pharmaceutical product candidate, SMaRT Replacement Therapy. Within antibiotics we are developing our pharmaceutical product candidate, MU1140-S.

Our Probiotic Product

We have developed and are commercializing a variety of probiotic products that contain the active ingredient ProBiora3, a patented blend of oral care probiotics that promote fresher breath, whiter teeth and support overall oral health. We have conducted scientific studies on ProBiora3 in order to market our products under self-affirmed Generally Recognized As Safe status, or GRAS. We sell our ProBiora3 products through multiple distribution channels. We continue to seek improvement in the performance of our oral care probiotics business. As a result of such efforts:

- We received the Frost and Sullivan Award for excellence in Oral Care Probiotics;
- To better serve our customers, we have begun to qualify new delivery systems which will enable us to deliver ProBiora3 to new markets and end-users; and
- We refocused our channel efforts, successfully limiting exposure to capital-intensive areas such as mass retail and increasing efforts in cost-effective, focused markets such as dental offices.
- We recently announced the successful completion of an independently conducted, randomized, double blind clinical trial on EvoraKids.

Our SMaRT Replacement Therapy

Our SMaRT Replacement Therapy product candidate is designed to be a painless, one-time, five-minute topical treatment applied to the teeth that has the potential to offer lifelong protection against dental caries, or tooth decay. Our SMaRT Replacement Therapy is based on the creation of a genetically modified strain of bacteria that colonizes in the oral cavity and replaces native bacteria that cause tooth decay. We commenced a second Phase 1 clinical trial for SMaRT Replacement Therapy during the first quarter of 2011, which we expect to conclude in the second half of 2012.

Our Antibiotics

While developing SMaRT Replacement Therapy, members of our scientific team discovered that the SMaRT bacterial strain produces MU1140, a molecule belonging to the novel class of antibiotics known as lantibiotics. MU1140 has proven active preclinically against Gram positive bacteria responsible for a number of healthcare associated infections or "HAIs". We are in the process of attempting to scale up production of our synthetic form of MU1140, or MU1140-S.

To assist in the successful commercialization of our novel lantibiotic platform, we have recently partnered with Intrexon Corporation through a worldwide Exclusive Collaboration for the development and commercialization of lantibiotics, a novel class of broad spectrum antibiotics, as active pharmaceutical ingredients (APIs) for the treatment of infectious diseases in human and companion animals.

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We continue to consider and evaluate opportunities and/or partnerships such as our recently completed partnership with Intrexon that will promote the advancement of our portfolio of scientific technologies and expect to commence preclinical testing as soon as we have enough material to completely characterize and profile any potential drug candidates. The key technologies behind the production of MU1140-S are our Differentially Protected Orthogonal Lanthionine Technology platform, or DPOLT and Intrexon's portfolio of synthetic biology technologies. We intend to concentrate our short term efforts on our partnership with Intrexon in order to create a pipeline of lantibiotics for therapeutic use, while seeking a partner for the DPOLT platform technology.

Our Weight Loss Agent-LPT3-04

In the course of our SMaRT Replacement Therapy research, our scientific team also discovered that consumption of a significant amount of LPT3-04, a naturally occurring compound which is normally consumed in the human diet in small amounts, resulted in dose-dependent weight loss in experimental animal models. LPT3-04 consumption in the required amounts has been shown to be safe in humans. Due to the natural sweetness of LPT3-04 and the relatively large amounts of it that need to be consumed on a daily basis to achieve the desired weight loss effect, current product development efforts are focused on incorporating the compound into bars, milkshakes, and other food products. We are positioning our LPT3-04 weight loss agent for licensing following the successful completion of the proof-of-concept human clinical trial. As a result of our efforts to date in developing LPT3-04:

- Our LPT3-04 product yielded successful clinical results, paving the way for a potential newly commercialized product and/or partnership.
- We have submitted a patent application for the use of LPT3-04 for weight regulation with the United States Patent and Trademark Office, or U.S. PTO.

Other Technologies

Additionally, we are developing non-core technologies that originated from the discoveries of our scientific team, including CMAT, which is a biomarker discovery platform, which we believe could provide significant potential opportunities for us.

We have recently repositioned the Company towards increasing our focus and efforts – both financially and operationally-on our probiotics business and on our antibiotics development due to the recent collaboration with Intrexon. We expect to focus on our oral health probiotic business to improve market awareness and provide for the potential for increased future sales. We expect to devote a substantial portion of our available resources to our oral health probiotic business and continued research and development and clinical trials for our other product candidates toward the goal of outlicensing such product candidates or entering into partnerships or collaborative arrangements for the development of such product candidates. In addition, we expect to devote resources to the protection of our intellectual property and the general and administrative support of our operations.

The July 2012 Private Placement Financing and Secured Debt Conversion

On July 30, 2012 (the "July 2012 Private Placement"), we entered into a Stock Purchase Agreement (the "Purchase Agreement") with certain accredited investors (the "Purchasers") pursuant to which we: (i) sold to the Purchasers an aggregate of 8,666,665 shares of our Common Stock at a price per share of \$1.50 (the "Common Shares") for aggregate gross proceeds of \$13.0 million and (ii) issued warrants to purchase up to 771,169 shares of the our Common Stock to our placement agent Griffin Securities, Inc. (the "Agent Warrants"). We intend to use the net proceeds from this July 2012 Private Placement to accelerate development of several of our key initiatives including the recently announced Channel Agreement with Intrexon relating to the our lantibiotics program, sales and marketing of our probiotic product lines and general corporate purposes.

Because the July 2012 Private Placement constituted a "qualified financing" under the terms of our existing Loan Agreement with the KFLP, our secured debt in the principal amount of \$2.5 million, together with accrued but unpaid interest thereon, due to the KFLP was automatically converted contemporaneously with the closing of the July 2012 Private Placement into 1,692,123 shares of common stock issued to the KFLP at the same price of \$1.50 per share paid by the Purchasers in the July 2012 Private Placement. The KFLP waived receiving comparable registration rights as the Purchasers in the July 2012 Private Placement as well as its piggyback registration rights

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applicable to the July 2012 Private Placement. Intrexon also waived its piggyback registration rights applicable to the July 2012 Private Placement and waived its participation rights. As a result of the conversion of the secured indebtedness, the Loan Agreement together with the related Security Agreement and related agreements have been terminated which eliminated all of our long-term debt.

Corporate and Other Information

We were incorporated in Florida in 1996 and commenced operations in 1999. We amended our articles of incorporation in 2002 in order to change our name from Oragen, Inc. to Oragenics, Inc., and consummated our initial public offering in June 2003. Our executive office is located at 3000 Bayport Drive, Suite 685, Tampa, Florida, 33607 and our research facilities are located at 13700 Progress Boulevard, Alachua, Florida 32615. Our telephone number is (813) 286-7900 and our website is <http://www.oragenics.com>. Information on, or that can be accessed through, our website is not part of this prospectus and should not be relied on in connection with this offering.

For a complete description of our business, financial condition, results of operations and other important information, we refer you to our filings with the Securities and Exchange Commission (the "SEC") that are incorporated by reference in this prospectus, including our Annual Report on Form 10-K for the year ended December 31, 2011. For instructions on how to find copies of these documents, see "Where You Can Find Additional Information."

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The Offering

The following is a brief summary of the offering. You should read the entire prospectus carefully, including “Risk Factors” and the information, including financial information relating to us included in our filings with the Securities and Exchange Commission and incorporated in this document by reference.

Common stock offered by the Selling Shareholders 9,437,834 shares of common stock.

Selling Shareholders See “*Selling Shareholders*” beginning on page 26.

Common stock outstanding 27,204,721 shares as of August 27, 2012.

Use of proceeds We will not receive any proceeds from the sale or other disposition of the shares of common stock covered by this prospectus. See “*Use of Proceeds*” on page 25.

OTC Bulletin Board Symbol Our Common Stock is quoted on the OTC Bulletin Board under the ticker symbol “ORNI”.

Risk Factors You should consider the matters set forth under “*Risk Factors*” beginning on page 5, as well as other cautionary statements throughout or incorporated by reference in this prospectus, before deciding to invest in shares of our common stock.

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RISK FACTORS

Readers and prospective investors in our common stock should carefully consider the following risk factors as well as the other information contained or incorporated by reference in this prospectus.

If any of the following risks actually occurs, our financial condition, results of operations and liquidity could be materially adversely affected. If this were to happen, the value of our common stock could decline, and if you invest in our common stock, you could lose all or part of your investment.

The discussion below highlights some important risks we have identified related to our business and operations and an investment in shares of our common stock, but these should not be assumed to be the only factors that could affect our future performance and condition, financial and otherwise. We do not have a policy of updating or revising forward-looking statements except as otherwise required by law, and silence by management over time should not be construed to mean that actual events are occurring as estimated in such forward-looking statements.

Risks Related to Our Business

We have incurred significant losses since our inception and expect to continue to experience losses for the foreseeable future.

We have incurred significant net losses and negative cash flow in each year since our inception, including net losses of approximately \$8.5 million, \$3.9 million, \$7.6 million and \$7.8 million for the six months ended June 30, 2012 and 2011 and the years ended December 31, 2011 and 2010, respectively. As of June 30, 2012 our accumulated deficit was approximately \$49.5 million. We have devoted a significant amount of our financial resources to research and development, including our preclinical development activities and clinical trials, and currently we only have our ProBiora3 products available for commercial sale which to date has not generated significant revenue. We expect that the costs associated with our exclusive channel partnership with Intrexon Corporation and the development and commercialization of our product candidates, as well as our increased marketing and sales efforts for our ProBiora3 products will increase the level of our overall expenses significantly going forward. As a result, we expect to continue to incur substantial net losses and negative cash flow for the foreseeable future. These losses and negative cash flows have had, and will continue to have, an adverse effect on our shareholders' equity and working capital. Because of the numerous risks and uncertainties associated with product development and commercialization, we are unable to accurately predict the timing or amount of substantial expenses or when, or if, we will be able to achieve or maintain profitability. The size of our future net losses will depend, in part, on the rate of growth of our expenses and the rate of growth of our revenues. If we are unable to develop and commercialize our other product candidates or if sales revenue from ProBiora3 products is insufficient, we will not achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability.

We will need to raise additional capital in the future to complete the development and commercialization of our product candidates and operate our business.

Developing and commercializing biopharmaceutical products, including conducting preclinical studies and clinical trials and establishing manufacturing capabilities, is expensive. As a result of the approximately \$13 million in gross proceeds from our recent private placement of common stock, we anticipate that our cash resources as of July 31, 2012 will be sufficient to fund our operations for at least the next 18 months. However, changes may occur that would consume our existing capital prior to that time, including the scope and progress of our efforts to develop and commercialize our product candidates. Because we currently expect to devote a significant portion of our resources to develop and commercialize lantibiotics and for ProBiora3 sales and marketing efforts, further progress with the development of our other product candidates including our SMaRT Replacement Therapy, MU1140-S and LPT3-04 product candidates may be significantly delayed and may depend on the success of our development efforts involving lantibiotics. Our actual costs, as well as the actual revenues from sales of our ProBiora3 products, may ultimately vary from our current expectations, which could materially impact our use of capital and our forecast of the period of time through which our financial resources will be adequate to support our operations. If our current cash, cash equivalents and short-term investments are not sufficient to fully implement our business strategy and sustain our operations, we will need to seek additional sources of financing and such additional financing may not be available on favorable terms, if at all. Until we can generate a sufficient amount of product revenue, if ever, we

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expect to finance future cash needs through public or private equity offerings, debt financings or corporate collaboration and licensing arrangements. If we do not succeed in raising additional funds on acceptable terms, we may be unable to complete planned preclinical and clinical trials or obtain approval of our product candidates from the FDA and other regulatory authorities. In addition, we could be forced to discontinue product development and commercialization of one or more of our product candidates, curtail or forego sales and marketing efforts, and/or forego licensing attractive business opportunities. Any additional sources of financing will likely involve the issuance of our equity or debt securities, which will have a dilutive effect on our shareholders.

Our success will also depend on our ability to significantly increase sales of our ProBiora3 products which have only generated modest revenues to date.

Currently our sole source of product revenues is from sales of our ProBiora3 products, which began in late 2008 and have generated only modest revenues to date. Sales of our ProBiora3 products were \$545,134 for the six months ended June 30, 2012 and \$1,193,236 and \$1,128,895 for the years ended December 31, 2011 and 2010, respectively. While we plan to significantly increase the amount we spend on sales and marketing efforts for our ProBiora3 products, there can be no assurance that it will result in a significant increase in sales. If we are unable to generate significant revenues from our ProBiora3 products our business, financial condition and results of operations will be materially adversely affected.

Our success will depend on our ability to obtain regulatory approval of our SMaRT Replacement Therapy and MU1140-S product candidates and their successful commercialization.

Our SMaRT Replacement Therapy and MU1140-S product candidates have not received regulatory approval in any jurisdiction and they may never receive approval or, if approvals are obtained, may never be commercialized successfully. We have incurred and will continue to incur significant costs relating to the preclinical and clinical development of our SMaRT Replacement Therapy and MU1140-S product candidates. We are currently in the process of commencing a second Phase 1 clinical trial to examine the safety and genetic stability of an attenuated version of the SMaRT strain in humans. We do not know whether our planned and current clinical trials for our SMaRT Replacement Therapy product candidate will be completed on schedule, if at all. In addition, we do not know whether any of our clinical trials will be successful or can be completed within our current expected budget. For our MU1140-S product candidate, we have performed extensive preclinical testing using native MU1140 and have since completed an Exclusive Channel Collaboration Agreement with Intrexon Corporation. We expect to use Intrexon's proprietary technologies to conclude the preclinical testing of MU1140-S, including toxicity testing in rodent and non-rodent animal models, during the first half of 2013. We intend to file an Investigational New Drug, or IND, application with the FDA in mid-2014. Even if we are able to conduct successful clinical trials or the required regulatory approvals are obtained, we may never be able to generate significant revenues from our SMaRT Replacement Therapy and MU1140-S product candidates. If our SMaRT Replacement Therapy or MU1140-S product candidates are unsuccessful, we may be unable to generate sufficient revenues to sustain and grow our business, and our business, financial condition and results of operations will be materially adversely affected.

The technology on which our channel partnering arrangement with Intrexon is based on early stage technology in the field of lantibiotics.

Our exclusive channel collaboration arrangement with Intrexon contemplates the use of Intrexon's advanced transgene and cell engineering platforms for the development and production of lantibiotics. Such technologies have a limited history of use in the design and development of active pharmaceutical ingredients and drug products involving the direct administration to humans or companion animals of a lantibiotic for the prevention or treatment of infectious disease and may therefore involve unanticipated risks or delays. The risk factors set forth herein that apply to our SMaRT Replacement Therapy, MU1140-S and LPT3-04 product candidates, which are in various stages of development, also apply to product candidates that we seek to develop under our exclusive channel partnership with Intrexon.

We will incur additional expenses in connection with our exclusive channel collaboration arrangement with Intrexon.

Pursuant to our exclusive channel collaboration with Intrexon, we are responsible for future research and development expenses of product candidates developed under such collaboration, the effect of which we expect will

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increase the level of our overall research and development expenses going forward. Although all manufacturing, preclinical studies and human clinical trials are expensive and difficult to design and implement, costs associated with the manufacturing, research and development of biologic product candidates are generally greater in comparison to small molecule product candidates. We expect to add additional personnel to support our exclusive channel collaboration with Intrexon.

Because our collaboration with Intrexon is relatively new, we have yet to assume development responsibility and costs associated with such program. In addition, because development activities are determined pursuant to a joint steering committee comprised of Intrexon and ourselves and we have limited experience, future development costs associated with this program may be difficult to anticipate and exceed our expectations. Our actual cash requirements may vary materially from our current expectations for a number of other factors that may include, but are not limited to, unanticipated technical challenges, changes in the focus and direction of our development activities or adjustments necessitated by changes in the competitive landscape in which we operate. If we are unable to continue to financially support such collaboration due to our own working capital constraints, we may be forced to delay our activities. If we are unable to obtain additional financing on terms acceptable to us or at all, we may be forced to seek licensing partners or discontinue development.

We may not be able to retain the exclusive rights licensed to us by Intrexon to develop and commercialize lantibiotic products.

Under our exclusive channel collaboration agreement with Intrexon (the "ECC"), we are responsible for, among other things, funding the further anticipated development of lantibiotics toward the goal of commercialization, conducting preclinical and clinical development of candidate lantibiotics, as well as for other aspects of manufacturing and the commercialization of the product(s). During the first 18 months, neither we nor Intrexon may terminate the ECC, except under limited circumstances. Following the first 18 months, Intrexon may terminate such agreement if we do not perform certain specified requirements, including developing therapies identified to us and considered superior by Intrexon. There can be no assurance that we will be able to successfully perform under the ECC and if the ECC is terminated it would prevent us from achieving our business objectives.

Our auditor has expressed substantial doubt about our ability to continue as a going concern.

In light of our recurring losses, accumulated deficit and negative cash flow, the report of our independent registered public accounting firm on our financial statements for the year ended December 31, 2011 contains an explanatory paragraph raising substantial doubt about our ability to continue as a going concern. Our financial statements do not include any adjustments that may be necessary in the event we are unable to continue as a going concern. If we are unable to establish to the satisfaction of our independent registered public accounting firm that the net proceeds from our financing efforts will be sufficient to allow for the removal of this going concern qualification, we may need to significantly modify our operational plans for us to continue as a going concern.

Our success will depend on our ability to partner or sub-license our SMaRT Replacement Therapy and MU1140-S product candidates and their subsequent successful commercialization.

Our SMaRT Replacement Therapy and MU1140-S product candidates are both in early stage development and will require partners with deep financial resources to continue the development of each of these products to commercialization. In addition, none of these product candidates have received regulatory approval in any jurisdiction and they may never receive approval or, if approvals are obtained, may never be commercialized successfully. We are currently conducting a second Phase 1 clinical trial to examine the safety and genetic stability of an attenuated version of the SMaRT strain in humans. Currently our clinical trials for our SMaRT Replacement Therapy product candidate are ongoing. In addition, we do not know whether any of our clinical trials will be successful or can be completed within our current expected budget. For our MU1140-S product candidate, we have performed extensive preclinical testing using native MU1140 and expect to pursue the preclinical testing of MU1140-S, including *in vitro* and animal models, during 2012. Even if we are able to partner and conduct successful clinical trials or the required regulatory approvals are obtained, we may never be able to generate significant revenues from our SMaRT Replacement Therapy and MU1140-S product candidates. If our SMaRT Replacement Therapy or MU1140-S product candidates are unsuccessful, we may be unable to generate sufficient revenues to sustain and grow our business, and our business, financial condition and results of operations will be materially adversely affected.

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Our financial results could vary significantly from quarter to quarter and are difficult to predict.

Our revenues and operating results could vary significantly from quarter to quarter due to a variety of factors, many of which are outside of our control. As a result, comparing our operating results on a period-to-period basis may not be meaningful. In addition, we may not be able to predict our future revenues or results of operations. We base our current and future expense levels on our internal operating plans and sales forecasts, and our operating costs are to a large extent fixed. As a result, we may not be able to reduce our costs sufficiently to compensate for an unexpected shortfall in revenues, and even a modest shortfall in revenues could disproportionately and adversely affect financial results for that quarter. Individual products represent meaningful portions of our revenues in any quarter. We may incur significant or unanticipated expenses associated with our research and development efforts of our product candidates under development. In addition to other risk factors discussed in this section, factors that may contribute to the variability of our quarterly results include:

- the timing of release of new products and services by us and our competitors, particularly those that may represent a significant portion of revenues in any given period;
- the popularity of new products, and products released in prior periods;
- changes in pricing policies by us or our competitors;
- fluctuations in the size and rate of growth of overall consumer and retailer demand for our ProBiora3 products;
- our success in entering new geographic markets;
- decisions by us to incur additional expenses, such as increases in marketing or research and development;
- the level of expenses associated with our clinical trials;
- accounting rules governing recognition of revenues;
- the amount we reserve against returns and allowances; and
 - the timing of compensation expense associated with equity compensation grants.

As a result of these and other factors, our quarterly and annual operating results could be materially adversely affected. Moreover, our operating results may not meet announced guidance or the expectations of research analysts or investors, in which case the price of our common stock could decrease significantly.

Current and future economic and market conditions could materially adversely affect our revenues, expense levels and profitability.

The U.S. economy and the global economy are recovering from a severe recession. Factors such as uncertainties in consumer spending, a sustained regional and/or global economic downturn or slow recovery may reduce the demand for our ProBiora3 products. Furthermore, challenging economic conditions also may impair the ability of our customers to pay for our commercial products. Because consumer spending for our ProBiora3 products can generally be considered a discretionary purchase, we may experience a more negative impact on our business due to these conditions than other companies that do not depend on discretionary spending. If demand for our ProBiora3 products declines or our customers are otherwise unable to pay for our products, we may be required to offer extensive discounts or spend more on marketing than budgeted and our revenues, expense levels, and profitability will be materially adversely affected.

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We are subject to government regulation of the processing, formulation, packaging, labeling and advertising of our consumer products.

Under the Federal Food, Drug, and Cosmetic Act, or FDCA, companies that manufacture and distribute foods, such as our ProBiora3 products, are limited in the claims that they are permitted to make about nutritional support on the product label without FDA approval. Any failure by us to adhere to the labeling requirements could lead to the FDA's requiring that our products be repackaged and relabeled, which would have a material adverse effect on our business. In addition, companies are responsible for the accuracy and truthfulness of, and must have substantiation for, any such statements. These claims must be truthful and not misleading. Statements must not claim to diagnose, mitigate, treat, cure or prevent a specific disease or class of disease. We are able to market our ProBiora3 products in reliance on the self-affirmed Generally Recognized As Safe, or GRAS, status of our active ingredient, ProBiora3. No governmental agency or other third party has made a determination as to whether or not ProBiora3 has achieved GRAS status. We make this determination based on independent scientific opinions that ProBiora3 is not harmful under its intended conditions of use. If the FDA, another regulatory authority or other third party denied our self-affirmed GRAS status for ProBiora3, we could face significant penalties or be required to undergo the regulatory approval process in order to market our probiotic products, and our business, financial condition and results of operations will be adversely affected. We cannot guarantee that in such a situation ProBiora3 would be approved.

The FDA's Good Manufacturing Practices, or GMPs, describe the methods, equipment, facilities, and controls for producing processed food and set the minimum sanitary and processing requirements for producing safe and wholesome food. Those who manufacture, package, or hold human food must comply with the GMPs. If we or our suppliers fail to comply with the GMPs, the FDA may take enforcement action against us or our suppliers.

The processing, formulation, packaging, labeling and advertising of our probiotic products are subject to regulation by one or more federal agencies including the FDA, the Federal Trade Commission and the Environmental Protection Agency. Our activities are also subject to regulation by various agencies of the states and localities in which our probiotic products are sold. Any changes in the current regulatory environment could impose requirements that would limit our ability to market our probiotic products and make bringing new products to market more expensive. In addition, the adoption of new regulations or changes in the interpretation of existing regulations may result in significant compliance costs or discontinuation of product sales and may adversely affect our business, financial condition and results of operations. While our ProBiora3 products are categorized as foods, it is possible that the FDA or a state regulatory agency could classify these products as a cosmetic or a drug. If the products are classified as cosmetics rather than a food, we would be limited to making claims that the products cleanse and beautify, but we could not make structure or function claims. If our probiotic products are classified as drugs, we would not be able to market the ProBiora3 products without going through the drug approval process. Either of these events would limit our ability to effectively market our products and would adversely affect our financial condition and results of operations. If the FDA or a state regulatory agency viewed the products as cosmetics or drugs, they could claim that the products are misbranded and require that we repack and relabel the products and impose civil and/or criminal penalties. Either or both of these situations could adversely affect our business and operations.

If we undertake product recalls or incur liability claims with respect to our ProBiora3 products, such recalls or claims could increase our costs and adversely affect our reputation, revenues and operating income.

Our ProBiora3 products are designed for human and animal consumption and we may face product recalls or liability claims if the use of our products is alleged to have resulted in injury or death. ProBiora3 is classified as a food ingredient and is not subject to pre-market regulatory approval in the United States. Our ProBiora3 products contain ingredients that do not have long histories of human or animal consumption. Previously unknown adverse reactions resulting from consumption of these ingredients could occur. We may have to undertake various product recalls or be subject to liability claims, including, among others, that our ProBiora3 products include inadequate instructions for use or inadequate warnings concerning possible side effects and interactions with other substances. A product recall or liability claim against us could result in increased costs and could adversely affect our reputation with our customers, which, in turn, could have a material adverse effect on our business, financial condition and results of operations.

Product liability insurance is expensive, is subject to deductibles and coverage limitations, and may not be available in the future. While we currently maintain product liability insurance coverage, we cannot be sure that such coverage will be adequate to cover any incident or all incidents. In addition, we cannot be sure that we will be able to obtain or maintain insurance coverage at acceptable costs or in a sufficient amount, that our insurer will not

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disclaim coverage as to a future claim or that a product liability claim would not otherwise adversely affect our business, financial condition and results of operations. The cost of any product liability litigation or other proceeding, even if resolved in our favor, could be substantial. Uncertainties resulting from the initiation and continuation of product liability litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. Product liability litigation and other related proceedings may also require significant management attention.

If we fail to comply with our obligations in the agreements with the University of Florida Research Foundation, Inc., under which we license our rights to SMaRT Replacement Therapy and MU1140, our licenses to these product candidates may be terminated and we will be unable to commercialize these products candidates.

We hold our SMaRT Replacement Therapy and MU1140 product candidates under licenses from the University of Florida Research Foundation, Inc., or UFRF. Under the terms of the licenses, we must spend at least \$1,000,000 per year on development of those product candidates until the first commercial sale of products derived from those product candidates has occurred. In addition, we must pay \$25,000 per quarter as minimum royalties to the UFRF under our license agreements. The UFRF may terminate our licenses to SMaRT Replacement Therapy and MU1140 if we breach our obligations to timely pay these amounts, to submit development reports as required under the license agreements or commit any other breach of any other covenants contained in the license agreements. There is no assurance that we will be able to comply with these conditions in a timely manner or at all. If our license agreements are terminated, we will be unable to commercialize these product candidates.

Until commercial sale of any products developed from these licensed product candidates takes place, we will not earn any revenues from these product candidates and will, therefore, need additional financing to fund our required royalty payments and development expenses, such as through the commercialization and sale of our ProBiora3 products, the sale of our debt or equity securities, or otherwise. There can be no assurance that we will achieve sufficient sales of our ProBiora3 products or be able to raise the capital necessary to meet our obligations under our licenses. If we are unable to meet our obligations under these licenses, we may lose the licenses to these product candidates and our business, financial condition and results of operations will be materially adversely affected.

We depend on third-party manufacturers for our ProBiora3 products. The loss of any manufacturer or any interruptions in the supply of our ProBiora3 products, would have a negative impact on our revenues and profitability.

We currently have no manufacturing facilities and are dependent upon establishing relationships with independent manufacturers to supply our product needs. We have contracted with multiple GMP-certified manufacturers to produce our active ingredient, ProBiora3, under GMPs. We believe our arrangements with our contract manufacturers have the capacity to meet our current and expected future manufacturing needs. Although we have qualified and used at least two contract manufacturers for each step in our manufacturing process, we do not have a long-term supply agreement or commitment with any of our manufacturers. If our manufacturers are unable or unwilling to produce our ProBiora products in sufficient quantities, or at all, at acceptable pricing in accordance with specifications we establish from time to time we would need to find alternative manufacturers that are qualified. If, in such instances, we are unsuccessful in obtaining alternative manufacturers, it could impair our ability to sell our ProBiora3 products and would have a negative impact on our revenues and profitability. In addition, competitors who own their manufacturing facilities may have an advantage over us with respect to pricing, availability of product and in other areas through their control of the manufacturing process.

The risks associated with the numerous factors that could cause interruptions in the supply of our products, including manufacturing capacity limitations, regulatory inspections, changes in our sources for manufacturing, disputes with a manufacturer, our failure to timely locate and obtain replacement manufacturers as needed and conditions affecting the cost and availability of raw materials, are magnified when the suppliers are limited in number. Any interruption in the supply of finished products could hinder our ability to timely distribute our products and satisfy customer demand. If we are unable to obtain adequate product supplies to satisfy our customers' orders, we may lose those orders, our customers may cancel other orders, and they may choose instead to stock and purchase competing products. This could result in a loss of our market share and negatively affect our revenues and profitability.

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If our manufacturers in general fail to meet our requirements and the requirements of regulatory authorities, our revenues and profitability may be materially adversely affected.

We do not have the internal capability to manufacture our ProBiora3 products or our LPT3-04 Weight Loss, SMaRT Replacement Therapy and MU1140-S product candidates under GMPs, as required by the FDA and other regulatory agencies. In order to continue to develop our product candidates, apply for regulatory approvals for our SMaRT Replacement Therapy and MU1140-S product candidates, and commercialize our ProBiora3 and LPT3-04 products and other product candidates, we will need to contract with third parties that have, or otherwise develop, the necessary manufacturing capabilities.

There are a limited number of manufacturers that operate under GMPs that are capable of manufacturing our ProBiora3 products and SMaRT Replacement Therapy product candidate. Furthermore, manufacturing MU1140-S on a commercial scale has not yet been achieved, so there are additional technical skills needed for the manufacture of MU1140-S that will further limit the number of potential manufacturers. As such, if we are unable to enter into supply and processing contracts with any of these manufacturers or processors for our ProBiora3 products or our development stage product candidates, such as LPT3-04, we may incur additional costs and delays in development and commercialization.

Problems with these manufacturing processes such as equipment malfunctions, facility contamination, labor problems, raw material shortages or contamination, natural disasters, power outages, terrorist activities, or disruptions in the operations of our suppliers and even minor deviations from normal procedures, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims and insufficient inventory.

If we are required to find an additional or alternative source of supply, there may be additional costs and delays in the development or commercialization of our product candidates. Additionally, the FDA and other regulatory agencies routinely inspect manufacturing facilities before approving a New Drug Application, or NDA, or Biologic License Application, or BLA, for a drug or biologic manufactured at those sites. If any of our manufacturers or processors fails to satisfy regulatory requirements, the approval and eventual commercialization of our commercial products and product candidates may be delayed.

All of our contract manufacturers must comply with the applicable GMPs, which include quality control and quality assurance requirements as well as the corresponding maintenance of records and documentation. If our contract manufacturers do not comply with the applicable GMPs and other FDA regulatory requirements, we may be subject to product liability claims, the availability of marketed products for sale could be reduced, our product commercialization could be delayed or subject to restrictions, we may be unable to meet demand for our products and may lose potential revenues and we could suffer delays in the progress of preclinical testing and clinical trials for products under development. We do not have control over our third-party manufacturers' compliance with these regulations and standards. Moreover, while we may choose to manufacture ProBiora3 products ourselves in the future, we have no experience in the manufacture of pharmaceutical or biological products for clinical trials or commercial purposes. If we decide to manufacture products, we would be subject to the regulatory requirements described above. In addition, we would require substantial additional capital and would be subject to delays or difficulties encountered in manufacturing pharmaceutical or biological products. Regardless of the manufacturer of our products, we will be subject to continuing obligations regarding the submission of safety reports and other post-market information.

We may be unable to find a method to produce MU1140-S in large-scale commercial quantities. If we cannot, we will be unable to generate revenues from sales of our MU1140-S product candidate.

Our antibiotic product candidate, MU1140-S, is a synthetic form of MU1140 produced by our strain of *S. mutans*. To date, it has been produced only in laboratory cultures. In March 2005 we successfully developed a methodology for producing MU1140 in quantities sufficient to undertake its preclinical testing. In addition, we developed the DPOLT synthetic chemistry methodology to allow large-scale commercial production of the MU1140-S antibiotic. However, this methodology may not be feasible for cost effective, large scale manufacture. If we are not able to utilize this methodology for large-scale manufacture, we will be unable to partner and generate revenues from this product candidate and our business, financial condition and results of operations will be materially adversely affected. We have recently retained Bachem to refine and scale-up GMP production of MU1140-S. The manufacturing of MU1140-S is a highly exacting and complex process. Manufacturing MU1140-S on a commercial scale has not yet been achieved so there are additional risks. Third-party manufacturers must have additional technical skills and must take multiple steps to attempt to control the manufacturing processes.

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Our ProBiora3 products and our LPT3-04 Weight Loss, SMaRT Replacement Therapy and MU1140-S product candidates face various forms of competition from other products in the marketplace.

The pharmaceutical and biotechnology industries are characterized by intense competition, rapid product development and technological change. Most of the competition that our ProBiora3 products and our LPT3-04 Weight Loss, SMaRT Replacement Therapy and MU1140-S product candidates face comes from companies that are large, well established and have greater financial, marketing, sales and technological resources than we have. Our ProBiora3 products compete with a range of consumer and nutraceutical products. Our commercial success with the LPT3-04 Weight Loss Agent, SMaRT Replacement Therapy and MU1140-S will depend on our ability and the ability of any sub-licensees to compete effectively in marketing and product development areas including, but not limited to, sales and branding, drug safety, efficacy, ease of use, patient or customer compliance, price, marketing and distribution. There can be no assurance that competitors will not succeed in developing and marketing products that are more desirable or effective than our ProBiora3 products or the products developed from our product candidates or that would render our products obsolete and non-competitive. We anticipate that our SMaRT Replacement Therapy, if approved for the treatment of tooth decay, would compete with other companies attempting to develop technologies in the oral health care market, including vaccines.

We rely on the significant experience and specialized expertise of our senior management and scientific team and we have incurred significant turnover in key positions in the last six months.

Our performance is substantially dependent on the continued services and on the performance of our senior management and scientific team, who have extensive experience and specialized expertise in our business. Our performance also depends on our ability to retain and motivate our other key employees. In May 2011, we hired Dr. John Bonfiglio as Chief Executive Officer and in February 2012, we hired Mr. Michael Sullivan, CPA as our Chief Financial Officer. The loss of the services of these key employees could harm our ability to develop and commercialize our product candidates. We have no key man life insurance policies. We have employment agreements with Dr Bonfiglio and Mr. Sullivan. The term of each of these employment agreements is for an indefinite period and will end when the employment relationship is terminated by either party for any or no reason.

We need to hire and retain additional qualified scientists and other highly skilled personnel to maintain and grow our business.

Our future success depends on our ability to identify, attract, hire, train, retain and motivate highly skilled technical, managerial and research personnel in all areas within our organization. We plan to continue to grow our business and will need to hire additional personnel to support this growth. We believe that there are only a limited number of individuals with the requisite skills to serve in many of our key positions, and we compete for key personnel with other biotechnology and nutraceutical companies, as well as universities and research institutions. It is often difficult to hire and retain these persons, and we may be unable to replace key persons if they leave or be unable to fill new positions requiring key persons with appropriate experience. If we fail to attract, integrate and retain the necessary personnel, our ability to maintain and grow our business could suffer significantly.

If our SMaRT Replacement Therapy and MU1140-S product candidates are shown to be ineffective or harmful in humans, we will be unable to generate revenues from these product candidates.

Before obtaining regulatory approvals for the commercial sale of our SMaRT Replacement Therapy or MU1140-S product candidates, we must demonstrate through preclinical testing and clinical trials that our products are safe and effective for use in humans. To date, the testing of our SMaRT Replacement Therapy product candidate has been undertaken solely in animals and a limited number of humans. Studies have proven our genetically altered strain of *S. mutans* to be effective in preventing tooth decay in animals. It is possible that our strain of *S. mutans* will be shown to be less effective in preventing tooth decay in humans in clinical trials. If our SMaRT Replacement Therapy product candidate is shown to be ineffective in preventing tooth decay in humans, we will be unable to commercialize and generate revenues from this product candidate. To date the testing of the antibiotic substance, MU1140, has been undertaken solely in the laboratory and in animals. We have not yet conducted human studies of MU1140-S. It is possible that when these studies are conducted, they will show that MU1140-S is ineffective or harmful in humans. If MU1140-S is shown to be ineffective or harmful in humans, we will be unable to

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commercialize and generate revenues from sales of this compound. If we are unable to generate revenues from our SMaRT Replacement Therapy and MU1140-S product candidates, our business, financial condition and results of operations will be materially adversely affected.

We intend to rely on third parties to pay the majority of the costs associated with obtaining regulatory approval for, and manufacturing and marketing of, our MU1140-S and SMaRT Replacement Therapy product candidates. If we are unable to obtain agreements with third parties to fund these costs, we will have to fund such costs ourselves or we may be unable to continue our operations.

As we continue our MU1140-S and SMaRT Replacement Therapy product candidates, we intend to either license these product candidates to, or partner with, one or more major pharmaceutical companies the earliest possible time in their product development. If we do so, we intend for these licensees or partners to pay the costs associated with any remaining development work, regulatory submissions, clinical trials and the manufacturing and marketing of our product candidates. If we are unable to license our product candidates or otherwise partner with third parties, we will have to fund the costs of our clinical trials ourselves. We will also have to establish our own manufacturing facilities and find our own distribution channels. This would greatly increase our future capital requirements and we cannot assure you that we would be able to obtain the necessary financing to pay these costs or that we will be generating significant revenues from any of our products, such as ProBiora3, sufficient to cover the associated costs. If we do not generate sufficient revenues to cover the associated costs or we cannot obtain financing on acceptable terms or at all, our business, financial condition and results of operations will be materially adversely affected.

Our dependence on collaborative arrangements with third parties subjects us to a number of risks. These collaborative arrangements may not be on terms favorable to us. Agreements with collaborative partners typically allow partners significant discretion in electing whether or not to pursue any of the planned activities. We cannot control the amount and timing of resources our collaborative partners may devote to products based on the collaboration, and our partners may choose to pursue alternative products. Our partners may not perform their obligations as expected. Business combinations or significant changes in a collaborative partner's business strategy may adversely affect a partner's willingness or ability to complete its obligations under the arrangement. Moreover, we could become involved in disputes with our partners, which could lead to delays or termination of the collaborations and time-consuming and expensive litigation or arbitration. Even if we fulfill our obligations under a collaborative agreement, our partner may be able to terminate the agreement under certain circumstances. If any collaborative partner were to terminate or breach our agreement with it, or otherwise fail to complete its obligations in a timely manner, our chances of successfully commercializing our product candidates would be materially and adversely affected.

We are subject to risks of doing business internationally as we attempt to expand our sales through international distributor relationships.

We have entered into a number of international distributor agreements for our ProBiora3 products. As a result, we expect to increase our revenues from international sales. A number of factors can slow or prevent international sales, or substantially increase the cost of international sales, and we may encounter certain risks of doing business internationally including the following:

- reduced protection and enforcement for our intellectual property rights;
- unexpected changes in, or impositions of, legislative or regulatory requirements that may limit our ability to sell our products and repatriate funds to the United States;
- political and economic instability;
- fluctuations in foreign currency exchange rates;
- difficulties in developing and maintaining distributor relationships in foreign countries;

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- difficulties in negotiating acceptable contractual terms and enforcing contractual obligations;
- exposure to liabilities under the U.S. Foreign Corrupt Practices Act;
- potential trade restrictions and exchange controls;
- creditworthiness of foreign distributors, customer uncertainty and difficulty in foreign accounts receivable collection; and
- the burden of complying with foreign laws.

As we attempt to expand our sales internationally, our exposure to these risks could result in our inability to attain the anticipated benefits and our business could be adversely impacted. Our success will depend, in large part, on our ability to anticipate and effectively manage these and other risks associated with our international operations. However, any of these factors could adversely affect our international operations and, consequently, our operating results.

If our intellectual property rights do not adequately protect our products or product candidates, or if third parties claim we are infringing their intellectual property rights, others could compete against us more directly or we could be subject to significant litigation. Such results could prevent us from marketing our products or product candidates and hurt our profitability.

Our product portfolio is protected by ten issued U.S. patents and twelve filed U.S. patent applications, including patents exclusively licensed from the University of Florida Research Foundation, Inc., or the UFRF. We are the exclusive worldwide licensee to the patents for SMaRT Replacement Therapy and MU1140, which are owned by the UFRF. Our success depends in part on our ability to obtain patents or rights to patents, protect trade secrets, operate without infringing upon the proprietary rights of others, and prevent others from infringing on our patents, trademarks and other intellectual property rights. We will be able to protect our intellectual property from unauthorized use by third parties only to the extent that it is covered by valid and enforceable patents, trademarks and licenses. Patent protection generally involves complex legal and factual questions and, therefore, enforceability of patent rights cannot be predicted with certainty. Patents, if issued, may be challenged, invalidated or circumvented. Thus, any patents that we own or license from others may not provide adequate protection against competitors. In addition, any future patent applications may fail to result in patents being issued. Also, those patents that are issued may not provide us with adequate proprietary protection or competitive advantages against competitors with similar product candidates. Moreover, the laws of certain foreign countries do not protect intellectual property rights to the same extent as do the laws of the United States.

In addition to patents and trademarks, we rely on trade secrets and proprietary know-how. We seek protection of these rights, in part, through confidentiality and proprietary information agreements. These agreements may not provide meaningful protection or adequate remedies for violation of our rights in the event of unauthorized use or disclosure of confidential and proprietary information. Failure to protect our proprietary rights could seriously impair our competitive position.

In the event of an infringement or violation, we may face litigation and may be prevented from pursuing product development or commercialization. We may receive in the future, notice of claims of infringement of other parties' proprietary rights. Infringement or other claims could be asserted or prosecuted against us in the future and it is possible that past or future assertions or prosecutions could harm our business.

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The FDA instituted numerous clinical holds with respect to our Phase 1 clinical trial program for our SMaRT Replacement Therapy product candidate. Although the clinical holds were lifted with respect to the attenuated version of the SMaRT strain, a clinical hold remains in effect for our IND for the non-attenuated SMaRT strain. If the FDA does not lift the clinical hold on this IND, we will be unable to conduct the clinical trials necessary to obtain marketing approval of our product candidate. The FDA's concerns that resulted in these clinical holds may lead to the imposition of a new clinical hold or holds or the failure of our product candidates to obtain marketing approval.

In December 1998, the FDA imposed a clinical hold on the IND for our SMaRT strain. The FDA expressed concerns about the potential for DNA transfer into or from the SMaRT strain; the possible creation of an organism with increased ability to colonize and produce dental caries; and the potential for the transfer of the strain between humans. We met with the FDA to discuss proposed trials of an attenuated SMaRT strain to address the FDA's concerns, and the FDA informed us that such trials required a separate IND. We submitted an IND for the attenuated strain in March 2003.

The FDA then imposed multiple clinical holds with respect to the Phase 1 clinical trials of the attenuated strain. Specifically, we received clinical hold letters in May 2003, February 2004, June 2007 and August 2007. In connection with the clinical hold letter in May 2003, the FDA requested that we provide preclinical data on eradication of the attenuated version of the SMaRT strain once it had been implanted and a plan for the eradication of the attenuated strain in the trial subjects and their spouse or partners. In an April 2004 meeting, the FDA suggested that we conduct two eradication trials: one in subjects without teeth, and, if successful, another trial in subjects with teeth. We submitted revised protocols in accordance with FDA's suggestions, and in November 2004 the FDA lifted the clinical hold for the attenuated strain.

We initiated our first Phase 1 clinical trial in April 2005, but we found it difficult to find subjects who fit the FDA's highly cautious inclusion and exclusion criteria, particularly with respect to the subjects' lack of dentition. We concluded this trial early after enrolling only two of the 15 planned subjects. The FDA then recommended that we revise the protocol for the evaluation of ten healthy male subjects, ranging from 18 to 30 years old and with normal dentition, in an institutionalized setting. After we submitted additional information, the FDA issued another clinical hold letter in June 2007 for the proposed trial with the attenuated strain, citing the need for a plan with respect to serious adverse effects; a plan for the eradication of the attenuated strain in trial subjects' offspring; and a required pregnancy test for female partners of subjects. We submitted additional protocols in response to the FDA's concerns. In August 2007, the FDA issued another clinical hold letter with required revisions to the protocol for offspring of subjects. We submitted a response to the clinical hold letter in September 2007, and the FDA removed the clinical hold for our Phase 1 trial in the attenuated strain in October 2007.

We plan to discuss with the FDA whether the clinical hold for the non-attenuated SMaRT strain can be lifted after the completion of our second Phase 1 clinical trial using the attenuated strain, because we believe the results from the trial may address the FDA's concerns with the non-attenuated SMaRT strain. However, there is no guarantee that our clinical trials for the attenuated strain will be successful, or that the FDA will ever lift the clinical hold on the non-attenuated SMaRT strain. If the FDA does not lift the clinical hold on the non-attenuated SMaRT strain, we or a partner cannot commence our anticipated third Phase 1 trial and we may not be able to conduct the clinical trials necessary to obtain marketing approval of the SMaRT strain.

The FDA may impose additional requirements that may significantly increase the time and expense of obtaining FDA approval. Although the FDA has removed the clinical holds with respect to our Phase 1 trials for the attenuated strain, if the FDA has further concerns regarding the safety or risks associated with our trials, the FDA could implement another clinical hold on our ongoing trial or future trials or raise concerns as a part of a future NDA review process for our SMaRT Replacement Therapy product candidate, which could delay or prevent marketing.

Our SMaRT Replacement Therapy and MU1140-S product candidates are subject to substantial government regulation, including the regulation of preclinical testing and clinical trials. If we are unable to obtain regulatory approval for our product candidates we will be unable to generate revenues.

The production and marketing of products which may be developed from our SMaRT Replacement Therapy and MU1140-S product candidates and our ongoing research and development, preclinical testing and clinical trial activities are subject to extensive regulation and review by numerous governmental authorities. Most of the product candidates we are developing must undergo rigorous preclinical testing and clinical trials and an extensive regulatory approval process before they can be marketed in the United States or internationally.

The FDA accepted our protocols to conduct Phase 1 human clinical trials of our SMaRT Replacement Therapy product candidate. If we fail to maintain regulatory approval for the clinical trials of our SMaRT Replacement Therapy, if the FDA fails to lift the clinical hold on our IND for the non-attenuated version of the SMaRT strain, or if we fail to obtain regulatory approval for our MU1140-S product candidate, we may have to

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cease further development. Clinical trials on our SMaRT Replacement Therapy and MU1140-S product candidates are expected to take several years to fully complete. The commencement or completion of preclinical studies or clinical trials can be delayed or prevented for a number of reasons, including:

- our belief that SMaRT Replacement Therapy is one of the first genetically modified bacterial strains for use in humans, which may cause the FDA to proceed with additional caution;
- difficulties in finding a partner with the resources to support large and expensive clinical development and commercialization costs;
- findings in preclinical studies;
- difficulties obtaining regulatory approval to commence a clinical trial or complying with conditions imposed by a regulatory authority regarding the scope or term of a clinical trial;
- delays in reaching or failing to reach agreement on acceptable terms with prospective contract research organizations, or CROs, and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- insufficient or inadequate supply or quality of a product candidate or other materials necessary to conduct our clinical trials;
- difficulties obtaining institutional review board, or IRB, approval to conduct a clinical trial at a prospective site;
- challenges recruiting and enrolling patients to participate in clinical trials for a variety of reasons, including the size and nature of patient population, proximity of patients to clinical sites, eligibility criteria for the trial, nature of the trial protocol, the availability of approved effective treatments for the relevant condition and competition from other clinical trial programs for similar indications;
- severe or unexpected drug or biologic-related side effects experienced by patients in a clinical trial; and
- difficulties retaining patients who have enrolled in a clinical trial but may be prone to withdraw due to rigors of the trial, lack of efficacy, side effects, or personal issues, or who are lost to further follow up.

Clinical trials also may be delayed or terminated as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, the FDA, the IRBs at the sites where the IRBs are overseeing a trial, or a data safety monitoring board, or DSMB, overseeing the clinical trial at issue, or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities;
- unforeseen safety issues or lack of effectiveness; and
- lack of adequate funding to continue the clinical trial.

We cannot assure you that clinical trials will demonstrate the safety or effectiveness of our SMaRT Replacement Therapy or MU1140-S product candidates, or will otherwise satisfy regulatory requirements. Our preclinical studies or clinical trials may produce negative or inconclusive results, there may be inconsistencies between early clinical trial results and results obtained in later clinical trials, and we may decide, or regulators may require us, to conduct additional preclinical studies or clinical trials. Moreover, preclinical and clinical data are often

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susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain FDA approval for their products. If we are unable to resolve the FDA's concerns, we will not be able to obtain regulatory approval for these product candidates.

The pre-marketing approval process can be particularly expensive, uncertain and lengthy, and a number of products for which FDA or other governmental regulatory approval has been sought by other companies have never been approved for marketing. In addition to testing and approval procedures, extensive regulations also govern marketing, manufacturing, distribution, labeling, and record-keeping procedures. If we do not comply with applicable regulatory requirements, such violations could result in warning letters, non-approval, suspensions of regulatory approvals or ongoing clinical trials, civil penalties and criminal fines, product seizures and recalls, operating restrictions, injunctions, and criminal prosecution.

We may encounter such delays and rejection of our product candidates by the FDA or other regulatory authority may also adversely affect our business. Such delays or rejection may be encountered due to, among other reasons, government or regulatory delays, lack of efficacy during clinical trials, unforeseen safety issues, or changes in regulatory policy during the period of product development. More stringent regulatory approval processes in product clearance and enforcement activities could result in our experiencing longer approval cycles, more uncertainty, greater risk, and higher expenses. Even if regulatory approval of a product is granted, this approval may entail limitations on uses for which the product may be labeled and promoted. It is possible, for example, that we may not receive FDA approval to market products based on our licensed, patented product candidates for different indications or to market updated products that represent extensions of our basic product candidates. In addition, we may not receive FDA approval to export our products based on our licensed, patented product candidates in the future, and countries to which products are to be exported may not approve them for import.

From time to time, legislative or regulatory proposals are introduced that could alter the review and approval process relating to our product candidates. It is possible that the applicable regulatory authority will issue additional regulations further restricting the sale of our product candidates. Any change in legislation or regulations that govern the review and approval process relating to our future product candidates could make it more difficult and costly to obtain approval for new products based on our product candidates, or to produce, market, and distribute such products if approved.

We cannot assure you that the market and consumers will accept our product candidates. If they do not, we will be unable to generate significant revenues from our product candidates and our business, financial condition and results of operations will be materially adversely affected.

The commercial success of our ProBiora3, LPT3-04, MU1140-S, SMaRT Replacement Therapy and lantibiotics, and other product candidates will depend in part on market acceptance by consumers. Biopharmaceutical companies have received substantial support from the scientific community, regulatory agencies and many governmental officials in the United States and internationally. Future scientific developments, media coverage and political events may diminish such support. Public attitudes may be influenced by claims that health products are unsafe for consumption or pose unknown risks to the environment or to traditional social or economic practices. Securing governmental approvals for, and consumer confidence in, such products poses numerous challenges, particularly outside the United States. The market success of product candidates developed by biopharmaceutical companies could be delayed or impaired in certain geographical areas as a result. Products based on our product candidates may compete with a number of traditional dental therapies and drugs manufactured and marketed by major pharmaceutical companies and biotechnology companies. Market acceptance of products based on our product candidates will depend on a number of factors including potential advantage over alternative treatment methods. We can offer you no assurance that dentists, physicians, patients or the medical and dental communities in general will accept and utilize products developed from our product candidates. If they do not, we may be unable to generate significant revenues from our product candidates and our business, financial condition and results of operations will be materially adversely affected.

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If our products do not receive favorable third-party reimbursement, or if new restrictive legislation is adopted, market acceptance of our products may be limited and we may not generate significant revenues.

Our ability to commercialize our products will depend in part on the extent to which appropriate reimbursement levels for the cost of our proposed formulations and products and related treatments are obtained by governmental authorities, private health insurers and other organizations, such as Health Maintenance Organizations, or HMOs. Reimbursement from third parties depends greatly on our ability to present data which demonstrate positive outcomes and reduced utilization of other products or services as well as cost data which show that treatment costs using the new product are equal to or less than what is currently covered for other products. If our products do not receive favorable third-party reimbursement and patients are unwilling or unable to pay for our products out-of-pocket, it could limit our revenues and harm our business.

The continuing efforts of government and insurance companies, health maintenance organizations and other payers of healthcare costs to contain or reduce costs of health care may affect our future revenues and profitability, and the future revenues and profitability of our potential customers, suppliers and collaborative partners and the availability of capital. For example, in certain foreign markets, pricing or profitability of prescription pharmaceuticals is subject to government control. In the United States, recent federal and state government initiatives have been directed at lowering the total cost of health care. In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms. Federal and state legislatures will likely continue to focus on health care reform, controlling the cost of prescription pharmaceuticals and on the reform of the Medicare and Medicaid systems. While we cannot predict whether any such legislative or regulatory proposals will be adopted, the announcement or adoption of such proposals could materially harm our business, financial condition and results of operations.

If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results or prevent fraud which could subject us to regulatory sanctions, harm our business and operating results and cause the trading price of our stock to decline.

Effective internal controls required under Section 404 of the Sarbanes-Oxley Act of 2002, or Sarbanes-Oxley Act, are necessary for us to provide reliable financial reports and effectively prevent fraud. If we cannot provide reliable financial reports or prevent fraud, our business, reputation and operating results could be harmed. We have discovered, and may in the future discover, areas of our internal controls that need improvement. We cannot be certain that the measures we have taken or intend to take will ensure that we maintain adequate controls over our financial processes and reporting in the future. Any failure to implement required new or improved controls or difficulties encountered in their implementation could subject us to regulatory sanctions, harm our business and operating results or cause us to fail to meet our reporting obligations. Inferior internal controls could also harm our reputation and cause investors to lose confidence in our reported financial information, which could have a negative impact on the trading price of our stock.

Risks Related to Our Common Stock

KFLP, together with members of the Koski family, have a substantial interest in our outstanding shares of common stock.

As of August 27, 2012 the KFLP, together with members of the Koski family, beneficially own approximately 46% (which reflects the July 31, 2012 conversion of the outstanding indebtedness of the Company to the KFLP into shares of common stock) of our outstanding shares of common stock, including outstanding warrants to acquire 2,170,925 shares of our common stock that we issued to the KFLP in connection with our Debt Exchange Agreement and Loan Agreement.

Christine L. Koski and Robert C. Koski, share voting and investment powers with two other Koski family members as general partners of the KFLP and serve on our Board of Directors. As a result, the Koski family will be able to affect the outcome of, or exert significant influence over, all matters requiring shareholder approval, including the election and removal of directors and any change in control. In particular, this concentration of ownership of our common stock could have the effect of delaying or preventing a change of control of us or otherwise discouraging or preventing a potential acquirer from attempting to obtain control of us. This, in turn, could have a negative effect on the market price of our common stock. It could also prevent our shareholders from realizing a premium over the market price for their shares of common stock. Moreover, the interests of this

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concentration of ownership may not always coincide with our interests or the interests of other shareholders, and, accordingly, the Koski family could cause us to enter into transactions or agreements that we would not otherwise consider.

Certain provisions of our articles of incorporation, bylaws, executive employment agreements and stock option plan may prevent a change of control of our company that a shareholder may consider favorable.

Provisions of our articles of incorporation, bylaws, executive employment agreements and stock option plan may discourage, delay or prevent a change of control of our company that a shareholder may consider favorable. These provisions include:

- authorization of the issuance of “blank check” preferred stock that could be issued by our Board of Directors without shareholder approval and that may be substantially dilutive or contain preferences or rights objectionable to an acquiror;
- the ability of our Board of Directors to amend the bylaws without shareholder approval;
- vacancies on our Board may only be filled by the remaining directors and not our shareholders;
- requirements that only our Board, our President or holders of more than 10% of our shares can call a special meeting of shareholders;
- obligations to make certain payments under executive employment agreements in the event of a change of control and termination of employment; and
- immediate vesting of all stock options.

As a result, these provisions could discourage bids for our common stock at a premium and limit the price that investors are willing to pay in the future for shares of our common stock. However, in our articles of incorporation we expressly elected not to be governed by Sections 607.0901 and 607.0902 of the Florida Business Corporation Act, which are statutory anti-takeover provisions relating to affiliated transactions and control share acquisitions, respectively. As such, we do not have the protection of these statutes in connection with any unwanted takeover attempts which could have the effect of encouraging an attempted change of control without first negotiating with our Board of Directors.

Our common stock is not listed on a national U.S. securities exchange and the application of the “penny stock” rules could adversely affect the market price of our common stock as well as increase your transaction costs to sell those shares.

Our common stock trades on the OTC Bulletin Board which generally has significantly less liquidity than securities traded on a national securities exchange, not only in the number of shares that can be bought and sold, but also through delays in the timing of transactions, reduction in securities analyst and news media coverage, and lower market prices than might otherwise be obtained. As a result, purchasers of shares of our common stock may find it difficult to resell their shares at prices quoted in the market or at all. In addition, if at any time the trading price of our stock is below \$5.00 per share it is subject to the SEC’s “penny stock” rules. Because the “penny stock” rules impose certain requirements on brokers, they may be less willing to execute transactions in our securities. Furthermore, because of the limited market and generally low volume of trading in our common stock, our common stock is more likely to be affected by broad market fluctuations, general market conditions, fluctuations in our operating results, changes in the market’s perception of our business, and announcements made by us, our competitors or parties with whom we have business relationships. Our ability to issue additional securities for financing or other purposes, or to otherwise arrange for any financing we may need in the future, may also be materially and adversely affected by the fact that our securities are not traded on a national securities exchange.

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Our stock price has historically been volatile and the trading volume of our stock has been low.

Since our initial public offering in June 2003 and through June 30, 2012 our stock price has fluctuated from \$90.00 to \$0.75 per share. The trading price of our common stock has been, and may be, subject to wide fluctuations in response to a number of factors, many of which are beyond our control. These factors include:

- quarter-to-quarter variations in our operating results;
- our perceived funding needs;
- the results of testing, technological innovations, or new commercial products by us or our competitors;
- governmental regulations, rules, and orders;
- our level of, and expected future use of, working capital;
- general conditions in the healthcare, dentistry, or biopharmaceutical industries;
- comments, research reports and/or earnings estimates by securities analysts;
- developments concerning patents or other intellectual property rights;
- litigation or public concern about the safety of our products;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- additions or departures of directors, officers and key personnel;
- release of transfer restrictions on our outstanding shares of common stock or sales of additional shares of common stock;
- potential litigation initiated against us; and
- the additional sale of common stock by us in capital raising transactions.

Historically, the daily trading volume of our common stock has been relatively low and on some days our stock does not trade at all. We cannot guarantee that an active public market for our common stock will be sustained or that the average trading volume will increase. In addition, the stock market in general has experienced significant price and volume fluctuations. Volatility in the market price for particular companies has often been unrelated or disproportionate to the operating performance of those companies. Broad market factors may seriously harm the market price of our common stock, regardless of our operating performance. In addition, securities class action litigation has often been initiated following periods of volatility in the market price of a company's securities. A securities class action suit against us could result in substantial costs, potential liabilities, and the diversion of management's attention and resources. To the extent our stock price fluctuates or remains low, it could impair our ability to raise capital through the offering of additional equity securities.

Trading on the OTC Bulletin Board may be volatile and sporadic, which could depress the market price of our common stock and make it difficult for our shareholders to resell their shares.

Our common stock is quoted on the OTC Bulletin Board service of the Financial Industry Regulatory Authority (FINRA). Trading in stock quoted on the OTC Bulletin Board is often thin and characterized by wide fluctuations in trading prices, due to many factors that may have little to do with our operations or business prospects. This volatility could depress the market price of our common stock for reasons unrelated to operating

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performance. Moreover, the OTC Bulletin Board is not a stock exchange, and trading of securities on the OTC Bulletin Board is often more sporadic than the trading of securities listed on a quotation system like Nasdaq or a stock exchange like Amex. Accordingly, shareholders may have difficulty reselling any of their shares.

The issuance of additional equity securities by us in the future could result in dilution to our existing shareholders.

Our board of directors has authority, without action or vote of our shareholders, to issue all or a part of our authorized but unissued shares. Any issuance of additional equity securities by us in the future could result in dilution to our existing shareholders. Such issuances could be made at a price that reflects a discount or a premium to the then-current trading price of our common stock. In addition, our business strategy may include expansion through internal growth by acquiring complementary businesses, acquiring or licensing additional products or brands, or establishing strategic relationships with targeted customers and suppliers. In order to do so, or to finance the cost of our other activities, we may issue additional equity securities that could result in further dilution to our existing shareholders. These issuances would dilute your percentage ownership interest, which would have the effect of reducing your influence on matters on which our shareholders vote, and might dilute the book value of our common stock. For example, we have recently issued a significant number of shares of our common stock in connection with financings and establishing strategic relationships and as a result our outstanding shares has increased from 12,170,795 shares as of March 31, 2012 to 27,204,721 as of August 27, 2012. You may incur additional dilution if holders of stock options, whether currently outstanding or subsequently granted, exercise their options, or if warrant holders exercise their warrants to purchase shares of our common stock.

Future sales of our common stock may depress our stock price.

The market price of our common stock could decline as a result of sales of substantial amounts of our common stock in the public market, or the perception that these sales could occur. In addition, these factors could make it more difficult for us to raise funds through future offerings of common stock. We have recently issued a significant number of shares of common stock and the number of outstanding shares has increased from 12,170,795 shares as of March 31, 2012 to 27,204,721 as of August 27, 2012. In June of 2012 we issued to Intrexon 4,392,425 shares of our common stock which are subject to piggy-back registration rights. On or about July 31, 2012, we issued 8,666,665 shares of Common Stock to investors and Warrants to purchase an additional 771,169 shares of Common Stock to the placement agent and pursuant to a Registration Rights Agreement we are required to register these shares and warrant shares for resale. Upon effectiveness of a registration statement these shares may be resold in the open market. As of August 27, 2012, there were 27,204,721 shares of our common stock outstanding, with another 2,477,313 shares of common stock issuable upon exercise of warrants to investors, 660,425 shares issuable upon exercise of options outstanding and an additional 64,262 shares available for option grants under our 2002 Amended and Restated Stock Option Plan ("Stock Incentive Plan"). The issuance of shares of our common stock under our Stock Incentive Plan is covered by Form S-8 registration statements we filed with the Securities and Exchange Commission, or SEC, and upon exercise of the options, such shares may be resold into the market. We have also issued shares of common stock and warrants in connection with previous private placements. Such shares are available for resale as well as certain of the shares of common stock issuable upon exercise of the warrants. We have also issued shares of our common stock in the private placement and financing transaction which are deemed to be "restricted securities," as that term is defined in Rule 144 promulgated under the Securities Act of 1933, as amended, or Securities Act, and such shares may be resold pursuant to the provisions of Rule 144. The resale of shares acquired from us in private transactions could cause our stock price to decline significantly.

In addition, from time to time, certain of our shareholders may be eligible to sell all or some of their restricted shares of common stock by means of ordinary brokerage transactions in the open market pursuant to Rule 144, subject to certain limitations. In general, pursuant to Rule 144, after satisfying a six-month holding period: (i) affiliated shareholders, or shareholders whose shares are aggregated, may, under certain circumstances, sell within any three-month period a number of securities which does not exceed the greater of 1% of the then-outstanding shares of common stock or the average weekly trading volume of the class during the four calendar weeks prior to such sale and (ii) non-affiliated shareholders may sell without such limitations, in each case provided we are current in our public reporting obligations. Rule 144 also permits the sale of securities by non-affiliates that have satisfied a one-year holding period without any limitation or restriction.

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We are unable to estimate the number of shares that may be sold because this will depend on the market price for our common stock, the personal or business circumstances of sellers and other factors.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified members for our Board of Directors.

As a public company, we are already subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the Sarbanes-Oxley Act. The requirements of these rules and regulations may increase our legal, accounting and financial compliance costs; may make some activities more difficult, time-consuming and costly; and may also place undue strain on our personnel, systems and resources. Our management and other personnel need to devote a substantial amount of time to comply with these requirements. Moreover, these rules and regulations increase our legal and financial compliance costs and make some activities more time-consuming and costly. These rules and regulations could also make it more difficult for us to attract and retain qualified persons to serve on our Board of Directors and Board committees or as executive officers.

As a public company we are also required to assess our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act and file periodic reports with the SEC. If we are unable to comply with these requirements in a timely manner, or if material weaknesses or significant deficiencies persist, the market price of our stock could decline and we could be subject to sanctions or regulatory investigations, which could harm our business. We must perform an assessment of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. Our compliance with Section 404 of the Sarbanes-Oxley Act requires that we incur substantial accounting expense and expend significant management efforts. If we are unable to comply with the requirements of Section 404 of the Sarbanes-Oxley Act or the SEC reporting requirements in a timely manner, or if we continue to note or identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline and we could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources. As a smaller reporting company, we do not have to have our independent registered public accounting firm report on the effectiveness of our internal control over financial reporting. If in the future we no longer meet the requirements of a smaller reporting company, our independent registered public accounting firm will have to report on our internal controls over financial reporting. There can be no assurance that our independent registered public accounting firm will not identify material weaknesses which could have an adverse effect on our stock price.

FORWARD-LOOKING STATEMENTS

Statements included in this prospectus, including information incorporated herein by reference, which are not historical in nature are intended to be, and are hereby identified as, forward-looking statements for purposes of the safe harbor provided by Section 21E of the Securities and Exchange Act of 1934 (the “Exchange Act”). The words “may,” “will,” “anticipate,” “should,” “would,” “believe,” “contemplate,” “expect,” “estimate,” “continue,” “may,” and “intend,” as well as other similar words and expressions of the future, are intended to identify forward-looking statements. We caution readers that forward-looking statements are estimates reflecting our judgment based on current information, and are subject to certain risks and uncertainties that could cause actual results to differ materially from anticipated results. Such risks and uncertainties include, among others, the matters described in the “Risk Factors” of this prospectus and the following:

- Our inability to raise additional capital.
- We have incurred significant operating losses since our inception and cannot assure you that we will increase revenues or achieve profitability.
- Success, timing and expenses of our collaboration efforts with Intrexon and expected clinical trials.
- If we fail to achieve positive cash flows from our operations and we fail to raise additional capital to meet our capital needs, we may need to significantly curtail or cease operations.
- If we raise additional capital it may be on terms that result in substantial dilution to our existing shareholders,
- We are subject to extensive and costly regulation by the FDA, which must approve our product candidates in development and could restrict or delay the future commercialization of certain of our product candidates.
- We may be unable to achieve commercial viability and acceptance of our ProBiora3 products and proposed product candidates or increase sales of our ProBiora3 products.
- Orders we receive for our consumer and professional products may be subject to terms and conditions that could result in their cancellation or the return of products to us.
- We may be unable to successfully operate internationally.
- We may be unable to improve upon, protect and/or enforce our intellectual property.
- We may be unable to enter into strategic collaborations or partnerships for the development, commercialization, manufacturing and distribution of our proposed product candidates or maintain strategic collaborations or partnerships.
- We may be adversely impacted by a continuing or worsening worldwide financial crises and its impact on consumers, retailers and equity and debt markets as well as our ability to obtain required additional funding to conduct our business.
- We are subject to significant competition.
- As a public company, we must implement additional and expensive finance and accounting systems, procedures and controls as we grow our business and organization to satisfy reporting requirements, which add to our costs and require additional management time and resources.

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- As a result of our lack of financial liquidity, our auditors have indicated there is substantial doubt about our ability to continue as a going concern.
- If we are unable to raise sufficient capital our license for our SMaRT™ Replacement Therapy and MU-1140 with the University of Florida Research Foundation could be terminated.

Further information on other factors that could materially affect our Company is included in the SEC filings incorporated by reference in this prospectus. See also “*Risk Factors*” contained herein and therein.

USE OF PROCEEDS

All of the shares of common stock covered by this prospectus are being sold by the Selling Shareholders. See “Selling Shareholders” on page 26. We will not receive any proceeds from these sales of shares of our common stock. A portion of the shares covered by this prospectus are issuable upon exercise of the Agent Warrants to purchase our common stock. Upon any exercise of the Agent Warrants for cash, such Selling Shareholders would pay us the exercise price of the warrants. Cash received from exercise of Agent Warrants will be used for general corporate purposes. Additionally, the Warrants are exercisable on a cashless basis. If any Agent Warrants are exercised on a cashless basis, we would not receive any cash payment from such Selling Shareholders upon any exercise of such Agent Warrants.

The Selling Shareholders will pay any underwriting discounts and commissions and expenses incurred by the Selling Shareholders for brokerage, accounting, tax, or legal services or any other expenses incurred by the Selling Shareholders in disposing of the shares. We will bear all other costs, fees, and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration and filing fees, and fees and expenses of our counsel and our accountants.

DETERMINATION OF OFFERING PRICE

The Selling Shareholders will determine at what price they may sell the offered shares, and such sales may be made at prevailing market prices, or at privately negotiated prices.

SELLING SHAREHOLDERS

We have prepared this prospectus to allow the Selling Shareholders or their successors, assignees or other permitted transferees to sell or otherwise dispose of, from time to time, up to 9,437,834 shares of our Common Stock. This prospectus covers the offer and sale by the Selling Shareholders of up to an aggregate of 9,437,834 shares of common stock. Of the shares of common stock being offered under this prospectus 8,666,665 were acquired by the purchasers in our July 2012 Private Placement and 771,169 shares are able to be acquired pursuant to the Agent Warrants we issued in connection with our July 2012 Private Placement which Agent Warrants are currently exercisable.

The shares of common stock sold to the Selling Shareholders in the July 2012 Private Placement were sold pursuant to an exemption from registration provided by Rule 506 of Regulation D under the Securities Act. In connection therewith, the investors made to us certain representations, warranties, covenants, and conditions customary for private placement investments.

The table below presents information regarding the Selling Shareholders and the shares of our Common Stock that they may sell or otherwise dispose of from time to time under this prospectus. The table is based on information supplied to us by the Selling Shareholders and reflects holdings as of August 27, 2012. Percentages of beneficial ownership are based upon 27,204,721 shares of Common Stock issued and outstanding as of August 27, 2012. Beneficial ownership is determined under Section 13(d) of the Exchange Act and generally includes voting or investment power with respect to securities and including any securities that grant the Selling Shareholders the right to acquire Common Stock within 60 days of August 27, 2012. Unless otherwise noted, each person or group identified possesses sole voting and investment power with respect to the shares, subject to community property laws where applicable.

We do not know when or in what amounts the Selling Shareholders may sell or otherwise dispose of the shares covered hereby. We currently have no agreements, arrangements or understandings with the Selling Shareholders regarding the sale of any of the shares by them other than the registration rights agreements described below. The Selling Shareholders might not sell any or all of the shares covered by this prospectus or may sell or dispose of some or all of the shares other than pursuant to this prospectus. Because the Selling Shareholders may not sell or otherwise dispose of some or all of the shares covered by this prospectus and because there are currently no agreements, arrangements or understandings with respect to the sale or other disposition of any of the shares, we cannot estimate the number of the shares that will be held by the Selling Shareholders after completion of the offering.

Each Selling Shareholder has indicated to us that neither it nor any of its affiliates has held any position or office or had any other material relationship with us in the past three years except as described in the footnotes to the table.

The shares of common stock being offered under this prospectus may be offered for sale from time to time during the period the registration statement of which this prospectus is a part remains effective, by or for the accounts of the Selling Shareholders named below.

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Name of Selling Shareholder	Shares of Common Stock			
	Beneficially Owned Prior to the Sale of all Shares covered by this Prospectus	Covered by this Prospectus	Beneficially Owned After the Sale of all Shares covered by this Prospectus	As a Percent of Total Outstanding After the Sale of Shares covered by this Prospectus
Fidelity Select Portfolios: Biotechnology Portfolio (1)	1,558,058	1,558,058	0	0 %
Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund (1)	108,608	108,608	0	0 %
MSD Credit Opportunity Master Fund, L.P. (2)	1,325,000	1,325,000	0	0 %
White Rock Capital Partners, L.P. (3)	1,120,000	1,100,000	20,000	*
NRM VII Holdings I, LLC (4)	5,249,980	857,555	4,392,425	16.1 %
Allen Adler	300,000	300,000	0	0%
Smokeshire Partners LLC (5)	250,000	250,000	0	0%
Oppenheim Asset Management S.a.r.l. on behalf of FCPOP Medical BioHealth-Trends (6)	226,667	226,667	0	0%
Roger J. LaGratta IRA Custodian	200,000	200,000	0	0%
Neil P. McCauley	200,000	200,000	0	0%
Eugene Mark Landry	170,000	170,000	0	0%
Selig Zises	150,000	150,000	0	0%
Michael H. Wehrle	125,000	125,000	0	0%
John F. LaGratta	100,000	100,000	0	0%
Edward Feigeles & Kathryn Green JTWROS	100,000	100,000	0	0%
Sean McCance	100,000	100,000	0	0%
Anthony Marinelli IRA	100,000	100,000	0	0%
Neil P. McCauley IRA	100,000	100,000	0	0%
Laurence Zalk	100,000	100,000	0	0%
William P. Saunders	100,000	100,000	0	0%
Mintz and Co. (7)	100,000	100,000	0	0%
JDH Investment Management, LLC (8)	100,000	100,000	0	0%
Dr. Frederick Telling (9)	212,592	98,111	114,481	*
Nancy Zises IRA	75,000	75,000	0	0%
The Weaver Family 2004 Dynasty Trust (10)	66,667	66,667	0	0%
Christina W. Vest	66,667	66,667	0	0%
Steve H. Kanzer	68,367	66,667	1,700	*
IPConcept Fund Management SA, an administration company according to Luxembourg Law, acting in its own name but on behalf of Apo Medical Opportunities – Medical Strategy (“ICP”) (11)	63,333	63,333	0	0%
Medical Strategy GmbH for Pharma/Whealth Management Company S.A. on behalf of PHARMA/wHEALTH (12)	53,333	53,333	0	0%
Howard Klion, IRA	50,000	50,000	0	0%
John A. MacPhee and Donna H. MacPhee	50,000	50,000	0	0%
Jay Zises IRA	50,000	50,000	0	0%
Estelle Nisson	50,000	50,000	0	0%
Raymond Scott	50,000	50,000	0	0%
John G. Bickerman	50,000	50,000	0	0%
Daniel T. and Helen M. Hartnett JTWROS	34,000	34,000	0	0%
Kidco Management L-2, LLC (13)	33,333	33,333	0	0%
Harry D. Schulman	33,333	33,333	0	0%
Marcus Pelham-Webb Rollover IRA	33,000	33,000	0	0%
Louis Vigden	30,000	30,000	0	0%
Hauck & Aufhaeuser Banquiers S.A. (14)	29,000	29,000	0	0%

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<u>Name of Selling Shareholder</u>	Shares of Common Stock			
	Beneficially Owned Prior to the Sale of all Shares covered by this Prospectus	Covered by this Prospectus	Beneficially Owned After the Sale of all Shares covered by this Prospectus	As a Percent of Total Outstanding After the Sale of Shares covered by this Prospectus
Janina Casey	25,000	25,000	0	0 %
Stephen S. Lipton	25,000	25,000	0	0 %
Dorothy C. Weaver	23,333	23,333	0	0 %
William J. Dalton	23,000	23,000	0	0 %
Richard Molinsky	20,000	20,000	0	0 %
Lis C. Waterman	17,000	17,000	0	0 %
David Andres Weaver	17,000	17,000	0	0 %
Margus Ehatamm	16,000	16,000	0	0 %
MS SB C/F Mai N Pogue IRA	16,000	16,000	0	0 %
Meredith Bowen Waterman	15,000	15,000	0	0 %
Joseph A. Condo /Christine P. Condo JTWROS	10,000	10,000	0	0 %
Susan K. Rho	6,000	6,000	0	0 %
Griffin Securities, Inc. (15)	385,585	385,585	0	0 %
Adrian Stecyk (15)	385,584	385,584	0	0 %

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* less than one percent

- (1) Fidelity Management & Research Company (“Fidelity”), 82 Devonshire Street, Boston, Massachusetts 02109, a wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 1,666,666 shares of the Company as a result of acting as investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940. Edward C. Johnson 3d and FMR LLC, through its control of Fidelity, and the funds each has sole power to dispose of the 1,666,666 shares owned by the Funds. Members of the family of Edward C. Johnson 3d, Chairman of FMR LLC, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders’ voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders’ voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. Neither FMR LLC nor Edward C. Johnson 3d, Chairman of FMR LLC, has the sole power to vote or direct the voting of the shares owned directly by the Fidelity funds, which power resides with the Funds’ Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Funds’ Boards of Trustees. Fidelity has indicated that it may be deemed to be an affiliate of a registered broker-dealer. Fidelity has represented that it acquired the shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.
- (2) MSD Credit Opportunity Master Fund, L.P. is the record and direct beneficial owner of the securities. MSDC Management, L.P. is the investment manager of, and may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, MSD Credit Opportunity Master Fund. MSDC Management (GP), LLC is the general partner of, and may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, MSDC Management, L.P. Each of Glenn R. Fuhrman, John C. Phelan and Marc R. Lisker is a manager of MSDC Management (GP) and may be deemed to have or share voting and/or dispositive power over, and beneficially own, the common shares beneficially owned by MSDC Management. Each of Mr. Fuhrman, Mr. Phelan and Mr. Lisker disclaim beneficial ownership of such common shares, except to the extent of the pecuniary interest of such person in such shares.
- (3) In accordance with Rule 13d-3 under the Exchange Act, Thomas U. Barton and Joseph U. Barton may be deemed control persons of the shares owned by White Rock Capital Partners, LP, with final voting power and investment control over such shares.
- (4) NRM VII Holdings I, LLC (“NRM Holdings”), a Delaware limited liability company that is controlled by Randal J. Kirk, is the record and direct beneficial owner of the 857,555 shares of common stock covered by this Prospectus. An additional 4,392,425 shares of common stock are owned by Intrexon Corporation, a Virginia corporation of which Mr. Kirk is the Chairman and Chief Executive Officer and over which Mr. Kirk, directly and through certain affiliates, has voting and dispositive power of a majority of the outstanding capital stock.

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Mr. Kirk may therefore be deemed to have voting and dispositive power over the 857,555 shares of common stock covered by this Prospectus and the 4,392,425 shares of common stock owned by Intrexon Corporation. Mr. Kirk disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein.

- (5) Smokeshire Partners, LLC is the record and direct beneficial owner of the shares of common stock. Mintz and Co. is the manager of, and may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, Smokeshire Partners, LLC. Lowell A. Mintz is the senior partner of, and may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, Mintz and Co.
- (6) Oppenheim Asset Management Services S.a.r.l. (“Oppenheim”) is record and direct beneficial owner of the shares of common stock . on behalf of FCPOP Medical BioHealth-Trends .
- (7) Mintz and Co. is the record and direct beneficial owner of the shares of common stock. Lowell A. Mintz is the senior partner of, and may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, Mintz and Co.
- (8) JDH Investment Management, LLC is the record and direct beneficial owner of the shares of common stock. John D. Harkey Jr. is the manager of, and may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, JDH Investment Management, LLC.
- (9) Dr. Frederick Telling is a director of the Company and our Chairman. The shares included as covered by this prospectus represent the shares Dr. Telling acquired in our July 2012 Private Placement. The shares beneficially owned by Dr. Telling also include (i) 55,000 option shares able to be acquired upon the exercise of currently exercisable stock options granted pursuant to our Director compensation program, (ii) 49,481 shares awarded pursuant to the long term incentive program component of our director compensation program with 13,081 shares thereof entitled to be issued upon the approval of an amendment to our option plan by our shareholders, and (iii) 10,000 previously shares acquired directly by Dr. Telling in open market transactions.
- (10) David Andres Weaver is the trustee of the Weaver 2004 Dynasty Trust and as such has voting and investment power over the shares listed.
- (11) This selling shareholder has indicated that it may be deemed to be an affiliate of a registered broker-dealer and has represented to us that it purchased the shares in the ordinary course of its business and, at the time of purchase, with no arrangement or understanding, directly or indirectly, with any persons to distribute such shares.
- (12) This selling shareholder has indicated that it may be deemed to be an affiliate of a registered broker-dealer and has represented to us that it purchased the shares in the ordinary course of its business and, at the time of purchase, with no arrangement or understanding, directly or indirectly, with any persons to distribute such shares.
- (13) Kidco Management L-2, LLC is the record and direct beneficial owner of the shares of common stock. Mr. Jeffery Scott Fraser is the manager of, and may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, Kidco Management L-2, LLC.
- (14) Hauck & Aufhaeuser Banquiers S.A. (“H&A”) is the record and direct beneficial owner of the shares of common stock. Hauck & Aufhaeuser Investment Gesellschaft S.A. (“H&A Investment”), is the investment manager of, and may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, H&A. Achim Welschoff is the individual who may be deemed to have or share voting and dispositive power over, and/or beneficially own securities owned by, H&A Investment.
- (15) Consists of warrants received as our placement agent in our July 2012 Private Placement. Griffin Securities, Inc. is a registered broker-dealer that served as the placement agent in connection with our July 2012 Private Placement. Adrian Stecyk, is the Chief Executive Officer of Griffin Securities, Inc. and an affiliate of a registered-broker-dealer. Mr. Stecyk has voting and dispositive power with respect to the warrants.

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The Selling Shareholders, or their partners, pledgees, donees, transferees or other successors that receive the shares and their corresponding registration in accordance with the registration rights agreement to which the Selling Shareholder is party (each also a selling shareholder for purposes of this prospectus), may sell up to all of the shares of our common stock shown in the table above under the heading “Covered by this Prospectus” pursuant to this Prospectus in one or more transactions from time to time as described below under “Plan of Distribution.” However, the Selling Shareholders are not obligated to sell any of the shares of our common stock offered by this prospectus.

Information about the Selling Shareholders may change from time to time. Any changed information with respect to which we are given notice will be included in prospectus supplements.

PLAN OF DISTRIBUTION

We are registering the shares of Common Stock to permit the resale of these shares of Common Stock by the Selling Shareholders and any of their transferees, pledgees, assignees, donees, and successors-in-interest from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the Selling Shareholders of the shares of Common Stock. Upon any exercise of the Agent Warrants by payment of cash, however, we will receive the exercise price of the Agent Warrants. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock.

The Selling Shareholders, or their pledges, donees, transferees, or any of their successors in interest selling shares received from a Selling Shareholder as a gift, partnership distribution or other non-sale related transfer after the date of this prospectus, may sell all or a portion of the shares of Common Stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the Selling Shareholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of Common Stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. The Selling Shareholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. These sales may be affected in transactions, which may involve crosses or block transactions,

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- through the distribution of the Common Stock by any Selling Shareholders to its partners, members or Shareholders;
- through one or more underwritten offerings on a firm commitment or best efforts basis;
- sales pursuant to Rule 144;
- broker-dealers may agree with the Selling Shareholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

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The Selling Shareholders may also transfer the shares of Common Stock by gift. We do not know of any arrangements by the Selling Shareholders for the sale of any of the shares of Common Stock.

The Selling Shareholders may engage brokers and dealers, and any brokers or dealers may arrange for other brokers or dealers to participate in effecting sales of the shares of Common Stock. These brokers, dealers or underwriters may act as principals, or as an agent of a Selling Shareholder. Broker-dealers may agree with a Selling Shareholder to sell a specified number of the shares of Common Stock at a stipulated price per security. If the broker-dealer is unable to sell the shares of Common Stock acting as agent for a Selling Shareholder, it may purchase as principal any unsold shares of Common Stock at the stipulated price. Broker-dealers who acquire shares of Common Stock as principals may thereafter resell the shares of Common Stock from time to time in transactions in any stock exchange or automated interdealer quotation system on which the shares of Common Stock are then listed, at prices and on terms then prevailing at the time of sale, at prices related to the then-current market price or in negotiated transactions. Broker-dealers may use block transactions and sales to and through broker-dealers, including transactions of the nature described above.

The Selling Shareholders may also sell the shares of Common Stock in accordance with Rule 144 under the Securities Act of 1933, as amended, rather than pursuant to this prospectus, regardless of whether the shares of Common Stock are covered by this prospectus.

If the Selling Shareholders effect such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions, commissions or fees from the Selling Shareholders or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions, commissions or fees as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of Common Stock or otherwise, the Selling Shareholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of Common Stock in the course of hedging in positions they assume. The Selling Shareholders may also sell shares of Common Stock short and deliver shares of Common Stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The Selling Shareholders may also loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares.

The Selling Shareholders may pledge, hypothecate or grant a security interest in some or all of the shares of Common Stock owned by them and, if they default in the performance of their secured obligations, the pledgees, secured parties or persons to whom the securities have been hypothecated may offer and sell the shares of Common Stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of Selling Shareholders to include the pledgee, transferee or other successors in interest as Selling Shareholders under this prospectus. The Selling Shareholders also may transfer and donate the shares of Common Stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In addition, a Selling Shareholder may, from time to time, sell the shares of Common Stock short, and, in those instances, this prospectus may be delivered in connection with the short sales and the shares of Common Stock offered under this prospectus may be used to cover short sales.

The Selling Shareholders and any underwriters, broker-dealer or agents participating in the distribution of the shares of Common Stock may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of Common Stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of Common Stock being offered and the terms of the offering, including the name or names of any underwriters, broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the Selling Shareholders and any discounts, commissions or concessions allowed or reallocated or paid to broker-dealers. The Selling Shareholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares of Common Stock against certain liabilities, including liabilities arising under the Securities Act.

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Under the securities laws of some states, the shares of Common Stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of Common Stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any Selling Shareholder will sell any or all of the shares of Common Stock registered pursuant to the registration statement, of which this prospectus forms a part.

The Selling Shareholders and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of Common Stock by the Selling Shareholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of Common Stock to engage in market-making activities with respect to the shares of Common Stock. All of the foregoing may affect the marketability of the shares of Common Stock and the ability of any person or entity to engage in market-making activities with respect to the shares of Common Stock.

The shares of Common Stock offered hereby were originally issued to the Selling Shareholders pursuant to an exemption from the registration requirements of the Securities Act. We agreed to register the shares of Common Stock under the Securities Act, and to keep the registration statement of which this prospectus is a part effective until the earlier of the date on which the Selling Shareholders have sold all of the securities or one year after the shares were acquired by the Selling Shareholder. We will pay all expenses of the registration of the shares of Common Stock pursuant to the Registration Rights Agreement, estimated to be \$60,000 in total, including, without limitation, SEC filing fees and expenses of compliance with state securities or "Blue Sky" laws; *provided, however*, that a Selling Shareholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the Selling Shareholders against liabilities, including some liabilities under the Securities Act, in accordance with the Registration Rights Agreement, or the Selling Shareholders will be entitled to contribution. We may be indemnified by the Selling Shareholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the Selling Shareholder specifically for use in this prospectus, in accordance with Registration Rights Agreement, or we may be entitled to contribution.

Once sold under the registration statement, of which this prospectus forms a part, the shares of Common Stock will be freely tradable in the hands of persons other than our affiliates.

DESCRIPTION OF CAPITAL STOCK

The following descriptions are summaries of the material terms that are included in our amended and restated articles of incorporation (as amended) and our bylaws (as amended) as well as the specific agreements such descriptions relate to. This summary is qualified in its entirety by the specific terms and provisions contained in our restated articles of incorporation, bylaws and the specific agreements described herein, copies of which we have filed as exhibits to the registration statement of which this prospectus is a part, and by the provisions of applicable law.

Overview

Authorized Capital Stock

Our authorized capital stock consists of 50,000,000 shares of common stock, par value \$0.001, and 20,000,000 shares of preferred stock, without par value. As of August 27, 2012 there were 27,204,721 shares of our common stock issued and outstanding and no shares of our preferred stock issued and outstanding.

Authorized but Unissued Capital Stock

Florida law does not require shareholder approval for any issuance of authorized shares other than in connection with certain mergers to which we may be a party. These additional shares may be used for a variety of corporate purposes, including future public offerings to raise additional capital or to facilitate corporate acquisitions.

Common Stock

Voting

The holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the shareholders. Approval of an amendment of our articles of incorporation, a merger, a share exchange, a sale of all our property or a dissolution must be approved by a majority of all votes entitled to be cast. Such votes may be cast in person or by proxy as provided in Article I Section 8 of our bylaws.

Distributions

Our Board of Directors, subject to any restrictions contained in (i) the Florida Business Corporation Act, or FBCA; or (ii) our amended and restated articles of incorporation, as amended, or Articles of Incorporation, may make distributions upon our securities. Distributions may be paid in cash, in property, or in our securities.

We have not declared or paid any distributions on our common stock. We presently intend to retain our future earnings, if any, to fund the development and growth of our business and, therefore, do not have plans to pay any dividends in the foreseeable future.

Other Rights

Upon our liquidation, dissolution or winding-up, after payment in full of our liabilities and the amounts required to be paid to holders of any outstanding shares of preferred stock, if any, all holders of our common stock will be entitled to receive a pro rata distribution of all of our assets and funds legally available for distribution.

No shares of our common stock are subject to redemption or have preemptive rights to purchase additional shares of our common stock or any of our other securities.

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Preferred Stock

Our Board of Directors has the authority, without action by our shareholders, to designate and issue up to 20,000,000 shares of preferred stock in one or more series or classes and to designate the rights, preferences and privileges of each series or class, which may be greater than the rights of our common stock. We do not have any shares of preferred stock either designated or outstanding. It is not possible to state the actual effect of the issuance of any shares of preferred stock upon the rights of holders of our common stock until our Board of Directors determines the specific rights of the holders of the preferred stock. However, the effects might include:

- restricting dividends on our common stock;
- diluting the voting power of our common stock;
- impairing liquidation rights of our common stock; or
- delaying or preventing a change in control of us without further action by our shareholders.

The Board of Directors' authority to issue preferred stock without shareholder approval could make it more difficult for a third-party to acquire control of our company, and could discourage such attempt. We have no present plans to issue any shares of preferred stock.

Options and Warrants

As of August 27, 2012, there were 660,425 options to acquire shares of our common stock outstanding at exercises prices between \$1.20 and \$17.00 under the 2002 Stock Incentive Plan and 64,262 shares were available for future grants under our 2002 Stock Incentive Plan. As of such date, we also have warrants outstanding to acquire an aggregate of 3,248,482 shares of our common stock at an exercise price of between \$1.50 to \$26.00. Holders of options and warrants do not have any of the rights or privileges of our shareholders, including voting rights, prior to exercise of the options and warrants. The number of shares of common stock for which these options and warrants are exercisable and the exercise price of these options and warrants are subject to proportional adjustment for stock splits and similar changes affecting our common stock. We have reserved sufficient shares of authorized common stock to cover the issuance of common stock subject to the options and warrants. Included in the number of our outstanding warrants are (i) warrants to acquire 771,169 shares of our common stock at an exercise price of \$1.50 we issued to the placement agent in connection with the closing of our private placement on July 31, 2012 and (ii) warrants to acquire 2,170,925 shares of our common stock at an exercise price of \$2.00 we issued to the Koski Family Limited Partnership ("KFLP"), pursuant to the terms of a Debt Exchange Agreement and a new Loan Agreement with the KFLP (which Loan Agreement was subsequently terminated in connection with our recently completed July 2012 Private Placement).

Contingent Share Issuance-Intrexon

On June 5, 2012, pursuant to the Stock Issuance Agreement between the Company and Intrexon Corporation ("Intrexon"), we issued to Intrexon 4,392,425 shares of our common stock as a technology access fee, in consideration for the execution and delivery of the Exclusive Chanel Collaboration Agreement we simultaneously entered into with Intrexon.

Under the Stock Issuance Agreement, we also agreed to make certain payments to Intrexon upon our achievement of designated milestones in the form of shares of our Common Stock or at our option make a cash payment to Intrexon (based upon the fair market value of the shares otherwise required to be issued). The milestone events and amounts payable are as follows: (i) filing of the first Investigational New Drug application with the U.S. Food and Drug Administration that number of shares of common stock equal to the number of shares of common stock comprising 1.0% of the Base Shares; (ii) upon the dosing of the first patient in the first Phase 2 clinical study, that number of shares equal to the number of shares of common stock comprising 1.5% of the Base Shares; (iii) upon the dosing of the first patient in the first Phase 3 clinical study, that number of shares of common stock equal to the number of shares of common stock comprising 2% of the Base Shares; (iv) upon the filing of the first New Drug Application ("NDA") or Biologics License Application ("BLA") with the U.S. Food and Drug Administration for a Company Product, or alternatively the filing of the first equivalent regulatory filing with a foreign regulatory agency, that number of shares of common stock equal to the number of shares of common stock comprising 2.5% of the Base Shares; and (v) upon the granting of the first regulatory approval of an Oragenics Product, that number of shares of common stock (equal to the number of shares of common stock comprising 3% of the Base Shares).

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Base Shares is defined in the Stock Issuance Agreement to mean (i) the number of shares of our common stock together with any securities or instruments convertible or exercisable for shares of common stock issued and outstanding at the time of the relevant Milestone Event, (ii) minus any shares issuable upon conversion of capital inducement securities. Capital Inducement Securities is defined in the Stock Issuance Agreement to mean warrants or other convertible securities of the Company issued to investors in connection with a debt or equity investment in the Company that are issued in addition to the primary investment securities and in an amount not to exceed 10% of the overall number of shares issued in the investment (on an as-converted to common stock basis).

Equity Participation Right-Intrexon

Pursuant to the Stock issuance Agreement, Intrexon was 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. Intrexon waived its right to participate in the July 2012 Private Placement.

Registration Rights

Koski Family Limited Partnership (“KFLP”). Pursuant to the June 2009 Private Placement with the KFLP, we also agreed to provide the KFLP with certain registration rights in connection with any underwritten or other offering by us within five years of such agreement. We are required under the June 2009 Private Placement to register on behalf of KFLP 15% of the total number of shares being offered, except that in an underwritten public offering the inclusion of shares is subject to the discretion of the managing underwriter. The KFLP waived its registration rights in connection with the Company’s July 2012 Private Placement.

Intrexon Corporation. Pursuant to the Stock Issuance Agreement, we granted certain registration rights to Intrexon. The registration rights 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. Intrexon waived its registration rights in connection with the Company’s July 2012 Private Placement.

Purchasers in July 2012 Private Placement. In connection with the July 2012 Private Placement, we entered into a registration rights agreement with each of the Selling Shareholders (the “Registration Rights Agreement”). The Registration Rights Agreement requires us to file a registration statement (the “Registration Statement”) with the Securities and Exchange Commission (the “SEC”) within forty-five (45) days of the closing date of the July 2012 Private Placement (the “Filing Date”) for the resale by the Selling Shareholders of all of the Common Shares acquired in the July 2012 Private Placement and all shares of Common Stock issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect thereto (the “Registrable Securities”). We agreed to use our commercially reasonable efforts to cause the Registration Statement to be declared effective by the SEC no later than ninety (90) days after the closing date of the July 2012 Private Placement (the “Effectiveness Date”) subject to certain adjustments. Upon the occurrence of certain events (each an “Event”), including, but not limited to, that the Registration Statement is not filed prior to the Filing Date, we will be required to pay liquidated damages to each of the Selling Shareholders equal to 1.5% of the aggregate purchase price paid by such Selling Shareholders for the Registrable Securities upon the date of the Event and then monthly thereafter until the earlier of: (i) the Event is cured, or (ii) the registrable shares are eligible for resale under Rule 144 without manner of sale or volume limitations. In no event shall the aggregate amount of liquidated damages payable to each of the Selling Shareholders exceed in the aggregate 10% of the aggregate purchase price paid by such Selling Shareholders for the Registrable Securities.

We also agreed to use our commercially reasonable efforts to keep the Registration Statement effective for resales until the earlier of (1) one year from the closing date (2) the date that all of the shares of our common stock

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included in the Registration Statement have been resold thereunder or under Rule 144 promulgated under the Securities Act, or (3) the date that all of the shares of our common stock covered by such registration statement may be sold without volume or manner of sale restrictions under Rule 144. The registration rights agreement contains cross-indemnification provisions between us and the Selling Shareholders.

This description of the Registration Rights Agreement is intended to be a summary of the terms of the agreement that are material to a purchaser of our common stock. It does not purport to be complete and is subject to, and qualified in its entirety by reference to, the complete text of the registration rights agreement, which was filed as an exhibit to the Form 8-K we filed on August 2, 2012 is an exhibit to the registration statement of which this prospectus is a part by incorporation by reference.

Certain Anti-Takeover Provisions

Florida Law

We are not subject to the statutory anti-takeover provisions under Florida law because in our articles of incorporation we have specifically elected to opt out of both the “control-share acquisitions” (F.S. 607.0902) and the “affiliated transactions” (F.S. 607.0901) statutes. Since these anti-takeover statutes do not apply to a corporation that has specifically elected to opt out of such provisions we would not be able to invoke the protection of such statutes in the event of a hostile takeover attempt.

Articles of Incorporation and Bylaw Provisions

Our articles of incorporation and bylaws contain provisions that could have an anti-takeover effect. These provisions include

- authorization of the issuance of “blank check” preferred stock that could be issued by our Board of Directors without shareholder approval and that may be substantially dilutive or contain preferences or rights objectionable to an acquiror;
- the ability of the Board of Directors to amend the bylaws without shareholder approval;
- vacancies on our board may only be filled by the remaining Directors and not our shareholders; and
- requirements that only our Board, our President or holders of more than 10% of our shares can call a special meeting of shareholders.

These provisions in our articles of incorporation and bylaws could delay or discourage transactions involving an actual or potential change in control of us, including transactions in which shareholders might otherwise receive a premium for their shares over their current prices. Such provisions could also limit the ability of shareholders to approve transactions that shareholders may deem to be in their best interests and could adversely affect the price of our common stock.

On September 24, 2010 the shareholders approved an amendment to our articles of incorporation to effect a 1-for-20 reverse stock split with an aggregate of 35,000,000 shares of capital stock consisting of 15,000,000 shares of common stock and 20,000,000 shares of preferred stock. On August 30, 2010 the shareholders approved an amendment to our articles of incorporation to increase the capital stock to an aggregate of 70,000,000 shares consisting of 50,000,000 shares of common stock and 20,000,000 shares of preferred stock.

agreements that such descriptions relate to. .

Listing of Common Stock

Our common stock is currently traded on the OTC Bulletin Board under the trading symbol “ORNI.”

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Transfer Agent and Registrar

The transfer agent and registrar of our common stock is Continental Stock Transfer & Trust Company, 17 Battery Place, New York, New York 10004, telephone: (212) 509-4000.

LEGAL MATTERS

The validity of the Common Stock offered by this prospectus will be passed upon by Shumaker, Loop & Kendrick, LLP, Tampa, Florida.

EXPERTS

The audited financial statements of Oragenics, Inc. as of December 31, 2011 and 2010, and for the two-year period ended December 31, 2011, included in our Annual Report on Form 10-K for the year ended December 31, 2011, and the effectiveness of our internal control over financial reporting as of December 31, 2011, incorporated by reference in this prospectus have been audited by Mayer Hoffman McCann P.C., an independent registered public accounting firm, as stated in their report dated April 13, 2012, which is incorporated by reference herein, and has been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly and current reports, proxy statements and other documents with the SEC. These filings contain important information which does not appear in this prospectus. You may read and copy, at prescribed rates, any documents we have filed with the SEC at its Public Reference Room located at 100 F Street, N.E., Washington, DC 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. We also file these documents with the SEC electronically. You can access the electronic versions of these filings on the SEC's website found at <http://www.sec.gov>.

We have filed with the Securities and Exchange Commission ("SEC") a registration statement for the securities on Form S-1 under the Securities Act. This prospectus, which forms part of the registration statement, does not contain all the information contained in the registration statement. Whenever a reference is made in this prospectus to any of our contracts or other documents, the reference may not be complete and, for a copy of the contract or document, you should refer to the exhibits that are part of the registration statement.

You may inspect and copy the registration statement at the public reference facilities maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549 upon payment of certain prescribed fees. You may obtain information on the operation of the SEC's public reference facilities by calling the SEC at 1-800-SEC-0330. You may also access the registration statement electronically through the SEC's Electronic Data Gathering, Analysis and Retrieval, or EDGAR, system at the SEC's website located at <http://www.sec.gov>.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. Information incorporated by reference is considered to be part of this prospectus, except for any information that is superseded by information included directly in this prospectus. Any statement contained in this prospectus or a document incorporated by reference in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or in any other subsequently filed document that is incorporated by reference in this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus. We incorporate by reference the documents listed below (excluding any portions of such documents that have been “furnished” but not “filed” for purposes of the Exchange Act).

- Our Annual Report on Form 10-K for the year ended December 31, 2011, filed with the SEC on April 16, 2012;
- Our Definitive Proxy Statement on Schedule 14A, filed with the SEC on September 17, 2012;
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2012 and June 30, 2012, filed with the SEC on May 15, 2012 and August 10, 2012, respectively; and
- Our Current Reports on Form 8-K, filed September 21, 2012, August 2, 2012, July 31, 2012, June 11, 2012, March 26, 2012, February 16, 2012, February 2, 2012 and January 25, 2012.

We will provide a copy of any and all of the information that is incorporated by reference in this prospectus to any person, including a beneficial owner, to whom a prospectus is delivered, without charge, upon written or oral request. Written requests for copies should be directed to Attn: Michael Sullivan, Oragenics, Inc., 3000 Bayport Drive, Suite 685, Tampa, Florida 33607. Telephone requests for copies should be directed to the Chief Financial Officer at (813) 286-7900.

We maintain an Internet website at www.oragenics.com where the incorporated reports listed above can be accessed. Neither this website nor the information on this website is included or incorporated in, or is a part of, this prospectus or any supplement to the prospectus.

9,437,834 SHARES OF COMMON STOCK

ORAGENICS, INC.

PROSPECTUS

September , 2012

Neither we nor the Selling Shareholders have authorized any dealer, salesperson or other person to give any information or to make any representations not contained in this prospectus or any prospectus supplement. You must not rely on any unauthorized information. This prospectus is not an offer to sell these securities in any jurisdiction where an offer or sale is not permitted. The information in this prospectus is current as of the date of this prospectus. You should not assume that this prospectus is accurate as of any other date.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

SEC Registration Fees	\$ 2,456
Accounting Fees and Expenses*	10,000
Legal Fees and Expenses*	35,000
Miscellaneous*	12,544
Total	<u>\$60,000</u>

* Estimates

We will bear our fees and expenses incurred in connection with the registration of shares of common stock in connection with this offering. The Selling Shareholders will bear all selling and other expenses that they incur in connection with their sale of shares of common stock pursuant to the prospectus which is part of this registration statement.

Item 14. Indemnification of Directors and Officers.

Under our Bylaws, each of our directors has the right to be indemnified by us to the maximum extent permitted by law against (i) reasonable expenses incurred in connection with any threatened, pending or completed civil, criminal, administrative, investigative or arbitral action, suit or proceeding seeking to hold the director liable by reason of his or her actions in such capacity and (ii) reasonable payments made by the director in satisfaction of any judgment, money decree, fine, penalty or settlement for which he or she became liable in such action, suit or proceeding. This right to indemnification includes the right to the advancement of reasonable expenses by us, to the maximum extent permitted by law. Under our Bylaws, each of our officers who are not directors is entitled to the same indemnification rights, including the right to the advancement of reasonable expenses, which are provided to our directors.

Pursuant to the Florida Business Corporation Act, a Florida corporation has the power to indemnify its directors and officers provided that they act in good faith and reasonably believe that their conduct was lawful and in the corporate interest (or not opposed thereto), as set forth in the Business Corporation Act. Under the Business Corporation Act, unless limited by its articles of incorporation, a corporation must indemnify a director or officer who is wholly successful, on the merits or otherwise, in the defense of any proceeding to which he or she was a party because he or she is or was a director or officer, against reasonable expenses incurred by the director or officer in connection with the proceeding. Our Articles of Incorporation do not contain any such limitations. The Business Corporation Act permits a corporation to pay for or reimburse reasonable expenses in advance of final disposition of an action, suit or proceeding only upon (i) the director's certification that he or she acted in good faith and in the corporate interest (or not opposed thereto), (ii) the director furnishing a written undertaking to repay the advance if it is ultimately determined that he or she did not meet this standard of conduct, and (iii) a determination is made that the facts then known to those making the determination would not preclude indemnification under the Business Corporation Act.

Under our Articles of Incorporation, no director will be liable to us or our shareholders for monetary damages for breach of his or her fiduciary duty as a director, to the maximum extent permitted by law.

The Florida Business Corporation Act also empowers a corporation to provide insurance for directors and officers against liability arising out of their positions, even though the insurance coverage may be broader than the corporation's power to indemnify. We maintain directors and officers' liability insurance for the benefit of our directors and officers.

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Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is therefore unenforceable.

The Company maintains a director and officer insurance policy which insures the directors and officers of the Company against damages, judgments, settlements and costs incurred by reason of certain wrongful acts committed by such persons in their capacities as directors and officers.

Item 15. Recent Sales of Unregistered Securities.

The following information relates to all securities issued or sold by the Registrant within the past three years and not registered under the Securities Act. Each of the transactions described below was conducted in reliance upon the exemptions from registration provided in Section 4(2) of the Securities Act and the rules and regulations promulgated thereunder. There were no underwriters employed in connection with any of the transactions set forth in this Item 15.

On June 29, 2009, we entered into a private placement of equity and debt financing (the "June 2009 Private Placement") pursuant to a securities purchase agreement (the "June 2009 Purchase Agreement") with the Koski Family Limited Partnership, or KFLP. Pursuant to the terms of the June 2009 Purchase Agreement, the Company issued 2,500,000 shares of its common stock to the KFLP and issued warrants to the KFLP to acquire 50,000 shares of Company common stock at an exercise price of \$2.00 per share in exchange for \$4,000,000, the payment of which consisted of the following: (i) \$1,500,000 in cash at closing and (ii) \$2,500,000 pursuant to a non-interest bearing promissory note providing for five consecutive monthly installment payments of \$500,000 commencing July 31, 2009, and the KFLP provided a secured loan of \$1,000,000 to the Company. The loan was secured by substantially all of our assets, excluding receivables, and bore interest at the rate of prime plus 4.0% payable quarterly. The principal of the loan was due in five years. The warrants expired in five years and were immediately exercisable. As a result of this transaction the KFLP acquired a controlling interest of our then outstanding voting common stock.

In connection with, and as a closing condition to the June 2009 Private Placement, the purchasers, (George Hawes, our largest shareholder prior to the June 2009 Private Placement, and William Matlack, an accredited investor), under that certain securities purchase agreement dated June 12, 2008, (the "June 2008 Purchase Agreement") entered into consent, waiver and mutual release agreements with us on June 25, 2009. In addition, such individuals waived and relinquished any special rights they possessed pursuant to agreements with the Company, including, but not limited to, (i) rights of first refusal, (ii) antidilution regarding future equity sales and (iii) covenants regarding secured lending contained in the June 2008 Purchase Agreement. In connection with such consents, waivers and releases, warrants to acquire 161,000 shares of our common stock at an exercise price of \$26.00 per share that were previously issued under the June 2008 Purchase Agreement were subject to the right of exchange for new replacement warrants to acquire the same number of shares under the same terms except for a change in the exercise price from \$26.00 to \$15.00.

On September 14, 2009 we issued a warrant to Strategic Growth International, Inc., or SGI, to acquire 12,500 shares of our common stock at \$6.00 per share. The warrant was issued in connection with an agreement with SGI to provide investor relations services to us.

On September 16, 2009 we issued 25,000 shares of our common stock to Media4Equity LLC, or M4E. The restricted shares were issued to M4E pursuant to the terms of an agreement we entered into with M4E effective September 3, 2009, whereby M4E would provide national media exposure consulting services to us relating to the placement of print and radio features. The shares had a fair market value of \$115,000 based on a price of \$4.60 per share. In addition to the issuance of common stock the agreement with M4E requires us to make monthly payments to M4E of \$10,000 over the three-year term of the agreement, subject to certain termination rights.

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On December 30, 2009, we completed the initial closing of a private placement (the “December 2009 Private Placement”) of common stock pursuant to a common stock purchase agreement (the “December 2009 Securities Purchase Agreement”) with accredited investors, including the KFLP. We issued 500,813 shares of our common stock at a price of \$5.00 per share to the investors for \$2,504,062, the payment of which consisted of the following: \$2,450,000 in cash at closing and \$54,063 pursuant to the cancellation of the same dollar amount of outstanding deferred compensation obligation owed by the Company to our former Chief Scientific Officer and director, Dr. Jeffrey Hillman. Approximately half of the total investment, or \$1,250,000, was made by the KFLP. In conjunction with, and as a condition to closing of this financing, the KFLP was also issued 200,000 shares of our common stock at \$5.00 per share, (which was the same price per share paid by the investors), in exchange for the cancellation of its \$1,000,000 secured note. The loan was entered into in June 2009 and originally had been secured by substantially all of our assets (excluding receivables) and required interest payments at the rate of prime plus 4.0% which were payable quarterly. The accredited investors were: Carol E. Martin, Kelly H. Leaird, Mark Bailey, Kris A. Persinger, First Clearing, LLC C/F Roth IRA FBO Kris Persinger, Richard Dresden, John Diana and Michael Wells, Dr. Hillman, and the KFLP.

Contemporaneously with the December 2009 Private Placement, the KFLP also elected to exercise previously issued warrants (issued on June 30, 2009 as part of the June 2009 Private Placement) to purchase 50,000 shares of Company common stock. The warrants were exercised through the payment by the KFLP of the warrant exercise price of \$2.00 per share.

On January 13, 2010, we completed the \$3,004,062 private placement contemplated by the December 2009 Securities Purchase Agreement and December 2009 Private Placement and issued another 100,000 shares of common stock at a price of \$5.00 per share to the accredited investors for \$500,000. Of this amount the KFLP again participated in half of the remainder of the aggregate investment by acquiring 50,000 shares for \$250,000.

On May 28, 2010, we entered into an unsecured promissory note with conversion provisions (the “May 2010 Note”) with the KFLP pursuant to which we borrowed \$1,000,000 from the KFLP. Interest on the May 2010 Note accrued at the rate of LIBOR plus 6.0% and the principal of the May 2010 Note, together with all accrued interest thereon, was due and payable on such date that is the earlier of: (i) the closing date of a registered public offering of newly issued equity securities by us resulting in cash proceeds to us (other than in connection with employee option plans) or (ii) the May 24, 2011 maturity date; provided, however, that in the event we completed a private offering of equity securities prior to such May 24, 2011 maturity date, we could elect to convert the principal of the May 2010 Note into the same equity securities being sold in the private placement at the same price and terms.

In June 2010, we issued 6,000 shares to Athorn Clark Partners, or Athorn, at a price per share of \$12.50, based on the value of the services required to be provided by Athorn, in connection with an agreement for Athorn to provide media-related services to us.

On July 30, 2010, we issued 250,000 shares of common stock to the KFLP, an accredited investor and our largest shareholder at a price of \$8.00 per share. The \$2,000,000 aggregate consideration consisted of (i) \$1,000,000 cash and (ii) the exchange and cancellation of the outstanding May 2010 Note issued to the KFLP on May 28, 2010. Simultaneously with such purchase (including note conversion) and as part thereof, we entered into an unsecured revolving credit agreement (the “Credit Facility”) which enabled us to borrow up to \$2,000,000 from the KFLP at LIBOR plus 6.0% after August 1, 2010 for a period of 12 months.

On September 13, 2010 we issued a promissory note to the KFLP, in the principal amount of \$1,000,000 pursuant to the Credit Facility.

On November 8, 2010 we issued a promissory note to the KFLP, in the amount of \$1,000,000 pursuant to the Credit Facility.

On January 24, 2011 we entered into a First Amendment to the Credit Facility (to increase the available borrowings from \$2,000,000 to \$2,500,000 and simultaneously therewith the Company drew on the Credit Facility as amended by the First Amendment to borrow the additional \$500,000 in available funds.

On February 4, 2011 we entered into the Second Amendment to the Credit Facility (the “Second Amendment”) which (i) increased the available borrowing under the Credit Facility by \$2,500,000 from \$2,500,000

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to \$5,000,000 (ii) changed the due date of the amounts outstanding and future borrowings from July 12, 2011 to July 30, 2012 (iii) provided for the automatic conversion of any amounts borrowed and outstanding under the Credit Facility into Company securities that may be issued by the Company in subsequent securities offering, and (iv) provided the KFLP with the right to put any undrawn available amounts under the Credit Facility, as amended, to the Company and thereby have a note issued to the KFLP.

Between March and June 2011, the Company borrowed an additional \$2,000,000 under the Credit Facility in \$500,000 monthly increments for its working capital and operational needs.

On March 15, 2011 we issued a promissory note to the KFLP in the principal amount of \$500,000, pursuant to the Credit Facility, as amended.

On April 5, 2011 we issued a promissory note to the KFLP in the principal amount of \$500,000, pursuant to the Credit Facility, as amended.

On May 5, 2011, we issued a promissory note to the KFLP in the principal amount of \$500,000, pursuant to the Credit Facility, as amended.

On June 3, 2011 we issued a promissory note to the KFLP in the principal amount of \$500,000, pursuant to the Credit Facility, as amended.

On June 29, 2011, we entered into a Third Amendment (the "Third Amendment") to the Credit Facility which increased our availability under the Credit Facility by \$2,000,000 from \$5,000,000 to \$7,000,000. Future draws of the \$2,000,000 in increased availability provided by the Third Amendment to the Credit Facility were limited to \$1,000,000 increments beginning no earlier than August 2011 and October 2011, respectively. All other terms of the Credit Facility remained the same.

On July 8, 2011 we issued a promissory note to the KFLP in the principal amount of \$500,000, pursuant to the Credit Facility, as amended.

On August 1, 2011 we issued a promissory note to the KFLP in the principal amount of \$1,000,000, pursuant to the Credit Facility, as amended.

On October 5, 2011 we issued a promissory note to the KFLP in the principal amount of \$1,000,000, pursuant to the Credit Facility, as amended.

On October 12, 2011, we issued 120,000 restricted shares of our common stock subject to performance as well as time based vesting to Dr. Jeffrey D. Hillman in connection with the Separation and Release Agreement which provided for Dr. Hillman's retirement from full time service to the Company and his resignation as Chief Scientific Officer and as a director of the Company.

On December 9, 2011, we entered into a Fourth Amendment (the "Fourth Amendment") to the Credit Facility which increased our availability under the Credit Facility by \$500,000 from \$7,000,000 to \$7,500,000. We issued a promissory note dated December 9, 2011 in the principal amount of \$500,000, to the KFLP pursuant to the Credit Facility, as amended.

On January 23, 2012, we entered into a Fifth Amendment (the "Fifth Amendment") to the Credit Facility with the KFLP. The Fifth Amendment increased the available borrowing under the Credit Facility by \$750,000 from \$7,500,000 to \$8,250,000. On January 23, 2012, we drew down on the Credit Facility as amended to borrow \$750,000. All other terms of the Credit Facility remained the same, including but not limited to, the outstanding indebtedness thereunder being due July 30, 2012.

On March 23, 2012, the Company entered into an Exchange of Notes for Equity Agreement (the "Debt Exchange Agreement") with the KFLP. Pursuant to the terms of the Debt Exchange Agreement, we issued 6,285,619 shares of common stock and a warrant to acquire 1,571,405 shares of common stock to the KFLP in exchange for the cancellation of an aggregate of \$8,737,011 of indebtedness owed to the KFLP under our Credit Facility with the KFLP. The outstanding indebtedness consisted of \$8,250,000 in principal owed on twelve separate promissory notes previously issued by us to the KFLP under the Credit Facility and accrued interest of \$487,011

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through March 23, 2012 (the closing date). As a result of the Debt Exchange Agreement, the Credit Facility was terminated and the previously issued promissory notes thereunder were cancelled. The warrant is exercisable immediately at a price per share of \$2.00 and expires three years from the date of issuance. We valued the common stock and warrant at \$8,737,011 which equaled the carrying value of the Credit Facility and related accrued interest.

On March 23, 2012, we also entered into a new loan agreement (the "Loan Agreement") with the KFLP which provided us with up to \$2.5 million in secured funding. The Loan Agreement provided that borrowings would mature in three years and bear interest at the rate of 5.0% and were secured by select Company assets relating to or connected with our technologies. Pursuant to the Loan Agreement we issued an additional warrant to the KFLP to acquire 599,520 shares of our common stock. The warrant is exercisable immediately at a price per share of \$2.00 and expires three years from the date of issuance.

On June 5, 2012, in partial consideration for each party's execution and delivery of the Exclusive Channel Collaboration Agreement, we entered into a Stock Issuance Agreement with Intrexon Corporation. Pursuant to the Stock Issuance Agreement we issued to Intrexon Corporation 4,392,425 shares of our common stock as an initial technology access fee, in consideration for the execution and delivery of the Channel Collaboration Agreement and granted Intrexon Corporation certain equity participation rights and registration rights.

On July 30, 2012, we consummated a private placement transaction pursuant to which we issued 8,666,665 shares of our common stock at \$1.50 per share for an aggregate purchase price of approximately \$13.0 million to accredited investors. The July 2012 Private Placement was exempt under Rule 506 of Regulation D and/or Section 4(2) of the Securities Act. No advertising or general solicitation was employed in offering the securities. The offerings and sales were made to a limited number of accredited investors, and transfer was restricted in accordance with the requirements of the Securities Act. All of the investors had access to our SEC filings. In connection with the July 2012 Private Placement we issued warrants to acquire 771,169 shares of our common stock to a placement agent. The warrants were exercisable for five years at the same \$1.50 price per share paid by the investors in our July 2012 Private Placement.

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Item 16. Exhibits and Financial Statement Schedules.

See the Exhibit Index attached hereto and incorporated by reference.

Item 17. Undertakings.

The registrant hereby undertakes:

(a) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) to reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(b) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(d) That, for the purpose of determining liability under the Act to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(e) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Tampa, State of Florida on September 21, 2012.

ORAGENICS, INC.

By: /s/ John N. Bonfiglio
John N. Bonfiglio,
Chief Executive Officer,
and Principal Executive Officer

POWER OF ATTORNEY

Pursuant to the requirements of the Securities Act of 1933, as amended this registration statement has been signed by the following persons in the capacities indicated on September 21, 2012.

<u>Signature</u>	<u>Title</u>
<u>/s/ John N. Bonfiglio</u> John N. Bonfiglio	Principal Executive Officer, Chief Executive Officer and Director
<u>/s/ Michael Sullivan</u> Michael Sullivan	Principal Financial Officer, Chief Financial Officer (Principal Accounting Officer)
<u>/s/ Christine L. Koski</u> Christine L. Koski	Director
<u>/s/ Robert C. Koski *</u> Robert C. Koski	Director
<u>/s/ Frederick W. Telling *</u> Frederick W. Telling	Chairman and Director
<u>/s/ Charles L. Pope *</u> Charles L. Pope	Director
<u>/s/ Alan W. Dunton *</u> Alan W. Dunton	Director

* Pursuant to Power of Attorney

By /s/ Michael Sullivan
Michael Sullivan
Attorney-in-Fact

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Exhibit number	Exhibit description	Incorporated by Reference				Filed herewith
		Form	File no.	Exhibit	Filing date	
3.1	Amended and Restated Articles of Incorporation	SB-2	333-100568	3.3	10/16/02	
3.2	Articles of Amendment to Amended and Restated Articles of Incorporation	8-K	001-32188	10.2	10/30/09	
3.3	Articles of Amendment to Amended and Restated Articles of Incorporation	8-K	001-32188	3.1	9/27/10	
3.4	Articles of Amendment to Amended and Restated Articles of Incorporation	8-K	001-32188	3.1	09/01/11	
3.5	Bylaws	SB-2	333-100568	3.2	10/16/02	
3.6	First Amendment to Bylaws	8-K	001-32188	3.1	6/9/10	
3.7	Second Amendment to Bylaws	8-K	001-32188	3.1	8/24/10	
4.1	Specimen Stock Certificate	S-1/A	333-169031	4.0	10/05/10	
4.2	Securities Purchase Agreement between George Hawes, William Matlack and Oragenics, Inc. dated June 12, 2008 (including form of June 2008 Warrant)	8-K	001-32188	10.1	6/16/08	
5.1	Opinion of Shumaker, Loop & Kendrick, LLP					X
10.1	Exclusive License Agreement between the Company and the University of Florida Research Foundation, Inc. effective August 4, 1998 for Replacement Therapy for Dental Caries (the "Replacement Therapy License Agreement")	SB-2	333-100568	10.1	10/16/02	
10.2	First Amendment to Replacement Therapy License Agreement dated September 15, 2000	SB-2	333-100568	10.2	10/16/02	
10.3	Second Amendment to Replacement Therapy License Agreement dated June 2002	SB-2	333-100568	10.3	10/16/02	
10.4	Third Amendment to Replacement Therapy License Agreement dated September 25, 2002	SB-2	333-100568	10.4	10/16/02	
10.5	Fourth Amendment to Replacement Therapy License Agreement dated March 2003	SB-2/A-3	333-100568	10.36	4/9/03	
10.6	Standard Exclusive License Agreement with Sublicensing Terms between the Company and the University of Florida Research Foundation, Inc. effective June 22, 2000 (the "Antimicrobial Polypeptide License Agreement")	SB-2	333-100568	10.5	10/16/02	
10.7	First Amendment to the Antimicrobial Polypeptide License Agreement dated September 15, 2000	SB-2	333-100568	10.6	10/16/02	
10.8	Second Amendment to the Antimicrobial Polypeptide License Agreement dated June 10, 2002	SB-2	333-100568	10.7	10/16/02	
10.9	Third Amendment to the Antimicrobial Polypeptide License Agreement dated September 25, 2002	SB-2	333-100568	10.4	10/16/02	

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<u>Exhibit number</u>	<u>Exhibit description</u>	<u>Incorporated by Reference</u>				
		<u>Form</u>	<u>File no.</u>	<u>Exhibit</u>	<u>Filing date</u>	<u>Filed herewith</u>
10.10	Fourth Amendment to the Antimicrobial Polypeptide License Agreement dated March 2003	SB-2/A-3	333-100568	10.36	4/9/03	
10.11	Amended and Restated 2002 Stock Option and Incentive Plan (including Form of Stock Option Agreement)	10-QSB/A	001-32188	10.1	9/29/06	
10.12	First Amendment to Amended and Restated 2002 Stock Option and Incentive Plan	8-K	001-32188	4.2	4/14/08	
10.13	Second Amendment to Amended and Restated 2002 Stock Option and Incentive Plan	8-K	001-32188	10.1	10/30/09	
10.14	Third Amendment to Amended and Restated 2002 Stock Option and Incentive Plan	8-K	001-32188	4.1	09/01/11	
10.15	Fourth Amendment to Amended and Restated 2002 Stock Option and Incentive Plan	10-Q	001-32188	4.5	11/14/11	
10.16	Form of Employee Long Term Incentive Program Agreement	8-K	001-32188	10.1	11/17/11	
10.17	Form of Director Long Term Incentive Program Agreement	8-K	001-32188	10.2	11/17/11	
10.18	Lease Agreement between the Company and Hawley-Wiggins LLC dated January 28, 2004; Subordination Agreement dated April 14, 2004; and First Amendment dated November 15, 2004	10-KSB	001-32188	10.46	3/14/05	
10.19	Sublease Agreement between the Company and Astrazenca LP dated October 12, 2009 (3000 Bayport Drive, Suite 685, Tampa, FL 33607)	10-K	001-32188	10.17	3/31/10	
10.20	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	
10.21	Executive Employment Agreement between the Company and John N. Bonfiglio dated May 25, 2011	8-K	001-32188	10.1	5/26/11	
10.22	Executive Employment Agreement between the Company and Michael Sullivan dated January 28, 2012	8-K	001-32188	10.1	2/2/12	
10.23	Executive Employment Agreement between the Company and Martin Handfield dated May 11, 2010	10-Q	001-32188	10.16	11/14/11	
10.24	License Agreement by and between Oragenics Inc. and Texas A&M University System dated December 20, 2011	10-K	001-32188	10.28	4/16/12	

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<u>Exhibit number</u>	<u>Exhibit description</u>	<u>Incorporated by Reference</u>				
		<u>Form</u>	<u>File no.</u>	<u>Exhibit</u>	<u>Filing date</u>	<u>Filed herewith</u>
10.25	Exclusive Channel Collaboration Agreement by and between Oragenics, Inc. and Intrexon Corporation dated as of June 5, 2012.**	8-K	001-32188	10.1	6/11/12	
10.26	Stock Issuance Agreement by and between Oragenics, Inc. and Intrexon Corporation dated as of June 5, 2012	8-K	001-32188	10.2	6/11/12	
10.27	Stock Purchase Agreement dated July 30, 2012	8-K	001-32188	10.1	8/2/12	
10.28	Registration Rights Agreement dated July 30, 2012	8-K	001-32188	10.2	8/2/12	
10.29	Form of Placement Agent Warrant	8-K	001-32188	10.3	8/2/12	
23.1	Consent of Mayer Hoffman McCann P.C., an independent registered public accounting firm					X
23.2	Consent of Shumaker, Loop & Kendrick, LLP (included as part of Exhibit 5.1)					X
24.1	Powers of Attorney (included on signature page of initial filing).					

** 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.



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September 21, 2012

Oragenics, Inc.
3000 Bayport Drive, Suite 685
Tampa, FL 33607

Re: Form S-1 Registration Statement

SEC Registration No. 333-183685

Ladies and Gentlemen:

We have acted as counsel to Oragenics, Inc., a Florida corporation (the "Company"), in connection with the filing of a Registration Statement on Form S-1 (Registration No. 333-183685) (the "Registration Statement") with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Act"), relating to the registration of the resale by the selling shareholders named therein (the "Selling Shareholders") of an aggregate of 9,437,834 shares (the "Offered Securities") of common stock, par value \$0.001 per share, of which 8,666,665 shares are issued and outstanding on the date hereof (the "Shares") and 771,169 shares (the "Warrant Shares") are issuable upon exercise of warrants (the "Warrant").

This opinion is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement other than as to the validity of the Offered Securities.

We have reviewed the originals or copies certified or otherwise identified to our satisfaction of the Registration Statement and all such corporate records of the Company and such other instruments and other certificates of public officials, officers and representatives of the Company and such other persons, and we have made such investigations of law, as we have deemed appropriate as a basis for the opinions expressed below. In arriving at the opinions expressed below, we have assumed the authenticity of all documents submitted to us as originals and the conformity to the originals of all documents submitted to us as copies. In addition, we have assumed and have not verified the accuracy as to factual matters of each document we have reviewed.

The foregoing opinion is limited solely to the laws of the State of Florida, the Florida Business Corporation Act and the federal laws of the United States of America, and we do not express any opinion as to the laws of any other jurisdiction. We also express no opinion herein with respect to compliance by the Company with securities or "blue sky" laws of any state or other jurisdiction of the United States or of any foreign jurisdiction. In addition, we express no opinion and make no statement herein with respect to the antifraud laws of any jurisdiction.

Based upon and subject to the foregoing, we are of the opinion with respect to the Offered Securities that (i) the Shares have been duly authorized and are validly issued and are fully paid and non-assessable, and (ii) upon the proper exercise of the Warrants and the payment of any consideration required thereunder, all as described in the Registration Statement, the Warrant Shares will be duly authorized, validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of our name therein and in the related prospectus under the caption "Legal Matters." In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

/s/ Shumaker, Loop & Kendrick, LLP

SHUMAKER, LOOP & KENDRICK, LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the reference to our firm under the caption "Experts" and to the use of our report dated April 13, 2012, with respect to the 2011 and 2010 financial statements of Orogenics, Inc. in the Registration Statement (Form S-1) and related Prospectus of Orogenics, Inc., dated September 21, 2012.

/s/ Mayer Hoffman McCann P.C.
Mayer Hoffman McCann P.C.
Clearwater, Florida
September 21, 2012