SENOMYX INC
Form 10-Q
April 26, 2018

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-Q

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

For the quarterly period ended March 31, 2018

Or

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

For the transition period from to

Commission File Number: 000-50791

SENOMYX, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	**33-0843840** (I.R.S. Employer Identification No.)
4767 Nexus Centre Drive **San Diego, California 92121** (Address of principal executive offices) (Zip code)	**(858) 646-8300** (Registrant's telephone number, including area code)

(Former name, former address and former fiscal year, if changed since last report)

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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

Large accelerated filer	Accelerated filer
Non-accelerated filer	(Do not check if a smaller reporting company)
	Smaller reporting company
	Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

Indicate the number of shares outstanding of each of the issuer’s classes of common stock, as of the latest practicable date.

Total shares of common stock outstanding as of the close of business on April 23, 2018: 48,304,277

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PART I. FINANCIAL INFORMATION

ITEM 1. CONDENSED FINANCIAL STATEMENTS (UNAUDITED)

SENOMYX, INC.

CONDENSED BALANCE SHEETS

(In thousands, except for share and per share data)

	March 31, 2018 (Unaudited)	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	*10,340*	$*6,233*
Short-term investments available-for-sale	*7,734*	*9,630*
Accounts receivable	*1,833*	*7,130*
Inventories	*1,632*	*1,579*
Other current assets	*398*	*467*
Total current assets	*21,937*	*25,039*
Property and equipment, net	*2,451*	*2,561*
Total assets	$ *24,388*	$*27,600*
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable, accrued expenses and other current liabilities	$ *3,481*	$*4,920*
Deferred rent	*343*	*335*
Leasehold incentive obligation	*219*	*219*
Total current liabilities	*4,043*	*5,474*
Deferred rent	*2,079*	*2,229*
Leasehold incentive obligation	*1,079*	*1,134*
Stockholders' equity:		
Preferred stock, $.001 par value; 7,500,000 shares authorized; no shares issued or outstanding at March 31, 2018 (unaudited) and December 31, 2017	—	—

Common stock, $.001 par value; 120,000,000 shares authorized at March 31, 2018 (unaudited) and December 31, 2017; 48,304,277 and 47,786,793 shares issued and outstanding at March 31, 2018 (unaudited) and December 31, 2017, respectively.	*48*	*48*
Additional paid-in capital	*299,042*	*298,242*
Accumulated other comprehensive loss	*(9)*	*(5)*
Accumulated deficit	*(281,894)*	*(279,522)*
Total stockholders' equity	*17,187*	*18,763*
Total liabilities and stockholders' equity	$ *24,388*	$ *27,600*

See accompanying notes to condensed financial statements.

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SENOMYX, INC.

CONDENSED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(In thousands, except share and per share data)

(Unaudited)

	Three Months Ended March 31,	
	2018	**2017**
Revenues:		
Commercial revenues	$*1,446*	$*2,620*
Development revenues	*1,662*	*1,846*
Total revenues	*3,108*	*4,466*
Operating expenses:		
Cost of commercial revenues	*288*	*421*
Research, development and patents	*3,925*	*4,427*
Selling, general and administrative	*2,696*	*3,066*
Total operating expenses	*6,909*	*7,914*
Loss from operations	*(3,801)*	*(3,448)*
Other income	*44*	*12*
Net loss	*(3,757)*	*(3,436)*
Other comprehensive income:		
Unrealized gain on investments	*4*	*1*
Comprehensive loss	$*(3,753)*	$*(3,435)*
Net loss per share, basic and diluted	$*(0.08)*	$*(0.07)*
Shares used in calculating net loss per share, basic and diluted	*47,965,037*	*45,841,809*

See accompanying notes to condensed financial statements.

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SENOMYX, INC.

CONDENSED STATEMENTS OF CASH FLOWS

(In thousands)

(Unaudited)

	Three Months Ended March 31,	
	2018	**2017**
Operating activities		
Net loss	$(3,757)	$(3,436)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation	173	181
Accretion of premium on available-for-sale securities	(12)	20
Amortization of leasehold incentive obligation	(55)	(55)
Stock-based compensation for employees and non-employee directors	530	787
Stock-based compensation for non-employees	4	6
Change in operating assets and liabilities:		
Accounts receivable	6,682	(146)
Inventories	(53)	(8)
Other current assets	69	(172)
Accounts payable, accrued expenses and other current liabilities	(1,468)	(1,255)
Deferred rent	(142)	(143)
Net cash provided by (used in) operating activities	1,971	(4,221)
Investing activities		
Purchases of property and equipment	(34)	(153)
Purchases of available-for-sale securities	(496)	—
Maturities of available-for-sale securities	2,400	3,550
Net cash provided by investing activities	1,870	3,397
Financing activities		
Proceeds from issuance of common stock, net of issuance costs	266	2,178
Net cash provided by financing activities	266	2,178
Net change in cash and cash equivalents	4,107	1,354
Cash and cash equivalents at beginning of period	6,233	3,587
Cash and cash equivalents at end of period	$10,340	$4,941
Supplemental disclosure of cash flow information:		
	$29	$171

Purchases of property and equipment included in accounts payable, accrued expenses and other current liabilities at period end

See accompanying notes to condensed financial statements.

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SENOMYX, INC.

NOTES TO CONDENSED FINANCIAL STATEMENTS

(Unaudited)

1. Organization and Summary of Significant Accounting Policies

Organization and Business

Senomyx, Inc. (“we”, “us” or “our”) was incorporated in Delaware in *September 1998* and commenced operations in *January 1999.* We use proprietary taste receptor technologies to discover, develop and commercialize innovative flavor ingredients and natural high intensity sweeteners (HIS) for the packaged food, beverage and ingredient supply industries to improve the nutritional profile of their products and generate cost of goods savings while maintaining or improving taste. Our current programs focus on the development and/or commercialization of sweet, savory and salt flavor ingredients, bitter blockers and cooling agents.

We currently have product discovery, development and commercialization collaborations with some of the world’s leading packaged food, beverage and ingredient companies: Ajinomoto Co., Inc. (“Ajinomoto”), Firmenich SA (“Firmenich”) and PepsiCo, Inc. (“PepsiCo”). Our collaboration agreements generally provide for license fees, research and development funding, reimbursement of certain costs, development milestone payments based upon our achievement of research or development goals and, in the event of commercialization, commercial milestone payments, minimum periodic royalties and royalties on sales of products incorporating our flavor ingredients. We also sell certain flavor ingredients directly to flavor companies for inclusion in flavor systems for re-sale to food and beverage companies.

Basis of Presentation

The financial statements at *March 31, 2018* and for the *three* months ended *March 31, 2018* and *2017* are unaudited. The unaudited financial statements have been prepared on the same basis as the audited financial statements and, in the opinion of management, include all adjustments, consisting only of normal recurring adjustments, necessary to state fairly the financial information therein. The results of operations for the *three* months ended *March 31, 2018* are

not necessarily indicative of the results that *may* be reported for the year ending *December 31, 2018.* For more complete financial information, these financial statements, and the notes thereto, should be read in conjunction with the audited financial statements for the year ended *December 31, 2017,* including the notes thereto, included in our Annual Report on Form *10*-K for the year ended *December 31, 2017* filed with the Securities and Exchange Commission (the "SEC").

The accompanying financial statements have been prepared on a going-concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. We have incurred net losses from operations since inception and have an accumulated deficit of *$281.9* million at *March 31, 2018.* Our ability to transition to profitable operations is dependent upon achieving a level of revenues adequate to support our cost structure through expanding our development and commercial revenues. Cash, cash equivalents, and short-term investments available-for-sale at *March 31, 2018* totaled *$18.1* million. We have prepared cash flow forecasts which indicate, based on our current cash resources available, that we will have sufficient resources to fund our business for at least the next *12* months from the date of this filing.

Use of Estimates

The preparation of financial statements in conformity with United States generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents

We consider all highly liquid investments with a remaining maturity of *three* months or less when purchased to be cash equivalents. Cash equivalents are recorded at cost, which approximates market value.

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Short-Term Investments Available-for-Sale

Our surplus cash is generally invested in United States government agency securities and corporate debt securities with maturity dates of *two* years or less from the settlement date. The amortized cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity with all amortization and accretion included in interest income. Our investments are classified as available-for-sale and carried at estimated fair value, with unrealized gains and losses reported in accumulated other comprehensive loss as a separate component of stockholders' equity. Realized gains and losses and declines in value judged to be other-than-temporary, if any, on available-for-sale securities are included in interest income. The cost of securities sold is based on the specific identification method. Interest on securities classified as available-for-sale is included in interest income.

Fair Value of Financial Instruments other than Short-Term Investments Available-for-Sale

The carrying amount of cash and cash equivalents, accounts receivables, accounts payable and accrued expenses are considered to be representative of their respective fair value because of the short-term nature of those items.

Accounts Receivable

We extend credit to our customers in the normal course of business based upon an evaluation of the customer's credit history, financial condition and other factors. Estimates of allowances for uncollectible receivables are determined by evaluating individual customer circumstances, historical payment patterns, length of time past due and other factors. At *March 31, 2018* and *December 31, 2017,* we did *not* have any allowances for uncollectible receivables.

Inventories

Inventories consist entirely of purchased finished goods. Inventories are valued at lower of cost (on a moving average basis) or net realizable value. We are required to make assumptions regarding the level of reserves required to value items at the lower of cost or net realizable value. We make judgments and estimates regarding excess or obsolete inventory by analyzing forecasted demand, pricing trends, margins, product life cycles, remaining shelf life and expectations of efficacy, as well as qualitative factors given the limited sales history of our products. At *March 31, 2018* and *December 31, 2017,* we had reserves for lower of cost or net realizable value, excess or obsolete inventory of *$395,000,* respectively.

Revenue Recognition

We recognize revenues when we transfer control of promised goods or services to our collaborators and customers in an amount that reflects the consideration to which we expect to be entitled to in exchange for those goods or services. See Note *2* for further discussion on Revenues.

Cost of Commercial Revenues

Cost of commercial revenues represents royalties payable under our *third*-party licensing agreements and the cost of goods sold related to direct sales, including related shipping and handling costs.

Research, Development and Patents

Research and development costs, including those incurred in relation to our collaboration agreements, are expensed in the period incurred. Research and development costs primarily consist of salaries and related expenses for personnel, facilities and depreciation, research and development supplies, licenses and outside services. Such research and development costs totaled *$3.5* million and *$4.0* million for the *three* months ended *March 31, 2018* and *2017,* respectively.

Costs related to filing and pursuing patent applications are expensed as incurred, as recoverability of such expenditures is uncertain. We include all external costs related to the filing of patents related to development in Research, Development and Patents expenses. Such patent-related expenses totaled *$403,000* and *$418,000* for the *three* months ended *March 31, 2018* and *2017,* respectively.

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Stock-Based Compensation

Total stock-based compensation expenses recognized for the *three* months ended *March 31, 2018* and *2017* was as follows (in thousands):

	Three Months Ended March 31,	
	2018	**2017**
Research, development and patents	$*272*	$*297*
Selling, general and administrative	*262*	*496*
Total stock-based compensation expenses	$*534*	$*793*

At *March 31, 2018,* total unrecognized estimated compensation expenses related to non-vested stock options granted prior to that date was *$2.8* million, which is expected to be recognized over a weighted average period of *2.6* years.

Net Loss Per Share

Basic earnings per share ("EPS") is calculated by dividing the net loss by the weighted average number of common shares outstanding for the period, without consideration for common stock equivalents. Diluted EPS is computed by dividing the net income or loss by the weighted average number of common share equivalents outstanding for the period determined using the treasury-stock method. Dilutive common share equivalents include the dilutive effect of in-the-money shares, which is calculated based on the average share price for each period using the treasury stock method. Under the treasury stock method, the exercise price of a share and the amount of compensation cost, if any, for future service that we have *not* yet recognized when the share is exercised are assumed to be used to repurchase shares in the current period. For purposes of this calculation, options to purchase common stock are considered to be common stock equivalents and are only included in the calculation of diluted earnings per share when their effect is dilutive.

The following table sets forth the computation of basic and diluted net loss per share for the respective periods.

	Three Months Ended March 31,	
	2018	**2017**

Numerator:		
Net loss (in thousands)	$*(3,757)*	$*(3,436)*
Denominator:		
Weighted average common shares	*47,965,037*	*45,841,809*
Basic and diluted net loss per share	$*(0.08)*	$*(0.07)*
Outstanding antidilutive securities not included in diluted net loss per share calculation:		
Options to purchase common stock	*10,956,148*	*11,297,197*

Comprehensive Income (Loss)

The Comprehensive Income Topic of the FASB ASC requires that all components of comprehensive income (loss), including net income (loss), be reported in the financial statements in the period in which they are recognized. Comprehensive income (loss) is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources. Our accumulated other comprehensive loss as of *March 31, 2018* and *December 31, 2017* consisted of unrealized losses on investments available-for-sale and is reported in stockholders' equity.

Segment Reporting

We operate in *one* business segment, which is the development and commercialization of flavor ingredients. All of our operations are located in the United States.

Recent Accounting Pronouncements

In *February 2016,* the FASB issued ASU *2016-02, Leases*. Under the new guidance, lessees will be required to recognize assets and liabilities for most leases. The provisions of this ASU are effective for annual periods beginning after *December 15, 2018,* and for interim periods within those years; early adoption is permitted. We will adopt ASU *2016-02* in the *first* quarter of *2019.* Although we are in the process of evaluating the impact of adoption of the ASU on our consolidated financial statements, we currently believe the most significant changes will be related to the recognition of new right-of-use assets and lease liabilities on our balance sheet for real estate operating leases.

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2. **Revenues**

In *May 2014,* the FASB issued accounting guidance on the recognition of revenue from contracts with customers. Under this guidance, we recognize revenue upon the transfer of promised goods or services to customers in an amount that reflects the value we expect in exchange for the goods or services. On *January 1, 2018,* we adopted this new guidance using the modified retrospective method applied to those contracts which were *not* completed as of *January 1, 2018.* Results for reporting periods beginning after *January 1, 2018* are presented under the new guidance, while prior period amounts are *not* adjusted and continue to be reported in accordance with our historic revenue recognition policy.

We recorded a net decrease of *$1.4* million to our opening accumulated deficit balance due to the cumulative impact of adopting the new revenue recognition guidance. The impact of adoption on *January 1, 2018* is primarily related to royalty-based collaboration revenues resulting in a *$1.5* million increase in accounts receivable offset by a *$100,000* increase in associated current liabilities. The cumulative impact of adoption at *January 1, 2018* is detailed as follows:

	January 1, 2018
Minimum periodic royalty payments	$ *1,125*
Sales based royalty payments (net)	*206*
Patent and other cost reimbursement payments	*54*
Total net decrease to opening accumulated deficit	$ *1,385*

Revenue Recognition

Revenues are recognized when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. Our steps for recognizing revenue consist of; *1*) identifying the contract, *2*) identifying the performance obligations as either distinct or bundled goods and services, *3*) determining the transaction price associated with each performance obligation for which we expect to be entitled in exchange for transferring such goods and services, *4*) allocating the transaction price to the performance obligations in the contract and *5*) recognizing revenue upon satisfaction of performance obligations.

Certain of our revenues derive from product discovery, development and commercialization collaboration agreements. Some of our collaboration agreements contain multiple performance obligations, including technological and territorial licenses and research and development services. For such arrangements, we allocate revenue to each

performance obligation based on its relative standalone selling price. We generally determine standalone selling prices at the inception of the contract based on our best estimate of what the selling price would be if the deliverable was regularly sold by us on a stand-alone basis.

Performance Obligations

Development revenues include revenues from license fees, research and development funding, the achievement of development milestones and cost reimbursements. Non-refundable license fees associated with our future performance obligations are considered non-distinct as they are attributed to a specific program or collaboration and recognized over the period of service for that specific program or collaboration. Amounts received for research funding are recognized as revenues as the services are performed and revenue is deferred for fees received prior to the satisfaction of future performance obligations.

Commercial revenues from collaboration agreements include non-refundable distinct license fees, royalties on sales made by our collaborators of products incorporating our flavor ingredients, minimum periodic royalty payments, payments from the achievement of commercial milestones and direct sales of our flavor ingredients to flavor companies. Performance obligations associated with non-refundable distinct license fees are satisfied upon the transfer of control of the functional intellectual property.

Royalty-based collaborator contract revenues *may* include non-refundable minimum periodic royalty payments where our collaborator has the right to terminate the contract without cause, subject to returning such rights to sell our products, generally with a *90*-day notice. Such minimum periodic royalty payments are recognized as revenue once the payments become non-refundable.

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Performance obligations for direct sales of our flavor ingredients are satisfied upon transfer of control of the product, generally according to shipping terms specific to delivery and acceptance, and do *not* include a general right of return period.

Contract performance obligations associated with sales based royalty revenues, including minimum periodic royalty payments, require us to use judgement as to timing of recognition of revenues:

Sales based royalty payments made by our collaborators of products incorporating our flavor ingredients are recognized at the later of when the subsequent sale or usage occurs or the performance obligation to which some or all of the sales based royalty has been allocated is satisfied. In cases where royalty reports from our collaborators are *not* available at the end of a reporting period, we estimate such royalties earned in the current reporting period based on historical trends, quarterly sales forecasts or some combination thereof, and apply an adjustment to such revenues in the reporting period for which we receive the royalty reports, generally *one* quarter in arrears.

Additionally, to the extent that calculated royalties on sales of licensed products exceed contractually provided minimum periodic royalty payments, the collaborators are required to remit to us the difference between royalties calculated and minimum periodic royalty payments made to date. We recognize this difference as royalties on product sales at the time for which the performance obligation is satisfied as evidenced by available royalty reports or calculated estimates when royalty reports are *not* available. To the extent that minimum periodic royalty payments through the end of any applicable period exceed calculated royalties, we are *not* required to refund the difference.

We operate in *one* business segment, which is the development and commercialization of flavor ingredients. All of our operations are located in the United States. As noted above, prior period amounts have *not* been adjusted under the modified retrospective method. The following table presents our revenues disaggregated by revenue source (in thousands):

	Three Months Ended March 31,	
	2018	**2017**
Development revenues:		
Research and development services	$*1,500*	$*1,750*
Patent and other cost reimbursement payments	*162*	*96*
Total development revenues	*1,662*	*1,846*
Commercial revenues:		
Sales based royalties	*858*	*1,911*
Direct sales	*584*	*705*

License fees	*4*	*4*
Total commercial revenues	*1,446*	*2,620*
Total revenues	$*3,108*	$*4,466*
Timing of revenue recognition:		
Services transferred over time	$*1,662*	$*1,846*
Good and services transferred at a point in time	*1,446*	*2,620*
Total revenues	$*3,108*	$*4,466*

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Transaction price allocated to remaining performance obligations associated with research and development contracts for the years ended *December 31, 2018* and *2019* are detailed as follows (in thousands):

	2018	2019
Revenue expected to be recognized from research and development services contracts as of March 31, 2018 (1)	$*6,000*	$*4,500*

(*1*) Transaction price = *$6* million in total for the year ended *December 31, 2018,* recognized evenly over *12* months at *$500,000* per month. Contract continues at *$500,000* per month, ending *September 30, 2019,* for a total of *$4.5* million for the year ended *December 31, 2019***.**

Practical Expedients and Exemptions

We generally expense sales commissions when incurred because the amortization period would have been *one* year or less. These costs are recorded within sales and marketing expenses.

We do *not* disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of *one* year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

3. **Balance Sheet Details**

Short-Term Investments Available-for-Sale

The following is a summary of short-term investments available-for-sale securities at *March 31, 2018 (*in thousands):

	Amortized Cost	Unrealized	Unrealized Loss	Estimated Fair

		Gain		Value
United States government agency securities	$ *2,999*	$ —	$ *(3*)	$ *2,996*
Corporate debt securities	*4,744*	—	*(6*)	*4,738*
Short-term investments available-for-sale	$ *7,743*	$ —	$ *(9*)	$ *7,734*

The following is a summary of short-term investments available-for-sale securities at *December 31, 2017* (in thousands):

	Amortized Cost	Unrealized Gain	Unrealized Loss	Estimated Fair Value
United States government agency securities	$ *4,592*	$ —	$ *(2*)	$ *4,590*
Corporate debt securities	*5,043*	—	*(3*)	*5,040*
Short-term investments available-for-sale	$ *9,635*	$ —	$ *(5*)	$ *9,630*

Short-term investments available-for-sale securities we consider to be temporarily impaired at *March 31, 2018* were as follows (in thousands, except for number of investments):

	Number of investments	Less than 12 Months of Temporary Impairment Estimated Fair Value	Unrealized Losses
United States government agency securities	*4*	$ *3,546*	$ *(3*)
Corporate debt securities	*7*	*3,346*	*(6*)
Temporarily impaired securities	*11*	$ *6,892*	$ *(9*)

We believe that the decline in value of these securities is temporary and primarily related to the change in market interest rates since purchase and that it is more likely than *not* that we will be able to hold these securities to maturity. Therefore we anticipate full recovery of their amortized cost basis at maturity.

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Gross realized gains and losses on available-for-sale securities were immaterial during the *three* months ended *March 31, 2018* and *2017.* As of *March 31, 2018,* all available-for-sale securities had maturity dates within *one* year.

4. **Fair Value Disclosures**

The following table presents information about our financial assets and financial liabilities measured at fair value on a recurring basis as of *March 31, 2018,* and indicates the fair value hierarchy of the valuation techniques utilized by us to determine such fair value. In general, fair values determined by Level *1* inputs utilize quoted prices (unadjusted) in active markets for identical assets or liabilities that we have the ability to access. We classify money market funds and United States Treasuries as Level *1* assets.

Fair values determined by Level *2* inputs utilize inputs other than quoted prices included in Level *1* that are observable for the asset or liability, either directly or indirectly. Level *2* inputs include quoted prices for similar assets and liabilities in active markets, and inputs other than quoted prices that are observable for the asset or liability, such as interest rates and yield curves that are observable at commonly quoted intervals. We obtain the fair value of Level *2* financial instruments from a *third*-party professional pricing service using quoted market prices for identical or comparable instruments. The professional pricing service gathers market prices from a variety of industry standard data providers, security master files from large financial institutions and other *third*-party sources. The service uses these multiple prices as inputs into a distribution-curve based algorithm to determine a fair value. We then validate the quoted fair values provided by the professional pricing service by comparing the service's assessment of the fair values of our Level *2* investment portfolio balance against the fair values of our Level *2* investment portfolio balance provided by our investment managers. We classify United States government agency bonds and corporate bonds as Level *2* assets. There were *no* transfers between Level *1* and Level *2* during the *three* months ended *March 31, 2018* or *2017.*

Level *3* inputs are unobservable inputs for the asset or liability, and include situations where there is little, if any, market activity for the asset or liability. In certain cases, the inputs used to measure fair value *may* fall into different levels of the fair value hierarchy. In such cases, the level in the fair value hierarchy within which the fair value measurement in its entirety falls has been determined based on the lowest level input that is significant to the fair value measurement in its entirety. Our assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment, and considers factors specific to the asset or liability. We do *not* hold any Level *3* assets or liabilities.

The fair value as of *March 31, 2018* for assets that have recurring measurements are shown below (in thousands):

	Balance as of March 31, 2018	Fair Value Measurement at Reporting Date Using Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Money market funds	$*7,891*	$*7,891*	$ —	$ —
United States government agency bonds	*3,546*	—	*3,546*	—
Corporate bonds	*4,738*	—	*4,738*	—
	$*16,175*	$*7,891*	$ *8,284*	$ —

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ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited financial statements, related notes and the "Risk Factors" included in this quarterly report on Form 10-Q and the audited financial statements, notes thereto as of and for the year ended December 31, 2017 and the "Risk Factors" included in our Annual Report on Form 10-K for the year ended December 31, 2017 filed with the Securities and Exchange Commission, or SEC. Operating results are not necessarily indicative of results that may occur in future periods.

Certain statements contained in this quarterly report on Form 10-Q, including statements regarding the development, growth and expansion of our business, our intent, belief or current expectations, primarily with respect to our future operating performance, and the products we expect to offer and other statements regarding matters that are not historical facts, are "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, or Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act, and are subject to the "safe harbor" created by these sections. Future filings with the SEC, future press releases and future oral or written statements made by us or with our approval, which are not statements of historical fact, may also contain forward-looking statements. Because such statements include risks and uncertainties, many of which are beyond our control, actual results may differ materially from those expressed or implied by such forward-looking statements. Some of the factors that could cause actual results to differ materially from those expressed or implied by such forward-looking statements can be found under the caption "Risk Factors," and elsewhere in this quarterly report on Form 10-Q. Readers are cautioned not to place undue reliance on forward-looking statements. The forward-looking statements speak only as of the date on which they are made, and we undertake no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they are made.

Overview and Recent Developments

We use proprietary taste receptor technologies to discover, develop and commercialize innovative flavor ingredients for the packaged food, beverage and ingredient supply industries. We consider flavor ingredients to include flavors, such as savory and cooling, and flavors with modifying properties, such as sweet and salt taste modifiers and bitter blockers. Flavors with modifying properties is a term used by the flavor industry to describe ingredients that function as part of a flavor system to modify or enhance the flavor profile of a variety of food and beverages. We also have an ongoing effort to discover and develop natural high intensity sweeteners, or natural HIS. We believe our flavor ingredients, when added as part of a flavor system, will enable packaged food, beverage and ingredient supply companies to improve the nutritional profile (i.e., reduce calories) of their products while maintaining or improving taste and, in certain cases, generating cost of goods savings.

Historically, we have derived our revenues from collaborative agreements by licensing our flavor ingredients to our collaborators on an exclusive or co-exclusive basis and receiving royalties and commercial milestones upon commercialization. We currently have collaborative agreements with several of the world's leading packaged food, beverage and ingredient companies, including Ajinomoto Co., Inc., or Ajinomoto, Firmenich SA, or Firmenich and PepsiCo, Inc., or PepsiCo. Depending upon the collaboration, our collaboration agreements have generally provided for license fees, research and development funding, reimbursement of certain costs, milestone payments based upon our achievement of research or development goals and, in the event of commercialization, commercial milestones, minimum periodic royalties and royalties on sales of products incorporating our flavor ingredients. As our technology has evolved from concept to commercial products, we have shifted our licensing approach with respect to collaborations for our flavor ingredients and natural HIS. Rather than licensing flavor ingredients and natural HIS to a collaborator on an exclusive or co-exclusive basis, we have begun licensing our ingredients on a non-exclusive basis to expand the addressable market for commercialization. We believe this approach will allow greater commercialization and usage of our ingredients by multiple food, beverage and ingredient supply companies.

In addition to revenues from collaborative agreements, we have a complementary commercialization strategy whereby we sell certain of our flavor ingredients directly to flavor companies for re-sale to their food and beverage company customers. The flavor companies add value by incorporating our ingredients into proprietary flavor systems, which include a combination or variety of flavor ingredients, for their customers. To support this direct sales program, we have established relationships with third party manufacturers. Our commercial revenues under the direct sales program are generated from sales of our flavor ingredients to flavor companies and other customers.

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We have incurred significant losses since our inception in 1998. Our results of operations have fluctuated from period to period and likely will continue to fluctuate substantially in the future based upon:

- the ability and willingness of our product discovery, development and commercialization collaborators to commercialize products incorporating our flavor ingredients into food, beverage and ingredient products, on expected timelines, if at all;
- our ability to enter into new product discovery, development and commercialization collaborations and technology collaborations and our payment obligations, expected revenues and other terms of any of our agreements;
- our ability to grow our direct sales program;
- the demand for our collaborators' and other customers' products containing our flavor ingredients;
- the termination, expiration or amendment of any of our product discovery, development and commercialization collaboration agreements;
- our receipt of milestone payments in any particular period;
- our ability, or our collaborators' ability, to successfully satisfy all pertinent regulatory requirements; and
- general and industry specific economic conditions which may affect our collaborators' research and development expenditures and commercialization efforts.

Results of Operations

Three Months Ended March 31, 2018 and 2017

Revenues

Total revenues were $3.1 million during the first quarter ended March 31, 2018, a decrease from $4.5 million for the first quarter ended March 31, 2017.

Development revenues were $1.7 million and $1.8 million for the three months ended March 31, 2018 and 2017, respectively.

Commercial revenues were $1.4 million and $2.6 million for the three months ended March 31, 2018 and 2017, respectively. The decrease compared to the prior year was primarily attributable to the conclusion of the minimum annual royalties period under the PepsiCo sweet program collaboration, which occurred during the first quarter of

2018.

Revenues under our material collaborations with Firmenich and PepsiCo accounted for approximately 72% of total revenues for the three months ended March 31, 2018 and 2017.

Cost of Commercial Revenues

Costs of commercial revenues were $288,000 and $421,000 for the three months ended March 31, 2018 and 2017, respectively. The decrease primarily resulted from lower cost of goods sold resulting from a decrease in direct sales and sales based royalty payments in the 2018 period.

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Research, Development and Patents Expenses

Research, development and patents expenses (including stock-based compensation expenses charged to research and development) were $3.9 million and $4.4 million for the three months ended March 31, 2018 and 2017, respectively. A comparison of research, development and patents expenses by category is as follows (in thousands):

	Three Months Ended	
	March 31,	
	2018	**2017**
Salaries and personnel	$1,629	$1,717
Facilities and depreciation	854	874
Patents and licensing	455	476
Research and development supplies	321	232
Non-cash stock-based compensation	272	297
Miscellaneous	246	237
Outside services	148	594
	$3,925	$4,427

Salaries and Personnel. Expenses for salaries and personnel decreased $88,000 due to reduced staffing levels in the 2018 period.

Outside Services. Expenses for outside services decreased $446,000 primarily due to decreased activities related to safety studies for sweet taste product candidates in development.

Research and Development Supplies. Expenses research and development supplies increased $89,000 due to increased screening activities.

Selling, General and Administrative Expenses

Selling, general and administrative expenses (including stock-based compensation expenses charged to selling, general and administrative) were $2.7 million for the three months ended March 31, 2018, a decrease of $370,000 from the $3.1 million total for the three months ended March 31, 2017. The decrease from 2017 was primarily due to reduced stock-based compensation expense.

Liquidity and Capital Resources

Since our inception, we have financed our business primarily through our product discovery and development collaborations, private and public placements of stock, royalties and commercial payments. As of March 31, 2018, we had received $267.5 million in research and development payments, license fees, cost reimbursements and milestone payments from our collaboration agreements. In addition, we had received $61.6 million in royalties and commercial payments.

At March 31, 2018, we had $18.1 million in cash, cash equivalents and short-term investments available-for-sale, a increase of $2.2 million compared to $15.9 million at December 31, 2017. This increase is primarily due to the receipt of commercial royalty payments, offset by cash used to fund our operations.

Operating Activities

Operating activities provided cash of $2.0 million and used cash of $4.2 million for the three months ended March 31, 2018 and 2017, respectively. The increase in cash provided by operating activities primarily resulted from an increase in commercial payments received, offset by cash used in operations.

Investing Activities

Investing activities provided cash of $1.9 million and $3.4 million for the three months ended March 31, 2018 and 2017, respectively. The decrease in cash provided by investing activities reflects the timing of maturities of available-for-sale securities.

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Financing Activities

Financing activities provided cash of $266,000 and $2.2 million for the three months ended March 31, 2018 and 2017, respectively. The decrease in cash provided by financing activities is primarily due the termination of our purchase agreement with Lincoln Park Capital Fund, LLC in November 2017, for which we received gross cash proceeds from the issuance of common stock of $2.1 million during the three months ended March 31, 2017.

As of March 31, 2018, future minimum payments due under our contractual obligations are as follows (in thousands):

	Payments Due by Period				
	Total	**Less than 1 year**	**1-3 years**	**4-5 years**	**After 5 years**
Operating leases	$17,465	$2,898	$5,866	$5,956	$2,745
License payments	135	129	6	—	—
Total	$17,600	$3,027	$5,872	$5,956	$2,745

As of March 31, 2018, we had no long-term debt obligations.

Our license agreement with the University of California calls for annual maintenance fees, which commenced in 2006, or royalties or service revenues on sales of any products developed using technologies licensed under the agreement. Royalties are calculated as a percentage of applicable sales and are included in cost of commercial revenues. The agreement specifies minimum annual royalty payments which continue through the expiration of the last to expire patent licensed under the agreement. Royalties currently paid under the agreement exceed the minimum annual royalty.

Our future capital uses and requirements depend on numerous forward-looking factors. These factors may include, but are not limited to, the following:

- our ability to generate flavor ingredient sales under our direct sales program;
- our ability to maintain product discovery, development and commercialization collaborations;
- the rate of progress and cost of research and development activities;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish;
- the cost of our direct sales program, including purchases of inventory;

the number and scope of our research activities;
the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
the proceeds from the issuance of common stock upon the exercise of stock options;
the effect of competing technological and market developments; and
the extent to which we acquire or in-license new products, technologies or businesses.

We are entitled to receive $9.0 million in non-refundable research and development payments from our collaborators from March 31, 2018 through the remaining life of our current collaboration agreements. This does not include any additional payments we may receive related to the following events:

- the achievement of milestones;
- the earning of royalties from the sale of products containing our flavor ingredients;
- the earning of any minimum periodic royalty payments;
- direct sales of flavor ingredients;
- the earning of any cost reimbursements; and
- the signing of new collaborations or extensions of existing collaborations.

We may not receive the additional payments if the collaborations are terminated, amended or not renewed, or if we do not achieve the milestones set forth in the collaboration agreements. In addition, the timing of the receipt of milestone payments in particular is uncertain, as we may achieve milestones significantly earlier or later than we currently expect. We cannot predict at this time the level of our collaborators' royalty-generating sales, as these sales to date have been based on launches of new products without established sales histories, or the level of flavor ingredient sales under our direct sales program.

We continue to pursue additional collaborations which could result in additional revenues. We may not recognize revenues for license fees, research and development funding, milestones, minimum periodic royalties or royalties if the collaborations are terminated or amended, or if we do not achieve the milestones set forth in the collaboration agreements. Our expenses will vary based upon the forward-looking factors listed above.

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We believe our available cash, cash equivalents, short-term investments available-for-sale and existing sources of funding will be sufficient to satisfy our anticipated operating and capital requirements through at least the next 12 months after the filing of our Form 10-Q.

Off-Balance Sheet Arrangements

As of March 31, 2018 and 2017, we did not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as special purpose or structured finance entities, which would have been established for the purposes of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. As such, we are not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in these relationships.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with United States generally accepted accounting principles, or GAAP. The preparation of these financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate these estimates, including those related to revenue recognition, stock-based compensation, uncollectible receivables, excess and obsolete inventories, long-lived assets, accrued liabilities and income taxes. These estimates are based on historical experience and various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates under different assumptions or conditions.

Revenue Recognition

On January 1, 2018, we adopted the new accounting standard related to recognition of revenue from contracts with customers. Under this guidance, we recognize revenue upon the transfer of promised goods or services to customers in an amount that reflects the value we expect in exchange for the goods or services. Contracts including performance obligations requiring significant judgement as to timing of recognition of revenues and require us to make estimates comprise of the following:

Sales based royalty payments. In cases where royalty reports from our collaborator is not available at the end of a reporting period, we estimate such royalties earned in the current reporting period based on historical trends, quarterly

sales forecasts or some combination thereof, and apply an adjustment to such revenues in the reporting period for which we receive actual sales data, generally one quarter in arrears.

The adoption of the new standard had a material impact on our consolidated financial statements. Refer to Note 2. Revenues of the Notes to Financial Statements (Part I, Item 1 of this Form 10-Q) for further discussion).

Other than the adoption of the new revenue recognition accounting standard, there have been no other material changes to our critical accounting policies and estimates from the information provided in Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” included in our Annual Report on Form 10-K for the year ended December 31, 2017.

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ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of United States interest rates. Due to the nature of our short-term investments, we believe that we are not subject to any material market risk exposure. We do not have any foreign currency or other derivative financial instruments.

ITEM 4. CONTROLS AND PROCEDURES

Prior to the filing of this quarterly report on Form 10-Q, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and our Vice President, Finance, of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a - 15(e) or 15d -15(e) of the Exchange Act) as of the end of the period covered by this quarterly report on Form 10-Q. Disclosure controls and procedures are designed to ensure that information required to be disclosed in our periodic reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Based upon that evaluation, our Chief Executive Officer and our Vice President, Finance concluded that our disclosure controls and procedures were effective as of the end of the period covered by this quarterly report on Form 10-Q.

An evaluation was also performed under the supervision and with the participation of our management, including our Chief Executive Officer and our Vice President, Finance, of any change in our internal control over financial reporting that occurred during our last fiscal quarter and that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. That evaluation did not identify any change in our internal control over financial reporting that occurred during our latest fiscal quarter and that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Our management, including our Chief Executive Officer and our Vice President, Finance, does not expect that our disclosure controls will prevent all errors or potential fraud. A control system, no matter how well conceived and operated, can provide only reasonable and not absolute assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their cost. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons or by collusion of two or more people. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, control may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

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PART II. OTHER INFORMATION

ITEM 1A. RISK FACTORS

The following sets forth risk factors associated with our business. The risk factors set forth below with an asterisk (*) next to the title contain changes to the description of the risk factors associated with our business previously disclosed in Item 1A. of our annual report on Form 10-K for the year ended December 31, 2017. Additional risks and uncertainties that we are unaware of may also become important factors that affect us. If any of the following risks occur, our business, financial condition or results of operations could be materially and adversely affected. In these circumstances, the market price of our common stock could decline.

Risks Related To Our Business

Even if we or our collaborators receive regulatory approval and incorporate our flavor ingredients or HIS into products, those products may never be commercially successful.

Even if we discover and develop flavor ingredients with appropriate attributes required for use in commercial products and we obtain the necessary regulatory authorizations through the Flavor and Extract Manufacturers Association (FEMA) Expert Panel's review and determination of our flavor ingredients as Generally Recognized as Safe (GRAS) or other regulatory approvals and receive the appropriate regulatory authorization to commercialize a natural HIS, the commercial utility for a novel flavor ingredient or HIS that we develop may ultimately be more limited than we expect. Our success depends to a significant degree upon successful commercial launches of food, beverage and ingredient products incorporating our flavor ingredients or HIS. If these products fail to achieve or subsequently maintain market acceptance or commercial viability, our business would be significantly harmed because our commercial revenues are dependent upon consumer sales of these products. In addition, we may be unable to maintain our existing collaborations or attract new product discovery and development collaborators or new customers for our direct sales program. Many factors may affect the willingness of food and beverage companies to launch new or reformulated products incorporating our flavor ingredients and HIS and the market acceptance and commercial success of any potential products incorporating flavor ingredients, including:

- whether our collaborators devote sufficient financial and other resources to promote our flavor ingredients or HIS;
- health concerns, whether actual or perceived, regarding our flavor ingredients, HIS, or those of our competitors;
- unfavorable publicity regarding our flavor ingredients, HIS, or our research methods;
- the timing of market entry as compared to competitive products;
- the cost of our flavor ingredients or HIS relative to other competing products;

the pricing of products that contain our flavor ingredients and HIS relative to other competing products;
the costs and market risks of reformulating existing products;
the rate of adoption of products by our collaborators and other companies in the flavor industry; and
any product labeling that may be required by United States or foreign regulatory agencies for products incorporating our flavor ingredients or HIS.

We are substantially dependent on our current and any future product discovery and development collaborators to develop and commercialize any flavor ingredient and natural high intensity sweeteners we may discover.

We are substantially dependent on our current and any other possible future collaborators to commercialize any flavor ingredients and natural high intensity sweeteners, or HIS, that we successfully develop and to provide the sales, marketing and distribution capabilities required for the success of our business. We have no control over the amount and timing of resources that our current or any future collaborators may devote to our programs or potential products. Our collaborators may decide not to devote the necessary resources to the commercialization of our ingredients and may choose not to incorporate our ingredients into any or all of their products within their licensed product fields on a timely basis or at all. Although our collaboration agreements vary, in some situations a collaborator may have the ability to return rights to one or more of our licensed flavor ingredients in some or all product categories or licensed territories and discontinue any associated minimum annual royalty obligations for those flavor ingredients, product categories or territories, as the case may be. A collaborator may elect to take any of these actions for any number of reasons, including as a result of unfavorable publicity regarding our flavor ingredients or our research methods, or if our flavor ingredients do not have the characteristics desired by the collaborator. These characteristics include, among other things, modifying properties, stability under various manufacturing and use conditions, solubility, taste, cost and an adequate safety profile. If these collaborators fail to conduct their commercialization, sales and marketing or distribution activities successfully and in a timely manner, or if our existing collaborators terminate their collaboration agreements with us prior to the expiration of the agreements, it will delay our ability to commercialize our flavor ingredients and HIS, we will earn little or no royalty revenues from our flavor ingredients and we will not be able to achieve our objectives or build a sustainable or profitable business.

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We are dependent on our current and any future product discovery and development collaborators for our research and development funding.

A key element of our current strategy is to commercialize our ingredients through collaboration agreements. To date, substantially all of our research and development funding has been derived solely from research and development payments, license fees, milestone payments and cost reimbursement payments received under our collaborations. Substantially all of our research and development funding in the foreseeable future will result from these types of payments from these collaborations until such time, if ever, that we earn more significant royalties on future sales of consumer products incorporating our flavor ingredients or begin to generate meaningful revenues from our direct sales program.

We may not be able to enter into additional collaboration agreements with third parties due to the cost, licensing requirement and risks of our current product discovery and development collaborations. Each of our current collaboration agreements provides for the use of our ingredients within one or more defined food, beverage and ingredient product fields on an exclusive, co-exclusive or non-exclusive basis for the respective collaborator during the collaboration period specified in the agreement. In the case of exclusive agreements, or co-exclusive agreements where all fields and geographies are granted, we will not be able to enter into additional collaborations with any other food, beverage and ingredient company covering the same product field during the applicable collaboration period.

In addition, our collaborators' competitors may not wish to do business with us at all due to our relationship with our collaborators and under some agreements we have agreed to arrangements where we would not launch competing products or collaborate with a collaborator's competitor for a limited period of time even after the conclusion of the applicable collaboration period. Consolidation in our target markets may also limit the number of potential collaborators. If any or all of our current material agreements with our collaborators expire, are amended, or are terminated, or if we are unable to, or elect not to, renew or enter into new collaboration agreements, our research and development funding could significantly decline or be substantially eliminated, which would have a material adverse effect on our business, financial condition and results of operations.

We may be unsuccessful in our efforts to discover, develop and commercialize natural sweet taste ingredients.

We are currently expending significant resources attempting to discover, develop and commercialize novel no- or low-calorie natural HIS and natural sweet taste modifiers. While we have been successful in the past discovering, developing and commercializing artificial flavor ingredients, we have never commercialized a flavor ingredient derived from our library of natural compounds, and our success commercializing artificial flavor ingredients in the past does not ensure that we will have similar success discovering, developing and commercializing natural HIS and sweet taste modifiers.

The discovery of natural sweet taste flavor ingredients requires significant time and resources in order to screen our library of natural compounds to identify potent natural sweet taste modifiers and/or HIS. Following the discovery of any natural sweet taste flavor ingredient, we must also expend significant resources attempting to optimize the applicable natural compound before being able select potential product candidates. Conducting this research is a time-consuming, expensive and uncertain process that may take years to complete, and we may never generate a viable natural sweet taste modifier and/or HIS as a result.

Even if we are able to generate a viable natural HIS, we do not believe that any natural HIS would qualify for a FEMA GRAS determination for its use as a sweetener, and therefore would likely require a different approval process, including submission through the FDA GRAS notification process or under a Food Additive Petition, which may be significantly more expensive and time-consuming to complete. There can be no assurance that any natural HIS that we generate will satisfy the specific regulatory processes, including any applicable foreign regulatory approval requirements, which may limit or prevent collaborators from selling products containing any natural HIS that we may create.

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Even if we successfully develop natural sweet taste modifier and/or HIS with appropriate attributes required for use in commercial products, our ability to scale up the manufacturing of our natural ingredients to enable their market launch will be dependent upon third parties being able to ferment or biosynthesize/manufacture such ingredients as we do not have the ability or expertise to do in-house. The fermentation or biosynthesis of a natural compound is very challenging and can be done only by a limited number of companies. If we are unable to successfully identify and collaborate with a third party capable of fermenting or biosynthesizing any natural ingredient that we are able to develop, we will not be able to scale up the manufacturing of such product to enable its market launch and our ability to successfully commercialize such product would be prohibited. Even if we are able to successfully collaborate with a third party capable of fermenting or biosynthesizing our natural ingredients, such third party may encounter difficulties developing a fermentation or biosynthesis manufacturing process which could result in delays in obtaining the necessary regulatory approvals and ultimately delay the commercialization of our natural ingredients. Even if a third party collaborator can ferment or biosynthesize our natural ingredients, such process may not meet the cost requirements which could delay or prevent the commercialization of our natural ingredients. Even if we obtain the necessary regulatory approvals, we will have limited or no control over these third parties, and because we could not ensure the actual fermentation or biosynthesis of our natural HIS or the ability of our suppliers to comply with applicable legal and regulatory requirements, our ability to successfully commercialize natural ingredients may be delayed or limited.

Furthermore, due to ongoing uncertainty and changes to applicable laws and standards, there is a possibility that any HIS or flavor ingredient derived from our library of natural compounds produced through fermentation could ultimately be categorized as an artificial, not natural, ingredient even if it is found in nature. If this were to occur, it would likely have a negative impact on the consumer appeal of any sweet taste modifier or HIS we develop from our library of natural compounds, and could deter food, beverage and ingredient products from incorporating the HIS or flavor ingredients. If this were to occur, our ability to successfully commercialize these ingredients would be limited and it could have a material adverse effect on our business, financial condition and results of operations.

We may not be able to commercialize the flavor ingredients in our portfolio that we currently control, which could negatively impact our results of operations and market share.

We have several flavor ingredients in our portfolio that we have discovered and developed but that are not currently exclusively licensed to a third party collaborator for one or more product categories and/or geographies, including, but not limited to, our *Savorymyx® UM80* (S807), *Sweetmyx® SR96* (S9632), *Sweetmyx SR69* (S6973) and *Bittermyx® BB68* (S6821) flavor ingredients for which we have worldwide rights in all products, and *Savorymyx UM33* (S336), for which we have certain rights in Japan and worldwide rights, outside of Asia, in all products. We currently intend to commercialize these and potentially other flavor ingredients under our direct sales program; however, we also retain the flexibility to consider licensing the rights to any flavor ingredients that we control to a third party collaborator.

There can be no assurance that our direct sales program will be successful or that we will enter into any new business arrangements for any of our flavor ingredients that are not currently exclusively licensed to a third party collaborator. We may encounter difficulties in growing our direct sales program or entering into any new business arrangements

that we elect to pursue. The direct sales selling cycle may take longer than we anticipate or may be at a slow rate. Any of these events could also delay our anticipated timelines, prevent the successful commercialization of our flavor ingredients, negatively impact our financial results, and delay or prevent us from ever achieving or sustaining profitability.

**** Our ability to consummate a strategic transaction that enhances stockholder value is uncertain and our focus on exploring strategic alternatives may yield unintended consequences that adversely affect our business, results of operations, financial condition and stock price.***

On March 8, 2018, we announced that our Board of Directors had engaged an advisor to assist us in the pursuit of a range of strategic alternatives.

There can be no assurance that our process to identify and evaluate potential strategic alternatives will result in any definitive offer to acquire our Company or any of our assets, or that the process will lead to us entering into any strategic combination or partnership. Moreover, even if we are able to enter into a definitive agreement for a strategic transaction, there can be no guarantee that the transaction will be consummated or that it would enhance stockholder value.

Furthermore, our focus on exploring strategic alternatives may yield unintended consequences, such as:

diversion of management and key employees' attention that may detract from our ability to increase revenues and minimize costs;

our announcement of exploring strategic alternatives may prevent us from retaining existing customers or entering into new collaborative arrangements; and

our announcement of exploring strategic alternatives may lead to attrition and employment uncertainty which may cause our existing employees to seek alternate employment. Competition among biotechnology companies for qualified employees is intense, and the ability to retain our key employees is critical to our ability to effectively manage our resources and to consummate a strategic transaction or continue our operations.

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Any of the foregoing and other risks related to our pursuit of a range of strategic alternatives may adversely affect our business, results of operations, financial condition and stock price.

We may seek additional capital to fund our operations.

If we are unable to successfully commercialize our flavor ingredients through royalty-based collaborations or direct sales, or enter into new product discovery and development collaborations with third parties, we will likely need to obtain additional capital, reduce our ongoing expenses and/or modify our strategy to continue our operations. In addition, our business and operations may change in a manner that would consume available resources at a greater rate than anticipated, or we may decide that for other reasons it is in our best interests to seek additional capital. In such an event, we may need to raise substantial additional capital to, among other things:

- fund research, discovery or development programs;
- advance product candidates into and through the safety evaluation and regulatory approval process;
- fund the strain development, optimization and fermentation process of our natural ingredients;
- acquire rights to products or product candidates, technologies or businesses;
- support the commercialization of our flavor ingredients; and
- prosecute, maintain and enforce our intellectual property rights.

If we pursue additional capital to continue our operations, we cannot assure you that additional financing will be available on terms acceptable to us, or at all. If adequate funds are not available or are not available on acceptable terms, our ability to fund our operations, take advantage of opportunities, identify and develop flavor ingredients and natural HIS, develop technologies or otherwise respond to competitive pressures could be significantly limited. In addition, if financing is not available, we may need to alter our strategies, reduce our ongoing expenses or cease operations. In addition, issuances of debt or additional equity could impact the rights of the holders of our common stock, may dilute our stockholders' ownership and may impose restrictions on our operations. These restrictions could include limitations on additional borrowing, specific restrictions on the use of our assets as well as prohibitions on our ability to create liens, pay dividends, redeem our stock or make investments. Even assuming the Company is successful in securing additional sources of financing to fund continued operations, there can be no assurance that the proceeds of such financing will be sufficient to fund operations until such time, if at all, that the Company generates sufficient revenue from our products to sustain and grow our operations.

We must secure and maintain regulatory approvals of our flavor ingredients and HIS through various governmental bodies outside the United States. The applicable regulations are complex and subject to change, which may adversely impact our ability to commercialize our flavor ingredients internationally.

Sales of our flavor ingredients outside of the United States will be subject to foreign regulatory requirements, which are determined by multiple bodies, such as the Joint FAO/WHO Expert Committee on Food Additives, or JECFA, and the European Food Safety Authority, or EFSA, and in some instances individual countries, such as China, Indonesia and Japan. These foreign regulatory requirements are complex and constantly changing, sometimes quite unpredictably, due, in part, to changes in agendas of political, business and social activist groups as well as government priorities. We may be required to incur substantial costs to comply with current or future laws and regulations, or new interpretations of existing laws and regulations, and our operations, business or financial condition could be adversely affected by such future requirements or interpretations of existing requirements.

A Generally Recognized as Safe, or GRAS, determination in the United States does not ensure approval in other jurisdictions because the requirements from jurisdiction to jurisdiction may vary widely and may change over time. In most cases, whether or not a GRAS determination has been obtained in the United States, approval of a product by the applicable regulatory authorities for a foreign country must still be obtained prior to manufacturing or marketing the product in that country. For example, we are aware of ongoing activities that are intended to clarify the regulatory approval process for flavor ingredients within the EU. Because of the inherent uncertainty associated with the regulatory approval process outside the United States, predicting the outcome or timing of review of any of our submissions to foreign regulatory authorities, present or in the future, is difficult. Accordingly, our estimates and forecasts for those submissions and potential approvals may not be accurate. The process of obtaining foreign approvals could result in significant delays, difficulties and costs for us and require additional safety studies and additional expenses. If we experience delays or if we fail to comply with these regulatory requirements or to obtain and maintain required approvals, our ability to generate revenue will be diminished.

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We and our collaborators may not be successful in overcoming these regulatory hurdles, which could result in product launch delays, unanticipated expenses, termination of collaborations and flavor ingredients not being approved for incorporation into consumer products in one or more geographies. In addition, even after regulatory approval of our ingredients, we may become aware of new information that suggests our ingredients are unsuitable for consumer use, in which case our regulatory approvals may be revoked or we may elect to voluntarily cease the commercialization of those ingredients. These consequences would have a material adverse effect on our business financial condition and results of operations.

If we or our collaborators are unable to obtain and maintain the GRAS determination by FEMA or other regulatory approval with respect to our ingredients required before certain of our ingredients can be incorporated into products that are sold, we would be unable to commercialize our ingredients and our business would be adversely affected.

In the United States, flavor ingredients and HIS are regulated under the Food, Drug and Cosmetic Act, or FD&C Act. Flavor ingredients that qualify for the GRAS review process are generally intended to be consumed in small quantities and have data supporting their safety under conditions of intended use. The Food Additive Amendments of 1958 prompted the flavor industry to establish in 1960 the FEMA Expert Panel whose purpose is to administer the FEMA GRAS review program for flavor ingredients.

Flavor Ingredients

Depending on the amount or intended use of a particular flavor ingredient added to a product and the number of product categories in which the flavor ingredient will be incorporated, specific safety assessment protocols and regulatory processes must be satisfied before we or our collaborators can commercially market and sell products containing any flavor ingredients that we may discover. A key element of our strategy is to develop flavor ingredients that may be subject to review under the FEMA GRAS process. Obtaining and maintaining a GRAS determination or other regulatory approval can be costly and take many years.

In our experiences with the savory, sweet, bitter and cool programs, safety studies, preparation and FEMA GRAS review has historically ranged from 12 to 18 months and cost up to approximately $1.5 million per flavor ingredient. This experience may not be representative of the timing and cost for current and future programs. The FEMA GRAS process may take longer than 12 to 18 months and cost more than $1.5 million depending on the properties of the flavor ingredient, and if we elect to perform additional safety studies or if additional safety studies are requested by the FEMA Expert Panel or one of our collaborators or are necessary to explain unexpected safety study findings. There is a risk that one or more of our product candidates for which we seek FEMA GRAS determination may not qualify for a FEMA GRAS determination for specific categories or at all. This may occur for a variety of reasons, including the flavor ingredient’s intended use, the amount of the flavor ingredient intended to be added to foods and beverages, the number of product categories in which the flavor ingredient will be incorporated, whether the flavor

ingredient imparts sweetness, the safety profile of the flavor ingredient and the FEMA Expert Panel's interpretation of the safety data.

Even if we obtain a GRAS determination with respect to a flavor ingredient, the U.S. Food and Drug Administration, or FDA, has the ability to challenge such determination or one or more of our collaborators may insist on additional studies, which could materially adversely affect our ability to market products on schedule or at all. In the event that a particular flavor ingredient does not qualify for FEMA GRAS determination or if one or more of our collaborators requires additional studies, we could be required to pursue a longer and more expensive approval process or dedicate our development efforts to alternative ingredients, which would further delay commercialization. In addition, laws, regulations or FDA practice governing the regulatory approval process, the availability of the GRAS determination process or the manufacture or labeling of such products, may change in a manner that could adversely affect our ability to commercialize products on schedule or at all and may also harm our ability to maintain our existing collaboration agreements or enter into new collaborations.

High Intensity Sweeteners

A high intensity sweetener is regulated as a food additive by the FDA unless its use as a sweetener is generally recognized as safe, or GRAS, by qualified experts as safe under the conditions of intended use. The basis for a GRAS determination based on scientific procedures is that experts qualified by scientific training and experience to evaluate its safety conclude, based on publically available information, that the substance is safe under the conditions of its intended use and are thus exempt from the food additive approval process. Even if we are able to obtain regulatory approval through the FDA GRAS notification process for our HIS, this process will still be significantly more expensive and timely to complete than the FEMA GRAS review that we have historically undertaken for our flavor ingredients. If our HIS are not eligible as a GRAS substance, we will be required to submit a food additive petition to the FDA seeking approval of our HIS before it can be used in food. The safety studies, preparation and food additive petition review process ranges from two to five years. The additional safety studies required could cost up to approximately $10 million per HIS.

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There can be no assurance that our natural HIS will be eligible for GRAS determination and we may be required to undertake additional lengthy and expensive safety studies and undergo a very lengthy review process to obtain regulatory approval, including any applicable foreign regulatory approval requirements, which may limit or prevent collaborators from selling products containing any natural HIS that we may discover.

We expect that our results of operations will fluctuate from period to period, and this fluctuation could cause our stock price to decline.

Our operating results have fluctuated in the past and are likely to vary significantly in the future based upon a number of factors, many of which we have little or no control over. We operate in a highly dynamic industry and future results could be subject to significant fluctuations. These fluctuations could cause us to fail to meet or exceed our published guidance or financial expectations of securities analysts or investors, which could cause our stock price to decline rapidly and significantly. Revenue and expenses in future periods may be greater or less than revenue and expenses in the immediately preceding period or in the comparable period of the prior year. Therefore, period-to-period comparisons of our operating results are not necessarily a good indication of our future performance. Some of the factors that could cause our operating results to fluctuate include:

- the ability and willingness of our product discovery, development and commercialization collaborators to commercialize products incorporating our flavor ingredients into food, beverage and ingredient products, on expected timelines, if at all;
- our ability to enter into new product discovery and development collaborations and technology collaborations or to extend the terms of our existing collaboration agreements and our payment obligations, expected revenue and other terms of any of our agreements;
- our ability to discover, develop and commercialize natural sweet taste ingredients;
- our ability to develop a strain and optimize the fermentation process of our natural ingredients;
- the termination, expiration or amendment of any of our product discovery and development collaboration agreements;
- our ability to grow our direct sales program;
- the demand for our collaborators' and other customers' products containing our flavor ingredients;
- our receipt of milestone payments in any particular period;
- our ability, or our collaborators' ability, to successfully satisfy all pertinent regulatory requirements, including any product labeling that may be required by United States or foreign regulatory agencies for products incorporating our flavor ingredients or HIS; and
- general and industry specific economic conditions which may affect our collaborators' research and development expenditures and commercialization efforts.

We have a history of operating losses and we may not achieve or maintain profitability.

We have not been profitable and have generated substantial operating losses since we were incorporated in September 1998. We expect to incur additional losses in the future. The extent and duration of our future losses will depend, in part, on the rate of increase in our operating expenses and the rate of growth, if any, in our revenues from our existing and any future product discovery and development collaborations as well as from our direct sales program and other sources that may become available to us in the future. To date, substantially all of our revenues have come from research and development funding, license fees, cost reimbursement and milestone payments under our product discovery and development collaborations. In order for us to generate further royalty revenues and become profitable, we must successfully enter into new product discovery and development collaborations and our collaborators must further commercialize products incorporating one or more of our flavor ingredients, from which we can derive additional royalty revenues, or we must successfully grow our direct sales program or alternative strategies where we receive revenues from other sources. Our ability to generate commercial revenue is uncertain and will depend upon, among other things, our ability to meet particular commercialization, research and development objectives.

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If we lose our key personnel or are unable to attract and retain qualified personnel, it could adversely affect our business.

Our success depends to a significant degree upon the continued contributions of our executive officers, management and scientific staff. We have entered into employment letter agreements with each of our executive officers; however, all of our employees are at-will employees, which means that either we or the employee may terminate their employment at any time. In addition, we currently have no key person insurance. If we are not able to attract and retain the necessary personnel to accomplish all of our business objectives, we may experience constraints that will adversely affect our ability to meet the demands of our current or any future product discovery and development collaborators in a timely fashion, to support our independent discovery and development programs or to pursue our direct sales program. In addition, we may be delayed or unable to develop new product candidates, commercialize our existing product candidates or achieve our other business objectives as a result of any future loss of our other executive officers or key members of our management or scientific staff, which could cause our stock price to decline. Moreover, the loss of the services of one or more of our executive officers or key members of our management or scientific staff could negatively impact the relationships we have with our collaborators.

Our business and operating results may be adversely affected by unfavorable economic and market conditions.

A significant portion of our current business model depends on our ability to maintain and enter into new collaborative research, development and commercialization agreements with leading food, beverage and ingredient companies. Our collaboration agreements typically require our collaborators to make a significant commitment of capital and other resources. In most instances these investments are discretionary on the part of our collaborators. The current weak global economic conditions may reduce the amount of discretionary investment that our current and prospective collaborators may be willing to make in our programs as well as the demand for our flavor ingredients in general. In some instances the result may be that companies elect to defer or delay entering into a collaboration agreement with us, or existing collaborators may amend, terminate or not renew an existing program when it expires. Therefore, weak economic conditions, or a reduction in research and development funding, even if economic conditions improve, would likely adversely impact our business, operating results and financial condition in a number of ways, including longer business development cycles, unfavorable financial or other commercial terms, and longer development timelines.

Disagreements or disputes with a collaborator or customer of our direct sales program could adversely impact our business operations and prospects.

From time to time we have disagreements or disputes with our collaborators regarding various subject matters, such as the interpretation of contractual rights and obligations under our agreements, the design of development studies for our ingredients and intellectual property matters. Because we depend on our collaborators to fund our research and development programs and commercialize our ingredients, any disputes or disagreements with our collaborators could

disrupt our business operations and adversely impact our ability to maintain existing collaborations or secure new collaborations. We may also have disagreements or disputes with customers of our direct sales program regarding various subject matters such as the interpretation of contractual rights and obligations under our terms and conditions of sale. Whenever we become involved in a dispute or litigation with any collaborator or customer, we might have to spend significant amounts of money, time and effort to defend our position and we may not be successful. Even if we are successful, any dispute could divert management attention and resources from other strategic, commercial and research priorities.

We may encounter difficulties managing growth, which could adversely affect our business.

Our strategy includes entering into and working on simultaneous flavor ingredient and natural HIS discovery and development programs across multiple markets. We may choose to increase headcount in the future in order to meet our strategic objectives, which may place a strain on us, our management and our resources. Our ability to effectively manage our operations, growth and various projects requires us to continue to improve our operational, financial and management controls, reporting systems and procedures and to attract and retain sufficient numbers of talented employees. We may not be able to successfully implement these tasks on a larger scale and, accordingly, we may not achieve our research, development and commercialization goals. If we fail to improve our operational, financial and management information systems, or fail to effectively monitor or manage our new and future employees or our growth, our business would suffer significantly. In addition, no assurance can be made that we will be able to maintain adequate facilities to house our staff, conduct our research or achieve our business objectives.

If we acquire products, technologies or other businesses, we will incur a variety of costs, may have integration difficulties and may experience numerous other risks that could adversely affect our business.

If appropriate opportunities become available, we may consider acquiring businesses, technologies or products that we believe are a strategic fit with our business. We may also consider reacquiring rights to flavor ingredients that are currently licensed to one or more of our collaborators. We have limited, if any, experience in identifying acquisition targets, successfully acquiring them and integrating them into our current infrastructure. We may not be able to successfully integrate any businesses, products, technologies or personnel that we might acquire in the future without a significant expenditure of operating, financial and management resources, if at all. In addition, future acquisitions might be funded by issuances of debt or additional equity, which could impact your rights as a holder of our common stock and may dilute your ownership percentage. Any of the foregoing could have a significant adverse effect on our business, financial condition and results of operations.

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Risks Related To Production and Supply

We currently expect to rely on third parties to develop a fermentation or biosynthesis manufacturing process and manufacture and supply our natural HIS.

Even if we successfully develop natural sweet taste modifier and/or HIS with appropriate attributes required for use in commercial products, our ability to scale up the manufacturing of our natural ingredients to enable their market launch will be dependent upon third parties being able to ferment or biosynthesize/manufacture such ingredients as we do not have the ability or expertise to do so in-house. The fermentation or biosynthesis of a natural compound is very challenging and can be done only by a limited number of companies. If we are unable to successfully identify and collaborate with a third party capable of fermenting or biosynthesizing any natural ingredient that we are able to develop, we will not be able to scale up the manufacturing of such product to enable its market launch and our ability to successfully commercialize such product would be prohibited. Even if we are able to successfully collaborate with a third party capable of fermenting or biosynthesizing our natural ingredients, such third party may encounter difficulties developing a fermentation or biosynthesis manufacturing process which could result in delays in obtaining the necessary regulatory approvals and ultimately delay the commercialization of our natural ingredients. Even if a third party collaborator can ferment or biosynthesize our natural ingredients, such process may not meet the cost requirements which could delay or prevent the commercialization of our natural ingredients. Even if we obtain the necessary regulatory approvals, we will have limited or no control over these third parties, and because we could not ensure the actual fermentation or biosynthesis of our natural HIS or the ability of our suppliers to comply with applicable legal and regulatory requirements, our ability to successfully commercialize natural ingredients may be delayed or limited.

We currently expect to rely on outside suppliers for our flavor ingredients to support our direct sales program, including Firmenich as sole supplier of our sweet flavor ingredients. If Firmenich or other suppliers are unable to supply us with our required amounts of our flavor ingredients on a timely basis, our results of operations may be adversely affected.

We have agreed to utilize Firmenich as our exclusive manufacturer of any sweet flavor ingredient for our direct sales program that Firmenich has selected to develop under the terms of our collaboration agreement. We have also entered into supply agreements with manufacturers for our savory flavor ingredients and bitter blockers and may enter into additional manufacturing arrangements in the future. Because Firmenich and our other suppliers are third party manufacturers, we have only limited control over the timing and level of their production volumes. If Firmenich or our other suppliers fail to supply us with required amounts of our flavor ingredients under our agreements, we would not be able to meet our customers' demands unless we were able to utilize alternative sources of supply, which may be more costly and may not even be available on acceptable terms or within an acceptable timeframe. Accordingly, if Firmenich or our other suppliers are unable to supply us with our required amounts of flavor ingredients on a timely basis and with acceptable quality, it may have a material adverse effect on our results of operations.

We rely on third parties to manufacture our flavor ingredients on a commercial scale.

We do not have experience in manufacturing nor do we have the resources or facilities to manufacture flavor ingredients on a commercial scale. Therefore, the commercialization of our flavor ingredients depends in part on our or our collaborators' ability to manufacture, or to contract with third-party manufacturers of our ingredients, on a large scale, at a competitive cost, with the specified quality and in accordance with relevant food, beverage and ingredient regulatory requirements. Any such collaborators or third-party manufacturers may encounter manufacturing difficulties at any time that could result in delays in the commercialization of potential flavor ingredients and natural HIS.

Our inability to find capable manufacturing capacity or to enter into agreements on acceptable terms with third party manufacturers could delay commercialization of any products we may develop and may harm our relationships with our existing and any future product discovery and development collaborators and our customers. Moreover, if we or our collaborators are required to change from one third-party manufacturer to another for any reason, the commercialization of our products may be delayed further. In addition, if any manufacturer of our flavor ingredients fail to comply with the FDA's good manufacturing practice regulations or similar regulations in other countries, then we or our collaborators may be subject to adverse regulatory action including product recalls, warning letters and withdrawal of our products, or our collaborators' or customers' products, from the market, any of which may harm our reputation and our business.

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Further, because our flavor ingredients are regulated as food products under the FD&C Act, we and the third parties with which we collaborate or contract to manufacture, process, pack, import or otherwise handle our products or our product ingredients, may be required to comply with certain registration, prior notice submission, recordkeeping and other regulatory requirements. Failure of any party in the chain of distribution to comply with any applicable requirements under the FD&C Act or any new regulations implemented by the FDA, or similar regulations in other countries, may adversely affect the manufacture and/or distribution of our products in commerce.

We face risks associated with inventory. If our inventory cannot be sold, our results of operations and/or financial position may be adversely affected.

To ensure adequate inventory supply for our direct sales program, we must forecast inventory needs of certain of our flavor ingredients and place orders with our manufacturers before firm orders are placed by our customers. If we fail to accurately forecast customer demand, we may experience excess inventory levels or a shortage of product to deliver to our customers. We may also be required to purchase substantial amounts of flavor ingredients in order to establish manufacturing relationships with third parties or to give potential customers greater confidence in the reliability of our supply. Inventory levels in excess of customer demand may result in inventory write-downs or write-offs and the sale of excess inventory at discounted prices, which may have a material adverse effect on our results of operations and/or financial position.

Risks Related To Our Industry

Disputes concerning the infringement or misappropriation of our proprietary rights or the proprietary rights of others could be time consuming and extremely costly and could delay our research and development efforts.

Our commercial success, if any, will be significantly harmed if we infringe the patent rights of third parties or if we breach any license or other agreements that we have entered into with regard to our technology or business. Our success will also depend, in part, on our ability to prevent others from infringing our patent rights.

We are aware of other companies and academic institutions that have been performing research in the areas of taste modulation and flavor ingredients. In particular, other companies, academic institutions and inventor applicants have announced that they have conducted taste-receptor or ion channel research and have published data on taste receptor sequence information and taste receptors or filed patent applications or obtained patent protection on taste modulation, taste modulating compounds or taste receptors and their uses, including Ajinomoto, Axxam S.p.A., Brain, A.G., California Institute of Technology, Cargill, Chromocell Corp., Colorado State University, Columbia University,

Dendreon, Duke University, the German Institute of Human Nutrition, Givaudan SA, International Flavors & Fragrances Inc., Johannes Gutenberg University, Kyushu University, Monell Chemical Senses Corp., Mount Sinai School of Medicine, the National Institutes of Health, Nestlé, Novartis, NutraSweet, Nutrinova GMBH, Pfizer, Inc., Ogawa Flavors & Fragrances, Sloan Kettering, Symrise, Tate & Lyle, The Scripps Research Institute, Unilever, the University of California, the University of Miami, the University of Tokyo, the University of Wisconsin, Virginia Commonwealth University and Wiessenbach. To the extent any of these companies, academic institutions or inventor applicants currently have, or obtain in the future, broad patent claims, such patents could block our ability to use various aspects of our discovery and development process and might prevent us from developing or commercializing newly discovered flavor ingredients and HIS or otherwise conducting our business. In addition, it is possible that some of the flavor ingredients and HIS that are discovered using our technology may not be patentable or may be covered by intellectual property of third parties.

The life sciences and other technology industries are characterized by extensive litigation regarding patents and other intellectual property rights. Many life sciences and other technology companies have employed intellectual property litigation as a way to gain a competitive advantage. We may become involved in litigation, interference proceedings, derivation proceedings, oppositions, reexamination, protest, inter partes review, post grant review or other potentially adverse intellectual property proceedings as a result of alleged infringement by us of the rights of others or as a result of priority of invention disputes with third parties. Third parties may also challenge the validity of any of our issued patents in litigation or in opposition, reexamination, inter partes review, or post grant review proceedings. Similarly, we may initiate proceedings to enforce our patent rights and prevent others from infringing our or our licensed intellectual property rights. In any of these circumstances, we might have to spend significant amounts of money, time and effort defending our position and we may not be successful. In addition, any claims relating to the infringement of third-party proprietary rights or proprietary determinations, or validity determinations, even if not meritorious, could result in costly litigation, lengthy governmental proceedings, divert management’s attention and resources, or require us to enter into royalty or license agreements that are not advantageous to us.

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Should any person have filed patent applications or obtained patents that claim inventions also claimed by us, we may have to participate in an interference proceeding or derivation proceeding declared by the relevant patent regulatory agency to determine priority of invention or derivation and, thus, the right to a patent for these inventions in the United States. Such a proceeding could result in substantial cost to us even if the outcome is favorable. Even if successful on priority grounds, an interference action may result in loss of claims based on patentability grounds raised in the interference action. Litigation, interference proceedings, derivation proceedings, or other proceedings could divert management's time and efforts. Even unsuccessful claims could result in significant legal fees and other expenses, diversion of management's time and disruption in our business. Uncertainties resulting from initiation and continuation of any patent proceeding or related litigation could harm our ability to compete and could have a significant adverse effect on our business, financial condition and results of operations.

An adverse ruling arising out of any intellectual property dispute, including an adverse decision as to the priority of our inventions or invalidity of our patents, could undercut or invalidate our intellectual property position. An adverse ruling could also subject us to significant liability for damages, including possible treble damages, prevent us from using technologies or developing products, or require us to negotiate licenses to disputed rights from third parties. Although patent and intellectual property disputes in the technology area are often settled through licensing or similar arrangements, costs associated with these arrangements may be substantial and could include license fees and ongoing royalties. Furthermore, necessary licenses may not be available to us on satisfactory terms, if at all. Failure to obtain a license in such a case could have a significant adverse effect on our business, financial condition and results of operations.

Our ability to compete in the flavor ingredient and natural HIS market may decline if we do not adequately protect our proprietary technologies.

Our success depends in part on our ability to obtain and maintain intellectual property protection for our technologies flavor ingredients and natural HIS. Patent positions may be highly uncertain and may involve complex legal and factual questions, including the ability to establish patentability of sequences relating to taste receptors, proteins, chemical synthesis techniques, natural and synthetic compounds and methods for using them to modulate taste for which we seek patent protection. No consistent standard regarding the allowability or enforceability of claims in many of our pending patent applications has emerged to date. As a result, we cannot predict the breadth of claims that will ultimately be allowed in our patent applications, if any, including those we have in-licensed or the extent to which we may enforce these claims against our competitors. The degree of future protection for our proprietary rights is therefore highly uncertain and we cannot assure you that:

- we were or will be the first to file patent applications or to invent the subject matter claimed in patent applications relating to the technologies upon which we rely;
- our issued patent claims relating to our technologies will be sufficiently broad to protect our flavor ingredients and technologies and our customers' use of our flavor ingredients and technologies;
- others will not independently develop or duplicate similar or alternative flavor ingredients, sweeteners or technologies;

our issued patent claims will not be challenged, potentially invalidated or potentially circumvented by third parties;
our issued and future patent claims directed to naturally occurring materials will issue or continue to be valid in the U.S.;
the use of our technologies and flavor ingredients will not infringe any third-party patent or intellectual property;
any of our patent applications will result in issued patents, or if issued, that any of our existing and future patent claims will be held valid and enforceable against third-party infringement;
any of our patent applications will not result in interferences, derivation proceedings or disputes with third parties regarding priority of invention or the validity of any issued patent;
any patents that have issued or may be issued to us, our collaborators or our licensors will provide a basis for commercially viable products or will provide us with any competitive advantages or will not be challenged by third parties;
the patents of others will not have an adverse effect on our ability to do business;
others did not publicly disclose our claimed technology before we conceived the subject matter included in any of our patent applications; or
new proprietary technologies from third parties, including existing licensors, will be available for licensing to us on reasonable commercial terms, if at all.

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In addition, patent law outside the United States is uncertain and in many countries intellectual property laws are undergoing review and revision. The laws of some countries do not protect intellectual property rights to the same extent as domestic laws. It may be necessary or useful for us to participate in opposition or post-grant proceedings to determine the validity of our competitors' patents, litigation to enforce our or our licensed intellectual property against others or to defend the validity of any of our or our licensors' future patents, which could result in substantial costs and would divert our efforts and attention from other aspects of our business. We cannot be certain of the outcome of any such proceedings or litigation.

Technologies licensed to us by others, or in-licensed technologies, are important to our business. In particular, we depend on technology related to certain taste receptor sequences that we license from the University of California and others and technology related to compound libraries that we license from third parties. In addition, we may in the future acquire rights to additional technologies by licensing such rights from existing licensors or from third parties. Such in-licenses may be costly. Also, we generally do not control the patent prosecution, maintenance or enforcement of in-licensed technologies. Accordingly, we are unable to exercise the same degree of control over this intellectual property as we do over our internally developed technologies. Moreover, some of our academic institution licensors, collaborators and scientific advisors have rights to publish data and information to which we have rights. If we cannot maintain the confidentiality of our technologies and other confidential information in connection with our collaborations, our ability to protect our proprietary information or obtain patent protection in the future may be impaired, which could have a significant adverse effect on our business, financial condition and results of operations.

Many of the patent applications we and our licensors have filed have not yet been substantively examined and may not result in patents being issued.

Many of the patent applications filed by us and our licensors have not been substantively examined by the United States Patent and Trademark Office and in foreign patent offices and may result in granted patents with claims of narrow scope that may not sufficiently deter competitors or may not result in patents being issued. Some of these patent applications claim sequences that were identified from different publicly available sequence information sources such as the High-Throughput Genomic Sequences division of GenBank. It is difficult to predict whether all of our or our licensors' applications will ultimately be found to be patentable or, if so, to predict the scope of any allowed claims. In addition, the disclosure in our or our licensors' patent applications, particularly in respect of the utility of our claimed inventions, may not be sufficient to meet the statutory requirements for patentability in all cases. As a result, it is difficult to predict whether all of our or our licensors' applications will be allowed, or, if so, to predict the scope of any allowed claims or the enforceability of the patents. Even if enforceable, others may be able to design around any patents or develop similar technologies that are not within the scope of such patents. Our and our licensors' patent applications may not issue as patents that will provide us with any protection or competitive advantage, which may have a material adverse effect on our business.

The Supreme Court determined in the Myriad decision that some isolated naturally occurring nucleic acids are ineligible for United States patent protection. This decision may raise concerns as to the validity of some or all of our granted claims, and those in our licensors' patents, and the patentability of our or our licensors' pending claims, which

are directed to isolated, naturally occurring nucleic acids. Also, while the Supreme Court in the Myriad decision did not address the patentability of other isolated, naturally occurring materials (i.e., non-nucleic acids), it is possible that later courts may determine that other isolated naturally occurring materials are similarly ineligible for United States patent protection. This may raise concerns as to the validity of some or all of our granted claims, and those in our licensors' patents, which are directed to isolated naturally occurring materials such as isolated, naturally occurring taste receptor polypeptides or isolated, naturally occurring flavor ingredients. In recently issued interim guidance, the United States Patent and Trademark Office has interpreted the Myriad decision as applying to any isolated naturally occurring material including non-nucleic acids. Thus, pending patent applications filed by us or our licensors that are directed to isolated naturally occurring materials may not issue in the United States, which could have a significant adverse effect on our business, financial condition and results of operations.

Many potential competitors, including those who have greater resources and experience than we do, may develop products or technologies that make ours obsolete or noncompetitive.

The life sciences and other technology industries are characterized by rapid technological change, and the area of sensory or taste receptor research is a rapidly evolving field. Our future success will depend on our ability to maintain a competitive position with respect to technological advances. Technological developments by others may result in our flavor ingredients or natural HIS and technologies becoming obsolete.

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In particular, we face substantial competition from companies pursuing the commercialization of products and services relevant to taste using more traditional methods for the discovery of flavor ingredients, or for the reduction of salt, sugar, monosodium glutamate, or MSG, or bitter taste. These competitors include leading flavor companies, such as Firmenich, Givaudan SA, International Flavors & Fragrances Inc., Symrise and Takasago. These companies provide flavors and other ingredients, such as essential oils, extracts and distillates, to consumer products companies for use in a wide variety of products including foods, beverages, confectionaries, dairy products and pharmaceuticals. Competitors currently developing or marketing HIS include Ajinomoto, BRAIN AG, or Biotechnology Research and Information Network AG, Cargill, DSM, Evolva, GLG Life Tech, Institute of Plant Sciences, Agricultural Research Organization–Volcani Center, Natur Research Ingredients, Nutrasweet, Nutrinova GMBH, PureCircle Limited, Tate & Lyle and The Coca Cola Company. Competitors currently developing or marketing menthol or cooling agents include International Flavors and Fragrances, Givaudan, Jindal Drugs, Mentha & Allied, Sharp Menthol, Symrise and Takasago. We currently compete and will continue to compete in the future with these companies in collaborating with and selling flavor ingredients for incorporation in food and beverage products. Many of these companies have substantially greater capital resources, research and development resources and experience, manufacturing capabilities, regulatory expertise, sales and marketing resources, established relationships with consumer products companies and production facilities.

Savory flavor ingredients, such as inosine monophosphate, or IMP, and natural HIS, such as Stevia, are commercially available, and we will compete with the companies that produce these ingredients. IMP and natural HIS, such as Stevia, are widely available and is a generally accepted by the food, beverage and ingredient industries. As a result, our existing and future collaborators may choose to incorporate IMP or similar savory flavor ingredients or Stevia or other natural HIS, into their food, beverage and ingredient products instead of our ingredients. We may compete with bitter masking or bitter blocking compounds, such as adenosine 5’ monophosphate, or AMP. We may also compete with known methods for reducing sodium, such as the use of potassium chloride in combination with flavors and masking agents. In addition, we may compete with existing cooling agents, such as menthol and WS-3, which are currently in use.

We may in the future face competition from life sciences and other technology companies and other commercial enterprises. These entities engage as we do in biotechnology, biology or chemistry research and could apply this technology to the discovery and development of flavor ingredients. We are aware of two companies, Brain AG and Chromocell Corp., which are involved in research for the discovery and development of sweet flavor modifiers, bitter blockers and salt substitutes. We cannot guarantee that products developed as a result of our competitors’ existing or future collaborations will not compete with our flavor ingredients.

Universities and public and private research institutions are also potential competitors. While these organizations primarily have educational objectives, they may develop proprietary technologies related to the sense of taste or secure patent protection that we may need for the development of our technologies and products. We may attempt to license these proprietary technologies, but these licenses may not be available to us on acceptable terms, if at all.

Our competitors, either alone or with their collaborative partners, may succeed in developing technologies or discovering flavor ingredients that are more effective, more affordable or more easily commercialized than ours, and our competitors may obtain intellectual property protection or commercialize products sooner than we do. Developments by others may render our product candidates or our technologies obsolete. In addition, our current product discovery and development collaborators are not prohibited from entering into research and development collaboration agreements with third parties in any product field. Our failure to compete effectively would have a significant adverse effect on our business, financial condition and results of operations.

If we are unable to protect our trade secrets and other proprietary information, we could lose any competitive advantage we may have, which could adversely affect our business.

We rely in part on trade secret protection for our confidential and proprietary information, knowhow and processes. Our policy is to execute proprietary information and invention agreements with our employees and consultants upon the commencement of an employment or consulting relationship. These agreements generally require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not be disclosed to third parties. These agreements also generally provide that inventions conceived by the individual in the course of their employment shall be our exclusive property. Similarly, in the course of our collaborations or in the negotiation of potential collaborations we often disclose confidential and proprietary information under written agreements that obligate those third parties to keep our information confidential and to use our confidential information only for the purposes that we specify. There can be no assurance that we will be able to effectively enforce these agreements or that proprietary information is our exclusive property. There can be no assurance that the subject proprietary information will not be disclosed, that others will not independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or that we can meaningfully protect our trade secrets. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

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Risks Related to Quality and Safety

Concerns with safety and quality could cause customers to avoid products that contain our flavor ingredients.

Adverse publicity about the safety of certain foods due to the actual or potential existence of certain artificial flavors or other ingredients has heightened the sensitivities of many consumers. These safety and quality issues, whether real or perceived, may discourage customers from buying products containing or perceived to contain the ingredients which give rise to such concerns. We could be adversely affected if our customers or the ultimate consumers of our products lose confidence in the safety and quality of our flavor ingredients. Any negative perceptions about the safety and quality of our flavor ingredients could adversely affect our business and financial condition.

We may be sued for product liability and exposed to other product safety-related risks, which could adversely affect our business and harm our reputation.

Because our business strategy involves the development and sale of commercial products incorporating our flavor ingredients, we may be sued for product liability and we may also be the subject of product recalls, product seizures and related adverse publicity. Product liability claims and recalls of products that contain any of our flavor ingredients could result from such things as contamination, spoilage, product misbranding or product tampering, whether real or perceived.

From time to time we receive reports of observed effects after individuals taste solutions or products that include novel flavor ingredients that we are testing or developing, including reports such as irritation of the mouth, tingling of the tongue, lips or gums, and modulation or loss of taste sensation. Our practice is to track reports of any observed effects and, in particular, to evaluate whether any adverse effect may be related to our novel flavor ingredient or whether another cause is determinable. In some instances, these effects may be observed only at higher levels of use or exposure, in which case we may elect to proceed with development, and subsequent commercialization, of a novel flavor ingredient at use levels that we believe are appropriate for only a subset of all potential applications. Nevertheless, we may be held liable if any flavor ingredient we test, develop or commercialize, or any product our collaborators test, develop or commercialize that incorporates any of our flavor ingredients, causes injury or illness or is found otherwise unsuitable during product testing, manufacturing, marketing, sale or consumer use. In addition, the safety studies we must perform and the regulatory approvals we must obtain prior to incorporating our flavor ingredients into a commercial product will not protect us from any such liability.

Any alleged illness or injury associated with any of our flavor ingredients, product defect, product liability judgment or product recall may negatively impact our financial results depending on the reaction of our collaborators, scope, competitive reaction, and consumer attitudes. Even if such an allegation or product liability claim lacks merit, cannot

be substantiated, is unsuccessful or is not fully pursued, the negative publicity surrounding any assertion that our flavor ingredients or products that incorporate our flavor ingredients caused illness, injury or death could adversely affect our reputation with existing and potential collaborators and licensees and our corporate image and could cause a decline in our stock price.

Our product liability insurance may not be sufficient to cover our potential liabilities in the case of a product recall or other safety-related claims.

Our product liability insurance may not fully cover our potential liabilities associated with the sale of commercial products incorporating any of our flavor ingredients. Insurance coverage for such risks may be expensive and difficult to obtain, and we may be unable to obtain coverage in the future on acceptable terms, if at all. Our inability to obtain sufficient insurance coverage to protect against potential product liability claims could prevent or inhibit the commercialization of products developed by us or our product discovery and development collaborators. We may be obligated to indemnify our product discovery and development collaborators or customers of our direct sales program for product liability or other losses they incur as a result of our flavor ingredients. Any indemnification we receive from such collaborators or customers for product liability that does not arise from our flavor ingredients may not be sufficient to satisfy our liability to injured parties. If we are sued for any injury caused by our flavor ingredients or products incorporating our flavor ingredients, our liability could exceed our total assets.

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We use hazardous materials. Any claims relating to improper handling, storage or disposal of these materials could be time consuming and costly.

Our discovery and development process requires our employees to routinely handle hazardous chemical, radioactive and biological materials. Our operations also produce hazardous waste products. Federal, state and local laws and regulations govern the use, manufacture, storage, handling and disposal of these materials. As a result of the increase in size of our operations, we are now classified as a large quantity generator of hazardous waste. This classification may result in increased scrutiny of our operations by the Environmental Protection Agency. Compliance with applicable environmental laws and regulations may be expensive, and current or future environmental regulations may impair our discovery and development efforts.

In addition, we cannot entirely eliminate the risk of accidental contamination or discharge and any resultant injury from these materials. Our insurance policies have limited coverage for damages or cleanup costs related to hazardous waste disposal or contamination. We may be forced to curtail operations or be sued for any injury or contamination that results from our use or the use by others of these materials, and our liability may exceed our total assets.

Risks Related To Our Common Stock

The price of our common stock is volatile.

The market prices for securities of biotechnology companies historically have been highly volatile, and the market has from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. Since our initial public offering in June 2004, the price of our common stock has ranged from approximately $0.57 per share to approximately $23 per share. The market price of our common stock may fluctuate in response to the factors described in this *Risk Factors* section, or other factors, some of which are beyond our control, such as:

- our product discovery, development and commercialization collaborators' decisions concerning the timing and extent of commercialization of our flavor ingredients;
- publications, articles or other media concerning our flavor ingredients and/or commercialization efforts;
- failure of any of our flavor ingredients, if approved, to achieve commercial success;
- developments concerning our collaboration agreements, including the ability to enter into new agreements;
- our ability to generate significant revenues from our direct sales program;

fluctuations in our operating results;
public concern as to the safety of our flavor ingredients or other unfavorable publicity regarding our flavor ingredients or our research methods;
developments related to the United States and international regulatory approval of our products;
results of safety evaluation of our flavor ingredients;
government regulation;
the discovery of a product defect or the commencement of a product recall;
an allegation of illness or injury relating to our flavor ingredients, whether meritorious or not, or any product liability judgment;
developments in patent or other proprietary rights;
announcements of technological innovations by us or others;
changes in our management, key personnel or members of our Board of Directors;
future sales of our common stock by existing stockholders, officers or directors;
comments by securities analysts; and
general market conditions.

Some companies that have experienced volatility and sustained declines in the market price of their stock have become subject to securities class action and derivative action litigation, and we may be the target of similar litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Our business could be impacted as a result of actions by activist stockholders or others.

We may be subject, from time to time, to legal and business challenges in the operation of our company due to actions instituted by activist stockholders or others. Responding to such actions could be costly and time-consuming, may not align with our business strategies and could divert the attention of our Board of Directors and senior management from the pursuit of our business strategies. Perceived uncertainties as to our future direction as a result of shareholder activism may lead to the perception of a change in the direction of the business or other instability and may affect our relationships with collaborators, customers, prospective and current employees and others.

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Anti-takeover provisions in our charter documents and under Delaware law may make an acquisition of us more complicated and the removal and replacement of our directors and management more difficult.

Provisions of our amended and restated certificate of incorporation and bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us, even if doing so would benefit our stockholders. These provisions may also make it difficult for stockholders to remove and replace our board of directors and management. These provisions:

- authorize the issuance of "blank check" preferred stock by our board of directors, without stockholder approval, which could increase the number of outstanding shares and prevent or delay a takeover attempt;
- limit who may call a special meeting of stockholders;
- prohibit stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders; and
- establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings.

In addition, the requirements of Section 203 of the Delaware General Corporation Law may discourage, delay or prevent a third party from acquiring us.

We have never paid cash dividends on our capital stock and we do not anticipate paying dividends in the foreseeable future.

We have paid no cash dividends on any of our classes of capital stock to date, and we currently intend to retain our future earnings, if any, to fund the development and growth of our business. In addition, the terms of any future debt or credit facility may preclude us from paying any dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of potential gain for the foreseeable future.

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ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 6. EXHIBITS

Exhibit Number	Description of Document	If incorporated by reference herein
3.1	Amended and Restated Certificate of Incorporation as currently in effect.	Registration Statement File No. 333-113998
3.2	Amended and Restated Bylaws as currently in effect.	Current Report on Form 8-K filed with the Securities and Exchange Commission on December 20, 2007
4.1	Form of Common Stock Certificate.	Registration Statement File No. 333-113998
31.1	Certification of John Poyhonen, Chief Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley	

31.2	Act of 2002. Certification of David Humphrey, Vice President, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32	Certification of John Poyhonen, Chief Executive Officer, and David Humphrey, Vice President, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	The following financial statements from the Senomyx, Inc. Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, formatted in eXtensible Business Reporting Language (XBRL): (i) condensed balance sheets, (ii) condensed statements of operations and comprehensive loss, (iii) condensed statements of cash flows, and (iv) notes to condensed financial statements.

* Confidential treatment has been granted or requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Senomyx, Inc.

Date: April 26, 2018 By: /S/ JOHN POYHONEN
John Poyhonen

President, Chief Executive Officer and Director

(on behalf of the registrant and as the registrant's Principal Executive Officer)

By: /S/ DAVID HUMPHREY
David Humphrey

Vice President, Finance

(on behalf of the registrant and as the registrant's Principal Financial and Accounting Officer)