We are offering 6,800,000 shares of our common stock.

Our common stock is listed on the NYSE American under the symbol “PFNX.” On May 23, 2018, the last reported sale price of our common stock was $5.95 per share.

Our business and an investment in our common stock involve significant risks. These risks are described under the caption “Risk Factors” beginning on page S-11 of this prospectus supplement and in the sections captioned “Item 1A—Risk Factors” in our most recently filed annual report on Form 10-K or quarterly report on Form 10-Q, which are incorporated by reference in this prospectus supplement and the accompanying prospectus.

<table>
<thead>
<tr>
<th>Per Share</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public offering price</td>
<td>$ 5.50</td>
</tr>
<tr>
<td>Underwriting discount and commissions(1)</td>
<td>$ 0.385</td>
</tr>
<tr>
<td>Proceeds to us, before expenses</td>
<td>$ 5.115</td>
</tr>
</tbody>
</table>

(1) See “Underwriting” for a description of compensation payable to the underwriters.

We have also granted the underwriters a 30-day option to purchase up to an additional 1,020,000 shares of our common stock at the public offering price less the underwriting discount.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

Delivery of the shares of common stock is expected to be made on or about May 25, 2018.

Barclays

William Blair

Prospectus Supplement dated May 23, 2018
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<td>EXPERTS</td>
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<td>WHERE YOU CAN FIND MORE INFORMATION</td>
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<td>INFORMATION INCORPORATED BY REFERENCE</td>
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</tbody>
</table>
ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, including the documents incorporated by reference herein, which describes the specific terms of this offering. The second part is the accompanying prospectus, including the documents incorporated by reference therein, which provides more general information. Generally, when we refer to this prospectus supplement, we are referring to both parts of this document combined. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus and all information incorporated by reference herein and therein, as well as the additional information described under “Where You Can Find Additional Information” on page S-30 of this prospectus supplement. These documents contain information that you should consider when making your investment decision. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference therein, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference therein.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectuses that we may provide to you in connection with this offering. We have not, and the underwriters have not, authorized any other person to provide you with any information that is different. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of our common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of our common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, the common stock offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

In this prospectus supplement, “Pfenex,” “we,” “us” and the “company” refer to Pfenex Inc. and, where appropriate, its subsidiaries, unless expressly indicated or the context otherwise requires. Pfenex™ and Pfēnex Expression Technology® are our primary trademarks. Other service marks, trademarks and trade names referred to in this prospectus supplement are the property of their respective owners. This prospectus supplement, the accompanying prospectus and the other documents incorporated by reference herein and therein contain references to our trademarks as well as third-party trademarks. Solely for convenience, trademarks and trade names, including logos, artwork and other visual displays, may appear without the® or TM symbols, but such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use of third-party trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us, this offering and information appearing elsewhere in this prospectus supplement, in the accompanying prospectus and in the documents we incorporated by reference herein and therein. This summary is not complete and does not contain all the information that you should consider before investing in our common stock. Before making an investment decision, to fully understand this offering and its consequences to you, you should carefully read this entire prospectus supplement and the accompanying prospectus, including “Risk Factors” beginning on page S-11 of this prospectus supplement, the financial statements and related notes and the other information that we incorporated by reference herein, including our Annual Report on Form 10-K and Quarterly Reports on Form 10-Q we file from time to time.

Pfenex Inc.

Overview

We are a clinical-stage development and licensing biotechnology company focused on leveraging our Pfenex Expression Technology to improve protein therapies for unmet patient needs. Using the patented Pfenex Expression Technology platform, we have created an advanced pipeline of therapeutic equivalents, vaccines, biologics and biosimilars. Our lead product candidates are PF708, developed as a therapeutic equivalent drug candidate to Forteo® (teriparatide) for the treatment of osteoporosis, and our novel anthrax vaccine candidates, Px563L and RPA563, funded through an advanced development contract with the U.S. government. In addition, we are developing hematology/oncology products in collaboration with Jazz Pharmaceuticals Ireland Limited (Jazz). Furthermore, our pipeline includes biosimilar candidates to Lucentis® and Neulasta®.

Product Candidates and Collaborations

The following table summarizes certain information about our lead product candidates:

<table>
<thead>
<tr>
<th>Product Candidate</th>
<th>Branded Reference Drug</th>
<th>Program</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proposed Therapeutic Equivalent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PF708 – Teriparatide</td>
<td>Forteo</td>
<td>Licensed in Mainland China, Hong Kong, Singapore, Malaysia, Thailand; Wholly-Owned Rest of World</td>
<td>Osteoporosis</td>
</tr>
<tr>
<td><strong>Novel Vaccines</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Px563L/RPA563 – rPA based anthrax vaccines</td>
<td>N/A</td>
<td>U.S. Government Funded</td>
<td>Anthrax post-exposure prophylaxis</td>
</tr>
</tbody>
</table>

The following table summarizes certain information about our lead collaboration:

<table>
<thead>
<tr>
<th>Collaboration Partner</th>
<th>Products</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jazz Pharmaceuticals Ireland Limited</td>
<td>Multiple Hematology/Oncology Products</td>
<td>Various</td>
</tr>
</tbody>
</table>
Our lead product candidates and collaboration include the following:

- **PF708 – our teriparatide drug candidate.** PF708 is being developed as a therapeutic equivalent candidate to Forteo, which is approved and marketed by Eli Lilly and Company for the treatment of osteoporosis in certain patients with a high risk of fracture. Forteo achieved $1.7 billion in global product sales in 2017. In November 2017, we announced the interim pharmacokinetic (PK) results from ongoing Study PF708-301, which compares the effects of PF708 and Forteo in osteoporosis patients. PF708 is being developed pursuant to the 505(b)(2) regulatory pathway in the United States and references Forteo as the Reference Listed Drug. Study PF708-301 completed enrollment in the third quarter of 2017 with a total of 181 patients – 90 randomized to PF708 and 91 to Forteo. We completed the last patient visit in mid-February 2018. The primary study endpoint was anti-drug antibody formation after 24 weeks of drug treatment. The secondary study endpoints were changes in bone mineral density and bone turnover markers after 24 weeks of drug treatment, as well as PK parameters for up to 4 hours after the first dose. These data showed comparable PK profiles for PF708 and Forteo, with no statistically significant differences in key PK parameters. On May 14, 2018, we announced top-line results from our PF708-301 study, which showed comparable overall profiles with respect to safety, immunogenicity, and bone mineral density and bone turnover markers between PF708 and Forteo after 24 weeks of daily injection in osteoporosis patients. Our top-line results from our PF708-301 study are more fully described in the “Recent Developments” section below. We expect to submit an NDA to the FDA in the third quarter of 2018, with a potential commercial launch possible in the United States as early as the third quarter of 2019, subject to receipt of US FDA marketing authorization. While we believe our legal strategy supports launch in as early as third quarter 2019, it is possible that various factors, including patent litigation by Eli Lilly and Company, may delay or prevent approval and launch. We believe we have sufficient cash resources to fund all necessary activities leading up to and including the expected submission of the NDA to the FDA in the third quarter of 2018. We believe the clinical program in the U.S. may be leveraged for regulatory filings in other geographies, such as the European Union (EU).

- **Px563L and RPA563 – our two novel anthrax vaccine candidates funded by the Biomedical Advanced Research and Development Authority (BARDA).** Both vaccine candidates are prepared using the identical antigen and are being evaluated in parallel, although Px563L contains an adjuvant and RPA563 does not. In August 2016, we announced positive immunogenicity and safety data from Day 70 analysis of the Px563L/RPA563 anthrax vaccine study. The Px563L results indicated that the vaccine was well-tolerated and afforded immunogenicity protection with fewer doses than the currently licensed product. On Day 70, 100% of Px563L subjects at the 10 mcg and 80 mcg dose levels achieved a TNA NF₅₀ ≥ 0.56, and 87.5% at the 50 mcg dose level achieved the target threshold. An additional success criterion for assessing anthrax vaccine immunogenicity is for the lower confidence limit (LCL), or the lower bound of 95% confidence interval, of the percentage of subjects who met or exceeded the TNA NF₅₀ threshold of 0.56, to be greater than or equal to 40%. On Day 70, all doses of Px563L exceeded this threshold, which was established by the currently licensed anthrax vaccine for the indication of post-exposure prophylaxis. We announced positive interim results from a Phase 1a study in healthy subjects in the second half of 2016 and the study was completed in the first half of 2017. In January 2017, BARDA exercised additional options under its existing contract, allowing for the continued development of Px563L and RPA563. To date, we have generated stability data on the 2016 manufactured lot for up to nine months, demonstrating the maintenance of high purity at 5°C, the expected storage temperature, and accelerated stability data at 25°C. We have also generated long-term stability data from our toxicology lot, showing the maintenance of high purity at 5°C at 40 months. Over the course of 2017, we continued to collect favorable stability data for both products. In October 2017, we completed a meeting with the FDA in which the Agency provided guidance for the proposed clinical development and licensure plans for a post-exposure prophylaxis indication. Potential next milestones in
2018 are the triggering of analytical and non-clinical animal study options, leading to a potential Phase 2 study in 2019, subject in each case to continued funding by BARDA.

- **Jazz Collaboration – multiple early stage hematology/oncology product candidates with Jazz.** In July 2016, we entered into a license and option agreement with Jazz, pursuant to which we and Jazz are collaboratively developing hematology/oncology products, including PF743, a recombinant crisantaspase, and PF745, a recombinant crisantaspase with half-life extension technology, and Jazz will have the exclusive right to manufacture and commercialize such products throughout the world. In addition, pursuant to the agreement, we have granted Jazz certain other rights to negotiate the exclusive right to develop, manufacture and commercialize throughout the world other hematology/oncology products that are currently or in the future may be developed by us. In the third quarter of 2017, we completed a process and development milestone associated with this collaboration. In December 2017, we and Jazz signed an amended and restated agreement under which we will be eligible to receive an additional $43.5 million in amendment fee and development milestone payments as compared to the 2016 agreement, increasing the total value of upfront, option and amendment fee payments and potential payments for the achievement of development, regulatory and sales-related milestones associated with the collaboration to an aggregate of $224.5 million. We will also be eligible to receive tiered royalties on worldwide sales of any products resulting from the collaboration at rates reduced from those under the 2016 agreement. In December 2017, as part of the amended and restated agreement, we received a total payment of $18.5 million, consisting of an upfront payment of $5.0 million and a payment of $13.5 million for development achievement.

- **Additional Biosimilar Pipeline Products** – Our pipeline includes biosimilar candidates to certain reference products, including biosimilar candidates to Lucentis and Neulasta. Following our strategic review in November 2017, we decided to pause development activities on PF582, our biosimilar candidate to Lucentis and PF529, our biosimilar to Neulasta, and focus development efforts elsewhere within the product portfolio while we continue to engage potential strategic partners to advance the programs and maximize value. Following the consummation of the Jazz collaboration in July 2016, we decided to advance the hematology/oncology assets that are part of the Jazz collaboration and pause development activities on PF530, our biosimilar candidate to Betaserum.

- **CRM197** – We have several development and commercial partnerships in place for CRM197, which is a non-toxic mutant of diphtheria toxin. It is a well-characterized protein and functions as a carrier for polysaccharides and haptenes, making them immunogenic. We developed a unique CRM197 based on our Pseudomonas Fluorescens Platform and sell non-GMP and cGMP CRM197 to mostly vaccine development-focused pharmaceutical partners. As a result of those efforts, Pfenex previously entered into commercial licenses for production strains capable of producing CRM197 with both Merck and Serum Institute of India. Our CRM197 is currently being used or planned to be used in multiple late-stage clinical trials for such diseases as pneumococcal and meningitis bacterial infections.

**Recent Developments**

On May 14, 2018, we announced top-line results from our PF708-301 study, which showed comparable overall profiles with respect to safety, immunogenicity, and bone mineral density and bone turnover markers between PF708 and Forteo® after 24 weeks of daily injection in osteoporosis patients. We expect that these results from the PF708-301 study, along with the previously announced bioequivalence findings from the PF708-101 study in healthy subjects, will support the submission of an NDA for PF708 in the third quarter of 2018, with a potential commercial launch in the United States as early as the third quarter of 2019, subject, of course, to FDA approval of the application. While we believe our legal strategy supports launch in as early as third quarter 2019, it is possible that various factors, including patent litigation by Eli Lilly and Company, may delay or prevent approval and launch.
The PF708-301 study enrolled a total of 181 patients, with 90 patients receiving PF708 and 91 receiving Forteo. There were 82 patients who completed the study in the PF708 treatment group, compared with 81 patients in the Forteo treatment group. The primary study endpoint was anti-drug antibody (ADA) incidence after 24 weeks of drug treatment. The secondary study endpoints included mean percentage changes in lumbar-spine bone mineral density (BMD) and median percentage changes in bone turnover markers (BTM) after 24 weeks of drug treatment, as well as pharmacokinetic (PK) parameters for up to four hours after the first dose. Safety study endpoints were incidences of adverse events (AE) and serious adverse events (SAE).

There were two PF708-treated patients and two Forteo-treated patients that developed ADA during the study. These low rates of immunogenicity are consistent with historical Forteo results (~3%) in postmenopausal osteoporosis patients. At Week 24, there were two ADA-positive findings for PF708 compared with none for Forteo, but the difference was not statistically significant. The ADA findings in the two PF708 patients were low in titer and resolved during follow-up. One of the two patients had *in vitro* neutralizing activity transiently detected at Week 4. However, pharmacological activity, as assessed by increases in BMD and BTM, was observed during the study for this patient. There were no apparent safety issues or abnormal serum calcium levels related to ADA or neutralizing antibody findings. These findings are consistent with observations in follow-on biologics and biosimilars approved in the United States, with almost all of the products demonstrating an ADA treatment difference of less than 5% in comparative patient studies. The overall ADA results are shown in Table 1, and individual titer results for all ADA-positive patients are shown in Table 2 (below).

PF708 and Forteo demonstrated comparable effects on lumbar-spine BMD, P1NP (N-terminal propeptide of type 1 procollagen), which is a marker of bone formation and CTX (cross-linked C-terminal telopeptide of type 1 collagen), which is a marker of bone resorption. There were no statistically significant differences in any of these parameters between PF708 and Forteo. The lumbar-spine BMD results are shown in Figure 1 (below), and BTM results are shown in Figure 2 (below).

There were no significant imbalances in AE incidences or severity profiles between PF708 and Forteo. Treatment-emergent AE and SAE profiles are shown in Table 3 (below), and the severity of treatment-emergent AEs is shown in Table 4 (below).

### Table 1. Study PF708-301 Overall Anti-Drug Antibody Results

<table>
<thead>
<tr>
<th>Time (wk)</th>
<th>PF708</th>
<th>Forteo</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0/90</td>
<td>0/91</td>
<td>1.00</td>
</tr>
<tr>
<td>1</td>
<td>1/87</td>
<td>0/90</td>
<td>0.49</td>
</tr>
<tr>
<td>4</td>
<td>1/86</td>
<td>0/89</td>
<td>0.49</td>
</tr>
<tr>
<td>12</td>
<td>2/82</td>
<td>2/86</td>
<td>1.00</td>
</tr>
<tr>
<td>24</td>
<td>2/81</td>
<td>0/81</td>
<td>0.50</td>
</tr>
<tr>
<td>24-week overall</td>
<td>2/87</td>
<td>2/90</td>
<td>1.00</td>
</tr>
</tbody>
</table>
* In vitro neutralizing activity detected; pharmacological activity, as assessed by changes in BMD and BTM, was observed during the study for this patient.

Antibody titer measures how much ADA is present in a positive sample. A value of 1:1 is the lowest possible finding, whereas a value of 1:8 represents an 8-fold increase.

Neg: negative; N/A: not applicable

Table 3. Study PF708-301 Treatment-Emergent Adverse Event Profiles

<table>
<thead>
<tr>
<th>Number and Percent of Patients with:</th>
<th>PF708</th>
<th>Forteo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any AE</td>
<td>75</td>
<td>83.3%</td>
</tr>
<tr>
<td>Any SAE</td>
<td>6</td>
<td>6.7%</td>
</tr>
<tr>
<td>Any treatment-related AE</td>
<td>48</td>
<td>53.3%</td>
</tr>
<tr>
<td>Any AE leading to early withdrawal</td>
<td>3</td>
<td>3.3%</td>
</tr>
<tr>
<td>Any AE leading to death</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

AE: adverse event; SAE: serious adverse event
Table 4. Study PF708-301 Severity of Treatment-Emergent Adverse Events

<table>
<thead>
<tr>
<th></th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Total</th>
</tr>
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<tr>
<td>All Findings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PF708</td>
<td>169</td>
<td>84</td>
<td>6</td>
<td>2</td>
<td>261</td>
</tr>
<tr>
<td>Forteo</td>
<td>203</td>
<td>61</td>
<td>9</td>
<td>3</td>
<td>276</td>
</tr>
<tr>
<td>Injection Site</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Findings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PF708</td>
<td>36</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>37</td>
</tr>
<tr>
<td>Forteo</td>
<td>33</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>34</td>
</tr>
</tbody>
</table>

Severity of AEs was assessed according to the Common Terminology Criteria for Adverse Events, Version 4.03

Figure 1. Study PF708-301 Lumbar-Spine Bone Mineral Density Results in Female and Male Patients

Lumbar-Spine (L1-L4)

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean ± SE</td>
<td>Time (wk)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>PF708</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Forteo</td>
<td>6</td>
<td>61</td>
</tr>
</tbody>
</table>
Figure 2. Study PF708-301 Bone Turnover Markers Results in All Patients

<table>
<thead>
<tr>
<th></th>
<th>PF708</th>
<th>79</th>
<th>78</th>
<th>89</th>
<th>79</th>
<th>71</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>85</td>
<td>84</td>
<td>89</td>
<td>84</td>
<td>85</td>
<td>71</td>
</tr>
</tbody>
</table>

IQR: Interquartile range

Corporate Information

We were founded in November 2009 as a Delaware corporation spun out of The Dow Chemical Company. Our principal executive offices are located at 10790 Roselle Street, San Diego, California 92121 and our telephone number is (858) 352-4400. Our website is www.pfenex.com. Information contained on the website is not incorporated by reference herein, and should not be considered to be part of, this prospectus supplement.

Implications of Being an Emerging Growth Company

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012. We will remain an emerging growth company until the earlier of (1) the beginning of the first fiscal year following the fifth anniversary of our initial public offering, (2) the beginning of the first fiscal year after our annual gross revenue is $1.07 billion or more, (3) the date on which we have, during the previous three-year period, issued more than $1.0 billion in non-convertible debt securities and (4) as of the end of any fiscal year in which the market value of our common stock held by non-affiliates exceeded $700 million as of the end of the second quarter of that fiscal year.

For as long as we remain an “emerging growth company,” we may take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not “emerging growth companies” including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, reduced disclosure obligations regarding executive compensation and financial statements in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote to approve executive compensation and shareholder approval of any golden parachute payments not previously approved. We will take advantage of these reporting exemptions until we are no longer an “emerging growth company.”

For further information regarding us and our financial information, you should refer to our recent filings with the SEC. See “Where You Can Find Additional Information.”
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<th>Details</th>
</tr>
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<tbody>
<tr>
<td><strong>The Offering</strong></td>
<td></td>
</tr>
<tr>
<td>Common stock offered by us</td>
<td>6,800,000 shares (or 7,820,000 shares if the underwriters’ option to purchase additional shares is exercised in full)</td>
</tr>
<tr>
<td>Common stock to be outstanding after this offering</td>
<td>30,383,585 shares (or 31,403,585 shares if the underwriters’ option to purchase additional shares is exercised in full)</td>
</tr>
<tr>
<td>Underwriters’ option to purchase additional shares</td>
<td>We have granted the underwriters a 30 day option from the date of this prospectus supplement to purchase up to 1,020,000 additional shares of our common stock at the public offering price, less underwriting discounts and commissions.</td>
</tr>
<tr>
<td>Use of proceeds</td>
<td>We plan to use the net proceeds from this offering for general corporate purposes and working capital. See “Use of Proceeds” on page S-16 of this prospectus supplement.</td>
</tr>
<tr>
<td>Dividend policy</td>
<td>We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings, if any, for the operation and expansion of our business and, therefore, we do not anticipate declaring or paying cash dividends in the foreseeable future. In addition, we may become subject to covenants under future debt arrangements that place restrictions on our ability to pay dividends. The payment of dividends, if any, will be at the discretion of our board of directors and will depend on our results of operations, capital requirements, financial condition, prospects, contractual arrangements, any limitations on payment of dividends present in our current and future debt agreements, and other factors that our board of directors may deem relevant.</td>
</tr>
<tr>
<td>Risk factors</td>
<td>See “Risk Factors” beginning on page S-11 of this prospectus supplement for a discussion of factors that you should read and consider before investing in our common stock.</td>
</tr>
<tr>
<td>NYSE American symbol</td>
<td>PFNX.</td>
</tr>
</tbody>
</table>

All information in this prospectus supplement relating to the number of shares of our common stock to be outstanding immediately after this offering is based on 23,583,585 shares of common stock outstanding as of March 31, 2018 and excludes as of that date:

- 4,495,648 shares of common stock issuable upon exercise of options outstanding as of March 31, 2018, at a weighted-average exercise price of $6.19 per share; and
- 3,548,460 shares of common stock reserved for future issuance under stock-based compensation plans as of March 31, 2018, including:
  - 1,811,205 shares of common stock reserved for issuance under our 2014 Equity Incentive Plan;
  - 132,290 shares of common stock reserved for issuance under our 2016 Inducement Equity Incentive Plan;
  - 1,604,965 shares of common stock reserved for issuance under our 2014 Employee Stock Purchase Plan and any automatic increases in the number of shares reserved for issuance under such plan.
Unless otherwise indicated, this prospectus supplement assumes (i) no exercise of the underwriters’ option to purchase additional shares and (ii) no exercise or cancellation of the outstanding options described above.
RISK FACTORS

You should consider carefully the risks described below and discussed under the section captioned “Risk Factors” contained in our annual report on Form 10-K for the year ended December 31, 2017 and our quarterly report on Form 10-Q for the quarter ended March 31, 2018, as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act, each of which is incorporated by reference in this prospectus in its entirety, together with other information in this prospectus, and the information and documents incorporated by reference in this prospectus, and any free writing prospectus that we have authorized for use in connection with this offering before you make a decision to invest in our common stock. If any of the following events actually occur, our business, operating results, prospects or financial condition could be materially and adversely affected. This could cause the trading price of our common stock to decline and you may lose all or part of your investment. The risks described below are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business operations.

Risks Relating to this Offering

You may experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase.

The price per share of our common stock being offered is higher than the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that an aggregate of 6,800,000 shares are sold at a price of $5.50 per share for aggregate proceeds of approximately $37.4 million in this offering, and after deducting commissions and estimated aggregate offering expenses payable by us, you will suffer immediate and substantial dilution of $3.14 per share, representing the difference between the as adjusted net tangible book value per share of our common stock as of March 31, 2018 after giving effect to this offering and the offering price. See the section entitled “Dilution” below for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

You may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering. As of March 31, 2018, an aggregate total of approximately 8.04 million shares of common stock are either subject to outstanding options or reserved for future issuance under our equity incentive plans and employee stock purchase plan. In addition, we have an equity sales agreement in place with William Blair & Company, L.L.C. to sell up to $20.0 million worth of shares of our common stock, from time to time, through an “at the market” equity offering program under which William Blair & Company, L.L.C. will act as sales agent. As of March 31, 2018, $20.0 million worth of shares of our common stock remained available for sale under the “at the market” equity offering program.

To the extent we sell additional shares of common stock under our “at the market” equity offering program, grant additional awards under our equity incentive plans, or sell additional stock under our employee stock purchase plan, you could experience dilution, and, as a result, the market price of our common stock may decline.

Our management team may invest or spend the proceeds of this offering in ways with which you may not agree or in ways which may not yield a significant return.

Our management will have broad discretion over the use of proceeds from this offering. The net proceeds from this offering will be used for general corporate purposes, which may include, among other things,
increasing our working capital and funding research and development, and capital expenditures as more fully described in the section entitled “Use of Proceeds.” Our management will have considerable discretion in the application of the net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. The net proceeds may be used for corporate purposes that do not increase our operating results or enhance the value of our common stock. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

Because we do not intend to declare cash dividends on our shares of common stock in the foreseeable future, stockholders must rely on appreciation of the value of our common stock for any return on their investment.

We have never declared or paid cash dividends on our common stock. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends in the foreseeable future. In addition, the terms of any existing or future debt agreements may preclude us from paying dividends. As a result, we expect that only appreciation of the price of our common stock, if any, will provide a return to investors in this offering for the foreseeable future.

A substantial number of shares of common stock may be sold in the market following this offering, which may depress the market price for our common stock.

We maintain a shelf registration statement on Form S-3 with the SEC pursuant to which we may, from time to time, sell up to an aggregate of $120.0 million of our common stock, preferred stock, warrants, debt securities or units. We have sold, and plan in the future to sell, shares of our common stock in underwritten offerings and have established, and may in the future establish, “at-the-market” offering programs pursuant to which we may offer and sell shares of our common stock.

Sales of a substantial number of shares of our common stock in the public market following this offering could cause the market price of our common stock to decline. These sales, or the perception in the market that our officers, directors or the holders of a large number of shares of our common stock intend to sell shares, could reduce the market price of our common stock. A substantial majority of the outstanding shares of our common stock are, and the shares of common stock sold in this offering upon issuance will be, freely tradable without restriction or further registration under the Securities Act of 1933, as amended, or the Securities Act. Other than our directors and executive officers, none of our stockholders are subject to any lock-up agreement in connection with this offering.

We cannot predict what effect, if any, sales of our shares in the public market or the availability of shares for sale will have on the market price of our common stock. Future sales of substantial amounts of our common stock in the public market, including shares issued upon exercise of outstanding options, or the perception that such sales may occur, however, could adversely affect the market price of our common stock and also could adversely affect our future ability to raise capital through the sale of our common stock or other equity-related securities of ours at times and prices we believe appropriate.

S-12
FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the information incorporated by reference in this prospectus supplement and accompanying prospectus includes and incorporates by reference forward-looking statements, within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, that are based on our management’s beliefs and assumptions and on information currently available to our management. Forward-looking statements include, but are not limited to:

- the sufficiency of our cash and cash equivalents and cash generated from operations to meet our working capital and capital expenditure needs for the next 12 months, including our belief that we have sufficient cash resources to fund all necessary activities leading up to and including the submission of a new drug application, or NDA, to the U.S. Food and Drug Administration, or FDA, for PF708;
- our ability to enroll patients in our clinical studies at the pace that we project;
- our expectations regarding the initiation, timing, progress and the success of the design, primary and secondary end points, and duration of the clinical trials and planned clinical trials of PF708, Px563L/RPA563 and our other product candidates, and reporting results from same;
- whether the results of our and our collaboration partners’ trials will be sufficient to support domestic or global regulatory filings and approvals for PF708, including our expectations regarding the timing of our submission of the NDA for PF708;
- our ability to seek, obtain and maintain regulatory approval of PF708 or our other product candidates, and the timing of such submissions and regulatory approvals;
- our ability to obtain an FDA determination that PF708 is therapeutically equivalent to Forteo;
- our expectations regarding the earliest potential commercial launch of PF708 in the United States;
- our ability to manufacture PF708, Px563L/RPA563 or any of our other product candidates in conformity with regulatory requirements and to scale up manufacturing of PF708, Px563L/RPA563 and our other product candidates to commercial scale;
- our ability to successfully build a specialty sales force, or collaborate with third-party distributors, to commercialize PF708 and our other product candidates;
- our ability to compete with companies currently producing the reference products, including Forteo;
- our ability to compete with companies that may also seek and obtain approval for therapeutically equivalent versions of Forteo;
- our reliance on Jazz, NT Pharma, and any future collaboration partner’s performance over which we do not have control;
- our ability to retain and recruit key personnel, including development of a sales and marketing function;
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- our ability to obtain and maintain intellectual property protection for PF708, Px563L/RPA563 or any other product candidates;
- our estimates of our expenses, ongoing losses, future revenue, capital requirements and our needs for or ability to obtain additional financing;
- our expectations regarding the market size, size of patient populations, and growth potential for our product candidates, if approved for commercial use;
- our estimates of the expected patent expiration timelines for Forteo and other branded reference biologics;
- our expectations regarding the time during which we will be an emerging growth company under the Jumpstart Our Business Startups Act;
- our ability to develop new products and product candidates;
- our ability to successfully establish and successfully maintain appropriate collaborations and derive significant revenue from those collaborations;
- our financial performance; and
- developments and projections relating to our competitors and our industry.

Forward-looking statements include statements that are not historical facts and can be identified by terms such as “anticipates,” “believes,” “could,” “seeks,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “projects,” “should,” “will,” “would,” or similar expressions and the negatives of those terms. Although we believe that we have a reasonable basis for each forward-looking statement contained and incorporated by reference included in this prospectus supplement and the accompanying prospectus, we caution you that these statements are based on our projections of the future that are subject to known and unknown risks and uncertainties and other factors that may cause our actual results, level of activity, performance or achievements expressed or implied by these forward-looking statements, to differ. The sections in this prospectus supplement entitled “Risk Factors,” in “Part I—Item 1A—Risk Factors” of our most recent report on Form 10-K or “Part II—Item 1A—Risk Factors” in our Quarterly Reports on Form 10-Q which is incorporated by reference in this prospectus supplement as well as other disclosures included in this prospectus supplement, discuss some of the factors that could contribute to these differences.

Other unknown or unpredictable factors also could harm our results. Consequently, actual results or developments anticipated by us may not be realized or, even if substantially realized, may not have the expected consequences to, or effects on, us. Given these uncertainties, prospective investors are cautioned not to place undue reliance on such forward-looking statements. Except as required by law, we undertake no obligation to update or revise publicly any of the forward-looking statements after the date of this prospectus supplement.

This prospectus supplement, the accompanying prospectus, and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus contain market data that we obtained from industry sources, including independent industry publications. In presenting this information, we have also made assumptions based on such data and other similar sources and on our knowledge of, and our experience to date in, the markets for our products. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. While we believe the market data included and incorporated by reference in this prospectus supplement and the accompanying prospectus is generally reliable, such information is inherently imprecise. In addition, projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described under the heading “Risk Factors” in this prospectus supplement and “Item 1A—Risk Factors” of our most recent report on Form 10-K or 10-Q which is incorporated by reference in this prospectus supplement. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.
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All forward-looking statements are based on information available to us on the date of this prospectus supplement and we will not update any of the forward-looking statements after the date of this prospectus supplement, except as required by law. Our actual results could differ materially from those discussed in this prospectus supplement. The forward-looking statements contained in this prospectus supplement, and other written and oral forward-looking statements made by us from time to time, are subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in the following discussion and within the section of this prospectus supplement captioned “Risk Factors” beginning on page S-11.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and although we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted a thorough inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

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USE OF PROCEEDS

We estimate that the net proceeds of this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately $34.2 million, or $39.4 million if the underwriters exercise in full their option to purchase additional shares. We cannot assure you that this offering will be completed.

The principal purposes of this offering are to obtain additional capital to support our operations. More specifically, we anticipate that we will use the net proceeds from this offering, together with our existing cash, as follows:

- approximately $30 million to fund expenses in connection with obtaining the regulatory approval of PF708 and for certain pre-commercialization activities of PF708 in the United States, if approved;
- the remainder to conduct ongoing research and development, clinical development of other product candidates and for general working capital and other corporate purposes.

We cannot specify with certainty all of the particular uses for the net proceeds to be received from this offering. In addition, the amount, allocation and timing of our actual expenditures will depend upon numerous factors, including: the timing and extent of spending on our research and development efforts, including with respect to PF708 and our other product candidates; our ability to enter into and maintain collaboration, licensing, commercialization and other arrangements and the terms and timing of such arrangements; the cost of manufacturing and commercialization activities, if any; the receipt of any collaboration or milestone payments; the scope, rate of progress, results and cost of our clinical trials, preclinical testing and other related activities; the emergence of competing technologies or other adverse market developments; the time and costs involved in seeking and obtaining regulatory and marketing approvals in multiple jurisdictions for our product candidates that successfully complete clinical trials; the cost of preparing, filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; the introduction of new product candidates and the number and characteristics of product candidates that we pursue; the timing, receipt and amount of sales, profit sharing or royalties, if any, from our potential products; the degree and rate of market acceptance of any products launched by us or our collaboration partner; the expansion of our sales and marketing activities; and the potential acquisition and in-licensing of other technologies, products or assets. Accordingly, we will have broad discretion in using these proceeds. Pending their uses, we plan to invest the net proceeds of this offering in money market funds, treasury obligations, short term certificates of deposit and high-grade corporate securities, directly or through managed funds, with maturities of six months or less.

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DILUTION

Purchasers of common stock offered by this prospectus supplement will suffer immediate and substantial dilution in the net tangible book value per share of common stock. Our net tangible book value as of March 31, 2018 was approximately $37.5 million, or approximately $1.59 per share of common stock. Net tangible book value per share represents the amount of total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding as of March 31, 2018.

Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers in this offering and the net tangible book value per share of our common stock immediately after this offering. After giving effect to the sale of shares of common stock offered by us in this offering at the public offering price of $5.50 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, our adjusted net tangible book value as of March 31, 2018 would have been approximately $71.75 million, or approximately $2.36 per share. This represents an immediate increase in as adjusted net tangible book value of $0.77 per share to existing stockholders and an immediate dilution in as adjusted net tangible book value of approximately $3.14 per share to new investors purchasing shares of common stock in this offering.

The following table illustrates this dilution on a per share basis:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public offering price per share</td>
<td>$5.50</td>
</tr>
<tr>
<td>Net tangible book value per share as of March 31, 2018</td>
<td>$1.59</td>
</tr>
<tr>
<td>Increase per share attributable to this offering</td>
<td>0.77</td>
</tr>
<tr>
<td>As adjusted net tangible book value per share as of March 31, 2018, after giving effect to this offering</td>
<td>$2.36</td>
</tr>
<tr>
<td>Dilution per share to new investors participating in this offering</td>
<td>$3.14</td>
</tr>
</tbody>
</table>

The information above assumes that the underwriters do not exercise their option to purchase additional shares. If the underwriters’ option to purchase additional shares is exercised in full, our as adjusted net tangible book value per share at March 31, 2018, after giving effect to this offering, would have been approximately $2.45 per share, and the dilution in as adjusted net tangible book value per share to investors in this offering would have been approximately $3.05 per share.

The above discussion and table are based on 23,583,585 shares of our common stock outstanding as of March 31, 2018 and excludes as of that date:
- 4,495,648 shares of common stock issuable upon exercise of options outstanding as of March 31, 2018, at a weighted-average exercise price of $6.19 per share; and
- 3,548,460 shares of common stock reserved for future issuance under equity compensation plans as of March 31, 2018, including: 1,811,205 shares of common stock reserved for issuance under our 2014 Equity Incentive Plan; 132,290 shares of common stock reserved for issuance under our 2016 Inducement Equity Incentive Plan; 1,604,965 shares of common stock reserved for issuance under our 2014 Employee Stock Purchase Plan and any automatic increases in number of shares reserved for future issuance under such plan.

To the extent that any options are exercised, new equity incentive awards are issued under our equity incentive plans, additional shares of common stock are sold under our employee stock purchase plan, or we otherwise issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering.
DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings, if any, for the operation and expansion of our business and, therefore, we do not anticipate declaring or paying cash dividends in the foreseeable future. In addition, we may become subject to covenants under future debt arrangements that place restrictions on our ability to pay dividends. The payment of dividends, if any, will be at the discretion of our board of directors and will depend on our results of operations, capital requirements, financial condition, prospects, contractual arrangements, any limitations on payment of dividends present in our current and future debt agreements, and other factors that our board of directors may deem relevant.

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MATERIAL UNITED STATES FEDERAL TAX CONSIDERATIONS FOR NON-UNITED STATES HOLDERS

The following is a summary of the material United States federal income and estate tax consequences of the ownership and disposition of shares of our common stock purchased pursuant to this offering by a non-United States holder, as we define that term below, but does not purport to be a complete analysis of all potential tax effects. This summary is based upon current provisions of the Internal Revenue Code of 1986, as amended, or the Code, Treasury regulations promulgated thereunder, judicial opinions, administrative pronouncements and published rulings of the United States Internal Revenue Service, or IRS, all as in effect as of the date hereof. These authorities may be changed or be subject to differing interpretations, possibly with retroactive effect, resulting in United States federal tax consequences different from those set forth below or that could adversely affect a non-United States holder of our common stock. We have not sought, and will not seek, any ruling from the IRS with respect to the statements made in the following summary, and there can be no assurance that the IRS will not take a position contrary to such statements or that any such contrary position taken by the IRS would not be sustained.

This summary is limited to non-United States holders who purchase shares of our common stock issued pursuant to this offering and who hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally property held for investment). This summary does not purport to be complete and does not address the tax considerations arising under the laws of any state, local or non-United States jurisdiction, or under United States federal estate or gift tax laws, except as specifically described below. In addition, this summary does not address tax considerations that may be applicable to an investor’s particular circumstances (including the impact of the Medicare contribution tax on net investment income), nor does it address the special tax rules applicable to special classes of non-United States holders, including, without limitation:

- banks, insurance companies or other financial institutions;
- partnerships or other entities treated as partnerships for United States federal income tax purposes, other pass-through entities, and investors therein;
- holders subject to the alternative minimum tax;
- United States expatriates and former citizens or long-term residents of the United States;
- tax-exempt organizations and governmental organizations;
- tax-qualified retirement plans;
- brokers or dealers in securities or currencies;
- mutual funds;
- “controlled foreign corporations,” “passive foreign investment companies” and corporations that accumulate earnings to avoid United States federal income tax;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons that will hold common stock as a position in a hedging transaction, “straddle,” “conversion” or other integrated transaction for tax purposes;
- persons subject to special tax accounting rules as a result of any item of gross income with respect to the common stock being taken into account in an “applicable financing statement” (as defined in the Code);
- “qualified foreign pension funds,” as defined in Section 897(i)(2) of the Code, and entities all of the interests of which are held by qualified foreign pension funds; or
persons who acquired ordinary shares through the exercise or cancellation of employee stock options or otherwise as compensation for their
services.

If a partnership, including any entity treated as a partnership for United States federal income tax purposes, is a holder of shares of our common
stock, the tax treatment of a partner or member in the partnership or entity will generally depend upon the status of the partner, the activities of
the partnership and certain determinations made at the partner level. A holder of shares of our common stock that is, or is treated as, a partnership, and
investors therein, are urged to consult their tax advisors regarding the tax consequences of the acquisition, ownership and disposition of shares of our
common stock.

For purposes of this discussion, a “non-United States holder” is a beneficial owner of our common stock that is neither a United States person nor
an entity treated as a partnership. A United States person means a person who is for United States federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, including any entity treated as a corporation for United States federal income tax purposes, created or organized in or under the
  laws of the United States, any state within the United States, or the District of Columbia;
- an estate the income of which is subject to United States federal income taxation regardless of its source; or
- a trust (1) if it is subject to the primary supervision of a court within the United States and one or more United States persons have the
  authority to control all substantial decisions of the trust or (2) that has a valid election in effect in effect under applicable Treasury regulations to be
treated as a United States person.

Non-United States holders are urged to consult their tax advisors with respect to the application of the United States federal income tax laws to
their particular situation as well as any tax consequences arising under the United States federal estate or gift tax rules or under the laws of any state,
local, non-United States or other taxing jurisdiction or under any applicable tax treaty.

Distributions on Shares of Our Common Stock

As described in the section entitled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common stock in the
foreseeable future. However, if distributions are paid on shares of our common stock, the distributions will constitute dividends for United States federal
income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under United States federal income tax
principles. To the extent a distribution exceeds our current and accumulated earnings and profits, it will constitute a return of capital that is applied
against and reduces, but not below zero, the adjusted tax basis of a non-United States holder’s shares in our common stock. Any remainder will be
treated as capital gain from the sale of shares of our common stock and will be treated as described below under “—Gain on Disposition of Our
Common Stock.”

Subject to the discussion below regarding backup withholding and FATCA, dividends paid to a non-United States holder generally will be subject
to withholding of United States federal income tax at the rate of 30% of the gross amount of the dividends or such lower rate as may be specified by an
applicable income tax treaty, the benefits of which a non-United States holder is eligible. However, if the dividend is effectively connected with the
non-United States holder’s conduct of a trade or business in the United States and, where required by an applicable income tax treaty, is attributable to a
United States permanent establishment or fixed base maintained by such non-United States holder, the dividend will not be subject to such 30%
withholding tax, provided certain certification and disclosure requirements are met, as described below, but will be subject to United States federal
income tax imposed on net income on the same basis that applies to United States persons generally at the regular graduated rates. A corporate
non-United States holder under certain circumstances also may be subject to
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a branch profits tax at a rate of 30%, or such lower rate as may be specified by an applicable income tax treaty the benefits of which such non-United States holder is eligible for, on such effectively connected dividends, as adjusted for certain items. Non-United States holders are urged to consult their tax advisors regarding the potential applicability of any income tax treaty.

To claim the benefit of an applicable income tax treaty or to claim exemption from withholding because the dividend is effectively connected with the conduct of a trade or business in the United States, a non-United States holder must provide to the applicable withholding agent prior to the payment of such dividend a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E (or other applicable documentation) for treaty benefits or W-8ECI for effectively connected income, or such successor forms as the IRS designates, and certify under penalties of perjury that (i) such holder is not a United States person and (ii) such holder qualifies for such treaty benefits or such dividends are effectively connected income, as applicable. These forms must be periodically updated. Non-United States holders may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim with the IRS.

Gain on Disposition of Our Common Stock

Subject to the discussion below regarding backup withholding and FATCA, a non-United States holder generally will not be subject to United States federal income tax, including withholding, on gain recognized on a sale or other disposition of shares of our common stock unless any one of the following is true:

- the gain is effectively connected with the non-United States holder’s conduct of a trade or business in the United States and, where an applicable income tax treaty applies, is attributable to a United States permanent establishment or fixed base maintained by such non-United States holder;
- the non-United States holder is a nonresident alien individual present in the United States for 183 days or more in the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a United States real property interest by reason of our status as a “United States real property holding corporation,” or USRPHC, for United States federal income tax purposes at any time during the shorter of (1) the period during which a non-United States holder holds our common stock and (2) the five-year period ending on the date a non-United States holder disposes of our common stock.

Unless an applicable income tax treaty provides otherwise, gain described in the first bullet point above will be subject to the United States federal income tax imposed on net income on the same basis that applies to United States persons generally, at the regular graduated rates, but will generally not be subject to withholding. Corporate non-United States holders also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such gain, as adjusted for certain items.

Gain described in the second bullet point above will be subject to United States federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty), which may be offset by certain United States source capital losses (even though the individual is not considered a resident of the United States) provided the non-United States holder has timely filed United States federal income tax returns with respect to such losses.

With respect to the third bullet point, we believe we are not currently, and will not become, a USRPHC for United States federal income tax purposes. However, because the determination of whether we are a USRPHC depends on the fair market value of our United States real property interests relative to the fair market value of our other business assets, we cannot assure you that we currently are not a USRPHC or will not become one in the future. If we are or were to become a USRPHC, gain from the disposition of our common stock by a non-United States holder will not be subject to U.S. federal income tax, as long as our common stock is “regularly traded,” as defined by applicable Treasury regulations, on an established securities market and such

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non-United States holder has not held, actually or constructively, more than 5% of such regularly traded common stock throughout the shorter of the five-year period ending on the date of the sale or other disposition or such non-United States holder’s holding period for such stock. If we are determined to be a USRPHC and the foregoing exception does not apply, gain derived from the disposition of such common stock generally will be subject to U.S. federal income tax in the same manner as effectively connected gain, as described above, and a purchaser of such common stock may be required to withhold 15% of the proceeds payable to such non-United States holder.

Non-United States holders are urged to consult any potentially applicable income tax treaties that may provide for different rules.

Legislation Involving Payments to Certain Foreign Entities

Sections 1471 through 1474 of the Code (commonly referred to as FATCA) impose a U.S. federal withholding tax of 30% on any dividends paid on shares of our common stock to a foreign financial institution or non-financial foreign entity (including, in some cases, when such foreign financial institution or entity is acting as an intermediary), in each case as specially defined for purposes of these rules, and on the gross proceeds of the sale or other disposition of shares of our common stock, unless (i) in the case of a foreign financial institution, such institution enters into an agreement with the United States government to withhold on certain payments, and to collect and provide to the United States tax authorities substantial information regarding United States account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with United States owners), (ii) in the case of a non-financial foreign entity, such entity either certifies it does not have any substantial United States owners or provides the withholding agent with a certification identifying the substantial direct and indirect United States owners of the entity or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. Under certain circumstances, a non-United States holder might be eligible for refunds or credits of such taxes. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing these withholding and reporting requirements may be subject to different rules.

Under the applicable Treasury regulations and IRS guidance, these withholding and reporting requirements apply to payments of dividends on our common stock and will apply to payments of gross proceeds from the sale or other disposition of such stock on or after January 1, 2019. Non-United States holders are urged to consult their tax advisors regarding the possible implications of FATCA on an investment in shares of our common stock.

United States Federal Estate Taxes

Shares of our common stock owned or treated as owned by an individual who at the time of death is a non-United States holder are considered United States situs assets and will be included in the individual’s estate for United States federal estate tax purposes, unless an applicable estate tax treaty provides otherwise.

Information Reporting and Backup Withholding

Information reporting and backup withholding (currently at a 24% rate) may apply to dividends paid to a non-United States holder with respect to our common stock and proceeds of the sale or other disposition of our common stock by a non-United States holder within the United States or conducted through certain United States-related brokers. In certain circumstances, such backup withholding and information reporting with respect to a non-United States holder generally is not required if the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person and the holder certifies its status as a non-United States holder by providing to the applicable withholding agent a properly executed applicable IRS Form W-8, or such successor forms as the IRS designates, or otherwise establishing an exemption and certain other requirements are met. However, information returns are required to be filed with the IRS in connection
with any dividends on our common stock paid to non-United States holders, regardless of whether any tax was actually withheld. Under the provisions of an applicable income tax treaty, copies of information returns filed with the IRS may also be made available to the tax authorities in the country in which the non-United States holder resides or is established. Non-United States holders are urged to consult their tax advisors regarding the application of the information reporting and backup withholding rules to them.

Backup withholding is not an additional tax. Amounts withheld under the backup withholding rules from a payment to a non-United States holder may be refunded in instances of excess withholding or credited against the non-United States holder’s United States federal income tax liability, if any, provided an appropriate claim is timely filed with the IRS.

Each prospective investor should consult its own tax advisor regarding the particular United States federal, state and local and non-United States tax consequences of purchasing, holding and disposing of our common stock, including the consequences of any proposed change in applicable laws.
UNDERWRITING

Barclays Capital Inc. and William Blair & Company, L.L.C. are acting as the representatives of the underwriters and the joint book-running managers of this offering. Under the terms of an underwriting agreement, each of the underwriters named below has severally agreed to purchase from us the respective number of shares of our common stock shown opposite its name below:

<table>
<thead>
<tr>
<th>Underwriters</th>
<th>Number of Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barclays Capital Inc.</td>
<td>3,828,400</td>
</tr>
<tr>
<td>William Blair &amp; Company, L.L.C.</td>
<td>2,971,600</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,800,000</strong></td>
</tr>
</tbody>
</table>

The underwriting agreement provides that the underwriters’ obligation to purchase shares of our common stock depends on the satisfaction of the conditions contained in the underwriting agreement including:

• the obligation to purchase all of the shares of common stock offered hereby (other than those shares of common stock covered by their option to purchase additional shares as described below), if any of the shares are purchased;
• that the representations and warranties made by us to the underwriters are true;
• that there is no material change in our business or the financial markets; and
• that we deliver customary closing documents to the underwriters.

Commissions and Expenses

The following table summarizes the underwriting discounts and commissions we will pay to the underwriters. These amounts are shown assuming both no exercise and full exercise of the underwriters’ option to purchase additional shares. The underwriting fee is the difference between the initial price to the public and the amount the underwriters pay to us for the shares.

<table>
<thead>
<tr>
<th>No Exercise</th>
<th>Full Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Share</td>
<td>$0.385</td>
</tr>
<tr>
<td>Total</td>
<td>$2,618,000.00</td>
</tr>
</tbody>
</table>

The representatives of underwriters have advised us that the underwriters propose to offer the shares of common stock directly to the public at the public offering price on the cover of this prospectus and to selected dealers, which may include the underwriters, at such offering price less a selling concession not in excess of $0.231 per share. After the offering, the representatives may change the offering price and other selling terms.

The expenses of the offering that are payable by us are estimated to be approximately $0.57 million (excluding underwriting discounts and commissions). We have also agreed to reimburse the underwriters for certain of their expenses, including expenses of up to $25,000 related to clearance of this offering with the Financial Industry Regulatory Authority, Inc.

Option to Purchase Additional Shares

We have granted the underwriters an option exercisable for 30 days after the date of this prospectus to purchase, from time to time, in whole or in part, up to an aggregate of 1,020,000 shares from us at the public offering price less underwriting discounts and commissions. To the extent that this option is exercised, each underwriter will be obligated, subject to certain conditions, to purchase its pro rata portion of these additional shares based on the underwriter’s percentage underwriting commitment in the offering as indicated in the table at the beginning of this Underwriting Section.
Lock-Up Agreements

We and all of our directors and executive officers have agreed that, for a period of 90 days after the date of this prospectus subject to certain conditions and subject to limited exceptions as described below, we and they will not directly or indirectly, without the prior written consent of Barclays Capital Inc. and William Blair & Company, L.L.C., (1) offer for sale, sell, pledge, or otherwise dispose of (or enter into any transaction or device that is designed to, or could be expected to, result in the disposition by any person at any time in the future of) any shares of common stock (including, without limitation, shares of common stock that may be deemed to be beneficially owned by us or them in accordance with the rules and regulations of the SEC and shares of common stock that may be issued upon exercise of any options or warrants) or securities convertible into or exercisable or exchangeable for common stock, (2) enter into any swap or other derivatives transaction that transfers to another, in whole or in part, any of the economic benefits or risks of ownership of shares of common stock, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or other securities, in cash or otherwise, (3) make any demand for or exercise any right or file or cause to be filed a registration statement, including any amendments thereto, with respect to the registration of any shares of common stock or securities convertible into or exercisable or exchangeable for common stock or any of our other securities, or (4) publicly disclose the intention to do any of the foregoing.

The restrictions above do not apply to:

• transactions relating to shares of common stock or other securities acquired in the open market after the completion of the offering;

• transfers of shares of any class of our capital stock (i) as part of a distribution to limited partners, members or stockholders of the lock-up party, (ii) to the lock-up party’s affiliates or to any investment fund or other entity controlled or managed by the lock-up party, (iii) by will or intestacy, bona fide gifts, sales or other dispositions, in each case (except with respect to transfers by will or intestacy) that are made exclusively between and among a lock-up party or members of the lock-up party’s family or a trust formed for the benefit of the lock-up party or members of the lock-up party’s family or (iv) to a nominee or custodian or a person or entity to whom a disposition or transfer would be permissible under clauses (i) through (iii) above; provided that it shall be a condition to any transfer pursuant to this exception that (i) the transferee/donee agrees to be bound by the terms of the lock-up agreement to the same extent as if the transferee/donee were a party thereto, and (ii) no filing by any party under Section 16(a) of the Exchange Act shall be required or shall be made voluntarily in connection with such transfer;

• the exercise of warrants or the exercise of stock options (including, in each case, on a “net” or “cashless” basis or to cover tax withholding obligations of the lock-up party) granted pursuant to our stock option/incentive plans or otherwise outstanding on the date of the lock-up agreement; provided, that (i) the restrictions shall apply to shares of our common stock issued upon such exercise or conversion, (ii) if any public reports or filings are required under Section 16 of the Exchange Act, any such public report or filing shall clearly indicate in the footnotes thereto that the filing relates to the exercise of a stock option or warrant, that no shares were sold by the reporting person and that the shares received upon exercise of the stock option or warrant are subject to a lock-up agreement and (iii) in the event of an exercise on a “net” basis, we become the owner of the shares of common stock surrendered in the net exercise;

• the establishment of any contract, instruction or plan that satisfies all of the requirements of Rule 10b5-1 under the Exchange Act, or a Rule 10b5-1 Plan; provided, however, that no sales of our common stock or securities convertible into, or exchangeable or exercisable for, our common stock, shall be made pursuant to a Rule 10b5-1 plan prior to the expiration of the lock-up period; provided further, that we are not required to report the establishment of such Rule 10b5-1 plan in any public report or filing with the Securities and Exchange Commission, or the SEC, under the Exchange Act during the lock-up period and do not otherwise voluntarily effect any such public filing or report regarding such Rule 10b5-1 Plan;
• sales of our common stock pursuant to a Rule 10b5-1 plan in existence prior to the date of the lock-up agreement; provided, that to the extent a public announcement or filing under the Exchange Act, if any, is required or voluntarily made by or on behalf of the lock-up party or the Company regarding any such sales, such announcement of filing shall clearly indicate in the footnotes thereto a statement to the effect that the sale was made pursuant to a trading plan pursuant to Rule 10b5-1 entered into prior to the date of the lock-up agreement;

• The transfer of shares of the lock-up party’s common stock or securities convertible into, or exchangeable or exercisable for, common stock pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of our common stock involving a change of control of our Company; provided that in the event that such transaction is not completed, the locked-up party’s securities shall remain subject to the restrictions contained in the lock-up agreement; and

• any demands or requests for, or the exercise of any right with respect to, the registration by us under the Securities Act of the lock-up party’s shares of our common stock; provided, that no transfer of the lock-up party’s shares of our common stock registered pursuant to the exercise of any such right and no registration statement shall be filed under the Securities Act with respect to any of the lock-up party’s shares of our common stock during the lock-up period.

Barclays Capital Inc. and William Blair & Company, L.L.C., in their sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time. When determining whether or not to release common stock and other securities from lock-up agreements, Barclays Capital Inc. and William Blair & Company, L.L.C. will consider, among other factors, the holder’s reasons for requesting the release, the number of shares of common stock and other securities for which the release is being requested and market conditions at the time.

**Indemnification**

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make for these liabilities.

**Stabilization, Short Positions and Penalty Bids**

The representatives may engage in stabilizing transactions, short sales and purchases to cover positions created by short sales, and penalty bids or purchases for the purpose of pegging, fixing or maintaining the price of the common stock, in accordance with Regulation M under the Exchange Act:

• Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.

• A short position involves a sale by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase in the offering, which creates the syndicate short position. This short position may be either a covered short position or a naked short position. In a covered short position, the number of shares involved in the sales made by the underwriters in excess of the number of shares they are obligated to purchase is not greater than the number of shares that they may purchase by exercising their option to purchase additional shares. In a naked short position, the number of shares involved is greater than the number of shares in their option to purchase additional shares. The underwriters may close out any short position by either exercising their option to purchase additional shares and/or purchasing shares in the open market. In determining the source of shares to close out the short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through their option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering.
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- Syndicate covering transactions involve purchases of the common stock in the open market after the distribution has been completed in order to cover syndicate short positions.

- Penalty bids permit the representatives to reclaim a selling concession from a syndicate member when the common stock originally sold by the syndicate member is purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

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

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

Listing on the NYSE American
Our common stock is listed on the NYSE American under the symbol “PFNIX.”

Stamp Taxes
If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

Other Relationships
The underwriters and certain of their affiliates are full-service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for the issuer and its affiliates, for which they received or may in the future receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of the issuer or its affiliates. If the underwriters or their affiliates have a lending relationship with us, certain of those underwriters or their affiliates routinely hedge, and certain other of those underwriters or their affiliates may hedge, their credit exposure to us consistent with their customary risk management policies. Typically, the underwriters and their affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the shares of common stock offered hereby. Any such credit default swaps or short positions could adversely affect future trading prices of the shares of common stock offered hereby. The underwriters and certain of their affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.
Selling Restrictions

This prospectus supplement and the accompanying prospectus does not constitute an offer to sell to, or a solicitation of an offer to buy from, anyone in any country or jurisdiction (i) in which such an offer or solicitation is not authorized, (ii) in which any person making such offer or solicitation is not qualified to do so or (iii) in which any such offer or solicitation would otherwise be unlawful. No action has been taken that would, or is intended to, permit a public offer of the shares of common stock or possession or distribution of this prospectus supplement, the accompanying prospectus or any other offering or publicity material relating to the shares of common stock in any country or jurisdiction (other than the United States) where any such action for that purpose is required. Accordingly, each underwriter has undertaken that it will not, directly or indirectly, offer or sell any shares of common stock or have in its possession, distribute or publish any prospectus, form of application, advertisement or other document or information in any country or jurisdiction except under circumstances that will, to the best of its knowledge and belief, result in compliance with any applicable laws and regulations and all offers and sales of shares of common stock by it will be made on the same terms.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State) an offer to the public of any shares of our common stock has not been made and may not be made in that Relevant Member State prior to the publication of a prospectus in relation to the shares of our common stock which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that an offer to the public in that Relevant Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

• to any legal entity which is a qualified investor as defined in the Prospectus Directive;
• to fewer than 100, or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriters for any such offer; or
• in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares of our common stock shall result in a requirement for the publication by us or the underwriters of a prospectus pursuant to Article 3 of the Prospectus Directive or a supplemental prospectus pursuant to Article 16 of the Prospectus Directive or any measure implementing the Prospectus Directive in a Relevant Member State and each person who initially acquires any shares of our common stock or to whom any offer is made will be deemed to have represented, acknowledged and agreed with the underwriters and us that it is a qualified investor within the meaning of the law of the Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive or any measure implementing the Prospectus Directive in any Relevant Member State.

For the purposes of this provision, the expression an “offer to the public” in relation to any shares of our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase any shares of our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State. The expression “Prospectus Directive” means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State, and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.
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In the case of any shares of our common stock being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, such financial intermediary will also be deemed to have represented, acknowledged and agreed that the shares of our common stock acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to persons in circumstances which may give rise to an offer of any shares of our common stock to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the underwriters has been obtained to each such proposed offer or resale. We, the underwriters and their affiliates, and others will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements. Notwithstanding the above, a person who is not a qualified investor and who has notified the underwriters of such fact in writing may, with the prior consent of the underwriters, be permitted to acquire shares of our common stock in the offer.

United Kingdom

The underwriters:

- have only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of section 21 of Financial Services and Markets Act 2000, as amended, or the FSMA) in connection with the sale or issue of our common stock in circumstances in which section 21 of FSMA does not apply to such underwriters; and

- has complied with, and will comply with all applicable provisions of FSMA with respect to anything done by them in relation to the shares of our common stock in, from, or otherwise involving the United Kingdom.

This prospectus supplement and the accompanying prospectus is directed solely at persons (i) who are outside the United Kingdom or (ii) in the United Kingdom, who (A) have professional experience in matters relating to investments and who fall within the definition of “investment professionals” in Article 19(5) of the Financial Services and Markets Act (Financial Promotion) Order 2005, or the Order, (B) are high net worth entities and other persons falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as “relevant persons”). Accordingly, by accepting delivery of this prospectus supplement and the accompanying prospectus, the recipient warrants and acknowledges that it is such a relevant person. This prospectus supplement and the accompanying prospectus must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this prospectus supplement and the accompanying prospectus relates is available only to relevant persons and will be engaged in with relevant persons only.

Canada

Shares of our common stock may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of shares of our common stock must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement or the accompanying prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory for particulars of these rights or consult with a legal advisor.
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Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts, or NI 33-105, the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

LEGAL MATTERS

The validity of the common stock offered hereby will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, San Diego, California. Certain matters will be passed upon for the underwriters by Latham & Watkins LLP, Chicago, Illinois.

EXPERTS

The consolidated financial statements of Pfenex Inc. as of December 31, 2017 and 2016, and for each of the years in the two-year period ended December 31, 2017, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, an independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The consolidated financial statements of Pfenex Inc. incorporated in this prospectus supplement by reference to Pfenex Inc.’s Annual Report on Form 10-K for the year ended December 31, 2015 have been audited by Haskell & White LLP, an independent registered public accounting firm, as set forth in their report included therein, and incorporated herein by reference. Such financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly and other reports, proxy statements and other information with the Securities and Exchange Commission, or the SEC. Our SEC filings are available to the public over the Internet at the SEC’s website at http://www.sec.gov. You may also read and copy any document we file at the SEC’s Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge from our website at http://www.pfenex.com. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website is not part of this prospectus supplement.

You should rely only on the information provided and incorporated by reference in this prospectus supplement and the accompanying prospectus and the registration statement. We have not authorized anyone else to provide you with different information. Our common stock is not being offered in any state where the offer is not permitted. The information contained in documents that are incorporated by reference in this prospectus supplement is accurate only as of the dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

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INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus supplement. We incorporate by reference the following information or documents that we have filed with the SEC (excluding those portions of any Form 8-K that are not deemed “filed” pursuant to the General Instructions of Form 8-K):

- our Annual Report on Form 10-K for the year ended December 31, 2017 filed with the SEC on March 15, 2018;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, filed on May 10, 2018;
- our Proxy Statement on Schedule 14A for our 2018 Annual Meeting of Stockholders filed with the SEC on April 3, 2018 (with respect to the information contained therein that is incorporated by reference in Part III of our Annual Report on Form 10-K for the year ended December 31, 2017);
- our Current Reports on Form 8-K filed with the SEC on January 4, 2018, January 24, 2018, March 14, 2018, March 15, 2018, April 18, 2018, May 10, 2018 and May 14, 2018; and
- the description of our common stock contained in our Registration Statement on Form 8-A (File No. 001-36540) filed with the SEC on July 14, 2014, pursuant to Section 12(b) of the Exchange Act, including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference in this prospectus supplement additional documents that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the completion or termination of the offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information deemed furnished and not filed with the SEC. Any statements contained in a previously filed document incorporated by reference in this prospectus supplement is deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

This prospectus supplement may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus supplement. You should rely only on the information incorporated by reference or provided in this prospectus supplement. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus supplement is accurate as of any date other than the date of this prospectus supplement or the date of the documents incorporated by reference in this prospectus supplement.

We will provide to each person, including any beneficial owner, to whom this prospectus supplement is delivered, upon written or oral request, at no cost to the requester, a copy of any and all of the information that is incorporated by reference in this prospectus supplement.

Requests for such documents should be directed to:
Pfenex Inc.
Attn: Investor Relations
10790 Roselle Street
San Diego, CA 92121
(858) 352-4400

You may also access the documents incorporated by reference in this prospectus supplement through our website at www.pfenex.com. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus supplement or the registration statement of which it forms a part.

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We may offer and sell from time to time, in one or more series or issuances and on terms that we will determine at the time of the offering, any combination of the securities described in this prospectus, up to an aggregate amount of $120,000,000.

In addition, selling stockholders to be named in a prospectus supplement may from time to time offer and sell up to 5,232,745 shares of our common stock. We will not receive any of the proceeds from the sale of our common stock by the selling stockholders.

This prospectus provides a general description of the securities we may offer. Each time we or any of the selling stockholders offer and sell securities, we or such selling stockholders will provide specific terms of the securities offered and, if applicable, the selling stockholders, in a supplement to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. A prospectus supplement and any free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement, and any related free writing prospectus, as well as the documents incorporated or deemed to be incorporated by reference in this prospectus, before you invest in any of our securities offered hereby.

This prospectus may not be used to consummate a sale of any securities unless it is accompanied by a prospectus supplement.

We or the selling stockholders may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, broker-dealers, agents, directly to purchasers, or through any other means described in this prospectus under “Plan of Distribution” and in supplements to this prospectus in connection with a particular offering of securities. If any underwriters, dealers or agents are involved in the sale of any of these securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

Our common stock is listed on NYSE MKT under the symbol “PFNX.” On August 26, 2015, the last reported sale price of our common stock on NYSE MKT was $21.50 per share. There is currently no market for the other securities we may offer; however, we will provide information in any applicable prospectus supplement regarding any listing of securities other than shares of our common stock on any securities exchange.

We are an “emerging growth company” as defined under the federal securities laws and, as such, have elected to comply with certain reduced public company reporting requirements.

INVESTING IN OUR SECURITIES INVOLVES SIGNIFICANT RISKS. YOU SHOULD REVIEW CAREFULLY THE “RISK FACTORS” ON PAGE 5 OF THIS PROSPECTUS AND IN THE APPLICABLE PROSPECTUS SUPPLEMENT BEFORE INVESTING IN OUR SECURITIES.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is September 2, 2015.
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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the United States Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf process, we may, from time to time, sell any combination of the securities described in this prospectus in one or more offerings up to an aggregate dollar amount of $120,000,000. In addition, the selling stockholders may from time to time sell up to an aggregate amount of 5,232,745 shares of our common stock in one or more offerings. This prospectus provides you with a general description of the securities we or the selling stockholders may offer.

Each time we or the selling stockholders sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings, hereinafter referred to as an issuer free writing prospectus. The prospectus supplement and any issuer free writing prospectus may also add to, update or change information contained in the prospectus and, accordingly, to the extent inconsistent, information in this prospectus is superseded by the information in the prospectus supplement or the issuer free writing prospectus, as applicable. You should carefully read this prospectus, any prospectus supplement, and any issuer free writing prospectus, together with the additional information described under the heading “Information Incorporated by Reference.”

The prospectus supplement to be attached to the front of this prospectus may describe, as applicable, the terms of the securities offered; the initial public offering price; the price paid for the securities; net proceeds; and the other specific terms related to the offering of the securities.

THIS PROSPECTUS MAY NOT BE USED TO OFFER AND SELL SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

You should only rely on the information contained or incorporated by reference in this prospectus and any prospectus supplement or issuer free writing prospectus relating to a particular offering. No person has been authorized to give any information or make any representations in connection with this offering other than those contained or incorporated by reference in this prospectus, any accompanying prospectus supplement and any related issuer free writing prospectus in connection with the offering described herein and therein, and, if given or made, such information or representations must not be relied upon as having been authorized by us. Neither this prospectus nor any prospectus supplement nor any related issuer free writing prospectus shall constitute an offer to sell or a solicitation of an offer to buy offered securities in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation. This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits.

You should read the entire prospectus and any prospectus supplement and any related issuer free writing prospectus, as well as the documents incorporated by reference into this prospectus or any prospectus supplement or any related issuer free writing prospectus, before making an investment decision. Neither the delivery of this prospectus or any prospectus supplement or any issuer free writing prospectus nor any sale made hereunder shall under any circumstances imply that the information contained or incorporated by reference herein or in any prospectus supplement or issuer free writing prospectus is correct as of any date subsequent to the date hereof or of such prospectus supplement or issuer free writing prospectus, as applicable. You should assume that the information appearing in this prospectus, any prospectus supplement, any issuer free writing prospectus, or any document incorporated by reference is accurate only as of the date of the applicable documents, regardless of the time of delivery of this prospectus or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

References in this prospectus to the “company,” “we,” “us” and “our” and similar terms or Pfenex refer to Pfenex Inc.

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PROSPECTUS SUMMARY

This summary description about us and our business highlights selected information contained elsewhere in this prospectus or incorporated in this prospectus by reference. This summary does not contain all of the information you should consider before deciding to invest in our securities. You should carefully read this entire prospectus and any applicable prospectus supplement, including each of the documents incorporated herein or therein by reference, before making an investment decision. Investors should carefully consider the information set forth under “Risk Factors” on page 5 and incorporated by reference to our annual report on Form 10-K and our quarterly reports on Form 10-Q.

Overview

We are a clinical-stage biotechnology company engaged in the development of biosimilar therapeutics and high-value and difficult to manufacture proteins. Our lead product candidate is PF582, a biosimilar candidate to Lucentis (ranibizumab). Lucentis, marketed by Genentech, Inc., a wholly-owned member of the Roche Group and Novartis AG, for the treatment of patients with retinal diseases, achieved approximately $4.2 billion in global product sales in 2014. We expect to commence a comparative clinical study with Hospira, Inc., or Hospira, in 2016. Hospira will be responsible for the manufacturing and commercialization of PF582 globally upon successful receipt of marketing approval. Our next most advanced product candidate is PF530, a biosimilar candidate to Betaseron (interferon beta-1b) that is marketed by Bayer AG for the treatment of multiple sclerosis and achieved over $1.2 billion in global product sales in 2014. For PF530, our Phase 1 trial was initiated in March 2015. In addition to our two most advanced product candidates, our pipeline includes five other biosimilar candidates as well as vaccine, generic and next generation biologic candidates. To date, none of our product candidates have received marketing authorization from any regulatory agency, and therefore we have not received revenue from the sale of any of our product candidates.

Corporate Information

We were founded in November 2009 as a Delaware corporation spun out of The Dow Chemical Company. Our principal executive offices are located at 10790 Roselle St., San Diego, California 92121 and our telephone number is (858) 352-4400. Our website is www.pfenex.com. The information on, or that can be accessed through, our website is not incorporated by reference into this prospectus and should not be considered to be a part of this prospectus. We have included our website address as an inactive textual reference only.

Pfenex™, the Pfenex logo and other trademarks or service marks of Pfenex appearing in this prospectus are the property of Pfenex Inc. Trade names, trademarks and service marks of other companies appearing in this prospectus are the property of their respective holders.

Implications of Being an Emerging Growth Company

We qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. An emerging growth company may take advantage of relief from certain reporting requirements and other burdens that are otherwise applicable generally to public companies. As an emerging growth company:

- we have availed ourselves of the exemption from the requirement to obtain an attestation and report from our auditors on the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002;
- we will provide less extensive disclosure about our executive compensation arrangements; and
- we will not require shareholder non-binding advisory votes on executive compensation or golden parachute arrangements.
We may use these provisions until the last day of our fiscal year following the fifth anniversary of our initial public offering. However, if certain events occur prior to the end of such five-year period, including if we become a “large accelerated filer,” our annual gross revenues exceed $1.0 billion or we issue more than $1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period. We may choose to take advantage of some but not all of these reduced burdens. To the extent that we take advantage of these reduced burdens, the information that we provide stockholders may be different than you might obtain from other public companies in which you hold equity interests.

The Securities We May Offer

We may offer up to $120,000,000 of common stock, preferred stock, warrants, debt securities, and/or units in one or more offerings and in any combination. In addition, the selling stockholders may sell up to 5,232,745 shares of common stock from time to time in one or more offerings. This prospectus provides you with a general description of the securities we and the selling stockholders may offer. A prospectus supplement, which we will provide each time we or the selling stockholders offer securities, will describe the specific amounts, prices and terms of these securities.

Common Stock

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. There are no cumulative voting rights. Subject to preferences that may be applicable to any then outstanding preferred stock, holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by our board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of preferred stock.

Preferred Stock

Our board of directors has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including, among others, dividend rights, conversion rights, voting rights, redemption rights, and liquidation preferences of each series of preferred stock.

Each series of preferred stock will be more fully described in the particular prospectus supplement that will accompany this prospectus, including redemption provisions, rights in the event of our liquidation, dissolution or winding up, voting rights and rights to convert into common stock. We have no present plans to issue any shares of preferred stock nor are any shares of our preferred stock presently outstanding.

Warrants

We may issue warrants for the purchase of debt securities, common stock or preferred stock. We may issue warrants independently or together with other securities.

Debt Securities

We may offer secured or unsecured obligations in the form of one or more series of senior or subordinated debt. The senior debt securities and the subordinated debt securities are referred to in this prospectus as the “debt securities.” The subordinated debt securities generally will be entitled to payment only after payment of
our senior debt. Senior debt generally includes all debt for money borrowed by us, except debt that is stated in the instrument governing the terms of that debt to be not senior to, or to have the same rank in right of payment as, or to be expressly junior to, the subordinated debt securities. We may issue debt securities that are convertible into shares of our common stock.

The senior and subordinated debt securities will be issued under separate indentures between us and a trustee. We have summarized the general features of the debt securities to be governed by the indentures. These indentures have been filed as exhibits to the registration statement of which this prospectus forms a part. We encourage you to read these indentures. Instructions on how you can get copies of these documents are provided under the heading “Where You Can Find More Information.”

Units

We may issue units comprised of one or more of the other classes of securities issued by us as described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit.
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**RISK FACTORS**

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of our securities will contain a discussion of the risks applicable to an investment in our securities. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading “Risk Factors” in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under “Part I—Item 1A—Risk Factors,” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2014 and “Part II—Item 1A—Risk Factors” in our Quarterly Reports on Form 10-Q, all of which are incorporated herein by reference, and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future and any prospectus supplement related to a particular offering. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

**SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that involve substantial risks and uncertainties concerning our business, operations and financial performance and condition, as well as our plans, objectives and expectations for our business operations and financial performance and condition. Those statements may appear in this prospectus, any accompanying prospectus supplement and the documents incorporated herein and therein by reference, particularly in the sections entitled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business.” Forward-looking statements include all statements that are not historical facts and can be identified by terminology such as “aim,” “anticipate,” “assume,” “believe,” “contemplate,” “continue,” “could,” “due,” “estimate,” “expect,” “goal,” “intend,” “may,” “objective,” “plan,” “predict,” “positioned,” “potential,” “seek,” “should,” “target,” “will,” “would” and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology.

These forward-looking statements include, but are not limited to, statements about:

- our and our collaboration partners’ ability to enroll patients in our clinical studies at the pace that we project;
- our expectations regarding the timing and the success of the design of the clinical trials and planned clinical trials of PF582, PF530, and our other product candidates and reporting results from same;
- whether the results of our and our collaboration partners’ trials will be sufficient to support domestic or global regulatory approvals for PF582, PF530, and our other product candidates;
- our and our collaboration partners’ ability to obtain and maintain regulatory approval of PF582 and PF530 or our other product candidates, and the timing of such regulatory approvals;
- our reliance on third parties to conduct clinical studies;
- our reliance on third-party contract manufacturers to manufacture and supply our product candidates for us;
- the benefits of the use of PF582 and PF530 or any other product candidates;
- the rate and degree of market acceptance of PF582 and PF530 or any future product candidates;
- our expectations regarding government and third-party payor coverage and reimbursement;
our and our collaboration partners’ ability to manufacture PF582, PF530, and our other product candidates in conformity with regulatory requirements and to scale up manufacturing of PF582, PF530, and our other product candidates to commercial scale;

• our ability to successfully build a specialty sales force, or collaborate with third-party distributors, to commercialize our products;

• our ability to compete with companies currently producing the reference products, including Lucentis, Betaseron, and Forteo;

• our reliance on our collaboration partners’ performance over which we do not have control;

• our ability to retain and recruit key personnel, including development of a sales and marketing function;

• our ability to obtain and maintain intellectual property protection for PF582, PF530, or any other product candidates;

• our estimates of our expenses, ongoing losses, future revenue, capital requirements and our needs for or ability to obtain additional financing;

• the sufficiency of our cash and cash equivalents and cash generated from operations to meet our working capital and capital expenditure needs;

• our expectations regarding the market size, size of the patient populations, and growth potential for our product candidates;

• our estimates of the expected patent expiration timelines for Lucentis, Betaseron, Forteo and other branded reference biologics;

• our expectations regarding the time during which we will be an emerging growth company under the Jumpstart Our Business Startups Act;

• our ability to develop new products and product candidates;

• our ability to successfully establish and successfully maintain appropriate collaborations and derive significant revenue from those collaborations;

• our anticipated use of net proceeds from the offering;

• our financial performance; and

• developments and projections relating to our competitors or our industry.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements including those described in “Risk Factors,” elsewhere in this prospectus and the documents incorporated by reference into this prospectus. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our management’s beliefs and assumptions only as of the date of this prospectus or the date of the documents incorporated by reference herein. You should read this prospectus and the documents that we have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future. We qualify all of our forward-looking statements by these cautionary statements.
This prospectus, any accompanying prospectus supplement and the documents incorporated herein and therein by reference may also contain estimates and other information concerning our industry that are based on government and industry publications. This information involves a number of assumptions and limitations, and you are cautioned not to give undue weight to these estimates. These government and industry publications generally indicate that their information has been obtained from sources believed to be reliable.
RATIO OF EARNINGS TO FIXED CHARGES AND PREFERENCE DIVIDENDS

Our earnings have been inadequate to cover fixed charges and preference dividends. The following table sets forth the dollar amount of the coverage deficiency for each of the years ended December 31, 2012, 2013 and 2014, and the six-month period ended June 30, 2015. We have derived the deficiency of earnings to cover fixed charges and preference dividends from our historical financial statements. The following should be read in conjunction with our financial statements, including the notes thereto, included in our annual report on Form 10-K for the year ended December 31, 2014 and our quarterly report on Form 10-Q for the period ended June 30, 2015, both of which are incorporated by reference in this prospectus. See Exhibit 12.1 hereto for additional detail regarding the computation of the deficiency of earnings to cover fixed charges and preference dividends.

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<th>Fiscal Year Ended December 31,</th>
<th>Six Months Ended June 30,</th>
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<tr>
<td>2012</td>
<td>2013</td>
</tr>
<tr>
<td>Deficiency of earnings available to cover combined fixed charges and preference dividends (dollars in thousands)</td>
<td>$(4,634)</td>
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As of the date of this prospectus, we have no shares of preferred stock outstanding, and consequently, our ratio of earnings to combined fixed charges and preference dividends and ratio of earnings to fixed charges would be identical.

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USE OF PROCEEDS

Unless otherwise indicated in the prospectus supplement, we will use the net proceeds from the sale of securities offered by this prospectus (i) for the continued research and development of one or more of our biosimilar product candidates currently in the preclinical stage; (ii) to conduct ongoing research and development and clinical development of these and other product candidates; and (iii) for general corporate purposes, which may include working capital, capital expenditures, other corporate expenses and acquisitions of complementary products, technologies or businesses. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including cash flows from operations, the anticipated growth of our business, the progress of our development and commercialization efforts and the status and results of our clinical trials, as well as any collaborations that we may enter into with third parties and any unforeseen cash needs. As a result, unless otherwise indicated in the prospectus supplement, our management will have broad discretion to allocate the net proceeds of the offerings. Pending their ultimate use, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing instruments.

We will not receive any proceeds from the sale of shares of our common stock by the selling stockholders.
DESCRIPTION OF CAPITAL STOCK

The following is a summary of all material characteristics of our capital stock as set forth in our amended and restated certificate of incorporation and amended and restated bylaws. The summary does not purport to be complete and is qualified in its entirety by reference to our amended and restated certificate of incorporation and amended and restated bylaws and to the applicable provisions of Delaware law.

General

Our authorized capital stock consists of 200,000,000 shares of common stock, par value $0.001 per share, and 10,000,000 shares of preferred stock, par value $0.001 per share.

Common Stock

Outstanding Shares

As of June 30, 2015, there were 23,187,322 shares of our common stock outstanding, held by approximately 29 stockholders of record, and no shares of our preferred stock outstanding.

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our amended and restated certificate of incorporation and amended and restated bylaws do not provide for cumulative voting rights. Because of this, the holders of a plurality of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose. With respect to matters other than the election of directors, at any meeting of the stockholders at which a quorum is present or represented, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at such meeting and entitled to vote on the subject matter shall be the act of the stockholders, except as otherwise required by law. The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of preferred stock.

Rights and Preferences

Holders of common stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Fully Paid and Nonassessable

All of our outstanding shares of common stock are fully paid and nonassessable.
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Preferred Stock
Our board of directors has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing change in our control or other corporate action. We have no present plan to issue any shares of preferred stock.

Stock Options
As of June 30, 2015, we had outstanding options to purchase an aggregate of 1,691,319 shares of our common stock pursuant to our equity plans, at a weighted-average exercise price of $7.21 per share. As of June 30, 2015, 900,624 shares of our common stock remain available for future grant or issuance under our 2014 Equity Incentive Plan.

Employee Stock Purchase Plan
As of June 30, 2015, 650,551 shares of our common stock are available for future grant or issuance under our 2014 Employee Stock Purchase Plan.

Registration Rights
As of June 30, 2015, the holders of approximately 5,233,000 shares of our common stock, or their permitted transferees, are entitled to certain demand registration rights. The registration rights terminate five years following the consummation of our initial public offering or, with respect to any particular stockholder, at such time that the stockholder can sell all of its shares during any three month period pursuant to Rule 144 of the Securities Act.

Demand Registration Rights
As of June 30, 2015, the holders of approximately 5,233,000 shares of our common stock, or their permitted transferees, are entitled to certain demand registration rights. Under the terms of the investors’ rights agreement, we will be required, upon the written request of holders of at least 50% of the shares that are entitled to registration rights under the investors’ rights agreement, to register all or a portion of these shares for public resale. We are required to effect only two registrations pursuant to this provision of the investors’ rights agreement. Such request for registration must cover a number of shares with an aggregate offering price of at least $5,000,000. We may defer the filing of a registration statement once during any 12 month period for a period of not more than 90 days, if we provide a certificate stating that in the good faith judgment of our board of directors, it would be seriously detrimental to us and our stockholders for the registration statement to be effected at that time; provided that, during such 90 day period, we do not register any securities for our own account or any other stockholder.

Piggyback Registration Rights
As of June 30, 2015, the holders of approximately 5,233,000 shares of our common stock or their permitted transferees are entitled to certain piggyback registration rights. If we register any of our securities for our own account after the completion of this offering, the holders of these shares are entitled to include their shares in the registration upon written request made within 20 days after notice of such registration is mailed by us. Both we and the underwriters of any underwritten offering have the right to limit the number of shares registered by these holders for marketing reasons, subject to limitations set forth in the investors’ rights agreement.
Form S-3 Registration Rights

As of June 30, 2015, the holders of approximately 5,233,000 shares of our common stock, or their permitted transferees, are entitled to certain Form S-3 registration rights so long as the aggregate amount of shares to be offered and sold under such registration statement on Form S-3 is at least $1.0 million. We are only obligated to file up to two registration statements on Form S-3 within a 12 month period. These registration rights are subject to specified conditions and limitations, including our ability to defer the filing of a registration statement with respect to an exercise of such Form S-3 registration rights for up to 90 days under certain circumstances.

Expenses of Registration

We will pay all expenses relating to any demand registrations, piggyback registrations and Form S-3 registrations, other than underwriting discounts and selling commissions.

Exclusive Jurisdiction

Under the provisions of our amended and restated certificate of incorporation, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for: (i) any derivative action or proceeding brought on behalf of us; (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees or agents to us or our stockholders; (iii) any action asserting a claim against us arising pursuant to any provision of the Delaware General Corporation Law or our amended and restated certificate of incorporation or amended and restated bylaws; or (iv) any action asserting a claim against us governed by the internal affairs doctrine. The enforceability of similar choice of forum provisions in other companies’ certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any action, a court could find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in such action.

Anti-Takeover Effects of Delaware Law and Our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Certain provisions of Delaware law and our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids. These provisions are also designed in part to encourage anyone seeking to acquire control of us to negotiate with our board of directors. We believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

• authorize our board of directors to issue, without further action by our stockholders, up to 10,000,000 shares of undesignated preferred stock;
• require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
• specify that special meetings of our stockholders can be called only by our board of directors, the chairman of our board of directors, the chief executive officer or the president;
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• establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
• provide that directors may be removed only for cause;
• provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
• establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms;
• specify that no stockholder is permitted to cumulate votes at any election of our board of directors; and
• require a super majority of the stockholders and a majority of the board to amend certain of the above-mentioned provisions, including certain amendments related to our blank check preferred stock, removal of directors solely for cause, the classification of our board of directors, and the prohibition on cumulative voting.

Delaware Anti-Takeover Statute

We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging, under certain circumstances, in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

• prior to the date of the transaction, our board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
• upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not for determining the outstanding voting stock owned by the interested stockholder, (1) shares owned by persons who are directors and also officers, and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
• at or subsequent to the date of the transaction, the business combination is approved by our board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation’s outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may discourage business combinations or other attempts that might result in the payment of a premium over the market price for the shares of common stock held by our stockholders.

The provisions of Delaware law and our restated certificate of incorporation and amended and restated bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.
Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC, or AST. The transfer agent and registrar’s address is 6201 15th Avenue, Brooklyn, NY 11219. The transfer agent’s telephone number is 800-937-5449.

Listing

Our common stock is listed on the NYSE MKT under the symbol “PFNX.”
DESCRIPTION OF THE WARRANTS

We may issue warrants for the purchase of our debt securities, preferred stock or common stock, or any combination thereof. Warrants may be issued independently or together with our debt securities, preferred stock or common stock and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants. The warrant agent will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants.

Debt Warrants

The prospectus supplement relating to a particular issue of warrants to purchase debt securities will describe the terms of the debt warrants, including the following:

• the title of the debt warrants;
• the offering price for the debt warrants, if any;
• the aggregate number of the debt warrants;
• the designation and terms of the debt securities, including any conversion rights, purchasable upon exercise of the debt warrants;
• if applicable, the date from and after which the debt warrants and any debt securities issued with them will be separately transferable;
• the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
• the dates on which the right to exercise the debt warrants will commence and expire;
• if applicable, the minimum or maximum amount of the debt warrants that may be exercised at any one time;
• whether the debt warrants represented by the debt warrant certificates or debt securities that may be issued upon exercise of the debt warrants will be issued in registered or bearer form;
• information with respect to book-entry procedures, if any; the currency or currency units in which the offering price, if any, and the exercise price are payable;
• if applicable, a discussion of material U.S. federal income tax considerations;
• the antidilution provisions of the debt warrants, if any;
• the redemption or call provisions, if any, applicable to the debt warrants;
• any provisions with respect to the holder’s right to require us to repurchase the debt warrants upon a change in control or similar event; and
• any additional terms of the debt warrants, including procedures, and limitations relating to the exchange, exercise and settlement of the debt warrants.

Debt warrant certificates will be exchangeable for new debt warrant certificates of different denominations. Debt warrants may be exercised at the corporate trust office of the warrant agent or any other office indicated in the prospectus supplement. Prior to the exercise of their debt warrants, holders of debt warrants will not have any of the rights of holders of the debt securities purchasable upon exercise and will not be entitled to payment of principal or any premium, if any, or interest on the debt securities purchasable upon exercise.

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Equity Warrants

The prospectus supplement relating to a particular series of warrants to purchase our common stock or preferred stock will describe the terms of the warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of warrants;
- the designation and terms of the common stock or preferred stock that may be purchased upon exercise of the warrants;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with the warrants will be separately transferable;
- the number of shares of common stock or preferred stock that may be purchased upon exercise of a warrant and the exercise price for the warrants;
- the dates on which the right to exercise the warrants shall commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the anti-dilution provisions of the warrants, if any;
- the redemption or call provisions, if any, applicable to the warrants;
- any adjustments to the terms of the warrants resulting from the occurrence of certain events or from the entry into or consummation by us of certain transactions;
- any provisions with respect to the holder’s right to require us to repurchase the warrants upon a change in control or similar event; and
- any additional terms of the warrants, including procedures and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of warrants will not be entitled:

- to vote, consent or receive dividends;
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as stockholders of us.

This summary of certain provisions of the warrants is not complete. For the terms of a particular series of warrants, you should refer to the prospectus supplement for that series of warrants and the warrant agreement for that particular series.
DESCRIPTION OF THE DEBT SECURITIES

The debt securities may be either secured or unsecured and will either be our senior debt securities or our subordinated debt securities. The debt securities will be issued under one or more separate indentures between us and a trustee to be specified in an accompanying prospectus supplement. Senior debt securities will be issued under a senior indenture and subordinated debt securities will be issued under a subordinated indenture. Together, the senior indenture and the subordinated indenture are called indentures in this description. This prospectus, together with the applicable prospectus supplement, will describe the terms of a particular series of debt securities.

The following is a summary of selected provisions and definitions of the indentures and debt securities to which any prospectus supplement may relate. The summary of selected provisions of the indentures and the debt securities appearing below is not complete and is subject to, and qualified entirely by reference to, all of the provisions of the applicable indenture and certificates evidencing the applicable debt securities. If any particular terms of the indenture or debt securities described in a prospectus supplement differ from any of the terms described below, then the terms described below will be deemed to have been superseded by that prospectus supplement. For additional information, you should look at the applicable indenture and the certificate evidencing the applicable debt security that is filed as an exhibit to the registration statement that includes the prospectus. In this description of the debt securities, the words “we,” “us,” or “our” refer only to Pfenex Inc. and not to any of our subsidiaries, unless we expressly state or the context otherwise requires.

The following description sets forth selected general terms and provisions of the applicable indenture and debt securities to which any prospectus supplement may relate. Other specific terms of the applicable indenture and debt securities will be described in the applicable prospectus supplement. If any particular terms of the indenture or debt securities described in a prospectus supplement differ from any of the terms described below, then the terms described below will be deemed to have been superseded by that prospectus supplement.

General

Debt securities may be issued in separate series without limitation as to aggregate principal amount. We may specify a maximum aggregate principal amount for the debt securities of any series.

We are not limited as to the amount of debt securities we may issue under the indentures. Unless otherwise provided in a prospectus supplement, a series of debt securities may be reopened to issue additional debt securities of such series.

The prospectus supplement relating to a particular series of debt securities will set forth:

- whether the debt securities are senior or subordinated;
- the offering price;
- the title;
- any limit on the aggregate principal amount;
- the person who shall be entitled to receive interest, if other than the record holder on the record date;
- the date or dates the principal will be payable;
- the interest rate or rates, which may be fixed or variable, if any, the date from which interest will accrue, the interest payment dates and the regular record dates, or the method for calculating the dates and rates;
- the place where payments may be made;
- any mandatory or optional redemption provisions or sinking fund provisions and any applicable redemption or purchase prices associated with these provisions;
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- if issued other than in denominations of U.S. $1,000 or any multiple of U.S. $1,000, the denominations in which the debt securities shall be issuable;
- if applicable, the method for determining how the principal, premium, if any, or interest will be calculated by reference to an index or formula;
- if other than U.S. currency, the currency or currency units in which principal, premium, if any, or interest will be payable and whether we or a holder may elect payment to be made in a different currency;
- the portion of the principal amount that will be payable upon acceleration of maturity, if other than the entire principal amount;
- if the principal amount payable at stated maturity will not be determinable as of any date prior to stated maturity, the amount or method for determining the amount which will be deemed to be the principal amount;
- if applicable, whether the debt securities shall be subject to the defeasance provisions described below under “Satisfaction and Discharge; Defeasance” or such other defeasance provisions specified in the applicable prospectus supplement for the debt securities;
- any conversion or exchange provisions;
- whether the debt securities will be issuable in the form of a global security;
- the deletion, addition or change in any event of default;
- any change or modification to the subordination provisions applicable to the subordinated debt securities if different from those described below under “Subordinated Debt Securities;”
- any deletion, addition or change in the covenants set forth in Article 10 of the indenture;
- any paying agents, authenticating agents, security registrars or other agents for the debt securities, if other than the trustee;
- any provisions relating to any security provided for the debt securities, including any provisions regarding the circumstances under which collateral may be released or substituted;
- any provisions relating to guaranties for the securities and any circumstances under which there may be additional obligors;
- any provisions granting special rights to holders when a specified event occurs;
- any special tax provisions that apply to the debt securities;
- with respect to the debt securities that do not bear interest, the dates for certain required reports to the applicable trustee;
- any and all additional, eliminated or changed terms that will apply to the debt securities; and
- any other terms of such debt securities.

Unless otherwise specified in the prospectus supplement, the debt securities will be registered debt securities. Debt securities may be sold at a substantial discount below their stated principal amount, bearing no interest or interest at a rate which at time of issuance is below market rates. The U.S. federal income tax considerations applicable to debt securities sold at a discount will be described in the applicable prospectus supplement.

Exchange and Transfer

Debt securities may be transferred or exchanged at the office of the security registrar or at the office of any transfer agent designated by us.
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We will not impose a service charge for any transfer or exchange, but we may require holders to pay any tax or other governmental charges associated with any transfer or exchange.

In the event of any partial redemption of debt securities of any series, we will not be required to:

• issue, register the transfer of, or exchange, any debt security of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption and ending at the close of business on the day of the mailing; or
• register the transfer of or exchange any debt security of that series selected for redemption, in whole or in part, except the unredeemed portion of the debt security being redeemed in part.

We will appoint the trustee as the initial security registrar. Any transfer agent, in addition to the security registrar initially designated by us, will be named in the prospectus supplement. We may designate additional transfer agents or change transfer agents or change the office of the transfer agent. However, we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

Global Securities

The debt securities of any series may be represented, in whole or in part, by one or more global securities. Each global security will:

• be registered in the name of a depositary, or its nominee, that we will identify in a prospectus supplement;
• be deposited with the depositary or nominee or custodian; and
• bear any required legends.

No global security may be exchanged in whole or in part for debt securities registered in the name of any person other than the depositary or any nominee unless:

• the depositary has notified us that it is unwilling or unable to continue as depositary or has ceased to be qualified to act as depositary;
• an event of default is continuing with respect to the debt securities of the applicable series; or
• any other circumstance described in a prospectus supplement has occurred permitting or requiring the issuance of any such security.

As long as the depositary, or its nominee, is the registered owner of a global security, the depositary or nominee will be considered the sole owner and holder of the debt securities represented by the global security for all purposes under the indentures. Except in the above limited circumstances, owners of beneficial interests in a global security will not be:

• entitled to have the debt securities registered in their names;
• entitled to physical delivery of certificated debt securities; or
• considered to be holders of those debt securities under the indenture.

Payments on a global security will be made to the depositary or its nominee as the holder of the global security. Some jurisdictions have laws that require that certain purchasers of securities take physical delivery of such securities in definitive form. These laws may impair the ability to transfer beneficial interests in a global security.
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Institutions that have accounts with the depositary or its nominee are referred to as “participants.” Ownership of beneficial interests in a global security will be limited to participants and to persons that may hold beneficial interests through participants. The depositary will credit, on its book-entry registration and transfer system, the respective principal amounts of debt securities represented by the global security to the accounts of its participants.

Ownership of beneficial interests in a global security will be shown on and effected through records maintained by the depositary, with respect to participants’ interests, or any participant, with respect to interests of persons held by participants on their behalf.

Payments, transfers and exchanges relating to beneficial interests in a global security will be subject to policies and procedures of the depositary. The depositary policies and procedures may change from time to time. Neither any trustee nor we will have any responsibility or liability for the depositary’s or any participant’s records with respect to beneficial interests in a global security.

Payment and Paying Agents

Unless otherwise indicated in a prospectus supplement, the provisions described in this paragraph will apply to the debt securities. Payment of interest on a debt security on any interest payment date will be made to the person in whose name the debt security is registered at the close of business on the regular record date. Payment on debt securities of a particular series will be payable at the office of a paying agent or paying agents designated by us. However, at our option, we may pay interest by mailing a check to the record holder. The trustee will be designated as our initial paying agent.

We may also name any other paying agents in a prospectus supplement. We may designate additional paying agents, change paying agents or change the office of any paying agent. However, we will be required to maintain a paying agent in each place of payment for the debt securities of a particular series.

All moneys paid by us to a paying agent for payment on any debt security that remain unclaimed for a period ending the earlier of:

- 10 business days prior to the date the money would be turned over to the applicable state; or
- at the end of two years after such payment was due,

will be repaid to us thereafter. The holder may look only to us for such payment.

No Protection in the Event of a Change of Control

Unless otherwise indicated in a prospectus supplement with respect to a particular series of debt securities, the debt securities will not contain any provisions that may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly-leveraged transaction, whether or not such transaction results in a change in control.

Covenants

Unless otherwise indicated in a prospectus supplement with respect to a particular series of debt securities, the debt securities will not contain any financial or restrictive covenants.

Consolidation, Merger and Sale of Assets

Unless we indicate otherwise in a prospectus supplement with respect to a particular series of debt securities, we may not consolidate with or merge into any other person (other than one of our subsidiaries), in a
transaction in which we are not the surviving corporation, or convey, transfer or lease our properties and assets substantially as an entirety to, any person (other than a subsidiary of Pfenex Inc.), unless:

- the successor entity, if any, is a U.S. corporation, limited liability company, partnership, trust or other business entity;
- the successor entity assumes our obligations on the debt securities and under the indentures;
- immediately after giving effect to the transaction, no default or event of default shall have occurred and be continuing; and
- certain other conditions specified in the indenture are met.

Events of Default

Unless we indicate otherwise in a prospectus supplement, the following will be events of default for any series of debt securities under the indentures:

1. we fail to pay principal of or any premium on any debt security of that series when due;
2. we fail to pay any interest on any debt security of that series for 30 days after it becomes due;
3. we fail to deposit any sinking fund payment when due;
4. we fail to perform any other covenant in the indenture and such failure continues for 90 days after we are given the notice required in the indentures; and
5. certain events involving our bankruptcy, insolvency or reorganization.

Additional or different events of default applicable to a series of debt securities may be described in a prospectus supplement. An event of default of one series of debt securities is not necessarily an event of default for any other series of debt securities.

The trustee may withhold notice to the holders of any default, except defaults in the payment of principal, premium, if any, interest, any sinking fund installment on, or with respect to any conversion right of, the debt securities of such series. However, the trustee must consider it to be in the interest of the holders of the debt securities of such series to withhold this notice.

Unless we indicate otherwise in a prospectus supplement, if an event of default, other than an event of default described in clause (5) above, shall occur and be continuing with respect to any series of debt securities, either the trustee or the holders of at least 25% in aggregate principal amount of the outstanding securities of that series may declare the principal amount and premium, if any, of the debt securities of that series, or if any debt securities of that series are original issue discount securities, such other amount as may be specified in the applicable prospectus supplement, in each case together with accrued and unpaid interest thereon, if any, to be due and payable immediately.

Unless we indicate otherwise in a prospectus supplement, if an event of default described in clause (5) above shall occur, the principal amount and premium, if any, of all the debt securities of that series, or if any debt securities of that series are original issue discount securities, such other amount as may be specified in the applicable prospectus supplement, in each case together with accrued and unpaid interest thereon, if any, will automatically become immediately due and payable. Any payment by us on the subordinated debt securities following any such acceleration will be subject to the subordination provisions described below under “Subordinated Debt Securities.”

Notwithstanding the foregoing, each indenture will provide that we may, at our option, elect that the sole remedy for an event of default relating to our failure to comply with our obligations described under the section entitled “Reports” below or our failure to comply with the requirements of Section 314(a)(1) of the Trust
Indenture Act will for the first 180 days after the occurrence of such an event of default consist exclusively of the right to receive additional interest on the relevant series of debt securities at an annual rate equal to (i) 0.25% of the principal amount of such series of debt securities for the first 180 days after the occurrence of such event of default and (ii) 0.50% of the principal amount of such series of debt securities from the 180th day to, and including, the 360th day after the occurrence of such event of default, which we call “additional interest.” If we so elect, the additional interest will accrue on all outstanding debt securities from and including the date on which such event of default first occurs until such violation is cured or waived and shall be payable on each relevant interest payment date to holders of record on the regular record date immediately preceding the interest payment date. On the 361st day after such event of default (if such violation is not cured or waived prior to such 361st day), the debt securities will be subject to acceleration as provided above. In the event we do not elect to pay additional interest upon any such event of default in accordance with this paragraph, the debt securities will be subject to acceleration as provided above.

In order to elect to pay the additional interest as the sole remedy during the first 360 days after the occurrence of any event of default relating to the failure to comply with the reporting obligations in accordance with the preceding paragraph, we must notify all holders of debt securities and the trustee and paying agent of such election prior to the close of business on the first business day following the date on which such event of default occurs. Upon our failure to timely give such notice or pay the additional interest, the debt securities will be immediately subject to acceleration as provided above.

After acceleration, the holders of a majority in aggregate principal amount of the outstanding securities of that series may, under certain circumstances, rescind and annul such acceleration if all events of default, other than the non-payment of accelerated principal, or other specified amounts or interest, have been cured or waived.

Other than the duty to act with the required care during an event of default, the trustee will not be obligated to exercise any of its rights or powers at the request of the holders unless the holders shall have offered to the trustee reasonable indemnity. Generally, the holders of a majority in aggregate principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee.

A holder of debt securities of any series will not have any right to institute any proceeding under the indentures, or for the appointment of a receiver or a trustee, or for any other remedy under the indentures, unless:

1. the holder has previously given to the trustee written notice of a continuing event of default with respect to the debt securities of that series;
2. the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made a written request and have offered reasonable indemnity to the trustee to institute the proceeding; and
3. the trustee has failed to institute the proceeding and has not received direction inconsistent with the original request from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series within 60 days after the original request.

Holders may, however, sue to enforce the payment of principal, premium or interest on any debt security on or after the due date or to enforce the right, if any, to convert any debt security (if the debt security is convertible) without following the procedures listed in (1) through (3) above.

We will furnish the trustee an annual statement from our officers as to whether or not we are in default in the performance of the conditions and covenants under the indenture and, if so, specifying all known defaults.
Modification and Waiver

Unless we indicate otherwise in a prospectus supplement, the applicable trustee and we may make modifications and amendments to an indenture with the consent of the holders of a majority in aggregate principal amount of the outstanding securities of each series affected by the modification or amendment.

We may also make modifications and amendments to the indentures for the benefit of holders without their consent, for certain purposes including, but not limited to:

- to evidence the succession of another person to Pfenex, or successive successions, and the assumption by any such successor of the covenants of Pfenex in the indentures in compliance with Article 8 of the indentures;
- adding covenants;
- adding events of default;
- making certain changes to facilitate the issuance of the debt securities;
- to add to, change or eliminate any of the provisions of the indentures or series of securities, provided that any such addition, change or elimination (A) shall neither (i) apply to any security of any series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (ii) modify the rights of the holder of any such security with respect to such provision or (B) shall become effective only when there is no such security outstanding;
- securing the debt securities;
- providing for guaranties of, or additional obligors on, the debt securities;
- to establish the form or term of debt securities as permitted by Sections 2.1 and 3.1 of the indenture;
- providing for a successor trustee or additional trustees;
- conforming the indenture to the description of the securities set forth in this prospectus or the accompanying prospectus supplement;
- curing any ambiguity, defect or inconsistency; provided that such action shall not adversely affect the interest of the holders in any material respect;
- permitting or facilitating the defeasance and discharge of the debt securities;
- make such other provisions in regard to matters or questions arising under the indentures or under any supplemental indentures as our board of directors may deem necessary or desirable, and which does not in each case adversely affect the interests of the holders of the debt securities of a series; and
- comply with requirements of the SEC in order to effect or maintain the qualifications of the indentures under the Trust Indenture Act of 1939, as amended (the “Trust Indenture Act”).

However, neither the trustee nor we may make any modification or amendment without the consent of the holder of each outstanding security of that series affected by the modification or amendment if such modification or amendment would:

- change the stated maturity of the principal of, or any installment of principal or interest on, any debt security;
- reduce the principal, premium, if any, or interest on any debt security or any amount payable upon redemption or repurchase, whether at our option or the option of any holder, or reduce the amount of any sinking fund payments;
- reduce the principal of an original issue discount security or any other debt security payable on acceleration of maturity;
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• change the place of payment or the currency in which any debt security is payable;
• impair the right to enforce any payment after the stated maturity or redemption date;
• if subordinated debt securities, modify the subordination provisions in a materially adverse manner to the holders;
• adversely affect the right to convert any debt security if the debt security is a convertible debt security; or
• change the provisions in the indenture that relate to modifying or amending the indenture.

Satisfaction and Discharge; Defeasance

We may be discharged from our obligations on the debt securities, subject to limited exceptions, of any series that have matured or will mature or be redeemed within one year if we deposit enough money with the trustee to pay all the principal, interest and any premium due to the stated maturity date or redemption date of the debt securities.

Each indenture contains a provision that permits us to elect either or both of the following:

• we may elect to be discharged from all of our obligations, subject to limited exceptions, with respect to any series of debt securities then outstanding. If we make this election, the holders of the debt securities of the series will not be entitled to the benefits of the indenture, except for the rights of holders to receive payments on debt securities or the registration of transfer and exchange of debt securities and replacement of lost, stolen or mutilated debt securities.
• we may elect to be released from our obligations under some or all of any financial or restrictive covenants applicable to the series of debt securities to which the election relates and from the consequences of an event of default resulting from a breach of those covenants.

To make either of the above elections, we must irrevocably deposit in trust with the trustee enough money to pay in full the principal, interest and premium on the debt securities. This amount may be made in cash and/or U.S. government obligations or, in the case of debt securities denominated in a currency other than U.S. dollars, cash in the currency in which such series of securities is denominated and/or foreign government obligations. As a condition to either of the above elections, for debt securities denominated in U.S. dollars, we must deliver to the trustee an opinion of counsel that the holders of the debt securities will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the action.

With respect to debt securities of any series that are denominated in a currency other than United States dollars, “foreign government obligations” means:

• direct obligations of the government that issued or caused to be issued the currency in which such securities are denominated and for the payment of which obligations its full faith and credit is pledged, or, with respect to debt securities of any series which are denominated in Euros, direct obligations of certain members of the European Union for the payment of which obligations the full faith and credit of such members is pledged, which in each case are not callable or redeemable at the option of the issuer thereof; or
• obligations of a person controlled or supervised by or acting as an agency or instrumentality of a government described in the bullet above the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which are not callable or redeemable at the option of the issuer thereof.

Notices

Notices to holders will be given by mail to the addresses of the holders in the security register.
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Governing Law

The indentures and the debt securities will be governed by, and construed under, the laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

No Personal Liability of Directors, Officers, Employees and Stockholders

No incorporator, stockholder, employee, agent, officer, director or subsidiary of ours will have any liability for any obligations of ours, or because of the creation of any indebtedness under the debt securities, the indentures or supplemental indentures. The indentures provide that all such liability is expressly waived and released as a condition of, and as a consideration for, the execution of such indentures and the issuance of the debt securities.

Regarding the Trustee

The indentures limit the right of the trustee, should it become our creditor, to obtain payment of claims or secure its claims.

The trustee will be permitted to engage in certain other transactions with us. However, if the trustee acquires any conflicting interest, and there is a default under the debt securities of any series for which it is trustee, the trustee must eliminate the conflict or resign.

Subordinated Debt Securities

The following provisions will be applicable with respect to each series of subordinated debt securities, unless otherwise stated in the prospectus supplement relating to that series of subordinated debt securities.

The indebtedness evidenced by the subordinated debt securities of any series is subordinated, to the extent provided in the subordinated indenture and the applicable prospectus supplement, to the prior payment in full, in cash or other payment satisfactory to the holders of senior debt, of all senior debt, including any senior debt securities.

Upon any distribution of our assets upon any dissolution, winding up, liquidation or reorganization, whether voluntary or involuntary, marshalling of assets, assignment for the benefit of creditors, or in bankruptcy, insolvency, receivership or other similar proceedings, payments on the subordinated debt securities will be subordinated in right of payment to the prior payment in full in cash or other payment satisfactory to holders of senior debt of all senior debt.

In the event of any acceleration of the subordinated debt securities of any series because of an event of default with respect to the subordinated debt securities of that series, holders of any senior debt would be entitled to payment in full in cash or other payment satisfactory to holders of senior debt of all senior debt before the holders of subordinated debt securities are entitled to receive any payment or distribution.

In addition, the subordinated debt securities will be structurally subordinated to all indebtedness and other liabilities of our subsidiaries, including trade payables and lease obligations. This occurs because our right to receive any assets of our subsidiaries upon their liquidation or reorganization, and your right to participate in those assets, will be effectively subordinated to the claims of that subsidiary’s creditors, including trade creditors, except to the extent that we are recognized as a creditor of such subsidiary. If we are recognized as a creditor of that subsidiary, our claims would still be subordinate to any security interest in the assets of the subsidiary and any indebtedness of the subsidiary senior to us.
We are required to promptly notify holders of senior debt or their representatives under the subordinated indenture if payment of the subordinated debt securities is accelerated because of an event of default.

Under the subordinated indenture, we may not make payment on the subordinated debt securities if:

- a default in our obligations to pay principal, premium, if any, interest or other amounts on our senior debt occurs and the default continues beyond any applicable grace period, which we refer to as a payment default; or
- any other default occurs and is continuing with respect to designated senior debt that permits holders of designated senior debt to accelerate its maturity, which we refer to as a non-payment default, and the trustee receives a payment blockage notice from us or some other person permitted to give the notice under the subordinated indenture.

We will resume payments on the subordinated debt securities:

- in case of a payment default, when the default is cured or waived or ceases to exist, and
- in case of a non-payment default, the earlier of when the default is cured or waived or ceases to exist or 179 days after the receipt of the payment blockage notice.

No new payment blockage period may commence on the basis of a non-payment default unless 365 days have elapsed from the effectiveness of the immediately prior payment blockage notice. No non-payment default that existed or was continuing on the date of delivery of any payment blockage notice to the trustee shall be the basis for a subsequent payment blockage notice.

As a result of these subordination provisions, in the event of our bankruptcy, dissolution or reorganization, holders of senior debt may receive more, ratably, and holders of the subordinated debt securities may receive less, ratably, than our other creditors. The subordination provisions will not prevent the occurrence of any event of default under the subordinated indenture.

The subordination provisions will not apply to payments from money or government obligations held in trust by the trustee for the payment of principal, interest and premium, if any, on subordinated debt securities pursuant to the provisions described under the section entitled “Satisfaction and Discharge; Defeasance,” if the subordination provisions were not violated at the time the money or government obligations were deposited into trust.

If the trustee or any holder receives any payment that should not have been made to them in contravention of subordination provisions before all senior debt is paid in full in cash or other payment satisfactory to holders of senior debt, then such payment will be held in trust for the holders of senior debt.

Senior debt securities will constitute senior debt under the subordinated indenture.

Additional or different subordination provisions may be described in a prospectus supplement relating to a particular series of debt securities.

Definitions

“Designated senior debt” means our obligations under any particular senior debt in which the instrument creating or evidencing the same or the assumption or guarantee thereof, or related agreements or documents to which we are a party, expressly provides that such indebtedness shall be designated senior debt for purposes of the subordinated indenture. The instrument, agreement or other document evidencing any designated senior debt may place limitations and conditions on the right of such senior debt to exercise the rights of designated senior debt.
“Indebtedness” means the following, whether absolute or contingent, secured or unsecured, due or to become due, outstanding on the date of the indenture for such series of securities or thereafter created, incurred or assumed:

- our indebtedness evidenced by a credit or loan agreement, note, bond, debenture or other written obligation;
- all of our obligations for money borrowed;
- all of our obligations evidenced by a note or similar instrument given in connection with the acquisition of any businesses, properties or assets of any kind;
- our obligations:
  - as lessee under leases required to be capitalized on the balance sheet of the lessee under generally accepted accounting principles, or
  - as lessee under leases for facilities, capital equipment or related assets, whether or not capitalized, entered into or leased for financing purposes;
  - all of our obligations under interest rate and currency swaps, caps, floors, collars, hedge agreements, forward contracts or similar agreements or arrangements;
  - all of our obligations with respect to letters of credit, bankers’ acceptances and similar facilities, including reimbursement obligations with respect to the foregoing;
  - all of our obligations issued or assumed as the deferred purchase price of property or services, but excluding trade accounts payable and accrued liabilities arising in the ordinary course of business;
  - all obligations of the type referred to in the above clauses of another person, the payment of which, in either case, we have assumed or guaranteed, for which we are responsible or liable, directly or indirectly, jointly or severally, as obligor, guarantor or otherwise, or which are secured by a lien on our property; and
  - renewals, extensions, modifications, replacements, restatements and refundings of, or any indebtedness or obligation issued in exchange for, any such indebtedness or obligation described in the above clauses of this definition.

“Senior debt” means the principal of, premium, if any, and interest, including all interest accruing subsequent to the commencement of any bankruptcy or similar proceeding, whether or not a claim for post-petition interest is allowable as a claim in any such proceeding, and rent payable on or in connection with, and all fees and other amounts payable in connection with, our indebtedness. However, senior debt shall not include:

- any debt or obligation if its terms or the terms of the instrument under which or pursuant to which it is issued expressly provide that it shall not be senior in right of payment to the subordinated debt securities or expressly provide that such indebtedness is on the same basis or “junior” to the subordinated debt securities; or
- debt to any of our subsidiaries, a majority of the voting stock of which is owned, directly or indirectly, by us.

“Subsidiary” means a corporation more than 50% of the outstanding voting stock of which is owned, directly or indirectly, by us or by one or more of our other subsidiaries or by a combination of us and our other subsidiaries. For purposes of this definition, “voting stock” means stock or other similar interests which ordinarily has or have voting power for the election of directors, or persons performing similar functions, whether at all times or only so long as no senior class of stock or other interests has or have such voting power by reason of any contingency.
DESCRIPTION OF THE UNITS

We may issue units comprised of one or more of the other classes of securities described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The units may be issued under unit agreements to be entered into between us and a unit agent, as detailed in the prospectus supplement relating to the units being offered. The prospectus supplement will describe:

• the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances the securities comprising the units may be held or transferred separately;
• a description of the terms of any unit agreement governing the units;
• a description of the provisions for the payment, settlement, transfer or exchange of the units;
• a discussion of material federal income tax considerations, if applicable; and
• whether the units if issued as a separate security will be issued in fully registered or global form.

The descriptions of the units in this prospectus and in any prospectus supplement are summaries of the material provisions of the applicable agreements. These descriptions do not restate those agreements in their entirety and may not contain all the information that you may find useful. We urge you to read the applicable agreements because they, and not the summaries, define your rights as holders of the units. For more information, please review the forms of the relevant agreements, which will be filed with the SEC promptly after the offering of units and will be available as described in the section titled “Where You Can Find More Information.”
SELLING STOCKHOLDERS

This prospectus also relates to the possible resale by certain of our stockholders, who we refer to in this prospectus as the “selling stockholders,” of up to an aggregate maximum amount of 5,232,745 shares of our common stock that were issued and outstanding prior to the original filing date of the registration statement of which prospectus forms a part or are issuable upon the exercise of options to acquire shares of our common stock that were issued and outstanding prior to the original filing date of the registration statement of which this prospectus forms a part. The selling stockholders originally acquired or may acquire the shares of our common stock included in this prospectus through (i) several private placements of our common stock or convertible preferred stock prior to our initial public offering, with all such shares of convertible preferred stock converted into shares of our common stock in connection with our initial public offering, (ii) issuances of shares of common stock and options to acquire common stock issued to officers, directors and employees pursuant to our 2009 Equity Incentive Plan and/or our 2014 Equity Incentive Plan, each as amended, and/or (iii) issuances of shares of common stock pursuant to a cumulative dividend declared in connection with our initial public offering. Information about the selling stockholders, where applicable, including their identities and the number of shares of common stock to be registered on their behalf, will be set forth in an applicable prospectus supplement, documents incorporated by reference or in a free writing prospectus we file with the SEC. The selling stockholders will not sell any shares of our common stock pursuant to this prospectus until we have identified such selling stockholders and the shares being offered for resale by such selling stockholders in a subsequent prospectus supplement. However, the selling stockholders may sell or transfer all or a portion of their shares of our common stock pursuant to any available exemption from the registration requirements of the Securities Act.
Plan of Distribution

We and/or the selling stockholders, if applicable, may sell the securities offered through this prospectus (1) to or through underwriters or dealers, (2) directly to purchasers, including our affiliates, (3) through agents, or (4) through a combination of any these methods. The securities may be distributed at a fixed price or prices, which may be changed, market prices prevailing at the time of sale, prices related to the prevailing market prices, or negotiated prices.

The prospectus supplement relating to any offering will include the following information:

- the terms of the offering;
- the names of any underwriters or agents;
- the name or names of any managing underwriter or underwriters;
- the purchase price of the securities;
- the net proceeds from the sale of the securities;
- any delayed delivery arrangements;
- any underwriting discounts, commissions and other items constituting underwriters’ compensation;
- any initial public offering price;
- any discounts or concessions allowed or reallowed or paid to dealers; and
- any commissions paid to agents.

We may engage in at-the-market offerings into an existing trading market in accordance with Rule 415(a)(4). Any at-the-market offering will be through an underwriter or underwriters acting as principal or agent for us.

We may offer to the holders of our common stock on a pro rata basis for no consideration, subscription rights to purchase shares of our common stock or preferred stock. These subscription rights may or may not be transferable by stockholders. The applicable prospectus supplement will describe the specific terms of any offering of our common or preferred stock through the issuance of subscription rights, including the terms of the subscription rights offering, the terms, procedures and limitations relating to the exchange and exercise of the subscription rights and, if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of common or preferred stock through the issuance of subscription rights.

Sale through Underwriters or Dealers

If underwriters are used in the sale, the underwriters will acquire the securities for their own account, including through underwriting, purchase, security lending or repurchase agreements with us. The underwriters may resell the securities from time to time in one or more transactions, including negotiated transactions. Underwriters may sell the securities in order to facilitate transactions in any of our other securities (described in this prospectus or otherwise), including other public or private transactions and short sales. Underwriters may offer securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. Unless otherwise indicated in the prospectus supplement, the obligations of the underwriters to purchase the securities will be subject to certain conditions, and the underwriters will be obligated to purchase all the offered securities if they purchase any of them. The underwriters may change from time to time any initial public offering price and any discounts or concessions allowed or reallowed or paid to dealers. The prospectus supplement will include the names of the principal underwriters the respective amount of securities underwritten, the nature of the obligation of the underwriters to take the securities and the nature of any material relationship between an underwriter and us.
Some or all of the securities that we offer through this prospectus may be new issues of securities with no established trading market. Any underwriters to whom we sell securities for public offering and sale may make a market in those securities, but they will not be obligated to do so and they may discontinue any market making at any time without notice. Accordingly, we cannot assure you of the liquidity of, or continued trading markets for, any securities offered pursuant to this prospectus.

If dealers are used in the sale of securities offered through this prospectus, we or the selling stockholders will sell the securities to them as principals. They may then resell those securities to the public at varying prices determined by the dealers at the time of resale. The prospectus supplement will include the names of the dealers and the terms of the transaction.

Direct Sales and Sales through Agents

We or the selling stockholders may sell the securities offered through this prospectus directly. In this case, no underwriters or agents would be involved. Such securities may also be sold through agents designated from time to time. The prospectus supplement will name any agent involved in the offer or sale of the offered securities and will describe any commissions payable to the agent by us or the selling stockholders. Unless otherwise indicated in the prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

We or the selling stockholders may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. The terms of any such sales will be described in the prospectus supplement.

Delayed Delivery Contracts

If the prospectus supplement indicates, we may authorize agents, underwriters or dealers to solicit offers from certain types of institutions to purchase securities at the public offering price under delayed delivery contracts. These contracts would provide for payment and delivery on a specified date in the future. The contracts would be subject only to those conditions described in the prospectus supplement. The applicable prospectus supplement will describe the commission payable for solicitation of those contracts.

Market Making, Stabilization and Other Transactions

Unless the applicable prospectus supplement states otherwise, each series of offered securities will be a new issue and will have no established trading market. We may elect to list any series of offered securities on an exchange. Any underwriters that we or the selling stockholders use in the sale of offered securities may make a market in such securities, but may discontinue such market making at any time without notice. Accordingly, we cannot assure you of the liquidity of, or continued trading markets for, any securities offered pursuant to this prospectus.

Any underwriter may also engage in stabilizing transactions, syndicate covering transactions and penalty bids in accordance with Rule 104 under the Securities Exchange Act of 1934, as amended. Stabilizing transactions involve bids to purchase the underlying security in the open market for the purpose of pegging, fixing or maintaining the price of the securities. Syndicate covering transactions involve purchases of the securities in the open market after the distribution has been completed in order to cover syndicate short positions.

Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.
Derivative Transactions and Hedging

We, the underwriters or other agents may engage in derivative transactions involving the securities. These derivatives may consist of short sale transactions and other hedging activities. The underwriters or agents may acquire a long or short position in the securities, hold or resell securities acquired and purchase options or futures on the securities and other derivative instruments with returns linked to or related to changes in the price of the securities. In order to facilitate these derivative transactions, we may enter into security lending or repurchase agreements with the underwriters or agents. The underwriters or agents may effect the derivative transactions through sales of the securities to the public, including short sales, or by lending the securities in order to facilitate short sale transactions by others. The underwriters or agents may also use the securities purchased or borrowed from us or others (or, in the case of derivatives, securities received from us in settlement of those derivatives) to directly or indirectly settle sales of the securities or close out any related open borrowings of the securities.

Electronic Auctions

We or the selling stockholders may also make sales through the Internet or through other electronic means. Since we or the selling stockholders may from time to time elect to offer securities directly to the public, with or without the involvement of agents, underwriters or dealers, utilizing the Internet or other forms of electronic bidding or ordering systems for the pricing and allocation of such securities, you should pay particular attention to the description of that system we will provide in a prospectus supplement.

Such electronic system may allow bidders to directly participate, through electronic access to an auction site, by submitting conditional offers to buy that are subject to acceptance by us, and which may directly affect the price or other terms and conditions at which such securities are sold. These bidding or ordering systems may present to each bidder, on a so-called “real-time” basis, relevant information to assist in making a bid, such as the clearing spread at which the offering would be sold, based on the bids submitted, and whether a bidder’s individual bids would be accepted, prorated or rejected. For example, in the case of a debt security, the clearing spread could be indicated as a number of “basis points” above an index treasury note. Of course, many pricing methods can and may also be used.

Upon completion of such an electronic auction process, securities will be allocated based on prices bid, terms of bid or other factors. The final offering price at which securities would be sold and the allocation of securities among bidders would be based in whole or in part on the results of the Internet or other electronic bidding process or auction.

General Information

Agents, underwriters, and dealers may be entitled, under agreements entered into with us, to indemnification by us or the selling stockholders against certain liabilities, including liabilities under the Securities Act. Agents, dealers, and underwriters may engage in transactions with or perform services for us in the ordinary course of their businesses.
LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon by Wilson Sonsini Goodrich & Rosati, Professional Corporation, San Diego, California.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2014 have been so incorporated in reliance on the report of Haskell & White LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC’s website at http://www.sec.gov. You may also read and copy any document we file at the SEC’s Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge through the Internet. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

We have filed with the SEC a registration statement under the Securities Act of 1933 relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement, at prescribed rates, from the SEC at the address listed above. The registration statement and the documents referred to below under “Incorporation by Reference” are also available on our Internet website, www.pfenex.com. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.
INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus certain information we file with it, which means that we can disclose important information by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we file later with the SEC will automatically update and supersedes information contained in this prospectus and any accompanying prospectus supplement. We incorporate by reference the documents listed below that we have previously filed with the SEC:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed with the SEC on March 16, 2015;
- the portions of our Definitive Proxy Statement on Schedule 14A (other than information furnished rather than filed) that are incorporated by reference into our Annual Report on Form 10-K, filed with the SEC on March 20, 2015;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2015 and June 30, 2015, filed with the SEC on May 14, 2015 and August 13, 2015, respectively;
- our Current Reports on Form 8-K filed with the SEC on February 10, March 10, March 23, April 24, July 6, and August 17, 2015, respectively; and
- the description of our common stock contained in our Registration Statement on Form 8-A as filed with the SEC on July 14, 2014 pursuant to Section 12(b) of the Exchange Act, as amended on July 17, 2014.

We also incorporate by reference into this prospectus additional documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits on such form that are related to such items) that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the completion or termination of the offering of the securities described in this prospectus, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information deemed furnished and not filed with the SEC. Any statements contained in a previously filed document incorporated by reference into this prospectus is deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

You should rely only on the information incorporated by reference or provided in this prospectus. Neither we nor the selling stockholders have authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, at no cost to the requester, a copy of any and all of the information that is incorporated by reference in this prospectus.

Requests for such documents should be directed to:
Pfenex Inc.
Attn: Investor Relations
10790 Roselle Street
San Diego, California 92121
(858) 352-4400

You may also access the documents incorporated by reference in this prospectus through our website at www.pfenex.com. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.
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6,800,000 Shares

Common Stock

Prospectus Supplement
May 23, 2018

Barclays
William Blair