

## **Pfenex Inc**

### **COMPANY AND PIPELINE OVERVIEW REPORT**

A comprehensive coverage of the company and a summary of the drug pipeline portfolio.

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#### **THOMSON REUTERS**

3 Times Square  
New York, New York 10036  
United States

Tel: +1 646 223 4000

[thomsonreuters.com](http://thomsonreuters.com)

[Return to Table of Contents](#)

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[Return to Table of Contents](#)



## GLOSSARY

### Number of Drugs in Active Development

Number of drugs associated with the company or subsidiary that are currently in active development, i.e. the development status for the drug(s) is one of the following: Discovery, Clinical, Phase I, Phase II, Phase III, Pre-registration, Registered, Launched, or Suspended.

### Number of Inactive Drugs

Number of drugs associated with the company or subsidiary that are currently classified as inactive, i.e. where the development status for the drug(s) is one of the following: No Development Reported, Discontinued, or Withdrawn.

### Number of Patents as Owner

Number of patents associated with the company where the company is listed as owner; i.e. the relationship type (or way the patent refers to the company) is: Patent Assignee/Owner, Patent owner (not assignee), Licensee for development and marketing, Licensee – marketing only (Distributor), Patent assignee of family member, Inferred assignee.

### Number of Patents as Third Party

Number of patents associated with the company where the company is listed as third party; i.e. the relationship type (or way the patent refers to the company) is: Patent assignee (not owner), Ex-Licensee for development and marketing, Ex-Licensee marketing only (Distributor), Customer of technology, Ex-Customer of technology, Patent opponent or infringer, Affiliate organization of inventor, Owner of underlying technology.

### Patents summary table

This table represents a summary of the core patent coverage for this company covering Therapeutic EP, US and WO patents since 1990 only.

### Number of Deals

A count of deals where the company or one of its subsidiaries is the primary company.

### Key Indications

Displays top ten key indications for the company and its subsidiaries based on frequency (indications occurring with high and identical frequency are always included, and this may result in more than ten Key Indications being listed). Includes both indications associated with patents where the company is patent owner and indications associated with drugs in active development. A drug is classified as 'active' if it features on a row (or rows) in the current development status table where the status is one of the following: Discovery, Clinical, Phase I, Phase II, Phase III, Pre-registration, Registered, Launched, or Suspended.

### Key Target-based Actions

Displays top ten key target-based actions for the company and its subsidiaries based on frequency (actions occurring with high and identical frequency are always included, and this may result in more than ten Key Target-based Actions being listed). Includes both target-based actions associated with patents where the company patent owner and target-based actions associated with drugs in active development. A drug is classified as 'active' if it features on a row (or rows) in the current development status table where the status is one of the following: Discovery, Clinical, Phase I, Phase II, Phase III, Pre-registration, Registered, Launched, or Suspended. A target-based action is one that is associated with a target.

### Key Technologies

Displays top ten key technologies for the company and its subsidiaries based on frequency (technologies occurring with high and identical frequency are always included, and this may result in more than ten Key Technologies being listed). Includes both key technologies associated with patents where the company relationship is patent owner and key technologies associated with drugs in active development. A drug is classified as 'active' if it features on a row (or rows) in the current development status table where the status is one of the following: Discovery, Clinical, Phase I, Phase II, Phase III, Pre-registration, Registered, Launched, or Suspended.

[Return to Table of Contents](#)



**PLEASE NOTE:** the financials section where present in the report includes: Share Information, Stock Performance chart (including the consensus recommendation), and Major Shareholders. Financial Performance presents graphical and tabular data on Worldwide Sales, Operating Income and Net Income over time, together with a Quarterly earnings update. Balance Sheet lists Assets, Liabilities and Stockholders Equity, and Forecasts includes: EPS Forecast and Other Forecasts. The data reported in all sections (except share information and major stock holders) are correct as of the publication date of the report (and not the download date). For share information and major stock holders the data is correct for the date shown with these sections

[Return to Table of Contents](#)



TABLE OF CONTENTS

Company Overview..... 7

Company Profile..... 7

Subsidiary Companies..... 7

Product Portfolio Summary..... 7

Product Portfolio Drugs..... 11

[Return to Table of Contents](#)

# Pfenex Inc

## COMPANY OVERVIEW

Company Name	Pfenex Inc
Parent Company Name	Pfenex Inc
Website	<a href="http://www.pfenex.com/">http://www.pfenex.com/</a>
Country	US
Number of Drugs in Active Development	13
Number of Inactive Drugs	1
Number of Patents as Owner	5
Number of Patents as Third Party	0
Number of Deals	15
Key Indications	Bacillus anthracis infection, Inflammatory disease, Neutropenia, Cancer, Multiple sclerosis, Plasmodium falciparum infection, Age related macular degeneration, Coronary thrombosis, Growth hormone deficiency, Influenza virus infection, Plasmodium infection
Key Target-based Actions	GCSF receptor agonist, GCSF ligand, Interferon beta ligand, GP IIb IIIa antagonist, Growth hormone ligand, Interferon alpha 2 ligand modulator, Interferon receptor modulator, TNF alpha ligand inhibitor, TNF antagonist, VEGF-A ligand inhibitor
Key Technologies	Biological therapeutic, Protein recombinant, Biosimilar product, Parenteral formulation unspecified, Injectable formulation, Antibody fragment, Subcutaneous formulation, Antigen, Infusion, Intravenous formulation, Monoclonal antibody humanized, PEGylated formulation

## COMPANY PROFILE

### SUMMARY

Pfenex Inc, headquartered in San Diego, CA is a leading biotechnology company focused on recombinant protein expression for a broad range of applications including therapeutic proteins, vaccines, research, reagents and biosimilars.

### ACQUISITIONS AND SPINOFFS

In April 2013, Pfenex, established an unnamed joint venture with Strides Acrolab subsidiary, Agila Biotech, to develop biosimilar products at Agila's Malaysian manufacturing facility. In July 2014, Strides disclosed that R&D programs for the biosimilar products were on track but further delays were expected in the manufacturing facility setup in Malaysia.

### FINANCIAL

In June 2014, Pfenex planned an IPO of common stock; in July 2014, the company priced its IPO of 8,333,333 common stock shares at a price of \$6.00 per share to the public and at that time, the underwriters were granted a 30-day option to purchase up to 1,250,000 additional common stock shares at the same price. The shares had begun trading under the symbol "PFNX" on the NYSE MKT; later that month, the offering was closed.

## SUBSIDIARY COMPANIES

Names
Pfenex/Stelis Joint Venture

[Return to Table of Contents](#)

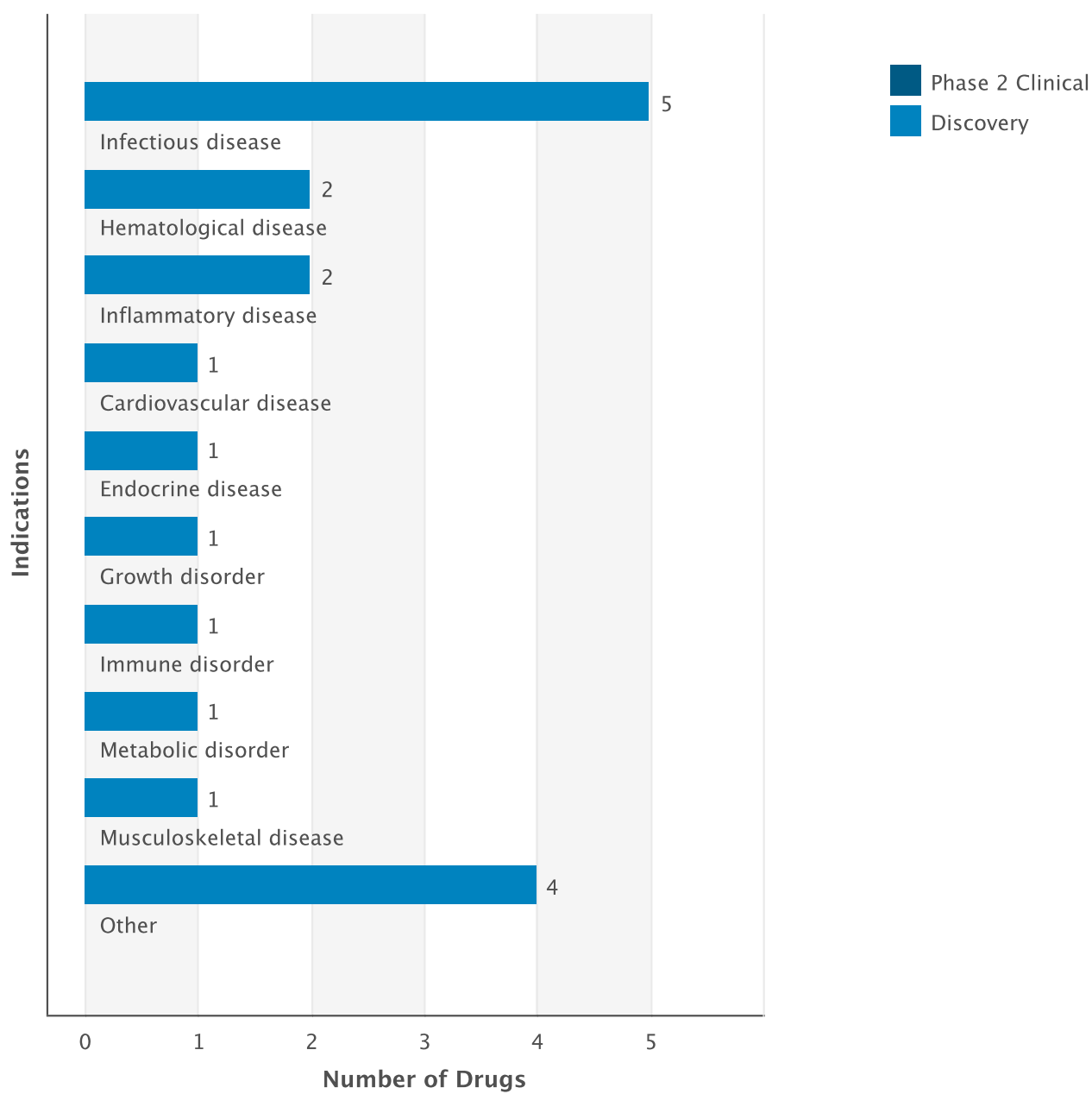


## PRODUCT PORTFOLIO SUMMARY

### DRUGS

#### Drugs by Indication

Active Drugs by Indication Chart



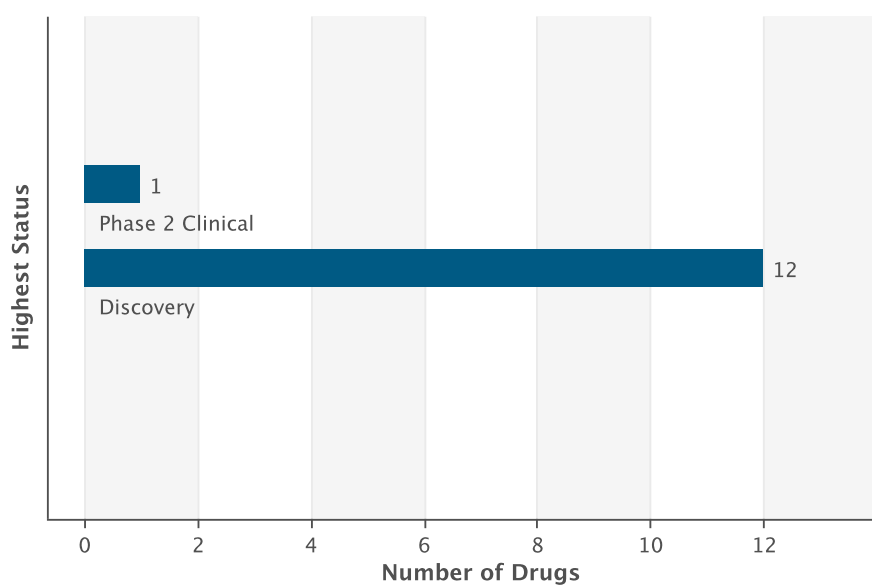
[Return to Table of Contents](#)

## Drugs by Indication Table

Indication	Active	Inactive	Total
Infectious disease	5	0	5
Hematological disease	2	1	3
Inflammatory disease	2	0	2
Musculoskeletal disease	1	0	1
Ocular disease	1	0	1
Cardiovascular disease	1	0	1
Metabolic disorder	1	0	1
Neurological disease	1	0	1
Respiratory disease	1	0	1
Immune disorder	1	0	1
Growth disorder	1	0	1
Endocrine disease	1	0	1
Neoplasm	1	0	1

## Drugs by Highest Status

### Active Drugs by Highest Status Chart



[Return to Table of Contents](#)



## Drugs by Highest Status Table

Development Status	Number of Drugs
Phase 2 Clinical	1
Discovery	12
No Development Reported	1

## DEALS

Deal Type	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Drug - Funding	4	0	1	0	5
Drug - Manufacturing/Supply	0	0	3	0	3
Technology - Other Proprietary	6	0	0	0	6

## CLINICAL TRIALS

### Trials by Condition Studied

Condition Studied	Ongoing	All
Ocular disease	1	2

### Trials by Phase

Phase	Ongoing	All
Phase 1	1	2

## Phase Definitions

### Phase 3 Clinical

Includes Phase 3, Phase 3b, Phase 3a, Phase 2/3 (where enrolment count is 300 or over)

### Phase 2 Clinical

Includes Phase 2, Phase 2a, Phase 2b, Phase 1/2 (where enrolment count is 100 or over), Phase 2/3 (where enrolment count is under 300 or not specified)

### Phase 1 Clinical

Includes Phase 1, Phase 1a, Phase 1, Phase 1/2 (where enrolment count is under 100 or not specified), Phase 0

## PATENTS \*

Indication	As Owner	As Third Party	Total
Cardiovascular disease	2	0	2
Endocrine disease	6	0	6
Gastrointestinal disease	4	0	4

[Return to Table of Contents](#)



Growth disorder	2	0	2
Hematological disease	2	0	2
Immune disorder	5	0	5
Musculoskeletal disease	1	0	1
Neoplasm	8	0	8
Genetic disorder	1	0	1
Metabolic disorder	3	0	3
Neurological disease	4	0	4
Respiratory disease	3	0	3
Infectious disease	13	0	13
Unidentified indication	2	0	2
Inflammatory disease	4	0	4
Gynecology and obstetrics	1	0	1
Dermatological disease	2	0	2

\* This table represents a summary of the core patent coverage for this company covering Therapeutic EP, US and WO patents since 1990 only.

[Return to Table of Contents](#)

## PRODUCT PORTFOLIO DRUGS

**PLEASE NOTE:** Highest status refers to highest development of that drug for one of the active companies

### PF-582

<b>Drug Name</b>	PF-582
<b>Key Synonyms</b>	ranibizumab
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Phase 2 Clinical
<b>Active Indications</b>	Age related macular degeneration
<b>Target-based Actions</b>	VEGF-A ligand inhibitor
<b>Other Actions</b>	Ocular antineovascularisation agent, Angiogenesis inhibitor
<b>Technologies</b>	Monoclonal antibody humanized, Antibody fragment, Injectable formulation, Ophthalmic formulation, Biological therapeutic, Parenteral formulation unspecified, Protein recombinant, Biosimilar product
<b>Last Change Date</b>	21-Jul-2014

### Px-563L

<b>Drug Name</b>	Px-563L
<b>Key Synonyms</b>	
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc, US Health and Human Services Department
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Bacillus anthracis infection
<b>Target-based Actions</b>	
<b>Other Actions</b>	Antibacterial, Recombinant bacterial vector vaccine
<b>Technologies</b>	Injectable formulation, Quick release formulation, Antigen, Biological therapeutic, Parenteral formulation unspecified
<b>Last Change Date</b>	09-Apr-2014

[Return to Table of Contents](#)

**Px-533**

<b>Drug Name</b>	Px-533
<b>Key Synonyms</b>	
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	National Institutes of Health, Pfenex Inc, Science Applications International Corp
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Plasmodium falciparum infection
<b>Target-based Actions</b>	
<b>Other Actions</b>	Protein subunit vaccine, Antiparasitic
<b>Technologies</b>	Injectable formulation, Biological therapeutic, Parenteral formulation unspecified, Peptide
<b>Last Change Date</b>	04-Dec-2013

**PF-530**

<b>Drug Name</b>	PF-530
<b>Key Synonyms</b>	interferon beta-1b
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Stelis Biopharma Pvt Ltd, Pfenex/Stelis Joint Venture
<b>Inactive Companies</b>	Pfenex Inc
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Multiple sclerosis
<b>Target-based Actions</b>	Interferon receptor modulator, Interferon beta ligand
<b>Other Actions</b>	Immunomodulator
<b>Technologies</b>	Subcutaneous formulation, Biological therapeutic, Protein recombinant, Biosimilar product
<b>Last Change Date</b>	22-Jan-2014

[Return to Table of Contents](#)

### GCSF biosimilar, Pfenex/Ranbaxy

<b>Drug Name</b>	GCSF biosimilar, Pfenex/Ranbaxy
<b>Key Synonyms</b>	
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc, Ranbaxy Laboratories Ltd
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Neutropenia
<b>Target-based Actions</b>	GCSF ligand, GCSF receptor agonist
<b>Other Actions</b>	Hematopoietic stimulant, Neutrophil stimulator
<b>Technologies</b>	Subcutaneous formulation, Intravenous formulation, Infusion, Biological therapeutic, Protein recombinant, Biosimilar product
<b>Last Change Date</b>	04-Dec-2013

### somatropin biosimilar, Pfenex/Ranbaxy

<b>Drug Name</b>	somatropin biosimilar, Pfenex/Ranbaxy
<b>Key Synonyms</b>	somatropin
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Ranbaxy Laboratories Ltd, Pfenex Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Growth hormone deficiency
<b>Target-based Actions</b>	Growth hormone ligand
<b>Other Actions</b>	
<b>Technologies</b>	Biological therapeutic, Parenteral formulation unspecified, Protein recombinant, Biosimilar product
<b>Last Change Date</b>	04-Dec-2013

[Return to Table of Contents](#)

## PRIMALVAC

<b>Drug Name</b>	PRIMALVAC
<b>Key Synonyms</b>	
<b>Originator Company</b>	European Vaccine Initiative
<b>Active Companies</b>	INSERM, European Vaccine Initiative, Pfenex Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Plasmodium infection
<b>Target-based Actions</b>	
<b>Other Actions</b>	Protein subunit vaccine, Prophylactic vaccine
<b>Technologies</b>	Biological therapeutic, Protein recombinant
<b>Last Change Date</b>	06-Feb-2013

## abciximab biosimilar, Pfenex

<b>Drug Name</b>	abciximab biosimilar, Pfenex
<b>Key Synonyms</b>	abciximab
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Coronary thrombosis
<b>Target-based Actions</b>	GP IIb IIIa antagonist
<b>Other Actions</b>	Platelet aggregation inhibitor
<b>Technologies</b>	Chimeric monoclonal antibody, Antibody fragment, Intravenous formulation, Infusion, Biological therapeutic, Protein recombinant, Biosimilar product
<b>Last Change Date</b>	28-Feb-2013

[Return to Table of Contents](#)

## influenza vaccine, Pfenex

<b>Drug Name</b>	influenza vaccine, Pfenex
<b>Key Synonyms</b>	
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Influenza virus infection
<b>Target-based Actions</b>	
<b>Other Actions</b>	Unspecified vaccine
<b>Technologies</b>	Biological therapeutic
<b>Last Change Date</b>	08-Mar-2013

## PF-688

<b>Drug Name</b>	PF-688
<b>Key Synonyms</b>	certolizumab pegol
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Inflammatory disease
<b>Target-based Actions</b>	TNF antagonist, TNF alpha ligand inhibitor
<b>Other Actions</b>	Anti-inflammatory, TNF binding agent
<b>Technologies</b>	Monoclonal antibody humanized, Antibody fragment, PEGylated formulation, Injectable formulation, Biological therapeutic, Parenteral formulation unspecified, Protein recombinant, Biosimilar product
<b>Last Change Date</b>	04-Dec-2013

[Return to Table of Contents](#)

### cancer therapeutic, Pfenex

<b>Drug Name</b>	cancer therapeutic, Pfenex
<b>Key Synonyms</b>	
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Cancer
<b>Target-based Actions</b>	
<b>Other Actions</b>	Anticancer
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	08-Mar-2013

### IFN alpha 2b biosimilar, Pfenex

<b>Drug Name</b>	IFN alpha 2b biosimilar, Pfenex
<b>Key Synonyms</b>	interferon alfa-2b
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Inflammatory disease
<b>Target-based Actions</b>	Interferon alpha 2 ligand modulator
<b>Other Actions</b>	Anti-inflammatory
<b>Technologies</b>	Biological therapeutic, Protein recombinant, Biosimilar product
<b>Last Change Date</b>	24-Jul-2014

[Return to Table of Contents](#)



## rPA vaccine (solid, anthrax), Pfenex / Glide

<b>Drug Name</b>	rPA vaccine (solid, anthrax), Pfenex / Glide
<b>Key Synonyms</b>	
<b>Originator Company</b>	Pfenex Inc
<b>Active Companies</b>	Pfenex Inc, Glide Pharma
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Bacillus anthracis infection
<b>Target-based Actions</b>	
<b>Other Actions</b>	Recombinant bacterial vector vaccine, Antibacterial
<b>Technologies</b>	Antigen, Biological therapeutic, Parenteral formulation unspecified, Formulation solid
<b>Last Change Date</b>	01-May-2013

[Return to Table of Contents](#)

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[Return to Table of Contents](#)

