

# Trevena Inc

## **COMPANY AND PIPELINE OVERVIEW REPORT**

Coverage of the company and a summary of the drug pipeline portfolio.

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## ABOUT COMPANY AND PIPELINE OVERVIEW REPORT

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### **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i.e. where the development status for the drug(s) is one of the following: No Development Reported, Discontinued, or Withdrawn.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.

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## Trevena Inc

#### **COMPANY OVERVIEW**

Company Name	Trevena Inc
Parent Company Name	Trevena Inc
Website	http://www.trevenainc.com/
Country	US
Number of Drugs in Active Development	7
Number of Inactive Drugs	2
Number of Patents as Owner	3
Number of Patents as Third Party	0
Number of Deals	6
Key Indications	Pain, Cardiac failure, Inflammatory disease, Major depressive disorder, Neuropathic pain, Overactive bladder, Parkinsons disease, Angina, Aortic aneurysm, Congestive heart failure, Hypertension, Ileus, Intestine disease, Myocardial disease, Myocardial infarction, Myocarditis, Pre-eclampsia, Respiratory depression, Retinopathy, Viral
Key Target-based Actions	Opioid receptor mu agonist,Beta-arrestin inhibitor,Opioid receptor delta agonist,Opioid receptor kappa agonist,Unspecified GPCR modulator,Angiotensin II AT-1 receptor modulator,Beta-arrestin stimulator,Opioid receptor delta modulator,Opioid receptor kappa modulator,Opioid receptor modulator
Key Technologies	Small molecule therapeutic,Intravenous formulation,Oral formulation,Peptide,Peptidomimetic

#### **COMPANY PROFILE**

### **SUMMARY**

Trevena is a drug discovery company focused on the development of G-protein coupled receptor-targeting pharmaceuticals.

### LICENSING AGREEMENTS

In February 2009, Ligand entered into a 2-year agreement with Trevena, to screen Ligand's combinatorial compound library using Trevena's technology for 24 potential targets to develop as G-protein coupled receptor (GPCR) therapeutics. Trevena would be granted exclusive worldwide rights to sublicense active candidates resulting from the collaboration, and Ligand would receive payments based on progression of each chosen target.

#### **EARLY R&D**

In February 2010, the company was investigating three G-protein biased GPCR therapeutics for pain, which were in target validation, hit identification, and lead optimization, respectively.

By March 2008, Trevena had licensed a drug discovery platform from Duke University Medical Center.

### **FINANCIAL**

In July 2010, Trevena completed a \$35 million series B financing.

In March 2008, Trevena raised \$24 million from a series A financing round.

#### **R&D GRANTS**

In November 2009, the National Institutes of Health (NIH) awarded Trevena a \$7.65 million Grand Opportunity (GO) Grant to further fund the company's work to identify and characterize functionally selective biased GPCR ligands.

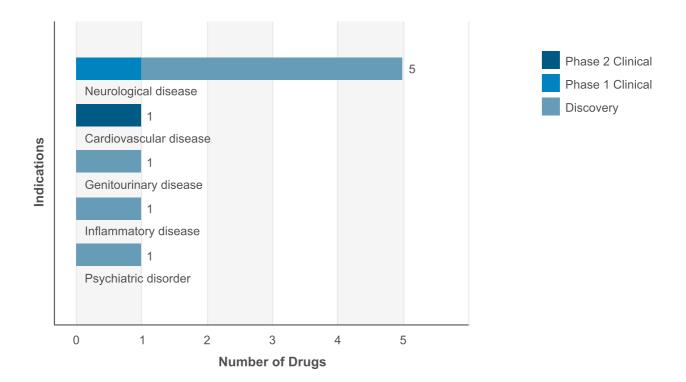


# PRODUCT PORTFOLIO SUMMARY

# **DRUGS**

# Drugs by Indication

Active Drugs by Indication Chart

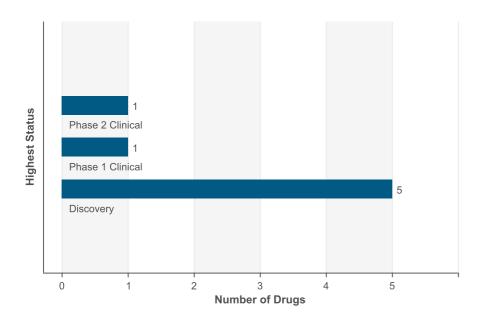


# Drugs by Indication Table

Indication	Active	Inactive	Total
Neurological disease	5	1	6
Psychiatric disorder	1	0	1
Nutritional disorder	0	1	1
Cardiovascular disease	1	0	1
Inflammatory disease	1	0	1
Genitourinary disease	1	0	1

## **Drugs by Highest Status**

Active Drugs by Highest Status Chart



Drugs by Highest Status Table

Development Status	Number of Drugs
Phase 2 Clinical	1
Phase 1 Clinical	1
Discovery	5
No Development Reported	2

## **DEALS**

Deal Type	Prin	cipal	Par	tner	Total
	Active	Inactive	Active	Inactive	
Drug - Funding	2	0	0	0	2
Technology - Asset Divestment	0	0	1	0	1
Drug - Screening/Evaluation	1	0	0	0	1
Drug - Development Services	0	0	1	0	1
Technology - Target Validation	0	0	1	0	1



### **CLINICAL TRIALS**

## Trials by Condition Studied

Condition Studied	Ongoing	All
Cardiovascular disease	0	3

## Trials by Phase

Phase	Ongoing	All
Phase 2	0	1
Phase 1	0	3

### **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	1	0	1
Gastrointestinal disease	1	0	1
Ocular disease	1	0	1
Neurological disease	2	0	2
Respiratory disease	1	0	1
Infectious disease	1	0	1
Gynecology and obstetrics	1	0	1

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

## **PRODUCT PORTFOLIO DRUGS**

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

## **TRV-027**

Drug Name	TRV-027
Key Synonyms	
Originator Company	Ligand Pharmaceuticals Inc
Active Companies	Trevena Inc
Inactive Companies	Ligand Pharmaceuticals Inc
Highest Status	Phase 2 Clinical
Active Indications	Cardiac failure
Target-based Actions	Beta-arrestin stimulator, Angiotensin II AT-1 receptor antagonist
Other Actions	Cardioprotectant
Technologies	Intravenous formulation, Infusion, Small molecule therapeutic
Last Change Date	09-Oct-2012

## **TRV-130**

Drug Name	TRV-130
Key Synonyms	
Originator Company	Trevena Inc
Active Companies	Trevena Inc
Inactive Companies	
Highest Status	Phase 1 Clinical
Active Indications	Pain
Target-based Actions	Beta-arrestin inhibitor, Opioid receptor mu agonist
Other Actions	Analgesic
Technologies	Intravenous formulation, Small molecule therapeutic
Last Change Date	24-Jan-2013

# mu opioid receptor ligands (iv, pain), Trevena

Drug Name	mu opioid receptor ligands (iv, pain), Trevena
Drug Name	The opiole receptor ligarities (iv., pairr), Trevena
Key Synonyms	
Originator Company	Trevena Inc
Active Companies	Trevena Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Pain
Target-based Actions	Opioid receptor mu agonist
Other Actions	Analgesic
Technologies	Intravenous formulation, Small molecule therapeutic
Last Change Date	16-May-2012

## kappa opioid receptor ligands (neuropathic/acute/chronic pain), Trevena

Drug Name	kappa opioid receptor ligands (neuropathic/acute/chronic pain), Trevena
Key Synonyms	
Originator Company	Trevena Inc
Active Companies	Trevena Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Neuropathic pain, Pain
Target-based Actions	Opioid receptor kappa agonist
Other Actions	Analgesic
Technologies	Small molecule therapeutic
Last Change Date	16-May-2012

# antiinflammatory therapeutics, Trevena

Drug Name	antiinflammatory therapeutics, Trevena
Key Synonyms	
Originator Company	Trevena Inc
Active Companies	Trevena Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Inflammatory disease
Target-based Actions	
Other Actions	Anti-inflammatory, Unspecified drug target
Technologies	Small molecule therapeutic
Last Change Date	12-May-2012

## mu opioid receptor ligands (oral, pain), Trevena

Drug Name	mu opioid receptor ligands (oral, pain), Trevena
Key Synonyms	
Originator Company	Trevena Inc
Active Companies	Trevena Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Pain
Target-based Actions	Opioid receptor mu agonist
Other Actions	Analgesic
Technologies	Oral formulation, Small molecule therapeutic
Last Change Date	16-May-2012

# delta opioid receptor ligands (pain/ depression/ Parkinson's disease/overactive bladder), Trevena

Drug Name	delta opioid receptor ligands (pain/ depression/ Parkinson's disease/overactive bladder), Trevena
Key Synonyms	
Originator Company	Trevena Inc
Active Companies	Trevena Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Pain, Major depressive disorder, Parkinsons disease, Overactive bladder
Target-based Actions	Opioid receptor delta agonist
Other Actions	Antiparkinsonian, Antidepressant, Analgesic
Technologies	Small molecule therapeutic
Last Change Date	16-May-2012



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