

## **Fate Therapeutics Inc**

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

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

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i.e. where the development status for the drug(s) is one of the following: No Development Reported, Discontinued, or Withdrawn.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



TABLE OF CONTENTS

Company Overview..... 5

Company Profile..... 6

Subsidiary Companies..... 7

Product Portfolio Summary..... 7

Product Portfolio Drugs..... 11

[Return to Table of Contents](#)

# Fate Therapeutics Inc

## COMPANY OVERVIEW

Company Name	Fate Therapeutics Inc
Parent Company Name	Fate Therapeutics Inc
Website	<a href="http://www.fatetherapeutics.com/">http://www.fatetherapeutics.com/</a>
Country	US
Number of Drugs in Active Development	5
Number of Inactive Drugs	6
Number of Patents as Owner	22
Number of Patents as Third Party	2
Number of Deals	7
Key Indications	Stem cell transplantation, Muscle wasting disease, Hearing loss, Heart disease, Insulin dependent diabetes, Cardiovascular disease, Myocardial infarction, Obesity, Stroke, Alopecia, Bone disease, Bone injury, Osteoarthritis, Osteoporosis, Peripheral vascular disease
Key Target-based Actions	Hedgehog protein stimulator, GLI gene stimulator, Osteocalcin stimulator, Wnt inhibitory factor 1 stimulator, Wnt ligand, Cardiotrophin-1 ligand, POU domain 5 transcription factor 1 stimulator, Wnt 7A ligand, AKT protein kinase stimulator, AMP activated protein kinase stimulator, Acetaldehyde dehydrogenase stimulator, Alk-5 protein kinase inhibitor, B-lymphocyte antigen CD20 stimulator, B-lymphocyte cell adhesion molecule stimulator, BCL2 gene inhibitor, Beta-catenin inhibitor, Bone morphogenetic protein-2 ligand, Bone morphogenetic protein-6 ligand, Brain derived neurotrophic factor ligand, CD29 agonist, CD40 ligand receptor agonist, CELSR2 gene stimulator, CNTF receptor agonist, Cadherin EGF LAG seven pass receptor 2 agonist, Cadherin-1 agonist, Caspase-3 stimulator, Caspase-9 stimulator, Cyclic AMP stimulator, Cytosine deaminase stimulator, FZD7 gene stimulator, Frizzled-7 receptor agonist, Glutathione S-transferase stimulator, Glycogen synthase kinase-3 alpha inhibitor, Glycogen synthase kinase-3 beta inhibitor, Homeobox protein NANOG stimulator, ITGA7 gene stimulator, Insulin receptor substrate-1 stimulator, Integrin alpha-7 agonist, Jun N terminal kinase-1 inhibitor, MEK protein kinase inhibitor, P-Glycoprotein 3 stimulator, Prostaglandin E synthase-1 stimulator, Protein kinase C stimulator, SOX transcription factor 2 stimulator, TGF beta antagonist, WIF1 gene stimulator, WNT7A gene stimulator, Wnt 5A ligand, Wnt inhibitory factor 1 inhibitor, Wnt ligand inhibitor
Key Technologies	Small molecule therapeutic, Haematopoietic stem cell therapy, Allogenic stem cell therapy, Biological therapeutic, Umbilical cord stem cell therapy, Systemic formulation unspecified, Pluripotent stem cell therapy, Adult stem cell therapy, Polynucleotide sequence, Cell culture technique, Peptide

## COMPANY PROFILE

### SUMMARY

Fate Therapeutics Inc, formed in November 2007 by Harvard University, Stanford University, University of Washington, the Scripps Research Institute (TSRI) and the Massachusetts General Hospital, is a biotechnology company that aims to develop small-molecules and biologicals to activate the body's existing stem cells and to create and differentiate induced pluripotent stem (iPS) cells.

### COMPANY LOCATION

By November 2007, Fate had facilities in Seattle and planned to have locations in California and Massachusetts 'soon'.

### ACQUISITIONS AND SPIN-OFFS

In April 2010, Fate entered into a definite agreement to acquire Verio Therapeutics. The acquisition had been approved by the boards of both companies. Under the terms of the agreement, Fate would establish a Canadian subsidiary to

[Return to Table of Contents](#)



continue to work on Verio's programs. At that time, no financial terms had been disclosed.

## LICENSING AGREEMENTS

In July 2009, Fate Therapeutics entered into an agreement with the Regents of the University of California for exclusive intellectual property rights covering osteogenic agents, and small molecule compositions and techniques for inducing bone formation. The patents would be used to augment Fate's stem cell modulators (SCM).

## EARLY R&D/TECHNOLOGY UPDATES

In October 2009, Fate and TSRI announced that they had developed a novel method of generating human induced pluripotent stem cells. The method using a combination of small molecules and was found to improve programming efficiency 200-fold and decrease time spent reprogramming.

In July 2009, preclinical data were presented at the 7th Annual Meeting of the International Society for Stem Cell Research in Barcelona, Spain, showing that Wnt activators induced mesenchymal stem cells to differentiate into mature bone-forming osteoblasts.

By May 2009, Fate was investigating small molecule stem cell modulators (SCM), developed using the company's adult stem cell biology engine and induced pluripotent stem (iPS) cell technology, with broad therapeutic potential in areas including regenerative medicine, hematological diseases, metastatic cancer, traumatic injury and degenerative diseases.

In April 2009, Fate and Stemgent launched the Catalyst program to provide pluripotent stem cell platform for drug discovery and development.

## FINANCIAL

In May 2001, Fate received an equity investment from Takeda Ventures.

In November 2009, the company raised \$30 million in a series B financing round.

## SUBSIDIARY COMPANIES

Names
Verio Therapeutics Inc

[Return to Table of Contents](#)

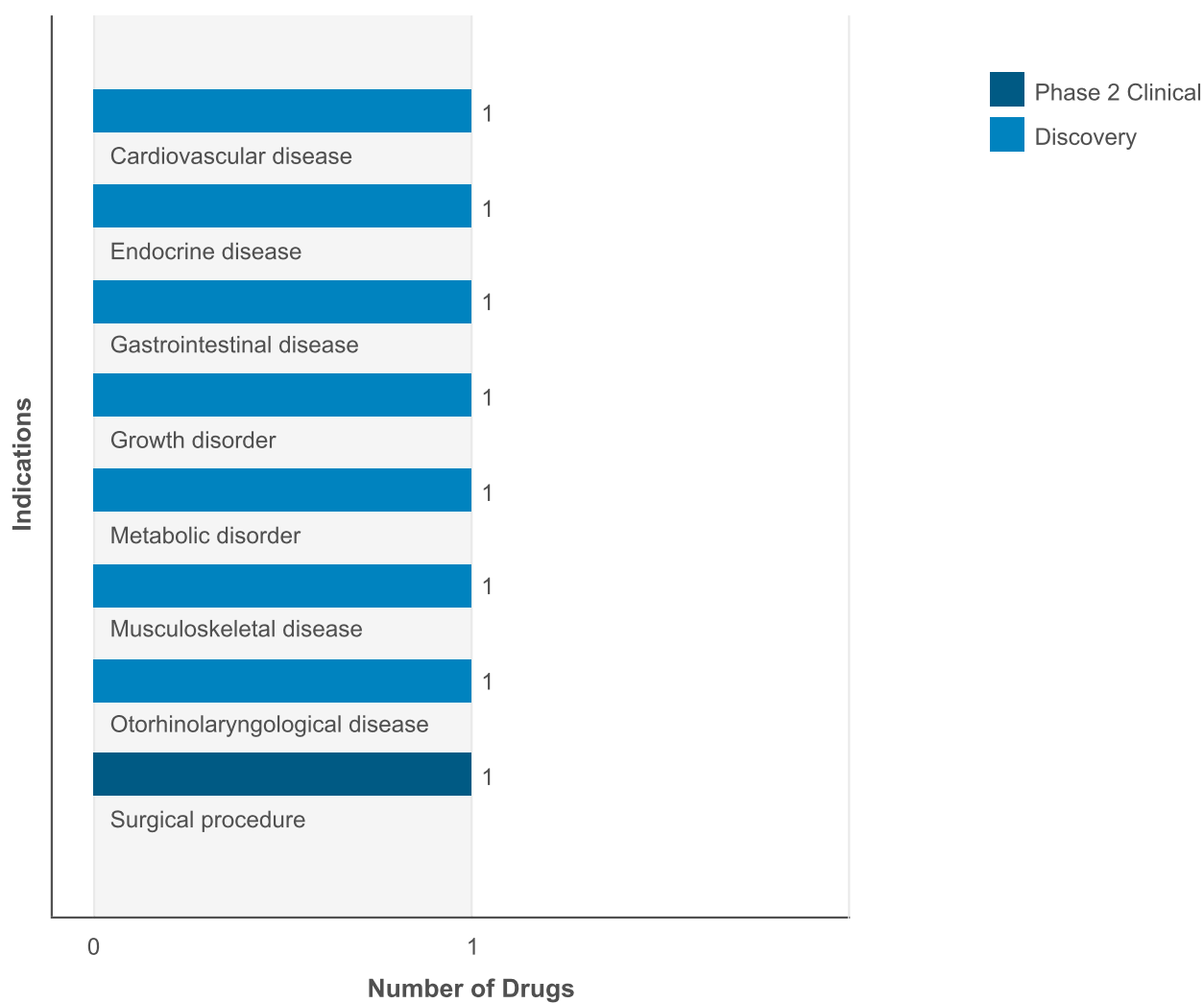


## PRODUCT PORTFOLIO SUMMARY

### DRUGS

#### Drugs by Indication

Active Drugs by Indication Chart



Drugs by Indication Table

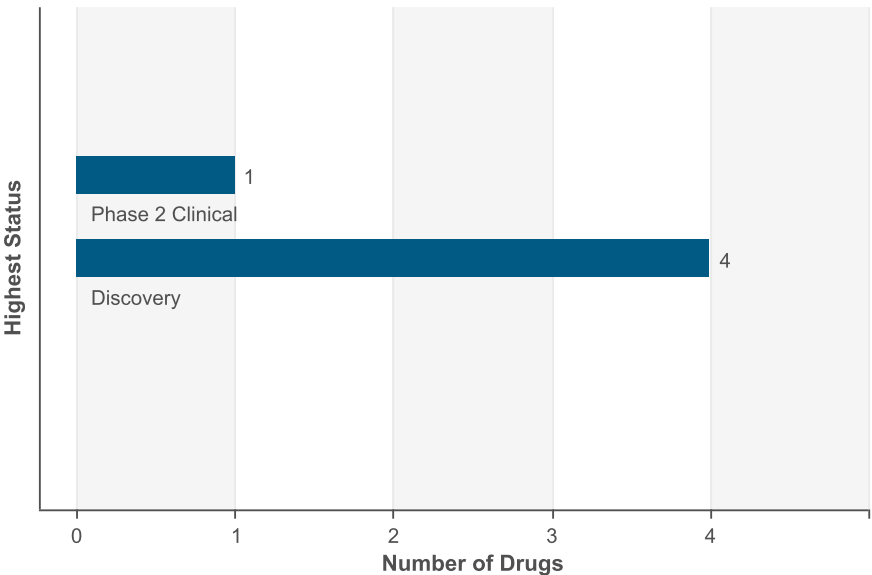
Indication	Active	Inactive	Total
Musculoskeletal disease	1	3	4
Growth disorder	1	1	2
Neurological disease	0	2	2
Surgical procedure	1	1	2
Metabolic disorder	1	0	1

[Return to Table of Contents](#)

Injury	0	1	1
Otorhinolaryngological disease	1	0	1
Neoplasm	0	1	1
Gastrointestinal disease	1	0	1
Endocrine disease	1	0	1
Cardiovascular 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
Discovery	4
Discontinued	1
No Development Reported	5

[Return to Table of Contents](#)



## DEALS

Deal Type	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Patent - Exclusive Rights	0	0	3	0	3
Drug - Funding	1	0	0	0	1
Drug - Development/Commercialization License	1	0	2	0	3

## CLINICAL TRIALS

### Trials by Condition Studied

Condition Studied	Ongoing	All
Hematological disease	1	2
Neoplasm	1	2
Surgical procedure	1	1
Immune disorder	1	1

### Trials by Phase

Phase	Ongoing	All
Phase 2	1	1
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	9	0	9
Endocrine disease	10	0	10
Gastrointestinal disease	4	0	4
Genitourinary disease	2	0	2
Growth disorder	3	1	4

[Return to Table of Contents](#)



Hematological disease	6	0	6
Degeneration	9	0	9
Immune disorder	3	0	3
Musculoskeletal disease	12	1	13
Neoplasm	8	0	8
Ocular disease	1	0	1
Genetic disorder	2	0	2
Metabolic disorder	5	0	5
Mouth disease	1	0	1
Neurological disease	11	1	12
Nutritional disorder	6	1	7
Respiratory disease	1	0	1
Infectious disease	1	0	1
Injury	7	1	8
Inflammatory disease	7	0	7
Dermatological disease	6	0	6
Surgical procedure	6	1	7

\* 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

### ProHema

<b>Drug Name</b>	ProHema
<b>Key Synonyms</b>	ProHema
<b>Originator Company</b>	Fate Therapeutics Inc
<b>Active Companies</b>	Fate Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Phase 2 Clinical
<b>Active Indications</b>	Stem cell transplantation
<b>Target-based Actions</b>	
<b>Other Actions</b>	Stem cell modulator, Anticancer, Hematopoietic stimulant
<b>Technologies</b>	Systemic formulation unspecified, Biological therapeutic, Allogenic stem cell therapy, Umbilical cord stem cell therapy, Haematopoietic stem cell therapy
<b>Last Change Date</b>	28-Nov-2012

### FT-101

<b>Drug Name</b>	FT-101
<b>Key Synonyms</b>	
<b>Originator Company</b>	Ottawa Hospital Research Institute
<b>Active Companies</b>	Fate Therapeutics Inc
<b>Inactive Companies</b>	Ottawa Hospital Research Institute, Verio Therapeutics Inc
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Heart disease
<b>Target-based Actions</b>	Cardiotrophin-1 ligand
<b>Other Actions</b>	Cardioprotectant, Stem cell stimulator
<b>Technologies</b>	Biological therapeutic, Parenteral formulation unspecified, Protein recombinant
<b>Last Change Date</b>	31-Jan-2013

[Return to Table of Contents](#)

**FT-201**

<b>Drug Name</b>	FT-201
<b>Key Synonyms</b>	
<b>Originator Company</b>	Ottawa Hospital Research Institute
<b>Active Companies</b>	Fate Therapeutics Inc
<b>Inactive Companies</b>	Ottawa Hospital Research Institute, Verio Therapeutics Inc
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Insulin dependent diabetes
<b>Target-based Actions</b>	Periostin stimulator
<b>Other Actions</b>	Hypoglycemic agent, Langerhans islet cell stimulator
<b>Technologies</b>	Biological therapeutic, Parenteral formulation unspecified, Peptide, Protein recombinant
<b>Last Change Date</b>	01-Feb-2013

**FT-301**

<b>Drug Name</b>	FT-301
<b>Key Synonyms</b>	
<b>Originator Company</b>	Ottawa Hospital Research Institute
<b>Active Companies</b>	Fate Therapeutics Inc
<b>Inactive Companies</b>	Ottawa Hospital Research Institute, Verio Therapeutics Inc
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Muscle wasting disease
<b>Target-based Actions</b>	Wnt 7A ligand
<b>Other Actions</b>	Stem cell stimulator
<b>Technologies</b>	Biological therapeutic, Parenteral formulation unspecified, Protein recombinant
<b>Last Change Date</b>	31-Jan-2013

[Return to Table of Contents](#)



stem cell modulator program (hearing restoration), Fate Therapeutics

Drug Name	stem cell modulator program (hearing restoration), Fate Therapeutics
Key Synonyms	
Originator Company	Fate Therapeutics Inc
Active Companies	Fate Therapeutics Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Hearing loss
Target-based Actions	
Other Actions	Stem cell modulator
Technologies	Small molecule therapeutic
Last Change Date	17-Apr-2012

[Return to Table of Contents](#)

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[Return to Table of Contents](#)

