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Intrexon Corp

CORTELLIS COMPANY DETAILED PIPELINE REPORT

A comprehensive coverage of the the company's drug pipeline portfolio including detailed product records.

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ABOUT CORTELLIS COMPANY DETAILED PIPELINE 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i.e. where the development status for the drug(s) is one of the following: No Development Reported, Discontinued, or Withdrawn.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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Intrexon Corp

COMPANY OVERVIEW

Company Name	Intrexon Corp
Parent Company Name	Intrexon Corp
Website	http://www.dna.com/
Country	US
Number of Drugs in Active Development	14
Number of Inactive Drugs	8
Number of Patents as Owner	36
Number of Patents as Third Party	8
Number of Deals	42
Key Indications	Cancer,Melioidosis,Autoimmune disease,Diabetes mellitus,Alzheimers disease,Rheumatoid arthritis,Infectious disease,Lung disease,Melanoma,Peripheral vascular disease
Key Target-based Actions	IL-12 agonist,Alpha 1 antitrypsin stimulator,DDC gene stimulator,IL-12 antagonist,SMN1 gene modulator,TLR4 gene inhibitor,Ecdysone receptor modulator,ATP2A2 gene stimulator,Adiponectin receptor agonist,B-lymphocyte cell adhesion molecule stimulator,Beta defensin stimulator,Beta-galactosidase modulator,Bradykinin B2 receptor antagonist,C-type lectin domain protein 12A stimulator,CD29 modulator,CD34 modulator,CD45 modulator,CD73 modulator,CFTR stimulator,Casein modulator,Cyclooxygenase stimulator,Dipeptidyl peptidase IV inhibitor,Elongation factor 2 inhibitor,Endoglin modulator,Erbb2 tyrosine kinase receptor inhibitor,Erythropoietin ligand,Glucagon-like peptide 1 agonist,Glucagon-like peptide 2 agonist,Hyaluronic acid receptor modulator,IL agonist,IL-10 agonist,IL-2 receptor alpha subunit stimulator,Interferon agonist,Interferon beta ligand,Interleukin-2 ligand,Kallikrein inhibitor,Leptin agonist,Leukocyte antigen MIC3 modulator,Mesothelin stimulator,Monocyte differentiation antigen CD14 modulator,Myelin basic protein stimulator,Nestin modulator,Neural cell adhesion molecule stimulator,Nuclear factor kappa B stimulator,Plasma protease C1 inhibitor inhibitor,RANTES ligand,Sarco endoplasmic calcium ATPase 2 modulator,Selectin modulator,Signal transducer CD24 stimulator,TNF alpha ligand,TNF gene modulator,Thy 1 membrane glycoprotein modulator,Trophoblast glycoprotein stimulator,Vitamin D3 receptor
Key Technologies	Biological therapeutic,Parenteral formulation unspecified,Monoclonal antibody human,Nanoparticle formulation,Cell therapy,Protein recombinant,Autologous stem cell therapy,Intravenous formulation,Mesenchymal stem cell therapy,Peptide

COMPANY PROFILE

SUMMARY

Intrexon Corp (formerly Genomatix) is a privately-held life science company which researches and develops DNA control systems for the delivery, targeting, activation, regulation and location of biotherapeutics. The company changed its corporate name to Intrexon in August 2005.

COMPANY LOCATION

The company has its headquarters in Blacksburg, VA, with additional R&D operations in Valley Forge, PA.

In October 2011, Intrexon launched a cell engineering unit in San Diego, CA.

In February 2011, Intrexon launched its Agricultural Biotechnology Division in Research Triangle Park, North Carolina.

In April 2010, Intrexon relocated its Protein Production Division from San Francisco, CA to Foster City, CA.

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ACQUISITIONS AND SPIN-OFFS

In July 2014, Intrexon entered into a definitive agreement to acquire Trans Ova Genetics. Trans Ova stockholders would receive approximately $60 million in upfront cash, $30 million in Intrexon common stock, and deferred payments of up to $20 million.

In December 2013, Intrexon entered into a definitive agreement to acquire Medistem, for approximately $26 million. Medistem stockholders would receive $0.27 in cash in exchange for each share of Medistem common stock and $1.08 worth of Intrexon common stock, based on the 20-day volume-weighted average price of Intrexon's common stock immediately prior to closing. The acquisition was subject to Intrexon's satisfactory completion of its due diligence of Medistem and its technology, customary closing conditions and Medistem stockholder approval. In March 2014, the acquisition was completed.

In October 2012, Intrexon entered into a definitive agreement to acquire an approximately 48% interest in Aqua Bounty Technologies by purchasing 48,631,444 shares for $6 million in cash. Following the close of the transaction, Intrexon would be required to commence a tender offer for any and all of the other outstanding shares of Aqua Bounty. In January 2013, Intrexon chose not to extend the tender offer to acquire outstanding shares in Aqua Bounty.

In October 2011, Intrexon acquired Immunologix, a company focused on the production of fully human monoclonal antibodies.

In October 2011, Intrexon announced the acquisition of GT Life Sciences, and the purchase of assets comprising the LEAP cell-processing platform from Cyntellect. Terms of the transactions were not disclosed.

In April 2011, the company acquired Neugenesis.

In February 2011, Intrexon acquired Agarigen a company which developed a mushroom-based expression platform for rapid, high-yield production of recombinant proteins.

In September 2009, Intrexon acquired certain assets and operations from Clinical Data's subsidiary Avalon Pharmaceutical, including a bioassay facility in Germantown, MD, for $1.5 million in cash.

In December 2006, RheoGene and Intrexon agreed to merge. The combined company, Intrexon Corp, would be based in Blacksburg, VA, and the UPMC would have an ownership stake in the new company.

FINANCIAL

In July 2013, Intrexon filed a registration statement with the SEC for an IPO of its common stock. In August 2013, the company priced its IPO of 9,999,999 common stock shares at $16 each. The underwriters were also granted a 30-day option to buy additional 1,499,999 common stock shares. At that time, trading of shares, under the symbol 'XON' on the New York Stock Exchange was expected to begin on August 8, 2013; later that month, the IPO was closed and a total of 11,499,998 common stock shares were issued, including the complete exercise of the underwriter's over-allotment option. By September 2013, the company raised a total net proceeds of approximately $168.3 million by the closing of the offering including the complete exercise of the underwriter's over-allotment option.

In May 2013, the company raised $150 million from a series F preferred investment round.

In May 2011, Intrexon raised $100 million from a series E preferred financing round.

In May 2008, Intrexon raised $25 million from a series C-2 financing. In June 2009, the company raised an additional $10 million from the series C-2 financing round.

In May 2007, Intrexon raised $25 million from a series C financing round.

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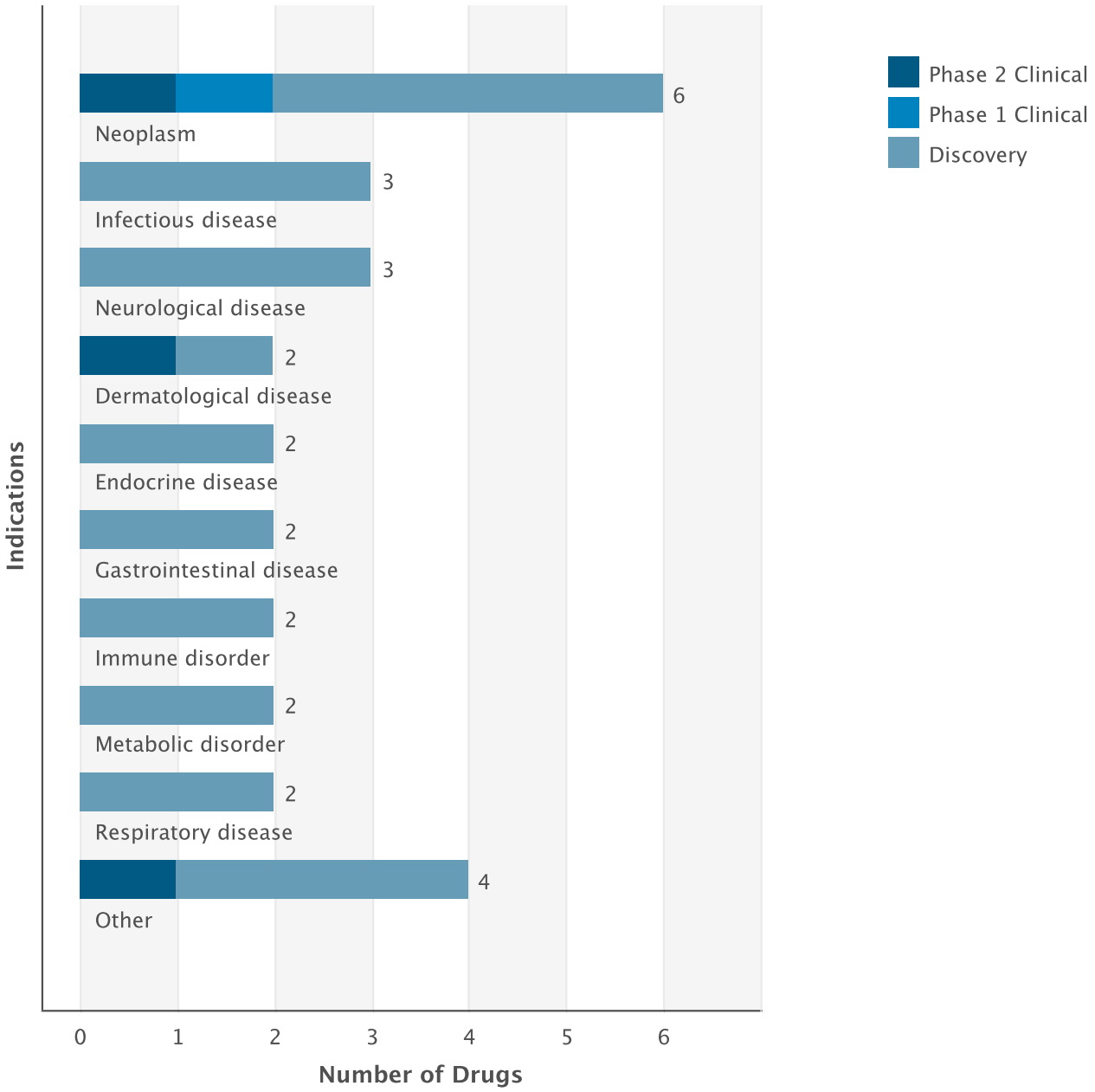
PRODUCT PORTFOLIO SUMMARY

DRUGS

Drugs by Indication

Active Drugs by Indication Chart



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Drugs by Indication Table

Indication	Active	Inactive	Total
Neoplasm	6	2	8
Infectious disease	3	4	7
Respiratory disease	2	3	5
Neurological disease	3	1	4
Immune disorder	2	0	2
Gastrointestinal disease	2	0	2
Endocrine disease	2	0	2
Dermatological disease	2	0	2
Metabolic disorder	2	0	2
Genitourinary disease	1	1	2
Cardiovascular disease	1	0	1
Andrology	0	1	1
Growth disorder	1	0	1
Injury	0	1	1
Degeneration	1	0	1
Inflammatory disease	1	0	1
Musculoskeletal disease	1	0	1

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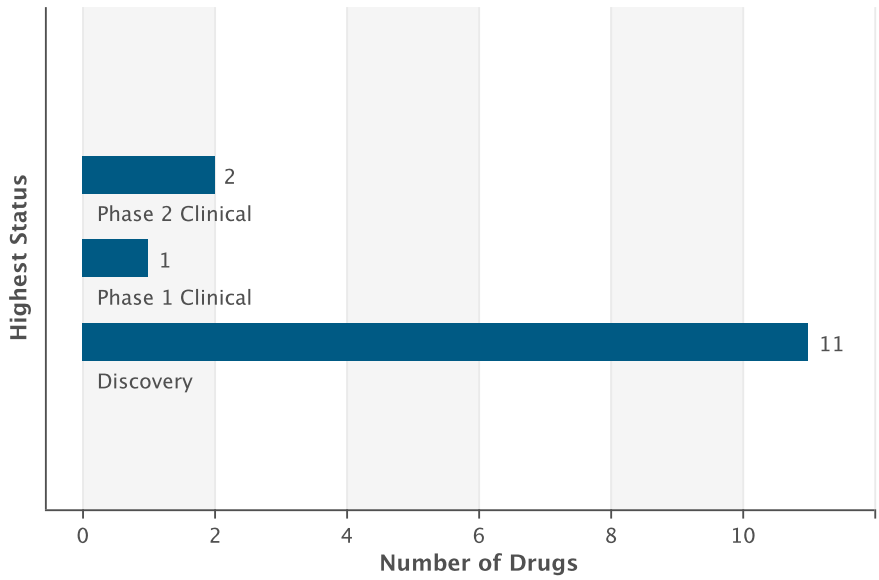
Drugs by Highest Status

Active Drugs by Highest Status Chart



Drugs by Highest Status Table

Development Status	Number of Drugs
Phase 2 Clinical	2
Phase 1 Clinical	1
Discovery	11
No Development Reported	8

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DEALS

Deal Type	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Patent - Exclusive Rights	2	0	1	0	3
Drug - Early Research/Development	3	0	4	0	7
Drug - Development/Commercialization License	2	0	0	0	2
Technology - Delivery/Formulation	0	0	2	0	2
Technology - Target Validation	2	0	0	0	2
Drug - Funding	2	0	0	0	2
Drug - Development Services	1	0	3	0	4
Drug - Screening/Evaluation	1	0	0	0	1
Patent - Non-Exclusive Rights	1	0	0	0	1
Technology - Other Proprietary	14	0	2	0	16
Drug - Commercialization License	1	0	0	0	1

CLINICAL TRIALS

Trials by Condition Studied

Condition Studied	Ongoing	All
Cardiovascular disease	0	2
Neoplasm	0	1

Trials by Phase

Phase	Ongoing	All
Phase 2	0	1
Phase 1	0	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

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PATENTS *

Indication	As Owner	As Third Party	Total
Cardiovascular disease	16	3	19
Endocrine disease	7	2	9
Gastrointestinal disease	7	2	9
Genitourinary disease	5	0	5
Growth disorder	0	1	1
Hematological disease	2	1	3
Degeneration	2	3	5
Andrology	2	0	2
Immune disorder	10	3	13
Psychiatric disorder	2	0	2
Musculoskeletal disease	5	2	7
Neoplasm	18	3	21
Ocular disease	2	0	2
Genetic disorder	5	0	5
Metabolic disorder	8	2	10
Neurological disease	11	3	14
Nutritional disorder	1	0	1
Respiratory disease	7	1	8
Infectious disease	5	0	5
Injury	4	0	4
Toxicity and intoxication	1	0	1
Unidentified indication	3	0	3
Inflammatory disease	8	1	9
Gynecology and obstetrics	1	0	1
Dermatological disease	6	2	8

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Surgical procedure	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.

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PRODUCT PORTFOLIO DRUG PIPELINE DETAIL

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

SGX-94

SGX-94 SNAPSHOT

Drug Name	SGX-94
Key Synonyms	
Originator Company	University of British Columbia
Active Companies	SciClone Pharmaceuticals Inc;Soligenix Inc;Intrexon Corp
Inactive Companies	University of British Columbia
Highest Status	Phase 2 Clinical
Active Indications	Radiation sickness;Oral mucositis;Melioidosis
Target-based Actions	Sequestosome 1 inhibitor
Other Actions	Antibacterial;Anti-inflammatory
Technologies	Systemic formulation unspecified;Biological therapeutic;Peptide
Last Change Date	17-Jun-2014

SGX-94 DEVELOPMENT PROFILE

SUMMARY

Soligenix, from an asset acquisition from University of British Columbia, is developing the active ingredient SGX-94 (structure shown), a short synthetic peptide innate defense regulator that binds to regulatory protein p62 (sequestosome-1), for the potential treatment of oral mucositis (as SGX-942) .

In December 2013, a phase II trial for oral mucositis was initiated in the US.

Soligenix is also investigating SGX-94, in collaboration with Intrexon, for melioidosis (as SGX-943), and investigating the compound for acute radiation syndrome ,. In February 2014, further preclinical trials in melioidosis were planned

SGX-94 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Soligenix Inc	Oral mucositis	US	Phase 2 Clinical	05-Dec-2013
Intrexon Corp	Melioidosis	US	Discovery	01-May-2013

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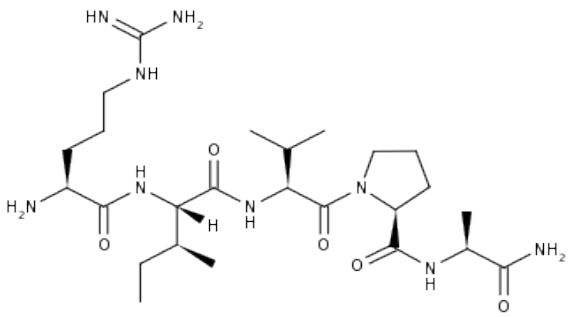
Company	Indication	Country	Development Status	Date
SciClone Pharmaceuticals Inc	Oral mucositis	China	Discovery	08-Jul-2013
Soligenix Inc	Melioidosis	US	Discovery	18-Dec-2012
Soligenix Inc	Radiation sickness	US	Discovery	27-Mar-2013
University of British Columbia	Melioidosis	Canada	Discontinued	18-Dec-2012
University of British Columbia	Oral mucositis	Canada	Discontinued	18-Dec-2012

SGX-94 CHEMICAL STRUCTURES

CAS Registry Number:	Confidence Level:
	4



Name	Type
SGX-94	Research Code

SGX-94 DRUG NAMES

Names	Type
SGX-943	Research Code
SGX-942	
SGX-94	Research Code

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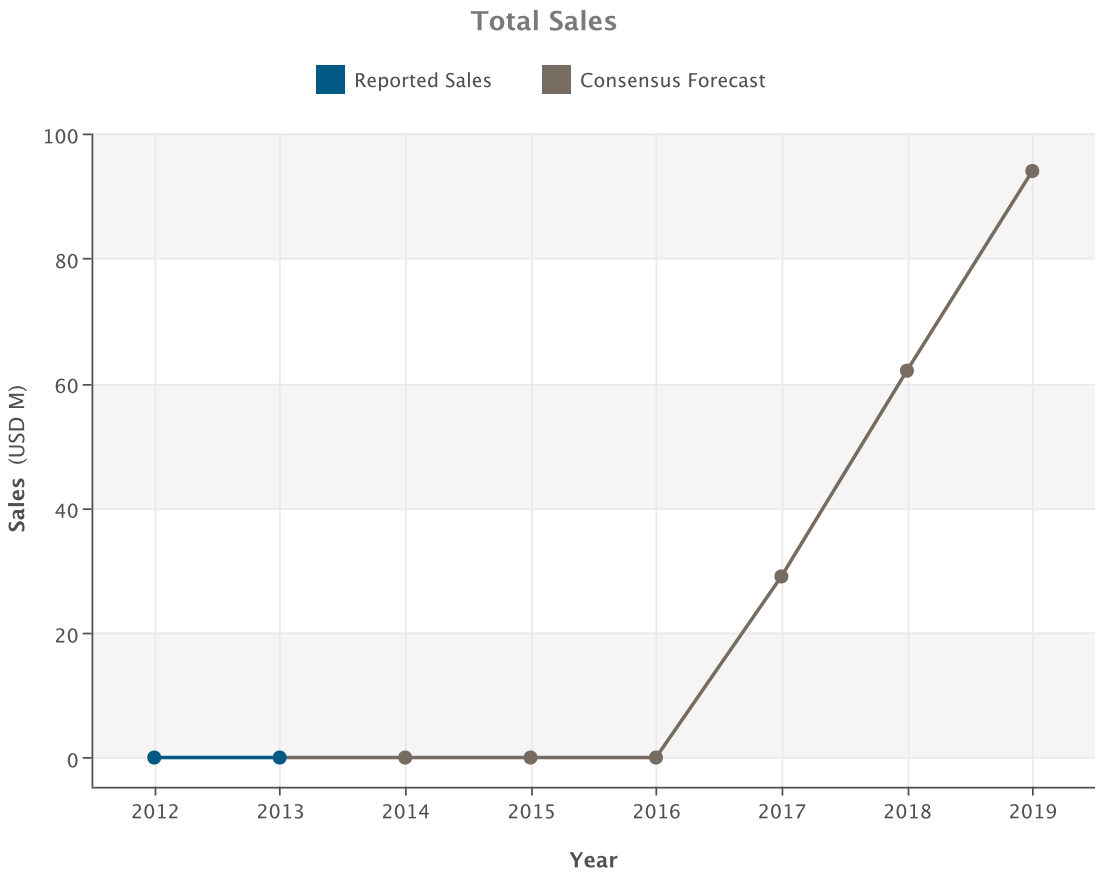
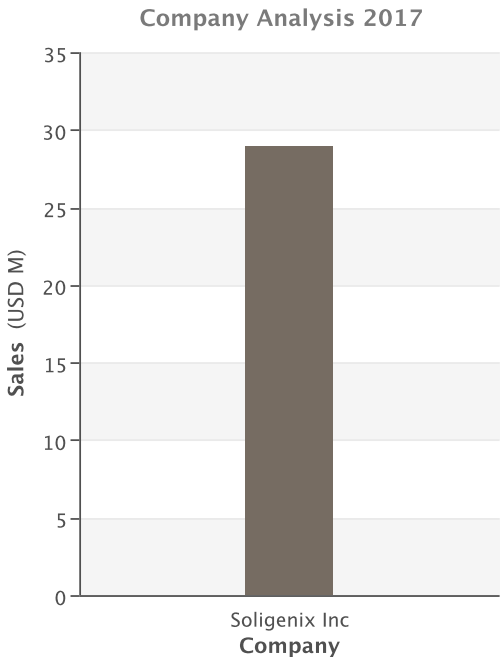
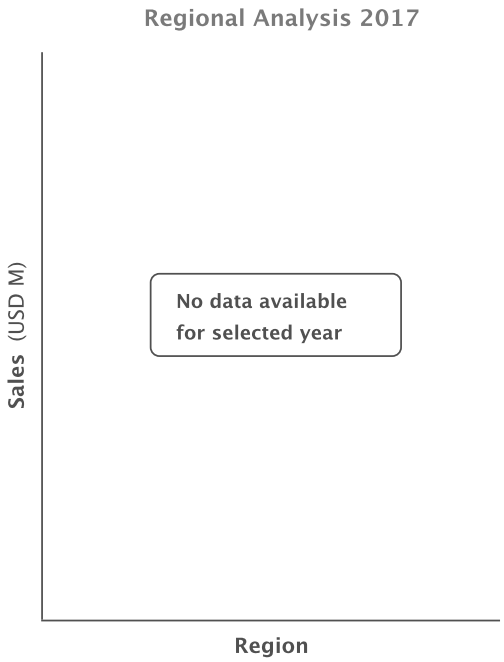
SGX-94 SALES AND FORECASTS

CHARTS







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COMMENTARY

CONSENSUS SALES INFORMATION

Consensus forecast data for Soligenix are presented. No Consensus forecast data for SciClone Pharmaceuticals are currently available.

REGIONAL DEVELOPMENT AND MARKETING RIGHTS

In December 2012, Soligenix acquired all rights of University of British Columbia's for the development of SGX-94 [1351218].

In July 2013, SciClone Pharmaceuticals agreed to commercialize SGX-942 in China, including Hong Kong and Macau, for oral mucositis, and in return Soligenix would receive access to SciClone's oral mucositis clinical and regulatory data library [1449437].

SGX-94 CLINICAL TRIALS

Trials by Phase and Condition Studied

Phase 4 Clinical		Phase 3 Clinical		Phase 2 Clinical		Phase 1 Clinical		Phase Unspecified		Total	
On-going	All	On-going	All	On-going	All	On-going	All	On-going	All	On-going	All
Oral mucositis											
0	0	0	0	1	1	0	0	0	0	1	1

Total Trials by Phase and Status

Phase 4 Clinical		Phase 3 Clinical		Phase 2 Clinical		Phase 1 Clinical		Phase Unspecified		Total	
On-going	All	On-going	All	On-going	All	On-going	All	On-going	All	On-going	All
Total by Phase and Status											
0	0	0	0	1	1	0	0	0	0	1	1

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

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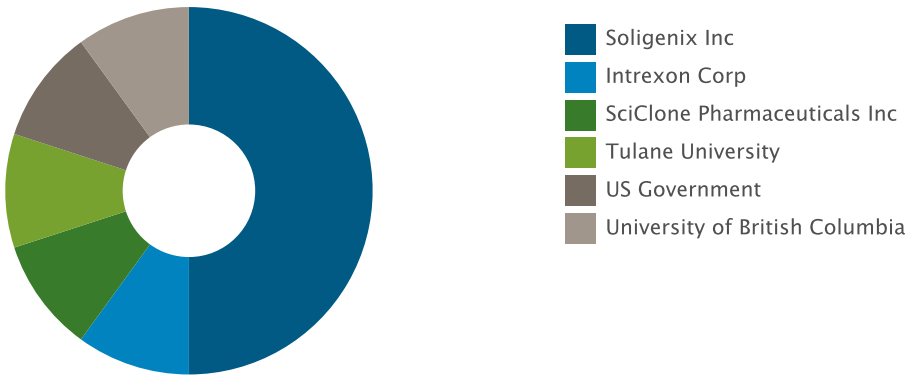
SGX-94 DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Active Deals
Total: 5

Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Soligenix Inc	2	0	3	0	5
SciClone Pharmaceuticals Inc	0	0	1	0	1
Tulane University	1	0	0	0	1
Intrexon Corp	1	0	0	0	1
US Government	0	0	1	0	1
University of British Columbia	1	0	0	0	1

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Deals by Type Chart

Deals by Type Table

Deal Type	Active	Inactive	Total
Drug - Development Services	1	0	1
Drug - Funding	1	0	1
Drug - Asset Divestment	1	0	1
Drug - Commercialization License	1	0	1
Technology - Other Proprietary	1	0	1

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ERC-124

ERC-124 SNAPSHOT

Drug Name	ERC-124
Key Synonyms	
Originator Company	Medistem Inc
Active Companies	ERCell LLC;Medistem Inc
Inactive Companies	
Highest Status	Phase 2 Clinical
Active Indications	Renal failure;Cardiac failure;Neurodegenerative disease;Peripheral vascular disease;Lung disease
Target-based Actions	
Other Actions	Angiogenesis stimulator;IL-4 release stimulator;Interferon gamma receptor antagonist;Cardioprotectant;Hypoglycemic agent
Technologies	Intravenous formulation;Intramuscular formulation;Biological therapeutic;Allogenic stem cell therapy;Mesenchymal stem cell therapy
Last Change Date	10-Mar-2014

ERC-124 DEVELOPMENT PROFILE

SUMMARY

Medistem (a wholly owned subsidiary of Intrexon), and Russian licensee ERCell, are developing ERC-124, an endometrial regenerative cell therapy (ERCs, including ERC-142), derived from allogeneic, unrelated, intramuscularly derived menstrual mesenchymal stem cells, that inhibit production of IFN-gamma and augment production of IL-4, for the potential treatment of heart failure and peripheral vascular disease in patients with critical limb ischemia. The companies are also investigating the use of the stem cells in patients with neurodegenerative diseases, renal and lung failure, and type I diabetes ,,,. By May 2011, ERCs had been administered to a heart failure patient ; in January 2012, a larger heart failure trial began . In March 2012, Medistem and ERCell signed a letter of intent to add trials in kidney and lung failure. In July 2012, a trial in critical limb ischemia began in China; in January 2013, Medistem was planning to initiate the trial in the US in 2013. In August 2013, the company planned to complete a preclinical study in the US in first half of 2014 and to file an IND for type I diabetes. In November 2013, the company planned to file an IND with the FDA for congestive heart failure (CHF) . In December 2010, the company was seeking to outlicense the drug for multiple sclerosis, heart failure, Duchenne muscular dystrophy and spinal cord injury.

ERC-124 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
ERCell LLC	Cardiac failure	Russian Federation	Phase 2 Clinical	23-Jan-2012
Medistem Inc	Cardiac failure	US	Phase 2 Clinical	11-May-2011
Medistem Inc	Peripheral vascular disease	China	Phase 2 Clinical	16-Jul-2012

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Company	Indication	Country	Development Status	Date
ERCell LLC	Lung disease	Russian Federation	Discovery	21-Mar-2012
ERCell LLC	Renal failure	Russian Federation	Discovery	21-Mar-2012
Medistem Inc	Lung disease	Russian Federation	Discovery	21-Mar-2012
Medistem Inc	Neurodegenerative disease	US	Discovery	16-Aug-2013
Medistem Inc	Renal failure	Russian Federation	Discovery	21-Mar-2012

ERC-124 DRUG NAMES

Names	Type
ERC-142	Research Code
endometrial regenerative cells (critical limb ischemia/ heart failure/type 1 diabetes/neurodegeneration), Medistem	
endometrial regenerative cells (critical limb ischemia), Medistem	
endometrial regenerative cells (critical limb ischemia/ heart failure), Medistem	
ERC-124	Research Code

ERC-124 CLINICAL TRIALS

Trials by Phase and Condition Studied

Phase 4 Clinical		Phase 3 Clinical		Phase 2 Clinical		Phase 1 Clinical		Phase Unspecified		Total	
On-going	All	On-going	All	On-going	All	On-going	All	On-going	All	On-going	All
Ischemia											
0	0	0	0	0	0	0	1	0	0	0	1
Congestive heart failure											
0	0	0	0	0	1	0	0	0	0	0	1

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Total Trials by Phase and Status

Phase 4 Clinical		Phase 3 Clinical		Phase 2 Clinical		Phase 1 Clinical		Phase Unspecified		Total	
On-going	All	On-going	All	On-going	All	On-going	All	On-going	All	On-going	All
Total by Phase and Status											
0	0	0	0	0	1	0	1	0	0	0	2

Phase Definitions

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

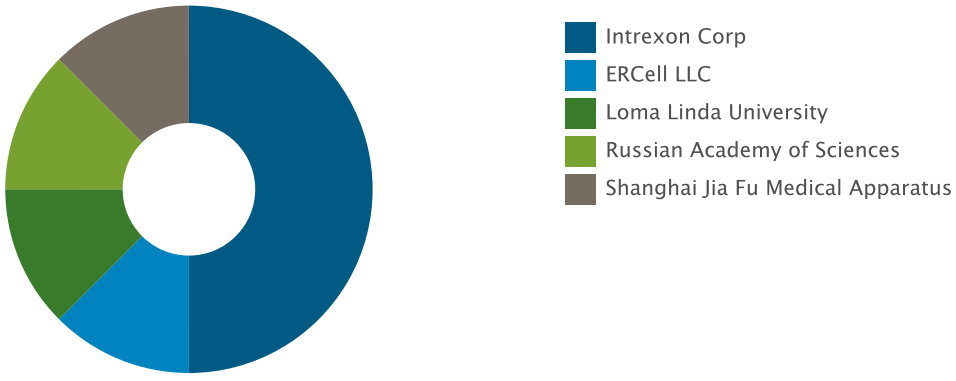
Phase 2 Clinical
Includes Phase 2, Phase 2a, Phase 2b, Phase 1/2 (where enrolment count is 100 or over), Phase 2/3 (where enrolment count is under 300 or not specified)

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

ERC-124 DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Active Deals
Total: 4

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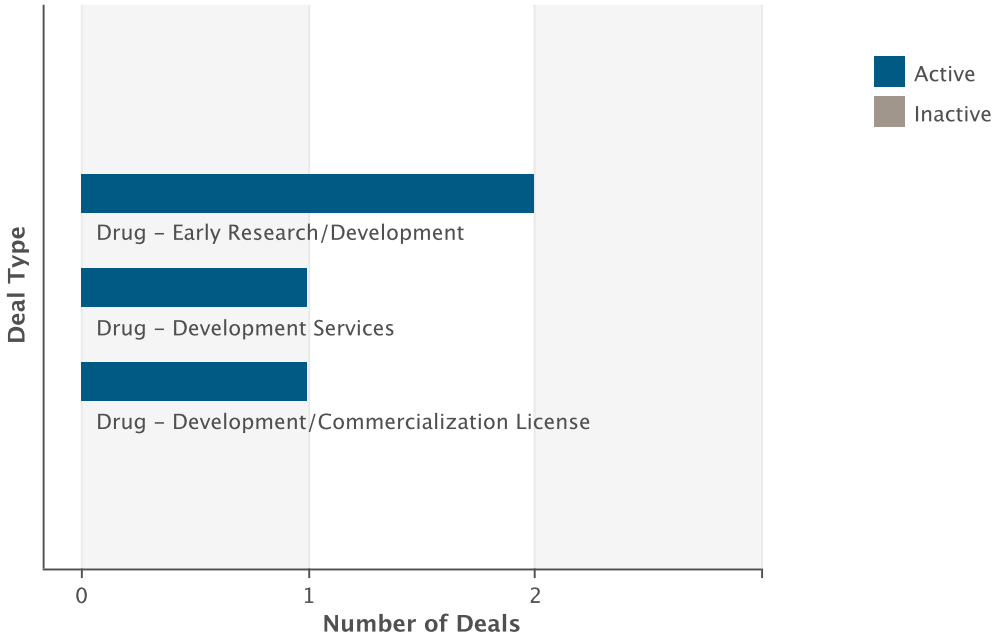
Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Intrexon Corp	1	0	3	0	4
Shanghai Jia Fu Medical Apparatus	1	0	0	0	1
Russian Academy of Sciences	1	0	0	0	1
Loma Linda University	1	0	0	0	1
ERCell LLC	0	0	1	0	1

Deals by Type Chart



Deals by Type Table

Deal Type	Active	Inactive	Total
Drug - Early Research/Development	2	0	2
Drug - Development Services	1	0	1
Drug - Development/Commercialization License	1	0	1

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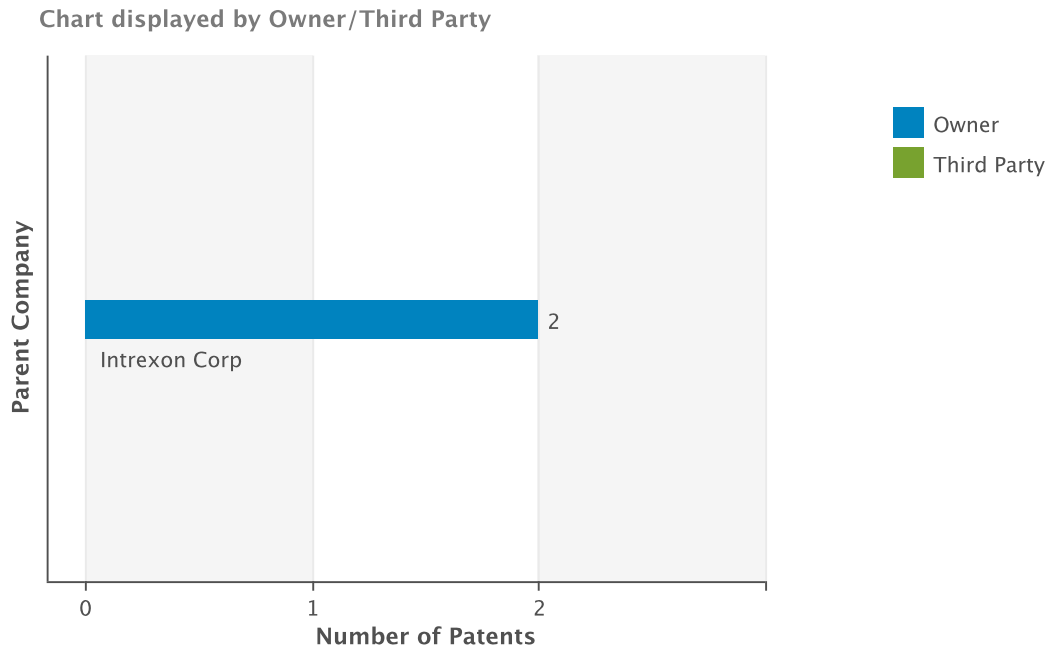
PATENTS

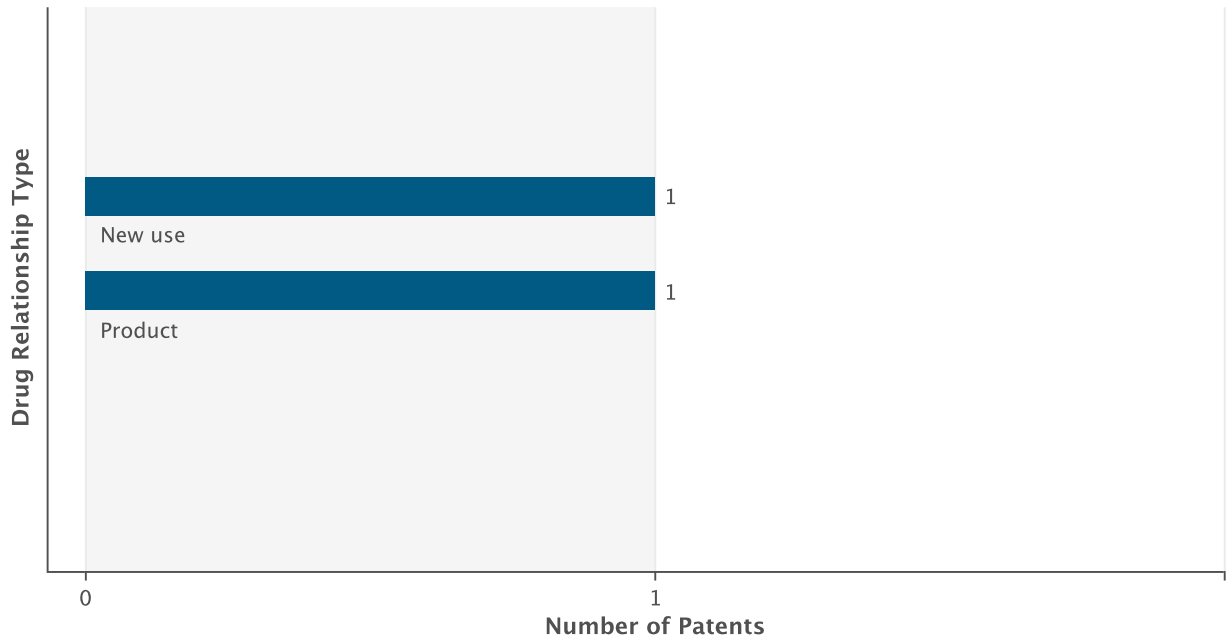
Patents by Parent Company Chart



Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Intrexon Corp	2	0	2

Patents by Drug Relationship Type Chart



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Patents by Drug Relationship Type Table

Drug Relationship	Total
New use	1
Product	1

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Ad-RTS-IL-12

Ad-RTS-IL-12 SNAPSHOT

Drug Name	Ad-RTS-IL-12
Key Synonyms	
Originator Company	ZIOPHARM Oncology Inc
Active Companies	ZIOPHARM Oncology Inc;Intrexon Corp
Inactive Companies	
Highest Status	Phase 2 Clinical
Active Indications	Stage IV melanoma;Stage III melanoma;Glioblastoma;Metastatic breast cancer
Target-based Actions	IL-12 agonist
Other Actions	Anticancer;Immunostimulant;Adenovirus based gene therapy
Technologies	Intratumoral formulation;Oral formulation;Virus recombinant;Biological therapeutic
Last Change Date	23-Jul-2014

Ad-RTS-IL-12 DEVELOPMENT PROFILE

SUMMARY

ZIOPHARM Oncology and Intrexon are developing INXN-2001 plus INXN-1001 combination regimen, comprising intratumorally injected Ad-RTS-IL-12 (ZIN-ATI-001, IL-12 DNA; Ad-RTS-mIL-12), an adenovirus that inducibly expresses human IL-12 (hIL-12) when activated by an oral small-molecule agent (veledimex, INXN-1001, AD-1001), using the Intrexon's RheoSwitch and UltraVector technologies, for the potential treatment of cancer, ,. In October 2012, phase II portion of phase I/II trial was initiated for stage III or IV melanoma. In March 2013, a phase II trial for breast cancer was initiated. In July 2014, these trials were ongoing and there were plans to evaluate the agent in combinations for these indications. In June 2013, a phase I trial in patients with recurring glioblastoma was being planned ; in December 2013, the study was approved. In July 2014, the trial was scheduled to start in the second half of 2014 .

ZIOPHARM and Intrexon are also developing ZIN-CTI-001, INXN-2001 plus INXN-1001 combination regimen, for the potential treatment of solid tumors.

Ad-RTS-IL-12 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Stage III melanoma	US	Phase 2 Clinical	14-Jul-2011
Intrexon Corp	Stage IV melanoma	US	Phase 2 Clinical	14-Jul-2011
ZIOPHARM Oncology Inc	Metastatic breast cancer	US	Phase 2 Clinical	11-Mar-2013

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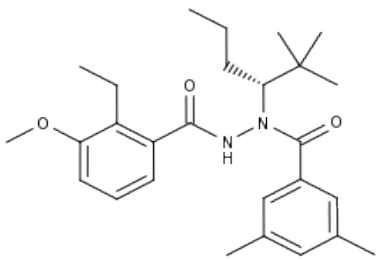
Company	Indication	Country	Development Status	Date
ZIOPHARM Oncology Inc	Stage III melanoma	US	Phase 2 Clinical	14-Jul-2011
ZIOPHARM Oncology Inc	Stage IV melanoma	US	Phase 2 Clinical	14-Jul-2011
ZIOPHARM Oncology Inc	Glioblastoma	US	Discovery	30-Jun-2013

Ad-RTS-IL-12 CHEMICAL STRUCTURES

CAS Registry Number:	Confidence Level:
1093130-72-3	2



Name	Type
veledimex	PINN; USAN

Ad-RTS-IL-12 DRUG NAMES

Names	Type
INXN-2001/AD-1001 regimen	
ZIN-ATI-001	Research Code
IL-12 gene therapy (UltraVector, cancer), Ziopharm/Intrexon	
Ad-RTS-IL-12	Research Code
INXN-2001	Research Code
INXN-2001/INXN-1001 regimen	
IL-12 DNA	
Ad-RTS-mIL-12	Research Code
IL-12 adenoviral gene therapy (intratumoral)/activator small-molecule (oral) (RheoSwitch/UltraVector, cancer), Intrexon/ZIOPHARM	

Ad-RTS-IL-12 CLINICAL TRIALS

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Trials by Phase and Condition Studied

Phase 4 Clinical		Phase 3 Clinical		Phase 2 Clinical		Phase 1 Clinical		Phase Unspecified		Total	
On-going	All	On-going	All	On-going	All	On-going	All	On-going	All	On-going	All
Stage IV melanoma											
0	0	0	0	0	0	0	2	0	0	0	2
Stage III melanoma											
0	0	0	0	0	0	0	2	0	0	0	2
Glioblastoma											
0	0	0	0	0	0	1	1	0	0	1	1
Glioma											
0	0	0	0	0	0	1	1	0	0	1	1

Total Trials by Phase and Status

Phase 4 Clinical		Phase 3 Clinical		Phase 2 Clinical		Phase 1 Clinical		Phase Unspecified		Total	
On-going	All	On-going	All	On-going	All	On-going	All	On-going	All	On-going	All
Total by Phase and Status											
0	0	0	0	0	0	1	3	0	0	1	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

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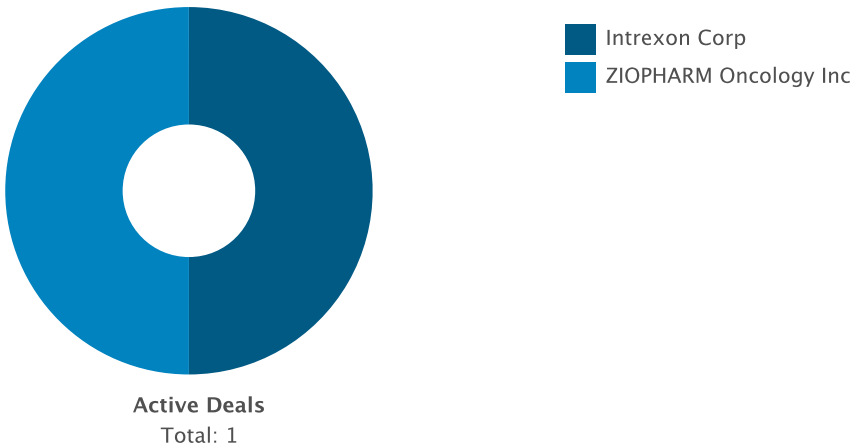
Ad-RTS-IL-12 DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
ZIOPHARM Oncology Inc	0	0	1	0	1
Intrexon Corp	1	0	0	0	1

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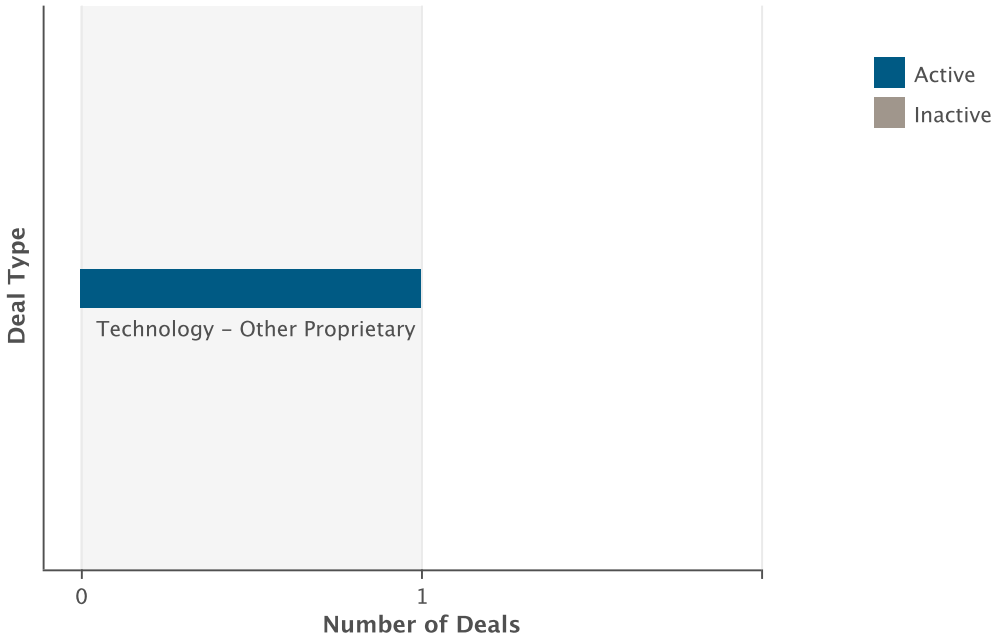
Deals by Type Chart



Deals by Type Table

Deal Type	Active	Inactive	Total
Technology - Other Proprietary	1	0	1

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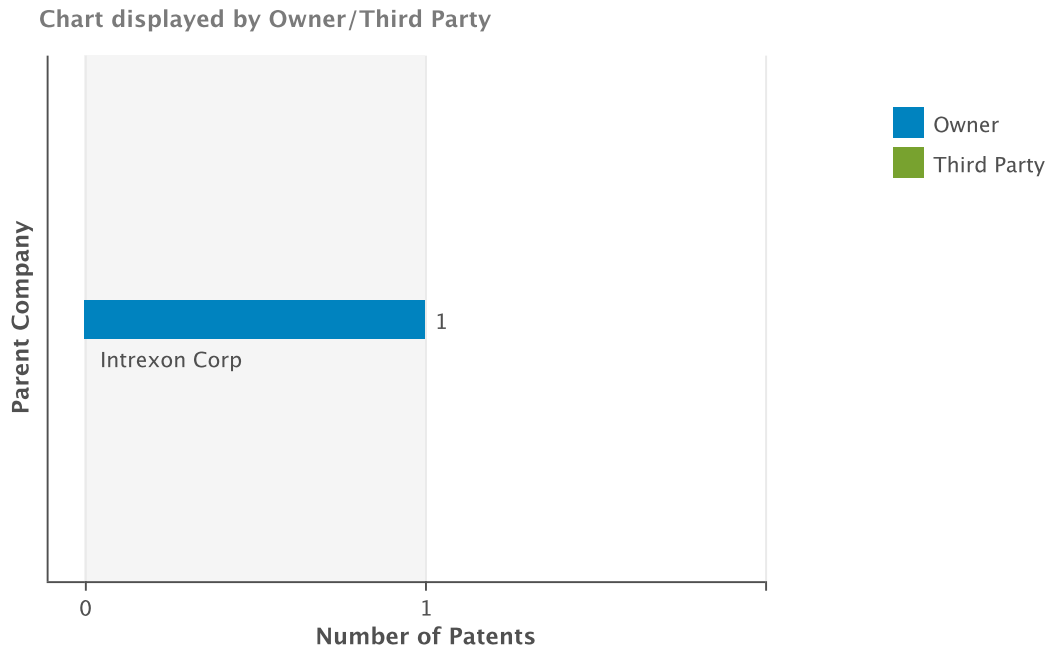
PATENTS

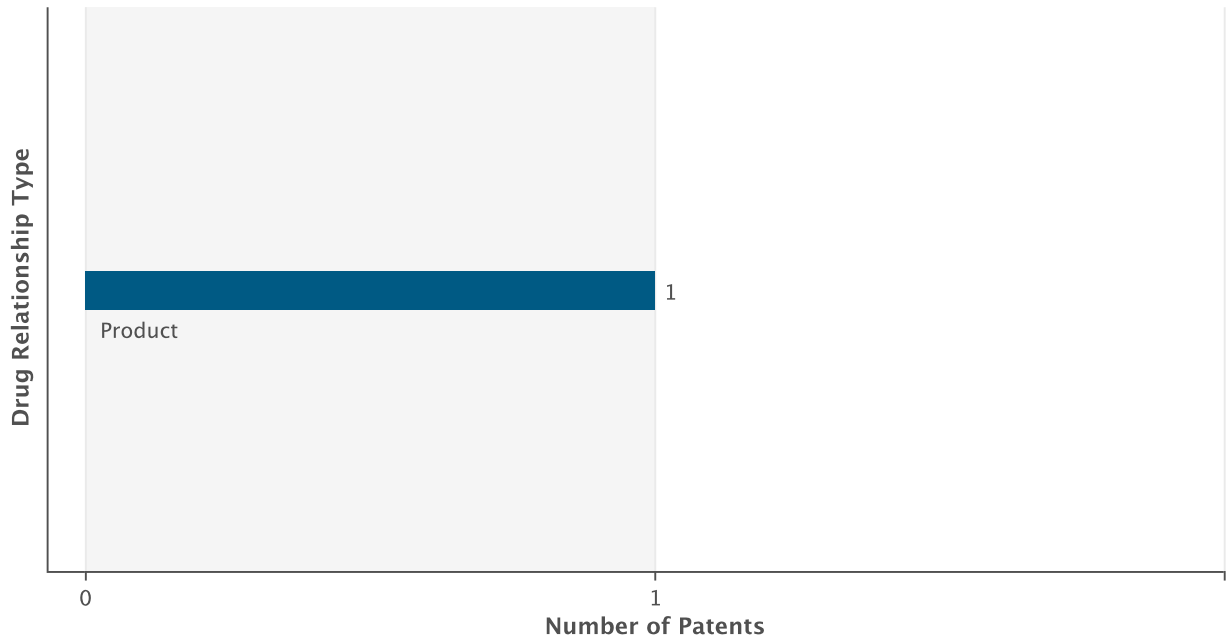
Patents by Parent Company Chart



Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Intrexon Corp	1	0	1

Patents by Drug Relationship Type Chart



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Patents by Drug Relationship Type Table

Drug Relationship	Total
Product	1

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DC-RTS-IL-12

DC-RTS-IL-12 SNAPSHOT

Drug Name	DC-RTS-IL-12
Key Synonyms	
Originator Company	Intrexon Corp
Active Companies	ZIOPHARM Oncology Inc;Intrexon Corp
Inactive Companies	
Highest Status	Phase 1 Clinical
Active Indications	Solid tumor
Target-based Actions	IL-12 agonist
Other Actions	Genetically engineered autologous cell therapy;Anticancer;Immunostimulant
Technologies	Intratumoral formulation;Cell therapy;Oral formulation;Biological therapeutic
Last Change Date	18-Nov-2013

DC-RTS-IL-12 DEVELOPMENT PROFILE

SUMMARY

ZIOPHARM, in collaboration with Intrexon, is developing the INXN-3001 plus INXN-1001 combination regimen, DC-RTS-IL-12 (ZIN-CTI-001), comprising intratumorally injected autologous dendritic cells (INXN-3001, INcell-1001, IL-12 DNA) adenovirally transduced to inducibly express human IL-12 (hIL-12) when activated by an oral small-molecule agent (veledimex, INXN-1001, AD-1001), using the company's RheoSwitch technology, for the potential treatment of solid tumors,. By May 2009, positive data had been obtained from a phase Ia trial of the INXN-1001 component and at that time, phase Ib trial began; in June 2011, data from a phase I trial in stage III/IV melanoma were presented. In May 2012, ZIOPHARM planned to progress the program into phase II development.

DC-RTS-IL-12 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Solid tumor	US	Phase 1 Clinical	11-May-2009
ZIOPHARM Oncology Inc	Solid tumor	US	Phase 1 Clinical	06-Jan-2011

DC-RTS-IL-12 CHEMICAL STRUCTURES

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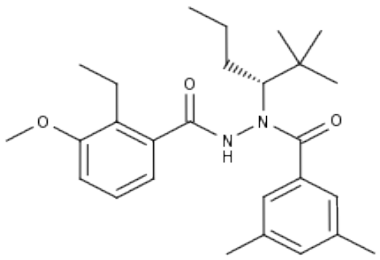
CAS Registry Number:	Confidence Level:
1093130-72-3	2



Name	Type
veledimex	PINN; USAN

DC-RTS-IL-12 DRUG NAMES

Names	Type
AD-1001	Research Code
INcell-1001/AD-1001	Research Code
INXN-3001	Research Code
INXN-1001	Research Code
INcell-1001	Research Code
INXN-3001 + INXN-1001, Intrexon	
DC-RTS-IL-12	Research Code
IL-12 DNA	
human IL-12 (hIL-12)-expressing autologous dendritic cells (adenovirally transduced, intratumorally injected) + activator small-molecule (oral) (solid tumor, RheoSwitch), Intrexon/ZIOPHARM	
ZIN-CTI-001	Research Code
INcell-1001 + AD-1001 (solid tumor, RheoSwitch), Intrexon	

DC-RTS-IL-12 CLINICAL TRIALS

Trials by Phase and Condition Studied

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Phase 4 Clinical		Phase 3 Clinical		Phase 2 Clinical		Phase 1 Clinical		Phase Unspecified		Total	
On-going	All	On-going	All	On-going	All	On-going	All	On-going	All	On-going	All
Solid tumor											
0	0	0	0	0	0	0	1	0	0	0	1
Melanoma											
0	0	0	0	0	0	0	1	0	0	0	1

Total Trials by Phase and Status

Phase 4 Clinical		Phase 3 Clinical		Phase 2 Clinical		Phase 1 Clinical		Phase Unspecified		Total	
On-going	All	On-going	All	On-going	All	On-going	All	On-going	All	On-going	All
Total by Phase and Status											
0	0	0	0	0	0	0	2	0	0	0	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

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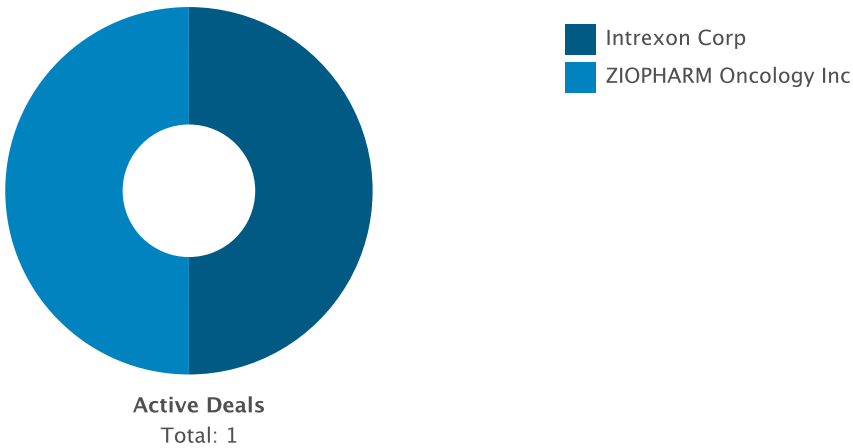
DC-RTS-IL-12 DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Intrexon Corp	1	0	0	0	1
ZIOPHARM Oncology Inc	0	0	1	0	1

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Deals by Type Chart

Deals by Type Table

Deal Type	Active	Inactive	Total
Technology - Other Proprietary	1	0	1

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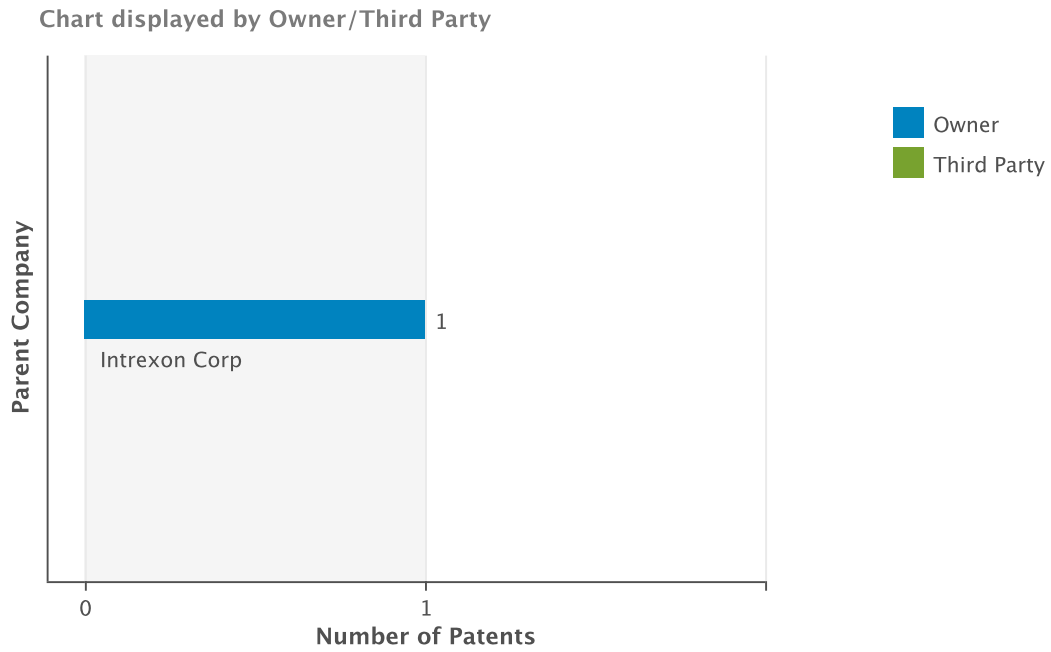
PATENTS

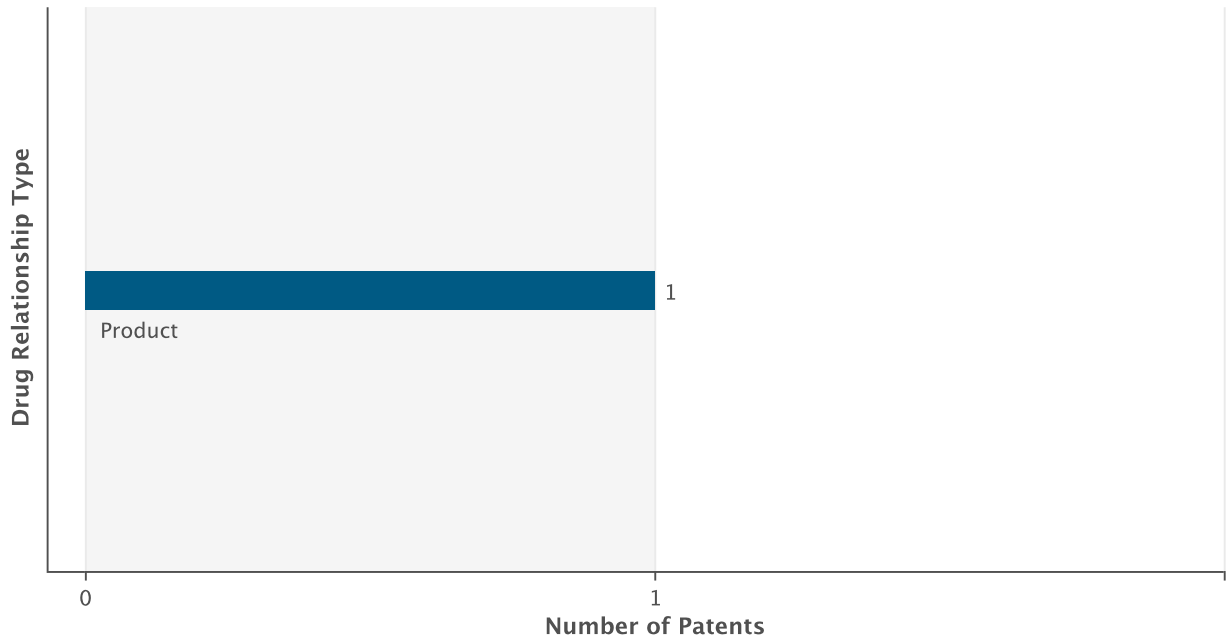
Patents by Parent Company Chart



Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Intrexon Corp	1	0	1

Patents by Drug Relationship Type Chart



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Patents by Drug Relationship Type Table

Drug Relationship	Total
Product	1

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rHuA1AT (sc Enhanze, A1AT deficiency), Intrexon

rHuA1AT (sc Enhanze, A1AT deficiency), Intrexon SNAPSHOT

Drug Name	rHuA1AT (sc Enhanze, A1AT deficiency), Intrexon
Key Synonyms	
Originator Company	Intrexon Corp
Active Companies	Intrexon Corp
Inactive Companies	
Highest Status	Discovery
Active Indications	Respiratory disease;Diabetes mellitus
Target-based Actions	Alpha 1 antitrypsin stimulator
Other Actions	Hypoglycemic agent
Technologies	Subcutaneous formulation;Biological therapeutic;Protein recombinant
Last Change Date	28-Mar-2012

rHuA1AT (sc Enhanze, A1AT deficiency), Intrexon DEVELOPMENT PROFILE

SUMMARY

Intrexon is investigating recombinant human alpha 1-antitrypsin (rHuA1AT), incorporating Halozyme's recombinant human hyaluronidase (rHuPH20)-based Enhanze technology, for the potential subcutaneous injectable treatment of diabetes, and respiratory diseases including cystic fibrosis, pulmonary disease and COPD caused by A1AT deficiency. In June 2011, the program was undergoing the scale-up phase of process development. In February 2012, the drug was listed as being in preclinical development; at that time, the company was seeking to outlicense the drug .

rHuA1AT (sc Enhanze, A1AT deficiency), Intrexon DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Diabetes mellitus	US	Discovery	26-Feb-2012
Intrexon Corp	Respiratory disease	US	Discovery	26-Feb-2012

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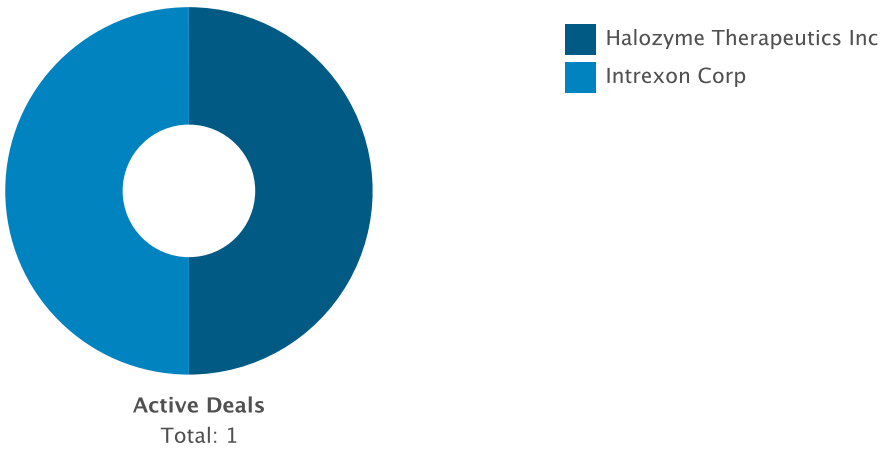
rHuA1AT (sc Enhanze, A1AT deficiency), Intrexon DRUG NAMES

Names	Type
rHuA1AT (sc Enhanze, A1AT deficiency), Intrexon	
ITXN-A1AT	Research Code
recombinant human alpha 1-antitrypsin (sc Enhanze, A1AT deficiency), Intrexon	

rHuA1AT (sc Enhanze, A1AT deficiency), Intrexon DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Intrexon Corp	0	0	1	0	1
Halozyme Therapeutics Inc	1	0	0	0	1

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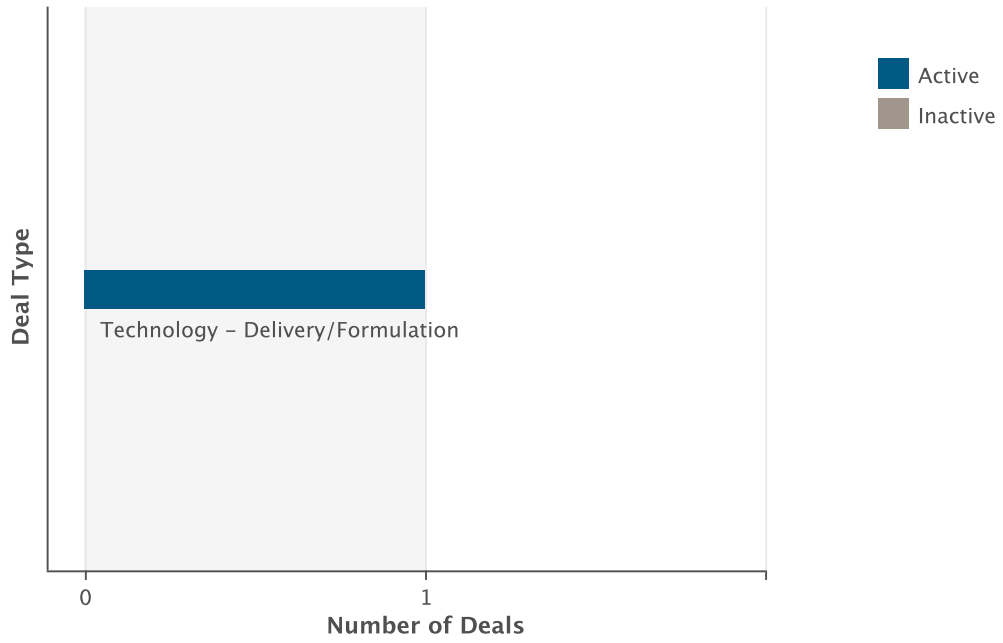
Deals by Type Chart



Deals by Type Table

Deal Type	Active	Inactive	Total
Technology - Delivery/Formulation	1	0	1

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ddRNAi therapy (rheumatoid arthritis), Medistem/Benitec

ddRNAi therapy (rheumatoid arthritis), Medistem/Benitec SNAPSHOT

Drug Name	ddRNAi therapy (rheumatoid arthritis), Medistem/Benitec
Key Synonyms	
Originator Company	Medistem Inc
Active Companies	Medistem Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Rheumatoid arthritis
Target-based Actions	IL-12 antagonist
Other Actions	Genetically engineered autologous cell therapy;Anti-inflammatory;Unspecified non-viral vector based gene therapy;shRNA agent;Therapeutic vaccine;Immunomodulator
Technologies	Intravenous formulation;Biological therapeutic;Parenteral formulation unspecified;Autologous stem cell therapy
Last Change Date	10-Mar-2014

ddRNAi therapy (rheumatoid arthritis), Medistem/Benitec DEVELOPMENT PROFILE

SUMMARY

Medistem (a wholly owned subsidiary of Intrexon) is investigating shRNA-modified stem-cell derived dendritic cells, developed using Benitec's gene silencing DNA-directed RNAi (ddRNAi) technology, as an antigen-specific tolerogenic vaccine for the potential treatment of autoimmune rheumatoid arthritis.

ddRNAi therapy (rheumatoid arthritis), Medistem/Benitec DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Medistem Inc	Rheumatoid arthritis	US	Discovery	31-Jan-2012

ddRNAi therapy (rheumatoid arthritis), Medistem/Benitec DRUG NAMES

Names	Type
ddRNAi therapy (rheumatoid arthritis), Medistem/Benitec	

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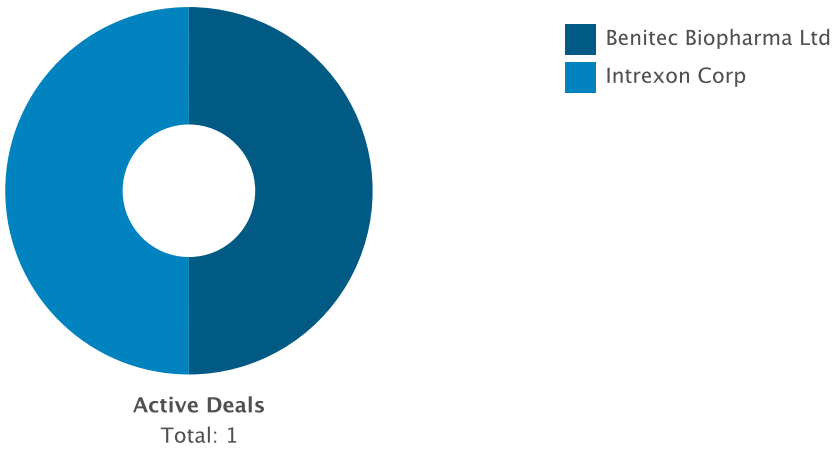
DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Benitec Biopharma Ltd	1	0	0	0	1
Intrexon Corp	0	0	1	0	1

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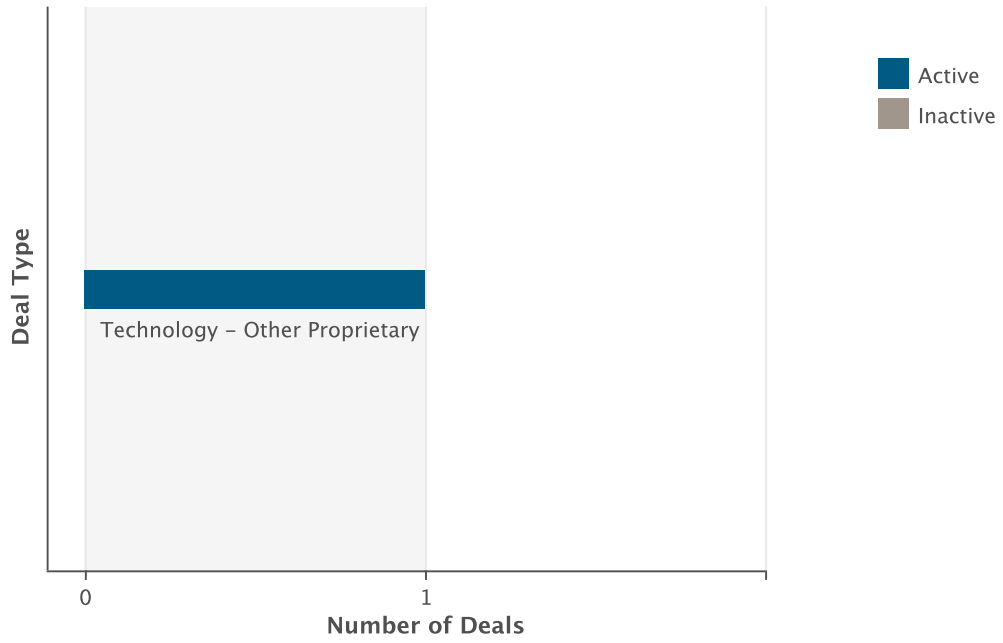
Deals by Type Chart



Deals by Type Table

Deal Type	Active	Inactive	Total
Technology - Other Proprietary	1	0	1

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pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Medistem

pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Medistem SNAPSHOT

Drug Name	pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Medistem
Key Synonyms	
Originator Company	Yale University
Active Companies	Medistem Inc
Inactive Companies	Yale University
Highest Status	Discovery
Active Indications	Insulin dependent diabetes
Target-based Actions	
Other Actions	Hypoglycemic agent
Technologies	Biological therapeutic;Parenteral formulation unspecified;Allogenic stem cell therapy
Last Change Date	11-Mar-2014

pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Medistem DEVELOPMENT PROFILE

SUMMARY

Medistem (a wholly owned subsidiary of Intrexon), under license from Yale University, is investigating pancreatic islets, generated from stem cells such as the endometrial regenerative cell (ERC), for the potential treatment of type 1 diabetes. By September 2011, preclinical studies had been conducted and results reported. In January 2013, the company planned to file an IND in 2013.

pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Medistem DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Medistem Inc	Insulin dependent diabetes	US	Discovery	07-Mar-2012
Yale University	Insulin dependent diabetes	US	Discontinued	07-Mar-2012

pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Medistem DRUG NAMES

Names	Type
pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Medistem	
pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Yale University	

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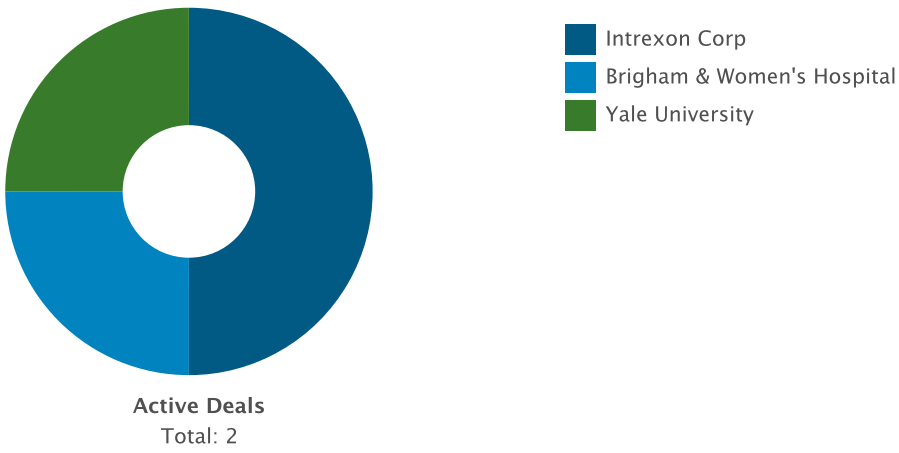
pancreatic islet therapy (endometrial regenerative cells, type 1 diabetes), Medistem DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Intrexon Corp	0	0	2	0	2
Brigham & Women's Hospital	1	0	0	0	1
Yale University	1	0	0	0	1

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Deals by Type Chart

Deals by Type Table

Deal Type	Active	Inactive	Total
Patent - Exclusive Rights	1	0	1
Drug - Development Services	1	0	1

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fully human mAbs (Alzheimers disease), Intrexon

fully human mAbs (Alzheimers disease), Intrexon SNAPSHOT

Drug Name	fully human mAbs (Alzheimers disease), Intrexon
Key Synonyms	
Originator Company	Immunologix
Active Companies	Intrexon Corp
Inactive Companies	Immunologix
Highest Status	Discovery
Active Indications	Alzheimers disease
Target-based Actions	
Other Actions	Neuroprotectant
Technologies	Monoclonal antibody human;Biological therapeutic;Parenteral formulation unspecified
Last Change Date	12-Jun-2012

fully human mAbs (Alzheimers disease), Intrexon DEVELOPMENT PROFILE

SUMMARY

Intrexon, following its acquisition of Immunologix, is investigating fully human mAbs targeting amyloid plaques, for the potential treatment of Alzheimer's disease. By June 2011, the target had been validated.

fully human mAbs (Alzheimers disease), Intrexon DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Alzheimers disease	US	Discovery	24-Oct-2011

fully human mAbs (Alzheimers disease), Intrexon DRUG NAMES

Names	Type
fully human monoclonal antibodies (Alzheimers disease), Immunologix	
fully human mAbs (Alzheimers disease), Intrexon	

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fully human monoclonal antibodies (cancer/infection/autoimmune disease), Intrexon

fully human monoclonal antibodies (cancer/infection/autoimmune disease), Intrexon SNAPSHOT

Drug Name	fully human monoclonal antibodies (cancer/infection/autoimmune disease), Intrexon
Key Synonyms	
Originator Company	Immunologix
Active Companies	Intrexon Corp
Inactive Companies	Immunologix
Highest Status	Discovery
Active Indications	Cancer;Infectious disease;Autoimmune disease
Target-based Actions	
Other Actions	Anticancer monoclonal antibody;Antimicrobial;Immunomodulator
Technologies	Monoclonal antibody human;Biological therapeutic;Parenteral formulation unspecified
Last Change Date	15-Jun-2012

fully human monoclonal antibodies (cancer/infection/autoimmune disease), Intrexon DEVELOPMENT PROFILE

SUMMARY

Intrexon, following its acquisition of Immunologix, is investigating fully human mAbs for the potential treatment of cancer, infectious disease including west nile and dengue fever, and autoimmune disease including inflammation. In February 2012, the program was listed as being in lead series and at that time, the company was seeking to outlicense the program.

fully human monoclonal antibodies (cancer/infection/autoimmune disease), Intrexon DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Autoimmune disease	US	Discovery	26-Feb-2012
Intrexon Corp	Cancer	US	Discovery	26-Feb-2012
Intrexon Corp	Infectious disease	US	Discovery	26-Feb-2012

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fully human monoclonal antibodies (cancer/infection/autoimmune disease), Intrexon DRUG NAMES

Names	Type
fully human monoclonal antibodies (cancer/infection/autoimmune disease), Intrexon	
fully human monoclonal antibodies (cancer/infection), Immunologix	

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antibody drug conjugates (cancer), Intrexon

antibody drug conjugates (cancer), Intrexon SNAPSHOT

Drug Name	antibody drug conjugates (cancer), Intrexon
Key Synonyms	
Originator Company	Intrexon Corp
Active Companies	Intrexon Corp
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	
Other Actions	Anticancer
Technologies	Antibody conjugated;Biological therapeutic
Last Change Date	28-Mar-2012

antibody drug conjugates (cancer), Intrexon DEVELOPMENT PROFILE

SUMMARY

Intrexon is investigating antibody drug conjugates for the potential treatment of cancer. In February 2012, the program was listed as being in lead series; at that time, the company was seeking to outlicense the program.

antibody drug conjugates (cancer), Intrexon DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Cancer	US	Discovery	26-Feb-2012

antibody drug conjugates (cancer), Intrexon DRUG NAMES

Names	Type
antibody drug conjugates (cancer), Intrexon	

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interferon-alpha plasmid transgene therapy (melanoma), ZIOPHARM/Intrexon

interferon-alpha plasmid transgene therapy (melanoma), ZIOPHARM/Intrexon SNAPSHOT

Drug Name	interferon-alpha plasmid transgene therapy (melanoma), ZIOPHARM/Intrexon
Key Synonyms	
Originator Company	ZIOPHARM Oncology Inc
Active Companies	Intrexon Corp;ZIOPHARM Oncology Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Melanoma
Target-based Actions	IFNA gene modulator
Other Actions	Anticancer;Plasmid based gene therapy;Immunostimulant
Technologies	DNA technology;Intramuscular formulation;Biological therapeutic
Last Change Date	19-Mar-2013

interferon-alpha plasmid transgene therapy (melanoma), ZIOPHARM/Intrexon DEVELOPMENT PROFILE

SUMMARY

ZIOPHARM Oncology, in collaboration with Intrexon, is investigating pRTS-IFNalpha, an interferon-alpha plasmid transgene therapy, created using RheoSwitch and UltraVector technologies, for the potential treatment of melanoma.

interferon-alpha plasmid transgene therapy (melanoma), ZIOPHARM/Intrexon DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Melanoma	US	Discovery	07-Nov-2012
ZIOPHARM Oncology Inc	Melanoma	US	Discovery	07-Nov-2012

interferon-alpha plasmid transgene therapy (melanoma), ZIOPHARM/Intrexon DRUG NAMES

Names	Type
pRTS-IFNalpha	
interferon-alpha plasmid transgene therapy (melanoma), ZIOPHARM/Intrexon	

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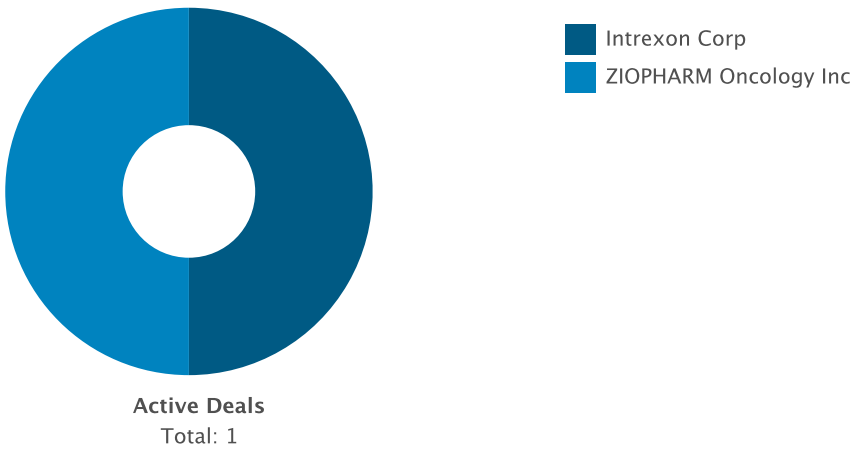
DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Intrexon Corp	1	0	0	0	1
ZIOPHARM Oncology Inc	0	0	1	0	1

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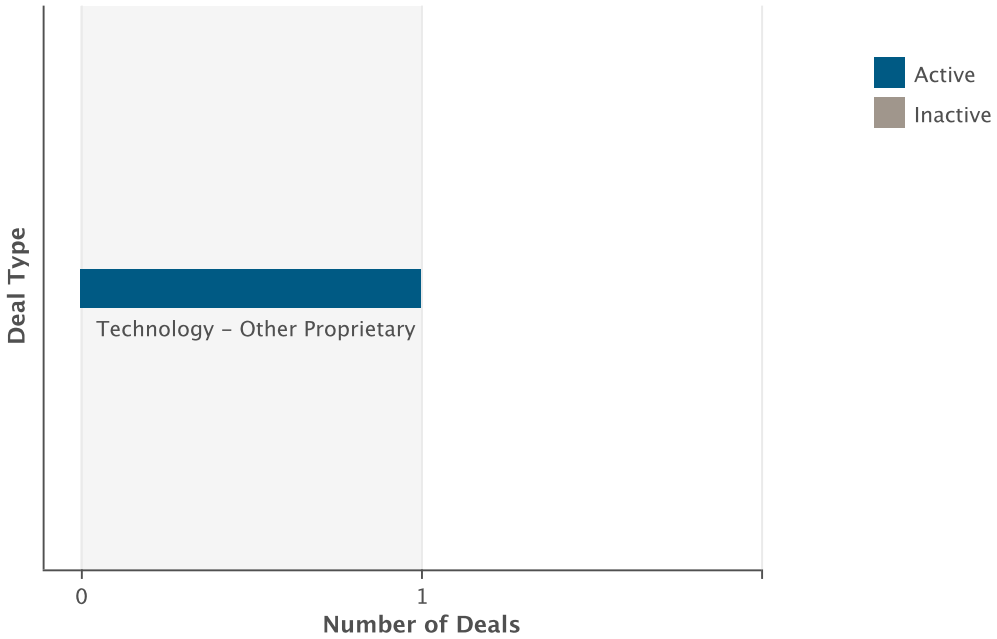
Deals by Type Chart



Deals by Type Table

Deal Type	Active	Inactive	Total
Technology - Other Proprietary	1	0	1

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transgene enabled cell-based therapeutics (Mesenchymal Lineage Cells/ RheoSwitch, cancer), ZIOPHARM Oncology/ Mesoblast/ Intrexon

transgene enabled cell-based therapeutics (Mesenchymal Lineage Cells/ RheoSwitch, cancer), ZIOPHARM Oncology/ Mesoblast/ Intrexon SNAPSHOT

Drug Name	transgene enabled cell-based therapeutics (Mesenchymal Lineage Cells/ RheoSwitch, cancer), ZIOPHARM Oncology/ Mesoblast/ Intrexon
Key Synonyms	
Originator Company	ZIOPHARM Oncology Inc
Active Companies	Mesoblast Ltd;ZIOPHARM Oncology Inc;Intrexon Corp
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	
Other Actions	Anticancer;Gene therapy
Technologies	Biological therapeutic;Mesenchymal stem cell therapy
Last Change Date	19-Feb-2014

transgene enabled cell-based therapeutics (Mesenchymal Lineage Cells/ RheoSwitch, cancer), ZIOPHARM Oncology/ Mesoblast/ Intrexon DEVELOPMENT PROFILE

SUMMARY

Mesoblast, Intrexon and ZIOPHARM Oncology are investigating transgene enabled cell-based therapeutics, which combine Mesoblast's Mesenchymal Lineage Cells (MLCs) with Intrexon's RheoSwitch Therapeutic System (RTS) and multigenic hIL-12, hIFN alpha, CTLA4 decoy, for the potential treatment of cancer including lung cancer In October 2013, the companies would form a joint venture to develop therapeutic candidates if their feasibility studies in lung cancer were successful. In February 2014, the company expected filing INDs for the therapy.

transgene enabled cell-based therapeutics (Mesenchymal Lineage Cells/ RheoSwitch, cancer), ZIOPHARM Oncology/ Mesoblast/ Intrexon DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Cancer	US	Discovery	23-Oct-2013
Mesoblast Ltd	Cancer	Australia	Discovery	23-Oct-2013
ZIOPHARM Oncology Inc	Cancer	US	Discovery	23-Oct-2013

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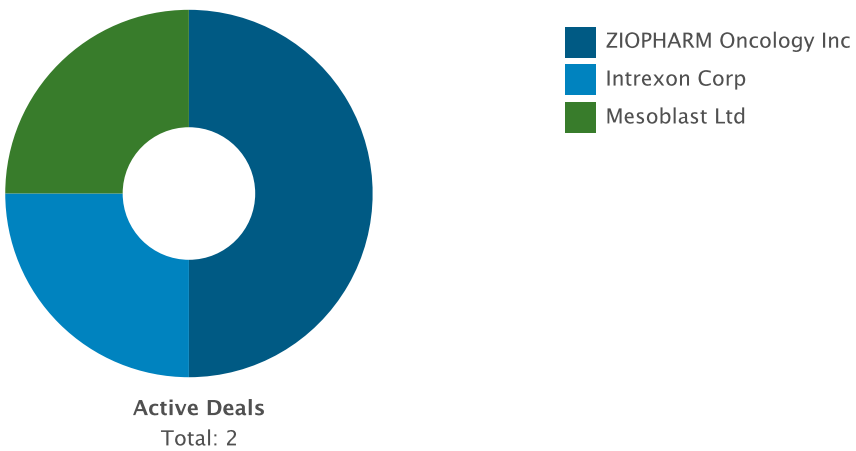
transgene enabled cell-based therapeutics (Mesenchymal Lineage Cells/ RheoSwitch, cancer), ZIOPHARM Oncology/ Mesoblast/ Intrexon DRUG NAMES

Names	Type
transgene enabled cell-based therapeutics (Mesenchymal Lineage Cells/ RheoSwitch, cancer), ZIOPHARM Oncology/ Mesoblast/ Intrexon	

transgene enabled cell-based therapeutics (Mesenchymal Lineage Cells/ RheoSwitch, cancer), ZIOPHARM Oncology/ Mesoblast/ Intrexon DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
ZIOPHARM Oncology Inc	0	0	2	0	2
Mesoblast Ltd	1	0	0	0	1
Intrexon Corp	1	0	0	0	1

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Deals by Type Chart

Deals by Type Table

Deal Type	Active	Inactive	Total
Drug - Early Research/Development	1	0	1
Technology - Other Proprietary	1	0	1

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SGX-101

SGX-101 SNAPSHOT

Drug Name	SGX-101
Key Synonyms	
Originator Company	Soligenix Inc
Active Companies	Soligenix Inc;Intrexon Corp
Inactive Companies	
Highest Status	Discovery
Active Indications	Melioidosis
Target-based Actions	
Other Actions	Unspecified drug target;Antibacterial
Technologies	Monoclonal antibody human;Biological therapeutic;Parenteral formulation unspecified
Last Change Date	18-Oct-2013

SGX-101 DEVELOPMENT PROFILE

SUMMARY

Soligenix and Intrexon are investigating human mAbs for the potential treatment of melioidosis. In May 2013, development was ongoing.

SGX-101 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Melioidosis	US	Discovery	01-May-2013
Soligenix Inc	Melioidosis	US	Discovery	01-May-2013

SGX-101 DRUG NAMES

Names	Type
human mAbs (melioidosis), Soligenix/Intrexon	
SGX-101	Research Code

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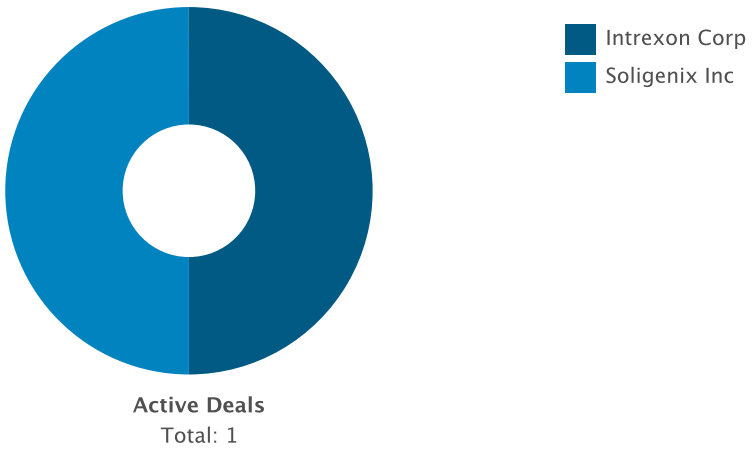
SGX-101 DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Intrexon Corp	1	0	0	0	1
Soligenix Inc	0	0	1	0	1

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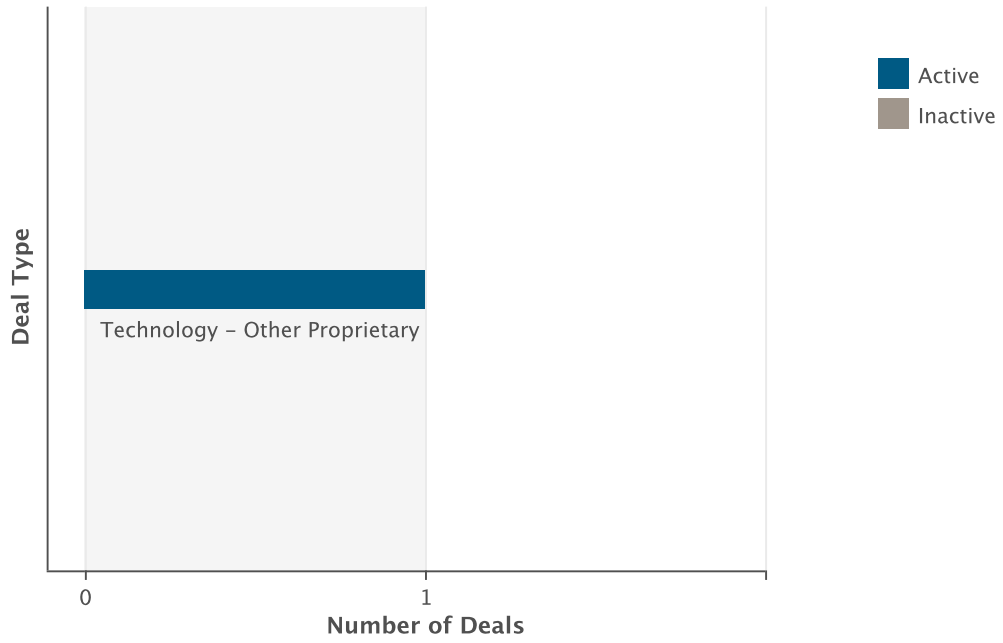
Deals by Type Chart



Deals by Type Table

Deal Type	Active	Inactive	Total
Technology - Other Proprietary	1	0	1

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SMN1-based gene replacement stem cell therapy (spinal muscular atrophy), Intrexon

SMN1-based gene replacement stem cell therapy (spinal muscular atrophy), Intrexon SNAPSHOT

Drug Name	SMN1-based gene replacement stem cell therapy (spinal muscular atrophy), Intrexon
Key Synonyms	
Originator Company	Intrexon Corp
Active Companies	Intrexon Corp
Inactive Companies	
Highest Status	Discovery
Active Indications	Spinal muscular atrophy
Target-based Actions	SMN1 gene modulator
Other Actions	Stem cell modulator
Technologies	Biological therapeutic;Parenteral formulation unspecified;Autologous stem cell therapy
Last Change Date	29-May-2014

SMN1-based gene replacement stem cell therapy (spinal muscular atrophy), Intrexon DEVELOPMENT PROFILE

SUMMARY

Intrexon, using stem-cell technology from BioLife Cell Bank, is investigating an SMN1 gene modified stem cell therapy for the potential treatment of spinal muscular atrophy (SMA),. In August 2012, preclinical development was ongoing.

SMN1-based gene replacement stem cell therapy (spinal muscular atrophy), Intrexon DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Intrexon Corp	Spinal muscular atrophy	US	Discovery	02-Aug-2012

SMN1-based gene replacement stem cell therapy (spinal muscular atrophy), Intrexon DRUG NAMES

Names	Type
SMN1-based gene replacement stem cell therapy (spinal muscular atrophy), Intrexon	

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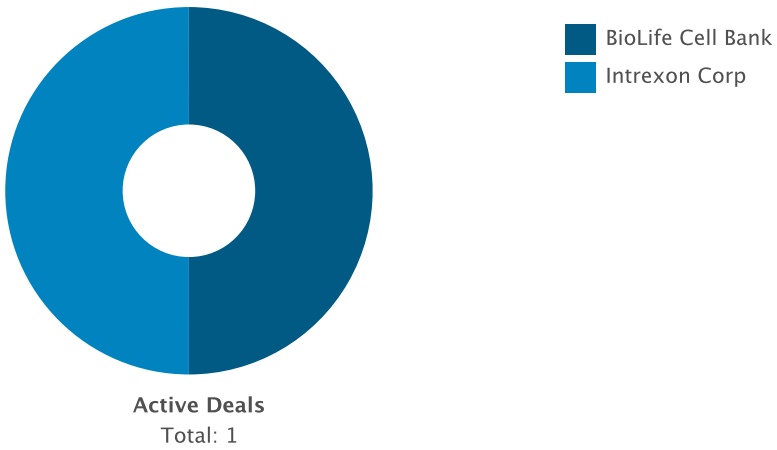
SMN1-based gene replacement stem cell therapy (spinal muscular atrophy), Intrexon DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
BioLife Cell Bank	0	0	1	0	1
Intrexon Corp	1	0	0	0	1

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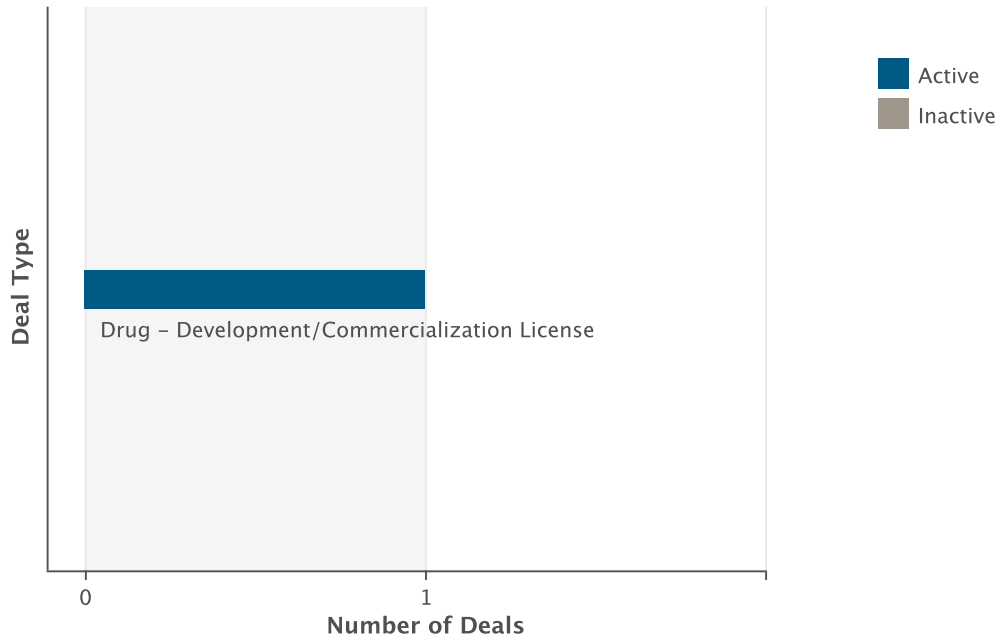
Deals by Type Chart



Deals by Type Table

Deal Type	Active	Inactive	Total
Drug - Development/Commercialization License	1	0	1

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