

## **Cerulean Pharma Inc**

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i.e. where the development status for the drug(s) is one of the following: No Development Reported, Discontinued, or Withdrawn.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

## COMPANY OVERVIEW

<b>Company Name</b>	Cerulean Pharma Inc
<b>Parent Company Name</b>	Cerulean Pharma Inc
<b>Website</b>	http://ceruleanrx.com/
<b>Country</b>	US
<b>Number of Drugs in Active Development</b>	4
<b>Number of Inactive Drugs</b>	1
<b>Number of Patents as Owner</b>	26
<b>Number of Patents as Third Party</b>	2
<b>Number of Deals</b>	1
<b>Key Indications</b>	Cancer,Breast tumor,Non-small-cell lung cancer,Ovary tumor,Stomach tumor,Renal tumor,Cardiovascular disease,Rectal tumor,Small-cell lung cancer,Autoimmune disease
<b>Key Target-based Actions</b>	Topoisomerase I inhibitor,Hypoxia inducible factor-1 alpha inhibitor,Proteasome inhibitor,Topoisomerase II inhibitor,DHFR inhibitor,DNA polymerase inhibitor,Hemagglutinin inhibitor,Hemagglutinin modulator,JAK tyrosine kinase inhibitor,PLK1 gene inhibitor,Thymidylate synthase inhibitor,Transferase inhibitor,VEGF receptor antagonist
<b>Key Technologies</b>	Nanoparticle formulation,Small molecule therapeutic,PEGylated formulation,Biological therapeutic,Oligonucleotide,Formulation preservation,Peptide,Controlled release formulation,Intravenous formulation,Cell targeting,Nanoparticle formulation injectable,Oligonucleotide

## COMPANY PROFILE

### SUMMARY

Cerulean Pharma (formerly Tempo Pharmaceuticals Inc) is a biopharmaceutical company specializing in the development of nanoparticle-based therapeutics for oncology, autoimmune and inflammatory diseases, based on its Nanocell technology that was exclusively licensed from the Massachusetts Institute of Technology. In October 2008, the company changed its name to Cerulean Pharma.

### FINANCIAL

In April 2014, Cerulean priced its IPO of 8,500,000 shares of its common stock US \$7.00 per share. Underwriters were granted a 30-day option to purchase an additional 1,275,000 shares. Stock to be listed on the NASDAQ Global Market under the ticker symbol 'CERU'. At that time, the offering was expected to close on April 15, 2014. Later that month, the offering was closed. In May 2014, underwriters for the IPO exercised their over-allotment option and purchased an additional 1,069,715 shares, bringing total number of shares sold to 9,569,715 shares and total gross proceeds to \$67 million.

In December 2011, Cerulean raised \$15 million from a series D financing.

In November 2010, Cerulean raised \$24 million from a series C financing.

In July 2009, Cerulean raised \$10 million from a series B-1 financing.

In January 2008, Tempo raised \$8.1 million from a series B financing.

In May 2007, Tempo raised \$12.1 million from a series A financing round.

In December 2006, Tempo raised \$2 million from a seed round.

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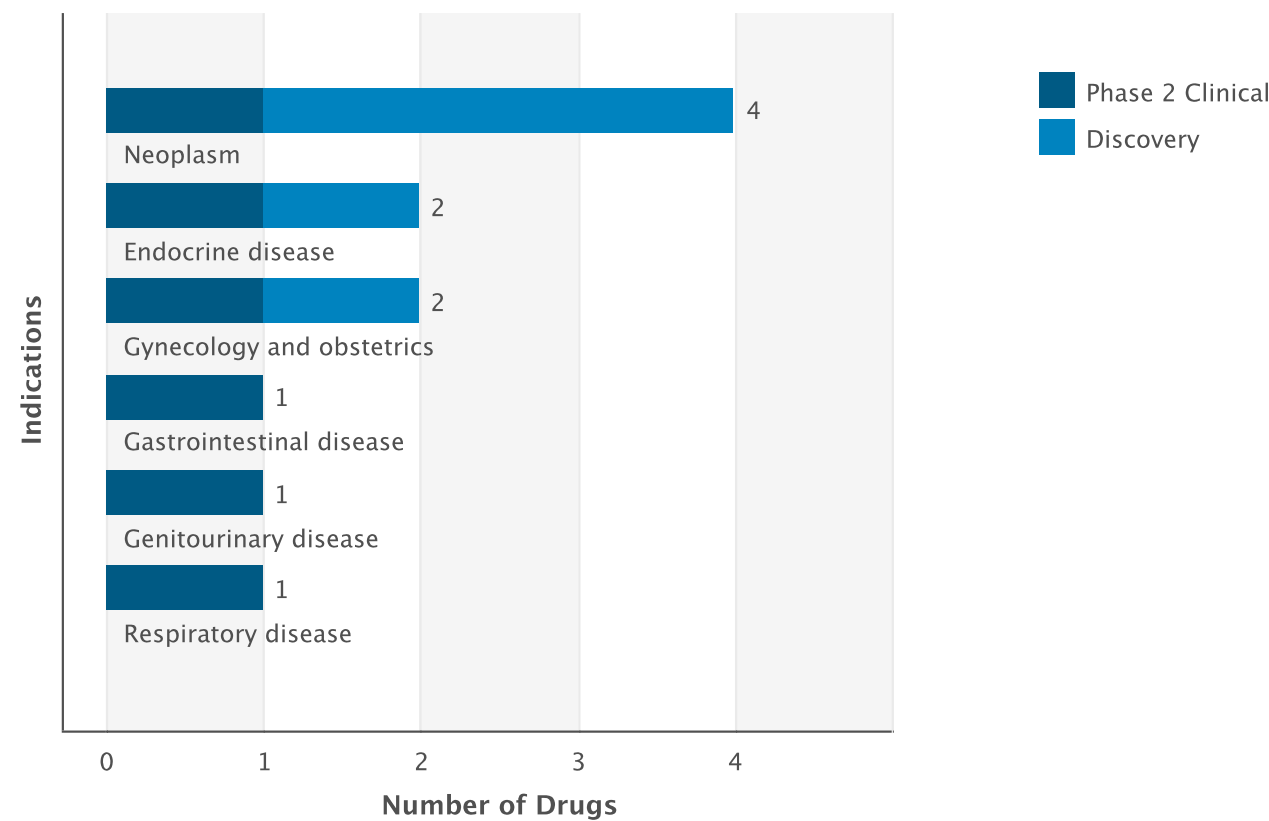


# PRODUCT PORTFOLIO SUMMARY

## DRUGS

### Drugs by Indication

Active Drugs by Indication Chart



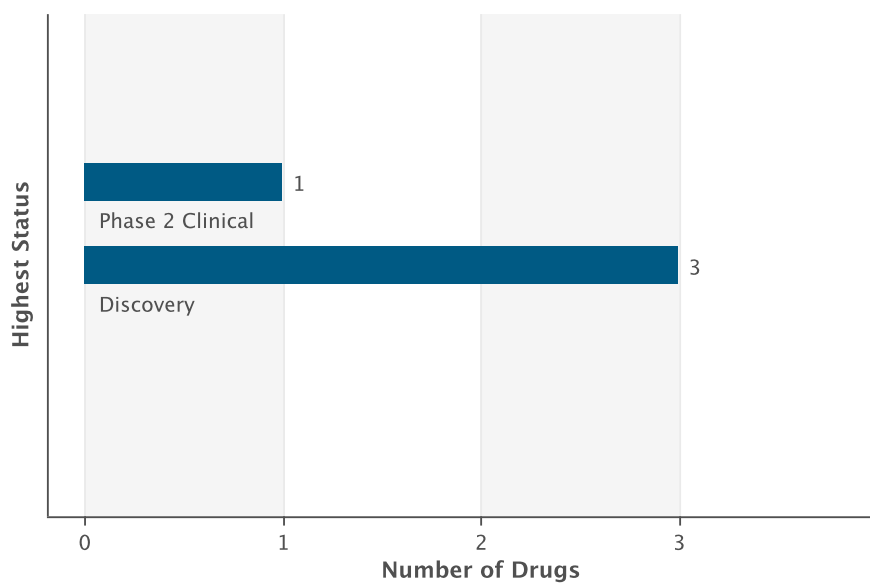
Drugs by Indication Table

Indication	Active	Inactive	Total
Neoplasm	4	1	5
Endocrine disease	2	0	2
Gynecology and obstetrics	2	0	2
Gastrointestinal disease	1	0	1
Genitourinary disease	1	0	1
Respiratory 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	1
Discovery	3
No Development Reported	1

## DEALS

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

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## CLINICAL TRIALS

### Trials by Condition Studied

Condition Studied	Ongoing	All
Neoplasm	2	5
Genitourinary disease	1	2
Endocrine disease	0	1
Gastrointestinal disease	1	1
Respiratory disease	0	1
Gynecology and obstetrics	0	1

### Trials by Phase

Phase	Ongoing	All
Phase 2	1	3
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	10	1	11
Endocrine disease	11	0	11
Gastrointestinal disease	11	0	11
Genitourinary disease	7	0	7
Growth disorder	1	0	1
Hematological disease	4	0	4
Degeneration	2	0	2
Andrology	2	0	2
Immune disorder	15	1	16

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Psychiatric disorder	1	0	1
Musculoskeletal disease	6	0	6
Neoplasm	23	1	24
Ocular disease	2	0	2
Genetic disorder	2	0	2
Metabolic disorder	11	0	11
Neurological disease	6	0	6
Nutritional disorder	3	0	3
Respiratory disease	5	2	7
Infectious disease	5	2	7
Inflammatory disease	14	1	15
Otorhinolaryngological disease	1	0	1
Gynecology and obstetrics	7	0	7
Dermatological disease	5	0	5

\* 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

### camptothecin nanoparticle (cancer), Cerulean Pharma

#### camptothecin nanoparticle (cancer), Cerulean Pharma SNAPSHOT

<b>Drug Name</b>	camptothecin nanoparticle (cancer), Cerulean Pharma
<b>Key Synonyms</b>	
<b>Originator Company</b>	Calando Pharmaceuticals Inc
<b>Active Companies</b>	Cerulean Pharma Inc
<b>Inactive Companies</b>	Calando Pharmaceuticals Inc
<b>Highest Status</b>	Phase 2 Clinical
<b>Active Indications</b>	Small-cell lung cancer;Non-small-cell lung cancer;Renal tumor;Ovary tumor;Stomach tumor;Rectal tumor
<b>Target-based Actions</b>	Topoisomerase I inhibitor;Hypoxia inducible factor-1 alpha inhibitor
<b>Other Actions</b>	Synergist;Anticancer
<b>Technologies</b>	Nanoparticle formulation injectable;Controlled release formulation;Intravenous formulation;Small molecule therapeutic
<b>Last Change Date</b>	14-Nov-2014

#### camptothecin nanoparticle (cancer), Cerulean Pharma DEVELOPMENT PROFILE

##### SUMMARY

Cerulean Pharma, under license from Calando, following its merger with Insert in April 2008, is developing

Calando was previously developing CRLX-10; in September 2008, Calando began a phase II ovarian cancer trial ; however, in June 2009, the trial was terminated due to poor recruitment.

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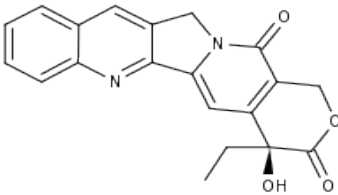


## camptothecin nanoparticle (cancer), Cerulean Pharma DEVELOPMENT STATUS

### CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Cerulean Pharma Inc	Non-small-cell lung cancer	Russian Federation	Phase 2 Clinical	29-Jun-2011
Cerulean Pharma Inc	Non-small-cell lung cancer	Ukraine	Phase 2 Clinical	29-Jun-2011
Cerulean Pharma Inc	Ovary tumor	US	Phase 2 Clinical	23-Jun-2009
Cerulean Pharma Inc	Rectal tumor	US	Phase 2 Clinical	21-Oct-2013
Cerulean Pharma Inc	Renal tumor	US	Phase 2 Clinical	21-Jun-2012
Cerulean Pharma Inc	Small-cell lung cancer	US	Phase 2 Clinical	31-Jan-2013
Cerulean Pharma Inc	Stomach tumor	US	Phase 2 Clinical	30-Nov-2012
Calando Pharmaceuticals Inc	Ovary tumor	US	Discontinued	03-Jun-2009

## camptothecin nanoparticle (cancer), Cerulean Pharma CHEMICAL STRUCTURES

CAS Registry Number: 7689-03-4	Confidence Level: 1
	
Name	Type
Camposomes	Trade Name
camptothecin	

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## camptothecin nanoparticle (cancer), Cerulean Pharma DRUG NAMES

Names	Type
Cycloset-camptothecin, Insert Therapeutics	
Cycloset-camptothecin, Calando	
camptothecin nanoparticle (cancer), Cerulean Pharma	
CRLX-101-202	Research Code
camptothecin	
IT-101	Research Code
Cycloset-camptothecin, Cerulean Pharma	
CRLX-101	Research Code

## camptothecin nanoparticle (cancer), Cerulean Pharma 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
Ovary tumor											
0	0	0	0	0	2	0	0	0	0	0	2
Renal cell carcinoma											
0	0	0	0	1	1	0	0	0	0	1	1
Metastatic esophageal cancer											
0	0	0	0	1	1	0	0	0	0	1	1
Metastatic stomach cancer											
0	0	0	0	1	1	0	0	0	0	1	1
Metastatic rectal cancer											
0	0	0	0	0	0	1	1	0	0	1	1
Metastatic non small cell lung cancer											
0	0	0	0	0	1	0	0	0	0	0	1
Advanced solid tumor											
0	0	0	0	0	0	0	1	0	0	0	1

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Fallopian tube cancer											
0	0	0	0	0	1	0	0	0	0	0	1
Metastatic renal cancer											
0	0	0	0	0	0	0	1	0	0	0	1
Small-cell lung cancer											
0	0	0	0	0	1	0	0	0	0	0	1
Peritoneal tumor											
0	0	0	0	0	1	0	0	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	2	6	1	3	0	0	3	9

### 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)

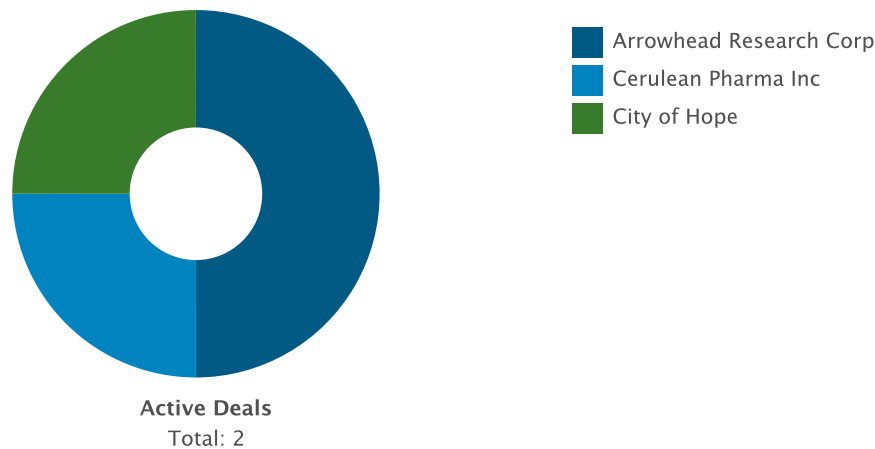
#### Phase 1 Clinical

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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DEALS

Deals by Parent Company Chart

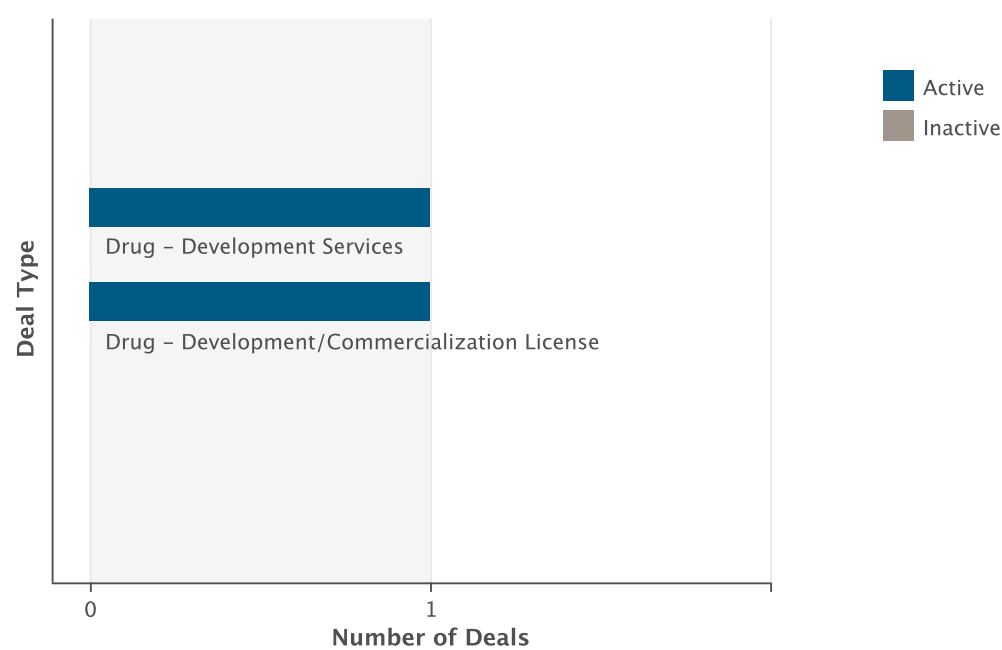


Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Arrowhead Research Corp	1	0	1	0	2
Cerulean Pharma Inc	0	0	1	0	1
City of Hope	1	0	0	0	1

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Deals by Type Chart

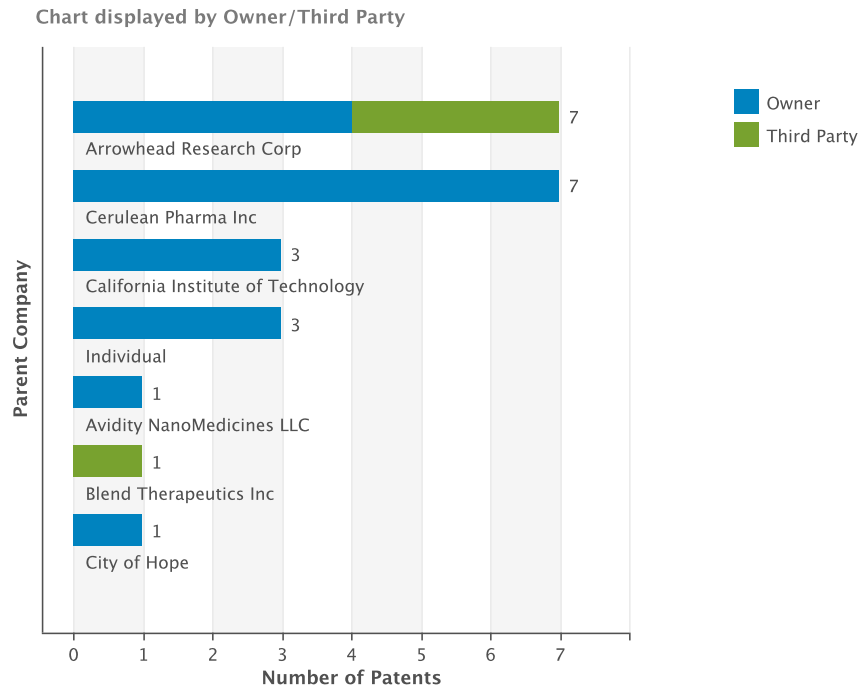


Deals by Type Table

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

PATENTS

Patents by Parent Company Chart



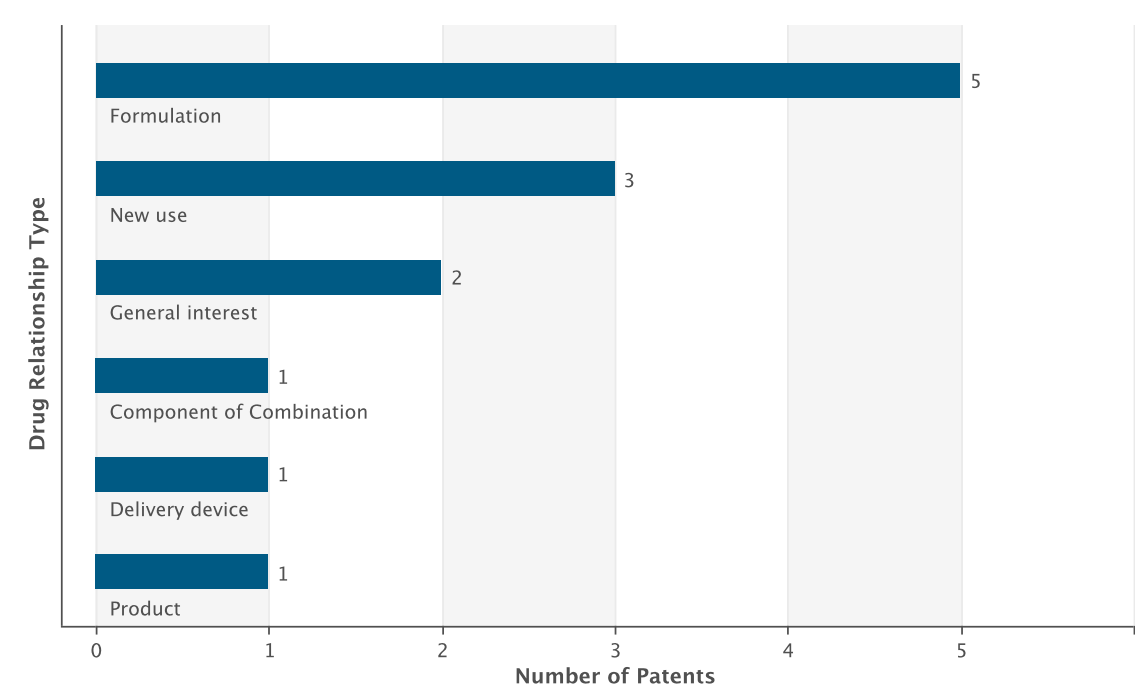
Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Arrowhead Research Corp	4	3	7
Cerulean Pharma Inc	7	0	7
Individual	3	0	3
California Institute of Technology	3	0	3
Avidity NanoMedicines LLC	1	0	1
Blend Therapeutics Inc	0	1	1
City of Hope	1	0	1

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Patents by Drug Relationship Type Chart



Patents by Drug Relationship Type Table

Drug Relationship	Total
Formulation	5
New use	3
General interest	2
Product	1
Component of Combination	1
Delivery device	1

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## siRNA-containing polymeric nanoparticle technology (cancer), Cerulean

### siRNA-containing polymeric nanoparticle technology (cancer), Cerulean SNAPSHOT

Drug Name	siRNA-containing polymeric nanoparticle technology (cancer), Cerulean
Key Synonyms	
Originator Company	Cerulean Pharma Inc
Active Companies	Cerulean Pharma Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Breast tumor
Target-based Actions	
Other Actions	Anticancer;siRNA agent
Technologies	Oligonucleotide;Nanoparticle formulation;Biological therapeutic
Last Change Date	24-Sep-2014

### siRNA-containing polymeric nanoparticle technology (cancer), Cerulean DEVELOPMENT PROFILE

#### SUMMARY

Cerulean is investigating a siRNA-containing polymeric nanoparticle technology formulation for the potential treatment of cancer. By March 2012, preclinical studies were ongoing ; in September 2014, development was ongoing.

### siRNA-containing polymeric nanoparticle technology (cancer), Cerulean DEVELOPMENT STATUS

#### CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Cerulean Pharma Inc	Breast tumor	US	Discovery	10-Mar-2012

### siRNA-containing polymeric nanoparticle technology (cancer), Cerulean DRUG NAMES

Names	Type
siRNA-containing polymeric nanoparticle technology (cancer), Cerulean	

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## CRLX-522

### CRLX-522 SNAPSHOT

Drug Name	CRLX-522
Key Synonyms	
Originator Company	Cerulean Pharma Inc
Active Companies	Cerulean Pharma Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	
Other Actions	Anticancer
Technologies	Nanoparticle formulation;Small molecule therapeutic
Last Change Date	17-Apr-2014

### CRLX-522 DEVELOPMENT PROFILE

#### SUMMARY

Cerulean is investigating CRLX-522, a cabazitaxel nanoparticle formulation, for the potential treatment of cancer. In April 2014, preclinical data were presented.

### CRLX-522 DEVELOPMENT STATUS

#### CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Cerulean Pharma Inc	Cancer	US	Discovery	08-Apr-2014

### CRLX-522 DRUG NAMES

Names	Type
cabazitaxel nanoparticle (cancer), Cerulean	
CRLX-522	Research Code

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## CRLX-301

### CRLX-301 SNAPSHOT

Drug Name	CRLX-301
Key Synonyms	
Originator Company	Cerulean Pharma Inc
Active Companies	Cerulean Pharma Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	
Other Actions	Cell cycle inhibitor;Anticancer;Microtubule inhibitor
Technologies	Nanoparticle formulation;Small molecule therapeutic
Last Change Date	13-Aug-2014

### CRLX-301 DEVELOPMENT PROFILE

#### SUMMARY

Cerulean is investigating CRLX-301, a Cyclodextrin Nanoparticle Technology formulation of docetaxel, using

The company is also investigating CRLX-288, a PEGylated polymeric nanoparticle technology docetaxel.

### CRLX-301 DEVELOPMENT STATUS

#### CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Cerulean Pharma Inc	Cancer	US	Discovery	10-Mar-2012

### CRLX-301 DRUG NAMES

Names	Type
CRLX-301	Research Code
docetaxel (Cyclodextrin Nanoparticle Technology), Cerulean	

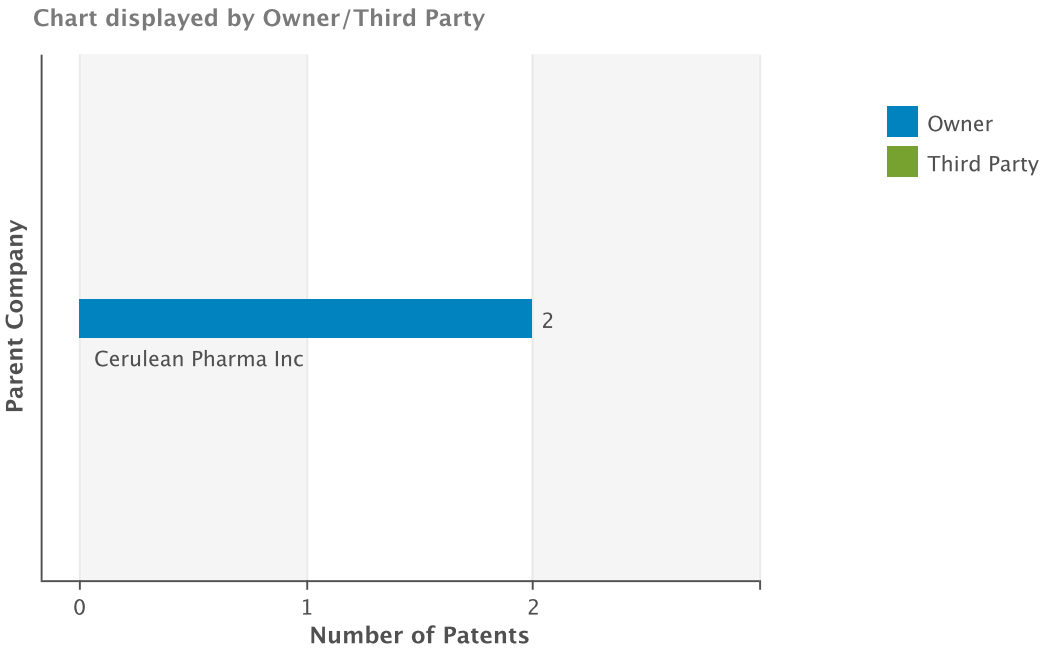
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CRLX-301 DEALS AND PATENTS

PATENTS

Patents by Parent Company Chart

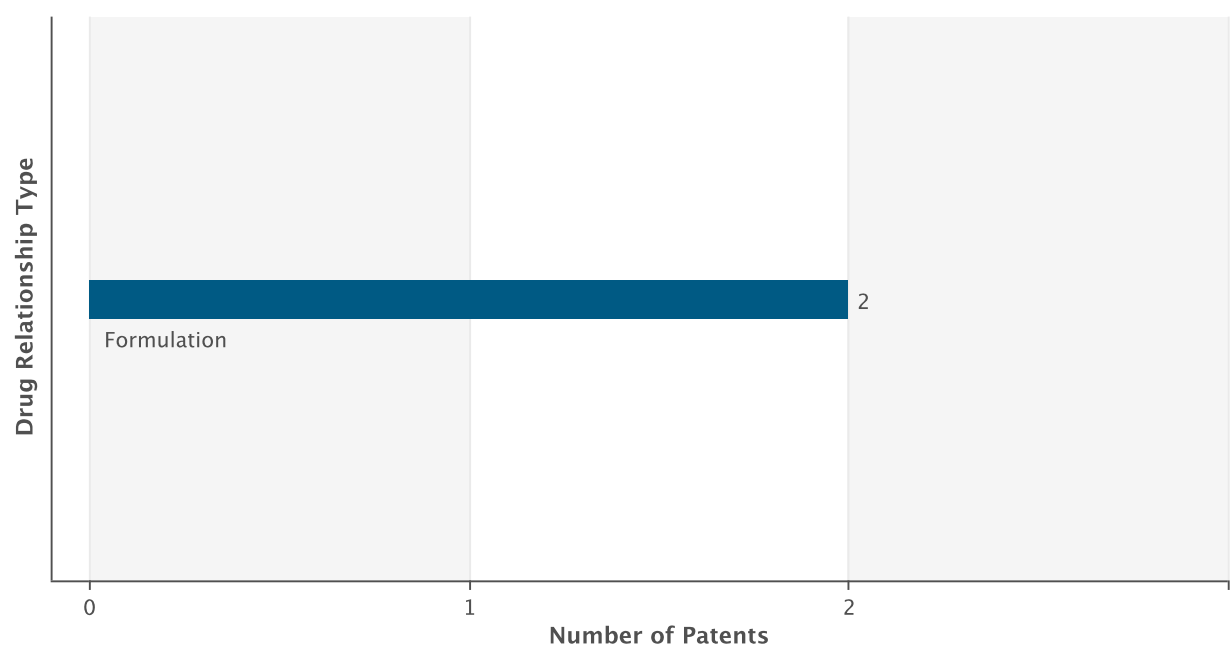


Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Cerulean Pharma Inc	2	0	2

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Patents by Drug Relationship Type Chart



Patents by Drug Relationship Type Table

Drug Relationship	Total
Formulation	2

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