

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i.e. where the development status for the drug(s) is one of the following: No Development Reported, Discontinued, or Withdrawn.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

Product Portfolio Summary..... 6

Product Portfolio Drugs..... 10

[Return to Table of Contents](#)

# Onconova Therapeutics Inc

## COMPANY OVERVIEW

Company Name	Onconova Therapeutics Inc
Parent Company Name	Onconova Therapeutics Inc
Website	http://www.onconova.com/
Country	US
Number of Drugs in Active Development	15
Number of Inactive Drugs	7
Number of Patents as Owner	14
Number of Patents as Third Party	0
Number of Deals	15
Key Indications	Cancer,Hematological neoplasm,Radiation sickness,Solid tumor,Myelodysplastic syndrome,Toxicity,Acute lymphoblastic leukemia,Acute myelogenous leukemia,Central nervous system disease,Inflammatory disease,Ovary tumor,Pancreas tumor
Key Target-based Actions	Abl tyrosine kinase inhibitor,Cyclin-dependent kinase-1 inhibitor,Cyclin-dependent kinase inhibitor 1 inhibitor,p53 tumor suppressor protein inhibitor,Bax protein inhibitor,Polo-like kinase 1 inhibitor,Tumor protein p73 inhibitor,AKT protein kinase inhibitor,BCL2L1 gene stimulator,Bcr protein inhibitor,Cyclin D1 inhibitor,Cyclooxygenase 2 inhibitor,Jun N terminal kinase modulator,MAP kinase inhibitor,Phosphoinositide 3-kinase inhibitor,Tubulin beta inhibitor
Key Technologies	Small molecule therapeutic,Oral formulation,Intravenous formulation,Infusion,Prodrug,Capsule formulation,Subcutaneous formulation,Formulation preservation,Solution,Analytical method,Cell targeting,Drug screening,Injectable formulation,Liquid

## COMPANY PROFILE

### SUMMARY

Onconova Therapeutics is a private development-stage biopharmaceutical company founded in 1998, by scientific founder Dr Premkumar Reddy, focused on the development of treatments for cancer and radiation injury.

### COMPANY LOCATION

Onconova is located in Newtown, PA and Lawrenceville, NJ.

### LICENSING AGREEMENTS

In May 2008, KINAXO Biotechnologies and Onconova Therapeutics agreed to collaborate on the development of novel small molecule therapeutics for cancer treatment and radiation protection.

### EARLY R&D

By November 2008, Onconova was investigating a series of immunoconjugate compounds suitable for use with monoclonal antibodies. At that time, the company was seeking to outlicence the program to biopharmaceutical companies.

[Return to Table of Contents](#)

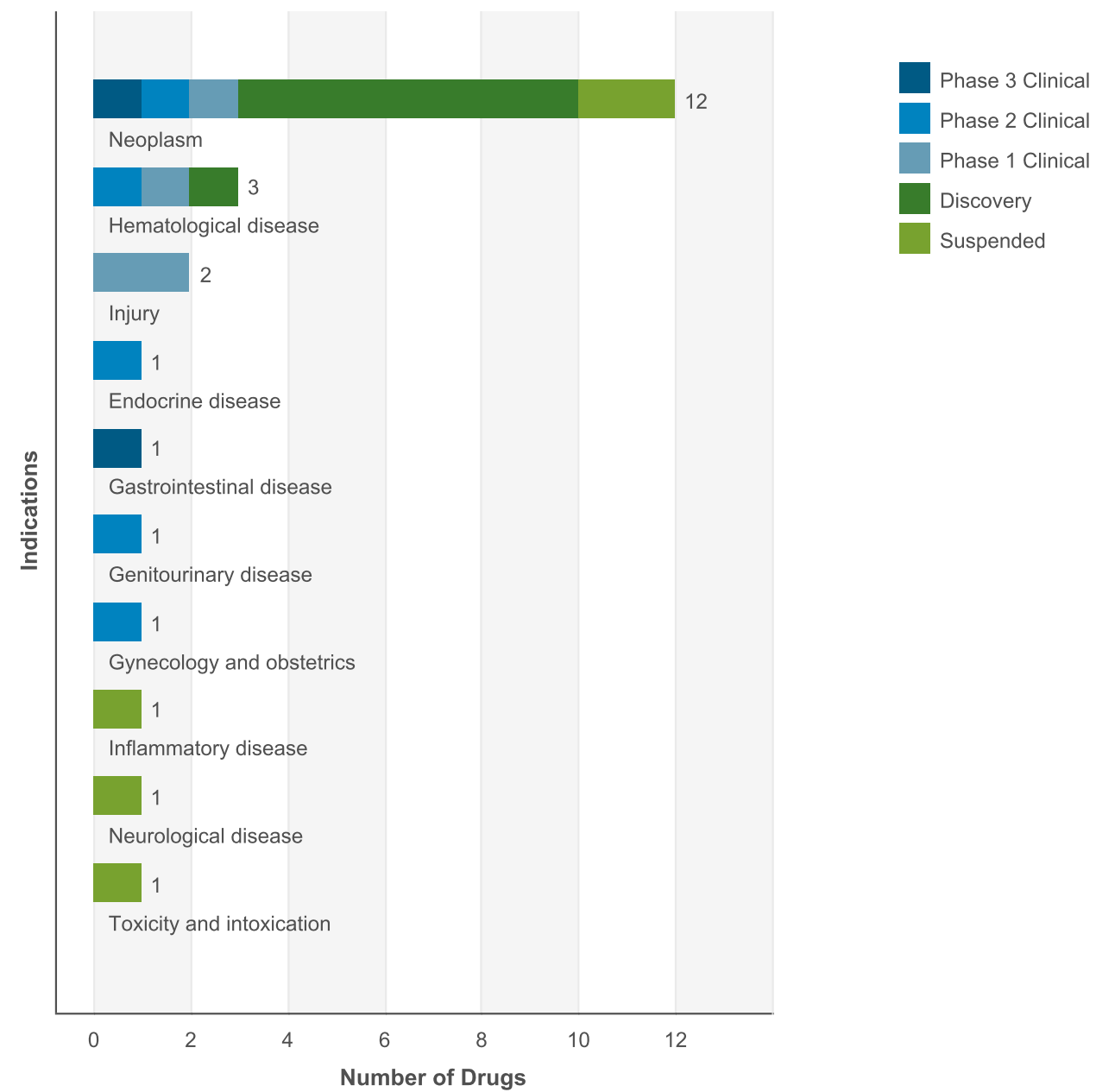


PRODUCT PORTFOLIO SUMMARY

DRUGS

Drugs by Indication

Active Drugs by Indication Chart



Drugs by Indication Table

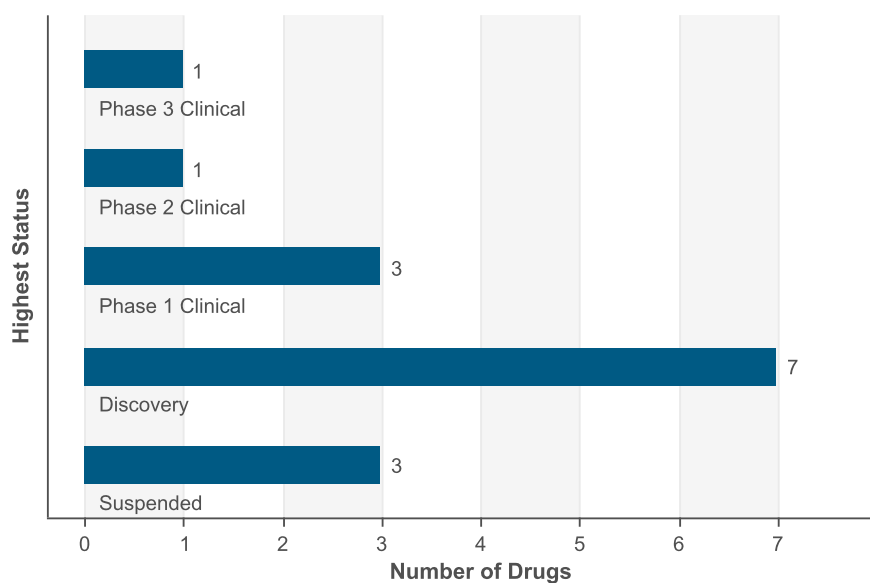
Indication	Active	Inactive	Total
Neoplasm	12	7	19

[Return to Table of Contents](#)

Hematological disease	3	0	3
Injury	2	0	2
Gynecology and obstetrics	1	1	2
Endocrine disease	1	1	2
Neurological disease	1	0	1
Genitourinary disease	1	0	1
Toxicity and intoxication	1	0	1
Gastrointestinal disease	1	0	1
Inflammatory 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 3 Clinical	1
Phase 2 Clinical	1
Phase 1 Clinical	3
Discovery	7
Suspended	3

[Return to Table of Contents](#)

No Development Reported	7
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## DEALS

Deal Type	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Drug - Discovery/Design	0	0	2	0	2
Drug - Funding	2	0	0	0	2
Drug - CRADA	2	0	0	0	2
Drug - Early Research/Development	1	0	5	0	6
Drug - Development/Commercialization License	1	0	0	0	1
Drug - Commercialization License	1	0	0	0	1
Drug - Development Services	0	0	1	0	1

## CLINICAL TRIALS

### Trials by Condition Studied

Condition Studied	Ongoing	All
Neoplasm	9	21
Hematological disease	4	4
Gastrointestinal disease	1	2
Immune disorder	1	1
Endocrine disease	0	1
Gynecology and obstetrics	0	1
Genitourinary disease	0	1

### Trials by Phase

Phase	Ongoing	All
Phase 3	2	2
Phase 2	1	3
Phase 1	6	17

### Phase Definitions

#### Phase 3 Clinical

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

[Return to Table of Contents](#)





**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	5	0	5
Endocrine disease	1	0	1
Gastrointestinal disease	3	0	3
Hematological disease	4	0	4
Degeneration	1	0	1
Immune disorder	6	0	6
Musculoskeletal disease	5	0	5
Neoplasm	11	0	11
Genetic disorder	1	0	1
Metabolic disorder	3	0	3
Neurological disease	5	0	5
Infectious disease	2	0	2
Injury	3	0	3
Toxicity and intoxication	1	0	1
Inflammatory disease	7	0	7
Gynecology and obstetrics	1	0	1
Dermatological disease	1	0	1
Ulcer	1	0	1

\* 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

### rigosertib sodium (iv, MDS/solid tumors), Onconova/SymBio

<b>Drug Name</b>	rigosertib sodium (iv, MDS/solid tumors), Onconova/SymBio
<b>Key Synonyms</b>	rigosertib, Novonex, Estybon, rigosertib sodium
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Baxter International Inc, SymBio Pharmaceuticals Ltd, Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Phase 3 Clinical
<b>Active Indications</b>	Myelodysplastic syndrome, Hematological neoplasm, Acute myelogenous leukemia, Solid tumor, Pancreas tumor, Acute lymphoblastic leukemia, Ovary tumor
<b>Target-based Actions</b>	Phosphoinositide 3-kinase inhibitor, MAP kinase inhibitor, AKT protein kinase inhibitor, Cyclin-dependent kinase-1 inhibitor, Jun N terminal kinase modulator, Polo-like kinase 1 inhibitor, BCL2L11 gene stimulator, Cyclin D1 inhibitor
<b>Other Actions</b>	Apoptosis stimulator, Anticancer protein kinase inhibitor, Cell cycle inhibitor
<b>Technologies</b>	Intravenous formulation, Infusion, Small molecule therapeutic
<b>Last Change Date</b>	19-Dec-2012

### rigosertib sodium (oral capsule, MDS/solid tumors), Onconova/SymBio

<b>Drug Name</b>	rigosertib sodium (oral capsule, MDS/solid tumors), Onconova/SymBio
<b>Key Synonyms</b>	Estybon, rigosertib sodium, Novonex, rigosertib
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc, SymBio Pharmaceuticals Ltd
<b>Inactive Companies</b>	
<b>Highest Status</b>	Phase 2 Clinical
<b>Active Indications</b>	Myelodysplastic syndrome, Solid tumor
<b>Target-based Actions</b>	Phosphoinositide 3-kinase inhibitor, MAP kinase inhibitor, AKT protein kinase inhibitor, Cyclin-dependent kinase-1 inhibitor, Jun N terminal kinase modulator, Polo-like kinase 1 inhibitor, BCL2L11 gene stimulator
<b>Other Actions</b>	Cell cycle inhibitor, Anticancer protein kinase inhibitor, Apoptosis stimulator
<b>Technologies</b>	Oral formulation, Capsule formulation, Small molecule therapeutic
<b>Last Change Date</b>	28-Dec-2012

[Return to Table of Contents](#)



## recilisib sodium (sc, radiation sickness), Onconova

<b>Drug Name</b>	recilisib sodium (sc, radiation sickness), Onconova
<b>Key Synonyms</b>	Ex-RAD, recilisib sodium, recilisib
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Phase 1 Clinical
<b>Active Indications</b>	Radiation sickness
<b>Target-based Actions</b>	Cyclin-dependent kinase inhibitor 1 inhibitor, p53 tumor suppressor protein inhibitor, Bax protein inhibitor, Tumor protein p73 inhibitor, Abl tyrosine kinase inhibitor
<b>Other Actions</b>	Anticancer protein kinase inhibitor, Radioprotectant, Apoptosis inhibitor
<b>Technologies</b>	Subcutaneous formulation, Small molecule therapeutic
<b>Last Change Date</b>	17-Oct-2012

## ON-013105

<b>Drug Name</b>	ON-013105
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Phase 1 Clinical
<b>Active Indications</b>	Hematological neoplasm
<b>Target-based Actions</b>	Cyclin D1 inhibitor
<b>Other Actions</b>	Apoptosis stimulator, Cell cycle inhibitor
<b>Technologies</b>	Prodrug, Intravenous formulation, Infusion, Small molecule therapeutic
<b>Last Change Date</b>	02-Aug-2012

[Return to Table of Contents](#)



### recilisib sodium (oral, radiation sickness), Onconova

<b>Drug Name</b>	recilisib sodium (oral, radiation sickness), Onconova
<b>Key Synonyms</b>	Ex-RAD, recilisib, recilisib sodium
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Phase 1 Clinical
<b>Active Indications</b>	Radiation sickness
<b>Target-based Actions</b>	Cyclin-dependent kinase inhibitor 1 inhibitor, p53 tumor suppressor protein inhibitor, Bax protein inhibitor, Tumor protein p73 inhibitor, Abl tyrosine kinase inhibitor
<b>Other Actions</b>	Radioprotectant, Anticancer protein kinase inhibitor, Apoptosis inhibitor
<b>Technologies</b>	Oral formulation, Small molecule therapeutic
<b>Last Change Date</b>	17-Oct-2012

### ON-24160

<b>Drug Name</b>	ON-24160
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Cancer
<b>Target-based Actions</b>	Tubulin beta inhibitor
<b>Other Actions</b>	Anticancer
<b>Technologies</b>	Oral formulation, Small molecule therapeutic
<b>Last Change Date</b>	08-Jun-2012

[Return to Table of Contents](#)

**ON-044580**

<b>Drug Name</b>	ON-044580
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Cancer
<b>Target-based Actions</b>	Bcr protein inhibitor, IL-3 antagonist, Abl tyrosine kinase inhibitor, Jak2 tyrosine kinase inhibitor, STAT-5 inhibitor
<b>Other Actions</b>	Anticancer protein kinase inhibitor, Apoptosis stimulator
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	11-Jun-2012

**ON-123300**

<b>Drug Name</b>	ON-123300
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Cancer
<b>Target-based Actions</b>	NUAK SNF1-like protein kinase 1 inhibitor, Cyclin-dependent kinase-4 inhibitor
<b>Other Actions</b>	Apoptosis stimulator, Anticancer protein kinase inhibitor
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	11-Jun-2012

[Return to Table of Contents](#)



**ON-1231320**

<b>Drug Name</b>	ON-1231320
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Cancer
<b>Target-based Actions</b>	Polo-like kinase 2 inhibitor, PARP stimulator
<b>Other Actions</b>	Anticancer protein kinase inhibitor
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	08-Jun-2012

**ALK inhibitors (cancer), Onconova**

<b>Drug Name</b>	ALK inhibitors (cancer), Onconova
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Cancer
<b>Target-based Actions</b>	Anaplastic lymphoma kinase receptor inhibitor
<b>Other Actions</b>	Anticancer protein kinase inhibitor
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	26-Sep-2012

[Return to Table of Contents](#)

**ON-108600**

<b>Drug Name</b>	ON-108600
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Cancer
<b>Target-based Actions</b>	Casein kinase II inhibitor, Cyclin-dependent kinase-9 inhibitor
<b>Other Actions</b>	Anticancer protein kinase inhibitor, Cell cycle inhibitor
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	19-Jun-2012

**PI3K alpha and delta isoform inhibitors (hematological malignancies), Onconova**

<b>Drug Name</b>	PI3K alpha and delta isoform inhibitors (hematological malignancies), Onconova
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Discovery
<b>Active Indications</b>	Hematological neoplasm
<b>Target-based Actions</b>	Phosphoinositide-3 kinase alpha inhibitor, Phosphoinositide-3 kinase delta inhibitor
<b>Other Actions</b>	Anticancer
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	24-Nov-2012

[Return to Table of Contents](#)


**ON-09300**

<b>Drug Name</b>	ON-09300
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Suspended
<b>Active Indications</b>	Cancer
<b>Target-based Actions</b>	Cyclooxygenase 2 inhibitor, 5-Lipoxygenase inhibitor
<b>Other Actions</b>	Anticancer
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	14-Nov-2008

**ON-09250**

<b>Drug Name</b>	ON-09250
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Suspended
<b>Active Indications</b>	Central nervous system disease, Inflammatory disease
<b>Target-based Actions</b>	Cyclooxygenase 2 inhibitor
<b>Other Actions</b>	Anti-inflammatory
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	09-Aug-2004

[Return to Table of Contents](#)



### ON-01500 series, Onconova

<b>Drug Name</b>	ON-01500 series, Onconova
<b>Key Synonyms</b>	
<b>Originator Company</b>	Onconova Therapeutics Inc
<b>Active Companies</b>	Onconova Therapeutics Inc
<b>Inactive Companies</b>	
<b>Highest Status</b>	Suspended
<b>Active Indications</b>	Toxicity, Cancer
<b>Target-based Actions</b>	Cyclin-dependent kinase-1 inhibitor
<b>Other Actions</b>	Anticancer, Chemoprotectant, Cell cycle inhibitor, Anticancer protein kinase inhibitor, Angiogenesis inhibitor
<b>Technologies</b>	Small molecule therapeutic
<b>Last Change Date</b>	02-Jun-2010

[Return to Table of Contents](#)

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[Return to Table of Contents](#)