

Onconova Therapeutics Inc

COMPANY AND PIPELINE OVERVIEW REPORT

A comprehensive coverage of the company and a summary of the drug pipeline portfolio.

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ABOUT COMPANY AND PIPELINE OVERVIEW REPORT

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GLOSSARY

Number of Drugs in Active Development

Number of drugs associated with the company or subsidiary that are currently in active development, i.e. the development status for the drug(s) is one of the following: Discovery, Clinical, Phase 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i.e. where the development status for the drug(s) is one of the following: No Development Reported, Discontinued, or Withdrawn.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.

PLEASE NOTE: the financials section where present in the report includes: Share Information, Stock Performance chart (including the consensus recommendation), and Major Shareholders. Financial Performance presents graphical and tabular data on Worldwide Sales, Operating Income and Net Income over time, together with a Quarterly earnings update. Balance Sheet lists Assets, Liabilities and Stockholders Equity, and Forecasts includes: EPS Forecast and Other Forecasts. The data reported in all sections (except share information and major stock holders) are correct as of the publication date of the report (and not the download date). For share information and major stock holders the data is correct for the date shown with these sections



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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	18
Number of Inactive Drugs	6
Number of Patents as Owner	14
Number of Patents as Third Party	1
Number of Deals	15
Key Indications	Cancer,Hematological neoplasm,Radiation sickness,Solid tumor,Acute myelogenous leukemia,Myelodysplastic syndrome,Acute lymphoblastic leukemia,Central nervous system disease,Chronic myelocytic leukemia,Inflammatory disease,Ovary tumor,Squamous cell carcinoma,Toxicity
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,Cyclooxygenase 2 inhibitor,Tumor protein p73 inhibitor,AKT protein kinase inhibitor,BCL2L11 gene stimulator,Bcr protein inhibitor,Casein kinase II inhibitor,Cyclin D1 inhibitor,Jun N terminal kinase modulator,MAP kinase inhibitor,Phosphoinositide 3-kinase inhibitor,Polo-like kinase 1 inhibitor,Tubulin beta inhibitor
Key Technologies	Small molecule therapeutic,Oral formulation,Infusion,Intravenous formulation,Capsule formulation,Prodrug,Subcutaneous formulation,Analytical method,Drug screening,Formulation oral taste-masking,Formulation preservation,Formulation solid oral,Liquid formulation,Quick release

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.

FINANCIAL

In June 2013, Onconova filed a form S-1 registration statement with the US SEC for the proposed IPO of its common stock. In July 2013, the company announced the pricing of the IPO of 5,166,667 shares of its common stock priced at \$15 each. The underwriters were granted a 30-day option to purchase an additional 7,75,000 shares of the common stock at the same price to cover overallotments. The shares were to begin trading on The NASDAQ Global Market on July 25, 2013 under the ticker symbol 'ONTX'. The offer was expected to close on July 30, 2013. By September 2013,

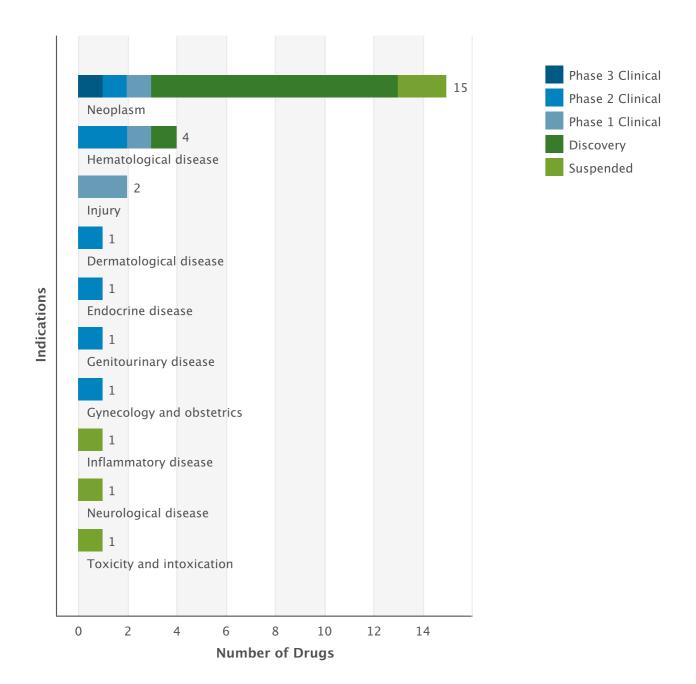


the offering had been closed and the company raised net proceeds of \$79.6 million. In December 2013, NASDAQ reported that, Onconova would be added to the NASDAQ Biotechnology Index under the ticker symbol 'ONTX', as a result of the annual re-ranking, which would become effective prior to market open on December 23, 2013.

PRODUCT PORTFOLIO SUMMARY DRUGS

Drugs by Indication

Active Drugs by Indication Chart



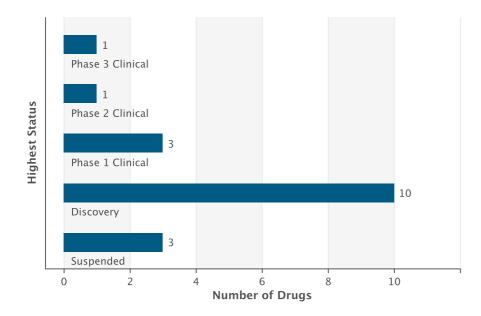


Drugs by Indication Table

Indication	Active	Inactive	Total
Neoplasm	15	6	21
Hematological disease	4	0	4
Endocrine disease	1	1	2
Injury	2	0	2
Gynecology and obstetrics	1	1	2
Dermatological disease	1	0	1
Toxicity and intoxication	1	0	1
Neurological disease	1	0	1
Gastrointestinal disease	0	1	1
Inflammatory disease	1	0	1
Genitourinary disease	1	0	1

Drugs by Highest Status

Active Drugs by Highest Status Chart





Drugs by Highest Status Table

Development Status	Number of Drugs
Phase 3 Clinical	1
Phase 2 Clinical	1
Phase 1 Clinical	3
Discovery	10
Suspended	3
No Development Reported	6

DEALS

Deal Type	Prin	cipal	Pai	tner	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	7	28
Hematological disease	2	5
Endocrine disease	0	3
Genitourinary disease	0	2
Dermatological disease	1	2
Gastrointestinal disease	0	2
Gynecology and obstetrics	0	2
Immune disorder	1	1



Trials by Phase

Phase	Ongoing	All
Phase 3	2	3
Phase 2	3	7
Phase 1	3	20
Phase not specified	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

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	1	6
Infectious disease	2	0	2
Injury	3	0	3
Toxicity and intoxication	1	0	1
Inflammatory disease	7	0	7



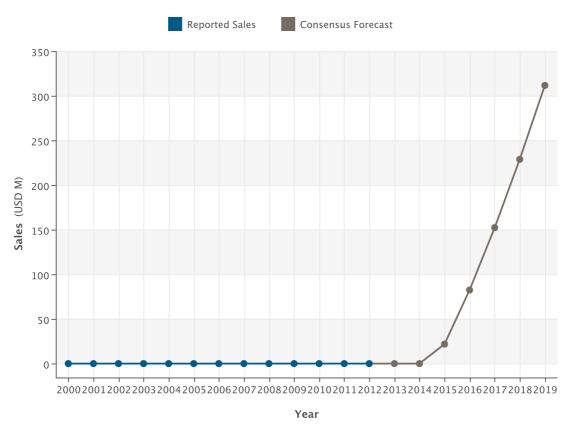
Gynecology and obstetrics	1	0	1
Dermatological disease	1	0	1
Ulcer	1	0	1

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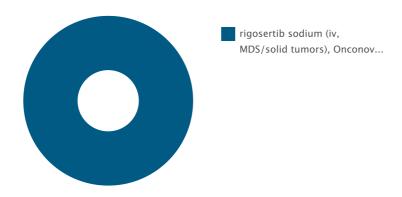
PRODUCT PORTFOLIO FINANCIALS

DRUG SALES AND FORECASTS





Drug Sales as a Share of the Total Sales 2015





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

Drug Name	rigosertib sodium (iv, MDS/solid tumors), Onconova/SymBio
Key Synonyms	rigosertib, Novonex, Estybon, rigosertib sodium
Originator Company	Onconova Therapeutics Inc
Active Companies	Baxter International Inc, SymBio Pharmaceuticals Ltd, Onconova Therapeutics Inc
Inactive Companies	
Highest Status	Phase 3 Clinical
Active Indications	Hematological neoplasm, Myelodysplastic syndrome, Acute myelogenous leukemia, Solid tumor, Pancreas tumor, Acute lymphoblastic leukemia, Ovary tumor
Target-based Actions	Jun N terminal kinase modulator, Polo-like kinase 1 inhibitor, Cyclin-dependent kinase-1 inhibitor, AKT protein kinase inhibitor, Cyclin D1 inhibitor, Phosphoinositide 3-kinase inhibitor, MAP kinase inhibitor, BCL2L11 gene stimulator
Other Actions	Cell cycle inhibitor, Apoptosis stimulator, Anticancer protein kinase inhibitor
Technologies	Intravenous formulation, Infusion, Small molecule therapeutic
Last Change Date	13-Feb-2014

rigosertib sodium (oral capsule, MDS/squamous cell carcinoma/solid tumors), Onconova/SymBio

Drug Name	rigosertib sodium (oral capsule, MDS/squamous cell carcinoma/solid tumors), Onconova/SymBio
Key Synonyms	Estybon, rigosertib sodium, Novonex, rigosertib
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc, SymBio Pharmaceuticals Ltd
Inactive Companies	
Highest Status	Phase 2 Clinical
Active Indications	Myelodysplastic syndrome, Solid tumor, Squamous cell carcinoma, Acute myelogenous leukemia, Chronic myelocytic leukemia
Target-based Actions	Jun N terminal kinase modulator, Polo-like kinase 1 inhibitor, Cyclin-dependent kinase-1 inhibitor, AKT protein kinase inhibitor, Phosphoinositide 3-kinase inhibitor, MAP kinase inhibitor, BCL2L11 gene stimulator
Other Actions	Apoptosis stimulator, Anticancer protein kinase inhibitor, Synergist, Cell cycle inhibitor
Technologies	Oral formulation, Capsule formulation, Small molecule therapeutic
Last Change Date	13-Feb-2014



recilisib sodium (sc, radiation sickness), Onconova

Drug Name	recilisib sodium (sc, radiation sickness), Onconova
Key Synonyms	Ex-RAD, recilisib sodium, recilisib
Originator Company	Onconova Therapeutics Inc
Active Companies	Pullan Consulting, Onconova Therapeutics Inc
Inactive Companies	
Highest Status	Phase 1 Clinical
Active Indications	Radiation sickness
Target-based Actions	Cyclin-dependent kinase inhibitor 1 inhibitor, p53 tumor suppressor protein inhibitor, Bax protein inhibitor, Abl tyrosine kinase inhibitor, Tumor protein p73 inhibitor
Other Actions	Anticancer protein kinase inhibitor, Apoptosis inhibitor, Radioprotectant
Technologies	Subcutaneous formulation, Small molecule therapeutic
Last Change Date	24-Jan-2014

briciclib sodium

Drug Name	briciclib sodium
Key Synonyms	briciclib, briciclib sodium
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc, Pullan Consulting
Inactive Companies	
Highest Status	Phase 1 Clinical
Active Indications	Hematological neoplasm
Target-based Actions	Cyclin D1 inhibitor
Other Actions	Apoptosis stimulator, Cell cycle inhibitor
Technologies	Prodrug, Intravenous formulation, Infusion, Small molecule therapeutic
Last Change Date	12-Feb-2014



recilisib sodium (oral, radiation sickness), Onconova

Drug Name	recilisib sodium (oral, radiation sickness), Onconova
Key Synonyms	Ex-RAD, recilisib, recilisib sodium
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc, Pullan Consulting
Inactive Companies	
Highest Status	Phase 1 Clinical
Active Indications	Radiation sickness
Target-based Actions	Cyclin-dependent kinase inhibitor 1 inhibitor, p53 tumor suppressor protein inhibitor, Bax protein inhibitor, Abl tyrosine kinase inhibitor, Tumor protein p73 inhibitor
Other Actions	Anticancer protein kinase inhibitor, Apoptosis inhibitor, Radioprotectant
Technologies	Oral formulation, Small molecule therapeutic
Last Change Date	04-Dec-2013

ON-24160

Drug Name	ON-24160
Key Synonyms	
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc, Pullan Consulting
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	Tubulin beta inhibitor
Other Actions	Anticancer
Technologies	Oral formulation, Small molecule therapeutic
Last Change Date	03-Apr-2013



ON-044580

Drug Name	ON-044580
Key Synonyms	
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc, Pullan Consulting
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	IL-3 antagonist, STAT-5 inhibitor, Jak2 tyrosine kinase inhibitor, Abl tyrosine kinase inhibitor, Bcr protein inhibitor
Other Actions	Anticancer protein kinase inhibitor, Apoptosis stimulator
Technologies	Small molecule therapeutic
Last Change Date	20-Sep-2013

ON-123300

Drug Name	ON-123300
Key Synonyms	
Originator Company	Onconova Therapeutics Inc
Active Companies	Pullan Consulting, Onconova Therapeutics Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	NUAK SNF1-like protein kinase 1 inhibitor, Cyclin-dependent kinase-4 inhibitor
Other Actions	Apoptosis stimulator, Anticancer protein kinase inhibitor
Technologies	Small molecule therapeutic
Last Change Date	19-Sep-2013

ON-1231320

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

mitotic cell cycle inhibitors (cancer), Onconova

Drug Name	mitotic cell cycle inhibitors (cancer), Onconova
Key Synonyms	
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	Tubulin alpha inhibitor, Tubulin beta inhibitor
Other Actions	Cell cycle inhibitor
Technologies	Small molecule therapeutic
Last Change Date	09-Nov-2013

ALK inhibitors (cancer), Onconova

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

ON-108600

Drug Name	ON-108600
Key Synonyms	
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	Casein kinase II inhibitor, Cyclin-dependent kinase-9 inhibitor
Other Actions	Apoptosis stimulator, Anticancer protein kinase inhibitor, Cell cycle inhibitor
Technologies	Small molecule therapeutic
Last Change Date	01-May-2013

ON-146 series (cancer), Onconova

Drug Name	ON-146 series (cancer), Onconova
Key Synonyms	
Originator Company	Onconova Therapeutics Inc
Active Companies	Pullan Consulting, Onconova Therapeutics Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Hematological neoplasm
Target-based Actions	Phosphoinositide-3 kinase delta inhibitor, Phosphoinositide-3 kinase alpha inhibitor
Other Actions	Anticancer
Technologies	Small molecule therapeutic
Last Change Date	04-Jun-2013

ON-108110

Duran Nama	ON 400440
Drug Name	ON-108110
Key Synonyms	
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	PIM-3 protein kinase inhibitor, Casein kinase II inhibitor
Other Actions	Cell cycle inhibitor, Anticancer protein kinase inhibitor, Apoptosis stimulator
Technologies	Small molecule therapeutic
Last Change Date	19-Apr-2013



ON-015640

Drug Name	ON-015640
Key Synonyms	
Originator Company	Onconova Therapeutics Inc
Active Companies	Onconova Therapeutics Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	Tubulin antagonist
Other Actions	Anticancer
Technologies	Small molecule therapeutic
Last Change Date	22-Apr-2013

ON-09300

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

ON-09250

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

ON-01500 series, Onconova

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

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