THOMSON REUTERS
CORTELLIS™

Merrimack Pharmaceuticals Inc

CORTELLIS COMPANY DETAILED PIPELINE REPORT

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

Publication Date: 19-Feb-2013

THOMSON REUTERS
3 Times Square
New York, New York 10036
United States

Tel: +1 646 223 4000

thomsonreuters.com

Return to Table of Contents

THOMSON REUTERS

ABOUT CORTELLIS COMPANY DETAILED PIPELINE REPORT

Thomson Reuters provides the knowledge, tools, and expertise to help support drug discovery and development activities, IP portfolio optimization, identification of licensing and partnering opportunities, delivery of successful regulatory submissions, and the ability to keep current with the rapidly-changing pharmaceutical and chemical markets, supporting informed, early decisions.

This report was created by Thomson Reuters, using information from *Thomson Reuters Cortellis™ for Competitive Intelligence*; a comprehensive, proven intelligence solution that leverages the most accurate, complete, and widely respected drug pipeline information.From drug discovery and development activities to patent reports, the latest deals, and partnering opportunities, *Cortellis* can provide the confidence to make the most informed business decisions, faster. *Cortellis for Competitive Intelligence* provides accurateand validated information on pharmaceutical and biotechnology companies globally, their drug pipelines, deals, patents, and clinical trials, plus breaking industry news and conference coverage. All contained in one simple, highly intuitive research platform.

Cortellis Company Detailed Pipeline reports are the second in a series of that track pharmaceutical and biotechnology companies worldwide. All *Cortellis for Competitive Intelligence* content is subject to the most comprehensive editorial review process available, conducted by scientists, pharma professionals, regulatory experts, and generics specialists. Featuring timely drug pipeline information expertly uncovered and integrated from over 400 global meetings each year, you'll always be on top of the latest developments.

Chosen by leading life sciences companies, their executives and investors, *Cortellis for Competitive Intelligence* accelerates your deal-making and gives you timely insights on the development landscape.

Discover undiscovered opportunities in drug development and licensing faster with *Thomson Reuters Cortellis™ for Competitive Intelligence*

DISCLAIMER

The information contained in this report is based on sources believed to be correct but Thomson Reuters does not guarantee the accuracy, timeliness, or completeness of this information. Opinions, if any, are those held by the author of any individual report or article at the time of initial publication and do not necessarily reflect the views of Thomson Reuters.

Information in this report on companies is intended for reference use only, and does not constitute a recommendation to buy or sell any particular security or other investment and does not constitute an offer to buy from or sell to any particular investor. Any company or securities mentioned in this report may not be suitable for any particular investor, depending on that investor's financial position and needs.

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

Return to Table of Contents

Merrimack Pharmaceuticals Inc

COMPANY OVERVIEW

Company Name	Merrimack Pharmaceuticals Inc
Parent Company Name	Merrimack Pharmaceuticals Inc
Website	http://www.merrimackpharma.com
Country	US
Number of Drugs in Active Development	9
Number of Inactive Drugs	8
Number of Patents as Owner	32
Number of Patents as Third Party	5
Number of Deals	16
Key Indications	Cancer,Breast tumor,Solid tumor,Stomach tumor,Advanced solid tumor,Non-small-cell lung cancer,Ovary tumor,Pancreas tumor,Colorectal tumor,Endometrioid carcinoma,Fallopian tube cancer,Glioma,Metastatic pancreas cancer,Peritoneal tumor
Key Target-based Actions	Erbb3 tyrosine kinase receptor inhibitor,Epidermal growth factor antagonist,Erbb2 tyrosine kinase receptor inhibitor,Alpha-fetoprotein stimulator,Insulin-like growth factor 1 antagonist,Erbb2 tyrosine kinase receptor modulator,Topoisomerase I inhibitor,DNA polymerase inhibitor,Topoisomerase II inhibitor,Albumin agonist,Albumin modulator,CD49d antagonist,EGFR family tyrosine kinase receptor inhibitor,Protein tyrosine kinase inhibitor,Unspecified growth factor receptor modulator,VEGF receptor antagonist
Key Technologies	Biological therapeutic,Monoclonal antibody human,Parenteral formulation unspecified,Small molecule therapeutic,Monoclonal antibody,Liposome formulation,Intravenous formulation,Multivalent monoclonal antibody,Drug combination,Nanoparticle formulation

COMPANY PROFILE

SUMMARY

Merrimack Pharmaceuticals Inc (formerly Atlantic BioPharmaceuticals Inc), founded in 2000 and headquartered in Cambridge, MA, is a privately-held biotechnology company focused on the study of protein networks to discover and develop pharmaceuticals in the area of immunology and oncology. In February 2002, Atlantic acquired Merrimack; the merged company was to operate as Merrimack Pharmaceuticals.

The company's network biology platform, integrating Target Orientated Screening (TOS) and Profile Orientated Screening (POS) technologies developed by researchers at the Massachusetts Institute of Technology and Harvard, enables the high-throughput mapping, profiling and modeling of complex proteins for the discovery, validation and development of targets and novel therapeutics.

Merrimack has ongoing research programs in the areas of immunomodulation, growth factor signalling and apoptosis.

ACQUISITIONS AND SPIN-OFFS

In December 2009, Merrimack acquired HERMES Biosciences.

In February 2002, the merger of Merrimack and Atlantic was completed. Atlantic acquired Merrimack in an all-stock transaction. Robert Mulroy, the former CEO of Atlantic, became President and CEO of the merged company.

EARLY R&D

In June 2008, the company was advancing a set of antibody therapies for solid tumors through preclinical studies. At that time, the company planned to file an IND for a third compound in early 2009.

LICENSING AGREEMENTS

Return to Table of Contents

In September 2008, Selexis signed a commercial license agreement with Merrimack to apply a high-performance cell line, generated using the Selexis technology platform, for the cGMP production of an undisclosed antibody. No financial terms were disclosed.

In April 2008, Merrimack recruited Codon Devices to perform protein engineering and optimization services. Under the terms of the allaince, Codon agreed to use its BioLOGIC platform to design proteins according to Merrimack's specifications. Merrimack agreed to pay its partner clinical milestone payments and royalties on net sales of protein developed with the technology.

By November 2004, GTC Biotherapeutics Inc was to deliver additional material for clinical evaluation for the program with Merrimack, which had entered trials in 2003,.

In June 2004,Merrimack initiated an exploratory research collaboration with Novartis Institutes for BioMedical Research Inc.

By year end 2002, Merrimack had entered into a research collaboration with Neurosearch whereby Neurosearch was to use Merrimack's proprietary technology for the discovery and validation of new compounds targeting neurological disease.

FINANCIAL

In November 2012, Merrimack entered into a loan and security agreement with Hercules Technology Growth Capital for an aggregate principal amount of $40.0 million. The agreement provided for an initial term loan advance of $25.0 million on November 8, 2012 and an additional term loan advance of up to $15.0 million would be available at any time through December 15, 2012 upon Merrimack's request at an an annual rate equal to the greater of 10.55% and 10.55% plus the prime rate of interest minus 5.25%, but may not exceed 12.55%.

In June 2012, Merrimack announced that it was to join the Russell 3000 Index on June 25, 2012. Initial listing of the company on NASDAQ occured in March 2012.

In March 2012, the company priced its IPO of 14.3 million shares at $7.00 per share and would grants underwriters a 30-day option to purchase an additional 2,145,000 shares to cover overallotments. In April 2012, the company raised net proceeds of $100.5 million in an IPO, from the sale of 15,042,459 shares including 742,459 shares folllowing the exercise by the underwriters; in August 2012, the company reported that the net proceeds from the offering was $98.1 million.

In April 2011, Merrimack raised $77 million in a series G private financing.

In January 2010, Merrimack received a $1.5 million tax incentive from the Massachusetts Life Sciences Center.

In June 2008, the company raised $60 million in a series F private equity financing. The company would use the funds to advance its pipeline.

In April 2006, Merrimack raised $65 million in a series E private equity financing.

In April 2005, Merrimack closed equity and debt financings totaling $37.3 million, comprising $28.3 million of series D Preferred Stock and a $9 million venture loan.The funds would allow the company to advance its pipeline through several key milestones.

In May 2004, Merrimack secured $28 million in its series C financing.

R&D GRANTS

In January 2004, Merrimack was awarded a phase I SBIR grant by the National Cancer Institute to support the development and application of its microarray-based network biology platform to the areas of apoptosis and cancer.

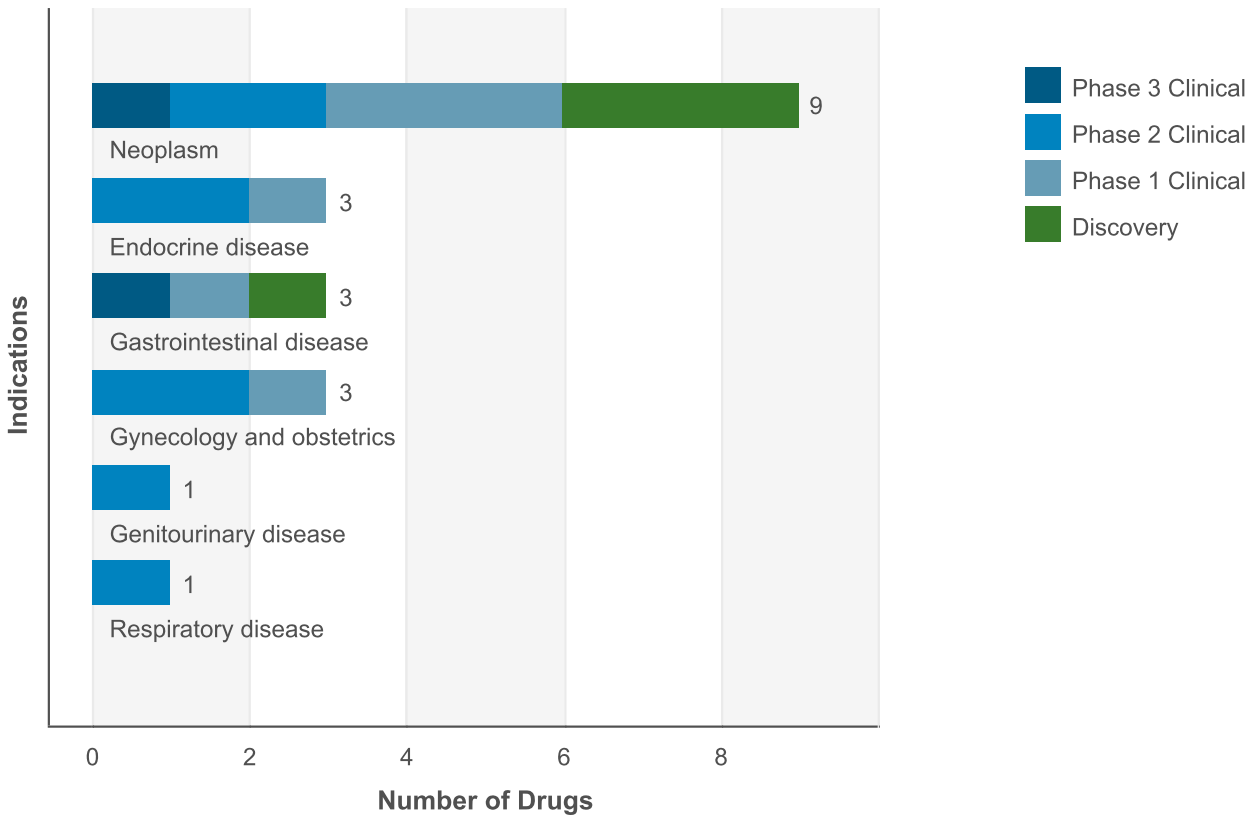
Return to Table of Contents

PRODUCT PORTFOLIO SUMMARY

DRUGS

Drugs by Indication

Active Drugs by Indication Chart



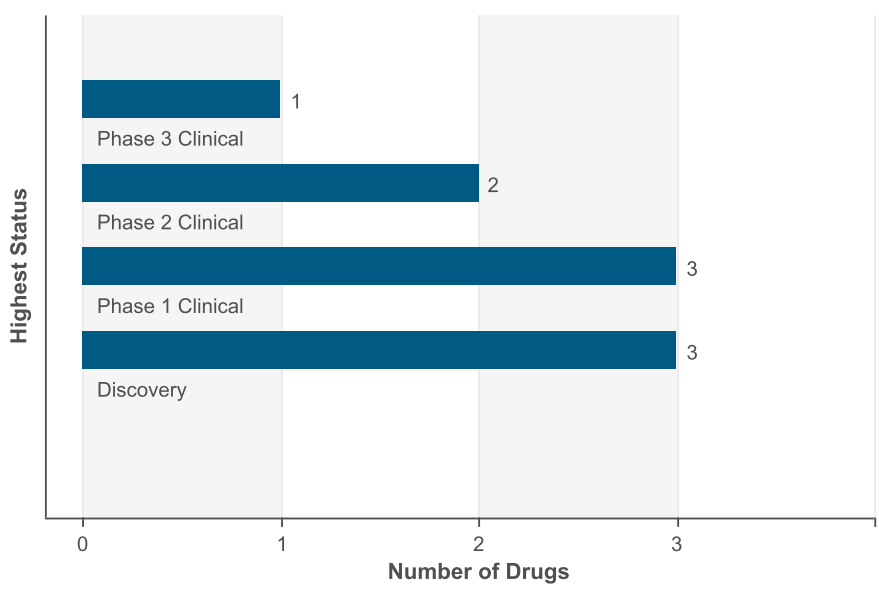
Return to Table of Contents

Drugs by Indication Table

Indication	Active	Inactive	Total
Neoplasm	9	6	15
Immune disorder	0	4	4
Gastrointestinal disease	3	1	4
Endocrine disease	3	0	3
Gynecology and obstetrics	3	0	3
Neurological disease	0	1	1
Hematological disease	0	1	1
Musculoskeletal disease	0	1	1
Dermatological disease	0	1	1
Ocular disease	0	1	1
Respiratory disease	1	0	1
Genitourinary disease	1	0	1
Inflammatory disease	0	1	1

Drugs by Highest Status

Active Drugs by Highest Status Chart



Return to Table of Contents

Drugs by Highest Status Table

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

DEALS

Deal Type	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Drug - Discovery/Design	0	0	1	0	1
Technology - Other Proprietary	1	0	1	0	2
Patent - Exclusive Rights	0	0	1	0	1
Drug - Funding	1	0	0	0	1
Drug - Early Research/Development	1	0	0	0	1
Drug - Development/Commercialization License	5	0	0	0	5
Drug - Commercialization License	0	0	2	0	2
Drug - Manufacturing/Supply	0	0	2	0	2
Technology - Target Validation	1	0	0	0	1

Return to Table of Contents

CLINICAL TRIALS

Trials by Condition Studied

Condition Studied	Ongoing	All
Neoplasm	13	19
Gynecology and obstetrics	2	8
Endocrine disease	2	8
Inflammatory disease	0	4
Gastrointestinal disease	2	4
Immune disorder	0	4
Musculoskeletal disease	0	3
Genitourinary disease	1	2
Respiratory disease	1	2
Dermatological disease	0	1
Ocular disease	0	1

Trials by Phase

Phase	Ongoing	All
Phase 3	1	1
Phase 2	4	9
Phase 1	8	13
Phase not specified	0	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

PATENTS *

Indication	As Owner	As Third Party	Total
Cardiovascular disease	2	0	2
Endocrine disease	15	1	16

Return to Table of Contents

Gastrointestinal disease	8	3	11
Genitourinary disease	6	0	6
Growth disorder	1	0	1
Hematological disease	3	1	4
Immune disorder	9	4	13
Musculoskeletal disease	6	2	8
Neoplasm	29	4	33
Ocular disease	3	0	3
Metabolic disorder	3	1	4
Mouth disease	1	0	1
Neurological disease	7	2	9
Respiratory disease	5	2	7
Infectious disease	5	1	6
Injury	1	1	2
Unidentified indication	0	1	1
Inflammatory disease	5	3	8
Fatigue	1	0	1
Gynecology and obstetrics	13	0	13
Dermatological disease	6	0	6

* 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 DRUG PIPELINE DETAIL

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

irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack

irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack SNAPSHOT

Drug Name	irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack
Key Synonyms	irinotecan
Originator Company	HERMES Biosciences
Active Companies	Merrimack Pharmaceuticals Inc;PharmaEngine Inc
Inactive Companies	HERMES Biosciences
Highest Status	Phase 3 Clinical
Active Indications	Colorectal tumor;Pancreas tumor;Glioma;Stomach tumor;Metastatic pancreas cancer
Target-based Actions	Topoisomerase I inhibitor
Other Actions	Anticancer
Technologies	Liposome formulation;Nanoparticle formulation;Small molecule therapeutic
Last Change Date	20-Dec-2012

irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack DEVELOPMENT PROFILE

SUMMARY

Merrimack Pharmaceuticals (formerly HERMES Biosciences) and licensee PharmaEngine are developing PEP-02 (MM-398), an encapsulated nano-liposomal formulation of irinotecan, for the potential treatment of glioma, colorectal, gastric and pancreatic cancers , ,. In December 2011, a phase III metastatic pancreatic cancer trial began ; in November 2012, top line data were expected in the "next 12 months". In early 2008, an European and Asian phase II trial for the second line treatment of gastric cancer was initiated ; in January 2011, data were presented. In May 2011, a phase II trial was initiated in patients with metastatic colorectal cancer in France. The trial was expected to be completed in December 2012. At that time, a phase I trial in glioma was ongoing. In August 2011, a phase II trial for lung cancer had been planned by PharmaEngine.

PharmaEngine was previously developing the drug for cervical cancer. However, by August 2011, this indication was no longer listed as under development.

irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

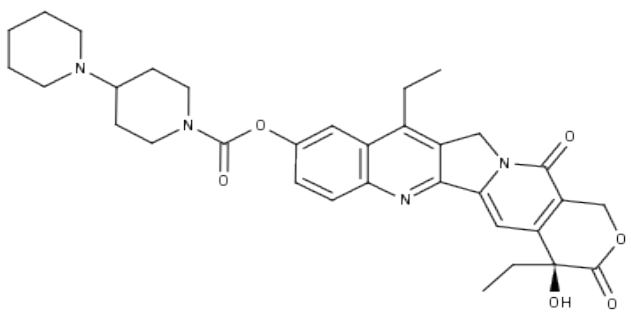
Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Metastatic pancreas cancer	US	Phase 3 Clinical	16-Dec-2011

Return to Table of Contents

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Colorectal tumor	France	Phase 2 Clinical	31-May-2011
Merrimack Pharmaceuticals Inc	Pancreas tumor	US	Phase 2 Clinical	09-May-2011
Merrimack Pharmaceuticals Inc	Stomach tumor	Asia	Phase 2 Clinical	09-May-2011
Merrimack Pharmaceuticals Inc	Stomach tumor	Europe	Phase 2 Clinical	09-May-2011
PharmaEngine Inc	Pancreas tumor	Taiwan	Phase 2 Clinical	31-Jan-2009
Merrimack Pharmaceuticals Inc	Glioma	US	Phase 1 Clinical	09-May-2011
PharmaEngine Inc	Colorectal tumor	Taiwan	Phase 1 Clinical	01-Dec-2004
HERMES Biosciences	Cancer	US	Discontinued	01-Dec-2004
PharmaEngine Inc	Pancreas tumor	US	Discontinued	09-May-2011
PharmaEngine Inc	Stomach tumor	Asia	Discontinued	09-May-2011
PharmaEngine Inc	Stomach tumor	Europe	Discontinued	09-May-2011
PharmaEngine Inc	Uterine cervix tumor	Taiwan	No Development Reported	30-Aug-2011

irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack CHEMICAL STRUCTURES

CAS Registry Number:	Confidence Level:
97682-44-5	1



Name	Type
irinotecan	INN
IHL-305	Research Code
SN-38B-11	Research Code
Irinophore C	

Return to Table of Contents

irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack DRUG NAMES

Names	Type
irinotecan	INN
campothecin derivative (cancer), PharmaEngine	
PEP-02 (nanoliposomal)	Research Code
camptothecin derivative (cancer), PharmaEngine/HERMES	
irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack	
MM-398	Research Code

irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack 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
Solid tumor											
0	0	0	0	0	0	1	2	0	0	1	2
Metastatic colorectal cancer											
0	0	0	0	0	0	0	1	0	1	0	2
Metastatic pancreas cancer											
0	0	1	1	0	0	0	0	0	0	1	1
Adenocarcinoma											
0	0	0	0	0	1	0	0	0	0	0	1
Gastrointestinal tumor											
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
Metastatic lung cancer											
0	0	0	0	0	0	0	0	0	1	0	1
Pancreas tumor											
0	0	0	0	0	1	0	0	0	0	0	1

Return to Table of Contents

Metastatic breast cancer											
0	0	0	0	0	0	0	0	0	1	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	1	1	0	2	1	4	0	1	2	8

Phase Definitions

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

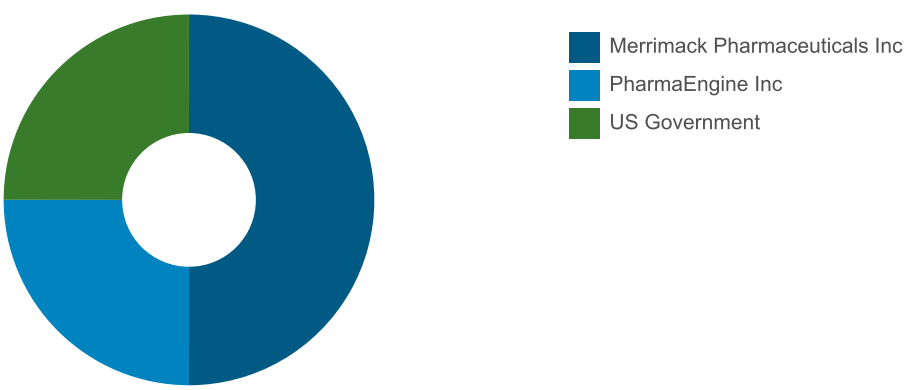
Phase 2 Clinical
Includes Phase 2, Phase 2a, Phase 2b, Phase 1/2 (where enrolment count is 100 or over), Phase 2/3 (where enrolment count is under 300 or not specified)

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

irinotecan (nanoliposomal, cancer), PharmaEngine/Merrimack DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



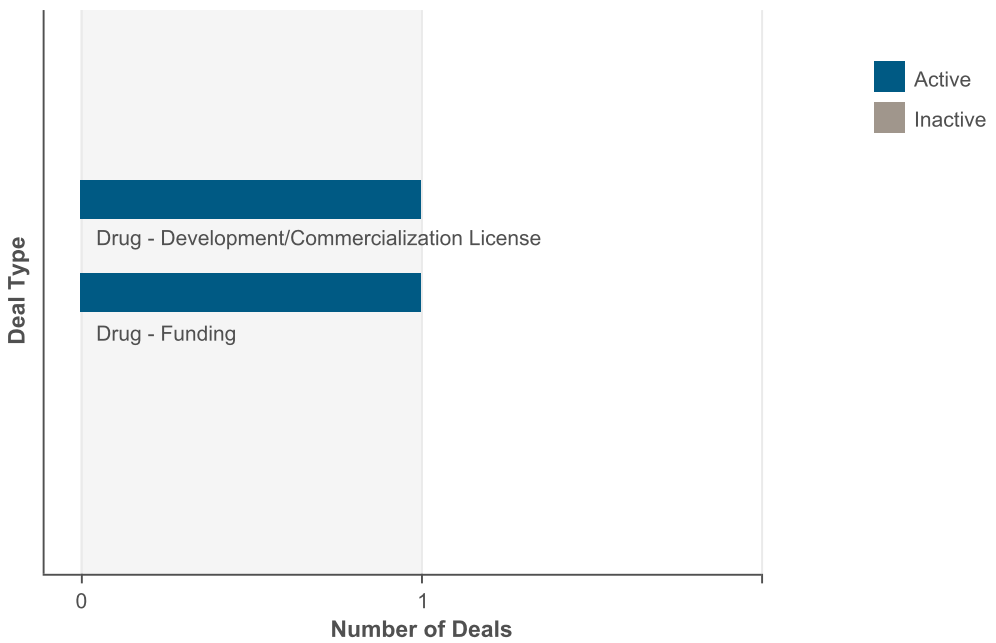
Active Deals
Total: 2

Return to Table of Contents

Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Merrimack Pharmaceuticals Inc	2	0	0	0	2
US Government	0	0	1	0	1
PharmaEngine Inc	0	0	1	0	1

Deals by Type Chart



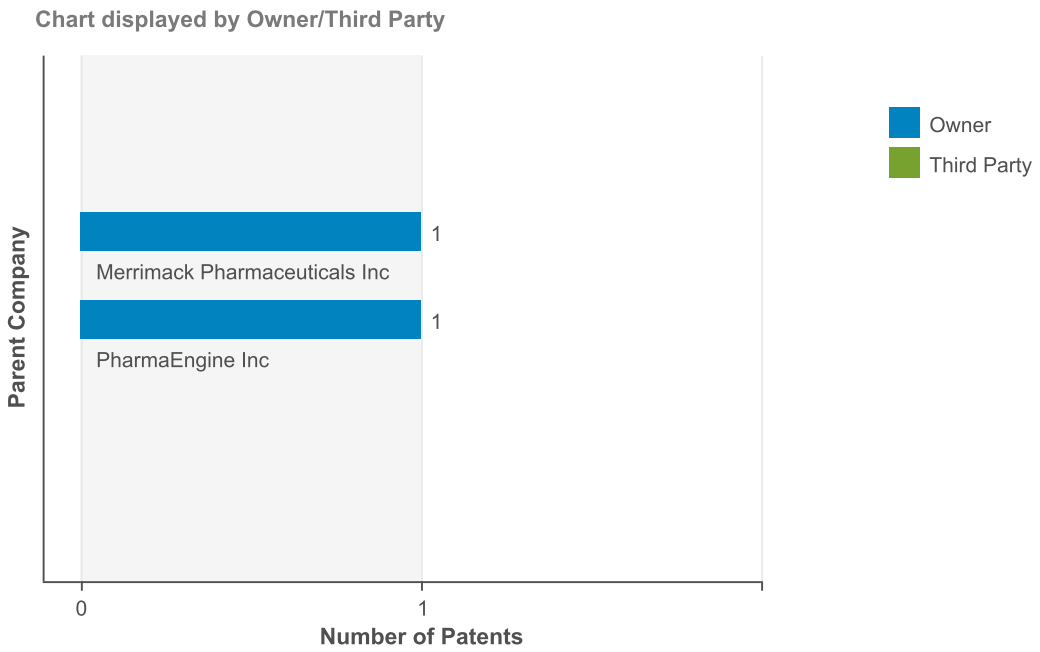
Deals by Type Table

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

Return to Table of Contents

PATENTS

Patents by Parent Company Chart

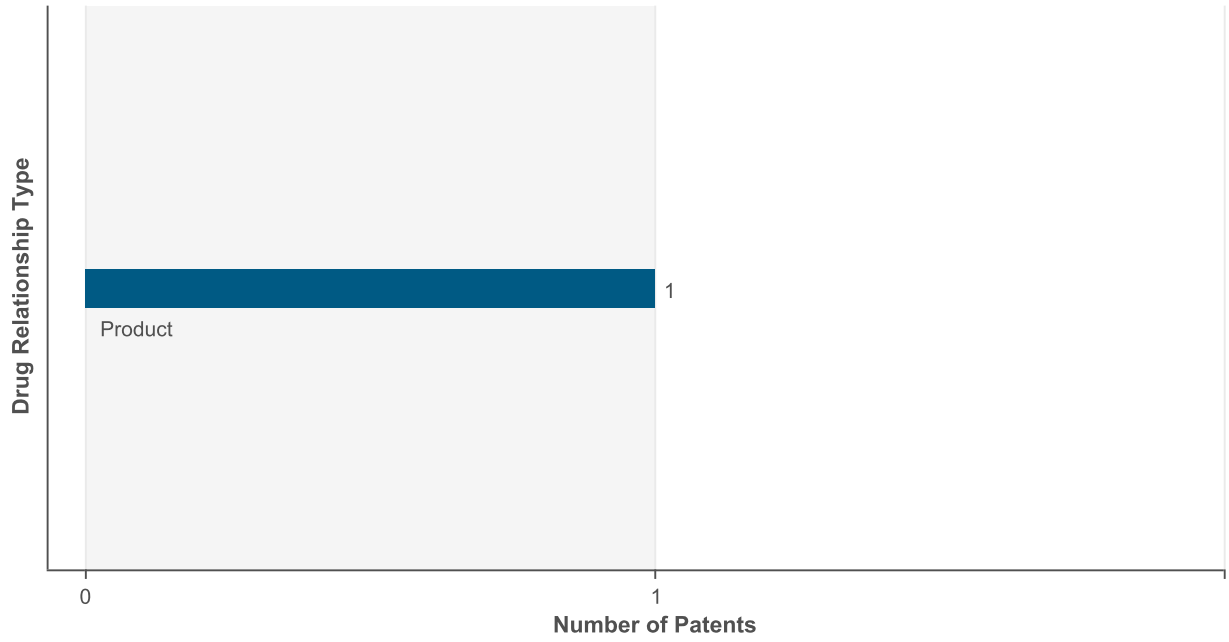


Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Merrimack Pharmaceuticals Inc	1	0	1
PharmaEngine Inc	1	0	1

Return to Table of Contents

Patents by Drug Relationship Type Chart



Patents by Drug Relationship Type Table

Drug Relationship	Total
Product	1

Return to Table of Contents

MM-111

MM-111 SNAPSHOT

Drug Name	MM-111
Key Synonyms	
Originator Company	Merrimack Pharmaceuticals Inc
Active Companies	Merrimack Pharmaceuticals Inc
Inactive Companies	
Highest Status	Phase 2 Clinical
Active Indications	Solid tumor;Breast tumor;Stomach tumor
Target-based Actions	Erbb3 tyrosine kinase receptor inhibitor;Erbb2 tyrosine kinase receptor inhibitor
Other Actions	Anticancer protein kinase inhibitor;Anticancer monoclonal antibody
Technologies	Biological therapeutic;Intravenous formulation;Monoclonal antibody human;Multivalent monoclonal antibody
Last Change Date	31-Jan-2013

MM-111 DEVELOPMENT PROFILE

SUMMARY

Merrimack is developing MM-111, a fully human monoclonal antibody bispecific for ErbB2 and ErbB3, for the potential iv treatment of breast tumor and other solid tumors overexpressing ErbB2 such as stomach and lung cancers,. In June 2009, a phase I/II trial was initiated in patients with HER2 positive cancers ; in June 2011, the trial was ongoing. In March 2010, a phase I/II MM-111 and trastuzumab combination trial in patients with breast cancer began ; in June 2011, the trial was ongoing . In November 2012, the company planned to initiate phase II trial for gastric cancer "within next 12 months".

The company is also developing the anti-ErbB3 antibody MM-121.

MM-111 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Breast tumor	US	Phase 2 Clinical	03-Jun-2009
Merrimack Pharmaceuticals Inc	Solid tumor	US	Phase 2 Clinical	03-Jun-2009
Merrimack Pharmaceuticals Inc	Stomach tumor	US	Discovery	14-Nov-2012

Return to Table of Contents

MM-111 DRUG NAMES

Names	Type
ErbB2/ErbB3 inhibitor (mAb, iv, cancer), Merrimack Pharmaceuticals	
MM-111	Research Code

MM-111 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
Breast tumor											
0	0	0	0	0	0	0	2	0	0	0	2
Advanced solid tumor											
0	0	0	0	0	0	1	1	0	0	1	1
Esophagus tumor											
0	0	0	0	1	1	0	0	0	0	1	1
Stomach tumor											
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	1	3	0	0	2	4

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)

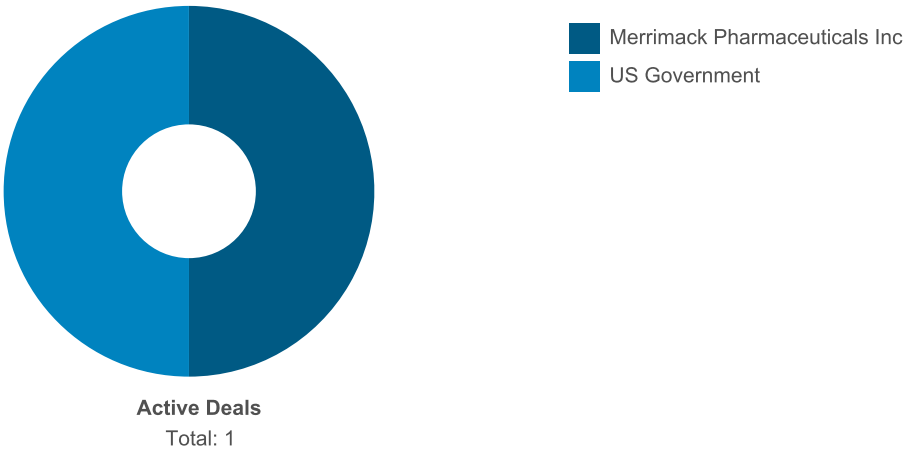
Phase 1 Clinical
Includes Phase 1, Phase 1a, Phase 1, Phase 1/2 (where enrolment count is under 100 or not specified), Phase 0

Return to Table of Contents

MM-111 DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
US Government	0	0	1	0	1
Merrimack Pharmaceuticals Inc	1	0	0	0	1

Return to Table of Contents

Deals by Type Chart

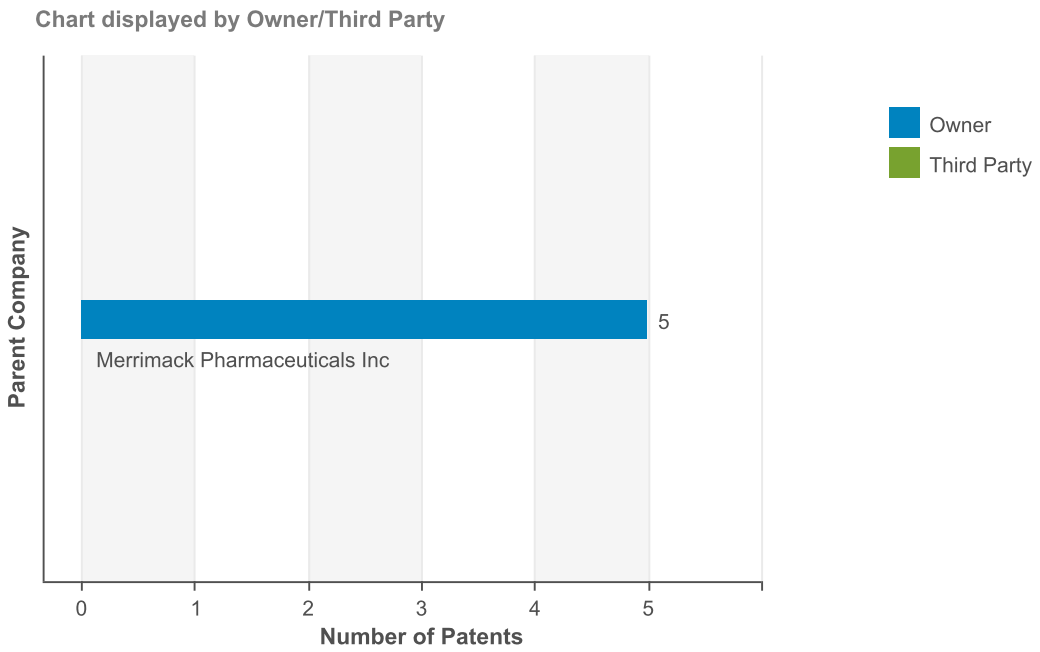
Deals by Type Table

Deal Type	Active	Inactive	Total
Drug - Funding	1	0	1

Return to Table of Contents

PATENTS

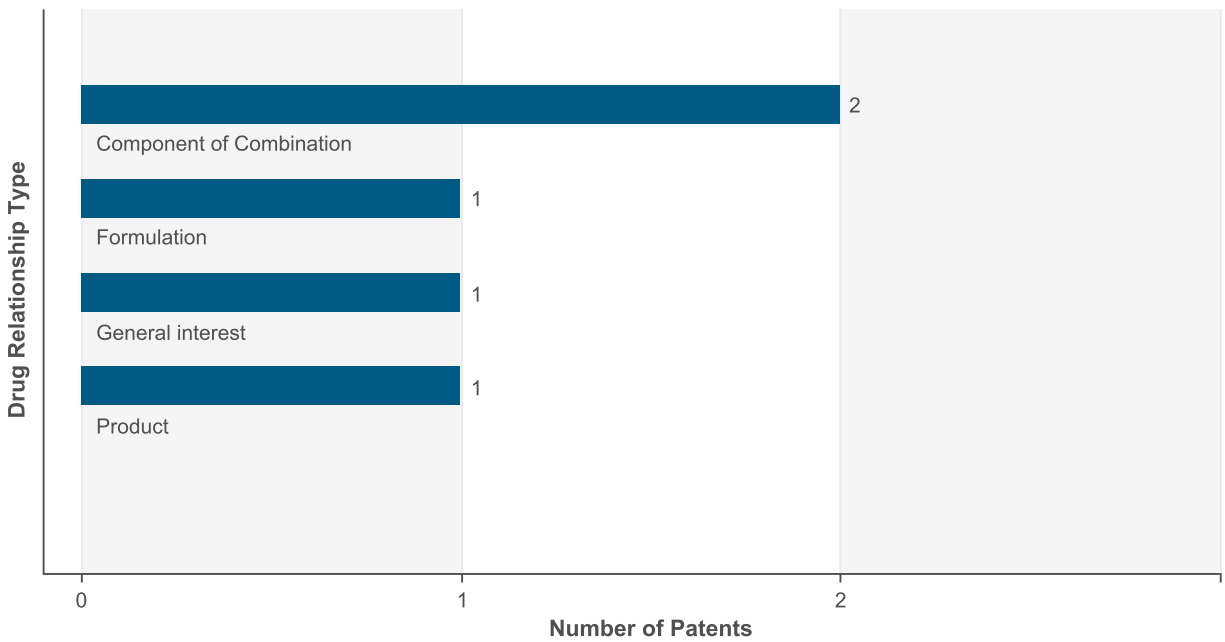
Patents by Parent Company Chart



Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Merrimack Pharmaceuticals Inc	5	0	5

Patents by Drug Relationship Type Chart



Return to Table of Contents

Patents by Drug Relationship Type Table

Drug Relationship	Total
Component of Combination	2
Product	1
General interest	1
Formulation	1

Return to Table of Contents

MM-121

MM-121 SNAPSHOT

Drug Name	MM-121
Key Synonyms	
Originator Company	Merrimack Pharmaceuticals Inc
Active Companies	Sanofi;Merrimack Pharmaceuticals Inc
Inactive Companies	
Highest Status	Phase 2 Clinical
Active Indications	Breast tumor;Peritoneal tumor;Endometrioid carcinoma;Advanced solid tumor;Fallopian tube cancer;Ovary tumor;Non-small-cell lung cancer
Target-based Actions	Erbb3 tyrosine kinase receptor inhibitor;Epidermal growth factor antagonist
Other Actions	Anticancer protein kinase inhibitor;Anticancer monoclonal antibody
Technologies	Biological therapeutic;Intravenous formulation;Infusion;Monoclonal antibody human;Immunoglobulin-G
Last Change Date	20-Nov-2012

MM-121 DEVELOPMENT PROFILE

SUMMARY

Merrimack and licensee Sanofi are developing MM-121 (SAR-256212), a fully human anti-ErbB3 IgG2 monoclonal antibody from a series of antibodies against EGF receptors including MM-111, that blocks binding of Heregulin, Betacellulin and other ligands to ErbB3, for the potential iv treatment of cancer, including non-small-cell lung cancer (NSCLC), breast cancer and gynecological cancer,,. In February 2010, a phase I/II combination study of MM-121 for NSCLC was initiated ; by November 2011, dosing had begun in the phase II part of the trial. In July 2010, a phase II combination trial for breast cancer was initiated ; in March 2011, the trial was ongoing . In October 2011, a phase II ovarian cancer trial began. In May 2012, the company expected top-line data from multiple phase II studies within next 12 months. By June 2012, an international phase II study was ongoing. In November 2010, a phase I combination trial began in patients with locally advanced/metastatic or recurrent ovarian cancer, fallopian tube cancer, primary peritoneal cancer, endometrial cancer or locally advanced/metastatic Her2 non-overexpressing breast cancer . In December 2011, dosing began in a phase I study for advanced solid tumors. In June 2012, data were presented from a phase I study in advanced NSCLC.

MM-121 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Breast tumor	US	Phase 2 Clinical	22-Jul-2010
Merrimack Pharmaceuticals Inc	Non-small-cell lung cancer	Asia	Phase 2 Clinical	18-Nov-2011
Merrimack Pharmaceuticals Inc	Non-small-cell lung cancer	Europe	Phase 2 Clinical	18-Nov-2011

Return to Table of Contents

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Non-small-cell lung cancer	US	Phase 2 Clinical	22-Feb-2010
Merrimack Pharmaceuticals Inc	Ovary tumor	US	Phase 2 Clinical	18-Oct-2011
Sanofi	Breast tumor	US	Phase 2 Clinical	22-Jul-2010
Sanofi	Non-small-cell lung cancer	Asia	Phase 2 Clinical	18-Nov-2011
Sanofi	Non-small-cell lung cancer	Europe	Phase 2 Clinical	18-Nov-2011
Sanofi	Non-small-cell lung cancer	US	Phase 2 Clinical	22-Feb-2010
Sanofi	Ovary tumor	US	Phase 2 Clinical	18-Oct-2011
Merrimack Pharmaceuticals Inc	Advanced solid tumor	US	Phase 1 Clinical	13-Dec-2011
Merrimack Pharmaceuticals Inc	Endometrioid carcinoma	US	Phase 1 Clinical	08-Nov-2010
Merrimack Pharmaceuticals Inc	Fallopian tube cancer	US	Phase 1 Clinical	08-Nov-2010
Merrimack Pharmaceuticals Inc	Peritoneal tumor	US	Phase 1 Clinical	08-Nov-2010
Sanofi	Advanced solid tumor	US	Phase 1 Clinical	13-Dec-2011

MM-121 DRUG NAMES

Names	Type
SAR-256212	Research Code
MM-121	Research Code
EGFR family tyrosine kinase receptor inhibitor (intravenous formulation/monoclonal antibody, cancer/NSCLC), Merrimack Pharmaceuticals/sanofi-aventis	
ErbB3 tyrosine kinase receptor modulator (intravenous formulation/monoclonal antibody, cancer/NSCLC), Merrimack Pharmaceuticals/sanofi-aventis	
EGFR antibodies (cancer), Merrimack	
ErbB antibodies (cancer), Merrimack	
MM-1x1 program (iv, cancer), Merrimack	

MM-121 CLINICAL TRIALS

Trials by Phase and Condition Studied

Return to Table of Contents

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
Breast tumor											
0	0	0	0	1	2	0	1	0	0	1	3
Solid tumor											
0	0	0	0	0	0	2	2	0	0	2	2
Ovary tumor											
0	0	0	0	1	1	0	1	0	0	1	2
Metastasis											
0	0	0	0	0	0	1	1	0	0	1	1
Advanced solid tumor											
0	0	0	0	0	0	1	1	0	0	1	1
Non-small-cell lung cancer											
0	0	0	0	1	1	0	0	0	0	1	1
Fallopian tube tumor											
0	0	0	0	0	0	0	1	0	0	0	1
Peritoneal tumor											
0	0	0	0	0	0	0	1	0	0	0	1
Metastatic breast cancer											
0	0	0	0	0	0	0	1	0	0	0	1
Metastatic ovary cancer											
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	3	4	4	5	0	0	7	9

Return to Table of Contents

Phase Definitions

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

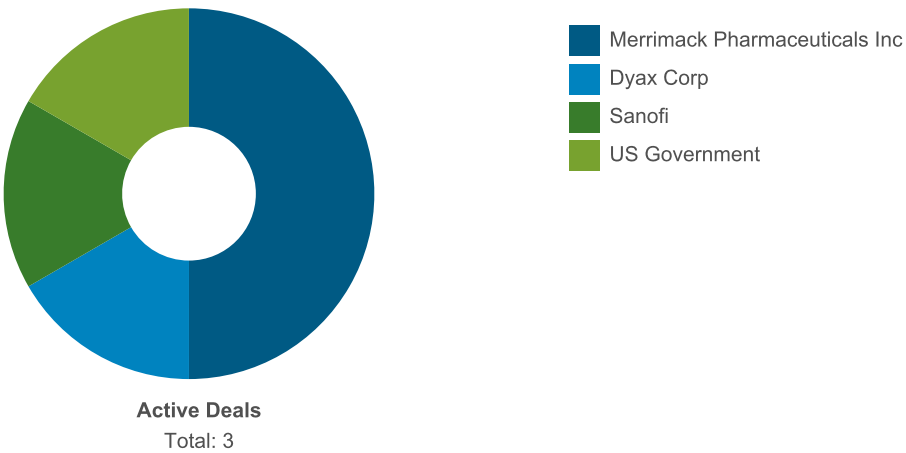
Phase 2 Clinical
Includes Phase 2, Phase 2a, Phase 2b, Phase 1/2 (where enrolment count is 100 or over), Phase 2/3 (where enrolment count is under 300 or not specified)

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

MM-121 DEALS AND PATENTS

DEALS

Deals by Parent Company Chart



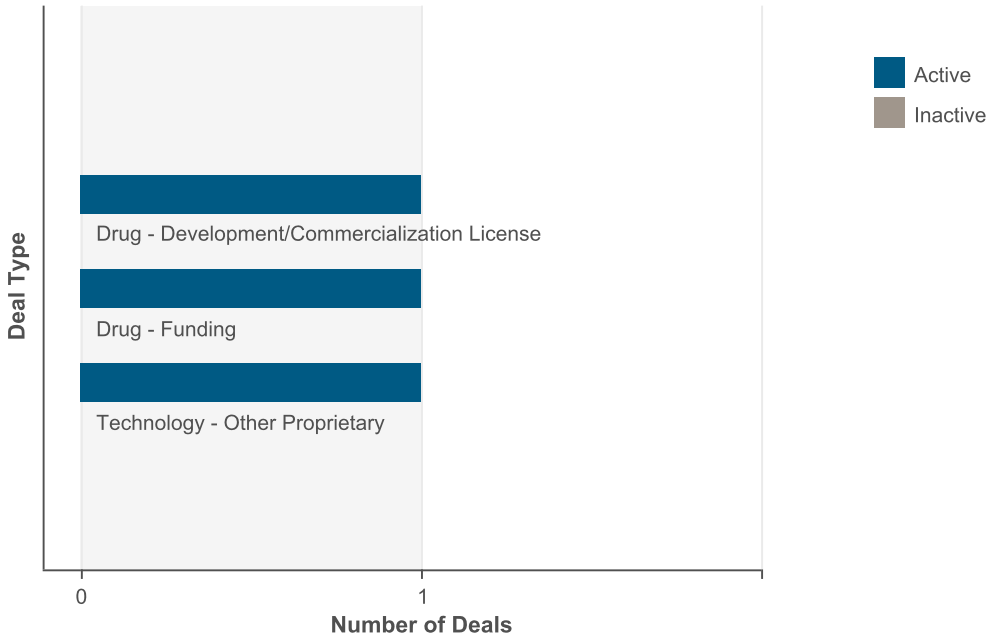
Active Deals
Total: 3

Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Merrimack Pharmaceuticals Inc	2	0	1	0	3
Sanofi	0	0	1	0	1
Dyax Corp	1	0	0	0	1
US Government	0	0	1	0	1

Return to Table of Contents

Deals by Type Chart



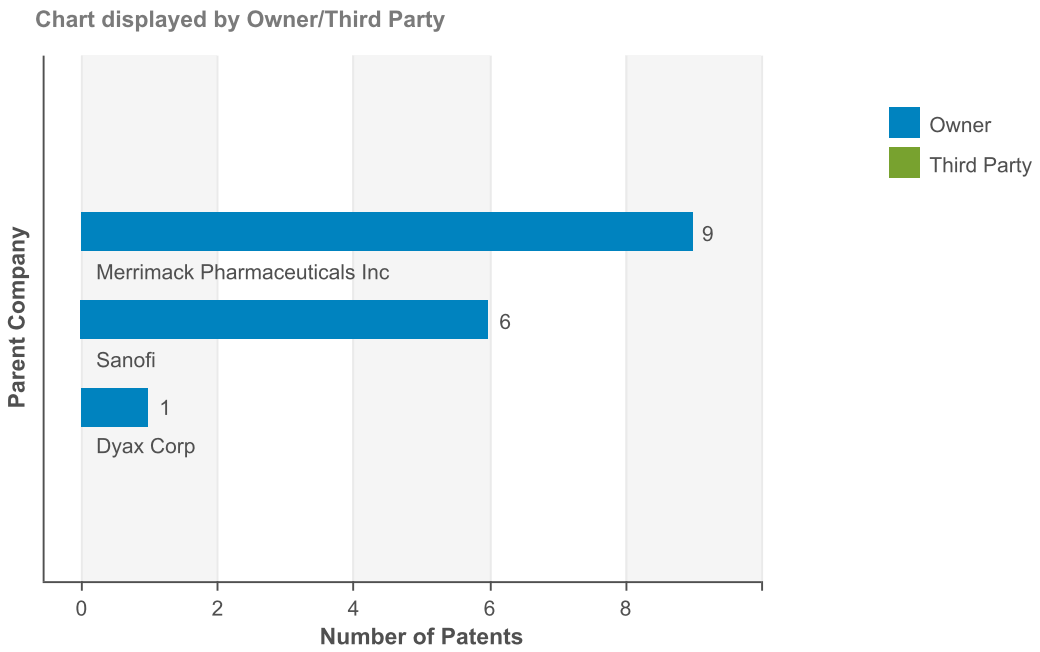
Deals by Type Table

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

Return to Table of Contents

PATENTS

Patents by Parent Company Chart

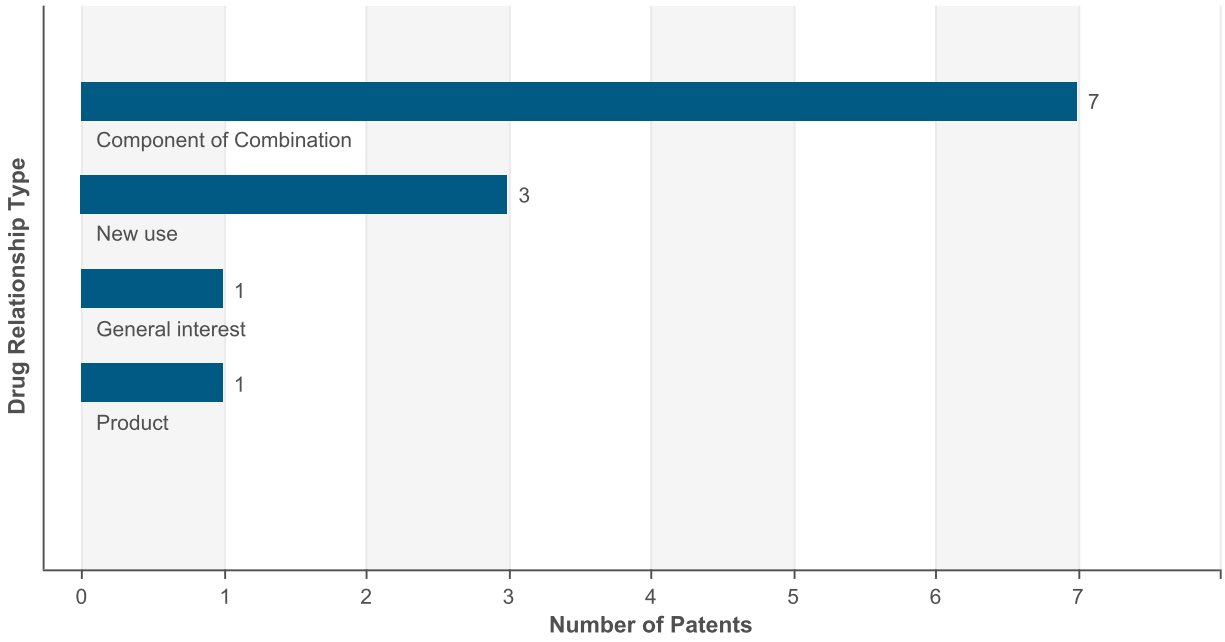


Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Merrimack Pharmaceuticals Inc	9	0	9
Sanofi	6	0	6
Dyax Corp	1	0	1

Return to Table of Contents

Patents by Drug Relationship Type Chart



Patents by Drug Relationship Type Table

Drug Relationship	Total
Component of Combination	7
New use	3
General interest	1
Product	1

Return to Table of Contents

MM-141

MM-141 SNAPSHOT

Drug Name	MM-141
Key Synonyms	
Originator Company	Merrimack Pharmaceuticals Inc
Active Companies	Merrimack Pharmaceuticals Inc
Inactive Companies	
Highest Status	Phase 1 Clinical
Active Indications	Solid tumor;Cancer
Target-based Actions	Erbb3 tyrosine kinase receptor inhibitor;Insulin-like growth factor 1 antagonist
Other Actions	Anticancer monoclonal antibody;Anticancer protein kinase inhibitor
Technologies	Biological therapeutic;Parenteral formulation unspecified;Monoclonal antibody human;Multivalent monoclonal antibody
Last Change Date	13-Dec-2012

MM-141 DEVELOPMENT PROFILE

SUMMARY

Merrimack is developing MM-141, a fully human bispecific tetravalent mAb, which targets Erbb3 tyrosine kinase and IGF-1 receptors, for the potential treatment of cancer, including solid tumors,. In November 2012, a phase I study began for solid tumors .

MM-141 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Solid tumor	US	Phase 1 Clinical	30-Nov-2012
Merrimack Pharmaceuticals Inc	Cancer	US	Discovery	08-Jan-2007

MM-141 DRUG NAMES

Names	Type
MM-141	Research Code

MM-141 CLINICAL TRIALS

Trials by Phase and Condition Studied

Return to Table of Contents

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
Advanced solid tumor											
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	1	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

Return to Table of Contents

MM-151

MM-151 SNAPSHOT

Drug Name	MM-151
Key Synonyms	
Originator Company	Merrimack Pharmaceuticals Inc
Active Companies	Merrimack Pharmaceuticals Inc
Inactive Companies	
Highest Status	Phase 1 Clinical
Active Indications	Cancer;Advanced solid tumor
Target-based Actions	
Other Actions	Anticancer polyclonal antibody;Epidermal growth factor modulator;Anticancer monoclonal antibody
Technologies	Antibody polyclonal;Biological therapeutic;Parenteral formulation unspecified;Monoclonal antibody human;Drug combination
Last Change Date	13-Jan-2012

MM-151 DEVELOPMENT PROFILE

SUMMARY

Merrimack is developing MM-151, a multi-specific, ErbB pathway-targetting oligoclonal antibody therapy, consisting of a mixture of three fully human monoclonal antibodies developed by Adimab, for the potential treatment of cancer and advanced solid tumors. In January 2012, a phase I study in advanced solid tumors was initiated.

MM-151 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Advanced solid tumor	US	Phase 1 Clinical	11-Jan-2012
Merrimack Pharmaceuticals Inc	Cancer	US	Discovery	13-May-2009

MM-151 DRUG NAMES

Names	Type
MM-151	Research Code

MM-151 CLINICAL TRIALS

Return to Table of Contents

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
Advanced solid tumor											
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	1	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)

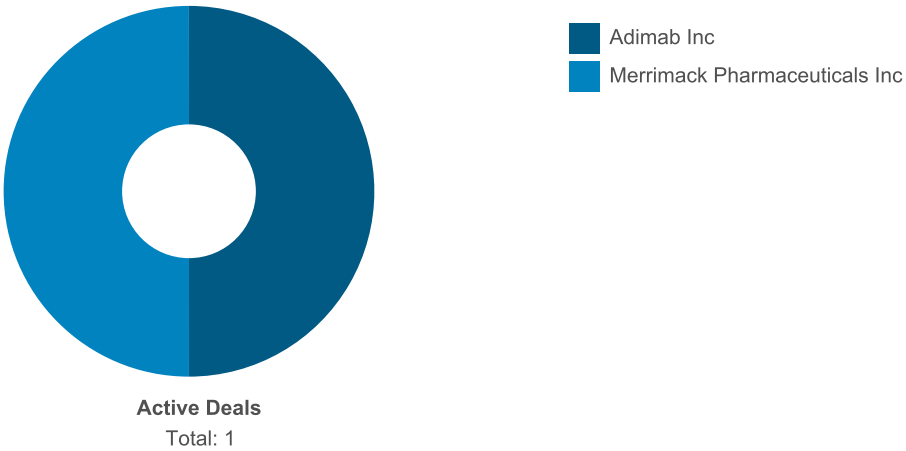
Phase 1 Clinical
Includes Phase 1, Phase 1a, Phase 1, Phase 1/2 (where enrolment count is under 100 or not specified), Phase 0

Return to Table of Contents

MM-151 DEALS AND PATENTS

DEALS

Deals by Parent Company Chart

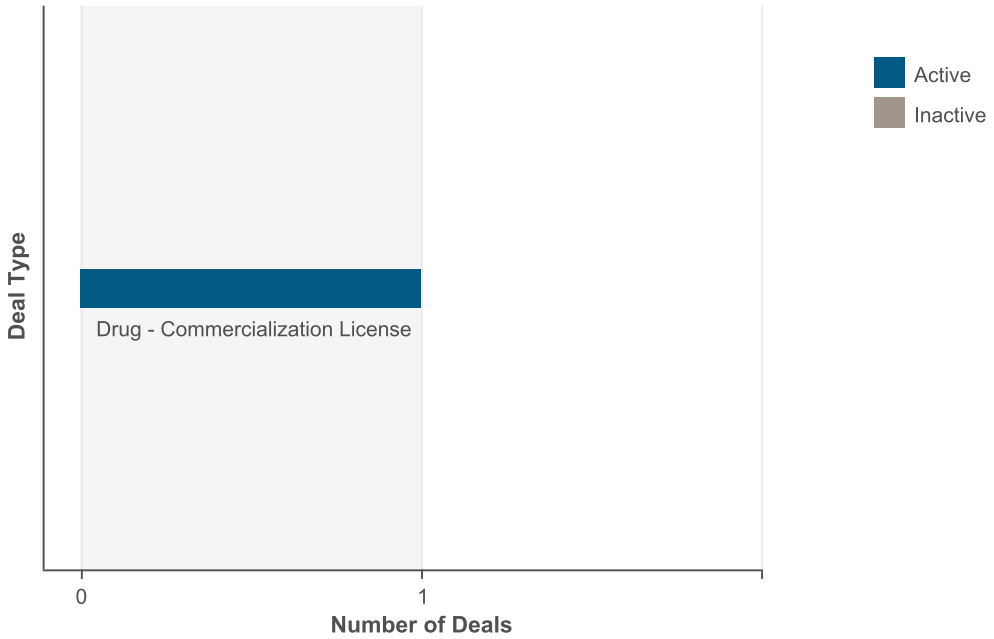


Deals by Parent Company Table

Company Name	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Adimab Inc	1	0	0	0	1
Merrimack Pharmaceuticals Inc	0	0	1	0	1

Return to Table of Contents

Deals by Type Chart



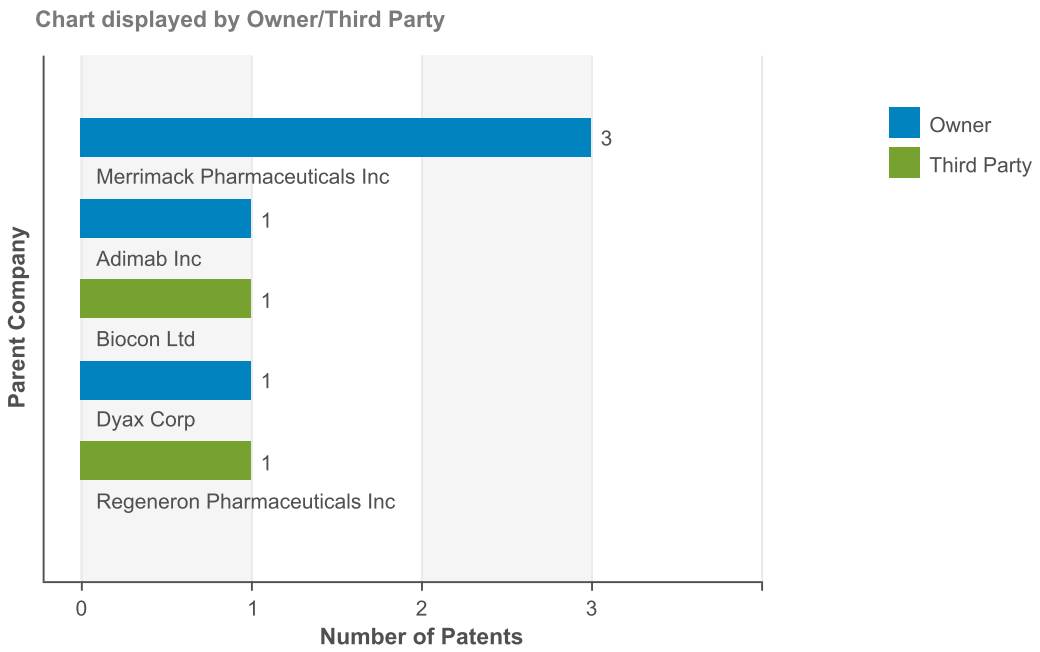
Deals by Type Table

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

Return to Table of Contents

PATENTS

Patents by Parent Company Chart

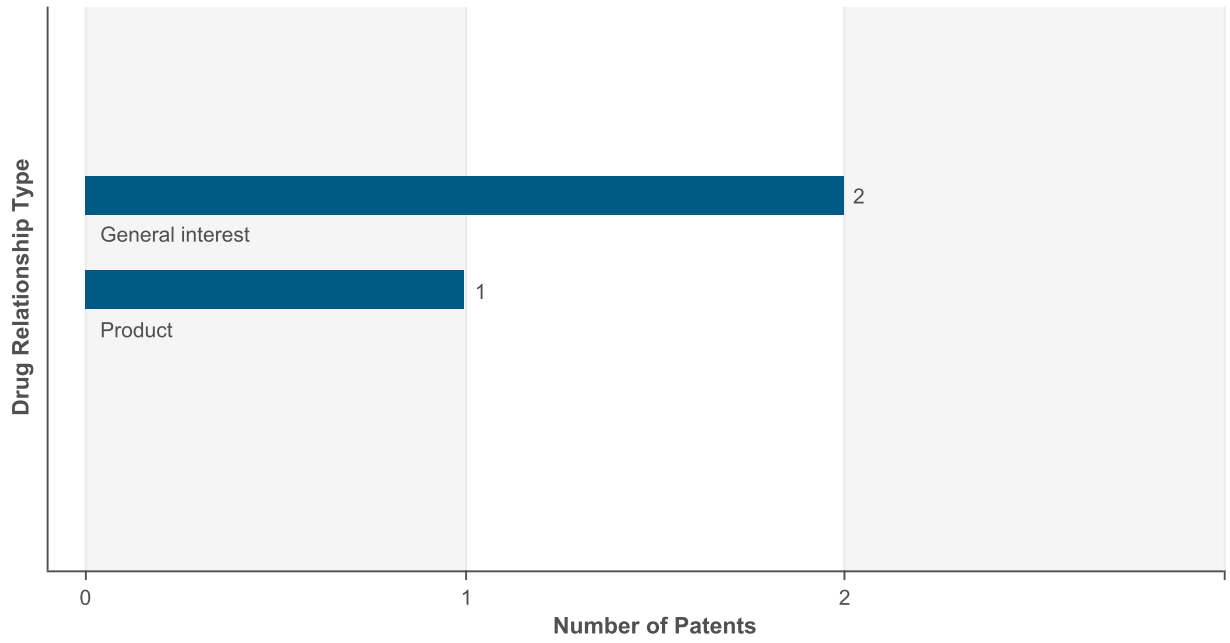


Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Merrimack Pharmaceuticals Inc	3	0	3
Biocon Ltd	0	1	1
Dyax Corp	1	0	1
Adimab Inc	1	0	1
Regeneron Pharmaceuticals Inc	0	1	1

Return to Table of Contents

Patents by Drug Relationship Type Chart



Patents by Drug Relationship Type Table

Drug Relationship	Total
General interest	2
Product	1

Return to Table of Contents

doxorubicin-antibody conjugate (ErbB2 targeting nanoliposome, cancer), Merrimack

doxorubicin-antibody conjugate (ErbB2 targeting nanoliposome, cancer), Merrimack SNAPSHOT

Drug Name	doxorubicin-antibody conjugate (ErbB2 targeting nanoliposome, cancer), Merrimack
Key Synonyms	
Originator Company	HERMES Biosciences
Active Companies	Merrimack Pharmaceuticals Inc
Inactive Companies	HERMES Biosciences
Highest Status	Phase 1 Clinical
Active Indications	Breast tumor
Target-based Actions	Erbb2 tyrosine kinase receptor modulator;Topoisomerase II inhibitor;DNA polymerase inhibitor
Other Actions	Anticancer antibody;DNA intercalator;Anticancer
Technologies	Liposome formulation;Antibody conjugated;Nanoparticle formulation injectable;Intravenous formulation;Biological therapeutic
Last Change Date	02-Jan-2013

doxorubicin-antibody conjugate (ErbB2 targeting nanoliposome, cancer), Merrimack DEVELOPMENT PROFILE

SUMMARY

Merrimack Pharmaceuticals, following its acquisition of HERMES Biosciences, is developing MM-302, a nanoliposomal formulation of doxorubicin, with attached antibodies that target the ErbB2 (HER2) receptor, for the potential iv treatment of cancer,,. By August 2011, a phase I trial had been initiated in patients with advanced ErbB2-positive breast cancer ; In December 2012, data were presented.

doxorubicin-antibody conjugate (ErbB2 targeting nanoliposome, cancer), Merrimack DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Breast tumor	US	Phase 1 Clinical	08-Aug-2011

doxorubicin-antibody conjugate (ErbB2 targeting nanoliposome, cancer), Merrimack DRUG NAMES

Names	Type
MM-302	Research Code
doxorubicin-antibody conjugate (ErbB2 targeting nanoliposome, cancer), Merrimack	
doxorubicin (Erbb2 targeting nanoliposome), Merrimack	

Return to Table of Contents

doxorubicin-antibody conjugate (ErbB2 targeting nanoliposome, cancer), Merrimack 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
Metastatic breast cancer											
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	1	0	0	0	1

Phase Definitions

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

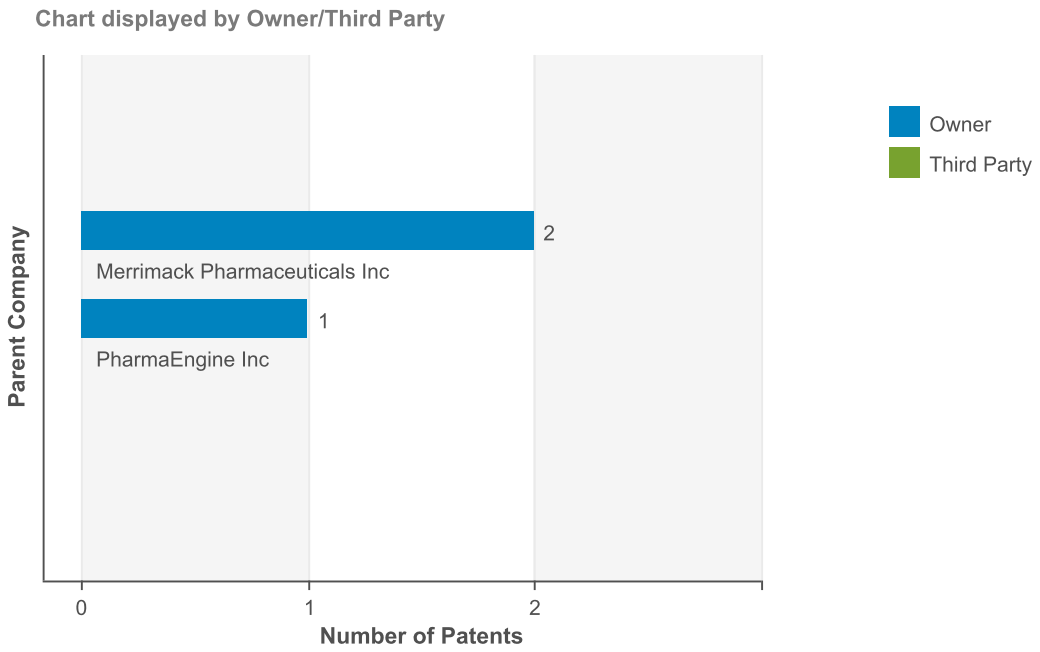
Phase 2 Clinical
Includes Phase 2, Phase 2a, Phase 2b, Phase 1/2 (where enrolment count is 100 or over), Phase 2/3 (where enrolment count is under 300 or not specified)

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

Return to Table of Contents

PATENTS

Patents by Parent Company Chart

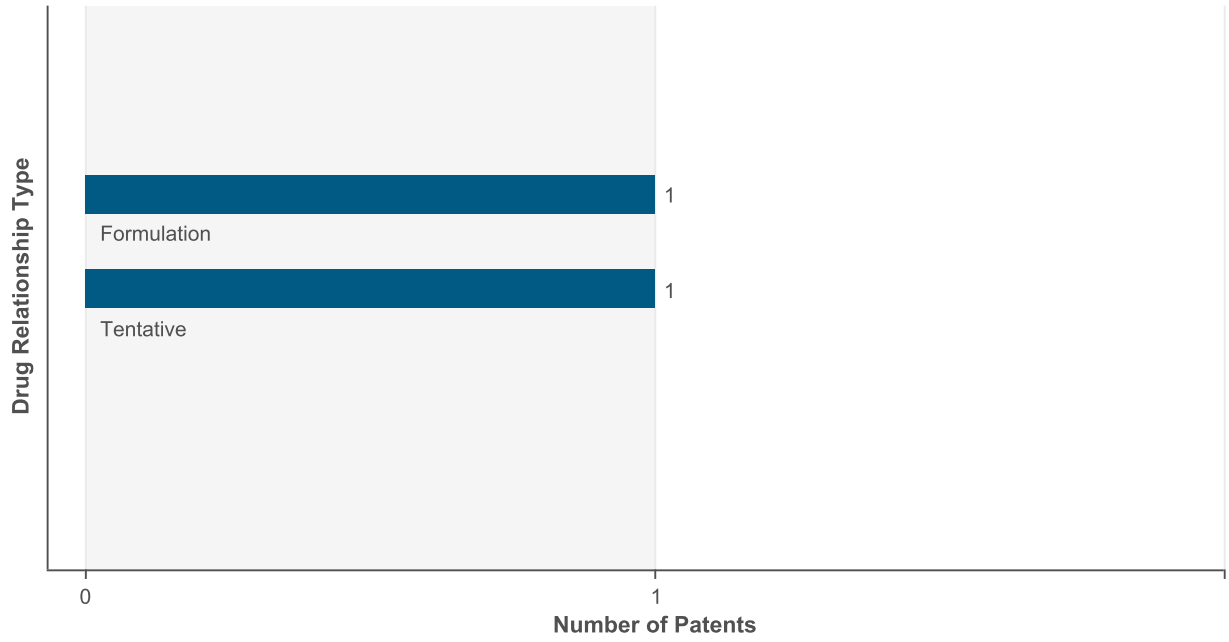


Patents by Parent Company Table

Company Name	As Owner	As Third Party	Total
Merrimack Pharmaceuticals Inc	2	0	2
PharmaEngine Inc	1	0	1

Return to Table of Contents

Patents by Drug Relationship Type Chart



Patents by Drug Relationship Type Table

Drug Relationship	Total
Tentative	1
Formulation	1

Return to Table of Contents

MMDX-929

MMDX-929 SNAPSHOT

Drug Name	MMDX-929
Key Synonyms	
Originator Company	Merrimack Pharmaceuticals Inc
Active Companies	Merrimack Pharmaceuticals Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	
Other Actions	PET contrast agent;Radiodiagnostic;Neoplasm diagnostic agent
Technologies	Liposome formulation;Imaging
Last Change Date	02-Jan-2013

MMDX-929 DEVELOPMENT PROFILE

SUMMARY

Merrimack Pharmaceuticals is investigating MMDX-929, an imaging agent consisting of a liposomal formulation of 4-DEAP-ATSC chelated to 64Cu, for the prediction of the intratumor deposition of a drug. In December 2012, preclinical data were presented. In August 2012, phase I studies were expected to begin in the next 12 months.

MMDX-929 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Cancer	US	Discovery	08-Sep-2012

MMDX-929 DRUG NAMES

Names	Type
liposomal imaging agent (cancer), Merrimack Pharmaceuticals	
MMDX-929	Research Code

Return to Table of Contents

MM-310

MM-310 SNAPSHOT

Drug Name	MM-310
Key Synonyms	
Originator Company	Merrimack Pharmaceuticals Inc
Active Companies	Merrimack Pharmaceuticals Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	
Other Actions	Unspecified drug target;Anticancer
Technologies	Nanoparticle formulation;Small molecule therapeutic
Last Change Date	02-Sep-2011

MM-310 DEVELOPMENT PROFILE

SUMMARY

Merrimack is investigating MM-310, an antibody targeted nanotherapeutic, for the potential treatment of cancer. In August 2011, MM-310 was listed as being in preclinical development. At that time, the company planned to file an IND in late 2012 or early 2013.

MM-310 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Cancer	US	Discovery	19-Aug-2011

MM-310 DRUG NAMES

Names	Type
MM-310	

Return to Table of Contents

MM-131

MM-131 SNAPSHOT

Drug Name	MM-131
Key Synonyms	
Originator Company	Merrimack Pharmaceuticals Inc
Active Companies	Merrimack Pharmaceuticals Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	
Other Actions	Anticancer monoclonal antibody
Technologies	Monoclonal antibody;Biological therapeutic;Parenteral formulation unspecified
Last Change Date	15-Oct-2012

MM-131 DEVELOPMENT PROFILE

SUMMARY

Merrimack is investigating MM-31, a multi-specific mAb, for the potential treatment of cancer. By January 2007, preclinical development had been ongoing ; in October 2012, this was still the case.

MM-131 DEVELOPMENT STATUS

CURRENT DEVELOPMENT STATUS

Company	Indication	Country	Development Status	Date
Merrimack Pharmaceuticals Inc	Cancer	US	Discovery	08-Jan-2007

MM-131 DRUG NAMES

Names	Type
MM-131	Research Code

Return to Table of Contents

This report was created by Thomson Reuters, using information from *Thomson Reuters Cortellis™ for Competitive Intelligence*; a comprehensive, proven intelligence solution that leverages the most accurate, complete, and widely respected drug pipeline information.

For more information about *Cortellis for Competitive Intelligence*, visit:
http://cortellis.thomsonreuters.com/cortellis_for_you/?cid=thomsonone.

For subscription information, e-mail scientific.lifesciences@thomsonreuters.com.

Return to Table of Contents