THOMSON REUTERS
CORTELLIS™

Genocea Biosciences Inc

COMPANY AND PIPELINE OVERVIEW REPORT

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

Publication Date: 14-Dec-2014

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 COMPANY AND PIPELINE OVERVIEW 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 and Pipeline Overview reports are the first in a series of reports that track pharmaceutical and biotechnology companies worldwide. Further report offerings planned to follow include: Company Detailed Pipeline and Company Competitive Landscape reports. 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 a significant number of 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

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

Return to Table of Contents

TABLE OF CONTENTS

Return to Table of Contents

Genocea Biosciences Inc

COMPANY OVERVIEW

Company Name	Genocea Biosciences Inc
Parent Company Name	Genocea Biosciences Inc
Website	http://www.genocea.com/
Country	US
Number of Drugs in Active Development	6
Number of Inactive Drugs	1
Number of Patents as Owner	15
Number of Patents as Third Party	0
Number of Deals	15
Key Indications	HSV-2 infection,Streptococcus pneumoniae infection,Chlamydia trachomatis infection,Cancer,Plasmodium falciparum infection,Sepsis,Chlamydia infection,Bacterial infection,Bacterial meningitis,Bacterial pneumonia,Chlamydia pneumoniae infection,Fungal infection,Helminth infection,Herpes simplex virus infection,Klebsiella pneumoniae infection,Moraxella catarrhalis infection,Neisseria gonorrhoeae infection,Otitis media,Pneumocystis carinii infection,Protozoal
Key Target-based Actions	CD4 agonist,T-cell surface glycoprotein CD8 stimulator,IL-17 agonist,Trans acting transcription protein ICP4 modulator,TLR agonist,CD4 modulator,Herpesvirus envelope glycoprotein D stimulator,Herpesvirus envelope glycoprotein G stimulator,IL-12 agonist,Interferon gamma ligand modulator,Listeriolysin stimulator,Perforin 1 stimulator,TNF alpha ligand modulator,TNF beta ligand modulator,Trans acting transcription protein ICP4
Key Technologies	Antigen,Biological therapeutic,Parenteral formulation unspecified,Peptide,Natural product,Liposome formulation,Glycoprotein,Nanoparticle formulation,Nanoparticle formulation

COMPANY PROFILE

SUMMARY

Genocea Biosciences was founded in 2006 with the aim of commercializing key breakthroughs in vaccine discovery. Genocea utilizes its technology which enables it to rapidly identify antigens which result in the in vivo stimulation of protective CD8+ and CD4+ T cells. These targets can then be incorporated into an existing antigen delivery system to produce multivalent vaccines.

LICENSING AGREEMENTS

In April 2010, the US Naval Medical Research Center (NMRC) entered into a cooperative research and development agreement (CRADA) with Genocea Biosciences to identify antigens for the development of a malaria vaccine against Plasmodium falciparum. Genocea would apply its technology to identify novel T-cell antigens while NMRC was to share their experience and materials for developing subunit malaria vaccines. The antigen discovery was funded by US Army Medical Research and Materiel Command (USAMRMC) to Genocea. Financial terms were undisclosed.

In February 2010, Genocea Biosciences licensed an extensive patent estate related to herpes simplex virus (HSV) type 2 antigens from the University of Washington and the Fred Hutchinson Cancer Research Center. The patents complemented Genocea's novel antigens which were discovered by its unique and proprietary antigen discovery technology. Financial terms were undisclosed.

In December 2007, the company licensed 14 antigens to Chlamydia trachomatis from Harvard Medical School, discovered by Dr Darren Higgins, the scientific founder of Genocea. These antigens had previously shown promising therapeutic potential for vaccine development.

EARLY R&D

Return to Table of Contents

By December 2007, GENO-004 against an undisclosed target was listed on Genocea's pipeline; this was still the case in February 2009.

FINANCIAL

In November 2014, the company entered into a loan and security agreement with Hercules Technology Growth Capital, Inc for a term loan of up to $27.0 million. In addition, Genocea entered into an equity rights letter agreement with Hercules and Hercules purchased 223,463 shares of Genocea's common stock at $8.95 per share, which was the the closing price of Genocea's common stock as reported on The NASDAQ Global Market on November 19, 2014 and at that time, the proceeds of the initial draw of $12.0 million would be used to repay Genocea's existing term loan facility and to provide additional working capital for general corporate purposes and the company would draw up to an additional $5.0 million at its option through June 30, 2015. Two further tranches of $5.0 million each would be drawn down at Genocea's option on or prior to December 15, 2015 subject to the achievement of certain clinical and corporate milestones.

In July 2014, the company announced an underwritten public offering of 3.4 million shares of its common stock; later that month, Genocea decided not to pursue the underwritten public offering .

In March 2014, the company was added to the Russell 3000 and Russell 2000 Indices.

In December 2013, the company filed a registration statement for a proposed initial public offering of shares of its common stock; in February 2014, the company announced an initial public offering of 5.5 million shares of its common stock at a price of $12 per share. At that time, underwriters were granted a 30-day option to purchase up to an additional 825,000 shares to cover any over-allotments. The shares were traded on the NASDAQ Global Market under the ticker symbol 'GNCA' and expected to close on February 10, 2014. Later that month, the company raised net proceeds of $61.4 million in the closed offering.

In October 2012, the company raised $30 million in series C financing. With the close of the financing round, Genocea had raised a total of $76 million in equity financing.

In January 2011, Genocea raised $35 million in series B financing.

In February 2009, the company raised $23 million in series A financing.

R&D GRANTS

In April 2010, Genocea Biosciences was awarded funding from the US Army Medical Research and Materiel Command (USAMRMC) to identify novel T-cell antigens for the development of a malaria vaccine against Plasmodium falciparum. Genocea received $2.7 million from USAMRMC.

The University of Pittsburgh Medical Center's Sexually Transmitted Infections Cooperative Research Center awarded Genocea Biosciences a grant for the development of vaccines for Chlamydia trachomatis.

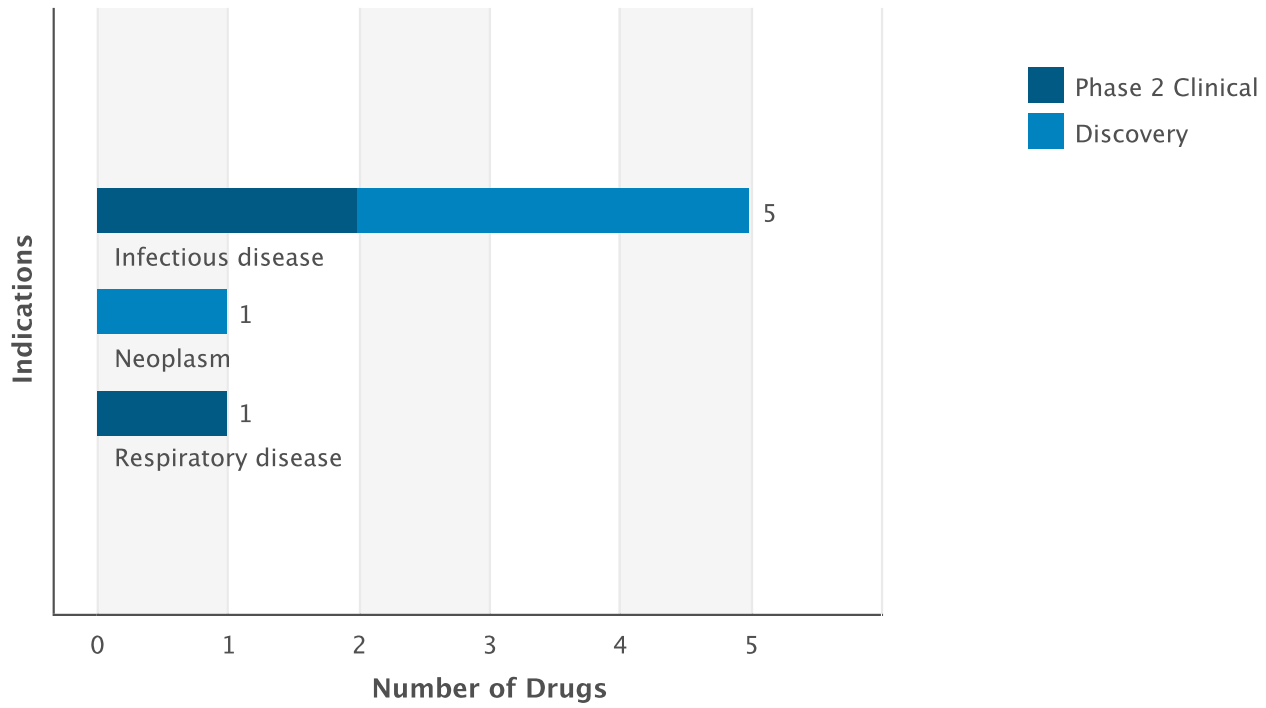
Return to Table of Contents

PRODUCT PORTFOLIO SUMMARY

DRUGS

Drugs by Indication

Active Drugs by Indication Chart



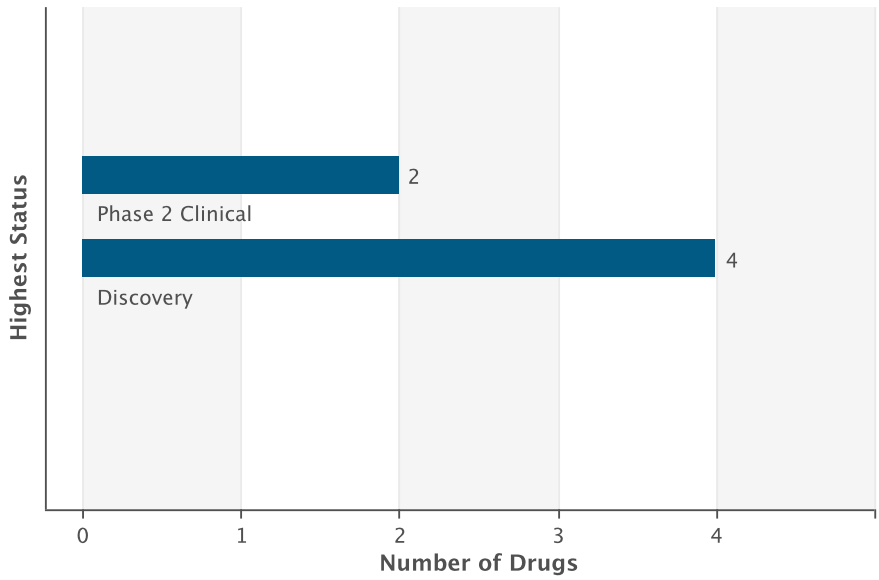
Drugs by Indication Table

Indication	Active	Inactive	Total
Infectious disease	5	1	6
Neoplasm	1	0	1
Respiratory disease	1	0	1

Return to Table of Contents

Drugs by Highest Status

Active Drugs by Highest Status Chart



Drugs by Highest Status Table

Development Status	Number of Drugs
Phase 2 Clinical	2
Discovery	4
No Development Reported	1

Return to Table of Contents

DEALS

Deal Type	Principal		Partner		Total
	Active	Inactive	Active	Inactive	
Drug - Early Research/Development	0	0	2	0	2
Drug - Manufacturing/Supply	0	0	1	0	1
Drug - Development Services	0	0	1	0	1
Drug - CRADA	1	0	0	0	1
Drug - Development/Commercialization License	0	0	1	0	1
Technology - Delivery/Formulation	0	0	1	0	1
Drug - Funding	4	0	0	0	4
Technology - Other Proprietary	1	0	0	0	1
Patent - Exclusive Rights	0	0	3	0	3

CLINICAL TRIALS

Trials by Condition Studied

Condition Studied	Ongoing	All
Infectious disease	2	3

Trials by Phase

Phase	Ongoing	All
Phase 2	3	4
Phase 1	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

PATENTS *

Indication	As Owner	As Third Party	Total
Neoplasm	1	0	1
Neurological disease	1	0	1

Return to Table of Contents

Respiratory disease	5	0	5
Infectious disease	13	0	13
Inflammatory disease	1	0	1
Otorhinolaryngological disease	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

GEN-004

Drug Name	GEN-004
Key Synonyms	
Originator Company	Genocea Biosciences Inc
Active Companies	Boston Children's Hospital, Program for Appropriate Technology in Health, Genocea Biosciences Inc
Inactive Companies	
Highest Status	Phase 2 Clinical
Active Indications	Streptococcus pneumoniae infection
Target-based Actions	CD4 agonist, T-cell surface glycoprotein CD8 stimulator, IL-17 agonist
Other Actions	Prophylactic vaccine, Protein subunit vaccine, Adjuvant
Technologies	Natural product, Antigen, Biological therapeutic, Parenteral formulation unspecified, Peptide
Last Change Date	18-Sep-2014

GEN-003

Drug Name	GEN-003
Key Synonyms	
Originator Company	Genocea Biosciences Inc
Active Companies	Genocea Biosciences Inc
Inactive Companies	
Highest Status	Phase 2 Clinical
Active Indications	HSV-2 infection
Target-based Actions	Trans acting transcription protein ICP4 modulator, CD4 agonist, T-cell surface glycoprotein CD8 stimulator
Other Actions	Immunostimulant, Protein subunit vaccine, Ganglioside GD2 modulator, Therapeutic vaccine, Antiviral, Adjuvant
Technologies	Liposome formulation, Nanoparticle formulation injectable, Antigen, Glycoprotein, Biological therapeutic, Parenteral formulation unspecified, Peptide
Last Change Date	04-Nov-2014

Return to Table of Contents

GENO-1

Drug Name	GENO-1
Key Synonyms	
Originator Company	Genocea Biosciences Inc
Active Companies	Genocea Biosciences Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Chlamydia trachomatis infection
Target-based Actions	T-cell surface glycoprotein CD8 stimulator, CD4 agonist
Other Actions	Therapeutic vaccine, Adjuvant, Protein subunit vaccine, Antibacterial
Technologies	Natural product, Antigen, Biological therapeutic, Parenteral formulation unspecified
Last Change Date	22-Aug-2014

GENO-5

Drug Name	GENO-5
Key Synonyms	
Originator Company	Genocea Biosciences Inc
Active Companies	US Naval Medical Research Center, Genocea Biosciences Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Plasmodium falciparum infection
Target-based Actions	CD4 agonist, T-cell surface glycoprotein CD8 stimulator
Other Actions	Prophylactic vaccine, Protein subunit vaccine, Adjuvant
Technologies	Natural product, Antigen, Biological therapeutic, Parenteral formulation unspecified, Peptide
Last Change Date	25-Aug-2014

Return to Table of Contents

GENO-2

Drug Name	GENO-2
Key Synonyms	
Originator Company	Genocea Biosciences Inc
Active Companies	Genocea Biosciences Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	HSV-2 infection
Target-based Actions	T-cell surface glycoprotein CD8 stimulator, CD4 agonist
Other Actions	Prophylactic vaccine, Protein subunit vaccine
Technologies	Antigen, Biological therapeutic, Parenteral formulation unspecified, Peptide
Last Change Date	22-Aug-2014

melanoma vaccine (ATLAS), Genocea/Dana-Farber Cancer Institute

Drug Name	melanoma vaccine (ATLAS), Genocea/Dana-Farber Cancer Institute
Key Synonyms	
Originator Company	Genocea Biosciences Inc
Active Companies	Dana-Farber Cancer Institute Inc, Genocea Biosciences Inc
Inactive Companies	
Highest Status	Discovery
Active Indications	Cancer
Target-based Actions	CD4 agonist, T-cell surface glycoprotein CD8 stimulator
Other Actions	Protein subunit vaccine, Therapeutic vaccine, Anticancer
Technologies	Antigen, Biological therapeutic, Parenteral formulation unspecified
Last Change Date	09-Apr-2014

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