



(12) Translation of  
European patent specification

(11) NO/EP 3056514 B1

NORWAY

(19) NO  
(51) Int Cl.  
**A61K 39/00 (2006.01)**  
**C07K 16/28 (2006.01)**

**Norwegian Industrial Property Office**

---

(21)	Translation Published	2019.09.23
(80)	Date of The European Patent Office Publication of the Granted Patent	2019.04.17
(86)	European Application Nr.	16160470.7
(86)	European Filing Date	2009.01.15
(87)	The European Application's Publication Date	2016.08.17
(30)	Priority	2008.01.15, US, 11324 P 2008.08.22, US, 189786 P
(84)	Designated Contracting States:	AT ; BE ; BG ; CH ; CY ; CZ ; DE ; DK ; EE ; ES ; FI ; FR ; GB ; GR ; HR ; HU ; IE ; IS ; IT ; LI ; LT ; LU ; LV ; MC ; MK ; MT ; NL ; NO ; PL ; PT ; RO ; SE ; SI ; SK ; TR
(62)	Divided application	EP2242512, 2009.01.15
(73)	Proprietor	The Board of Trustees of The Leland Stanford Junior University, Office of The General Counsel Building 170, 3rd Floor, Main Quad P.O. Box 20386, Stanford, CA 94305-2038, USA
(72)	Inventor	JAISWAL, Siddhartha, Department of PathologyMassachusetts General HospitalWarren 24555 Fruit St, Boston MA 02114, USA WEISSMAN, Irving L., P.O. Box 97305747 Santa Ynez Street, Stanford, CA 97305, USA JAMIESON, Catriona, Helen M., P.O. Box 92093-0820Moores University of California San Diego Cancer Center3855 Healty Science Drive, La Jolla, CA 92093-0820, USA MAJETI, Ravindra, P.O. Box 94304Stanford Institute for Stem Cell Bio andRegenerative Medicine 1050 Arastradero RoadBuilding A, Stanford, CA 94304, USA
(74)	Agent or Attorney	OSLO PATENTKONTOR AS, Hoffsvæien 1A, 0275 OSLO, Norge

---

(54)	Title	<b>METHODS FOR MANIPULATING PHAGOCYTOSIS MEDIATED BY CD47</b>
(56)	References Cited:	US-A1- 2007 111 238 EP-A1- 1 693 385 MAJETI RAVINDRA ET AL: "CD47 Is An Independent Prognostic Factor and Therapeutic Antibody Target on Human Acute Myeloid Leukemia Stem Cells", BLOOD, AMERICAN SOCIETY OF HEMATOLOGY, US, vol. 112, no. 11, 1 November 2008 (2008-11-01), page 284, XP009160228, ISSN: 0006-4971

- X. W. ZHAO ET AL: "Is targeting of CD47-SIRP enough for treating hematopoietic malignancy?", BLOOD, vol. 119, no. 18, 3 May 2012 (2012-05-03), pages 4333-4334, XP055116565, ISSN: 0006-4971, DOI: 10.1182/blood-2011-11-391367
- M. P. CHAO ET AL: "Therapeutic Antibody Targeting of CD47 Eliminates Human Acute Lymphoblastic Leukemia", CANCER RESEARCH, vol. 71, no. 4, 15 February 2011 (2011-02-15), pages 1374-1384, XP55029988, ISSN: 0008-5472, DOI: 10.1158/0008-5472.CAN-10-2238
- JAISWAL S ET AL: "Macrophages as mediators of tumor immunosurveillance", TRENDS IN IMMUNOLOGY, ELSEVIER LTD. \* TRENDS JOURNALS, GB, vol. 31, no. 6, 1 June 2010 (2010-06-01), pages 212-219, XP027079216, ISSN: 1471-4906, DOI: 10.1016/J.IT.2010.04.001 [retrieved on 2010-06-01]
- Y. LIU ET AL: "Signal Regulatory Protein (SIRPalpha ), a Cellular Ligand for CD47, Regulates Neutrophil Transmigration", JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 277, no. 12, 15 March 2002 (2002-03-15), pages 10028-10036, XP055030073, ISSN: 0021-9258, DOI: 10.1074/jbc.M109720200
- S. B. WILLINGHAM ET AL: "The CD47-signal regulatory protein alpha (SIRPa) interaction is a therapeutic target for human solid tumors", PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, vol. 109, no. 17, 26 March 2012 (2012-03-26), pages 6662-6667, XP055029983, ISSN: 0027-8424, DOI: 10.1073/pnas.1121623109
- PETTERSEN R F ET AL: "CD47 SIGNALS T CELL DEATH", THE JOURNAL OF IMMUNOLOGY, THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS, US, vol. 162, 1 January 1999 (1999-01-01), pages 7031-7040, XP002940659, ISSN: 0022-1767
- P. P. MANNA ET AL: "The Mechanism of CD47-Dependent Killing of T Cells: Heterotrimeric Gi-Dependent Inhibition of Protein Kinase A", THE JOURNAL OF IMMUNOLOGY, vol. 170, no. 7, 1 April 2003 (2003-04-01) , pages 3544-3553, XP55116597, ISSN: 0022-1767, DOI: 10.4049/jimmunol.170.7.3544
- RAVINDRA MAJETI1 ET AL: "CD47 is an adverse prognostic factor and therapeutic antibody target on human acute myeloid leukemia stem cells", DEVELOPMENTAL CELL, CELL PRESS, CAMBRIDGE, MA, US, vol. 138, no. 2, 23 July 2009 (2009-07-23) , pages 286-299, XP002632714, ISSN: 1097-4172, DOI: 10.1016/J.CELL.2009.05.045 [retrieved on 2009-07-23]
- PARTHA MANNA ET AL: "CD47 mediates killing of breast tumor cells via Gi-dependent inhibition of protein kinase A.", CANCER RESEARCH, vol. 64, no. 3, 1 February 2004 (2004-02-01), pages 1026-1036, XP055030076, ISSN: 0008-5472
- X. W. ZHAO ET AL: "CD47-signal regulatory protein- (SIRP ) interactions form a barrier for antibody-mediated tumor cell destruction", PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, vol. 108, no. 45, 8 November 2011 (2011-11-08), pages 18342-18347, XP55055636, ISSN: 0027-8424, DOI: 10.1073/pnas.1106550108

Enclosed is a translation of the patent claims in Norwegian. Please note that as per the Norwegian Patents Acts, section 66i the patent will receive protection in Norway only as far as there is agreement between the translation and the language of the application/patent granted at the EPO. In matters concerning the validity of the patent, language of the application/patent granted at the EPO will be used as the basis for the decision. The patent documents published by the EPO are available through Espacenet (<http://worldwide.espacenet.com>) or via the search engine on our website here: <https://search.patentstyret.no/>

**Patentkrav**

1. Sammensetning omfattende et monoklonalt antistoff som spesifikt binder CD47 på overflaten av leukemiceller og hemmer dets interaksjon med SIRPa-reseptor på overflaten av fagocytiske celler, til anvendelse i behandling av leukemi ved å øke fagocytose av leukemiceller i et menneskelig individ, hvor nevnte antistoff oppregulerer fagocytose av nevnte leukemiceller ved å hemme bindingen av CD47 på overflaten av leukemicellene til SIRPa-reseptor på overflaten av fagocytiske celler.
- 10 2. Sammensetning til anvendelse ifølge krav 1, hvor nevnte leukemi er akutt myelogen leukemi (AML).
3. Sammensetning til anvendelse ifølge krav 1 eller krav 2, hvor antistoffet er et humanisert antistoff.