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12196527.1 11 December 2012 (11.12.2012) EP
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- (81) **Designated States** (*unless otherwise indicated, for every  
kind of national protection available*): AE, AG, AL, AM,  
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,  
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,

DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,  
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR,  
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,  
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,  
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC,  
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,  
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UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,  
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,  
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,  
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**Published:**

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WO 2013/179143 A3

(54) **Title:** SENSITIZATION OF CANCER CELLS BY THE REMOVAL OF SOLUBLE TUMOR NECROSIS FACTOR RECEPTORS

(57) **Abstract:** The present invention relates to a molecule binding to soluble tumor necrosis factor receptor (sTNFR) for use in a method for sensitizing a tumor cell in a patient to a treatment with a chemotherapeutic agent, wherein said molecule is immobilized on a solid support that is contacted with a body fluid of said patient. Furthermore, the present invention refers to a method for sensitizing a tumor cell and to a body fluid from which sTNFR has been removed for use in a method for sensitizing a tumor cell in a patient to a treatment with a chemotherapeutic agent. Moreover, the present invention refers to a chemotherapeutic agent for use in a method for treating a tumor in a patient for sensitizing a tumor cell of said tumor in said patient to a treatment with said chemotherapeutic agent.

# INTERNATIONAL SEARCH REPORT

International application No <b>PCT/IB2013/001583</b>
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**A. CLASSIFICATION OF SUBJECT MATTER**  
**INV.** A61M1/36 C07K16/28  
**ADD.**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
**A61M C07K**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**EPO-Internal, BIOSIS, EMBASE, WPI Data**

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 2012/163544 A1 (BIOPHERESIS TECHNOLOGIES INC [US]; HEINRICH GUENTHER [DE]; TEN HAGEN T) 6 December 2012 (2012-12-06)	1-23
L	page 26, paragraph 3 - page 27, paragraph 3; figure 1; examples 1,2 page 28, paragraph 3 - paragraph 7	1-23
X	----- WO 2005/107802 A2 (BIOPHERESIS TECHNOLOGIES LLC [US]; LENTZ M RIGDON [DE]) 17 November 2005 (2005-11-17) cited in the application	17,18
A	page 2, paragraph 4 - page 3, paragraph 1; claims 1-11 page 14, paragraph 5 -----	1-16, 19-23
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Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
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- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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- "&" document member of the same patent family

Date of the actual completion of the international search

11 March 2014

Date of mailing of the international search report

19/03/2014

Name and mailing address of the ISA/

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## INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2013/001583

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/61085 A2 (LENTZ M RIGDON [US]) 2 December 1999 (1999-12-02) cited in the application page 11, paragraph 2; claims 1-11; examples 2-4 -----	1-23
A	MEREDITH LENTZ ET AL: "Reduction of Plasma Levels of Soluble Tumor Necrosis Factor and Interleukin-2 Receptors by Means of a Novel Immunoabsorption Column", THERAPEUTIC APHERESIS AND DIALYSIS, vol. 12, no. 6, 1 December 2008 (2008-12-01), pages 491-499, XP055001372, ISSN: 1744-9979, DOI: 10.1111/j.1744-9987.2008.00640.x abstract -----	1-23
A	WO 01/37873 A2 (LENTZ M RIGDON [US]) 31 May 2001 (2001-05-31) cited in the application claims 1-16 -----	1-23
A	ROBBERT G VAN DER MOST ET AL: "Tumor eradication after cyclophosphamide depends on concurrent depletion of regulatory T cells: a role for cycling TNFR2-expressing effector-suppressor T cells in limiting effective chemotherapy", CANCER IMMUNOLOGY, IMMUNOTHERAPY, SPRINGER, BERLIN, DE, vol. 58, no. 8, 4 December 2008 (2008-12-04), pages 1219-1228, XP019706344, ISSN: 1432-0851 the whole document -----	1-23

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2013/001583

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2013/001583

## Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. (means)

on paper

in electronic form

b. (time)

in the international application as filed

together with the international application in electronic form

subsequently to this Authority for the purpose of search

2.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments: