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(71) Applicants (*for all designated States except US*): **ONCOTHERAPY SCIENCE, INC.** [JP/JP]; 2-1, Sakado 3-chome, Takatsu-ku, Kawasaki-shi, Kanagawa, 2130012 (JP). **THE UNIVERSITY OF TOKYO** [JP/JP]; 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo, 1138654 (JP).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **NAKAMURA, Yusuke** [JP/JP]; c/o THE UNIVERSITY OF TOKYO, 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo, 1138654 (JP). **FURUKAWA, Yoichi** [JP/JP]; c/o THE UNIVERSITY OF TOKYO, 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo, 1138654 (JP). **NAKATSURU, Shuichi** [JP/JP]; c/o ONCOTHERAPY SCIENCE, INC., 2-1, Sakado 3-chome, Takatsu-ku, Kawasaki-shi, Kanagawa, 2130012 (JP).

(74) Agents: **SHIMIZU, Hatsushi** et al.; Kantetsu Tsukuba Bldg. 6F 1-1-1, Oroshi-machi, Tsuchiura-shi, Ibaraki3000847 (JP).

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Declaration under Rule 4.17:

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

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14 June 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CANCER RELATED GENE RASGEF1A

(57) Abstract: The present invention provides methods for detecting and diagnosing cancer. According to an embodiment, the diagnostic method involves the determination of the expression level of the RASGEF1A gene which was discovered to discriminate cancer cells from normal cells. Furthermore, the present invention provides methods of screening for therapeutic agents useful in the treatment of cancer, methods for treating cancer, and methods for vaccinating a subject against cancer.



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INTERNATIONAL SEARCH REPORT

International application No

PCT/JP2006/314443

A. CLASSIFICATION OF SUBJECT MATTER

INV. C12Q1/68

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)

C12Q

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, MEDLINE, EMBASE, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/59063 A2 (HUMAN GENOME SCIENCES INC [US]; ROSEN CRAIG A [US]; BARASH STEVEN C [U] 16 August 2001 (2001-08-16) SEQ ID NO 8307 = RASGEF1A page 362	1-13, 15-24
X	WO 02/103028 A2 (BIOMEDICAL CT [RU]) 27 December 2002 (2002-12-27) POM18 expressed in Glioma (lung) SEQ ID NO:138 SEQ ID NO:139 = RASGEF1A	1-13, 15-24
X	EP 1 347 046 A (RES ASS FOR BIOTECHNOLOGY [JP]) 24 September 2003 (2003-09-24) Human cDNA of the invention SEQ ID NO:545 = RASGEF1A	1-13, 15-24

☒ 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 document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *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
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

17 January 2007

Date of mailing of the international search report

29/01/2007

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gabriels, Jan

INTERNATIONAL SEARCH REPORT

International application No

PCT/JP2006/314443

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 2005/028676 A2 (ONCOTHERAPY SCIENCE INC [JP]; UNIV TOKYO [JP]; NAKAMURA YUSUKE [JP]; K) 31 March 2005 (2005-03-31) IDC N 504 = RASGEF1A page 84	1-6, 8-12, 16-20, 25-27
X	WO 2005/005601 A2 (UNIV MICHIGAN [US]; CLARKE MICHAEL F [US]; LIU RUI [US]) 20 January 2005 (2005-01-20) LOC221002 = RASGEF1A (downregulated in UPTG versus UPNTG) page 41; table 6 page 46; table 7b claim 15	1-13, 15-24
X	WO 2005/044981 A2 (SIRNA THERAPEUTICS INC [US]; HAEBERLI PETER [US]; MCSWIGGEN JAMES [US]) 19 May 2005 (2005-05-19) page 207	16,17
X	DATABASE INVITROGEN [Online] XP002414657 retrieved from HTTPS://RNAIDESIGNER.INVITROGEN.COM/RNAIPRESS/RNAIEXPRESS.DO?LOCUSID=221002 abstract	16-19
X	MAXWELL G LARRY ET AL: "Microarray analysis of endometrial carcinomas and mixed mullerian tumors reveals distinct gene expression profiles associated with different histologic types of uterine cancer." CLINICAL CANCER RESEARCH : AN OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH. 1 JUN 2005, vol. 11, no. 11, 1 June 2005 (2005-06-01), pages 4056-4066, XP002415036 ISSN: 1078-0432 table 2	1-6
X	US 2004/076955 A1 (MACK DAVID H [US] ET AL) 22 April 2004 (2004-04-22) Table 9A shows about 1200 genes upregulated in bladder cancer. page 146; table 9a	1-17, 20-28

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2006/314443

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 16-25 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/JP2006/314443

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US 2004076955	A1	22-04-2004	NONE		