

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 December 2001 (20.12.2001)

PCT

(10) International Publication Number
WO 01/096391 A3

(51) International Patent Classification⁷: **C12N 15/12**,
C07K 14/47, C12N 5/10, C07K 16/18, C12Q 1/68, G01N
33/50, 33/53, A61K 48/00, 31/00, 33/00, 38/17, 39/395,
35/12, A01K 67/027

(74) Agent: **MURASHIGE, Kate, H.**; Morrison & Foerster
LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA
92130-2332 (US).

(21) International Application Number: PCT/US01/19246

(22) International Filing Date: 13 June 2001 (13.06.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/211,454 13 June 2000 (13.06.2000) US

(81) Designated States (*national*): AE, AG, AL, AM, AT (util-
ity model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (util-
ity model), DE, DK (utility model), DK, DM, DZ, EC, EE
(utility model), EE, ES, FI (utility model), FI, GB, GD, GE,
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA,
ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant: **AGENSYS, INC.** [US/US]; 1545 - 17th Street,
Santa Monica, CA 90404 (US).

(72) Inventors: **FARIS, Mary**; 2538 Almaden Court, Los
Angeles, CA 90077 (US). **HUBERT, Rene, S.**; 1644
North Occidental Blvd., Los Angeles, CA 90026 (US).
AFAR, Daniel, E., H.; 435 Visitacion Avenue, Brisbane,
CA 94005 (US). **LEVIN, Elana**; 10874 Rose Avenue,
#9, Los Angeles, CA 90034 (US). **MITCHELL, Steven,**
Chappell; 2417-1/2 4th Street, Santa Monica, CA 90405
(US). **RAITANO, Arthur, B.**; 10807 Cushman Avenue,
Los Angeles, CA 90064 (US). **JAKOBOVITS, Aya**; 3135
Hutton Drive, Beverly Hills, CA 90210 (US).

Published:
— with international search report

(88) Date of publication of the international search report:
5 December 2002

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

(54) Title: 55P4H4: GENE EXPRESSED IN VARIOUS CANCERS

MVATGSLSSKNPASISELLDCGYHPESLLSDFDYWDYVVPEPNLNEVIFEESTC
QNLVKMLENCLSKSKQTKLGCSKVLVPEKLTQRIAQDVLRLSSTPCGLRGC
VMHVNLEIENVCKKLDRIVCDSVVPTFELTLVFKQENCSSWTSFRDFFFSRGR
FSSGFRRTLILSSGFRLVKKKLYSLIGTTVIEGS

(57) Abstract: A novel gene (designated 55P4H4) and its encoded protein are described. While 55P4H4 exhibits tissue-restricted expression in normal adult tissue, it is aberrantly expressed in multiple cancers including prostate, bladder, kidney, lung, testis, bone, cervical, brain, and ovarian cancers. Consequently, 55P4H4 provides a diagnostic and/or therapeutic target for cancers, and the 55P4H4 gene or fragment thereof, or its encoded protein or a fragment thereof used to elicit an immune response.



WO 01/096391 A3

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/US 01/19246

A. CLASSIFICATION OF SUBJECT MATTER

 IPC 7 C12N15/12 C07K14/47 C12N5/10 C07K16/18 C12Q1/68
 G01N33/50 G01N33/53 A61K48/00 A61K31/00 A61K33/00
 A61K38/17 A61K39/395 A61K35/12 A01K67/027

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)

IPC 7 C12N C07K C12Q G01N A61K

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, 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	DATABASE EMBL SEQUENCE LIBRARY 'Online! 22 July 1997 (1997-07-22) NCI-CGAP: "National Cancer Institute, Cancer Genome Anatomy Project (CGAP), Tumor Gene Index http://www.ncbi.nlm.nih.gov/ncicgap - nj15d07.s1 NCI_CGAP_Pr22 Homo sapiens cDNA clone IMAGE:986413 3', mRNA" XP002196336 accession no. AA528140 --- -/--	1-12

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in 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 April 2002

Date of mailing of the international search report

03/05/2002

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

Holtorf, S

INTERNATIONAL SEARCH REPORT

Application No
PCT/US 01/19246

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL SEQUENCE LIBRARY 'Online! 2 May 2000 (2000-05-02) TSAI, S.F.: "Genome Sequencing of the Chromosome 4q Region Implicated in Human Hepatocellular Carcinoma Pathogenesis 1 - Homo sapiens genomic DNA, chromosome 4q22-q24, clone:2190A3" XP002196337 accession no. AP001961 ---	1-12
X	WO 99 09046 A (EINAT PAZ ;SKALITER RAMI (IL); QUARK BIOTECH INC (US); KOHN KENNET) 25 February 1999 (1999-02-25) the whole document ---	1,2,8, 42,45
X	WO 99 51727 A (SCHMITT ARMIN ;SPECHT THOMAS (DE); DAHL EDGAR (DE); HINZMANN BERND) 14 October 1999 (1999-10-14) the whole document ---	1-3,8, 42,45
X	TJOA B ET AL: "PRESENTATION OF PROSTATE TUMOR ANTIGENS BY DENDRITIC CELLS STIMULATES T-CELL PROLIFERATION AND CYTOTOXICITY" PROSTATE, WILEY-LISS, NEW YORK, NY, US, vol. 28, no. 1, 1996, pages 65-69, XP000605663 ISSN: 0270-4137 the whole document ---	1,6
X	XUE B-H ET AL: "INDUCTION OF HUMAN CYTOTOXIC T LYMPHOCYTES SPECIFIC FOR PROSTATE- SPECIFIC ANTIGEN" PROSTATE, WILEY-LISS, NEW YORK, NY, US, vol. 30, no. 2, 1997, pages 73-78, XP000878867 ISSN: 0270-4137 the whole document ---	1,6
P,X	WO 00 44902 A (MORRIS DALE L ;SEARLE & CO (US); CURTIS SANDRA W (US); RODI CHARLE) 3 August 2000 (2000-08-03) see SEQID19 the whole document ---	1,12,13
-/--		

INTERNATIONAL SEARCH REPORT

In International Application No

PCT/US 01/19246

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	DATABASE EMBL SEQUENCE LIBRARY 'Online! 9 February 2001 (2001-02-09) ADACHI, J., ET AL. : "functional annotation of a full-length mouse cDNA collection - Mus musculus adult male testis cDNA, RIKEN full-length enriched library clone:1700108M02:homolog to CDNA FLJ20500 FIS, CLONE KAT09159, full insert" XP002196338 accession no. AK018944	1-13
P,X	-& DATABASE TREMBL DATABASE 'Online! 1 June 2001 (2001-06-01) KAWAI, J., ET AL. : "functional annotation of a full-length mouse cDNA collection" XP002196339 accession no. Q9CQV2	1-13
E	WO 01 57207 A (ALGATE PAUL A ;CORIXA CORP (US); MANNION JANE (US)) 9 August 2001 (2001-08-09) see SEQID312	1,12,13
E	WO 01 51513 A (ALGATE PAUL A ;CORIXA CORP (US)) 19 July 2001 (2001-07-19) see SEQID330	1,12,13
E	WO 01 74901 A (SCIOS INC ;WHITE R TYLER (US); STANTON LAWRENCE W (US)) 11 October 2001 (2001-10-11) see SEQID3	1,12,13

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 41

Present claim 41 relates to a compound defined by reference to a desirable characteristic or property, namely to a substance that modulates the status of a cell that expresses 55P4H4.

The claim covers all compounds having this characteristic or property, whereas the application provides no support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for compounds.

In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT).

An attempt is made to define the compound by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

Consequently, no search has been carried out for claim 41.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/19246

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9909046	A	25-02-1999	AU 9028298 A	08-03-1999
			AU 9110798 A	08-03-1999
			EP 1015471 A1	05-07-2000
			EP 1009753 A1	21-06-2000
			JP 2002505841 T	26-02-2002
			WO 9909049 A1	25-02-1999
			WO 9909046 A1	25-02-1999
WO 9951727	A	14-10-1999	DE 19816395 A1	07-10-1999
			WO 9951727 A2	14-10-1999
			EP 1068231 A2	17-01-2001
WO 0044902	A	03-08-2000	AU 2962100 A	18-08-2000
			WO 0044902 A2	03-08-2000
WO 0157207	A	09-08-2001	AU 3483001 A	14-08-2001
			WO 0157207 A2	09-08-2001
			US 2002022591 A1	21-02-2002
WO 0151513	A	19-07-2001	AU 3647001 A	24-07-2001
			WO 0151513 A2	19-07-2001
WO 0174901	A	11-10-2001	AU 5097801 A	15-10-2001
			WO 0174901 A2	11-10-2001