

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 September 2000 (21.09.2000)

PCT

(10) International Publication Number
WO 00/54839 A3

- (51) International Patent Classification⁷: **A61K 48/00**
- (21) International Application Number: **PCT/US00/07055**
- (22) International Filing Date: **15 March 2000 (15.03.2000)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
60/124,482 15 March 1999 (15.03.1999) US
60/124,388 15 March 1999 (15.03.1999) US
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- (81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— With international search report.
- (88) Date of publication of the international search report:
25 January 2001
- 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: DENDRITIC CELLS TRANSDUCED WITH A WILD-TYPE SELF GENE ELICIT POTENT ANTITUMOR IMMUNE RESPONSES

(57) Abstract: The present invention relates to immunotherapy methods for treating hyperproliferative disease or pathogen-induced diseases in humans. More specifically, the invention is directed, in one embodiment, to methods for treating a subject with a hyperproliferative disease in which the expression of a self gene is upregulated in hyperproliferative cells. In another embodiment, an adenoviral expression construct comprising a self gene under the control of a promoter operable in eukaryotic cells is intradermally administered to said hyperproliferative cells. In another embodiment of the present invention, a pathogen-induced disease in which the pathogen gene expression is increased or altered, is treated by intradermally administered a pathogen gene under the control of a promoter operable in eukaryotic cells. The present invention thus provides immunotherapies for treating hyperproliferative and pathogen diseases by attenuating the natural immune systems CTL response against hyperproliferative cells or overexpressing mutant p53 antigens.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/07055

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K48/00

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 A61K C12N

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)

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 99 47180 A (SHANKARA SRINIVAS ; ARMENTANO DONNA (US); GENZYME CORP (US); ROBERT) 23 September 1999 (1999-09-23) * see abstract, pages 7,11,21 and 25-26 *	1-8, 10-23, 26, 28-30, 32,33
X	WO 98 06863 A (NELSON PETER J ;US HEALTH (US); NELSON EDWARD L (US)) 19 February 1998 (1998-02-19) * see abstract, table 1, pages 19-20 and 22-24 * --- -/--	1-8,10, 11, 23-26, 28-30, 32-34, 36,37



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

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"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

19 July 2000

Date of mailing of the international search report

17.10.00

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/07055

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HURPIN C ET AL: "The mode of presentation and route of administration are critical for the induction of immune responses to p53 and antitumor immunity" VACCINE,GB,BUTTERWORTH SCIENTIFIC. GUILDFORD, vol. 16, no. 2/03, January 1998 (1998-01), pages 208-215, XP002098284 ISSN: 0264-410X * see abstract, page 209 and page 210 right col. *	1-8, 10-24, 32,33
X,P	WO 99 26662 A (PASTEUR MERIEUX SERUMS VACC ;HAENSLER JEAN (FR); ERDILE LORNE (US)) 3 June 1999 (1999-06-03) * see claims 1,2,5 and 8, pages 3-4 *	1-8,10, 11, 20-24, 32,33
X,P	WO 99 27958 A (ENSOLI BARBARA ;IST SUPERIORE SANITA (IT)) 10 June 1999 (1999-06-10) * see claims 1,5,18-22,37 and pages 10-11*	1,26, 28-30, 32-34, 36,37
X	WO 97 00954 A (UNIV TEXAS ;HSIEH JER TSONG (US); LIN SUE HWA (US)) 9 January 1997 (1997-01-09) * see pages 4,30,43,54 and table 3 *	1-8, 10-24, 32,33
X	YONGHONG WAN ET AL: "DENDRITIC CELLS TRANSDUCED WITH AN ADENOVIRAL VECTOR ENCODING A MODEL TUMOR-ASSOCIATED ANTIGEN FOR TUMOR VACCINATION" HUMAN GENE THERAPY,XX,XX, vol. 8, no. 11, 20 July 1997 (1997-07-20), pages 1355-1363, XP000877349 ISSN: 1043-0342 * see abstract, page 1358 right col., page 1356 right col. and page 1362 last paragraph *	1-3, 12-24, 26,28, 32,33
Y	WO 97 29183 A (US HEALTH ;HWU PATRICK (US); REEVES MARK (US); ROSENBERG STEVEN A) 14 August 1997 (1997-08-14) * see abstract, cl. 16,46-47, pages 4,6,20-21,27, 30 and 32 *	1-37

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INTERNATIONAL SEARCH REPORT

Int'l Application No

PCT/US 00/07055

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DELEO ET AL.: "P53-BASED IMMUNOTHERAPY OF CANCER" CRITICAL REVIEWS IN IMMUNOLOGY,XX,CRC PRESS, INC, vol. 18, no. 1/02, 1998, pages 29-35, XP000877346 ISSN: 1040-8401 * see abstract, page 32 right col. and page 33 *	1-37
Y	WO 97 03703 A (RHONE POULENC RORER PHARMA ;PHILIP RAMILA (US); LEBKOWSKI JANE S () 6 February 1997 (1997-02-06) * see pages 6-9,11,13,54 and cl.26 *	1-37
A	RAZ E ET AL: "INTRADERMAL GENE IMMUNIZATION: THE POSSIBLE ROLE OF DNA UPTAKE IN THE INDUCTION OF CELLULAR IMMUNITY TO VIRUSES" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA,US,NATIONAL ACADEMY OF SCIENCE. WASHINGTON, vol. 91, no. 20, 27 September 1994 (1994-09-27), pages 9519-9523, XP002021792 ISSN: 0027-8424 * see abstract, pages 9519 and 9523 *	1-37

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/07055

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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:
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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

See additional sheet

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.:

1 - 37

Remark on Protest

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

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-37

Method for treating hyperproliferative diseases comprising
administering a vector expressing a self gene

2. Claims: 38-60

Method for treating a pathogen-induced disease comprising
administering a vector expressing a pathogen gene

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PL 1/US 00/07055

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9947180 A	23-09-1999	AU 3358999 A	11-10-1999
WO 9806863 A	19-02-1998	AU 3980497 A EP 0920522 A	06-03-1998 09-06-1999
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