

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 July 2009 (30.07.2009)

PCT

(10) International Publication Number
WO 2009/094647 A3

(51) International Patent Classification:
G01N 33/574 (2006.01) C12Q 1/68 (2006.01)
G01N 33/53 (2006.01)

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(21) International Application Number:
PCT/US2009/032029

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(22) International Filing Date:
26 January 2009 (26.01.2009)

(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, BR, BW, BY, BZ,
CA, CH, 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, KM, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG,
SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/023,736 25 January 2008 (25.01.2008) US
61/030,874 22 February 2008 (22.02.2008) US
61/044,373 11 April 2008 (11.04.2008) US

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(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

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[Continued on next page]

(54) Title: P53 BIOMARKERS

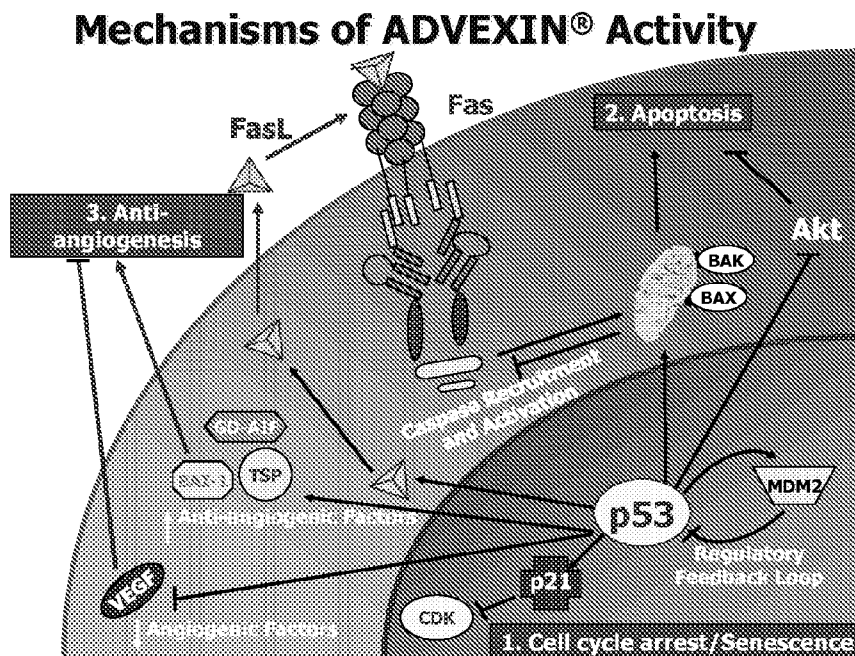


FIG. 1

[Continued on next page]

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ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR),
OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG).

— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))

Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:

8 October 2009

(57) Abstract: The present invention relates to the identification of p53 biomarker profiles that predict response in patients with hyperproliferative disease such as cancer to a therapy, and their use in methods of treating such patients with an anti-hyperproliferative disease gene therapy.

A. CLASSIFICATION OF SUBJECT MATTER*G01N 33/574(2006.01)i, G01N 33/53(2006.01)i, C12Q 1/68(2006.01)i*

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 A61K 38/17, C12Q 1/68, G01N 33/574, G06F 19/00

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

Korean Utility Models and applications for Utility Models since 1975

Japanese Utility Models and applications for Utility Models since 1975

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

eKOMPASS(KIPO internal) & keywords: p53, tumor, favorable response, gene therapy, allele, and methotrexate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LISA S. ST. JOHN et al. Endogenous p53 gene status predicts the response of human squamous cell carcinomas to wild-type p53. <i>Cancer Gene Therapy</i> . 2000, Vol. 7, No. 5, pages 749-756 See the whole document, especially, abstract, tables 1, 2, pages 751, 753, 754	1, 2, 4-13, 15-50
A	M. CASCALLO et al. Genetic background determines the response to adenovirus-mediated wild-type p53 expression in pancreatic tumor cells. <i>Cancer Gene Therapy</i> . 1999, Vol. 6, No. 5, pages 428-436 See the whole document, especially, abstract, table 1, figures 2-7, pages 431, 433	1, 2, 4-13, 15-50
A	SHU FEN WEN et al. Development and validation of sensitive assays to quantitate gene expression after p53 gene therapy and paclitaxel chemotherapy using in vivo dosing in tumor xenograft models. <i>Cancer Gene Therapy</i> . 2000, Vol. 7, No. 11, pages 1469-1480 See the whole document, especially, abstract, figure 4, page 1475	1, 2, 4-13, 15-50
A	US 2005-0227918 A1 (PAUL J. FARRELL et al.) 13 Oct 2005 See the whole document, especially, abstract, claims 1-11, 22-25	1, 2, 4-13, 15-50

 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

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of 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

29 JULY 2009 (29.07.2009)

Date of mailing of the international search report

29 JULY 2009 (29.07.2009)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

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Telephone No. 82-42-481-5569



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/032029

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2005-080593 A2 (NOVARTIS AG et al.) 01 Sep 2005 See the whole document, especially, pages 1-2, claims 1-10	1, 2, 4-13, 15-50
A	US 2006-0074565 A1 (LANCE D. MILLER et al.) 06 Apr 2006 See the whole document, especially, abstract, claims 1-18	1, 2, 4-13, 15-50
A	JEAN-LOUIS BOULAY et al. P21 gene expression as an indicator for the activity of adenovirus-p53 gene therapy in non-small cell lung cancer patients. Cancer Gene Therapy. 2000, Vol. 7, No. 9, pages 1215-1219 See the whole document, especially, abstract, figures 1, 2	1, 2, 4-13, 15-50
A	J. SVEN D. MIEOG et al. Tumour response to preoperative anthracycline-based chemotherapy in operable breast cancer: the predictive role of p53 expression. European Journal of Cancer. 2006, Vol. 42, pages 1369-1379 See the whole document, especially, abstract	1, 2, 4-13, 15-50

Box No. 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:

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.: 3, 14
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. 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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/032029

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005-0227918 A1	13.10.2005	None	
WO 2005-080593 A2	01.09.2005	AU 2005-215910 A1 AU 2005-215910 B2 AU 2005-215910 B2 AU 2005-215910 A1 CA 2555542 A1 EP 1721007 A2 JP 2007-522812 A KR 10-2007-0022665 A US 2008-0194613 A1 US 2009-0156713 A1 WO 2005-080593 A3	01.09.2005 22.02.2005 01.05.2008 22.02.2005 01.09.2005 15.11.2006 16.08.2007 27.02.2007 14.08.2008 18.06.2009 01.09.2005
US 2006-0074565 A1	06.04.2006	CN 101111604 A0 CN 101111604 A EP 1809762 A1 JP 2008-521383 A WO 2006-052218 A1	23.01.2008 23.01.2008 25.07.2007 26.06.2008 18.05.2006