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(54) Title: METHOD AND NUCLEIC ACIDS FOR THE IMPROVED TREATMENT OF CANCERS

(57) Abstract: The present invention provides methods and nucleic acids for determining the prognosis and predicting treatment response of subjects with cancer. The expression of LHX3 or PITX3 is determined by determining the methylation status of one or more CpG positions within said genes.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2006/006458

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, Sequence Search, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/40716 A (CEMINES, LLC) 23 May 2002 (2002-05-23) page 27 - page 29; claims 1,33,54 -----	1-5
X	WO 02/070742 A (EPIGENOMICS AG [DE]) 12 September 2002 (2002-09-12) page 34, line 5; claims 42,53 -----	1,6
X	WO 01/77373 A (EPIGENOMICS AG [DE]; BERLIN KURT [DE]; PIEPENBROCK CHRISTIAN [DE]; OLE) 18 October 2001 (2001-10-18) page 359, line 2; claims 1-3 ----- -/--	1,6



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.
- *G* document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2006/006458

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 02/00927 A (EPIGENOMICS AG; OLEK, ALEXANDER; PIEPENBROCK, CHRISTIAN; BERLIN, KURT) 3 January 2002 (2002-01-03) page 4, paragraph 3 page 6, paragraph 3 page 9, line 14 - line 22 page 13, line 2 - line 3 page 14, line 22 - line 31 claims 3,6,8,11,12,16,17,20,28 sequence 173	7-10, 12-16, 19-23
Y	-----	11,17,18
X	DATABASE NCBI NUCLEOTIDE Seq 173 from patent WO0200927 1 February 2002 (2002-02-01), XP002403740 Database accession no. AX344748 the whole document	19,20
Y	----- WO 2005/059172 A2 (EPIGENOMICS AG [DE]; FOEKENS JOHN [NL]; HARBECK NADIA [DE]; KOENIG THO) 30 June 2005 (2005-06-30) cited in the application page 21, paragraph 4 - page 22 page 29, paragraph 4 - page 30	11,17,18
A	----- YAN P S ET AL: "CpG island arrays: an application toward deciphering epigenetic signatures of breast cancer" CLINICAL CANCER RESEARCH, THE AMERICAN ASSOCIATION FOR CANCER RESEARCH, US, vol. 6, no. 4, April 2000 (2000-04), pages 1432-1438, XP002245955 ISSN: 1078-0432	
A	----- US 2004/242510 A1 (MARKOWITZ SANFORD D) 2 December 2004 (2004-12-02)	
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2006/006458

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:
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:

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.:

1-23 (partially)

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

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-23 (partially)

A method for providing a prognosis/ predicting the outcome of treatment of a subject with a cell proliferative disorder by determining the expression or methylation state of LHX3. Related nucleic acids, kits and compositions.

2. claims: 1-23 (partially)

A method for providing a prognosis/ predicting the outcome of treatment of a subject with a cell proliferative disorder by determining the expression or methylation state of PITX3. Related nucleic acids, kits and compositions.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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