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(54) Title: HOMOZYGOUS DELETION OF CHROMOSOME 8p23 IN HEPATOCELLULAR CARCINOMA

(57) Abstract: A method for detecting human hepatocellular carcinoma (HCC), wherein the method comprises detecting a homozygous deletion in human chromosome 8p23.



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## INTERNATIONAL SEARCH REPORT

Internat application No

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A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 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)

IPC 7 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)

BIOSIS, MEDLINE, EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>PINEAU PASCAL ET AL: "Identification of three distinct regions of allelic deletions on the short arm of chromosome 8 in hepatocellular carcinoma." ONCOGENE, vol. 18, no. 20, 20 May 1999 (1999-05-20), pages 3127-3134, XP008012480 ISSN: 0950-9232 cited in the application figures 1-3; table 1 --- - /--</p>	1-10

☒ 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.

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB01/02274

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SUZUKI KAZUNORI ET AL: "Relationship between loss of heterozygosity at microsatellite loci and computerized nuclear morphometry in hepatocellular carcinoma." ANTICANCER RESEARCH, vol. 20, no. 2B, March 2000 (2000-03), pages 1257-1262, XP008012479 ISSN: 0250-7005 the whole document	1-10
X	NAGAI HISAKI ET AL: "Comprehensive allelotyping of human hepatocellular carcinoma." ONCOGENE, vol. 14, no. 24, 1997, pages 2927-2933, XP002075364 ISSN: 0950-9232 page 2929, column 2, paragraph 1 -page 2930; table 2	1-10
X	BECKER SHERRY A ET AL: "Frequent loss of chromosome 8p in hepatitis B virus-positive hepatocellular carcinomas from China." CANCER RESEARCH, vol. 56, no. 21, 1996, pages 5092-5097, XP002084551 ISSN: 0008-5472 page 5093; figure 4	1-10
Y	SUN PAUL C ET AL: "Homozygous deletions define a region of 8p23.2 containing a putative tumor suppressor gene" GENOMICS, ACADEMIC PRESS, SAN DIEGO, US, vol. 62, no. 2, 1 December 1999 (1999-12-01), pages 184-188, XP002175136 ISSN: 0888-7543 cited in the application the whole document	1-10
Y	ISHWAD CHANDRAMOHAN S ET AL: "Frequent allelic loss and homozygous deletion in chromosome band 8p23 in oral cancer" INTERNATIONAL JOURNAL OF CANCER, NEW YORK, NY, US, vol. 80, no. 1, 5 January 1999 (1999-01-05), pages 25-31, XP002175137 ISSN: 0020-7136 cited in the application figures 2,3; tables 1,2	1-10

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB 01/02274

## 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:  
see FURTHER INFORMATION sheet PCT/ISA/210
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:

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.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

Continuation of Box I.2

Present claim 1 relates to isolated nucleic acids and "a homologous sequence thereof". This expression encompasses homologous sequences of the given sequence identity numbers with less than 100% homology, thereby relating to an extremely large number of possible sequences. With that expression, the claim contains so many options that a lack of clarity and conciseness within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims impossible. Consequently, the search has been carried out for those parts of the application which do appear to be clear and concise, namely the Sequence Identities 37 - 53 themselves.

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.