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(54) Title: COMPOSITIONS AND METHODS FOR THE USE OF FIBRONECTIN FRAGMENTS IN THE DIAGNOSIS OF CANCER

(57) Abstract: The present invention relates to the detection tumors *in vivo*, the imaging of tumors *in vivo*, and the imaging of cancerous tissue in pathological samples. In particular the present invention incorporates the use of fibronectin fragments into these same detection and imaging methods.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 02/01189

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N33/574 A61K49/00 A61K51/00

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 G01N

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.
A	<p>PELTONEN J ET AL: "FIBRONECTIN GENE EXPRESSION BY EPITHELIAL TUMOR CELLS IN BASAL CELL CARCINOMA: AN IMMUNOCYTOCHEMICAL AND IN SITU HYBRIDIZATION STUDY" JOURNAL OF INVESTIGATIVE DERMATOLOGY, NEW YORK, NY, US, vol. 91, no. 4, October 1988 (1988-10), pages 289-293, XP000984049 ISSN: 0022-202X abstract</p> <p style="text-align: center;">---</p>	1-5
A	<p>US 4 894 326 A (MATSUURA ET AL) 16 January 1990 (1990-01-16) column 1, line 44 -column 3, line 8; claims 1-10</p> <p style="text-align: center;">---</p> <p style="text-align: right;">-/--</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.
- *&* document member of the same patent family

Date of the actual completion of the international search

28 April 2003

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INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/US 02/01189

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	LIVANT DONNA L ET AL: "Invasion of selectively permeable sea urchin embryo basement membranes by metastatic tumor cells, but not by their normal counterparts." CANCER RESEARCH, vol. 55, no. 21, 1995, pages 5085-5093, XP001147064 ISSN: 0008-5472 page 5086 -page 5092 ----	1-5
X	US 5 840 514 A (THE REGENTS OF THE UNIVERSITY OF MICHIGAN) 24 November 1998 (1998-11-24) column 3, line 62 -column 12, line 39; claims 1-11 ---	1-5
A	ALBRECHT M ET AL: "Fibronectin in human prostatic cells in vivo and in vitro: Expression, distribution, and pathological significance" HISTOCHEMISTRY AND CELL BIOLOGY, SPRINGER, BERLIN, DE, vol. 112, no. 1, July 1999 (1999-07), pages 51-61, XP002218305 ISSN: 0948-6143 abstract ---	1-5
Y	LIVANT D L ET AL: "THE PHSRN SEQUENCE INDUCES EXTRACELLULAR MATRIX INVASION AND ACCELERATES WOUND HEALING IN OBESE DIABETIC MICE" JOURNAL OF CLINICAL INVESTIGATION, NEW YORK, NY, US, vol. 105, no. 11, June 2000 (2000-06), pages 1537-1545, XP001147066 ISSN: 0021-9738 the whole document ---	1-5
X	LIVANT D L ET AL: "ANTI-INVASIVE, ANTITUMORIGENIC, AND ANTIMETASTATIC ACTIVITIES OF THE PHSCN SEQUENCE IN PROSTATE CARCINOMA" CANCER RESEARCH, AMERICAN ASSOCIATION FOR CANCER RESEARCH, BALTIMORE, MD, US, vol. 60, no. 2, 15 January 2000 (2000-01-15), pages 309-320, XP001147065 ISSN: 0008-5472 the whole document -----	1-5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 02/01189

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:

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.:

1-5

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: 1-5

Method for detecting cancer contacting a sample with cells disposed on a fibronectin-depleted substrate and measuring the extent of invasion of said cells into said substrate.

2. Claims: 6-21

Method for imaging cancer, administering to a patient a composition comprising the sequence X1HSX2N.

3. Claim : 22

Method of detection of fibronectin fragment as indicator of cancer.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 02/01189

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4894326 A	16-01-1990	US 5243029 A	07-09-1993
US 5840514 A	24-11-1998	AU 7302298 A	10-06-1998
		EP 0928340 A	14-07-1999
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		WO 9822617 A	28-05-1998
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