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(54) Title: DIAGNOSTICS AND THERAPEUTICS FOR DISEASES ASSOCIATED WITH X-PROLYL AMINOPEPTIDASE 2 (XPNPEP2)

(57) Abstract: The invention provides a human XPNPEP2 which is associated with the cardiovascular disorders, dermatological disorders, gastrointestinal and liver diseases, metabolic diseases, cancer disorders, neurological disorders, respiratory diseases and urological disorders. The invention also provides assays for the identification of compounds useful in the treatment or prevention of cardiovascular disorders, dermatological disorders, gastrointestinal and liver diseases, metabolic diseases, cancer disorders, neurological disorders, respiratory diseases and urological disorders. The invention also features compounds which bind to and/or activate or inhibit the activity of XPNPEP2 as well as pharmaceutical compositions comprising such compounds.



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/005021

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N33/48 C12Q1/68 A61P1/00 A61P3/00 A61P35/00
G01N33/68

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 C12N G01N C12Q A61P

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, BIOSIS, WPI Data, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 399 349 B1 (SPRINKLE TERRY JOE CURTIS ET AL) 4 June 2002 (2002-06-04) the whole document, see especially paragraphs 15, 16, 80, 181, and 409. the whole document	1-26
X	----- MARSHALL PETER ET AL: "Study of bradykinin metabolism in human and rat plasma by liquid chromatography with inductively coupled plasma mass spectrometry and orthogonal acceleration time-of-flight mass spectrometry." RAPID COMMUNICATIONS IN MASS SPECTROMETRY : RCM. 2002, vol. 16, no. 3, 2002, pages 220-228, XP002296819 ISSN: 0951-4198 the whole document ----- -/-	1-17

☒ 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 September 2004

Date of mailing of the international search report

29. 11. 04

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/005021

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 01/00811 A (KAPELLER LIBERMANN ROSANA ; WILLIAMSON MARK (US); MILLENNIUM PHARM INC) 4 January 2001 (2001-01-04) the whole document -----	1-26
Y	WO 02/20736 A (INCYTE GENOMICS INC) 14 March 2002 (2002-03-14) the whole document, see especially p. 1-15 -----	1-26
X	WO 02/053170 A (ANSORGE SIEGFRIED ; LENDECKEL UWE (DE); NEUBERT KLAUS (DE); REINHOLD D) 11 July 2002 (2002-07-11) the whole document, see especially paragraphs 15-17 and claims 3,14 and 21 -----	19-26
X	US 5 656 603 A (SIMMONS WILLIAM H) 12 August 1997 (1997-08-12) the whole document -----	19-26
X	WO 02/099379 A (BURNHAM INST) 12 December 2002 (2002-12-12) the whole document, see especially tables 2-4 -----	19-26
X	WO 01/89569 A (ANSORGE SIEGFRIED ; ARNDT MARCO (DE); LENDECKEL UWE (DE); NEUBERT KLAU) 29 November 2001 (2001-11-29) the whole document -----	19-26

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2004/005021

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:

Although claim 26 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
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.:

1-26 (partial)

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 11.1

Although claim 26 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-26 (partial)

These claims concern methods which involve XPNPEP2 for screening for therapeutic agents useful in the treatment of gastrointestinal diseases (claims 1-17), a method for diagnosing said diseases (claim 18), pharmaceutical compositions for treatment of said diseases (claims 19-23) or use of regulators of XPNPEP2 for the preparation of a pharmaceutical composition for the treatment of said diseases (claim 24), a method for the preparation of a pharmaceutical composition useful for the treatment of said diseases (claim 25) or use of a regulator of XPNPEP2 for the regulation of the activity of XPNPEP2 in a mammal having the said diseases.

2. claims: 1-26 (partial)

These claims concern methods which involve XPNPEP2 as a screening marker/diagnostic marker/therapeutical target (see above) in conjunction with cancer.

3. claims: 1-26 (partial)

These claims concern methods which involve XPNPEP2 as a screening marker/diagnostic marker/therapeutical target (see above) in conjunction with metabolic diseases.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/005021

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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