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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 02/059298 A3

(54) Title: GAB2(P97) GENE AND METHODS OF USE THEREOF

(57) Abstract: This invention relates to the purification, cloning and characterization of a novel gene, Gab2. In response to extra-cellular stimuli (e.g., cytokines, growth factors, hormones and antigens), Gab2 binds several signal relay molecules, including the protein-tyrosine phosphatase SHP-2 and phosphatidylinositol-3-OH kinase (PI-3K), which results in the initiation of multiple signaling cascades. Gab2 nucleic acid molecules, peptides, vectors, host cells, probes, antibodies, knockout and transgenic animals are provided. The invention also relates to methods of diagnosis, prevention and treatment of Gab2-mediated conditions such as allergic responses, neoplastic disorders and immune disorders.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/47854

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C12N15/12 C07K14/47 C07K16/18 A01K67/027 C12N15/11
 A61K31/70

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 C07K

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, EMBL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GU HAIHUA ET AL: "Cloning of p97/Gab2, the major SHP2-binding protein in hematopoietic cells, reveals a novel pathway for cytokine-induced gene activation." MOLECULAR CELL, vol. 2, no. 6, December 1998 (1998-12), pages 729-740, XP002231345 ISSN: 1097-2765 page 738, column 1; figure 1	1-6
X	& DATABASE EMBL 'Online! 18 January 1999 (1999-01-18) GU ET AL.: retrieved from EBI Database accession no. AF104244 abstract -----	1,4

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	"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
"E" earlier document but published on or after the international filing date	"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
"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)	"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.
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 17 February 2003	Date of mailing of the international search report 10. 10. 03
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Friedrich, C
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/47854

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:

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.:

1-6

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: 1-6

Nucleic acid, vector, host cell, protein, antibody.

1.1. Claim : 1

Nucleic acid, vector, host cell, protein.

1.2. Claim : 5

Antibody

2. Claims: 8, 10, 11, 32-34

Gab2 knockout.

3. Claims: 9-11, 32-34

Transgenic non-human mammal overexpressing Gab2.

4. Claims: 12-30, 35-48

Gab2 inhibitors.

5. Claims: 7, 31

Gab2 detection in patients with neoplastic disorders.

Please note that all inventions mentioned under item 1, although not necessarily linked by a common inventive concept, could be searched without effort justifying an additional fee.