(54) Title: NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

(57) Abstract: The present invention provides novel nucleic acids, novel polypeptide sequences encoded by these nucleic acids and uses thereof.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : C12N/15/11, 15/00, 1/21, 5/10, 5/16; C12Q 1/68; C12P 19/34, 21/00; G06F 17/00
US CL : 536/23.5, 23.1; 435/320.1, 252.3, 325, 6, 91.2, 69.1; 702/19, 20
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)
U.S. : 536/23.5, 23.1; 435/320.1, 252.3, 325, 6, 91.2, 69.1; 702/19, 20

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 practicable, search terms used)
CompuGen, SEQ ID NO: 1

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>WO 01/25221 A2 (ZYMOGENETICS, INC.) 26 April 2001 (26.04.2001), see especially pages 1-8, SEQ ID NO: 401 (and the alignment attached to the reference).</td>
<td>1-9, 13-15, and 19 22-26</td>
</tr>
<tr>
<td>Y</td>
<td>LOCKHART, D.J. et al., Expression monitoring by hybridization to high-density oligonucleotide arrays, Nature Biotechnology, December 1996, Vol. 14, pages 1675-1680, see entire document.</td>
<td>22-26</td>
</tr>
<tr>
<td>X</td>
<td>WO 00/32630 A2 (G.D. SEARLE &amp; CO.) 08 June 2000 (08.06.2000), see especially pages 5-10, SEQ ID NO: 26, and alignment attached to reference.</td>
<td>2 and 13-15</td>
</tr>
</tbody>
</table>

• 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
*B* earlier application or patent 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

Date of the actual completion of the international search
27 March 2003 (27.03.2003)

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231
Facsimile No. (703)305-3230

Date of mailing of the international search report
02 APR 2003

Authorized officer
Nelia D. Robinson
Telephone No. (703) 308-0196

Form PCT/ISA/210 (second sheet) (July 1998)
C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
</table>
**INTERNATIONAL SEARCH REPORT**

**Box I** Observations where certain claims were found unsearachable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claim 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. ☐ Claim 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:

Please See Continuation 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.: 1-9, 13-15, 19, and 22-26
   insofar as they relate to SEQ ID NO: 1

**Remark on Protest**

☐ The additional search fees were accompanied by the applicant’s protest.

☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet(1)) (July 1998)
BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claim(s) 1-9, 13-15, 19, and 22-26, drawn to polynucleotides, vectors, host cells, binding assays, nucleic acid molecular hybridization assays, methods for producing polypeptides, and polynucleotide arrays.

Group II, claim(s) 10, 11, 20, and 21, drawn to polypeptides, compositions comprising polypeptides, and polypeptide arrays.

Group III, claim(s) 12 and 16, drawn to antibodies and binding assays.

Group IV, claim(s) 17 and 18, drawn to methods for identifying a compound that binds to a polypeptide.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The polynucleotides, vectors, host cells, binding assays, and polynucleotide arrays of Group I are materially different from the polypeptides, compositions containing polypeptides, and polypeptide arrays of Group II, and the antibodies of Group III. None of the polypeptides, compositions containing polypeptides, and polypeptide arrays of Group II or the antibodies of Group III are needed to practice the methods of Group I. The methods of Groups I, III, and IV may be practiced independently of one another. The polypeptides, compositions containing polypeptides, and polypeptide arrays of Group II are materially different from the antibodies of Group III and have uses other than the methods of Groups III and IV (e.g., in affinity chromatography). The antibodies of Group III are not needed to practice the methods of Group IV.

Claims 1-26 require or mention more than one unrelated, independent, and distinct (from one another) polynucleotides or polypeptides. The polynucleotides lack a common special technical feature. The polypeptides lack any common special technical feature when compared one to another. Applicant is required to pay additional search fees for any sequence(s) to be searched beyond the first mentioned sequence (i.e., polynucleotides comprising SEQ ID NO: 1). Any additional SEQ ID NO to be searched requires one additional search fee per SEQ ID NO (i.e. one search fee per polypeptide SEQ ID NO and one search fee per polynucleotide SEQ ID NO). See MPEP 1850.