Title: DETECTION OF ANALYTES

Abstract

The invention concerns a method where catalytic nucleic acid sequence in the presence of an analyte (which may be a nucleic acid sequence or a non-nucleic acid sequence) converts a substrate to a catalytic product. The catalytic product may then be amplified by state of the art amplification methods such as PCR, LCR, SSR and NASBA.
### FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>AL</td>
<td>Spain</td>
<td>ES</td>
<td>Lesotho</td>
<td>LS</td>
</tr>
<tr>
<td>Armenia</td>
<td>AM</td>
<td>Finland</td>
<td>FI</td>
<td>Lithuania</td>
<td>LT</td>
</tr>
<tr>
<td>Austria</td>
<td>AT</td>
<td>France</td>
<td>FR</td>
<td>Luxembourg</td>
<td>LU</td>
</tr>
<tr>
<td>Australia</td>
<td>AU</td>
<td>Gabon</td>
<td>GA</td>
<td>Latvia</td>
<td>LV</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>AZ</td>
<td>United Kingdom</td>
<td>GB</td>
<td>Monaco</td>
<td>MC</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>BA</td>
<td>Georgia</td>
<td>GE</td>
<td>Republic of Moldova</td>
<td>MD</td>
</tr>
<tr>
<td>Barbados</td>
<td>BB</td>
<td>Ghana</td>
<td>GH</td>
<td>Madagascar</td>
<td>MG</td>
</tr>
<tr>
<td>Belgium</td>
<td>BE</td>
<td>Guinea</td>
<td>GN</td>
<td>The former Yugoslav Republic of Macedonia</td>
<td>MK</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>BF</td>
<td>Greece</td>
<td>GR</td>
<td>Mali</td>
<td>ML</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>BG</td>
<td>Hungary</td>
<td>HU</td>
<td>Mongolia</td>
<td>MN</td>
</tr>
<tr>
<td>Benin</td>
<td>BJ</td>
<td>Israel</td>
<td>IL</td>
<td>Mauritania</td>
<td>MR</td>
</tr>
<tr>
<td>Brazil</td>
<td>BR</td>
<td>Iceland</td>
<td>IS</td>
<td>Malawi</td>
<td>MW</td>
</tr>
<tr>
<td>Belarus</td>
<td>BY</td>
<td>Italy</td>
<td>IT</td>
<td>Mexico</td>
<td>MX</td>
</tr>
<tr>
<td>Canada</td>
<td>CA</td>
<td>Japan</td>
<td>JP</td>
<td>Niger</td>
<td>NE</td>
</tr>
<tr>
<td>Central African Republic</td>
<td>CF</td>
<td>Kenya</td>
<td>KE</td>
<td>Netherlands</td>
<td>NL</td>
</tr>
<tr>
<td>Congo</td>
<td>CG</td>
<td>Kyrgyzstan</td>
<td>KG</td>
<td>Norway</td>
<td>NO</td>
</tr>
<tr>
<td>Switzerland</td>
<td>CH</td>
<td>Democratic People's Republic of Korea</td>
<td>KP</td>
<td>New Zealand</td>
<td>NZ</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>CI</td>
<td>Republic of Korea</td>
<td>KR</td>
<td>Poland</td>
<td>PL</td>
</tr>
<tr>
<td>Cameroon</td>
<td>CM</td>
<td>Kazakstan</td>
<td>KZ</td>
<td>Portugal</td>
<td>PT</td>
</tr>
<tr>
<td>China</td>
<td>CN</td>
<td>Saint Lucia</td>
<td>LC</td>
<td>Russian Federation</td>
<td>RU</td>
</tr>
<tr>
<td>Cuba</td>
<td>CU</td>
<td>Liechtenstein</td>
<td>LI</td>
<td>Sudan</td>
<td>SD</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>CZ</td>
<td>Sri Lanka</td>
<td>LK</td>
<td>Sweden</td>
<td>SE</td>
</tr>
<tr>
<td>Germany</td>
<td>DE</td>
<td>Liberia</td>
<td>LR</td>
<td>Singapore</td>
<td>SG</td>
</tr>
<tr>
<td>Denmark</td>
<td>DK</td>
<td>Slovenia</td>
<td>SI</td>
<td>Slovakia</td>
<td>SK</td>
</tr>
<tr>
<td>Estonia</td>
<td>EE</td>
<td>Senegal</td>
<td>SN</td>
<td>Swaziland</td>
<td>SZ</td>
</tr>
<tr>
<td>Togo</td>
<td>TG</td>
<td>Chad</td>
<td>TD</td>
<td>Sweden</td>
<td>SE</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>TJ</td>
<td>Trinidad and Tobago</td>
<td>TT</td>
<td>Slovenia</td>
<td>SI</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>TM</td>
<td>Ukraine</td>
<td>UA</td>
<td>United States of America</td>
<td>US</td>
</tr>
<tr>
<td>Turkey</td>
<td>TR</td>
<td>Uganda</td>
<td>UG</td>
<td>Viet Nam</td>
<td>VN</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>TY</td>
<td>Netherlands</td>
<td>NL</td>
<td>Yugoslavia</td>
<td>YU</td>
</tr>
<tr>
<td>Zambia</td>
<td>ZA</td>
<td>Zimbabwe</td>
<td>ZW</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### A. CLASSIFICATION OF SUBJECT MATTER

**IPC 7**

C12O1/68

According to International Patent Classification (IPC) or to both national classification and IPC categories:

**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 databases consulted during the international search (name of database and where practical, search terms used):

### 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 98 08974 A (TIKCHINSKI YARON ; ASHER NATHAN (IL); INTELLIGENE LTD (IL); ELLING) 5 March 1998 (1998-03-05) cited in the application page 1-9; claims; examples 6,7,10</td>
<td>1-7</td>
</tr>
<tr>
<td>X</td>
<td>WO 94 13833 A (INNOVIR LAB INC) 23 June 1994 (1994-06-23) cited in the application the whole document</td>
<td>1-6</td>
</tr>
<tr>
<td>A</td>
<td>US 5 652 107 A (LIZARDI PAUL M ET AL) 29 July 1997 (1997-07-29) the whole document</td>
<td>1-7</td>
</tr>
</tbody>
</table>

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 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

* Other categories of cited documents:
  - **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.
  - **ZA** document member of the same patent family

Date of the actual completion of the international search: 19 May 2000

Date of mailing of the international search report: 31/05/2000

Name and mailing address of the ISA:

European Patent Office, P.B. 5818 Patentlaan 2 NL - 2580 HV Rijswijk
Tel: (+31-70) 340-2040, Tx: 31 651 epo nl, Fax: (+31-70) 340-3016

Authorized officer:

Reuter, U
<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>P,X</td>
<td>ROBERTSON M P ET AL: &quot;In vitro selection of an allosteric ribozyme that transduces analytes to amplicons.&quot; NATURE BIOTECHNOLOGY, (1999 JAN) 17 (1) 62-6, XP002138120 the whole document</td>
<td>1-7</td>
</tr>
<tr>
<td>Patent document cited in search report</td>
<td>Publication date</td>
<td>Patent family member(s)</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-----------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>WO 9808974 A</td>
<td>05-03-1998</td>
<td>AU 717736 B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 3862097 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CN 1232509 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0922114 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NO 990850 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 3862197 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0970241 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WO 9841654 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0958303 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 5739694 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0681613 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 8507202 T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 5589332 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0682716 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 8505531 T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WO 9416105 A</td>
</tr>
</tbody>
</table>