Title: ANTI-CANCER NUCLEIC ACID AND PROTEIN TARGETS

Abstract: This invention relates to the discovery of nucleic acids associated with cell proliferation, neoplasia, cell transformation, malignant tumor formation and metastasis and uses therefor.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : C12Q 1/68; G01N 33/53; C07H 21/02  
US CL : 435/6, 7.1; 536/23.1  
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. : 435/6, 7.1; 536/23.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

STN-BIOSCIENCE database family, Genbank  
search terms: U81006, breast underexpress, overexpress, colon

**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>A</td>
<td>Schimmoeller et al Database Genbank, Accession No. U81006, National Center for Biotechnology Information, National Library of Medicine, Bethesda, Maryland, publically available, 19 December 1996.</td>
<td>1, 2, 4 and 6</td>
</tr>
</tbody>
</table>

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

Date of the actual completion of the international search  
07 FEBRUARY 2001

Date of mailing of the international search report  
11 APR 2001

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

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Form PCT/ISA/210 (second sheet) (July 1998)
INTERNATIONAL SEARCH REPORT

Box I  Observations where certain claims were found unsearchable (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. □ 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:

   Please See Extra 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, 2, 4, 6

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 WAS LACKING

This ISA found multiple inventions as follows:

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

Groups 1-444, claim(s) 1, 2, 4 and 6, drawn to a method of diagnosing cancer comprising detecting the overexpression of a cancer associated mRNA wherein the mRNA is the mRNA of one of the 444 separate and distinct clones recited in Table 1, respectively.

Groups 445-888, claim(s) 1, 2, 5, 6, drawn to a method of diagnosing cancer comprising detecting the overexpression of a cancer associated protein wherein the protein is encoded by one of the 444 separate and distinct clones in Table 1, respectively.

Group 889-1332, claim(s) 1, 3-4 and 6, drawn to a method of diagnosing cancer comprising detecting the underexpression of a cancer associated mRNA wherein the mRNA is the mRNA of one of the 444 separate and distinct clones recited in Table 1, respectively.

Groups 1333-1776, claim(s) 1, 2, 5, 6, drawn to a method of diagnosing cancer comprising detecting the overexpression of a cancer associated protein wherein the protein is encoded by one of the 444 separate and distinct clones in Table 1, respectively.

Group 1777-2220, claim(s) 7 and 8, drawn to a method of inhibiting cancer comprising introducing a nucleic acid, one of the 444 separate and distinct clones in Table 1, respectively.

Group 2221-2664, claim(s) 7 and 9, drawn to a method of inhibiting cancer comprising introducing a protein encoded by one of the 444 separate and distinct clones in Table 1, respectively.

Group 2665-3108, claim(s) 10 and 11, drawn to a method of arresting cancer with an antisense molecule of one of the 444 separate and distinct clones in Table 1, respectively.

Group 3109-3552, claim(s) 10 and 12, drawn to a method of arresting cancer with an antibody to the protein encoded by one of the 444 separate and distinct clones in Table 1, respectively.

Group 3552-3996, claim(s) 13-14, drawn to a method for identifying a modulate of cancer development with a probe from one of the 444 separate and distinct clones in Table 1.

Group 3997-4440, claim(s) 15 and 16, drawn to a method for modulating cancer development by administering a compound that decreases expression of one of the 444 separate and distinct nucleic acids in Table 1, respectively.

Group 4441-4884, claim(s) 15 and 16, drawn to a method for modulating cancer development by administering a compound that increases expression of one of the 444 separate and distinct nucleic acids in Table 1, respectively.

The inventions listed as Groups 1-4884 do not relate to a single 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:

Groups 1-4884 are materially distinct methods which differ at least in objectives, method steps, reagents and/or dosages and/or schedules used, response variables, and criteria for success.

An international or a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations of categories:

(1) A product and a process specially adapted for the manufacture of said product; or

(2) A product and a process of use of said product; or

(3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or

(4) A process and an apparatus or means specifically designed for carrying out the said process; or

(5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.

Since all of the claims are drawn to methods, unity of invention is not found.