Title: COMPOSITIONS FOR TREATMENT OF PROSTATE AND OTHER CANCERS

Abstract: The present invention makes use of therapeutic agents which target heat shock protein (hsp) 27 in vivo to provide treatment to individuals, particularly human individuals, suffering from prostate cancer and other cancers that overexpress hsp 27. In accordance with the invention, a therapeutic agent, for example an antisense oligonucleotide or RNAi nucleotide inhibitor with sequence specificity for hsp 27 mRNA, for example human hsp 27 mRNA, is administered to an individual suffering from prostate cancer or some other cancer expressing elevated levels of hsp 27 in a therapeutically effective amount. The therapeutic agent is suitably formulated into a pharmaceutical composition which includes a pharmaceutically acceptable carrier, and packaged in dosage unit form. A preferred dosage unit form is in injectable dosage unit form.
**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 A61K31/713 A61K31/7125 A61P35/00

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 A61K

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 practical, search terms used)

WPI Data, EPO-Internal, MEDLINE, PAJ, BIOSIS, CHEM ABS Data, SEQUENCE SEARCH

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tr>
<td>X</td>
<td>WO 01 70976 A (CORIXA CORP ; PYLE RUTH A (US); STOLK JOHN A (US); XU JIANCHUN (US)) 27 September 2001 (2001-09-27) abstract page 13, line 12-19 page 38, line 12-18 page 46, line 22 - page 48, line 17; claims 1, 11, 13 seq. ID No. 2</td>
<td>1-3, 12-14</td>
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<td>Y</td>
<td>DATABASE WPI Section Ch, Week 199737 Derwent Publications Ltd., London, GB; Class B02, AN 1997-399429 XP002272450 &amp; JP 09 176011 A (KUREHA CHEM IND CO LTD), 8 July 1997 (1997-07-08) abstract</td>
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<td>1,12</td>
</tr>
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</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 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 without the document 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
*"Z" document member of the same patent family

**Date of the actual completion of the International search**

4 March 2004

**Date of mailing of the international search report**

18/03/2004

**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

Greif, G
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<tr>
<td>Y</td>
<td>MORINO M ET AL: &quot;SPECIFIC REGULATION OF HSPS IN HUMAN TUMOR CELL LINES BY FLAVONOIDs&quot; IN VIVO - INTERNATIONAL JOURNAL OF IN VIVO RESEARCH, XX, GB, vol. 11, no. 3, May 1997 (1997-05), pages 265-270, XP009007378 ISSN: 0258-851X abstract; table 1 page 267, left-hand column, paragraphs 2,3</td>
<td>4-11</td>
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<td>Y</td>
<td>TAMM I ET AL: &quot;Antisense therapy in oncology: new hope for an old idea?&quot; LANCET, XX, XX, vol. 358, no. 9280, 11 August 2001 (2001-08-11), pages 489-497, XP004299974 ISSN: 0140-6736 page 494, right-hand column, paragraph 2</td>
<td>4-11</td>
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INTERNATIONAL SEARCH REPORT

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.: 1-4, 7-9, 12-14 (all partially)
   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:
   see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 8.4(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:

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.:

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 1985)
Continuation of Box I.2

Claims Nos.: 1-4, 7-9, 12-14 (all partially)

Present claims 1-4, 7-9 and 12-14 relate to a product or use defined by reference to a desirable characteristic or property, namely

- An agent effective to reduce the amount of active hsp27 in hsp27 expressing cells exposed to the therapeutic agent
- An antisense oligonucleotide that is sequence specific for hsp27
- An siRNA that is sequence specific for shp27

The claims cover all products and uses having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products and uses, namely, the specific sequences of antisense oligonucleotides or siRNAs. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product or use by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the products or uses covered by the examples and provided sequences of claims 5, 6, 10 and 11, as well as the general underlying principle of the application.

The applicant’s attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.
<table>
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<th>Publication date</th>
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<tr>
<td>WO 0170976 A</td>
<td>27-09-2001</td>
<td>AU 4931701 A</td>
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<td>US 2003059781 A1</td>
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| JP 9176011 A                         | 08-07-1997      | NONE                   |                 |