METHODS AND COMPOSITIONS FOR TREATING NEOPLASIA RELATING TO HNRNP A1 AND A2 NUCLEIC ACID MOLECULES

Abstract: The present invention provides therapeutic and diagnostic methods for neoplasia treatment relating to hnRNP A1 and hnRNP A2 nucleic acid molecules.
### INTERNATIONAL SEARCH REPORT

**A. CLASSIFICATION OF SUBJECT MATTER**

| IPC 7 | C12N15/11 A61K38/00 A61K48/00 C12Q1/68 G01N33/53 |

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 | C12N A61K C12Q G01N |

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)

EPO-Internal

**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>
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<tbody>
<tr>
<td>A</td>
<td>WO 98/00537 A (UNIVERSITE DE SHERBROKE (CA); CHABOT BENOIT) 8 January 1998 (1998-01-08) page 16, line 5 – page 18, line 17 page 41 – page 43; example 7 page 46 – page 49; claims 10-14,26,28</td>
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<td>A</td>
<td>US 6 165 789 A (ISIS PHARMACEUTICAL, INC. (US); MONIA BRETT P.; CONSEVERS LEX M.) 26 December 2000 (2000-12-26)</td>
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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 document 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

  * "Y" 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.
  * "X" document member of the same patent family

**Date of the actual completion of the international search**

31 October 2003

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

09.02.2004

**Name and mailing address of the ISA**

European Patent Office, P.O. 5818 Patentlaan 2 NL - 2280 HV Rijswijk
Tel. (+31-70) 840-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016

**Authorized officer**

Macchia, G
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. [X] Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:
   Although claims 1-38, 94-104, 131-136 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

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. [X] 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.:

   1-38, 53-62, 84, 88-91, 121-136 (all totally)

Remark on Protest

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

[ ] No protest accompanied the payment of additional search fees.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-38, 53-62, 84, 88-91, 121-130 all totally; 77, 81, 87, 131-136 all partially

   Method of inducing cell death in a cell, as claimed in claim 1.
   Methods related thereto, as claimed in claims 2-38, 81, 84, 87, 89-91, 131-136.
   Compositions related thereto, as claimed in claims 53-62, 77, 126-130.
   Kit related thereto, as claimed in claim 88.

   Vector related thereto, as claimed in claims 121-125.

2. claims: 39-43, 64-71, 82, 85, 105-110 all totally; 63, 77-81, 87, 92, 93, 131-136 all partially

   A pharmaceutical composition comprising a nucleic acid molecule having at least one strand complementary to at least a portion of the sequence of hnRNP A1, as claimed in claim 39.
   Compositions related thereto, as claimed in claims 40-43, 63-71, 77, 78.
   Kit related thereto, as claimed in claims 79, 80.

   Methods related thereto, as claimed in claims 81-82, 85, 87, 92, 93, 131-136.
   Vector related thereto, as claimed in claims 105-110.

3. claims: 44-52, 72-76, 83, 86, 94-104, 111-120 all totally; 63, 77-81, 87, 92, 93, 131-136 all partially

   A pharmaceutical composition comprising a nucleic acid molecule having at least one strand complementary to at least a portion of the sequence of SEQ ID NO:30 (hnRNP A2), as claimed in claim 44.
   Compositions related thereto, as claimed in claims 45-50, 63, 72-78.
   Methods related thereto, as claimed in claims 51, 52, 81, 83, 86, 87, 92-104, 131-136.
   Kit related thereto, as claimed in claims 79, 80.

   Vector related thereto, as claimed in claims 111-120.
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