Title: DIAGNOSTICS AND THERAPEUTICS FOR DISEASES ASSOCIATED WITH HUMAN TRANSMEMBRANE SERINE PROTEASE 2 (TMPRSS2)

Abstract: The invention provides a human TMPRSS2 which is associated with the cardiovascular disorders, endocrinological diseases, gastroenterological diseases, metabolic diseases, cancer, respiratory diseases, urological disorders and inflammation. The invention also provides assays for the identification of compounds useful in the treatment or prevention of cardiovascular disorders, endocrinological diseases, gastroenterological diseases, metabolic diseases, cancer, respiratory diseases, urological disorders and inflammation. The invention also features compounds which bind to and/or activate or inhibit the activity of TMPRSS2 as well as pharmaceutical compositions comprising such compounds.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7  C12Q1/37  G01N33/573

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  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, BIOSIS, EMBASE, PAJ, WPI Data, CHEM ABS Data

**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 02/04953 A (AGENSY INC ; HUBERT RENE S (US); FARIS MARY (US); JAKOBVITS AYA (US)) 17 January 2002 (2002-01-17) abstract page 54, line 18 – page 55, line 30</td>
<td>1-26</td>
</tr>
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</table>

**Further documents are listed in the continuation of box C.**

**X** Patent family members are listed in annex.

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

28 October 2004

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

28.12.2004

**Name and mailing address of the ISA**

European Patent Office, P.B. 5816 Patentlaan 2 NL - 2280 HV Wassenaar Tel: (+31-70) 340-2040, Tx. 31 851 epo nl, Fax: (+31-70) 340-3016

**Authorized officer**

Jacques, P
<table>
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<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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| X        | WO 00/00605 A (MYRIAD GENETICS INC)  
6 January 2000 (2000-01-06)  
abstract  
claims 1-55 | 1-26 |
| X        | WO 99/62942 A (SAFFRAN DOUGLAS C ; AFAR DANIEL E (US); HUBERT RENE S (US); LEONG KAH) 9 December 1999 (1999-12-09)  
abstract  
claims 1-19 | 1-26 |
| X        | VAARALA MARKKU H ET AL: "The TMPRSS2 gene encoding transmembrane serine protease is overexpressed in a majority of prostate cancer patients: Detection of mutated TMPRSS2 form in a case of aggressive disease"  
INTERNATIONAL JOURNAL OF CANCER,  
vol. 94, no. 5,  
1 December 2001 (2001-12-01), pages 705-710, XP002302825  
ISSN: 0020-7136  
the whole document | 1-26 |
INTERNATIONAL SEARCH REPORT

Box No. 1 Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

   a. type of material

      - [x] a sequence listing
      - [ ] table(s) related to the sequence listing

   b. format of material

      - [x] in written format
      - [x] in computer readable form

   c. time of filing/furnishing

      - [x] contained in the international application as filed
      - [x] filed together with the international application in computer readable form
      - [ ] furnished subsequently to this Authority for the purpose of search

2. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:
INTERNATIONAL SEARCH REPORT

Box II  Observations where certain claims were found unsearchable (Continuation of item 2 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.: 26
   because they relate to subject matter not required to be searched by this Authority, namely:
   Although claim 26 is 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 III  Observations where unity of invention is lacking (Continuation of item 3 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.:  
   claims 1-26 (all partially)

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: 1-26 (all partially)


2. claims: 1-26 (all partially)

Same subject-matter as invention 1 but relating to endocrinological diseases.

3. claims: 1-26 (all partially)

Same subject-matter as invention 1 but relating to gastroenterological diseases.

4. claims: 1-26 (all partially)

Same subject-matter as invention 1 but relating to metabolic diseases.

5. claims: 1-26 (all partially)

Same subject-matter as invention 1 but relating to cancer.

6. claims: 1-26 (all partially)

Same subject-matter as invention 1 but relating to respiratory diseases.

7. claims: 1-26 (all partially)

Same subject-matter as invention 1 but relating to urological diseases.

8. claims: 1-26 (all partially)
Same subject-matter as invention 1 but relating to inflammation.
<table>
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