Fig. 1

[Continued on next page]

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)
(19) World Intellectual Property Organization
International Bureau
(43) International Publication Date
3 January 2014 (03.01.2014)

(21) International Application Number:
PCT/EP2013/063859

(22) International Filing Date:
1 July 2013 (01.07.2013)

(24)Title: MARKER SEQUENCES FOR PARKINSON'S DISEASE AND USE THEREOF

(57) Abstract: The present invention relates to new marker sequences for Parkinson's disease and the diagnostic use thereof together with a method for Screening of potential active substances for Parkinson's disease by means of these marker sequences. Furthermore, the invention relates to a diagnostic device containing such marker sequences for Parkinson's disease, in particular a protein biochip and the use thereof.
(88) Date of publication of the international search report:

30 May 2014
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. (means)
      - [ ] on paper
      - [x] in electronic form
   b. (time)
      - [x] in the international application as filed
      - [ ] together with the international application in electronic form
      - [ ] 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:

Form PCT/ISA/21 0 (continuation of first sheet (1)) (July 2009)
**Box No. 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. □ 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 No. 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:

```markdown
see additional sheet
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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 fees, this Authority did not invite payment of additional fees.

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 (completely) ; 2-15 (partially)

**Remark on Protest**

- The additional search fees were accompanied by the applicant’s protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant’s protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.
A. CLASSIFICATION OF SUBJECT MATTER
INV. G01N 33/68

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
G01N

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<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>MIN SHI ET AL: &quot;Cerebrospinal fluid biomarkers for Parkinson disease diagnosis and progress&quot;, ANNALS OF NEUROLOGY, vol. 69, no. 3, 11 March 2011 (2011-03-11), pages 570-580, XP055083164, ISSN: 0364-5134, DOI: 10.1002/ana.22311 page 571, left-hand column, paragraph 4 - page 574, right-hand column, paragraph 1</td>
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Date of the actual completion of the international search

11 October 2013

Date of mailing of the international search report

09/04/2014

Authorized officer

Fliei tmann, J

Further documents are listed in the continuation of Box C.

See patent family annex.
### DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>X</td>
<td>WO 2004/085646 AI (NOVARTIS A.G [CH]; NOVARTIS PHARMA GMBH [AT]; IOURGENKO VADIM [US]; LAB) 7 October 2004 (2004-10-07) claims 47-49,56; sequence 16</td>
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**Notes:**
- **X** indicates documents considered to be relevant.
- **DATABASE MEDLINE** is a database of medical literature.
- **METHODS IN MOLECULAR BIOLOGY** is a publication by CLIFTON, N.J.
- **WO 2004/085646** is a World Intellectual Property Organization application.

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**Form PCT/ISA/210 (continuation of second sheet) (April 2008)**
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<td>WO 2004085646 A1</td>
<td>07-10-2004</td>
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This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1 (completely); 2-15 (partly)

   Method for identifying marker sequences for Parkinson's disease (PD) by differential screening of samples from healthy persons (HD), samples from patients with other neurodegenerative diseases (DC) and samples from patients with Parkinson's disease and processing the data obtained from the differential screening by a three-step feature selection approach and marker defined by SEQ ID NO. 1 as a PD marker

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2-37. Claims: 2-15 (partly)

   Use of one of the markers identified by SEQ ID NO. 2-37 for the diagnosis of Parkinson's Disease

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