Abstract: Methods of inactivating infectious prion proteins in a biological fluid to produce a non-infectious biological fluid are disclosed; the methods comprising subjecting an amount of a fluid containing infectious prion proteins to an ozone/oxygen admixture delivered by an ozone delivery system whereby biological fluids are rendered free of infectious prions. The methods also disclose the treatment of fluid additive with ozone to render the fluid additive pharmaceutically-active for anti-prion activity.
before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:
12 April 2012

Published:
— with international search report (Art. 21(3))
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

C07K 14/47(2006.01)i, C12Q 1/00(2006.01)i, GOIN 33/92(2006.01)i, GOIN 33/52(2006.01)i

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)

C07K 14/47; A61L 2/20; A61M 15/02; A61M 37/00; A61L 9/00; A61M 1/36; A61L 2/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: prion, ozone/oxygen,lipid peroxide, ozone-inert amterials.

**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>X</td>
<td>JOHNSON, C.J. et al. Ultraviolet-ozone treatment reduces levels of disease-associated prion protein and prion infectivity.</td>
<td>1-9,15,16,18-20</td>
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<tr>
<td>Y</td>
<td>BMC Research Notes, 2009, Vol. 2, No. 121. See abstract.</td>
<td>11-14,17</td>
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<td>Y</td>
<td>US 66027688 A (MAINWRIGHT, B.E.) 22 February 2000</td>
<td>11-14,17</td>
</tr>
<tr>
<td></td>
<td>See the whole document, especially abstract and claims 1,2.</td>
<td>1-9,15,16,18-20</td>
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<tr>
<td>Y</td>
<td>US 5052382 A (MAINWRIGHT, B.E.) 01 October 1991</td>
<td>11-14,17</td>
</tr>
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<td>See abstract and claims 1-9.</td>
<td>1-9,15,16,18-20</td>
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<td>See abstract and claim 1.</td>
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</table>

☐ Further documents are listed in the continuation of Box C.  ☒ See patent family 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 application or patent 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 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 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

"&" document member of the same patent family

Date of the actual completion of the international search

14 FEBRUARY 2012 (14.02.2012)

Date of mailing of the international search report

17 FEBRUARY 2012 (17.02.2012)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejon, 189 Cheongsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Form PCT/ISA/210 (second sheet) (July 2009)

Authorized officer

KIM, YUN-KYUNG

Telephone No. 82-42-481-5605
**INTERNATIONAL SEARCH REPORT**

**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.: 10  
   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:

   According to PCT Rule 6.1(b), claims should be numbered consecutively in Arabic numerals but claim 10 is missing.

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:

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 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.
<table>
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<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
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<tr>
<td></td>
<td></td>
<td>EP 0653945 A</td>
<td>01.10.1997</td>
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<td></td>
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<td>WO 94-03217 A</td>
<td>17.02.1994</td>
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<td>US 05052382 A</td>
<td>01.10.1991</td>
<td>None</td>
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<td>US 2003-0 19857 A</td>
<td>23.10.2003</td>
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</table>

Form PCT/ISA/210 (patent family annex) (July 2009)