Title: TOPICAL TRANSDERMAL DEXMEDETOMIDINE COMPOSITIONS AND METHODS OF USE THEREOF

(51) International Patent Classification:
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A61K 9/06 (2006.01) A61P 25/00 (2006.01)
A61P 35/00 (2006.01)

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(72) Inventors; and


(74) Agent: LEGAARD, Paul K.; Pepper Hamilton LLP, 400 Berwyn Park, 899 Cassatt Road, Berwyn, PA 1932 (US).


Declarations under Rule 4.17:
— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(HH))
— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(HH))

Published:
— with international search report (Art. 21(3))

[Continued on next page]

Fig. 5

(57) Abstract: Analgesic topical formulations of dexmedetomidine and methods of use thereof in the treatment and management of pain and other conditions.
— 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:

17 November 2011
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

A61K 31/415(2006.01)i, A61K 9/06(2006.01)i, A61P 35/00(2006.01)i, A61P 25/06(2006.01)i, A61P 25/00(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)

A61K 31/415; A61K 9/06; A61P 35/00; A61P 25/06; A61P 25/00

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 practicable, search terms used)
eKOMPASS (KIPO internal), NCBI (PubMed, MeSH)

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>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>TUNA ONTONEN et al., 'The Mechanical Antihyperalgesic Effect of Intrathecally Administered MPV-2426, a Novel a2-Adrenoceptor Agonist, in a Rat Model of Postoperative Pain', Anesthesiology, 2000, Vol. 92, No. 6, PP. 1740-1745, ISSN 0003-2022 See pp. 1743-1743; figures 1-2; abstract.</td>
<td>18-25</td>
</tr>
</tbody>
</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
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Date of the actual completion of the international search
19 SEPTEMBER 2011

Date of mailing of the international search report
19 SEPTEMBER 2011

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Korean Intellectual Property Office
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Authorized officer
SUNG Sun Young
Telephone No. 82-42-481-8405

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<table>
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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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| A        | US 2008-0131483 A1 (MUHAMMAD ABDURAZIK) 05 June 2008  
See the whole document. | 18-25                |

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**INTERNATIONAL SEARCH REPORT**

<table>
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<th>Observations where certain claims were found unsearable (Continuation of item 2 of first sheet)</th>
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<td>This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:</td>
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<tr>
<td>1. ☒ Claims Nos.: 1-17 because they relate to subject matter not required to be searched by this Authority, namely:</td>
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<tr>
<td>The claims pertain to methods for treatment of the human body by therapy, and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(l) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.</td>
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<td>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:</td>
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<td>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).</td>
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<td>1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.</td>
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<td>2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.</td>
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<td>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.:</td>
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<tr>
<td>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.:</td>
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**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.

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<table>
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<th>Patent family member(s)</th>
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<tr>
<td>US 2003-0022926 A1</td>
<td>30.01.2003</td>
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<td>US 2008-0131483 A1</td>
<td>05.06.2008</td>
<td>IL 147921 DO</td>
<td>14.08.2002</td>
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