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Published:

- with international search report (Art. 21(3))
- 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:

20 February 2014

(54) Title: COMPOSITIONS AND METHODS FOR THE TREATMENT OF LOCAL PAIN

(57) Abstract: The invention relates to the compounds of formula I or its pharmaceutical acceptable salts, as well as polymorphs, solvates, enantiomers, stereoisomers and hydrates thereof. The pharmaceutical compositions comprising an effective amount of compounds of formula I, and methods for the treatment of local pain may be formulated for oral, buccal, rectal, topical, transdermal, trans mucosal, intravenous, parenteral administration, syrup, or injection. Such compositions may be used to treatment of moderate to severe pain, neuropathic pain, post herpetic neuralgia and rheumatic pains.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2013/054079

A. CLASSIFICATION OF SUBJECT MATTER

See the extra sheet

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: C07C, A61K, A61P

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)

CNPAT, CTCMPD, CNKI Full-Text database, Chinese Medicine Abstract, WPI, EPODOC, WOTXT, EPTXT, USTXT, CATXT, JPTXT, KRITXT, STN, Embase, Elsevier:capsaicin,+capsaicin,capsaicin+, thioctic,lipoic,eicosapentaenoic,docosahexaenoic,acetyl cysteine,etiology,neurologic,pain,herpetic neuralgia,diabetic,neuropathy, structures of compounds

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 20080058362 A1 (NULU J R et al.), 06 March 2008 (06.03.2008), See the abstract, figure.2., claims 1, 15-16, 37-39, description, paragraphs 0004, 0006, 0007	1-5
A		6-13
X	US 20080020996 A1 (NULU J R et al.), 24 January 2008 (24.01.2008), See the abstract, figure.1, claims 4, 13-16	1-5
A		6-13
A	WO 2011154833 A1 (KANDULA, Mahesh), 15 December 2011 (15.12.2011), See the abstract, claims 1-14	1-13

Further documents are listed in the continuation of Box C. See patent family annex.

<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“L” document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p>	<p>“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</p> <p>“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</p> <p>“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</p> <p>“&” document member of the same patent family</p>
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Date of the actual completion of the international search 03 December 2013 (03.12.2013)	Date of mailing of the international search report 12 Dec. 2013 (12.12.2013)
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2013/054079

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.: 4-5
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 4-5 are directed to a method of treatment of the human/animal body (Article 17 (2) (a) (i) and Rule 39. 1(iv) PCT), however, the search has been carried out and based on the use of the compounds in manufacture medicaments for treating corresponding diseases in claims 4-5.
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:

See extra 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 fees, this Authority did not invite payment of 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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2013/054079

CLASSIFICATION OF SUBJECT MATTER:

C07C 43/20 (2006.01)i

C07C 43/205 (2006.01)i

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A61K 31/38 (2006.01)i

A61P 25/00 (2006.01)i

A61P 25/04 (2006.01)i

Continuation of **Box No. III:**

This International Searching Authority found multiple inventions in this international application, as follows:

1) claims: 6 :

A pharmaceutical composition comprising a molecular conjugate of capsaicin and R-Lipoic acid.

2) claims: 7

A pharmaceutical composition comprising a molecular conjugate of capsaicin and eicosapentaenoic acid..

3) claims: 8

A pharmaceutical composition comprising a molecular conjugate of capsaicin and docosahexaenoic acid.

4) claims: 9

A pharmaceutical composition comprising a molecular conjugate of capsaicin and acetyl cysteine.

5) claims: 10

A pharmaceutical composition comprising a molecular conjugate of capsaicin and N-(2, 6-dimethylphenyl) acetamide.

6) claims: 11

A pharmaceutical composition comprising a molecular conjugate of capsaicin and bupivacaine.

7) claims: 12

A pharmaceutical composition comprising a molecular conjugate of capsaicin and lidocaine.

8) claims: 13

A pharmaceutical composition comprising a molecular conjugate of capsaicin and 1-(3, 4, 5-trihydroxyphenyl) ethanone.

By searching, D1(US 20080058362 A1) discloses a pharmaceutical composition comprising capsaicin or an ester of capsaicin. The composition can be used to treat chronic pain (See the abstract).

In view of the disclosure of D1 (see above), the claims as listed do not share a common special technical feature. Therefore, the present application lacks unity of invention (Rule 13(1, 2, 3)).

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IB2013/054079

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
US 2008058362 A1	06.03.2008	US 7645767 B	12.01.2010
US 2008020996 A1	24.01.2008	US 7943666 B	17.05.2011
		US 2011218180 A	08.09.2011
WO 2011154833 A1	15.12.2011	US 2011300190 A	08.12.2011
		CA 2801336 A	15.12.2011
		AU 2011263423 A	23.08.2012
		SG 185754 A	28.12.2012
		CN 102947287 A	27.02.2013
		EP 2580204 A	17.04.2013
		EP 20110749511 A	03.06.2011
		JP 2013529221 A	18.07.2013