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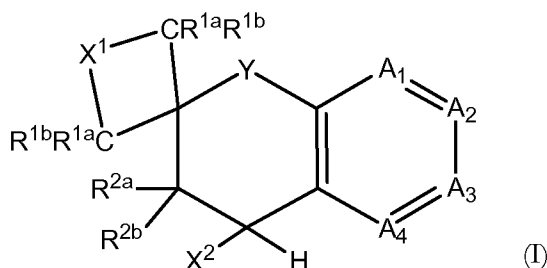
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(54) Title: ANTAGONISTS OF THE VANILLOID RECEPTOR SUBTYPE 1 (VR1) AND USES THEREOF



(57) Abstract: The present invention is directed to compounds of formula (I), wherein variables X^1 , X^2 , Y , R^{1a} , R^{1b} , R^{2a} , R^{2b} , A_1 , A_2 , A_3 , and A_4 are as defined in the description, and methods of use to treat pain, neuropathic pain, allodynia, pain associated with inflammation or an inflammatory disease, inflammatory hyperalgesia, bladder overactivity, and urinary incontinence.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/66515

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A61K 31/416(2006.01),31/352(2006.01);C07D 231/56(2006.01),493/00(2006.01)

USPC: 514/405,453;548/361.1;549/330

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)

U.S. : 514/405, 453; 548/361.1; 549/330

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)
STN STRUCTURE SEARCH, FILE CAPLUS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 2007/042906 A1 (GHARAT et al) 19 April 2007 (19.04.2007), examples 3-37.	1, 12-17, 27-43

☐

Further documents are listed in the continuation of Box C.

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See patent family annex.

* Special categories of cited documents:

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"E" earlier application or patent published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

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"X"

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document member of the same patent family

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INTERNATIONAL SEARCH REPORT

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BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In order for more than one species to be examined, the appropriate additional examination fees must be paid. The species are as follows:

I. Compounds of formula (I) where A1-A4 represent C and X1 represents $-(CR1aR1b)_m$ -, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

II. Compounds of formula (I) where A1-A4 represent C and X1 represents $-(CR1aR1b)_nG1$ -, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

III. Compounds of formula (I) where A1-A4 represent C and X1 represents $-(CR1aR1b)_p-G1-C(R1aR1b)-$, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

IV. Compounds of formula (I) where only one of A1-A4 represents N and X1 represents $-(CR1aR1b)_m$ -, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

V. Compounds of formula (I) where only one of A1-A4 represents N and X1 represents $-(CR1aR1b)_nG1$ -, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

VI. Compounds of formula (I) where only one of A1-A4 represents N and X1 represents $-(CR1aR1b)_p-G1-C(R1aR1b)-$, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

VII. Compounds of formula (I) where two of A1-A4 represent N and X1 represents $-(CR1aR1b)_m$ -, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

VIII. Compounds of formula (I) where two of A1-A4 represent N and X1 represents $-(CR1aR1b)_nG1$ -, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

IX. Compounds of formula (I) where two of A1-A4 represent N and X1 represents $-(CR1aR1b)_p-G1-C(R1aR1b)-$, pharmaceutical compositions containing these compounds and methods of treatment using these compounds.

The claims are deemed to correspond to the species listed above in the following manner:

Species I : Claims 13-17 and 27-34.

Species II : Claims 18-23.

Species III : Claims 24-26.

Form PCT/ISA/210 (extra sheet) (April 2007)

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Species IV-VI : Claims 2-5.

Species VII-IX : Claims 6-11.

The following claim(s) are generic: Claims 1, 12 and 35-43.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons:

There is no common core which in the Markush Practice, is a significant structural element shared by all of the alternatives; see PCT Administrative Instructions Annex B Part I (f) (i) (B) (1).