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A61K 31/395 (2006.01)

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English

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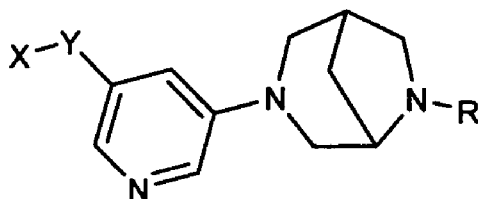
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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

3 September 2009

(54) Title: BICYCLIC DIAMINES AS NICOTINIC RECEPTOR AGONISTS



Formula I

(57) Abstract: Compounds; pharmaceutically acceptable salts thereof; and stereoisomers of the compound of Formula I and pharmaceutically acceptable salts thereof; are disclosed, wherein the compounds have the structure of Formula (I) as defined in the specification. Corresponding pharmaceutical compositions and methods of treatment are also disclosed.



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INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2008/003382

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07D471/08 A61K31/395 A61P25/00

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)

C07D

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 practical, search terms used)

EPO-Internal, WPI Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	US 2002/013309 A1 (MILLER CRAIG HARRISON [US] ET AL) 31 January 2002 (2002-01-31) page 1, paragraph 2 - paragraph 6 examples pages 3-5, paragraphs 23-80 especially 40-46 claim 1	1-15
Y	WO 00/44755 A (ABBOTT LAB [US]) 3 August 2000 (2000-08-03) page 1, line 12 - page 6, line 3 Pages 17-21, Examples of formula IX and X claim 1	1-15
Y	EP 1 359 152 A (ABBOTT LAB [US]) 5 November 2003 (2003-11-05) pages 9-10, examples of compounds of formula VI and VII page 1, paragraph 2 - page 3, paragraph 17 claim 1	1-15

☐ 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 document 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 another 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

26 February 2009

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22/07/2009

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2008/003382

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:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable 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.:

see annex

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-2 (in part), 3, 4-7(in part), 8-9, 10 (in part), 11-12 and 13-15 (in part)

Directed to 3-(pyridin-3-yl)-3,6-diazobycyclo[3,2.1]octane derivatives where R is H and their use as nicotinic receptor agonists for the treatment of CNS disorders.

2. claims: 1-2 (in part), 4-7(in part), 10 (in part) and 13-15 (in part)

Directed to 3-(pyridin-3-yl)-3,6-diazobycyclo[3,2.1]octane derivatives where R is alkyl and their use as nicotinic receptor agonists for the treatment of CNS disorders.

3. claims: 1-2 (in part), 4-7(in part), 10 (in part) and 13-15 (in part)

Directed to 3-(pyridin-3-yl)-3,6-diazobycyclo[3,2.1]octane derivatives where R is alkanoyl and their use as nicotinic receptor agonists for the treatment of CNS disorders.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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