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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:

1 April 2010

(54) Title: SUBSTITUTED PYRIMIDONE DERIVATIVES

(57) Abstract: Pyrimidone derivatives of formula (I) wherein: R1 represents a 4-pyridine ring; R2 represents a hydrogen atom; R3 represents a hydrogen atom; R4 represents : a hydrogen atom; a phenyl ring, this ring being optionally substituted by 1 to 4 substituents selected from a C₁₋₆ alkyl group, a halogen atom, a C₁₋₂ halogenated alkyl group, a hydroxyl group, a C₁₋₆ alkoxy group, a C₁₋₂ halogenated alkoxy group, R5 represents a hydrogen atom, a C₁₋₆ alkyl group, a 4-pyridine group, a phenyl group, these groups being optionally substituted, R6 represents a hydrogen atom, a C₁₋₆ alkyl group, a benzyloxy group, a phenyl C₁₋₆ alkyl group, these groups being optionally substituted, in form of a free base or of an addition salt with an acid. Use in therapeutic.



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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. C07D471/04 A61K31/519 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 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 practical, search terms used)
EPO-Internal, CHEM ABS Data, BEILSTEIN Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2004/016607 A (KINACIA PTY LTD [AU]; JACKSON SHAUN P [AU]; ROBERTSON ALAN D [AU]; KEN) 26 February 2004 (2004-02-26) page 43; compounds KN-347, KN-348 page 44; compounds KN-349 page 45; example 4b; compounds 1, 3 page 46; example 4d; compound 6 page 70; claim 5 page 77; claim 17 page 3	1-15
A	WO 02/087589 A (DAIICHI SEIYAKU CO [JP]; ESSENTIAL THERAPEUTICS INC [US]; NAKAYAMA KIY) 7 November 2002 (2002-11-07) page 527; 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	"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
"E" earlier document but published on or after the international filing date	"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
"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)	"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.
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 23 October 2009	Date of mailing of the international search report 15/02/2010
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International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KIM ET AL: "Novel GSK-3beta inhibitors from sequential virtual screening" BIOORGANIC & MEDICINAL CHEMISTRY, ELSEVIER SCIENCE LTD, GB, vol. 16, no. 2, 22 October 2007 (2007-10-22), pages 636-643, XP022437116 ISSN: 0968-0896 page 640; table 3; compound 16 -----	1-15
A	EP 1 790 649 A (SANOFI AVENTIS [FR]; MITSUBISHI PHARMA CORP [JP]) 30 May 2007 (2007-05-30) page 25; claim 1 -----	1-15

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2009/006486

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 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 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.:

1-15 (all in part)

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: 1-15 (all in-part)

directed to compound of formula (I) wherein R6 represents a hydrogen atom

2. claims: 1-15 (all in-part)

directed to compound of formula (I) wherein R6 represents a C1-6 alkyl group

3. claims: 1-15 (all in-part)

directed to compound of formula (I) wherein R6 represents a benzyloxy group

4. claims: 1-15 (all in-part)

directed to compound of formula (I) wherein R6 represents a phenyl C1-6 alkyl group

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2009/006486

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		US 2009036427 A1	05-02-2009