

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 December 2009 (23.12.2009)

PCT

(10) International Publication Number
WO 2009/155001 A3

(51) International Patent Classification:

C07D 401/12 (2006.01) *C07D 403/10* (2006.01)
C07D 209/94 (2006.01) *C07D 239/54* (2006.01)
C07D 471/04 (2006.01) *C07D 277/82* (2006.01)

(21) International Application Number:

PCT/US2009/045340

(22) International Filing Date:

27 May 2009 (27.05.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/130,149 27 May 2008 (27.05.2008) US
61/204,279 2 January 2009 (02.01.2009) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to non-prejudicial disclosures or exceptions to lack of novelty (Rule 4.17(v))

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:
25 February 2010



WO 2009/155001 A3

(54) Title: WNT PROTEIN SIGNALLING INHIBITORS

(57) Abstract: The present invention generally relates to protein signalling. In particular, compounds that inhibit the Wnt protein signalling pathway are disclosed. Such compounds may be used in the treatment of Wnt protein signalling-related diseases and conditions such as cancer, degenerative diseases, type II diabetes and osteopetrosis.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/045340

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07D401/12 C07D209/94 C07D471/04 C07D403/10 C07D239/54
C07D277/82

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

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, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BARKER NICK; CLEVERS HANS: "Mining the Wnt pathway for cancer therapeutics" NATURE REVIEWS. DRUG DISCOVERY, vol. 5, no. 12, December 2006 (2006-12), pages 997-1014, XP002545380 tables 2a,2b	
A	VEEMAN MICHAEL T; AXELROD JEFFREY D; MOON RANDALL T: "A second canon: Functions and mechanisms of beta-catenin-independent Wnt signaling" DEVELOPMENTAL CELL, vol. 5, no. 3, September 2003 (2003-09), pages 367-377, XP002545381 the whole document	

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

11 September 2009

Date of mailing of the international search report

18/12/2009

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/045340

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.:

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: 1-7(part),8,9(part),12(part),13,14-35(part),36-60

IWR compounds of class I and their use for the treatment of cancer, osteopetrosis, degenerative diseases and type II diabetes

2. claims: 1-7,9,12,14-35(all part)

IWR compounds of class II and their use for the treatment of cancer, osteopetrosis, degenerative diseases and type II diabetes

3. claims: 1-5(part),9(part),10,11,12(part),14-35(part)

IWP compounds and their use for the treatment of cancer, osteopetrosis, degenerative diseases and type II diabetes
