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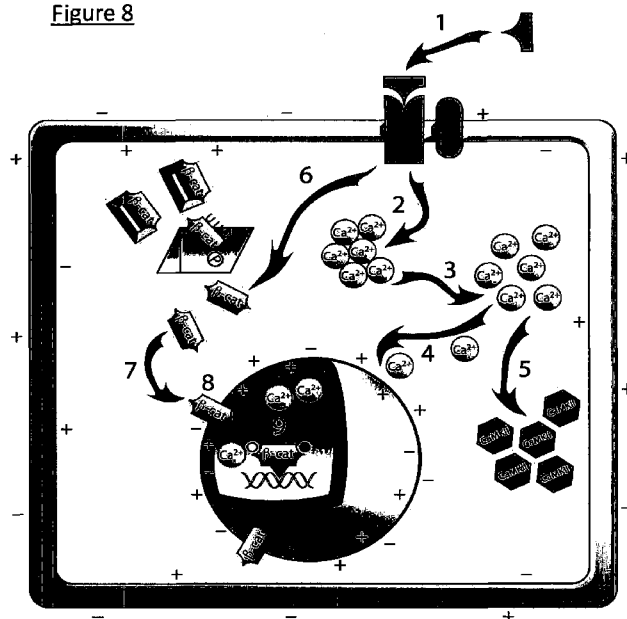
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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

[Continued on next page]

(54) **Title:** TREATMENT OF BETA-CATENIN RELATED DISEASES8**Figure 8**

(57) **Abstract:** The invention relates to B-catenin, and to the use of compounds which can affect B- catenin translocation within the cell, for use in treating B-catenin/Wnt-signaling-related disorders, such as osteoporosis, cancer or diabetes. The invention extends to pharmaceutical formulations and compositions comprising such compounds.



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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. A61K31/18 A61P35/00
ADD.

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)
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)

EPO-Internal, BIOSIS, CHEM ABS Data, EMBASE, 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 | EP 0 123 850 A2 (UNIV WAYNE STATE [US]) 7 November 1984 (1984-11-07) the whole document example 7 claims 1,4 | 1-5, 7-10, 15-17 |
| X | WO 2006/039806 A1 (INST CARDIOLOGIE MONTREAL [CA]; YANG BAOFENG [CN]; WANG ZHIGUO [CA]) 20 April 2006 (2006-04-20) | 1-5, 7-10, 15-17 |
| Y | the whole document paragraph [0008] - paragraph [0009] paragraph [0013] - paragraph [0015] figures 1,3 paragraph [0031] - paragraph [0038] paragraph [0042] - paragraph [0048] paragraph [0052] - paragraph [0054] claims 1-10,15-24,29-38,51-54,59-62 ----- -/- | 1-5, 7-10, 15-17 1-5, 7-10, 15-17 |



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 application or patent 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

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Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2014/053138

| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|------------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| Y | WO 2011/058508 A2 (NOI PER VOI ONLUS [IT]; ARCANGELI ANNAROSA [IT]; BECCHETTI ANDREA [IT]) 19 May 2011 (2011-05-19) page 12; compound first the whole document page 20, line 14 - line 17 claims 1,3,6-20 ----- | 1-5, 7-10, 15-17 |
| A | Kobayashi: "Nuclear translocation of beta-catenin in colorectal cancer", 21 April 2000 (2000-04-21), XP055167936, Retrieved from the Internet: URL: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2374509/pdf/82-6691112a.pdf [retrieved on 2015-02-06] the whole document ----- | 1-5, 7-10, 15-17 |
| A | Hongmiao Sheng ET AL: "ACCELERATED PAPER Nuclear translocation of [beta]-catenin in hereditary and carcinogen- induced intestinal adenomas", Carcinogenesis, 1 April 1998 (1998-04-01), pages 543-549, XP055167996, Retrieved from the Internet: URL: http://carcin.oxfordjournals.org/content/19/4/543.full.pdf [retrieved on 2015-02-06] the whole document ----- | 1-5, 7-10, 15-17 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2014/053138

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.:

1-5, 7-10, 15-17(all partially)

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: 1-5, 7-10, 15-17(all partially)

Dofetilide for use in the treatment of cancer

2. claims: 1-5, 7-10, 15-17(all partially)

Etamon for use in the treatment of cancer

3. claims: 1-5, 7-10, 15-17(all partially)

CsCl for use in the treatment of cancer

4. claims: 1-5, 7-10, 15-17(all partially)

Sotalol for use in the treatment of cancer

5. claims: 1-5, 7-10, 15-17(all partially)

Amiodarone for use in the treatment of cancer

6. claims: 1-5, 7-10, 15-17(all partially)

4-amino pyridine for use in the treatment of cancer

7. claims: 1-5, 7-10, 15-17(all partially)

Pinacidil for use in the treatment of cancer

8. claims: 1-5, 7-10, 15-17(all partially)

Glibenclamide for use in the treatment of cancer

9. claims: 1-5, 7-10, 15-17(all partially)

Tolbutamide for use in the treatment of cancer

10. claims: 1-5, 7-10, 15-17(all partially)

Tolazimide for use in the treatment of cancer

11. claims: 1-5, 7-10, 15-17(all partially)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Minoxidil for use in the treatment of cancer

12. claims: 1-5, 7-10, 15-17(all partially)

Quinidine for use in the treatment of cancer

13. claims: 1-5, 7-10, 15-17(all partially)

Lidocaine for use in the treatment of cancer

14. claims: 1-5, 7-10, 15-17(all partially)

Nifedipine for use in the treatment of cancer

15. claims: 1-5, 7-10, 15-17(all partially)

Dihydropyridine for use in the treatment of cancer

16. claims: 1-5, 7-10, 15-17(all partially)

Bay K8644 for use in the treatment of cancer

17. claims: 1-5, 7-10, 15-17(all partially)

FPL 64176 for use in the treatment of cancer

18. claims: 1-5, 7-10, 15-17(all partially)

Istaroxime for use in the treatment of cancer

19. claims: 1-5, 7-10, 15-17(all partially)

Isradipine for use in the treatment of cancer

20. claims: 1-5, 7-10, 15-17(all partially)

Digoxin for use in the treatment of cancer

21. claims: 1-5, 7-10, 15-17(all partially)

Furosemide for use in the treatment of cancer

22. claims: 6(completely); 1-3, 7-10, 15-17(partially)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

A cell membrane electrical potential-regulating agent which regulates beta-catenin translocation in the cell for use in the treatment of diabetes

23. claims: 11-14(completely); 1, 2, 7-10, 15-17(partially)

A cell membrane electrical potential-regulating agent which regulates beta-catenin translocation in the cell for use in the treatment of osteoporosis

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2014/053138

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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| | | DE 123850 T1 14-02-1985 | |
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