

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
5 June 2008 (05.06.2008)

PCT

(10) International Publication Number  
WO 2008/066789 A3

(51) International Patent Classification:  
A01N 55/02 (2006.01) A61K 31/555 (2006.01)

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(21) International Application Number:  
PCT/US2007/024396

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, 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, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(22) International Filing Date:  
27 November 2007 (27.11.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/867,248 27 November 2006 (27.11.2006) US

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(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, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

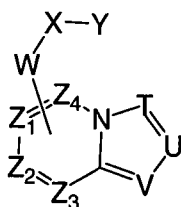
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Published:  
— with international search report

(88) Date of publication of the international search report:  
21 August 2008

(54) Title: HETEROARYL AMIDE DERIVATIVES



(57) Abstract: Heteroaryl amide derivatives are provided, of the Formula: wherein variables are as described herein. Such compounds are ligands that may be used to modulate specific receptor activity in vivo or in vitro, and are particularly useful in the treatment of conditions associated with pathological receptor activation in humans, domesticated companion animals and livestock animals. Pharmaceutical compositions and methods for using such compounds to treat such disorders are provided, as are methods for using such ligands for receptor localization studies.



WO 2008/066789 A3

**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US 07/24396

<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  IPC(8) - A01N 55/02; A61K 31/555 (2008.01)                  USPC - 514/185-186                  According to International Patent Classification (IPC) or to both national classification and IPC</p>														
<p><b>B. FIELDS SEARCHED</b>                  Minimum documentation searched (classification system followed by classification symbols)                  USPC: 514/185-186</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched                  514/210.09, 230.5, 233.5, 233.8, 234.2, 235.2, 257, 258.1, 259.3, 299-300, 412-414, 656-657, 680-681; 568/818; 585/352 (text search-                  see search terms below)</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)                  PubWEST(USPT,PGPB,EPAB,JPAB); DialogWeb; Google Scholar                  Search Terms Used: adamantan, P2X7, inhibitor, antagonist, cirrhosis.</p>														
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Category*</th> <th style="width:70%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width:20%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X --- Y</td> <td>WO 2006/025783 A1 (FORD et al.) 09 March 2006 (09.03.2006) pg 1, ln 18-25; pg 36, ln 7-8; pg 38, ln 6-7; pg 157, ln 6 to pg 158</td> <td>55-58 --- 59</td> </tr> <tr> <td>X --- Y</td> <td>US 2006/0217448 A1 (KELLY et al.) 28 September 2006 (28.09.2006) para [0008], [0025]- [0038]</td> <td>1-4, 20-22 and 31-35 --- 51, 59</td> </tr> <tr> <td>Y</td> <td>SEMAN et al. NAD-Induced T Cell Death: ADP-Ribosylation of Cell Surface Proteins by ART2 Activates the Cytolytic P2X7 Purinoceptor. Immunity, October 2003, Vol 19:571-582, especially pg 574, section titled 'P2X7 is ADP Ribosylated'; fig 5C</td> <td>51</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X --- Y	WO 2006/025783 A1 (FORD et al.) 09 March 2006 (09.03.2006) pg 1, ln 18-25; pg 36, ln 7-8; pg 38, ln 6-7; pg 157, ln 6 to pg 158	55-58 --- 59	X --- Y	US 2006/0217448 A1 (KELLY et al.) 28 September 2006 (28.09.2006) para [0008], [0025]- [0038]	1-4, 20-22 and 31-35 --- 51, 59	Y	SEMAN et al. NAD-Induced T Cell Death: ADP-Ribosylation of Cell Surface Proteins by ART2 Activates the Cytolytic P2X7 Purinoceptor. Immunity, October 2003, Vol 19:571-582, especially pg 574, section titled 'P2X7 is ADP Ribosylated'; fig 5C	51
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<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>														
<p>* Special categories of cited documents:</p> <table style="width:100%;"> <tr> <td style="width:50%;"> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width:50%;"> <p>"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</p> <p>"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</p> <p>"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</p> <p>"&amp;" document member of the same patent family</p> </td> </tr> </table>			<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&amp;" document member of the same patent family</p>										
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<p>Date of the actual completion of the international search 31 March 2008 (31.03.2008)</p>		<p>Date of mailing of the international search report <b>25 APR 2008</b></p>												
<p>Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>		<p>Authorized officer: <b>Lee W. Young</b></p> <p>PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>												

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/24396

**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.: 5-19, 23-30, 36-50, 52-54 and 60-61  
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:

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 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.:

- 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.