

(43) International Publication Date
20 May 2010 (20.05.2010)(10) International Publication Number
WO 2010/056672 A3

PCT

(51) International Patent Classification:
C07C 229/22 (2006.01) *A61P 25/00* (2006.01)
A61K 31/205 (2006.01)(21) International Application Number:
PCT/US2009/063886(22) International Filing Date:
10 November 2009 (10.11.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/113,239 11 November 2008 (11.11.2008) US(71) Applicant (for all designated States except US): **AUS-PEX PHARMACEUTICALS, INC.** [US/US]; 1261 Liberty Way, Suite C, Vista, CA 92081 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GANT, Thomas, G.** [US/US]; 1261 Liberty Way, Suite C, Vista, CA 92081 (US). **SHAHBAZ, Manoucherhr** [US/US]; 1261 Liberty Way, Suite C, Vista, CA 92081 (US). **HODILUK, Craig** [US/US]; 1261 Liberty Way, Suite C, Vista, CA 92081 (US).(74) Agent: **BENNETT, Dennis, A.**; Global Patent Group, LLC, 1005 North Warson Road, Suite 201, St. Louis, MO 63132 (US).

(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, CL, 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, PE, 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.

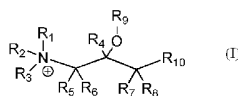
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT,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

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:
16 September 2010

(54) Title: BUTYLAMMONIUM MODULATORS OF FATTY ACID TRANSPORT



(57) Abstract: The present invention relates to new butylammonium modulators of fatty acid transport, and/or removal of toxic acyl-CoA compounds of formula (I), pharmaceutical compositions thereof, and methods of use thereof.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/063886**A. CLASSIFICATION OF SUBJECT MATTER***C07C 229/22(2006.01)i, A61K 31/205(2006.01)i, A61P 25/00(2006.01)i*

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)

C07C 229/22; A61K 31/41; A61P 9/00; C07D 413/12; C07D 413/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & GOOGLE SCHOLAR

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	RAPID COMMUNICATIONS IN MASS SPECTROMETRY, 1998, vol. 12, pp. 403-409 See abstract; figures 1-10; tables 1-4; conclusions	1-22,37,38
X	THE JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, 1997, 281(3), pp. 1071-1076 See abstract; results; and discussion	1-22,37,38
Y	PEDIATRIC RESEARCH, 1994, 35(1), pp. 96-101 See abstract & results	1-22,37,38
Y	US 2008-0132555 A1 (GANT THOMAS G. et al.) 05 June 2008 See page 6, paragraph [0079] - page 7, paragraph [0087]	1-22,37,38
Y	WO 2008-124803 A1 (AUSPEX PHARMACEUTICALS, INC. et al.) 16 October 2008 See page 14, paragraph [0071] - page 17, paragraph [0079]	1-22,37,38
Y	Journal of Radioanalytical and Nuclear Chemistry, 2001, Vol. 250, No. 2, pp. 347-351 See abstract and introduction	1-22,37,38



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 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

19 JULY 2010 (19.07.2010)

Date of mailing of the international search report

20 JULY 2010 (20.07.2010)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KANG Young Jin

Telephone No. 82-42-481-8391



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/063886**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.: 23-36
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 23-36 pertain to methods for treatment of the human body by therapy as well as diagnostic methods, and thus relate to a subject matter which this international Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
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:

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 fee, this Authority did not invite payment of any additional fee.
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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/063886

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008-0132555 A1	05.06.2008	WO 2008-067378 A2	05.06.2008
		WO 2008-067378 A2	05.06.2008
		WO 2008-067378 A3	14.05.2009
WO 2008-124803 A1	16.10.2008	AU 2008-237062 A1	16.10.2008
		AU 2008-237062 A1	16.10.2008
		CA 2683857-A1	16.10.2008
		EP 2144903 A1	20.01.2010
		US 2008-255036 A1	16.10.2008