



(51) International Patent Classification:

A61K 31/00 (2006.01) A61K 9/00 (2006.01)
A61K 47/00 (2006.01) C07J 41/00 (2006.01)

(21) International Application Number:

PCT/IB2014/058775

(22) International Filing Date:

4 February 2014 (04.02.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

550/CHE/2013 8 February 2013 (08.02.2013) IN

(71) Applicant: **CELLIXBIO PRIVATE LIMITED** [IN/IN];
No.1177B, Road No. 56, Jubilee Hills, Hyderabad 500
081, Andhra Pradesh (IN).

(72) Inventor: **KANDULA, Mahesh**; Door No. 11-61,
Samalkot Mandal, East Godavari District, G.Medapadu
533 434, Andhra Pradesh (IN).

(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, BN, 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, IR, IS, JP, KE, KG, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, 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, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, 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:

23 March 2017

(54) Title: FATTY ACID CONJUGATES FOR THE TREATMENT OF INFLAMMATION AND METABOLIC DISEASES

(57) Abstract: The invention relates to the compounds of formula I, formula II and formula III or its pharmaceutical acceptable salts, as well as polymorphs, solvates, enantiomers, stereoisomers and hydrates thereof. The pharmaceutical compositions comprising an effective amount of compounds of formula I, formula II or formula III; and methods for treating or preventing inflammation and metabolic diseases, may be formulated for oral, buccal, rectal, topical, transdermal, transmucosal, intravenous, parenteral administration, syrup, or injection. Such compositions may be used to treatment of diabetes, insulin resistance, hyperglycemia, neuropathic pain, hypertriglyceridemia, arthritis, autoimmune diseases, pain, chronic pain, acute inflammation, chronic aneurysm, low HDL, lipid diseases, angina, atherosclerosis, cerebrovascular accident (stroke), cerebrovascular disease, congestive heart failure, coronary artery disease, myocardial infarction.



WO 2014/122575 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2014/058775

A. CLASSIFICATION OF SUBJECT MATTER

A61K31/00, A61K47/00, A61K9/00, C07J41/00 Version=2017.01

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, C07J

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)

Patseer, IPO Internal Database

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO2011028689 A1 (CATABASIS PHARMACEUTICALS INC [US]; ET AL) 10 MARCH 2011 (10-03-2011) Para [0002], [0068]- [0141]; examples; claims	1-9 (in part)
Y	WO2011106688 A1 (CATABASIS PHARMACEUTICALS INC [US]; ET AL) 01 SEPTEMBER 2011 (01-09-2011) Para [008] - [010], [171]- [00180]; examples; claims	1-9 (in part)
Y	US20100184730 A1 (VU CHI B [US]; ET AL) 22 JULY 2010 (22-07-2010) abstract, claims	1-9 (in part)



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

24-01-2017

Date of mailing of the international search report

24-01-2017

Name and mailing address of the ISA/

Indian Patent Office
Plot No.32, Sector 14, Dwarka, New Delhi-110075
Facsimile No.

Authorized officer

Manish Kumar Yadav

Telephone No. +91-1125300200

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2014/058775

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.: 10-15
because they relate to subject matter not required to be searched by this Authority, namely:
The subject matter of claims 10-15 relates to a method for treatment of the human or animal body which does not require an international search by the International Searching Authority in accordance with PCT Article 17(2)(a)(i) and [Rule 39.1(iv)].
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 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.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IB2014/058775

Citation	Pub.Date	Family	Pub.Date
WO 2011028689 A1	10-03-2011	EP 2473045 A1	21-08-2012
		IN 2661DEN2012 A	11-09-2015
		JP 2013503872 A	04-02-2013
		US 2012264791 A1	18-10-2012
		AE 2011053990 A1	03-03-2011
WO 2011106688 A1	01-09-2011	US 2012115695 A1	30-08-2012
		US 2013190327 A1	25-07-2013
US 20100184730 A1	22-07-2010	AU 2009268610 A1	14-01-2010
		CA 2729186 A1	14-01-2010
		EP 2315740 A1	04-05-2011
		JP 2011527691 A	04-11-2011
		KR 20110042071 A	22-04-2011
		MX 2011000273 A	23-05-2011
		NZ 590179 A	21-12-2012
		NZ 601932 A	28-03-2014
		RU 2011104016 A	30-08-2013
		US 2010041748 A1	18-02-2010