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Published:

— *with international search report (Art. 21(3))*

(88) Date of publication of the international search report:

1 September 2016

(54) Title: COMPOSITIONS AND METHODS FOR THE TREATMENT OF METABOLIC SYNDROME

(57) Abstract: The invention relates to the compounds of formula (I) 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), and methods for the treatment of metabolic syndrome may be formulated for oral, buccal, rectal, topical, transdermal, transmucosal, intravenous, parenteral administration, syrup, or injection. Such compositions may be used to treatment of acute hypertension or malignant hypertension, hypoglycemia in disease states such as insulinoma (a tumor producing insulin) or congenital hyperinsulinism, hyperuricemia, gout, dyslipidemia, obesity, urea cycle disorders, hyperglycemia, insulin resistance, diabetes mellitus, diabetes insipidus, type 1 diabetes, type 2 diabetes, microvascular complications, macrovascular complications, lipid disorders, prediabetes, obesity, arrhythmia, myocardial infarction, stroke, neuropathy, renal complications, hypertriglyceridemia and cardiovascular complications.



WO 2013/167997 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2013/050907

A. CLASSIFICATION OF SUBJECT MATTER

See the extra sheet

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)

IPC: C07D, 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)

DATABASE: WPI, EPODOC, CNPAT(CN), CNKI(CN), REGISTRY, CAPLUS.

KEYWORDS: diazoxide, thioctic acid, lipoic acid, eicosapentaenoic acid, icosapent, doconexent, docosaheptaenoic acid, acetyl cysteine, acetylcysteine, salsalate, conjugate, structure search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 101232886 A (SOLVAY PHARM GMBH) 30 July 2008 (30.07.2008) claim 1, 8, page 50	1-3
A		6-10

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	“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
“A” document defining the general state of the art which is not considered to be of particular relevance	“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
“E” earlier application or patent but published on or after the international filing date	“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
“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)	“&” document member of the same patent family
“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	

Date of the actual completion of the international search
20 June 2013 (20.06.2013)Date of mailing of the international search report
18 Jul. 2013 (18.07.2013)Name and mailing address of the ISA/CN
The State Intellectual Property Office, the P.R.China
6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China
100088
Facsimile No. 86-10-62019451Authorized officer
SHENG, Qian
Telephone No. (86-10)62411142

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2013/050907

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. 4-5:
because they relate to subject matter not required to be searched by this Authority, namely:

Claims 4-5 relate to methods of treatment of the human or animal body that belong to subject-matter not required to be searched (Rule 39.1(iv) PCT).

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 fees, this Authority did not invite payment of 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/IB2013/050907

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 101232886 A	30.07.2008	WO 2007020286 A2	22.02.2007
		US 2007191357 A1	16.08.2007
		EP 1928463 A2	11.06.2008
		AU 2006281368 A1	22.02.2007
		INDELNP 200802068 E	04.07.2008
		KR 20080039996 A	07.05.2008
		JP 2009504712 A	05.02.2009
		CA 2619480 A1	22.02.2007
		MXPA 08002193 A	01.03.2008
		BRPI 0616995 A2	05.07.2011
		WO 2007020286 A3	10.05.2007

INTERNATIONAL SEARCH REPORT

International application No.

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C07D 285/24 (2006.01) i

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