



(43) International Publication Date
24 July 2014 (24.07.2014)

(10) International Publication Number
WO 2014/111815 A3

(51) International Patent Classification:

C07J 43/00 (2006.01) *A61P 5/46* (2006.01)
A61K 31/58 (2006.01)

(21) International Application Number:

PCT/IB2014/000619

(22) International Filing Date:

18 January 2014 (18.01.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/754,460 18 January 2013 (18.01.2013) US

(71) Applicant: **CORTENDO AB (PUBL)** [SE/US]; Suite 510, 555 Lancaster Avenue, Radnor, PA 19087 (US).

(72) Inventors: **KOZIOL, Theodore, Richard**; Suite 510, 555 Lancaster Avenue, Radnor, PA 19087 (US). **REISER, H., Joseph**; Suite 510, 555 Lancaster Avenue, Radnor, PA 19087 (US).

(74) Agents: **STAKLEFF, N., Nicole** et al.; Suite 5000, 500 Grant Street, Pittsburgh, PA 15219-2507 (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, 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))

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

6 November 2014

(54) Title: ABIRATERONE AND ANALOGS THEREOF FOR THE TREATMENT OF DISEASES ASSOCIATED WITH CORTISOL OVERPRODUCTION

(57) Abstract: Novel analogs of abiraterone and methods of treating diseases associated with the overproduction of cortisol, such as Cushing's syndrome, obesity, headache, depression, hypertension, diabetes mellitus type II metabolic syndrome, pseudo-Cushing syndrome, cognitive impairment, dementia, heart failure, renal failure, psoriasis, glaucoma, cardiovascular disease, stroke or incidentalomas, by administering an effective amount of abiraterone or analogs thereof to a patient in need thereof are described.



WO 2014/111815 A3

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2014/000619

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07J43/00 A61K31/58 A61P5/46
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)

C07J 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, BEILSTEIN Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2012/083112 A2 (BIOMARIN PHARM INC [US]; CHU DANIEL [US]; WANG BING [US]; YE TAO [CN]) 21 June 2012 (2012-06-21)	1-20
Y	page 3, paragraphs [0011], [0013] page 4, paragraph [0016] page 540; table 4; compound C	1-18
X	WO 2012/142208 A1 (UNIV PENNSYLVANIA [US]; PENNING TREVOR M [US]; ADENIJI ADEGOKE O [US];) 18 October 2012 (2012-10-18) page 2, paragraph 3 - page 3, paragraph 1	1-20

-/--



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

10 July 2014

Date of mailing of the international search report

28/07/2014

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Watchorn, Peter

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2014/000619

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GERHARDT ATTARD ET AL: "Clinical and Biochemical Consequences of CYP17A1 Inhibition with Abiraterone Given with and without Exogenous Glucocorticoids in Castrate Men with Advanced Prostate Cancer", JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM, vol. 97, no. 2, 1 February 2012 (2012-02-01), pages 507-516, XP55127798, ISSN: 0021-972X, DOI: 10.1210/jc.2011-2189 page 507, paragraph 4-5 -----	1-20
X	MASUO YAMAOKA ET AL: "Orteronel (TAK-700), a novel non-steroidal 17,20-lyase inhibitor: Effects on steroid synthesis in human and monkey adrenal cells and serum steroid levels in cynomolgus monkeys", THE JOURNAL OF STEROID BIOCHEMISTRY AND MOLECULAR BIOLOGY, vol. 129, no. 3-5, 1 April 2012 (2012-04-01), pages 115-128, XP55127781, ISSN: 0960-0760, DOI: 10.1016/j.jsbmb.2012.01.001 page 119, column 1, paragraph 3.1 page 124, column 1, paragraph 2 -----	1-20
X	WO 2010/091306 A1 (TOKAI PHARMACEUTICALS [US]; CASEBIER DAVID [US]) 12 August 2010 (2010-08-12)	1,2,7
Y	page 1, paragraph [0002]; examples 1,2,4 -----	1-18
X	DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; YIN, JIANMING ET AL: "Pyridyl androstane derivatives and their application for preparing medicine for preventing and/or treating prostatic carcinoma", XP002726940, retrieved from STN Database accession no. 2012:782580 abstract -----	1,2,5-7, 19,20
Y	& CN 102 477 061 A (SUZHOU BORUI BIOPHARMACEUTICAL SCIENCE AND TECHNOLOGY CO., LTD., PEOP.) 30 May 2012 (2012-05-30) ----- -/-	1-18

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2014/000619

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 2013/096907 A1 (TOKAI PHARMACEUTICALS INC [US]; STEWART SUSAN [US]) 27 June 2013 (2013-06-27) page 2, paragraph [0009]-[0011] page 15, paragraph [00121] claim 2 -----	1-20
X,P	WO 2013/071177 A1 (TOKAI PHARMACEUTICALS INC [US]; STEIN CY A [US]; SOIFER HARRIS [US]; C) 16 May 2013 (2013-05-16) page 3, paragraph [0013] page 13, paragraph [0053] claim 1 -----	1-20
X,P	DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; LIU, PING ET AL: "Method for synthesizing Abiraterone", XP002726941, retrieved from STN Database accession no. 2013:1663484 abstract & CN 103 360 458 A (XINTAI PHARMACEUTICAL CO., LTD., PEOP. REP. CHINA) 23 October 2013 (2013-10-23) -----	1
X,P	WO 2013/053691 A1 (ZACH SYSTEM [FR]) 18 April 2013 (2013-04-18) examples 3,7 -----	1,2
X,P	WO 2013/158644 A2 (SYNTA PHARMACEUTICALS CORP [US]) 24 October 2013 (2013-10-24) abstract page 143, paragraph [00624] -----	1,2,4,7
E	WO 2014/016830 A1 (MAPI PHARMA LTD [IL]) 30 January 2014 (2014-01-30) claims 1,2 -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2014/000619

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2012083112 A2	21-06-2012	AU 2011343637 A1 CA 2819515 A1 CN 103282358 A EP 2651916 A2 EP 2660241 A2 JP 2013545815 A TW 201307378 A US 2013252930 A1 WO 2012083112 A2	30-05-2013 21-06-2012 04-09-2013 23-10-2013 06-11-2013 26-12-2013 16-02-2013 26-09-2013 21-06-2012
WO 2012142208 A1	18-10-2012	US 2014107085 A1 WO 2012142208 A1	17-04-2014 18-10-2012
WO 2010091306 A1	12-08-2010	AU 2010210422 A1 CA 2761389 A1 CN 102686600 A EP 2393827 A1 JP 2012516900 A US 2011312916 A1 WO 2010091306 A1	18-08-2011 12-08-2010 19-09-2012 14-12-2011 26-07-2012 22-12-2011 12-08-2010
WO 2013096907 A1	27-06-2013	NONE	
WO 2013071177 A1	16-05-2013	NONE	
WO 2013053691 A1	18-04-2013	CA 2851330 A1 WO 2013053691 A1	18-04-2013 18-04-2013
WO 2013158644 A2	24-10-2013	US 2014079636 A1 WO 2013158644 A2	20-03-2014 24-10-2013
WO 2014016830 A1	30-01-2014	US 2014155363 A1 WO 2014016830 A1	05-06-2014 30-01-2014