



(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, ST, 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).

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- 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))
- with sequence listing part of description (Rule 5.2(a))

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

24 March 2016

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/066458

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61K31/47 A61K31/4709 A61K31/497 A61K31/5377 C07D215/38
 A61P29/00 A61P1/00 A61P19/02 A61P25/00 G01N33/50
 C12Q1/68

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 C07D G01N C12Q

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, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 2015/001518 A1 (SPLICOS [FR]; CENTRE NAT RECH SCIENT [FR]; INST CURIE [FR]; UNIV MONTP) 8 January 2015 (2015-01-08) abstract page 4, paragraph 3 - page 6, paragraph 1 page 15, last paragraph - page 17, last paragraph page 20, paragraph 2 Table I: Formula (Ia), (Ib) and (Ie); claims ----- -/--	1-6,9-11



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

18 January 2016

Date of mailing of the international search report

22/01/2016

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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/066458

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2010/143168 A2 (SPLICOS SOC [FR]; CENTRE NAT RECH SCIENT [FR]; INST CURIE [FR]; UNIV M) 16 December 2010 (2010-12-16) abstract table I page 31, line 16 - line 26 page 77, line 6 - line 13; claims -----	1-6,9-11
X	EP 2 465 502 A1 (SPLICOS SOC [FR]; CENTRE NAT RECH SCIENT [FR]; INST CURIE [FR]; UNIV M) 20 June 2012 (2012-06-20) abstract page 20, paragraph 42 examples; table I claims -----	1-6,9-11
X	K. SAMIR ET AL.: "Microwave Mediated Dearylation of 2-Aryloxy-5-Nitropyridine", RESEARCH JOURNAL OF CHEMICAL SCIENCES, vol. 1, no. 6, 2011, pages 84-87, XP002734224, Scheme 4 -----	7,12
X	ALSAIDI H ET AL: "CONVENIENT SYNTHESIS OF HETEROARYL PHENYL ETHERS FROM CHLOROPYRIDINES AND CHLOROQUINOLINES USING PHASE-TRANSFER CATALYSIS", SYNTHESIS, GEORG THIEME VERLAG, STUTTGART, DE, no. 11, 1 November 1980 (1980-11-01), pages 921-924, XP002937892, ISSN: 0039-7881, DOI: 10.1055/S-1980-29272 Table 2; Scheme B -----	7,12
X	JP S52 72821 A (MITSUBISHI PETROCHEMICAL CO) 17 June 1977 (1977-06-17) page 3 -----	7,12
X	WO 2004/007461 A1 (PRANA BIOTECHNOLOGY LTD [AU]; BARNHAM KEVIN JEFFREY [AU]; GAUTIER ELIS) 22 January 2004 (2004-01-22) abstract page 18: compound PBT 1056 page 27, line 20 - page 28, line 17 example 13 page 86 ----- -/--	1-3,5-7, 9-12

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/066458

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	O.A. YANBORISOVA ET AL.: "Synthesis and Antiinflammatory Activity of 2-Arylaminoquinolinic Acids and Amides of 1,2-Dihydro-2-Oxocinchoninic Acid", PHARMACEUTICAL CHEMISTRY JOURNAL, vol. 29, no. 6, 1995, pages 404-405, XP002734223, the whole document	1-3,5,6,9,10
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X	----- YANBORISOVA O A ET AL: "[Derivatives of 2-aminocinchoninic acids: synthesis and antiinflammatory activity]", KHIMIKO-FARMATSEVTICHESKII ZHURNAL, IZDATEL'STVO FOLIUM, RU, vol. 28, no. 1, 1 January 1994 (1994-01-01), pages 29-31, XP008175621, ISSN: 0023-1134 the whole document -& DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; YANBORISOVA, O. A. ET AL: "Derivatives of 2-aminocinchoninic acids: synthesis and antiinflammatory activity", XP002737778, retrieved from STN Database accession no. 1995:796563 abstract see RNs: 134721-63-4; 134721-64-5; 134721-66-7	1-3,5,6,9,10
X	----- US 2009/227628 A1 (KOLCZEWSKI SABINE [DE] ET AL) 10 September 2009 (2009-09-10) abstract page 2, paragraph 25 page 5, paragraphs 116,127; claims; example 18	1,2,4-6,9-11
A	----- WO 2010/127208 A1 (FOREST LAB HOLDINGS LTD; SARMA PAKALA KUMARA SAVITHRU [IN]; ACHARYA VI) 4 November 2010 (2010-11-04) abstract page 44, paragraph 2; claims; example 198 ----- -/--	1-12

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/066458

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	HUANG-KAI PENG ET AL: "Synthesis and anti-HCV activity evaluation of anilinoquinoline derivatives", BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, PERGAMON, AMSTERDAM, NL, vol. 22, no. 2, 28 November 2011 (2011-11-28), pages 1107-1110, XP028438490, ISSN: 0960-894X, DOI: 10.1016/J.BMCL.2011.11.121 [retrieved on 2011-12-04] abstract Scheme 1	1-12
A	KUDUK S D ET AL: "Amiloride derived inhibitors of acid-sensing ion channel-3 (ASIC3)", BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, PERGAMON, AMSTERDAM, NL, vol. 19, no. 9, 1 May 2009 (2009-05-01), pages 2514-2518, XP026041304, ISSN: 0960-894X, DOI: 10.1016/J.BMCL.2009.03.029 [retrieved on 2009-03-14] Tables 1-2: compounds 5x and 6l; page 2514, left-hand column, paragraph 1	1-10
X	US 2012/202870 A1 (WEINER HOWARD [US] ET AL) 9 August 2012 (2012-08-09) the whole document abstract paragraphs [0102] - [0103] examples 5-8	13-15
X	YANG SUN ET AL: "MicroRNA-124 mediates the cholinergic anti-inflammatory action through inhibiting the production of pro-inflammatory cytokines", CELL RESEARCH - XIBAO YANJIU, vol. 23, no. 11, 27 August 2013 (2013-08-27), pages 1270-1283, XP055225079, GB, CN ISSN: 1001-0602, DOI: 10.1038/cr.2013.116 cited in the application the whole document abstract	13-15
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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/066458

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GEORGIOS KOUKOS ET AL: "MicroRNA-124 Regulates STAT3 Expression and Is Down-regulated in Colon Tissues of Pediatric Patients With Ulcerative Colitis", GASTROENTEROLOGY, vol. 145, no. 4, 1 October 2013 (2013-10-01), pages 842-852.e2, XP055225092, PHILADELPHIA, PA ISSN: 0016-5085, DOI: 10.1053/j.gastro.2013.07.001 the whole document abstract	13-15
X,P	----- WO 2014/111892 A1 (SPLICOS [FR]; CENTRE NAT RECH SCIENT [FR]; UNIV MONTPELLIER II [FR]) 24 July 2014 (2014-07-24) the whole document claims 1-23 examples 1-2 -----	13-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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INTERNATIONAL SEARCH REPORT

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing:
- a. ☒ forming part of the international application as filed:
- ☐ in the form of an Annex C/ST.25 text file.
- ☐ on paper or in the form of an image file.
- b. ☐ furnished together with the international application under PCT Rule 13~~ter~~.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
- c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
- ☐ in the form of an Annex C/ST.25 text file (Rule 13~~ter~~.1(a)).
- ☐ on paper or in the form of an image file (Rule 13~~ter~~.1(b) and Administrative Instructions, Section 713).
2. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2015/066458

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.:
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:

see additional sheet

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 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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-12

A compound of formula (I), (Ia), (Ib) or (Ic) for use in the treatment and/or prevention of an inflammatory disease.
A compound of formula (Id) or (Ie).

2. claims: 13-15

An in vitro or ex vivo use of a miR-124 for screening a quinoline derivative presumed effective in treating and/or preventing an inflammatory disease
