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*A61K 31/426* (2006.01) *A61K 31/517* (2006.01)  
*A61K 31/454* (2006.01) *A61K 31/519* (2006.01)  
*A61K 31/4545* (2006.01) *A61K 31/12* (2006.01)  
*A61K 31/498* (2006.01) *A61P 31/12* (2006.01)

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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.

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16 April 2015



WO 2015/018797 A3

(54) Title: ANTIVIRAL COMPOUNDS

(57) Abstract: The present invention provides compounds for the treatment of viral infections.

INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2014/066747

A. CLASSIFICATION OF SUBJECT MATTER  
 INV. A61K31/4184 A61K31/426 A61K31/454 A61K31/4545 A61K31/498  
 A61K31/4985 A61K31/517 A61K31/519 A61K31/12 A61P31/12  
 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)  
 A61K  
 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, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2011/160043 A2 (WHITEHEAD BIOMEDICAL INST [US]; BRUMMELKAMP THIJN R [US]; CARETTE JAN) 22 December 2011 (2011-12-22) Identification of PLA2G16 as a target for antiviral drugs and compounds inhibiting this protein for treating viral infections: see paragraphs 3, 4, 5, 8; figures 4, 5, 6, 7; paragraphs 66, 80-89, and pages 85-86 examples 6, 8, 9, 10 and claims 1-35, 50-58 ----- -/--	1,2,7-10

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
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Date of the actual completion of the international search  11 November 2014	Date of mailing of the international search report  09/02/2015
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  Veronese, Andrea

## INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2014/066747

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>CLANCY J ET AL: "ASSAYS TO DETECT AND CHARACTERIZE HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1) RECEPTOR ANTAGONISTS, COMPOUNDS THAT INHIBIT BINDING OF THE HIV-1 SURFACE GLYCOPROTEIN, GP120, TO THE CD4 RECEPTOR ON HUMAN T LYMPHOCYTES", ANTIMICROBIAL AGENTS AND CHEMOTHERAPY, AMERICAN SOCIETY FOR MICROBIOLOGY, vol. 38, no. 9, 1 September 1994 (1994-09-01), pages 2008-2013, XP000872678, ISSN: 0066-4804 See compound CP-101816 and its use as inhibitor of the human immunodeficiency virus receptor.</p>	1,2,7-10
Y	<p>US 2009/257979 A1 (BEIGELMAN LEONID [US] ET AL) 15 October 2009 (2009-10-15) See compounds disclosed in paragraphs 735, 741, 743, 744, 746 and in claim 120 (e.g. compounds N. 225, 226, 227, 228, 236-241, 243-255) and their use for the treatment of viral infections (see paragraphs 12, 13, 14 and claims 124-126)</p>	1,2,7-10
Y	<p>WO 2006/019955 A2 (HARVARD COLLEGE [US]; COEN DONALD M [US]; LOREGIAN ARIANNA [US]) 23 February 2006 (2006-02-23) See compounds of formula 4 in page 23 and compound AL-7 (see fig 1/11) as agents for the treatment of viral infections (see claims and examples)</p>	1,2,7-10
A	<p>EP 0 303 357 A2 (PFIZER LTD [GB]) 15 February 1989 (1989-02-15) See the compound of formula (I) defined in claim 1, and pharmaceutical compositions thereof, for the treatment of arrhythmias</p>	10
A	<p>WO 02/053558 A1 (HOFFMANN LA ROCHE [CH]) 11 July 2002 (2002-07-11) See the compounds defined in examples 2, 4, 7, 8, 9, 10, 11, and pharmaceutical compositions thereof and uses in medicine (see page 16 and claims)</p>	10
Y	<p>DATABASE REGISTRY [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; XP002712586, Database accession no. 1259167-86-6 See compound having Registry Number: 1259167-86-6, and reference to catalogs where it is offered for sale</p>	1,2,7-10
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2014/066747

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NL 7 312 350 A (PFIZER) 12 March 1974 (1974-03-12) See the claimed compounds, and in particular the compound having the Registry Number: 52781-48-3, and pharmaceutical compositions thereof for treatment of hypertension -----	9,10

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2014/066747

## 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.:

2(completely); 1, 7-10(partially)

### 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: 2(completely); 1, 7-10(partially)

Compounds of formula (I) for use in the treatment of viral infections

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2. claims: 3(completely); 1, 7-10(partially)

Compounds of formula (II) for use in the treatment of viral infections

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3. claims: 4(completely); 1, 7-10(partially)

Compounds of formula (III) for use in the treatment of viral infections

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4. claims: 5(completely); 1, 7-10(partially)

Compounds of formula (IV) for use in the treatment of viral infections

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5. claims: 6(completely); 1, 7-10(partially)

Compounds of formula (V) for use in the treatment of viral infections

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No  
PCT/EP2014/066747

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Information on patent family members

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