

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 56045-WO-PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/IB2015/053975	International filing date (<i>day/month/year</i>) 27 May 2015 (27-05-2015)	(Earliest) Priority Date (<i>day/month/year</i>) 28 May 2014 (28-05-2014)
Applicant NOVARTIS AG		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:



the international application in the language in which it was filed



a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐

This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6**bis**(a)).

c. ☐

With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐

Certain claims were found unsearchable (See Box No. II)

3. ☐

Unity of invention is lacking (see Box No III)

4. With regard to the **title**,



the text is approved as submitted by the applicant



the text has been established by this Authority to read as follows:

NOVEL PYRAZOLO PYRIMIDINE DERIVATIVES AND THEIR USE AS MALT1 INHIBITORS

5. With regard to the **abstract**,



the text is approved as submitted by the applicant



the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. _____



as suggested by the applicant



as selected by this Authority, because the applicant failed to suggest a figure



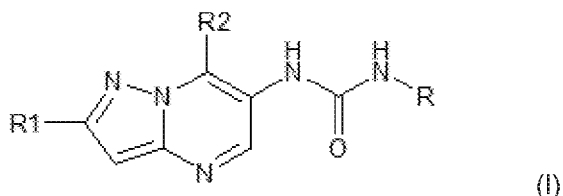
as selected by this Authority, because this figure better characterizes the invention

b. ☐

none of the figures is to be published with the abstract

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The present invention describes new pyrazolo-pyrimidine derivatives of formula (I) or a pharmaceutically acceptable salt thereof;



wherein,

R1 is halogen, cyano, or C₁-C₃alkyl optionally substituted by halogen; R2 is C₁-C₆alkyl optionally substituted one or more times by C₁-C₆alkyl, C₂-C₆alkenyl, hydroxyl, N,N-di-C₁-C₆alkyl amino, N-mono-C₁-C₆alkyl amino, O-R_g, R_g, phenyl, or by C₁-C₆alkoxy wherein said alkoxy again may optionally be substituted by C₁-C₆alkoxy, N,N-di-C₁-C₆alkyl amino, R_g or phenyl; C₃-C₆cycloalkyl optionally substituted by C₁-C₆alkyl, N,N-di-C₁-C₆alkyl amino or C₁-C₆alkoxy-C₁-C₆alkyl, and/or two of said optional substituents together with the atoms to which they are bound may form an annulated or spirocyclic 4 - 6 membered saturated heterocyclic ring comprising 1 - 20 atoms; phenyl optionally substituted by C₁-C₆alkoxy; a 5 - 6 membered heteroaryl ring having 1 to 3 heteroatoms selected from N and O said ring being optionally substituted by C₁-C₆alkyl which may be optionally substituted by amino or hydroxy; R_g; or N,N-di-C₁-C₆alkyl amino carbonyl; and

R is phenyl independently substituted two or more times by R_a, 2-pyridyl independently substituted one or more times by R_b, 3-pyridyl independently substituted one or more times by R_c, or 4-pyridyl independently substituted one or more times by R_d; which are generally interacting with MALT1 proteolytic and/or autoproteolytic activity, and in particular which may inhibit said activity. The present invention further describes the synthesis of said new pyrazolo-pyrimidine derivatives, their use as a

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2015/053 975

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

medicament, especially by interacting with MALT1 proteolytic and/or autoproteolytic activity.

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2015/053975

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07D487/04 A61K31/519 A61P29/00 A61P35/00 A61P37/00
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)
C07D

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, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2009/065897 A2 (VIB VZW [BE]; UNIV GENT [BE]; UNIV LEUVEN KATH [BE]; BEYAERT RUDI [BE]) 28 May 2009 (2009-05-28) cited in the application the whole document -----	1-15



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

26 August 2015

Date of mailing of the international search report

15/09/2015

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

Fink, Dieter

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2015/053975

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009065897 A2	28-05-2009	AT 553769 T	15-05-2012
		AU 2008327884 A1	28-05-2009
		CA 2705694 A1	28-05-2009
		EP 2222326 A2	01-09-2010
		US 2011021548 A1	27-01-2011
		WO 2009065897 A2	28-05-2009
