

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 123429-08420	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2020/039346	International filing date (<i>day/month/year</i>) 24 June 2020 (24-06-2020)	(Earliest) Priority Date (<i>day/month/year</i>) 27 June 2019 (27-06-2019)
Applicant BIOGEN MA INC.		

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:

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

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2020/039346

A. CLASSIFICATION OF SUBJECT MATTER		
INV. C07D231/56	C07D401/12	C07D405/14
C07D519/00	A61K31/416	A61P29/00
A61K31/437	A61K31/4985	A61P3/00
		A61P25/00
C07D471/04		
C07D487/04		
A61K31/4439		
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 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, EMBASE, 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	CHI WAI CHEUNG ET AL: "Amide synthesis via nickel-catalysed reductive aminocarbonylation of aryl halides with nitroarenes", CHEMICAL SCIENCE, vol. 9, no. 3, 1 January 2018 (2018-01-01) , pages 655-659, XP055727017, United Kingdom ISSN: 2041-6520, DOI: 10.1039/C7SC03950F figure 4; compound 41	1,2,9,22
X	WO 2014/107771 A1 (NTZ LAB LTD [BG]) 17 July 2014 (2014-07-17) claims 1, 3, 4; table 3; compounds 14, 18, 20 ----- -/-	1,2,9, 12,15, 22,23, 37-41
☒ 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 7 September 2020		Date of mailing of the international search report 18/09/2020
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 Moriggi, J

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International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 105 503 863 A (NANJING HUAWE MEDICAL TECH DEV CO LTD) 20 April 2016 (2016-04-20) claims 1, 8-10; compounds I-3, I-6, I-16, I-42 -----	1,2, 9-11,20, 21,37-41
X	WO 2014/143666 A1 (BIOMARIN PHARM INC [US]) 18 September 2014 (2014-09-18) pages 36, 37; claims 1, 110, 119, 123, 124; compounds A16, A24 -----	1-41
A	WO 2016/083433 A1 (BAYER PHARMA AG [DE]) 2 June 2016 (2016-06-02) claims 1, 12, 13, 20 -----	1-41
A	WO 2017/009798 A1 (AURIGENE DISCOVERY TECH LTD [IN]) 19 January 2017 (2017-01-19) claims 1, 26, 28 -----	1-41
A	WO 2017/148902 A1 (BAYER PHARMA AG [DE]) 8 September 2017 (2017-09-08) compounds 1, 9, 16 -----	1-41

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2014107771 A1	17-07-2014	EP 2964219 A1 US 2015353504 A1 WO 2014107771 A1	13-01-2016 10-12-2015 17-07-2014
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INTERNATIONAL SEARCH REPORT

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