

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 145021.529078 (0004)	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2020/057496	International filing date (<i>day/month/year</i>) 27 October 2020 (27-10-2020)	(Earliest) Priority Date (<i>day/month/year</i>) 28 October 2019 (28-10-2019)
Applicant MERCK SHARP & DOHME CORP.		

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/US2020/057496

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/US2020/057496

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07D471/04 C07D498/04 A61K31/522 A61P35/00
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 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, 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,P	WO 2020/050890 A2 (AMGEN INC [US]) 12 March 2020 (2020-03-12) see example 146 and the cyclic compounds in table 146 as KRAS inhibitors on p. 249 to 255	1-32
E	WO 2020/259513 A1 (GUANGDONG NEWOPP BIOPHARMACEUTICALS CO LTD [CN]) 30 December 2020 (2020-12-30) see e.g. examples 2, 6, 10 and 17 as KRAS inhibitors and the compounds on e.g. p. 22 entitled to priority of 24.06.19	1-20, 22-32
A	WO 2018/119183 A2 (AMGEN INC [US]) 28 June 2018 (2018-06-28) see the compounds of claim 4 and the corresponding examples, e.g. 8-1 to 8-6 and 9-1 to 9-14 as KRAS inhibitors	1-32
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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

23 February 2021

Date of mailing of the international search report

03/03/2021

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2020/057496

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2018/217651 A1 (AMGEN INC [US]) 29 November 2018 (2018-11-29) see the compounds of claim 1 and the corresponding examples as KRAS inhibitors -----	1-32

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2020/057496

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2020050890	A2	12-03-2020	AU 2019336588 A1 03-12-2020
		CA 3100390 A1 12-03-2020	
		US 2019374542 A1 12-12-2019	
		WO 2020050890 A2 12-03-2020	

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		BR 112019012976 A2 31-12-2019	
		CA 3048217 A1 28-06-2018	
		CL 2019001762 A1 18-10-2019	
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		CN 110366550 A 22-10-2019	
		CO 2019006598 A2 28-06-2019	
		CR 20190338 A 09-09-2019	
		EA 201991528 A1 16-01-2020	
		EP 3558955 A2 30-10-2019	
		JP 2020504738 A 13-02-2020	
		KR 20190097201 A 20-08-2019	
		PE 20191207 A1 10-09-2019	
		PH 12019501670 A1 04-11-2019	
		SG 10201913491P A 30-03-2020	
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		AU 2018273356 A1 21-11-2019	
		BR 112019024525 A2 09-06-2020	
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		CN 110997668 A 10-04-2020	
		CO 2019013010 A2 01-04-2020	
		CR 20190534 A 20-03-2020	
		EA 201992781 A1 01-04-2020	
		EP 3630761 A1 08-04-2020	
		JP 6785819 B2 18-11-2020	
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		KR 20200010384 A 30-01-2020	
		PE 20200733 A1 23-07-2020	
		PH 12019502579 A1 13-07-2020	
		SG 10201913195R A 27-02-2020	
		TW 201906821 A 16-02-2019	
		US 2018334454 A1 22-11-2018	
		US 2020055845 A1 20-02-2020	
		US 2021009577 A1 14-01-2021	
		UY 37744 A 02-01-2019	
		WO 2018217651 A1 29-11-2018	
