

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 7946-103188-04	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2020/049487	International filing date (<i>day/month/year</i>) 4 September 2020 (04-09-2020)	(Earliest) Priority Date (<i>day/month/year</i>) 6 September 2019 (06-09-2019)
Applicant RIGEL PHARMACEUTICALS, 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 6 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/US2020/049487

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07D413/14 C07D413/12 A61P37/00 A61K31/553
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)

A61P 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, WPI Data, 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	WO 2014/125444 A1 (GLAXOSMITHKLINE IP DEV LTD [GB]) 21 August 2014 (2014-08-21) cited in the application pages 185-194; examples -----	1-43
X	WO 2016/027253 A1 (GLAXOSMITHKLINE IP DEV LTD [GB]) 25 February 2016 (2016-02-25) page 68, see e.g. 1622851-59-5; 1622851-48-2, 1622848-88-7 -----	1-43
X	WO 2017/136727 A2 (DENALI THERAPEUTICS INC [US]) 10 August 2017 (2017-08-10) page 1; claim 1; example 32 -----	1-43
X	WO 2018/154520 A1 (GLAXOSMITHKLINE IP DEV LTD [GB]) 30 August 2018 (2018-08-30) pages 1-4; example 4 ----- -/-	1-43



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

19 October 2020

Date of mailing of the international search report

27/10/2020

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

Lauro, Paola

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International application No

PCT/US2020/049487

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PHILIP A. HARRIS ET AL: "DNA-Encoded Library Screening Identifies Benzo[b][1,4]oxazepin-4-ones as Highly Potent and Monoselective Receptor Interacting Protein 1 Kinase Inhibitors", JOURNAL OF MEDICINAL CHEMISTRY, vol. 59, no. 5, 10 March 2016 (2016-03-10), pages 2163-2178, XP055302242, US ISSN: 0022-2623, DOI: 10.1021/acs.jmedchem.5b01898 the whole document -----	1-43
Y	PHILIP A. HARRIS ET AL: "Identification of a RIP1 Kinase Inhibitor Clinical Candidate (GSK3145095) for the Treatment of Pancreatic Cancer", ACS MEDICINAL CHEMISTRY LETTERS, vol. 10, no. 6, 9 May 2019 (2019-05-09), pages 857-862, XP055651088, US ISSN: 1948-5875, DOI: 10.1021/acsmchemlett.9b00108 the whole document -----	1-43
X,P	WO 2019/213447 A1 (RIGEL PHARMACEUTICALS INC [US]) 7 November 2019 (2019-11-07) pages 1-4; examples -----	1-43
X,P	WO 2019/213445 A1 (RIGEL PHARMACEUTICALS INC [US]) 7 November 2019 (2019-11-07) pages 1-4; examples -----	1-43

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