

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 10275-123304	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2018/036610	International filing date (<i>day/month/year</i>) 8 June 2018 (08-06-2018)	(Earliest) Priority Date (<i>day/month/year</i>) 8 June 2017 (08-06-2017)
Applicant VERTEX PHARMACEUTICALS INCORPORATED		

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 4 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/US2018/036610

A. CLASSIFICATION OF SUBJECT MATTER INV. A61K31/4045 A61K31/443 A61K31/454 A61K31/47 A61P11/12 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 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, WPI Data, BIOSIS, EMBASE, CHEM ABS Data											
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X,P</td> <td>WO 2018/064632 A1 (VERTEX PHARMA [US]) 5 April 2018 (2018-04-05) the whole document</td> <td>1-62</td> </tr> <tr> <td>A</td> <td>WO 2014/014841 A1 (VERTEX PHARMA [US]) 23 January 2014 (2014-01-23) claim 1 ----- -/--</td> <td>1-62</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X,P	WO 2018/064632 A1 (VERTEX PHARMA [US]) 5 April 2018 (2018-04-05) the whole document	1-62	A	WO 2014/014841 A1 (VERTEX PHARMA [US]) 23 January 2014 (2014-01-23) claim 1 ----- -/--	1-62
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A	WO 2014/014841 A1 (VERTEX PHARMA [US]) 23 January 2014 (2014-01-23) claim 1 ----- -/--	1-62									
☒ 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		Date of mailing of the international search report									
10 August 2018		19/09/2018									
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 Allnutt, Sarah									

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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.
A	CLAIRE E. WAINWRIGHT ET AL: "Lumacaftor?Ivacaftor in Patients with Cystic Fibrosis Homozygous for Phe508del CFTR", THE NEW ENGLAND JOURNAL OF MEDICINE, - NEJM -, vol. 373, no. 3, 16 July 2015 (2015-07-16) , pages 220-231, XP055382899, US ISSN: 0028-4793, DOI: 10.1056/NEJMoal409547 abstract -----	1-62
A	PETER NORMAN: "Novel picolinamide-based cystic fibrosis transmembrane regulator modulators: evaluation of W02013038373, W02013038376, W02013038381, W02013038386 and W02013038390", EXPERT OPINION ON THERAPEUTIC PATENTS, vol. 24, no. 7, 1 July 2014 (2014-07-01), pages 829-837, XP055200029, ISSN: 1354-3776, DOI: 10.1517/13543776.2014.876412 Second to last -----	1-62

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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 2018064632 A1	05-04-2018	US 2018093969 A1 WO 2018064632 A1	05-04-2018 05-04-2018
WO 2014014841 A1	23-01-2014	AR 092857 A1 AU 2013290444 A1 CA 2878057 A1 EP 2872122 A1 HK 1209318 A1 TW 201408295 A US 2014088160 A1 US 2015182517 A1 US 2017266176 A1 WO 2014014841 A1	06-05-2015 29-01-2015 23-01-2014 20-05-2015 01-04-2016 01-03-2014 27-03-2014 02-07-2015 21-09-2017 23-01-2014