

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 10275-0222-00304	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2023/032282	International filing date (<i>day/month/year</i>) 8 September 2023 (08-09-2023)	(Earliest) Priority Date (<i>day/month/year</i>) 9 September 2022 (09-09-2022)
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 43.6bis(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**,

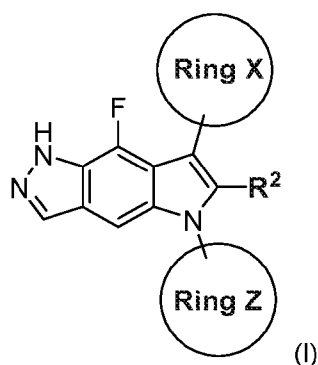
- ☐ the text is approved as submitted by the applicant
☒ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

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

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

Novel compounds, compositions, and methods of using and preparing the same, which may be useful for treating alpha-1 antitrypsin deficiency (AATD).



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2023/032282

A. CLASSIFICATION OF SUBJECT MATTER INV. C07D405/04 C07D487/04 A61P11/00 A61K31/4162 A61P1/16 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 A61P A61K		
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		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2020/247160 A1 (VERTEX PHARMA [US]) 10 December 2020 (2020-12-10) cited in the application claims 1,11,44 -----	1-24
☐ 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
27 November 2023		07/12/2023
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 Schuemacher, Anne

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2023/032282

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2020247160 A1	10-12-2020	AU 2020286424 A1	06-01-2022
		BR 112021022832 A2	18-01-2022
		CA 3140039 A1	10-12-2020
		CL 2021002964 A1	05-08-2022
		CN 114096542 A	25-02-2022
		CO 2021016594 A2	29-04-2022
		CR 20210608 A	11-02-2022
		DO P2021000234 A	15-03-2022
		EC SP21085481 A	31-01-2022
		EP 3969440 A1	23-03-2022
		IL 287878 A	01-01-2022
		JP 2022532340 A	14-07-2022
		KR 20220023987 A	03-03-2022
		MA 55971 A	23-03-2022
		PE 20220905 A1	30-05-2022
		SG 11202112414U A	30-12-2021
		TW 202108588 A	01-03-2021
		US 2020361939 A1	19-11-2020
		UY 38696 A	30-11-2020
		WO 2020247160 A1	10-12-2020
