

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IB2019/059702

International filing date (day/month/year)
12.11.2019

Priority date (day/month/year)
15.11.2018

International Patent Classification (IPC) or both national classification and IPC
INV. C07D471/04 A61K31/437 A61K31/444 A61K31/4196 A61P35/00

Applicant
PFIZER INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:



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Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established 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)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established 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 13ter.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 13ter.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. ☐ 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.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>1-76</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	<u>1-76</u>
	No: Claims	
Industrial applicability (IA)	Yes: Claims	<u>1-76</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:

D1 WO 2018/167147 A1 (HOFFMANN LA ROCHE [CH]; GENENTECH INC [US]) 20 September 2018 (2018-09-20)

Novelty

The present compounds differ from the compounds in D1 in the 2,3-dihydro-1H-pyrrolo[3,4-c]pyridin-1-one generic structure.

The claimed matter is novel.

Inventive Step

D1 discloses 1H-pyrrolo[2,3-b]pyridine derivatives as HPK1 inhibitors for the treatment of cancer.

D1 is the closest prior art.

The problem of the invention was the provision of new HPK1 inhibitors for the treatment of cancer.

The present description discloses the preparation of exemplary compounds as well as pharmacological data thereof (e.g. pages 82 to 211; examples 1 to 188; tables 1 to 5).

The problem has been solved over the whole of the claimed scope.

D1 does not disclose or suggest any 2,3-dihydro-1H-pyrrolo[3,4-c]pyridin-1-one derivatives.

The claimed matter is based on an inventive step.

Re Item VII

Certain defects in the international application

Description

The relevant prior art D1 has not been cited in the description.

The description contains irrelevant expressions, like e.g.:

- *"They are not to constrain the scope of the invention in any way" (e.g. page 48, lines 19 and 20)*
- *"All publications and patent applications cited in the specification are herein incorporated by reference in their entirety. It will be apparent to those of ordinary skill in the art that certain changes and modifications may be made thereto without departing from the spirit or scope of the appended claims" (e.g. page 211, lines 3 to 6)*

With entry into the regional phase before the EPO:

- When filing amended claims the description has to be brought in line with the amended claim set at the same time. Please do not defer the adaptation of the description until an agreement has been reached on the claim set. This only results in an unnecessary delay in the granting procedure.
- The relevant prior art D1 cited in the present international search report must be cited in the description.
- Those parts of the application containing irrelevant or unnecessary expressions must be deleted.
- A working copy (e.g. hand-amended version) wherein the amendments are visible as well as a readable, re-typed version (clear copy) as the print version must be filed at the same time, in order to avoid printing errors (hand-amended pages are not allowed for the print version).
- The basis for the amendments in the application as originally filed must be indicated.

Re Item VIII

Certain observations on the international application

Lack of Clarity and Conciseness (Article 6 PCT)

The present claims 26, 46 and 66 lack a reference to claim 1 and repeat unnecessarily identical substituent definitions of claim 1.

In claim 66 each of the variables R1a, R3, X, R5 and a have only one specific value, namely R1a=R3=R5=H, X=C and a=1.

With entry into the regional phase before the EPO a reference to claim 1 must be inserted into the present claims 26, 46 and 66. The specific values R1a=R3=R5=H, X=C and a=1 must be inserted in the formula I of claim 66 and the these superfluous variables and their substituent definitions must be deleted in claim 66.