

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

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/EP2022/055519	International filing date (day/month/year) 04.03.2022	Priority date (day/month/year) 09.03.2021
International Patent Classification (IPC) or both national classification and IPC INV. A61K9/16 A61K9/20		
Applicant BAYER AKTIENGESELLSCHAFT		

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:  European Patent Office Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Date of completion of this opinion see form PCT/ISA/210	Authorized Officer Friederich, Pierre Telephone No. +49 30 25901-0	
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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>1-14</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-14</u>
Industrial applicability (IA)	Yes: Claims	<u>1-14</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents; the numbering will be adhered to in the rest of the procedure.

- D1 WO 2017/005725 A1 (BAYER PHARMA AG [DE]) 12 January 2017
(2017-01-12)
- D2 WO 2020/210629 A1 (SQUIBB BRISTOL MYERS CO [US]) 15 October
2020 (2020-10-15)

2. Novelty Article 33(2) PCT:

The subject-matter of the claim 1 is novel:

The document D1 discloses **(4 S)-2⁴-chloro-4-ethyl-7³-fluoro-3'-methoxy-3²,5-dioxo-1⁴-(trifluoromethyl)-3² H -6-aza-3(4,1)-pyridina-1(1)-[1,2,3]triazola-2(1,2), 7(1)- dibenzenaheptaphane-7⁴-carboxamide**.

D1 does not disclose a solid pharmaceutical dosage form for oral administration comprising an amorphous solid dispersion (ASD) for the above compound in a pharmaceutically acceptable matrix.

3. Inventive step Article 33(3) EPC:

3.1 Claim 1

The document D1 is considered to be the closest prior art.

The difference is described above.

The effect of this difference can be detected from the description of the present application:

A solid pharmaceutical dosage form comprising an amorphous solid dispersion (ASD) in which the active ingredient (I) is present in an amorphous form shows a superior dissolution behaviour and a good bioavailability.

The problem to be solved is to how achieve a higher dissolution behaviour and a good bioavailability.

The solution is a solid pharmaceutical dosage form comprising an amorphous solid dispersion (ASD) in which the active ingredient is present.

The document D2 discloses a very similar active product in a ASD (see claim 11 of D2).

The ASD form is used in order to improve dissolution behaviour and a good bioavailability (see example 3 and 4).

It seems obvious to the person skilled in the art to use the ASD of the present active compound. He knows that ASD form from similar active products give an improvement in dissolution behaviour and bioavailability.

The solution is obvious and the subject-matter of claim 1 is not inventive.

The same applies to the subject-matter of related claims 6-7.

3.2 Claims 2-5

Claims 2-3

The release data is of the same order as in D2 (see §126).

Lubricating agent and disintegrating agent are present in D2 (see §64).

Claims 4 and 5

The pharmaceutical dosage form in D2 is a tablet. Film coated table is not expressly disclosed, but well know in the art (see §65).

3.3 Claims 8-10

PVP solid dispersion base and carriers like colorant, lubricant, etc, are mentioned in D2 (see claim 8 and 9).

3.4 Claims 11-14

Granulation is proposed in D2 § 66.

The initially preparation of the ASD comprising the active compound and the matrix and later bringing in a form are already discussed above.

The subject-matter of claims 1-14 is not inventive.

4. The attention of the applicant is drawn to the fact that the application may not be amended in such a way that it contains subject-matter which extends beyond the content of the application as filed (Article 123(2) EPC). The application is requested the indicate the basis of the amendments and to adopt where necessary the description to eventual newly filed claims. He is requested to demonstrate novelty and inventive step of eventually newly filed claims by using the problem solution approach.