

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

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/EP2023/062656

International filing date (day/month/year)
11.05.2023

Priority date (day/month/year)
12.05.2022

International Patent Classification (IPC) or both national classification and IPC
INV. C07D213/82 C07D237/24 A01N43/40

Applicant
SYNGENTA CROP PROTECTION AG

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

Johnson, Claire

Telephone No. -0



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.
 - b. ☐ furnished subsequent to the international filing date for the purposes of international search (Rule 13ter.1(a)),
 - ☐ accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.
4. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established to the extent that a meaningful opinion could be formed without a WIPO Standard ST.26 compliant sequence listing.
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	<u>15</u>
Inventive step (IS)	Yes: Claims	<u>1-14</u>
	No: Claims	<u>15</u>
Industrial applicability (IA)	Yes: Claims	<u>1-15</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

Claim 13 is directed to a therapeutic method. The patentability can be dependent upon the formulation of the claims. The EPO, for example, does not recognise as patentable claims to the use of a compound in medical treatment, but allows claims to a product for use in a first or further medical treatment.

Prior art

D1: WO 2021/153720 A1 (KUMIAI CHEMICAL INDUSTRY CO [JP]) 5 August 2021 (2021-08-05) cited in the application, and interpreted using the English language family member, AU2021214350

Novelty

The presently claimed compounds differ from those of D1 (claim 1) in that at least one of X, Y and Z is N. D1 relates to compounds wherein each of the groups corresponding to present X, Y and Z are CR⁸.

Present claim 15 is directed inter alia to plant propagation material that has been treated with a compound of formula I. Such a formulation does not obligatorily mean that the plant propagation material still retains any of said compound. This being the case, the subject matter of claim 15 is anticipated by any arbitrary plant propagation material, e.g. a seed, belonging to the prior art.

Claims 1-14 fulfil the requirements of novelty.

Inventive step

In view of its lack of novelty, claim 15 cannot be inventive.

The data in the application relating to the insecticidal activity of examples P1-P89 (pp. 171-174) make it plausible that the claimed compounds solve the technical problem of providing insecticidal compounds.

D1, which relates to insecticides which have a phenyl ring in place of the present pyridine, pyrimidine, pyridazine or pyrazine ring, is taken as the closest prior art. In the absence of any documents showing an equivalence between a phenyl ring and a

pyridine, pyrimidine, pyridazine or pyrazine ring in structurally similar compounds with insecticidal activity, it is not considered obvious to solve the problem of providing alternative insecticides in the way claimed in claims 1-10. Furthermore, as claim 11 relates to a method of providing a compound of claims 1-10, claim 12 relates to a composition comprising a compound of claims 1-10 and claims 13 and 14 relate to methods of using the compound of claims 1-10, these claims derive an inventive step from the inventiveness of the compounds of claims 1-10 and are therefore not obvious. Claims 1-14 fulfil the requirements of inventive step.