

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|                                                    |                                                                                                  |                                                                                     |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Applicant's or agent's file reference<br>25635     | <b>FOR FURTHER ACTION</b><br>see Form PCT/ISA/220<br>as well as, where applicable, item 5 below. |                                                                                     |
| International application No.<br>PCT/US2023/083468 | International filing date ( <i>day/month/year</i> )<br>12 December 2023 (12-12-2023)             | (Earliest) Priority Date ( <i>day/month/year</i> )<br>14 December 2022 (14-12-2022) |
| Applicant<br><br>MERCK SHARP & DOHME LLC           |                                                                                                  |                                                                                     |

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

## INTERNATIONAL SEARCH REPORT

International application No  
**PCT/US2023/083468****A. CLASSIFICATION OF SUBJECT MATTER****INV. A61K47/68 A61P35/00**  
**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, CHEM ABS Data****C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                                                                                                                                                                                                                                        | Relevant to claim No.                              |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>X</b>  | <b>WO 2017/214456 A1 (ABBVIE INC [US])</b><br><b>14 December 2017 (2017-12-14)</b>                                                                                                                                                                                                                                                                                                                        | <b>1, 2, 5-9,</b><br><b>11-18,</b><br><b>22-25</b> |
| <b>Y</b>  | <b>claims 91, 95-103</b><br><b>page 2, lines 25-27</b><br><b>page 14, line 16 - page 15, line 13</b><br><b>page 18, lines 35-36</b><br><b>page 19, lines 8-9</b><br><b>page 38, line 29 - page 39, line 9</b><br><b>page 66, lines 3-5</b><br><b>page 106, lines 6-14</b><br><b>page 108; compound IVb.6</b><br><b>page 155; example 2.12; table A</b><br><b>page 386; example 5</b><br><br>-----<br>-/-- | <b>3, 4,</b><br><b>19-21</b>                       |

☒ 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

**4 April 2024**

Date of mailing of the international search report

**16/04/2024**Name and mailing address of the ISA/  
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**Fernandez Rodriguez**

## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2023/083468

| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |                                                                                                                                                                                                                                                                                                   |                                    |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Category*                                            | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                                                                                                                                | Relevant to claim No.              |
| X                                                    | YANMING WANG ET AL: "Development and Properties of Valine-Alanine based Antibody-Drug Conjugates with Monomethyl Auristatin E as the Potent Payload", INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, vol. 18, no. 9, 25 August 2017 (2017-08-25), page 1860, XP055694898, DOI: 10.3390/ijms18091860 | 1, 2, 5-9, 13, 16, 18, 22-25       |
| Y                                                    | abstract<br>figure 2<br>section: "2.2. Evaluation of Antibody-Drug Conjugates (ADC) Preparation"<br>section: "2.4. Cathepsin B Reactivity"<br>section: "2.5. In Vitro Evaluation of Cytotoxic Agents and ADCs"<br>section: "2.6. In Vivo Evaluation"<br>-----                                     | 3, 4, 19-21                        |
| X                                                    | WO 2019/197602 A1 (MEDIMMUNE LTD [GB])<br>17 October 2019 (2019-10-17)                                                                                                                                                                                                                            | 1, 2, 5, 10, 11, 13, 16, 18, 22-25 |
| Y                                                    | claims 15, 18, 19<br>examples 1-7<br>page 66, lines 5-22<br>-----                                                                                                                                                                                                                                 | 3, 4                               |
| Y                                                    | ZAMBALDO CLAUDIO ET AL:<br>"2-Sulfonylpyridines as Tunable, Cysteine-Reactive Electrophiles", JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 142, no. 19, 17 April 2020 (2020-04-17), pages 8972-8979, XP093146492, ISSN: 0002-7863, DOI: 10.1021/jacs.0c02721                                    | 3, 4                               |
| A                                                    | abstract<br>figures 1B, 1D, 5<br>-----                                                                                                                                                                                                                                                            | 19-21                              |

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2023/083468

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|-------------------------------------------|---------------------|----------------------------|---------------------|
| WO 2017214456 A1                          | 14-12-2017          | AU 2017277914 A1           | 03-01-2019          |
|                                           |                     | BR 112018075630 A2         | 19-03-2019          |
|                                           |                     | CA 3027033 A1              | 14-12-2017          |
|                                           |                     | CN 109562169 A             | 02-04-2019          |
|                                           |                     | EP 3468598 A1              | 17-04-2019          |
|                                           |                     | JP 2019524651 A            | 05-09-2019          |
|                                           |                     | US 2020002432 A1           | 02-01-2020          |
|                                           |                     | WO 2017214456 A1           | 14-12-2017          |
| -----                                     |                     |                            |                     |
| WO 2019197602 A1                          | 17-10-2019          | CN 112119082 A             | 22-12-2020          |
|                                           |                     | EP 3774820 A1              | 17-02-2021          |
|                                           |                     | JP 2021521172 A            | 26-08-2021          |
|                                           |                     | KR 20200143389 A           | 23-12-2020          |
|                                           |                     | US 2021079023 A1           | 18-03-2021          |
|                                           |                     | WO 2019197602 A1           | 17-10-2019          |
| -----                                     |                     |                            |                     |