

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference BHC213004WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2022/052170	International filing date (<i>day/month/year</i>) 31 January 2022 (31-01-2022)	(Earliest) Priority Date (<i>day/month/year</i>) 1 February 2021 (01-02-2021)
Applicant BAYER AKTIENGESELLSCHAFT		

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 5 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

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International application No
PCT/EP2022/052170

A. CLASSIFICATION OF SUBJECT MATTER INV. A61K51/10 C07D413/14 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 C07D		
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, BIOSIS, EMBASE, 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.
Y	MEMBRENO ROSEMERY ET AL: "Toward the Optimization of Click-Mediated Pretargeted Radioimmunotherapy", MOLECULAR PHARMACEUTICS, vol. 16, no. 5, 26 March 2019 (2019-03-26), pages 2259-2263, XP055784093, ISSN: 1543-8384, DOI: 10.1021/acs.molpharmaceut.9b00062 abstract figure page 5 - page 6 ----- -/--	1-22
☒ 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
14 June 2022		28/06/2022
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 Dullaart, Anwyn

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International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	LIKO FLONJA ET AL: "Dendrimers as Innovative Radiopharmaceuticals in Cancer Radionanotherapy", BIOMACROMOLECULES, vol. 17, no. 10, 20 September 2016 (2016-09-20), pages 3103-3114, XP055928735, ISSN: 1525-7797, DOI: 10.1021/acs.biomac.6b00929 Retrieved from the Internet: URL:https://pubs.acs.org/doi/pdf/10.1021/acs.biomac.6b00929> abstract figures; tables page 3111, right-hand column, last paragraph - page 3112 -----	1-22
Y	C. WÄNGLER ET AL: "Antibody-Dendrimer Conjugates: The Number, Not the Size of the Dendrimers, Determines the Immunoreactivity", BIOCONJUGATE CHEMISTRY, vol. 19, no. 4, April 2008 (2008-04), pages 813-820, XP055020206, ISSN: 1043-1802, DOI: 10.1021/bc700308q abstract figures; tables page 819, left-hand column, paragraph Conclusion -----	1-22
Y	WU C ET AL: "Metal-chelate-dendrimer-antibody constructs for use in radioimmunotherapy and imaging", BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, vol. 4, no. 3, 10 February 1994 (1994-02-10), pages 449-454, XP026646436, ISSN: 0960-894X, DOI: 10.1016/0960-894X(94)80014-6 [retrieved on 1994-02-10] abstract page 450 figure 1 page 452 ----- -/--	1-22

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International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MYNERICH JENASEE ET AL: "Evaluation of Specific Activity and Stable Impurities in 225Ac Derived from ISAC and 229Th Decay", JOURNAL OF MEDICAL IMAGING AND RADIATION SCIENCES, vol. 50, no. 4, December 2019 (2019-12), XP085964033, ISSN: 1939-8654, DOI: 10.1016/J.JMIR.2019.11.115 [retrieved on 2019-12-17] abstract -----	1-22
Y	KHAN BEHLOL ED - MCCUAIG CARLY: "Biparatopic Targeting of Epidermal Growth Factor Receptor Positive Breast Cancer Cells using Domain I/II and Domain III Specific Antibody Conjugates", JOURNAL OF MEDICAL IMAGING AND RADIATION SCIENCES, vol. 50, no. 4, December 2019 (2019-12), XP085963976, ISSN: 1939-8654, DOI: 10.1016/J.JMIR.2019.11.092 [retrieved on 2019-12-17] abstract -----	1-22
Y	WO 2019/090242 A1 (ADVANCED PROTEOME THERAPEUTICS INC [US]; KRANTZ ALEXANDER [US] ET AL.) 9 May 2019 (2019-05-09) examples claims -----	1-22
Y	WO 2018/183906 A1 (UNIV CORNELL [US]) 4 October 2018 (2018-10-04) examples claims -----	1-22
Y	WO 2020/106886 A1 (UNIV CORNELL [US]) 28 May 2020 (2020-05-28) examples claims -----	1-22
Y	NIKKI A THIELE ET AL: "An Eighteen-Membered Macrocyclic Ligand for Actinium-225 Targeted Alpha Therapy", ANGEWANDTE CHEMIE INTERNATIONAL EDITION, vol. 56, no. 46, 13 November 2017 (2017-11-13), pages 14712-14717, XP055543785, ISSN: 1433-7851, DOI: 10.1002/anie.201709532 abstract figures page 14714, right-hand column - page 14715 -----	1-22

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Information on patent family members

International application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2019090242 A1	09-05-2019	EP 3703676 A1	09-09-2020
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		US 2022177461 A1	09-06-2022
		WO 2020106886 A1	28-05-2020
