

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 25644	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2024/013911	International filing date (<i>day/month/year</i>) 1 February 2024 (01-02-2024)	(Earliest) Priority Date (<i>day/month/year</i>) 3 February 2023 (03-02-2023)
Applicant 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 6 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/US2024/013911

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out 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 13*ter*.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.
2. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this report has been established to the extent that a meaningful search could be carried out without a WIPO Standard ST.26 compliant sequence listing.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2024/013911

A. CLASSIFICATION OF SUBJECT MATTER INV. C07K7/08 C07K7/54 A61P19/02 A61P37/00 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) A61P C07K A61K 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, WPI Data, BIOSIS, 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.
X	TSUKAMOTO KEITA ET AL: "In vitro display evolution of the PURE system-expressed TNF[alpha]-binding unnatural cyclic peptide containing an N-methyl-D-amino acid", BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, ELSEVIER, AMSTERDAM NL, vol. 534, 2 December 2020 (2020-12-02), pages 519-525, XP086429306, ISSN: 0006-291X, DOI: 10.1016/J.BBRC.2020.11.050 [retrieved on 2020-12-02] the whole document figure 4 ----- - / - -	1 - 11, 14 - 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 29 May 2024		Date of mailing of the international search report 11/06/2024
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 Cervigni, S

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2024/013911

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2017/176608 A1 (BRISTOL MYERS SQUIBB CO [US]) 12 October 2017 (2017-10-12) the whole document claim 1 -----	1-11, 14-22
X	GOTO YUKI ET AL: "The RaPID Platform for the Discovery of Pseudo-Natural Macrocyclic Peptides", ACCOUNTS OF CHEMICAL RESEARCH, vol. 54, no. 18, 21 September 2021 (2021-09-21), pages 3604-3617, XP093007366, US ISSN: 0001-4842, DOI: 10.1021/acs.accounts.1c00391 the whole document figure 7 -----	1-11, 14-22
X	KATOH TAKAYUKI ET AL: "Ribosomal Elongation of Cyclic [gamma]-Amino Acids using a Reprogrammed Genetic Code", JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 142, no. 11, 4 March 2020 (2020-03-04), pages 4965-4969, XP093115748, ISSN: 0002-7863, DOI: 10.1021/jacs.9b12280 the whole document page 4968; figures 1,3 -----	1-11, 14-22
A	JI-AE PARK ET AL: "Cyclic RGD Peptides Incorporating Cycloalkanes: Synthesis and Evaluation as PET Radiotracers for Tumor Imaging", ACS MEDICINAL CHEMISTRY LETTERS, vol. 5, no. 9, 14 July 2014 (2014-07-14), pages 979-982, XP055550471, US ISSN: 1948-5875, DOI: 10.1021/ml500135t the whole document Scheme 1 -----	1-22
X	ZHANG NAN ET AL: "Selective inhibition of Tumor necrosis factor receptor-1 (TNFR1) for the treatment of autoimmune diseases", CYTOKINE & GROWTH FACTOR REVIEWS, ELSEVIER LTD, GB, vol. 55, 12 April 2020 (2020-04-12), pages 80-85, XP086287703, ISSN: 1359-6101, DOI: 10.1016/J.CYTOGFR.2020.03.002 [retrieved on 2020-04-12] the whole document tables 1-2 ----- -/-	1-11, 14-22

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2024/013911

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 102 321 155 A (UNIV HUAZHONG SCIENCE TECH) 18 January 2012 (2012-01-18) abstract; claims -----	1 - 11, 14 - 22

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2024/013911

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2017176608	A1	12-10-2017	AR 108186 A1 25-07-2018
			AU 2017246216 A1 22-11-2018
			BR 112018070377 A2 05-02-2019
			CA 3020300 A1 12-10-2017
			CN 109311943 A 05-02-2019
			EA 201892243 A1 29-03-2019
			EP 3440097 A1 13-02-2019
			IL 262126 A 29-11-2018
			JP 7122255 B2 19-08-2022
			JP 2019513734 A 30-05-2019
			KR 20180132775 A 12-12-2018
			MA 43774 A 28-11-2018
			SG 11201808678Q A 29-11-2018
			TW 201738260 A 01-11-2017
			US 2017283463 A1 05-10-2017
			UY 37194 A 31-10-2017
			WO 2017176608 A1 12-10-2017

CN 102321155	A	18-01-2012	NONE
