

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 56274-WO-PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2015/036328	International filing date (<i>day/month/year</i>) 18 June 2015 (18-06-2015)	(Earliest) Priority Date (<i>day/month/year</i>) 23 June 2014 (23-06-2014)
Applicant NOVARTIS AG		

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 43.6**bis**(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:

FATTY ACIDS AND THEIR USE IN CONJUGATION TO BIOMOLECULES

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. 1

- ☒ 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/US2015/036328

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61K47/48 A61P3/00 C07K14/475
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 C07K

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, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MICHAEL J. HACKETT ET AL: "A dicarboxylic fatty acid derivative of paclitaxel for albumin-assisted drug delivery", JOURNAL OF PHARMACEUTICAL SCIENCES, vol. 101, no. 9, 6 June 2012 (2012-06-06), pages 3292-3304, XP055223401, WASHINGTON, US ISSN: 0022-3549, DOI: 10.1002/jps.23213 abstract figures 2, 3 ----- -/--	1,3-7, 15,16, 19,24



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

26 October 2015

Date of mailing of the international search report

02/11/2015

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

Monami, Amélie

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2015/036328

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	D. LEFORT ET AL: "Free-radical addition of alcohols and acids to 10-undecenoic esters, 10-undecen-1-ol, and 10-undecenyl acetate", BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR, DIVISION OF CHEMICAL SCIENCES., vol. 16, no. 3, 1 March 1967 (1967-03-01), pages 623-627, XP055223363, US ISSN: 0568-5230, DOI: 10.1007/BF00906006 page 626, paragraph 3 page 627, paragraph 6 -----	25
X	Olof Ceder ET AL: "Pimaricin. II. High Pressure---High Temperature Hydrogenation Studies.", Acta Chemica Scandinavica, 1 January 1964 (1964-01-01), pages 83-97, XP055223487, Retrieved from the Internet: URL:http://actachemscand.org/pdf/acta_vol_18_p0083-0097.pdf [retrieved on 2015-10-26] page 86; compound 2 -----	25,26
A	WANG Q ET AL: "Pharmacological properties of hydrophilic and lipophilic derivatives of octreotate", NUCLEAR MEDICINE AND BIOLOGY, ELSEVIER, NY, US, vol. 31, no. 1, 1 January 2004 (2004-01-01), pages 21-30, XP004485708, ISSN: 0969-8051, DOI: 10.1016/S0969-8051(03)00099-4 abstract figure 3 -----	1,27
A	CHAE S Y ET AL: "The fatty acid conjugated exendin-4 analogs for type 2 antidiabetic therapeutics", JOURNAL OF CONTROLLED RELEASE, ELSEVIER, AMSTERDAM, NL, vol. 144, no. 1, 21 May 2010 (2010-05-21), pages 10-16, XP027036550, ISSN: 0168-3659 [retrieved on 2010-04-30] abstract figure 1 page 11, column 1, paragraph 3 - paragraph 4 page 14, column 2, paragraph 2 - page 15, column 2, paragraph 2 ----- -/--	1-27

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2015/036328

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LIM SUNG IN ET AL: "Site-specific fatty acid-conjugation to prolong protein half-life in vivo", JOURNAL OF CONTROLLED RELEASE, vol. 170, no. 2, 2 June 2013 (2013-06-02), pages 219-225, XP028676591, ISSN: 0168-3659, DOI: 10.1016/J.JCONREL.2013.05.023 abstract page 220, column 2, paragraph 3 - page 221, column 1, paragraph 1 figure 1	1-27
A	----- WO 2014/083505 A1 (NOVARTIS AG [CH]; HU QI-YING [US]; IMASE HIDETOMO [US]) 5 June 2014 (2014-06-05) example 66	1-27
X,P	----- WO 2015/013168 A1 (NOVARTIS AG [CH]; BRUCE ALEXANDRA MARSHALL [US]; GROSCHE PHILIPP [CH];) 29 January 2015 (2015-01-29) cited in the application page 117 - page 120 page 127 - page 128 page 30 - page 31 page 48 page 53 - page 54	1-8, 14-16, 19,24-27
X,P	----- WO 2015/013169 A2 (NOVARTIS AG [CH]; CAPLAN SHARI L [US]; GOLOSOV ANDREI [US]; GROSCHE PH) 29 January 2015 (2015-01-29) cited in the application page 144 - page 146 page 31 - page 32 page 48 page 53 - page 54 page 58	1-8, 14-16, 19,24-27
X,P	----- WO 2015/006728 A2 (USERA AIMEE [US]; ROBINSON ZACHARY [US]; COBB JENNIFER [US]) 15 January 2015 (2015-01-15) cited in the application page 85 - page 87 page 98 -----	1-8, 14-16, 19,24-27

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2015/036328

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2014083505 A1	05-06-2014	AU 2013350802 A1	09-04-2015
		CA 2888445 A1	05-06-2014
		CN 104853781 A	19-08-2015
		EA 201591049 A1	30-09-2015
		EP 2925368 A1	07-10-2015
		KR 20150090081 A	05-08-2015
		WO 2014083505 A1	05-06-2014
WO 2015013168 A1	29-01-2015	US 2015031604 A1	29-01-2015
		UY 35670 A	27-02-2015
		WO 2015013168 A1	29-01-2015
WO 2015013169 A2	29-01-2015	TW 201518323 A	16-05-2015
		US 2015030594 A1	29-01-2015
		UY 35671 A	27-02-2015
		WO 2015013169 A2	29-01-2015
WO 2015006728 A2	15-01-2015	US 2015017192 A1	15-01-2015
		WO 2015006728 A2	15-01-2015