

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference ETB-01025	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2018/050211	International filing date (<i>day/month/year</i>) 10 September 2018 (10-09-2018)	(Earliest) Priority Date (<i>day/month/year</i>) 8 September 2017 (08-09-2017)
Applicant EVELO BIOSCIENCES, INC.		

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 43.6**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:

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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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

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A. CLASSIFICATION OF SUBJECT MATTER
INV. A61K39/02 A61K35/66
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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 2 494 865 A2 (AEON MEDIX INC [KR]) 5 September 2012 (2012-09-05) page 2 - page 13; examples 1-11, 18-22 -----	1,11-17, 19,20, 40, 76-78, 94-101, 106-110, 113-115, 147,161
X	WO 03/051379 A1 (HEALTH PROT AGENCY [GB]; FOSTER KEITH ALAN [GB]; GORRINGE ANDREW RICHA) 26 June 2003 (2003-06-26) page 6, line 3 - page 15, line 4; examples 5-8 ----- -/-	1,11, 13-15, 76-78, 106,110, 113-115, 147,161



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

19 November 2018

Date of mailing of the international search report

14/12/2018

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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.
X	GUNNSTEIN NORHEIM ET AL: "An OMV Vaccine Derived from a Capsular Group B Meningococcus with Constitutive Feta Expression: Preclinical Evaluation of Immunogenicity and Toxicity", PLOS ONE, vol. 10, no. 9, 21 September 2015 (2015-09-21), page e0134353, XP055524302, DOI: 10.1371/journal.pone.0134353 page 5/23 - page 9/23 page 11/23 - page 12/23 -----	1,11, 76-78, 106,107, 110
X	MARIA P. CABRAL ET AL: "Design of live attenuated bacterial vaccines based on D-glutamate auxotrophy", NATURE COMMUNICATIONS, vol. 8, 26 May 2017 (2017-05-26), page 15480, XP055524585, DOI: 10.1038/ncomms15480 page 14, right-hand column, paragraph 4 -----	9,10,14, 15,76, 77,90, 92,95, 98,106, 107,109, 110, 113-115
X	IAN A. MACDONALDA AND META J. KUEHN: "Stress-Induced Outer Membrane Vesicle Production by Pseudomonas aeruginosa", JOURNAL OF BACTERIOLOGY, vol. 195, no. 13, 1 July 2013 (2013-07-01), pages 2971-2981, XP002786623, page 2973, left-hand column, paragraph 2 -----	116-118, 121,122, 124,127, 132,135, 138
X	WO 2014/152484 A1 (UNIV MINNESOTA [US]) 25 September 2014 (2014-09-25) claims 1-44 -----	2-8,10, 11, 13-15, 76,77, 79,81, 83-85, 89, 91-94, 103-108, 111,113, 161

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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
EP 2494865	A2	05-09-2012	CN	102480932 A		30-05-2012
			EP	2494865 A2		05-09-2012
			JP	5818793 B2		18-11-2015
			JP	2013503857 A		04-02-2013
			KR	20110025068 A		09-03-2011
			US	2012222142 A1		30-08-2012
			US	2015017664 A1		15-01-2015
			WO	2011027971 A2		10-03-2011

WO 03051379	A1	26-06-2003	AU	2002350974 A1		30-06-2003
			CA	2464512 A1		26-06-2003
			EP	1476173 A1		17-11-2004
			JP	2005514388 A		19-05-2005
			US	2005013831 A1		20-01-2005
			WO	03051379 A1		26-06-2003

WO 2014152484	A1	25-09-2014	NONE			

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-161

A pharmaceutical composition comprising isolated bacterial extracellular vesicles (EVs), methods of producing same and the uses thereof.

1.1. claims: 9(completely); 10-115(partially)

A pharmaceutical composition comprising bacteria isolated from EVs and the uses thereof.

1.2. claims: 116-161(partially)

A method of generating an engineered bacterium comprising introducing into the bacterium a modification that results in the increased production of EVs, or that results the production of EVs with an improved therapeutic property by the bacterium.
