

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL SEARCH REPORT**

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PIR-001WO	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2018/048878	International filing date ( <i>day/month/year</i> ) 30 August 2018 (30-08-2018)	(Earliest) Priority Date ( <i>day/month/year</i> ) 30 August 2017 (30-08-2017)
Applicant  PIROUETTE MEDICAL 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 43.6*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. 5

- 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/US2018/048878

## 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.: 25-38  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
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:

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.

INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2018/048878

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61M5/20 A61M5/142  
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)  
A61M

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 A	WO 2017/004315 A1 (VALERITAS INC [US]) 5 January 2017 (2017-01-05) the whole document	1-7, 10-24 8,9
A	----- WO 2015/117913 A1 (SANOFI SA [FR]) 13 August 2015 (2015-08-13) the whole document	1-24
A	----- US 2016/082189 A1 (ANDERSON PHILIP D [US] ET AL) 24 March 2016 (2016-03-24) the whole document	1-24

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 <b>7 November 2018</b>	Date of mailing of the international search report <b>15/11/2018</b>
---	---

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 <b>Neiller, Frédéric</b>
--	--

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2018/048878

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
WO 2017004315	A1	05-01-2017	AU 2016287632 A1	18-01-2018
			AU 2018247266 A1	01-11-2018
			CA 2990453 A1	05-01-2017
			CN 107921214 A	17-04-2018
			EP 3316940 A1	09-05-2018
			JP 2018519048 A	19-07-2018
			US 2018193557 A1	12-07-2018
			WO 2017004315 A1	05-01-2017
-----				
WO 2015117913	A1	13-08-2015	CN 106132463 A	16-11-2016
			EP 3102264 A1	14-12-2016
			JP 2017505180 A	16-02-2017
			US 2017165418 A1	15-06-2017
			WO 2015117913 A1	13-08-2015
-----				
US 2016082189	A1	24-03-2016	AU 2011242602 A1	25-10-2012
			BR 112012026886 A2	13-09-2016
			CA 2796186 A1	27-10-2011
			CN 103118737 A	22-05-2013
			CN 104906656 A	16-09-2015
			EP 2560727 A1	27-02-2013
			EP 3360596 A1	15-08-2018
			JP 5809242 B2	10-11-2015
			JP 6189903 B2	30-08-2017
			JP 2013524951 A	20-06-2013
			JP 2016025924 A	12-02-2016
			JP 2017225828 A	28-12-2017
			KR 20130092418 A	20-08-2013
			KR 20160150645 A	30-12-2016
			KR 20180041261 A	23-04-2018
			MX 339532 B	30-05-2016
			NZ 602782 A	31-07-2015
			NZ 702172 A	31-03-2016
			RU 2012149446 A	27-05-2014
			SG 184934 A1	29-11-2012
			SG 10201503130U A	29-06-2015
US 2012022499 A1	26-01-2012			
US 2016082189 A1	24-03-2016			
US 2018154079 A1	07-06-2018			
WO 2011133823 A1	27-10-2011			
-----				