

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference ZP000197A	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2018/045353	International filing date (<i>day/month/year</i>) 6 August 2018 (06-08-2018)	(Earliest) Priority Date (<i>day/month/year</i>) 7 August 2017 (07-08-2017)
Applicant PHARMAQ AS		

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 7 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. 10

- ☒ 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

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

A fish handling unit (500) for processing live fish (1) is provided. Such fish handling unit (500) includes an inspection system (600) configured to inspect a plurality of live fish (1). A conveyor assembly (550) transports the live fish (1) to the inspection system (600). At least one robotic cell (510) is in communication with the inspection system (600). The robotic cell (510) has a controller configured to control operation thereof. An end effector (800) is operably engaged with the robotic cell (510). The end effector (800) interacts with the live fish (1) moving along the conveyor assembly (550), based on information determined by the inspection system (600) and received by the controller. The end effector (800) may optionally be an integrated gripper and injection assembly (850) capable of orientation and injection of the live fish (1). Associated devices and methods are also provided.

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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.:

1-14, 17

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. A01K61/95 A01K61/13
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)
A01K A22C

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	WO 03/069987 A1 (NORDICH FISH TECH AB [SE]; LEANDER LEIF [SE]; LEANDER OLOF [SE]) 28 August 2003 (2003-08-28)	1,4,8,9, 12,17
Y	page 2, line 30 - page 15, line 2; figures	13
A	1-8	2,3,5-7, 10,11,14
X	----- WO 99/00306 A2 (GOLDSTEIN YEHIEL [IL]) 7 January 1999 (1999-01-07)	1-3,5-7
A	page 2, line 18 - page 21, line 10; figures 1-4	4,8-14, 17
X	----- EP 2 551 222 A1 (VENDEE CONCEPT [FR]) 30 January 2013 (2013-01-30)	1-3
A	paragraphs [0025] - [0133]; figures 1-13	4-14,17
	----- -/-	



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

5 November 2018

Date of mailing of the international search report

08/01/2019

Name and mailing address of the ISA/

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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 A	WO 2012/008843 A1 (MASKON AS [NO]; ANDRESEN HALVARD [NO]; ERIKSSON JOHN [NO]; HAEGGLUND J) 19 January 2012 (2012-01-19) page 7, line 3 - page 13, line 6; figures 1-6 -----	13 1-12,14, 17

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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 03069987	A1	28-08-2003	AT 298195 T 15-07-2005
		AU 2003206566 A1 09-09-2003	
		DE 60300890 D1 28-07-2005	
		EP 1482785 A1 08-12-2004	
		NO 320008 B1 10-10-2005	
		WO 03069987 A1 28-08-2003	
WO 9900306	A2	07-01-1999	AU 7928798 A 19-01-1999
		WO 9900306 A2 07-01-1999	
EP 2551222	A1	30-01-2013	DK 2551222 T3 06-07-2015
		EP 2551222 A1 30-01-2013	
		ES 2541025 T3 15-07-2015	
		FR 2978436 A1 01-02-2013	
WO 2012008843	A1	19-01-2012	NO 331843 B1 16-04-2012
		WO 2012008843 A1 19-01-2012	

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-14, 17

a fish handling unit and an associated method of use, the unit comprising: an inspection system, a conveyor assembly and at least one robotic cell having a controller in communication with the inspection system; and an end effector configured to interact with the live fish moving along the conveyor assembly, based on information determined by the inspection system and received by the controller

2. claims: 15, 16

inspection system for live fish comprising a segmented conveyor
