

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IS2018/050013

International filing date (day/month/year)
30.11.2018

Priority date (day/month/year)
01.12.2017

International Patent Classification (IPC) or both national classification and IPC
INV. A01K61/10 A01K61/17

Applicant
STOFNFISKUR HF

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:



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Date of completion of
this opinion

see form
PCT/ISA/210

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established 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)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>4, 12, 17, 18, 25, 27, 36</u>
	No: Claims	<u>1-3, 5-11, 13-16, 19-24, 26, 28-35, 37, 38</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-38</u>
Industrial applicability (IA)	Yes: Claims	<u>1-38</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 The following document has been cited by the applicant in the description:

D1 GEIR LASSE TARANGER ET AL: "Abrupt changes in photoperiod affect age at maturity, timing of ovulation and plasma testosterone and oestradiol-17[beta] profiles in Atlantic salmon, *Salmo salar*",
AQUACULTURE,
vol. 162, no. 1-2, 1 March 1998 (1998-03-01), pages 85-98,
XP055568087,
Amsterdam, NL
ISSN: 0044-8486, DOI: 10.1016/S0044-8486(98)00168-9
cited in the application

1.1 Further reference is made to the following documents:

D2 US 2017/208840 A1 (NORDLY JIM ROGER [NO] ET AL) 27 July 2017 (2017-07-27)

D3 CN 103 503 820 A (SUZHOU YIKEMAN BIOLOG AGRICULTURAL SCIENCE AND TECHNOLOGY CO LTD) 15 January 2014 (2014-01-15)

1.2 The present application does not meet the criteria of Article 33(2) PCT, because the subject-matter of claims 1, 37 and 38 is not new.

1.3 D1 discloses (see the whole document, especially pages 87-89):

A process for the harvesting of fish eggs (page 87, item 2.1: "*Fish stock, rearing conditions and experimental design*"), comprising:

- providing a broodstock comprising sexually immature fish from at least one *Salmo salar* strain ("*One-year-old Atlantic salmon smolts from farmed stock at the Institute of Marine Research were reared in sea cages at Matre Aquaculture Research Station ... fish maturing after 1.5 years in seawater*"; page 87, second paragraph; see also the present application on page 2, lines 14-16; page 14, lines 2-5);
- rearing the broodstock in an aquatic environment comprising an aqueous medium that is suitable for sustaining life of the broodstock

(sea cages, raceways; see page 87, second and fourth paragraphs) such that it proceeds to maturation ("*... fish maturing after 1.5 years in seawater*"; page 87, second paragraph), wherein the rearing is performed in life-cycle stages during which at least the light exposure and time span of each life cycle stage is adjusted ("*Three different photoperiod regimes were used between January 16 and July 13*"; page 87, third paragraph), wherein the rearing includes at least a winter-summer period that comprises a winter life-cycle stage (during winter months as in figure 1), within which the broodstock is exposed to light that simulates winter light exposure, and a subsequent summer life-cycle stage (during summer months as in figure 1), within which the broodstock is exposed to light that simulates summer light exposure, wherein the total Accumulated Thermal Unit (ATU) during the winter-summer period is no more than 5000 (reading average monthly temperatures from January till December as 10°C, 9.5°C, 8.5°C, 7°C, 7°C, 9°C, 10.5°C, 12.5°C, 12°C, 10°C, 8°C, 7°C, respectively, in figure 2, a total ATU can be estimated as being about 3400); and

- harvesting eggs from the mature fish (see "*production of off-season eggs*" on page 86, last paragraph, second line; see also page 89, second paragraph from last).

- 1.4 The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 37 and 38, which therefore is also considered not new.
- 1.5 The subject-matter of claims 1, 37 and 38 lacks therefore novelty according to Article 33(2) PCT with regard to D1.
- 2 Dependent claims 2, 3, 5 to 11, 13 to 16, 19 to 24, 26 and 28 to 35 do not appear to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty, see, in D1:
 - page 88, figure 1, regarding claims 2, 3, 9 to 11, 13 to 15 and 28 to 31;
 - page 87, item 2.1, regarding claims 5, 7, 8 and 19 to 24;
 - page 89, paragraphs 2 to 4, regarding claim 6;
 - page 89, figure 2, regarding claims 16 and 26; and
 - page 92, table 3, regarding claims 32 to 35.

- 3 Dependent claims 4, 12, 17, 18, 25, 27 and 36 relate to processing features which are partly if not wholly revealed in the prior art quoted in the search report or which form part of the normal consideration of the person skilled in the art, i.e. they are the result of routine engineering and do not constitute an inspired design. Therefore the dependent claims 4, 12, 17, 18, 25, 27 and 36 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of inventive step (Article 33(3) PCT) in view of the combination of D1 (see, e.g., page 87, item 2.1, regarding claims 4 and 12; page 87, third paragraph from last, regarding claims 17 and 18; page 89, figure 2, regarding claim 27) with the common general knowledge of the skilled person.

Re Item VII

Certain defects in the international application

- 4 A typing error has been detected in claim 5: "*such that the average*".

Re Item VIII

Certain observations on the international application

- 5 The application does not meet the requirements of Article 6 PCT, because claims 14, 15, 25, 31 to 35 and 38 are not clear.
- 5.1 The terms "*the switch*" used in claims 14 and 15 lack an antecedent (Article 6 PCT).

 The same applies to the terms "*the eyed stage*" used in claims 32 to 35.
- 5.2 The terms "*the holding stage*" used in claim 25 are unclear when said claim depends on any claim 7 to 24, insofar as the latter is interpreted to depend on any claim 1 to 5 (Article 6 PCT).

 Similarly, the terms "*the holding stage*" used in claim 31 are unclear when said claim depends on any claim 7 to 30, insofar as the latter is interpreted to depend on any claim 1 to 5.
- 5.3 Claim 38 is directed to a process of rearing salmo salar as set forth in any one of claims 1 to 36. However, since the subject-matter of each of said claims 1 to 36 already relates to rearing salmo salar, said claim 38 does not introduce an additional process step, thereby leading to a problem of lack of clarity (Article 6 PCT).

- 5.4 The presence of the "*clauses*" on pages 22 to 25 in the application implies that the scope of protection may be different to that defined in the claims. When used to interpret the claims, these clauses cause considerable doubt concerning the actual intended scope of protection of the application, contrary to the requirements of the first sentence of Article 6 PCT, thereby rendering the subject-matter of the claims as a whole unclear (Article 6 PCT).