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Oslo, 2023.11.04

Your ref.:	137759/MWW
Application no.:	20210585 (please include in your reply)
Applicant:	NORD UNIVERSITET
Due date:	

Office action in patent application no. 20210585

Basis of the opinion

Description	received 2021.05.10
Claims	received 2022.06.03
Drawings	received 2021.05.10

Conclusion

We refer to your letter and new set of claims of June 3, 2022. We now consider the invention as specified by claims 1-14 to fulfill the novelty criterions.

The claims are amended according to our comments in our previous letter, and are thus novel.

Novelty

Claim 1 specifiies that both the lactic acid bacterias are present in the fish feed composition. A fish feed composition comprising both *L.plantatum* and *L.fermentum* as living and active cultures of bacteria is not disclosed in prior art. Therefore claim 1 is novel. The same comment refers to depending claims 2-9. New claims 10 and 12 and their dependent claims are also novel.

Inventive step

D1 is regarded as being the most relevant prior art document. D1 teaches that one of the most important stages in the final selection of a probiotic is its capasity to colonise the epithelium of relevant organisms [0035]. The strains selected, LPS47 *Lactobacillus plantarum* and LPS 148 *Lactobaccocus lactis lactis* are administered as part of a preparation and are capable of remaining viable, adhering to and colonising the gastrointestinal tract of salmon during and after administration of said preparation through feed. [0039] The immunological results show that the probiotic bacteria generate a nonspecific stimulation that is similar to that of a commercial immunostimulant and sligtly superior to the stimulation generated in the control group. [0040] The protective role of these probiotic strains is also evaluated using tests in which the lactic strains are challenged with a virulent strain of *Aeromonas salmonicida.*

The objective technical problem to be solved by the present invention may be regarded as providing alternative fish feed composition which has positive effects on the mucosal

barriers in the fish. The skilled person knows that in fish, the epithelial surfaces are covered by mucus. The epidermal mucus contains innate immune components that provide the primary defence against different pathogenic microbes and act as a barrier between the fish and environment.

Claim 1 relates to fish feed composition comprising the lactic acid bacteria *L.plantatum* and *L.fermentum* as living and active cultures of bacteria.

The selection of lactic acid in claim 1 is merely one of several possibilities from which the skilled person would select based on the knowledge from D2- D6 and /or D8 in combination with D1.The documents describe how different probiotics in fish feed affect the mucosal health and immune response in fish.

We find the selection og lactic acids obvious to a person skilled in the art. The selection can only be regarded as inventive if the selection presents unexpected effects or properties in relation to the lactic acids in D1 in combination with D2-D6 and / or D8. However no such effects or properties are indicated in the applicaton. The subject matter of claim 1 is therefore not considered to involve an inventive step. The same comment applies to claim 12.

Claim 2 is a product claim defined in the terms of manufacture with the feature «wherein the bacteria are isolated from the intestinal content of rainbow trout». The product as such has to fulfill the requirements of novelty and inventive step. A product is not rendered inventive merely by the fact that it is produced by means of an new process. The claim is not considered to involve an inventive step.

The subject-matter of claim 3 regards the shape and coating on the fish feed.The selection of shape and the can only be regarded as inventive , if the selection presents unexpected effects or properties in relation to the rest of the shapes of feed. However, no such effects or properties are indicated in the application. Hence, no inventive step is present in the subject-matter of claim 3.

The features of the dependent claims 3-9 are considered to be modifications or features that would be obvious to the skilled person based on the prior art and their common general knowledge. Hence, no inventive step is present in the subject-matter of claim 3-9.

The method features in claim 10 and 11 match closely the common learning in preparing coated feed pellets from prior art. The present application gives no explanation as to the choice of or benefit from the selected steps. We thus find that these aspects of the method in itself do not contribute to an inventive step.

Certain defects and observations

The structure and references in the claim set may be amended to increase clarity, ref. Norwegian Patents Act, Section 8, second paragraph, first sentence. Examples are given below.

- Claim 1 is a product claim , providing a composition comprising two lactic acid bacteria as living and active cultures of bacteria. It is unclear how these living and active cultures of bacteria are incorporated in the fish feed pellets.

- Claim 2 is product claim defined in the terms of manufacture with the feature «wherein the bacteria are isolated from the intestinal content of rainbow trout». The product as such has to fulfill the requirements of novelty and inventive step.

- Claim 3-4 concerns how to add the lactic acid bacteria to the feed pellet. It unclear how the lactic acid bacterias are added to the feed and if its a difference between the coating in claim 3 and 4.

Instructions

If you disagree with our assessments please send us the reasons for your opinion and, if appropriate, an amended set of claims reflecting this.

If you amend the patent claims, you must state where in the application as filed support for the amendment is found, ref. Regulations to the Norwegian Patents Act (Patent Regulations), Section 20.

If you file an amended description, you must specify which parts of the description are not in accordance with the previously filed description and specify in which way the amendments imply anything new with respect to the substantive content, ref. Patent Regulations, Section 21.

Time limit for response

You are invited to submit a written response within the due date above. You may respond via Altinn. If you fail to respond, the application will be shelved. However, the processing of the application may be resumed by paying a fee. Ref. Norwegian Patents Act, Section 15, third paragraph and Regulation Relating to Payments etc. to the Norwegian Industrial Property Office and the Board of Appeal for Industrial Property Rights (Regulation on fees), Section 26. You may request an extension of the due date, see «patentretningslinjene del A, kap. I, punkt 5.1» Examination Guidelines, part A, Chapter I, 5.1 (in Norwegian only). This must be done within the due date.

For general provisions regarding submitting of documents and payments, see Regulation on fees, Sections 1-6 and 8.

Additional information to the applicant

Application documents in English - provisional protection

The patent application will be published 18 months after it was first submitted. In order to obtain provisional protection for the invention described in the application from the publishing date, you must submit a translation of the claims into Norwegian. The patent claims in Norwegian will form the basis for provisional protection during the application

period. The provisional protection applies only insofar as the Norwegian and English texts correspond with each other. Provisional protection takes effect once you have supplied a translation of the claims and we have published a notice of this in the Norwegian Official Patent Gazette (Norsk patenttidende).

Application documents in English – patent claims in Norwegian at the time of grant
We would like to remind you that before the time of grant of patent you must submit a translation into Norwegian of the approved claims, see Norwegian Patents Act, Section 21, third paragraph and Patent Regulations, Section 33a.

For your information
Relevant laws and regulations, as well as Examination Guidelines are available on our webpage, www.nipo.no.

Information to applicants using Altinn: You will find cited publications linked in the enclosed search report or as electronic attachments. They will be forwarded in paper format only if not available in electronic format or if protected by copyright.

Please contact us if you have any questions.

Sincerely,

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Enclosures: cited publications, search report