Meeting

LNFP-1 and 2’- FL – Additional Information Discussion Paper

Committee Paper for Discussion - ACNFP/157/01

Advisory Committee for Novel Foods and Processes

Application for Authorisation as a Novel Food for LNFP-1 and 2’- FL - Additional Information from Applicant for review.

Application number RP549

Issue

The Committee reviewed this application for the first time at the June 2022 meeting and requested further information on which to base their assessment of the novel food. Members are invited to consider the response from the applicant and whether it addresses the requests for information satisfactorily or if further information is required.

1. At the last meeting, the Committee requested that the Secretariat draft an assessment output for this novel food for consideration, subject to the applicant’s response to the request for information addressing outstanding questions. The Committee is invited to consider the draft in Annex A.

Background

2. On the 10th February 2021, the FSA received the submission for LNFP-1 and 2’-FL as a novel food from Glycom A/S. The oligosaccharides, LNFP-1 and 2’- FL are manufactured by fermentation with the production micro-organism, followed by a series of purification, isolation, and concentration steps to generate the purified novel food ingredient. The oligosaccharides are intended to be used as an ingredient in a number of food products and food supplements.

3. The Committee reviewed the LNFP-1 and 2’-FL dossier at a ACNFP meeting on 8th June 2022, where they identified areas requiring further clarification to assess the safety of the novel food and its proposed use. Information was requested on the

- **Production Process**
- **Composition**

4. The applicant has provided a response to the Committee on these areas and the Committee is asked whether this addresses the outstanding questions on the dossier. To inform the discussion and further development of an opinion, the FSA’s requested further information (Annex B) and the applicant’s response (Annex C) are provided. The applicant has also provided a copy of a published paper by Townsend et al (2007) concerning the level of endotoxins in powdered infant milk formula (Annex D).

Applicant’s response to request for further information

Production Process

5. The Committee noted that the production micro-organism strain, *E. coli* K12, was classified by the applicant as a category 1 Genetically Modified Micro-organism in both manufacturing processes. Members remarked that this approach had been used for other applications using GMOs as production organisms. Clarification was sought on the applicant’s explanation for considering the product under the category 1 classification.

6. The applicant has responded by stating that the novel food ingredient has been chemically defined as > 80% is LNFP-1 and 2’-FL, with the remainder as structurally related oligosaccharides and carbohydrates. This is supported by the analytical data from batches of the novel food ingredients. Further, purification steps completely remove the production micro-organism and any associated DNA. Based on this information, the applicant concludes that the novel food ingredient meets the definition of category 1.

Composition

7. The Committee remarked that the analytical data shows the presence of gram negative endotoxins in low quantities in the finished products. Members noted, however, that there was a marked variability in the content of these endotoxins between different batches of the novel food ingredient. Given the potential for adverse effects in vulnerable consumers, the Committee Members requested that the applicant provide further clarification concerning the variability in endotoxin levels in the novel food ingredients.

8. The applicant has responded by stating that the most likely reason for variability in the residual endotoxin levels is the continuous improvement during upscaling and refinement of the production process. The most recent batch has reported levels of <0.00025 EU/mg. The applicant expects future batches of the novel food to have levels of endotoxin close to most recent one reported.

9. The applicant has amended the data in Table 2.b.1.6-3 in the dossier because some values were reported for the wrong batches.

10. The applicant has assessed the potential exposure of endotoxins in the novel food ingredients to vulnerable consumers. The content of endotoxins reported in infant milk products by Townsend et al (2007) was compared to the calculated exposure level in infants from LNFP-1 and 2’-FL at the recommended intake level. Based on this information, the calculated levels of endotoxins from LNFP-1 and 2’-FL are 12 – 13 times lower than the levels reported in 53 out 75 milk powder products.

11. The applicant remarks that seven other human milk oligosaccharide products have already been reviewed and approved for the UK market with a specification of 10 EU/mg for residual endotoxins.

12. The applicant concludes by stating that based on the existing approvals of other milk oligosaccharides, the analytical data from batches of the novel food ingredients showing low levels of endotoxins, and the specification limit for LNFP-1 and 2’-FL, there is no additional safety risk to vulnerable consumers.

Committee Action Required

- The Committee is asked whether the response from the applicant is sufficient to clarify the concerns discussed at the last meeting.
- If not, the Committee is asked to indicate what further data is required and the feedback that should be given to the applicant.

- The Committee is also asked to review and comment on the draft output for the assessment of this novel food.

ACNFP Secretariat December 2022

Annexes

Annex A – Draft Output for LNFP-1 and 2’-FL

Annex B – Request for Information

Annex C – Applicant’s Response to Request for Information

Annex D – Copy of Published Paper by Townsend et al, 2007