

ADVISORY COMMITTEE FOR NOVEL FOODS AND PROCESSES

POLICOSANOL

ISSUE

The Belgian Competent Authority has prepared an unfavourable initial opinion on an application for the authorisation of policosanol as a novel food ingredient under the novel foods regulation (EC) No 258/97. The Committee is asked whether it agrees with the initial opinion and whether it has any further comments to make on this application. The Committee's advice will form the basis for the UK's formal response.

Introduction

1. On 19 August 2008, the European Commission forwarded the Belgian Competent Authority's (CA) initial opinion on an application made by Uniq Ingredients A/S under Article 4 (1) of Regulation (EC) 258/97, for the authorisation of policosanol as a novel food ingredient. The Commission has requested the views of Member States on the Belgian CA's initial opinion.
2. A confidential version of the application dossier is attached as **Annex A**, and the Initial Assessment Report is attached as **Annex B** (restricted).

Background

3. Policosanol is a mixture of concentrated natural aliphatic alcohols composed primarily of 1-octacosanol, 1-triacontanol, 1-tetracosanol and 1-hexacosanol. Long chain aliphatic primary alcohols are constituents of naturally occurring waxes found in grains, fruits, vegetables, nuts and a variety of lower marine organisms. The novel ingredient (NI) is extracted from sugar cane (*Saccharum officinarum*). Policosanol from other sources (rice and sugar beet) are already legally marketed in the EU as food supplements.
4. The applicant intends to incorporate policosanol into food supplements, spreads and dairy products such as milk, cheese and yogurt. The applicant's intention is to use the NI as a functional food ingredient as it is perceived to reduce risk factors associated with cardiovascular disease (lower serum cholesterol, reduce platelet aggregation). As policosanol is highly soluble in dairy products, these have been identified by the applicant as target foods for fortification (policosanol is not water soluble).
5. The present application for authorisation of policosanol was prepared pursuant to Commission Recommendation (97/618/EC) of 29 July 1997 concerning the scientific aspects and presentation of information necessary to support applications for the placing on the market of novel foods and novel food ingredients. Policosanol has been classified as a pure chemical or simple

mixture from non-GM sources (Class 1.2). The requirements for a submission for this class are as follows:

I	Specification of the NF	X	<i>VIII</i>	<i>Ability to survive in and colonise the human gut</i>	-
II	Effect of the production process applied to the NF	X	IX	Anticipated intake/extent of use of the NF	X
III	History of the organism used as the source of the NF	X	<i>X</i>	<i>Information from previous human exposure to the NF or its source</i>	-
<i>IV</i>	<i>Effect of the genetic modification on the properties of the host organism</i>	-	XI	Nutritional information on the NF	X
<i>V</i>	<i>Genetic stability of the GMO</i>	-	XII	Microbiological information on the NF	X
<i>VI</i>	<i>Specificity of expression of novel genetic material</i>	-	XIII	Toxicological information on the NF	X
<i>VII</i>	<i>Transfer of genetic material from GM microorganisms</i>	-			

The information presented in the dossier is structured accordingly and is considered below under these schemes.

I. Specification of the novel food

Annex A, p 8-9, Annex C

6. Specifications for the NI are set out in the table below:

Aliphatic Alcohols	
Octacosanol	55-70%
Tetracosanol	0-10%
Hexacosanol	2-25%
Heptacosanol	0-0.5%
Nonacosanol	0-10%
Triacontanol	0-20%
Dotriacontanol	0.1-10%
Tetracontanol	0.1-10%
Total plate count	5,000 CFU/g
<i>Salmonella</i>	negative per 2 g
<i>Total coliforms</i>	≤10 MPN
<i>Escherichia coli</i>	<3 MPN
<i>Staphylococcus</i>	≤10 CFU/g
yeasts and moulds	≤ 100 CFU/g

The Belgian CA expressed concern that the specification was too wide and that, as a consequence, the composition of the NI is too variable. The Belgian CA also highlighted that the specification showed significant differences to the analytical results given in the test reports (**Annex C**). The Belgian CA was also concerned that no information was provided relating to the impact of compositional variation on human health.

II. Effect of the production process applied to the novel food

Annex A, p 10, Annex C

7. The production process for the NI is described briefly in Annex A. The cuticle wax of *Saccharum officinarum* is mechanically separated from the plant and saponified by treatment with sodium hydroxide. Following filtration, the product is purified (to achieve a purity of 90%) using ethanol. The Belgian CA expressed concern on the risks associated with extraction, including the potential for pesticide residues to become concentrated during the process.

III. History of the organism used as a source of the novel food

Annex A, p 10

8. The NI is extracted from sugar cane (*Saccharum officinarum*), which in the form of cane syrup and raw sugarcane has a very long history of consumption. However, the Belgian CA was of the view that this information is not relevant in the context of the safety of the NI.

IX. Anticipated intake/extent of use of the novel food

Annex A, p 11

9. The applicant intends that daily intake of policosanol from supplements will be between 5 to 40 mg, although, the applicant does not clearly specify the amount to be incorporated into foods. The Belgian CA advised that the applicant provides a detailed analysis of anticipated daily intake from products that could contain policosanol with a particular emphasis on potential intake by children.

XI. Nutritional information on the novel food

Annex A, p 12

10. The applicant states that policosanol is present in certain foods with daily intake levels depending on the diet. The applicant is of the view that the NI contains 9 calories per gram and has a rate of incorporation of 100 to 500 mg/kg. Given the lengths of the carbon chains in the aliphatic alcohols constituting the NI, the Belgian CA questioned the calorific value proposed by the applicant.

XII. Microbiological information on the novel food

Annex A, P12

11. Results from microbiological analyses of the NI are presented in Annex C and comply with the specification described in paragraph 6. The Belgian CA accepted these data.

XIII. Toxicological information on the novel food

Annex A p 13, Annex C.

12. The applicant did not provide studies relating to genotoxicity, teratogenicity or allergenicity of the NI. The toxicological information was limited to published references supplied with the dossier (attached at Annex C) together with a very limited discussion of toxicological studies. The Belgian CA raised concerns regarding the absence of studies carried out on the novel ingredient, and Members should note that as the applicant did not provide any assurances that the NI was used in the studies cited, the test material is referred to as policosanol in the summary detailed below.

13. The Belgian CA's initial opinion reports that chronic toxicity tests on rats and mice over periods from 12 to 24 months did not report any adverse effects at doses up to 500 mg/kg body weight per day policosanol (corresponding to 5 mg/kg bodyweight/day for adult humans).
14. A major toxicological study was conducted (Gamez *et al.*, 2001) determining the effects of orally administering a range of doses (50 – 5000 mg/kg body weight/day) of policosanol from *Saccharum officinarum* in the form of a mixture with gum acacia and water to rats over six months. Five of fifteen animals died in this study, although in each case deaths were attributed to handling during force feeding the animals. The study reports a lack of toxicological effects at doses of policosanol up to 500 mg/kg bodyweight per day (a dose of 500 mg/kg is 1,724 times greater than the maximum recommended therapeutic dose of 20 mg/day). The Belgian CA questioned whether the product used in this study was representative of the NI.
15. The Belgian CA has advised that further data on policosanol exposure in children should be obtained and notes that human studies revealed non-systematic cases of temporary and moderate side-effects including drowsiness, insomnia and gastrointestinal symptoms. Hepatic changes or toxicity were not reported. The Belgian CA also expressed concern that policosanol treatment is claimed to have anti-aggregant effects on platelets, but there are no studies reported on the effect over time on prothrombin or precautions for use by high-risk patients or those requiring surgery. All data provided on human studies is attached in the form of references in Annex C.
16. While the Belgian CA concluded that it is reassuring that the published studies do not reveal any risks to health at the recommended intake levels, it is unable to provide a favourable opinion until it has been demonstrated that the studies cited were performed on the product for which the application is made.

Allergenicity

Annex A, p13

17. The applicant has not discussed this issue in detail in the dossier. The dossier briefly states that the NI is free of proteins but no supporting data are provided. The applicant acknowledges that allergenicity data for the NI are scarce but refers to two studies demonstrating lack of allergenic potential. The Belgian CA did not provide any comments on this issue.

COMMITTEE ACTION REQUIRED

18. The Committee is asked whether it agrees with the initial opinion from the Belgian CA and whether it wishes to make any comments on the application.

**Secretariat
August 2008**

Annexes attached:

- Annex A** Application for the approval of policosanol (Restricted).
- Annex B** Initial Opinion on policosanol from the Belgian Competent Authority (Restricted).
- Annex C-** Analytical data and relevant published toxicological reports.