

ADVISORY COMMITTEE FOR NOVEL FOODS AND PROCESSES

PYRROLOQUINOLINE QUINONE DISODIUM SALT (PQQ) - DOSSIER 180

**ISSUE**

1. The Irish Competent Authority (CA) has prepared comments on an application for Pyrroloquinoline Quinone Disodium Salt under the Novel Foods Regulation (EC) No 258/97. The initial opinion is recommending a further assessment of the application.
2. The Committee is asked whether it agrees with the initial opinion and whether it would like to make any further comments on this application. The Committee's advice will form the basis for the UK's formal response to the Commission.

**Background**

4. On 2 August the European Commission forwarded the Irish Food Safety Authority's initial opinion on an application made by Mitsubishi Gas Chemical Company Inc. under Article 4 of the Regulation, for Pyrroloquinoline Quinone Disodium Salt (PQQ). The initial opinion is recommending further assessment on the basis of the original dossier and the views of the assessors from 2013. While further information has been supplied the Irish competent authority has been unable to update their assessment in light of the new information.
5. The Commission has requested the views of Member States on the Irish CA's initial opinion. Member States have until 30 September 2016 to submit any comments and/or reasoned objections to the Irish assessment.
6. The application dossier is attached as Annex A, the Irish Initial Assessment Report is attached as Annex B. Further annexes providing the referenced papers are available on request. Annex A and B contain protected information.

**This application**

7. PQQ is a fermentation product of *Hyphomicrobium denitrifican*. The bacteria does not have a history of consumption in the EU prior to 1997, therefore the fermentation product is considered novel. The applicant is proposing the PQQ, in the form of 99% pure red brown powder, is added to food supplements at the level of up to 50mg/day.
8. The applicant suggests that PQQ has been linked with benefits for cognitive and immune function as well as growth promotion and antioxidant functions. The opinion notes that the mechanism of action is not well understood but that some efficacy data is provided as part of the data package. The dossier explains that PQQ is

present at low levels in a number of foods. The use of PQQ in food supplements is not intended to replace other foods. The opinion notes that while PQQ is taken up by the body in the small intestine, 80% is excreted in urine within 24 hours. Similarly some PQQ is complexed in amino acids but can be excreted in faeces.

9. The applicant suggests *Hyphomicrobium denitrifican* is unlikely to cause disease in humans and that controls are in place to minimise the presence of bacteria in the final product. The bacteria is not genetically modified.

10. The Irish assessment concludes that insufficient data has been provided to support the product's safety. In particular uncertainties remained in relation to whether the compound is genotoxic as a result of weak positive reactions in the chromosome aberration test but negative results in vivo. The applicant has agreed that the supplement containing PQQ would not be recommended for use by children or pregnant women.

11. At high doses in the animal studies adverse effects including crystallisation of PQQ in the urine and renal toxicity were seen as well as dark green coloured faeces. The opinion suggests that if the NOAEL identified in rats of 100mg PQQ/Kg bw day was accepted the proposed dose would have a margin of safety of 143. At the dose identified as the NOAEL crystallisation of the material in the urine was seen along with the presence of protein positive reactions. The opinion notes that the toxicological data and human data are insufficient to draw conclusion on the risks associated with long term consumption at the proposed dose.

#### **COMMITTEE ACTION REQUIRED**

12. Members are asked whether they agree with the initial opinion from the Irish CA and whether they wish to make any comments on the application.

13. The Committee's advice will form the basis for the UK's formal response to the opinion of the Irish CA.

**Secretariat  
August 2016**

#### **Annexes attached:**

**Annex A** Application for the approval of Pyrroloquinoline Quinone Disodium Salt  
**Annex B** Initial Opinion of the Irish Authorities