

## Summary of the dossier: Mung bean protein

Applicant: Eat Just, Inc. (JUST), 2000 Folsom Street San Francisco, CA 94110 USA

This application for authorisation of a novel food in accordance with Regulation (EU) 2015/2283 concerns mung bean protein (MBP). The source of the protein, dry mung beans (*Vigna radiata*), has a long history of food use, especially in Asia but also in Europe.

Mung bean protein is intended to be used as ingredient in foods for the general population. The novel food shall be used in a range of food categories, e.g. to substitute animal proteins like egg proteins and is not intended as sole dietary protein source

MPB is produced via a series of steps involving an aqueous extraction of mung bean flour, followed by isoelectric precipitation of the protein. The process is typical for extracting globular seed proteins and is widely used in the industry for the manufacture of seed proteins. Whereas mung beans contain 20-25 % protein, MBP contains at least 85 % protein, which was shown to mainly consist of the major seed storage protein of mung bean, vicilin-like 8S-globulin. Because the protein isolation is only a physical process, the protein is not chemically modified and exogenous factors are not introduced into the manufacturing process. Therefore, it can be assumed that the nutritional properties of MBP are not altered compared to the protein that is naturally contained in mung beans.

As regards the safety of the novel food, analyses of six representative batches of MBP demonstrated the manufacturing consistency, good microbial quality and the absence of environmental contaminants, including pesticides and heavy metals. The safety of MBP was concluded based on the history of safe use of mung beans, and on the identity of MBP - being a vicilin-like 8S globulin. In fact, vicilin-like globulins (together with legumin-like 11S-globulins) are ubiquitous seed storage proteins throughout the plant kingdom. These globulins are the most prominent storage proteins in legume seeds e.g. in soybean, broad bean, lentil, pea, lupine, or peanut, and are also abundantly present in other dicotyledonous seeds used for human nutrition. Many commercially available plant proteins e.g. from soy, pea, lupine and other seeds provide the same class of globular seed storage proteins. On the grounds of the history of safe use of mung beans and the homology of the proteins in MBP with numerous well established commercial plant proteins, product specific toxicity studies were not conducted.

Since mung bean is a legume like soybean, lupine and peanut, people sensitive to the respective proteins might react to MBP as well. So far, allergenicity towards mung bean or mung bean protein was never reported.

Overall, by means of analytical data it was demonstrated that the mung bean protein is devoid of any toxicological, nutritional, or microbiological hazards that would arise from the production process.

The application has been prepared in accordance with the requirements of Commission Implementing Regulation (EU) 2017/2469 of 20 December 2017 laying down administrative and scientific requirements for applications referred to in Article 10 of Regulation (EU) 2015/2283 of the European Parliament and of the Council on novel foods, and the European Food Safety Authority (EFSA) Guidance on the preparation and presentation of an application for authorisation of a novel food in the context of Regulation (EU)

2015/2283 and EFSA's Administrative guidance on the submission of applications for authorisation of a novel food pursuant to Article 10 of Regulation (EU) 2015/2283.