



**EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), 2014. Scientific Opinion on the substantiation of a health claim related to a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate and reduction of post-prandial glycaemic responses pursuant to Article 13(5) of Regulation (EC) No 1924/2006**

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## SCIENTIFIC OPINION

### Scientific Opinion on the substantiation of a health claim related to a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate and reduction of post-prandial glycaemic responses pursuant to Article 13(5) of Regulation (EC) No 1924/2006<sup>1</sup>

EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)<sup>2,3</sup>

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#### ABSTRACT

Following an application from DoubleGood AB, submitted for authorisation of a health claim pursuant to Article 13(5) of Regulation (EC) No 1924/2006 via the Competent Authority of Sweden, the EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) was asked to deliver an opinion on the scientific substantiation of a health claim related to a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate and reduction of post-prandial glycaemic responses. The Panel considers that the food is sufficiently characterised. The target population proposed by the applicant is “adults in the general population wishing to reduce their post-prandial blood glucose responses”. The mechanism proposed by the applicant for the claimed effect is “stimulating insulin release via the insulinogenic properties of the amino acids in the food”. The Panel notes that the evidence provided by the applicant does not establish that a reduction in post-prandial glycaemic responses achieved by an increase in insulin secretion is a beneficial physiological effect for the target population in the context of this application. The Panel considers that a cause and effect relationship has not been established between the consumption of the food, a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate, and a beneficial physiological effect for the target population.

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#### KEY WORDS

amino acids, chromium picolinate, post-prandial glycaemic responses, health claims

<sup>1</sup> On request from the Competent Authority of Sweden following an application by DoubleGood AB, Question No EFSA-Q-2013-00756, adopted on 25 June 2014.

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## SUMMARY

Following an application from DoubleGood AB, submitted for authorisation of a health claim pursuant to Article 13(5) of Regulation (EC) No 1924/2006 via the Competent Authority of Sweden, the EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) was asked to deliver an opinion on the scientific substantiation of a health claim related to a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate and reduction of post-prandial glycaemic responses.

The scope of the application was proposed to fall under a health claim based on newly developed scientific evidence. The application included a request for the protection of proprietary data.

The food that is the subject of the health claim is a combination of five amino acids, i.e. L-threonine, L-valine, L-leucine, L-isoleucine and L-lysine, plus chromium picolinate, which are dissolved in table water. The amounts of the single constituents, an overview of the manufacturing process and information on stability and batch-to-batch analyses were provided. The Panel considers that the food, a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate, is sufficiently characterised.

The claimed effect is “reduces the post-prandial blood glucose response”. The target population proposed by the applicant is “adults in the general population wishing to reduce their post-prandial blood glucose responses”.

Decreasing post-prandial glycaemic responses may be beneficial, for example, to individuals with impaired glucose tolerance, as long as post-prandial insulinaemic responses are not disproportionately increased. In view of the proposed mechanism, i.e. “stimulating insulin release via the insulinogenic properties of the amino acids in the food”, the applicant was invited to provide evidence that a reduction of post-prandial blood glucose responses achieved by an increase in insulin secretion is a beneficial physiological effect for the proposed target population. No such evidence was provided by the applicant.

The Panel notes that the evidence provided by the applicant does not establish that a reduction in post-prandial glycaemic responses achieved by an increase in insulin secretion is a beneficial physiological effect for the target population in the context of this application.

The Panel considers that a cause and effect relationship has not been established between the consumption of the food, a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate, which is the subject of the health claim, and a beneficial physiological effect for the target population.

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## BACKGROUND

Regulation (EC) No 1924/2006<sup>4</sup> harmonises the provisions that relate to nutrition and health claims, and establishes rules governing the Community authorisation of health claims made on foods. As a rule, health claims are prohibited unless they comply with the general and specific requirements of this Regulation, are authorised in accordance with this Regulation, and are included in the lists of authorised claims provided for in Articles 13 and 14 thereof. In particular, Article 13(5) of this Regulation lays down provisions for the addition of claims (other than those referring to the reduction of disease risk and to children's development and health) which are based on newly developed scientific evidence, or which include a request for the protection of proprietary data, to the Community list of permitted claims referred to in Article 13(3).

According to Article 18 of this Regulation, an application for inclusion in the Community list of permitted claims referred to in Article 13(3) shall be submitted by the applicant to the national competent authority of a Member State, which will make the application and any supplementary information supplied by the applicant available to the European Food Safety Authority (EFSA).

## STEPS TAKEN BY EFSA

- The application was received on 10/09/2013.
- The scope of the application was proposed to fall under a health claim based on newly developed scientific evidence. The application included a request for the protection of proprietary data.
- On 16/10/2013, during the validation process of the application, EFSA sent a request to the applicant to provide missing information.
- On 15/01/2014, EFSA received the missing information as submitted by the applicant.
- The scientific evaluation procedure started on 16/01/2014.
- On 06/03/2014, the Working Group on Claims of the NDA Panel agreed on a list of questions for the applicant to provide additional information to accompany the application. The clock was stopped on 26/03/2014 and was restarted on 10/04/2014, in compliance with Article 18(3) of Regulation (EC) No 1924/2006.
- On 11/04/2014, EFSA received the requested information (which was made available to EFSA in electronic format on 09/04/2014).
- During its meeting on 25/06/2014, the NDA Panel, having evaluated the data submitted, adopted an opinion on the scientific substantiation of a health claim related to a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate and reduction of post-prandial glycaemic responses.

## TERMS OF REFERENCE

EFSA is requested to evaluate the scientific data submitted by the applicant in accordance with Article 16(3) of Regulation (EC) No 1924/2006. On the basis of that evaluation, EFSA will issue an opinion on the scientific substantiation of a health claim related to: a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate and reduction of post-prandial glycaemic responses.

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<sup>4</sup> Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods. OJ L 404, 30.12.2006, p. 9–25.

**EFSA DISCLAIMER**

The present opinion does not constitute, and cannot be construed as, an authorisation for the marketing of a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate, a positive assessment of its safety, nor a decision on whether a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate is, or is not, classified as a foodstuff. It should be noted that such an assessment is not foreseen in the framework of Regulation (EC) No 1924/2006.

It should also be highlighted that the scope, the proposed wording of the claim, and the conditions of use as proposed by the applicant may be subject to changes, pending the outcome of the authorisation procedure foreseen in Article 18(4) of Regulation (EC) No 1924/2006.

## INFORMATION PROVIDED BY THE APPLICANT

**Applicant's name and address:** DoubleGood AB, Scheelevägen 22, Box 719, SE-22007 Lund, Sweden.

The application includes a request for the protection of proprietary data for one unpublished study (Svensson et al., unpublished), in accordance with Article 21 of Regulation (EC) No 1924/2006.

### Food/constituent as stated by the applicant

According to the applicant, the food that is the subject of the health claim is a combination of five amino acids (i.e. L-threonine, L-valine, L-leucine, L-isoleucine and L-lysine) plus chromium picolinate, which are dissolved in bottled table water. In addition, for reasons of taste and preservation, the mix contains flavourings (e.g. lemon, pomegranate), small amounts of salt, sodium benzoate and potassium sorbate. The water may be carbonated.

### Health relationship as claimed by the applicant

According to the applicant, consumption of table water containing L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate during a carbohydrate-rich meal reduces the post-prandial blood glucose response without a disproportionate insulin increase.

Concerning the proposed mechanism, the applicant argued that the amino acids might act both directly by stimulating insulin release via the beta cells and indirectly by stimulating incretin hormones (gastric inhibitory polypeptide (GIP) and glucagon-like peptide-1 (GLP-1)) release in the gut. Furthermore, the applicant hypothesised that the chromium might improve insulin sensitivity, thereby improving the action of insulin, the secretion of which has been stimulated by the amino acids.

### Wording of the health claim as proposed by the applicant

The applicant has proposed the following wording for the health claim: "Contributes to the reduction of the blood glucose rise when consumed together with a carbohydrate rich meal".

### Specific conditions of use as proposed by the applicant

The applicant has proposed to consume one portion, i.e. ## g of amino acids plus ## µg chromium picolinate, in 330 mL table water during a meal. The proposed target population is the general adult population wishing to reduce their post-prandial blood glucose responses.

## ASSESSMENT

The approach used by the Panel in the evaluation of health claims is explained in the general guidance for stakeholders<sup>5</sup>.

In assessing each specific food/health relationship that forms the basis of a health claim the Panel considers the extent to which:

1. the food/constituent is defined and characterised;

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<sup>5</sup> EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA), 2011. General guidance for stakeholders on the evaluation of Article 13.1, 13.5 and 14 health claims. EFSA Journal, 9(4):2135, 24 pp.

2. the claimed effect is defined and is a beneficial physiological effect;
3. a cause and effect relationship is established between the consumption of the food/constituent and the claimed effect.

Substantiation of the claim is dependent on a favourable outcome of the assessment of 1, 2 and 3 above. Thus, a cause and effect relationship is considered not to be established if the outcome of any one of these assessments is unfavourable.

## 1. Characterisation of the food/constituent

The food that is the subject of the health claim is a combination of five amino acids, i.e. L-threonine, L-valine, L-leucine, L-isoleucine and L-lysine, plus chromium picolinate (CrPic), which are dissolved in table water.

The amounts of the single constituents contained in one portion (330 mL) of the table water are ## g L-threonine, ## g L-valine, ## g L-leucine, ## g L-isoleucine, ## g L-lysine monohydrate (for a total of ## g amino acids per portion) and ## µg CrPic (equivalent to ## µg Cr(III)). In addition, 0.033 g sodium chloride and 1.16 g lemon flavours are added to the water, plus the food preservatives sodium benzoate and potassium sorbate (0.05 g/330 mL of each).

The indispensable amino acids L-threonine, L-valine, L-leucine, L-isoleucine and L-lysine are well-characterised nutrients and can be measured in foods by established methods. CrPic is a compound derived from Cr(III) and picolinic acid. CrPic is well characterised, is authorised for use in the manufacture of food supplements (Annex II of Directive 2002/46/EC<sup>6</sup>), and can be measured in foods by established methods.

An overview of the manufacturing process of the food and information on stability and batch-to-batch analyses were provided.

The Panel considers that the food, a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus CrPic, which is the subject of the health claim, is sufficiently characterised.

## 2. Relevance of the claimed effect to human health

The claimed effect is “reduces the post-prandial blood glucose response”. The target population proposed by the applicant is “adults in the general population wishing to reduce their post-prandial blood glucose responses”.

The elevation of blood glucose concentrations after consumption of a food and/or meal, i.e. post-prandial glycaemia, is a normal physiological response which varies in magnitude and duration, and which may be influenced by the chemical and physical nature of the food or meal consumed, as well as by individual factors (Venn and Green, 2007). Decreasing post-prandial glycaemic responses may be beneficial, for example, to individuals with impaired glucose tolerance, as long as post-prandial insulinaemic responses are not disproportionately increased (EFSA NDA Panel, 2012).

The applicant indicated that the mechanism by which the food exerts the claimed effect is by “stimulating insulin release via the insulinogenic properties of the amino acids in the food”. In view of the mechanism proposed, the applicant was invited to provide evidence that a reduction in post-prandial blood glucose responses achieved by an increase in insulin secretion is a beneficial

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<sup>6</sup> Directive 2002/46/EC of the European Parliament and of the Council of 10 June 2002 on the approximation of the laws of the Member States relating to food supplements. OJ L 183, 12.7.2002, p. 51-57.



physiological effect for the proposed target population. No such evidence was provided by the applicant.

The Panel notes that the evidence provided by the applicant does not establish that a reduction in post-prandial glycaemic responses achieved by an increase in insulin secretion is a beneficial physiological effect for the target population in the context of this application.

The Panel considers that a cause and effect relationship has not been established between the consumption of the food, a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus CrPic, which is the subject of the health claim, and a beneficial physiological effect for the target population.

## CONCLUSIONS

On the basis of the data presented, the Panel concludes that:

- The food, a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus CrPic, which is the subject of the health claim, is sufficiently characterised.
- The claimed effect is “reduces the post-prandial blood glucose response”. The target population proposed by the applicant is “adults in the general population wishing to reduce their post-prandial blood glucose responses”. The proposed mechanism by which the food exerts the claimed effect is by “stimulating insulin release via the insulinogenic properties of the amino acids in the food”. No evidence was provided that a reduction in post-prandial glycaemic responses achieved by an increase in insulin secretion is a beneficial physiological effect for the target population.
- A cause and effect relationship has not been established between the consumption of the food, a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus CrPic, and a beneficial physiological effect for the target population.

## DOCUMENTATION PROVIDED TO EFSA

Health claim application on a combination of L-threonine, L-valine, L-leucine, L-isoleucine, L-lysine plus chromium picolinate and reduction of post-prandial glycaemic responses pursuant to Article 13(5) of Regulation (EC) No 1924/2006 (Claim serial No: 0395\_SE). September 2013. Submitted by DoubleGood AB.

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- EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), 2012. Guidance on the scientific requirements for health claims related to appetite ratings, weight management, and blood glucose concentrations. *EFSA Journal* 2012;10(3):2604, 11 pp. doi:10.2903/j.efsa.2012.2604
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