

## GLNC response to consultation paper – W1109 – Consultation about beta-glucan and blood cholesterol health claims.

### GLNC interest in this consultation

GLNC is a not-for-profit company limited by guarantee and a recognised health promotion charity. As the independent authority on the nutrition and health benefits of grains and legumes, GLNC provides a platform for organisations from across the grains and legumes value chain that have a pre-competitive interest in promoting the health and nutrition benefits of grains, grain-based foods and legumes. As the independent authority on the nutrition and health benefits of grains and legumes, GLNC's mission is to promote grains and legumes nutrition as part of a balanced diet through evidence-based information cultivating good health.

### Summary or key messages

GLNC wishes to submit a draft statement in relation to W1109 – Consultation about  $\beta$ -glucan and blood cholesterol health claims.

#### **1. What do you consider to be the best approach for managing this food-health relationship in the Code, given the outcomes of the systematic review for the food-health relationship for a HLHC about beta-glucan? (see Section 7.1) Please give reasons for your response.**

Suggested changes to the Code following the systematic review are significant, and raise a number of dilemmas.

The studies in this area have been performed using oats, oat bran and barley whole foods (or added as ingredients) rather than consumption of isolated  $\beta$ -glucan. So from this point-of-view, the move away from using  $\beta$ -glucan in the High Level Health Claim (HLHC) could make sense, and aligns with current thinking about whole foods rather than reductionist approaches linked with a single component. However, the HLHC has been in place for a number of years, with mechanisms attributed to  $\beta$ -glucan, also specifying a minimum level of  $\beta$ -glucan, so this would need to be considered and an alternative proposed. Alternatives would need to be weighed up as new requirements may introduce barriers for some products making these claims and at the same time, care needs to be taken not to detract from the body of research identifying  $\beta$ -glucan.

We have noted that the effects of barley on blood cholesterol have been investigated in fewer studies than oats, but that the weight of the evidence is both significant and positive for those referenced in the FSANZ review. In addition, a recent systematic review and meta-analysis of barley  $\beta$ -glucan showing a positive effect on cholesterol, included studies deemed to be of high quality but were not referenced by FSANZ.<sup>1</sup>

It is worth considering that factors such as viscosity, the molecular weight and solubility may influence the degree of cholesterol lowering, and due to the chemical structure of barley in particular, there may be differences in efficacy depending on the food form. It may be that these factors ( $\beta$ -glucan content of barley, molecular weight (Mw), solubility and viscosity<sup>1</sup>) should be examined more closely in determining the relevant effects before making this significant change in the Code. In a recent study using barley flakes the authors noted that intact cell wall structures, like in barley flakes or muesli based on flakes are positive for retaining  $\beta$ -glucan Mw during food processing however the destruction of these structures (as in puffed oats or fine flour) and long processing times are detrimental for  $\beta$ -glucan Mw<sup>2</sup>. The molecular weight of  $\beta$ -glucan has been suggested as an area for further research and assessment.

GLNC is not in a position to comment on the likelihood of further studies regarding the physiological changes in blood cholesterol to validate the mechanism ascribed to barley  $\beta$ -glucan, but considering the significant high quality evidence, and assessment by FSANZ of 'moderate' and 'plausible' evidence for barley, its removal from the HLHC seems to lack basis. Further, this action may create confusion among consumers, as the body of evidence does not appear to dispute its role in lowering cholesterol. And, we note that a General Level Health Claim (GLHC) about barley  $\beta$ -glucan and cholesterol reabsorption may still be made at this stage.

In order to streamline any necessary claim changes for manufacturers, and reduce potential consumer confusion, GLNC suggests a review should be conducted for the GLHC relevant to  $\beta$ -glucan and cholesterol reabsorption, rather than just those relating to the HLHC. GLNC are uncertain as to the precise requirements of the proposed change. Is it that only the wording needs to change to maintain the claim, or will other criteria be introduced?

## **2. What do you consider to be the impacts of amending the Code for consumer understanding about beta-glucan, oats and barley and blood cholesterol?**

The change in the Code is unlikely to affect consumer understanding although this should be tested. Consumer understanding may be strengthened by the use of whole foods (oats, oat bran, barley) rather than food components, as these provide greater credibility; they are well-recognised and easily identified by consumers. However, if GLHCs can still be made regarding  $\beta$ -glucan and cholesterol reabsorption, this may detract from the efforts to enhance consumer understanding and instead, increase confusion.

It is worth noting that Stancu et al (2017) did not find any indication that adding information or re-wording the health claim for  $\beta$ -glucan led to improvements in 'adequate understanding' of that claim in relation to blood glucose<sup>3</sup>. They state: *'Efforts to improve understanding should be done with care as there is potential for consumers to attribute fewer safe benefits to products with health claims when they are faced with a re-worded version of the authorised claim using less technical terms or with additional information together with the authorised claim. Tests of adequate understanding would, thus, be recommended on a case by case basis before changing the authorised wording of health claims'*.

## **3. Do you consider that such amendments to the Code would be consistent with dietary guidelines and other relevant public health messages? Why/why not?**

The Australian Dietary Guidelines (ADGs) encourage consumption of 'mostly whole grains'. While the evidence suggests that  $\beta$ -glucan is responsible for the effect on blood cholesterol lowering, the change to using oats and barley would be consistent with guidelines and public health messages regarding whole foods and therefore whole diet approaches. In regards to barley, removal of this claim would not be in alignment with the ADGs as it is an example of a whole grain and in large observational studies whole grain intake has consistently been associated with improved cardiovascular disease outcomes. In this respect, the change would be contradictory to the key messages used by GLNC.

## **4. What do you consider to be the impacts on the food industry of such an amendment?**

GLNC is aware of companies using Oats and Barley as a core ingredient in breakfast cereals, bars and in recently launched breads. The change to the HLHC may impact on brands that have only just entered the market and some more established brands. It would be difficult to determine the precise

costs associated with the research, development, technical aspects of managing a soluble fibre within a food mixture, packaging costs and marketing of products (via websites, TVC and other media) for the companies who are currently leveraging this claim. However, the timeframe for changes to the HLHC should take into consideration recently launched products, and the efforts made to comply with the HLHC. Perhaps a longer term view is required in light of the fact that a number of countries permit claims for both oats and barley  $\beta$ -glucan<sup>4</sup>.

Some clarification should be provided to interested parties regarding the precise methodology used for the SLR, including a priori decisions, excluded studies, and an explanation of criteria used to assess the degree of certainty around barley and its effect on cholesterol. Information around requirements for the replacement standard (pack messages, dose requirements) and the timeframes for the assessment of the GLHC for  $\beta$ -glucan and reduced dietary or biliary cholesterol absorption should also be made available to stakeholders.

## References

- 1) Ho, H.V.T., Sievenpiper, J.L., Zurbau, A., Blanco Mejia, S., Jovanovski, E., Au-Yeung, F., Jenkins, A.L., and Vuksan, V. (2016) A systematic review and meta-analysis of randomized controlled trials of the effect of barley  $\beta$ -glucan on LDL-C, non-HDL-C and apoB for cardiovascular disease risk reduction. *European Journal of Clinical Nutrition* **70**, 1239–1245; doi:10.1038/ejcn.2016.89; published online 8 June 2016
- 2) Rieder, A., Halvors., Knutsen, S. (2017) In vitro digestion of beta-glucan rich cereal products results in extracts with physicochemical and rheological behavior like pure beta-glucan solutions e A basis for increased understanding of in vivo effects. *Balance Food Hydrocolloids* 67; 74e84
- 3) Stancu, V., Grunert, K.G., Lähteenmäki, L. (2017) Consumer inferences from different versions of a beta-glucans health claim. *Food Quality and Preference* 60 (2017) 81–95
- 4) Whitehead, A., Beck, E.J., Tosh, S., and Wolever, T.M.S. (2014) Cholesterol-lowering effects of oat  $\beta$ -glucan: a meta-analysis of randomized controlled trials *Am J Clin Nutr* ;100:1413–21