Breaking News on Supplements & Nutrition - Europe

Beta-glucan shows potential prebiotic activity

By Stephen Daniells, 02-Jun-2010

Related topics: Fibres and carbohydrates, Probiotics and prebiotics, Cardiovascular health, Gut health

Beta-glucan from barley may boost levels of beneficial bacteria in our gut, particularly in people over 50, says a new study from Greece.

Daily intake of 0.75 grams significantly increased levels of bifidobacteria, suggesting prebiotic potential but only in people over the age of 50, according to findings published in *Food Research International*.

The study, led by Adamantini Kyriacou from Harokopio University in Athens, is said to be the first report of a potential prebiotic effect of beta-glucan *in vivo*. However, the study merely shows a bifido-boosting effect and the actual prebiotic activity of the ingredients is still to be shown.

Prebiotics are defined as *"non-digestible (by the host) food ingredients that have a beneficial effect through their selective metabolism in the intestinal tract"* (Gibson et al. 2004).

From the heart to the gut

Beta-glucan from oats is most commonly linked to cholesterol-reduction, and the science is sufficiently robust to have merited health claims in a range of countries. Indeed, such a claim has existed in Sweden since 2002, the UK since 2004, while the French Food Health and Safety Agency (AFFSA) approved a health claim for beta-glucan health cholesterol-lowering in 2008. In May 2008, the US Food and Drug Administration (FDA) added certain oat products to a health claim linking soluble fibre and risk of coronary heart disease.

The new study looked at beta-glucan from barley. The Greek scientists recruited 52 health people aged between 39 and 70 and randomly assigned them to receive a cake containing either 0.75 grams of barley beta-glucan (DKSH Switzerland Ltd) or no additional beta-glucan for 30 days.

At the end of the study, results showed that a strong bifidogenic effect was observed in the volunteers over the age of 50. Kyriacou and his co-workers also noted a *"concurrent significant increase in bacteroides"* in these people. A trend for a beneficial effect on lactobacillus levels was also recorded, but these did not reach a level of statistical significance, said the researchers.

Importantly, the product was well tolerated and no undesirable gastrointestinal side effects were recoded in these older subjects.

A journey of a thousand miles starts with a single step

"Data demonstrated a possible prebiotic role of barley b-glucan supplementation especially in older subjects. Moreover, in this age group, ingestion of experimental foodstuff was well-tolerated, with no severe gastrointestinal side effects," wrote the researchers.

"Further research is crucial for the elucidation of dose–response in vivo effects of barley b-glucan on human microbiota and the potential food-processing-related changes in its prebiotic functionality," they concluded.

Commenting independently on the research, prebiotics pioneer Professor Glenn Gibson from the University of Reading told NutraIngredients: *"This human study reports on the prebiotic potential of glucans from oats. If proven, it expands the current (rather limited) range of prebiotics.*

"However, I would have been more comfortable with the application of modern molecular based technologies to definitely assess microbial effects. The authors have used a culture based approach and it is difficult to be sure that the selective agars used are wholly reliable," added Prof Gibson.

Source: *Food Research International*
Volume 43, Issue 4, Pages 1086-1092
"Prebiotic potential of barley derived β-glucan at low intake levels: A randomised, double-blinded, placebo-controlled clinical study"
Authors: E.K. Mitsou, N. Panopoulou, K. Turunen, V. Spiliotis, A. Kyriacou