More Support For Prebiotic, Probiotics For Colon Health

By Stephen Daniells

05/03/2007- **Daily intake of prebiotics and probiotics may reduce the production of potentially toxic or carcinogenic compounds by suppressing the activity of certain enzymes, says new research from Belgium.**

"In view of the carcinogenic potential of these enzymes, the induced changes that occurred in this study by lactulose, oligofructose-enriched inulin, L. casei *Shirota and* B. breve *on the bacterial beta-glucuronidase activity could be considered as beneficial for the host and may have important implications for health,"* wrote lead author Vicky De Preter from University Hospital Gasthuisberg, Leuven.

Writing in the *European Journal of Clinical Nutrition*, the researchers report the findings of their investigation into the potential benefits of the prebiotics lactulose (Duphalac Solvay Pharma) and oligofructose-enriched inulin (Raftilose Synergy 1, Orafti), and the probiotics *Lactobacillus casei* Shirota (Yakult), *Bifidobacterium breve* (Yakult) and *Saccharomyces boulardii* (Perenterol, Biodiphar) on the activity and levels of the enzymes beta-glucuronidase and beta-glucosidase on 53 healthy volunteers (age range 19-26).

Probiotics are bacteria found in the gut that are understood to have health benefits. Prebiotics are ingredients that stimulate growth of probiotics in the gut, and synbiotics are a combination of the two.

The subjects were randomly assigned to one of the five intervention groups and crossed over after four weeks of intervention. A two-week washout period separated the interventions. Faecal samples were collected over a period of 72 hours at the start and end of the intervention period.

De Preter reports that both prebiotics significantly decreased beta-glucuronidase activity, as did the probiotics *L. casei* Shirota and *B. breve*. *S. boulardii* was found to have no affect on the enzymes, they said.

On the other hand, the probiotic was found to increase the levels of beta-glucosidase.

"Supplementation with the synbiotic did not appear to be more beneficial than either compound alone," stated the researchers.

"Administration of lactulose, oligofructose-enriched inulin, L. casei *Shirota or* B. breve *resulted in a decrease of the beta-glucuronidase activity, which is considered beneficial for the host,"* they concluded.

Talking exclusively to NutraIngredients.com, lead researcher Professor Kristin Verbeke said that it was currently difficult to indicate the relevance of the observations.

"First of all, we have performed our measurements in young, "healthy" individuals and it is very difficult to render healthy people more healthy. Secondly, we have shown that administration of pre- and probiotics can decrease the activity of potential harmful bacterial enzymes (and other parameters of colonic metabolism) but we have not (yet) shown that people will live longer or healthier because of these changes," said Prof. Verbeke.

"We should need large, long-term diet intervention studies to prove the link between changes in colonic metabolism and health and this will be very difficult."

Professor Verbeke also revealed that the research in ongoing with work focusing on the evaluation of new potential pre- and probiotic substrates.

"We will [also] apply the methodology to patients in which an abnormal colon metabolism is expected (such as inflammatory bowel disease and irritable bowel disease). In this way, we want to investigate whether similar changes on colonic metabolism are observed as in healthy individuals and whether changes in colonic metabolism correlate with changes in disease activity," said Prof. Verbeke.

"This would already be a first step in indicating the relevance of colonic metabolism to health."

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"Effect of dietary intervention with different pre- and probiotics on intestinal bacterial enzyme activities"
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