

Orafti[®]Synergy1 decreases energy intake in overweight and obese subjects

June 2011 - Results of a new study led by Prof. Rob Welch (University of Ulster, Northern Ireland), show that BENEО's Orafti[®]Synergy1 leads to lower energy intake in overweight and obese adults. The study was recently presented for the first time at the 18th European Congress on Obesity (ECO), which took place in Istanbul (May 25 - 28, 2011).

The randomized, double-blind, placebo-controlled, cross-over intervention study¹ included 36 overweight or obese men and women volunteers, receiving twice 6 grams of Orafti[®]Synergy1 (oligofructose-enriched inulin) daily at breakfast and lunch as a supplement dissolved in a beverage, or a placebo (maltodextrin) during 3 weeks. The aim of the study was to assess the effects of Synergy1 on energy intake as well as on appetite sensations in those participants. While energy intake was assessed at the beginning and end of each treatment phase, appetite ratings were evaluated through visual analogue scales (VAS).

It was shown that Synergy1 intake resulted in a significantly lower energy intake in all subjects (-3.6%), and when stratified by gender, this result was even more apparent in women.

Anke Sentko, Vice President Regulatory Affairs and Nutrition Communication at the BENEО-Institute comments: "We are delighted to see that the well-designed human intervention study by Professor Welch and his team has shown the effect of BENEО's Orafti[®]Synergy1 on lowering the energy intake of the participants. This shows how small changes in the daily diet can add up and finally make a difference when they are much easier to accept and integrate in one's daily life."

From animal research to human evidence: insight on the effects of prebiotics on food intake and weight

In addition to the latest results by Prof. Welch, further recent findings suggest a beneficial role for the prebiotics inulin and oligofructose related to the management of energy homeostasis – in addition to their well known positive effects on the gut microbiota.

¹ McCann MT, Livingstone MBE, Wallace JMW, Gallagher AM, Welch RW. Oligofructose-enriched inulin supplementation decreases energy intake in overweight and obese men and women. Obesity Reviews 12 (Suppl. 1) (2011) 63-279

Research in this area has started with animal studies. Numerous findings have shown that the inclusion of BENEEO's prebiotics in the diet of rodents reduced their energy intake, which was accompanied by lower weight and fat mass development in comparison to the animals receiving the standard diet. Such effects were shown in lean models, but also in genetic or diet-induced obesity models. In animals, these effects have been seen in parallel to modulations of hormones involved in appetite regulation, such as increased concentrations of glucagon-like peptide 1 (GLP-1).

In healthy adults, the intake of 8 grams of Orafti[®]Synergy1 twice daily (compared to maltodextrin as placebo) was previously shown to result in a lower energy intake (reduced by 6%) and reduced hunger feelings. Synergy1 significantly increased plasma GLP-1 and peptide YY (PYY) concentrations, two peptides secreted in the lower part of the gastrointestinal tract, and involved in the signaling pathway of satiety to the brain².

Still further, a study conducted with oligofructose supplementation (Orafti[®]P95) at a higher dosage (3x7 g/day) in overweight or obese healthy adults for a period of 12 weeks resulted in lower energy intake and body weight loss (around 1 kg, mainly fat mass loss). This study also showed effects on blood levels of appetite-regulation hormones: lower postprandial ghrelin and higher PYY responses in the subjects consuming oligofructose³.

Energy intake: a conclusive finding

The "obesogenic" environment we are living in, characterized by easily available, high-palatable foods, is probably one of the main causal factors of the spiraling obesity levels, as it results in a long-term imbalance between energy intake and energy expenditure. "Looking at the totality of human studies, it appears clear that energy intake is a key parameter that is consistently modified by Orafti[®]Synergy1 intake, both in healthy, overweight and obese volunteers, thus linking Synergy1 to healthy weight managing diets," summarizes Anke Sentko.

² Cani PD, Lecourt E, Dewulf EM, Sohet FM, Pachikian BD, Naslain D, De Backer F, Neyrinck AM & Delzenne NM (2009) Gut microbiota fermentation of prebiotics increases satietogenic and incretin gut peptide production with consequences for appetite sensation and glucose response after a meal. *American Journal of Clinical Nutrition* 90: 1236-1243.

³ Parnell JA & Reimer RA (2009) Weight loss during oligofructose supplementation is associated with decreased ghrelin and increased PYY in overweight and obese adults. *American Journal of Clinical Nutrition* 89: 1751-1759.

Orafti®Synergy1 is an oligofructose-enriched inulin and an acknowledged prebiotic. Its carefully selected chain-length distribution allows a steady fermentation throughout extended parts of the large intestine, presumably including the proximal and more distal parts. It has beneficial effects on maintaining a healthy composition of gut microbiota, and on decreasing energy intake and supporting energy balance.

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The BENEO-Institute is an organisation which brings together BENEO's expertise from Nutrition Science, Nutrition Communication and Regulatory Affairs teams. It acts as an advisory body for customers and partners reaching from ingredient approval, physiological effects and nutritional composition to communication and labelling. The key nutritional topics that form the basis of the **BENEO-Institute's** work include weight management, digestive health, bone health, physical and mental performance, the effects of a low glycaemic diet in the context of healthy eating and disease prevention, as well as dental health.

The **BENEO-Institute** facilitates access to the latest scientific research and knowledge throughout all nutritional and regulatory topics related to BENEO ingredients. It provides BENEO customers and partners with substantiated guidance for some of the most critical questions in the food industry. BENEO is a division of the Südzucker Group, employs almost 900 people and has production units in Belgium, Chile, Germany and Italy.

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