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Inulin plus resistant starch could be super-prebiotic

By Stephen Daniells, 29-Jun-2010

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Combining fructooligosaccharides with resistant starch could produce gut health benefits beyond the mere sum of the parts, suggests a new study from Spain.

Scientists from the University of Granada report that findings from their rat study indicated that the combination of the ingredients not only boosted levels of lactobacilli and bifidobacteria in the animals' intestine, but also improved intestinal function.

The combination of [fructooligosaccharides](#) (Beneo-95, Beneo-Orafti) and [resistant starch](#) (Fibersol-2, ADM) resulted in a synergistic effect in the gut of rats with colitis, according to findings published in *Clinical Nutrition*.

"Functional foods based on the combination of two different dietary fibers, with different rate of fermentability along the large intestine, may result in a synergistic effect, and thus, in a more evident prebiotic effect that may confer a greater health benefit to the host," wrote the researchers, led by Julio Gálvez.

Definitions

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).

The most extensive research to date is with the inulin-type fructans, non-digestible carbohydrates that reach the colon intact and are hydrolysed by specific 'positive' members of the colon microflora.

The reported health benefits of [prebiotics](#) relate to improving bones health, reducing the risk of colorectal cancer, boosting immunity, and enhancing satiety and aiding weight management.

Study details

Galvez and his co-workers investigated the effects of fructooligosaccharides (FOS) and resistant starch in healthy rats and rats with reduced intestinal function and therefore an altered immune response.

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All animals consumed the same diet but were divided into four groups. The first group received only drinking water, but the drinking water of the other three groups was supplemented with either FOS (2 grams per rat per day), resistant starch (2 grams per rat per day), or a combination of both (2 grams per rat per day, 62.5 per cent resistant starch, 37.5 per cent FOS).

The researchers report that healthy rats experienced increases in lactobacilli and bifidobacteria in both the cecum and colon regions of the intestine. Animals receiving resistant starch only experienced increases in bifidobacteria, while animals receiving FOS experienced increases in both sets of bacteria.

In the animals with colitis, Galvez and his co-workers noted that the combination of the fibers produced an upregulation of certain genes that are linked to improved intestinal barrier function.

"The beneficial effects observed with this combination were confirmed in the model of rat colitis, since it was able to exert intestinal anti-inflammatory effect, associated with an increase of protective bacteria and up-regulation of epithelial defense mechanisms," stated the researchers.

If future studies support the apparent benefits, it could see the combination ingredient enhancing the prebiotic market.

Source: *Clinical Nutrition*

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"The combination of fructooligosaccharides and resistant starch shows prebiotic additive effects in rats"

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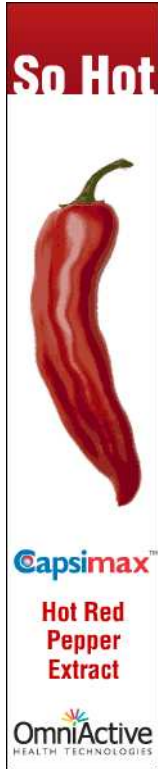
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