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Dose-Effect of a 6-week treatment with PEP2DIA® on sucrose tolerance in Goto-Kakizaki (GK) rats

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Abstract

The study was designed to evaluate the dose-effect of PEP2DIA□, a patented milk protein hydrolysate on glycemic control of type 2 diabetic Goto-Kakizaki (GK) rats treated for 6 weeks from weaning. The 6 week-treatment with PEP2DIA□ (63mg/kg, 88.6mg/kg and 126mg/kg) did not decrease fasting plasma glucose of GK rats, but improved sucrose tolerance with the best effect at the dose of 63mg/kg. Insulin response to sucrose was lower than control after PEP2DIA□ treatment at all the doses tested with the strongest decrease with 63mg/kg of PEP2DIA. This decrease in insulin response seems to be at least in part the consequence of an improvement of the insulin resistance of the GK rats. At the lowest dose tested (63mg/kg), FAS and SREBP-1c gene expressions were significantly decreased in retroperitoneal adipose tissue of GK rats, suggesting that PEP2DIA□ inhibited lipogenesis. PEP2DIA□ treatment induced strong increases in GLP-1 plasma level at all the doses tested but the difference reached significance only with 63 and 126mg/kg of PEP2DIA□. This effect was not the consequence of an inhibition of DPP-4. An inhibition of alpha-glucosidase in duodenum but not in jejunum was observed after the 6-weektreatment with PEP2DIA□, maybe due to a too short time after compound administration for organ sampling. Moreover, in retroperitoneal adipose tissue but not in liver, PEP2DIA□ at the lowest dose tested (63mg/kg), significantly decreased gene expression of both SREBP-1c and FAS, suggesting a beneficial effect on triglyceride accumulation in adipose tissue

Biography:

Audrey BOULIER joined INGREDIA SA in 2012 after graduating from AgroParisTech, Leading French engineering Institute of Science and Food Industry Master's degree. Currently working as Scientific and Innovative Manager for Bioactive, she manages the bioactive and nutrition scientific programs. In addition to innovative manager responsibilities, Mrs Boulier works in connections with Universities, Hospitals and Scientific Institutes in Europe. Before working for INGREDIA SA, Mrs Boulier was graduated from AgroParisTech, Leading French engineering Institute of Science and Food Industry; with a speciality on Biology Sciences and technology, Nutrition and Human food.

Speaker Publications:

1. With Pep2Dia', type-2 diabetes prevention becomes a reality
2. How does micellar casein PRODIET® Fluid allows to answer seniors' nutritional needs?

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