

The effect of dairy fat and inulin on fasting induced adipose factor (FIAF) blood concentrations

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Project manager: Arne Astrup
Institution: University of Copenhagen, Department of Nutrition, Exercise and Sports
Collaborators: Grith Mortensen, Aarhus University, Department of Food Science
Karsten Kristiansen, University of Copenhagen, Department of Biology
Hanne C. Bertram, Aarhus University, Department of Food Science
Liisa Lähteenmäki, Aarhus University, MAPP – Centre for Research on Customer Relations in the Food Sector
Website: www.fiaf.dk

Aim and Description:

Recent studies have indicated that milk and milk products, apart from serving as important nutrients, may regulate energy uptake and expenditure. One suggestion is that milk contains components, which may diminish uptake of lipids from the intestine, reduce uptake into fat cells, and/or increase lipid oxidation. In preliminary experiments, we have provided evidence for a novel mechanism by which milk may regulate body weight by showing the presence of components in milk that enhance the expression of the so-called fasting-induced adipose factor (FIAF; also named Angptl4). Increased levels of FIAF in circulation have been shown to inhibit lipoprotein lipase (LPL) and thereby reduce lipid uptake in target organs. FIAF was identified as a factor secreted from adipose tissue, but it is also produced in the liver and the intestinal mucosa. The gut microbiota has been shown to inhibit expression and secretion of FIAF leading to enhanced accumulation of fat in adipose tissue. Thus, the main purpose of the project is to identify the component(s) in milk leading to enhanced expression of FIAF and to elucidate the mechanisms by which FIAF-inducing milk component(s) (abbreviated FIAF-IMC) may regulate body weight and energy homeostasis, using animal and human intervention studies.