Caroline Montelius, J Diabetes Metab 2014, 5:10
http://dx.doi.org/10.4172/2155-6156.S1.026

OMICS Group Conferences
Accelerating Scientific Discovery

5th World Congress on
Diabetes & Metabolism
November 03-05, 2014 Embassy Suites Las Vegas, USA

Satiety-promoting spinach thylakoids promote weight-loss and decrease risk factors for metabolic diseases

Caroline Montelius
Lund University, Sweden

Current diet and exercise regimes to promote bodyweight loss are not enough. The global obesity epidemic continues to increase, and with overweight and obesity many diseases, as diabetes, follow. To strengthen the inherent satiety signals might be one way to succeed with any weight-loss program. Chloroplasts thylakoids, extracted from green leaves, have such satiety-promoting effects. This occurs through retardation of fat digestion by interaction of thylakoids with lipid droplets and with lipase/co-lipase [Albertsson PA et al, Biochem J 2007; Emek SC et al, Prep Biochem Biotechnol 2010; Köhnke R et al, Livestock Science 2010]. Another mechanism is a retarded nutrient uptake over the intestinal wall [Montelius C et al, Br J Nutr 2011]. This results in decreased circulating levels of ghrelin and elevated levels of CCK [Köhnke R et al, Scand J Gastroenterol 2009; Montelius C et al, Clin Nutr 2013]. Furthermore, thylakoids prevent postprandial hypoglycaemia and cause decreased subjective ratings of hunger in humans [Stenblom EL et al, Appetite 2013]. In long-term animal studies thylakoids decrease bodyweight gain, food intake and body-fat mass [Emek SC et al, Prep Biochem Biotechnol 2010; Köhnke R et al, Phytother Res 2009, Montelius C et al, J Nutr Sci 2013]. In human long-term studies, thylakoids decrease metabolic risk factors as blood cholesterol, fasting blood-glucose and insulin, as well as decrease body weight, body-fat mass and waist/hip circumferences (unpublished data). Thylakoids added to food in adjunct to lifestyle intervention may therefore be helpful in enabling overweight subjects to lose weight and improve metabolic parameters.

Biography

Caroline Montelius is a PhD-student in the Appetite Regulation Unit at the Medical Faculty at Lund University, Sweden, and will defend her thesis in February 2015. Caroline has been studying the effect of thylakoids, extracted from chloroplast membranes in green leaves, since the beginning of 2009. The use of thylakoids as satiety-strengthening agents was first discovered by her supervisor Prof Charlotte Erlanson-Albertsson in 2003.

caroline.montelius@med.lu.se