

AUMC announces a publication in “Gut” on the Mode of Action of the commensal *A. soehngeni* (*E. hallii*) and its beneficial impact on glucose metabolism

Amsterdam – An extensive program of preclinical and clinical investigations in cardio-metabolic diseases including both type 1 and type 2 diabetes is ongoing at the academic research group of prof. Max Nieuwdorp at the Amsterdam University Medical Centre (AUMC), the Netherlands. Main research topic is the understanding and ability to influence the impact of gut microorganism on health and disease. In this respect AUMC is closely working with Caelus Health, which develops food supplements and pharmaceutical products based on gut microbiota for the prevention and early treatment of cardio-metabolic diseases.

A recently completed clinical study at AUMC Amsterdam with other investigators from universities in Wageningen, Copenhagen, Gothenburg, Cleveland and Helsinki resulted in the discovery of the Mode of Action (MoA) by which *Anaerobutyricum soehngeni* (previously known as *Eubacterium hallii*) is able to improve glycemic control in individuals who are at risk of developing or are suffering from early signs of type 2 diabetes. This has now been published in the leading British Medical Journal (BMJ) “Gut” by Koopen et al. #. Follow this link: [Publication in Gut](#)

The randomized controlled clinical trial demonstrated that a single local administration of cells of *A. soehngeni* in the small intestine led to a significantly increased production of serum GLP-1 and resulted in improved glycemic control. In addition, transcriptional analysis of biopsies revealed the way *A. soehngeni* communicates with the host and further analyses provided relevant insight in the regulation of glucose metabolism and improvement of pancreatic beta-cell function.

Following the successful completion of a series of Fecal Microbiota Transplant (FMT) studies, various individual microorganisms including *A. soehngeni* (*E. hallii*) were identified that may impact the metabolism in the small intestine. Subsequent mice trials and a human proof-of-concept dose finding study showed the efficacy of *A. soehngeni* in improving glucose metabolism, providing the need to focus on the mechanistic aspects of its interaction with specific cells and tissues in the gastrointestinal tract.

The PI of the latest study, dr Elena Rampanelli (AUMC) stated: *“This is a breakthrough in our understanding of the mechanisms by which next generation therapeutic microbes interacts with the human host and shows that *A. soehngeni* can improve metabolic health by stimulating intestinal GLP-1 production.”*

Prof Willem M de Vos who together with Prof Max Nieuwdorp co-founded Caelus Health added: *“We now take the insight in the host-microbe dialogue to the next level and conclude that a single dose of live *A. soehngeni* has not only a local but also a systemic impact that leads to improved metabolic health.”*

In addition, Luc Sterkman, MD, CEO of Caelus commented: *“This publication is very valuable as it reflects an increased understanding of the positive impact of A. soehngeni cells on the physiology in the gut and enhances our ability to develop meaningful products in the area of cardio-metabolic diseases.”*

AUMC, the Amsterdam University Medical Center (AUMC), location AMC, is one of the foremost research institutions in the Netherlands, as well as one of its largest hospitals. Over 7000 people work at AMC to provide integrated patient care, fundamental and clinical scientific research, and teaching. The AMC complex houses among others the university hospital and the faculty of medicine of UvA as well as the Emma Children’s Hospital and the Netherlands Institute for Neuroscience. A number of biotech companies (some of which are AMC spin-offs) are also located on the premises. This concentration of expertise makes the centre a breeding ground for fruitful scientific collaboration.

Caelus Health is an Amsterdam-based biotech company. Caelus is dedicated to the commercialisation of functional food and pharmaceutical products for the prevention and early treatment of cardio-metabolic diseases. Based on the strong correlation between the intestinal microbiome and health, the company is developing an entirely new class of microbiota-based therapeutics for the reduction of insulin resistance and prevention of Type 2 Diabetes Mellitus (T2DM) in people with metabolic syndrome (MetS). In addition, the company has built an extensive range of patents based on the gut microbiome and fecal Microbiota Transplant (FMT) -studies In Type 1 Diabetes, cancer cachexia and liver disorders.

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Duodenal Anaerobutyricum soehngeni infusion stimulates GLP-1 production, ameliorates glycemic control and beneficially shapes the duodenal transcriptome in metabolic syndrome subjects; a randomized double-blind placebo-controlled cross-over study.

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