

METABOLIC TYPE 2
PREBIOTIC DIET IMPROVED
BUTYRATE colonic UNHEALTHY
HEALTH *in vitro* bacteria BACTERIA
fibres

BUTCOINS

Concepts for enhanced butyrate production to improve colonic health and insulin sensitivity¹



AARHUS UNIVERSITY

FERMENTATION BUTYRATE
human SCFA
BALANCED low intake enhance
COLONIC ANIMAL
concept habit syndrome
in vivo FAT
GLUCOSE HOMEOSTASIS
community insulin sensitivity

¹The ButColns project is a collaboration between the academic partners, Aarhus University, Dept. of Animal Science, Aarhus University Hospital, Department of Gastroenterology and Hepatology, Aarhus University Hospital, Department of Endocrinology and Metabolism and University of California, Davis and the industrial partners DuPont Industrial Bioscience, DuPont Nutrition and Health, KMC Kartoffelmelscentralen and Lantrmännen.

Butyrate is a short-chain fatty acid deriving from the fermentation of dietary fibre by the colonic microflora. Butyrate is believed to play a particularly important role in maintaining colonic health and function and has been linked to metabolic health parameters such as insulin sensitivity and glucose homeostasis. Western dietary habits, with a high intake of fat and refined carbohydrates and low intake of dietary fibre, limit the activity of the gut microbiome and the production of short-chain fatty acids and butyrate in the gut.

In the ButColns project, funded by the Danish Strategic Research Council (now Innovation Fund Denmark), we have studied various concepts to enhance butyrate production in the large intestine, in order to improve colonic and metabolic health. Emphasis has been on two types of dietary fibre (prebiotics), arabinoxylan and resistant starch, which have been studied both in vitro and in vivo (animal models and human subjects with the metabolic syndrome). A synbiotic concept combining a prebiotic diet with delivery of a butyrate producing bacteria has also been studied both in vitro and in vivo. At the seminar we will present the main outcomes of all these studies conducted in the ButColns project.

TARGET AUDIENCE

Food companies including managers, product developers, technical and academic staff. Clinical dietitians and other health professionals.

VENUE

Meeting Room 8, Agro Food Park 13, 8200 Aarhus N

TIME

Wednesday 2 March 2016.
9:00-17:00

PRICE

400 kr.

LANGUAGE

If non-Danish speaking participants sign up, the seminar will be in English

REGISTRATION

www.dca.au.dk

9:00-9:30	Registration and coffee
9:30-9:45	Welcome, background and introduction to the ButColns project Knud Erik Bach Knudsen, Aarhus University, Dept. of Animal Science
9:45-10:00	Arabinoxylan and resistant starch – two dietary fibre components with the potential to influence butyrate production Helle Nygaard Lærke, Aarhus University, Dept. of Animal Science
10:00-10:30	Butyrogenic effects of pre- and probiotics in vitro Stig Purup, Aarhus University, Dept. of Animal Science
10:30-11:00	Gut formation of butyrate and influence on gene expression parameters related to gut health – animal studies Tina Skau Nielsen, Aarhus University, Dept. of Animal Science
11:00-11:20	Coffee break
11:20-11:50	Absorption of metabolites derived from dietary carbohydrates insulin secretion, liver extraction and release of insulin and carbohydrate-derived metabolites to peripheral circulation Peter Kappel Theil, Aarhus University, Dept. of Animal Science
11:50-12:20	Beyond short-chain fatty acids – what complex arabinoxylan and resistant starch rich diets also deliver to the body Mette Skou Hedemann, Aarhus University, Dept. of Animal Science
12:20-13:20	Lunch
13:20-13:50	Human subjects with the metabolic syndrome – why the target group for studying gut and metabolic health? Søren Gregersen, Aarhus University Hospital, Dept. of Endocrinology and Metabolism
13:50-14:30	Impact of arabinoxylan and resistant starch on the gut microbiome and gut health parameters in human subjects with metabolic syndrome Stine Hald, Aarhus University Hospital, Dept. of Gastroenterology and Hepatology
14:30-15:00	Coffee break
15:00-15:40	Impact of microbial metabolites on the peripheral tissue and insulin sensitivity in human subjects with metabolic syndrome Anne Grethe Schioldan, Aarhus University Hospital, Dept. of Endocrinology and Metabolism
15:40-16:00	General discussion
16:00-17:00	Meet the researchers - a chance for matchmaking under relaxed conditions

