Association among bile acids, the human gut microbiome and metabolic diseases

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Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

Citation (APA):
Petersen, A. Ø., Myers, P. N., & Nielsen, H. B. (2017). *Association among bile acids, the human gut microbiome and metabolic diseases*. Abstract from Bile Acid Receptors as Signal Integrators in Liver and Metabolism 2017, Monterey, United States.

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Correlations between the gut microbiome, bile acids (BAs) and health have largely been inferred via in vitro and mouse studies. However, human bile acids and metabolism differ considerable from mice. Here we present a cross-sectional study of 278 Danish individuals that investigate the relationship between faecal gut microbiome compositions, systemic BA concentrations and a variety of human health measurements relating to metabolic health, liver health and the immune system. A statistical approach to microbial bile acid transformation have identified a list of MetaGenomic Species (MGS) with overlapping functional potential, that commonly associated with bacterial BA metabolism. Preliminary studies of the associations between the gut microbiome, BAs and human health have suggested microbial BA conversion as a contributing factor to several metabolic diseases.