

Mini Symposium on Lipidomics

November 3th 2010: 13.00-15.00

University of Copenhagen

Faculty of Life Sciences

Thorvaldsensvej 40, 1871 Frederiksberg C

6th floor, room R645 in the “high building”



Organizers: The Danish Society of Analytical Chemistry in collaboration with Waters Corporation.

A Lipidomic Analysis of Mice Transgenically Modified to Increase Expression of Glucose Transporter 1

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Type II diabetes is characterized by insulin resistance and in the heart this results in a failure to recruit Glucose Transporter 4 (GluT4) to the cell membrane during periods of high blood glucose. As a result, metabolism of the diabetic heart has an increased reliance of beta-oxidation of fatty acids. This has been linked to the increased lipid load which may result in lipotoxicity in the diabetic heart. Furthermore, the ATP generated by fatty acid oxidation requires more oxygen compared with that derived from the oxidation of glucose, increasing the risk of ischaemic heart disease.

In this study we have examined a mouse model where Glucose Transporter 1 has been increased in expression selectively in the heart to examine heart function under conditions of glucose stimulation. Mice (3 month) were scarified and the heart tissue rapidly dissected and stored at -80C. A chloroform/methanol extraction was performed and the organic layer analyzed using a Xevo TQ to profile butylated carnitine derivatives. The carnitine fraction robustly discriminated the transgenic and wild type animals, with the transgenic animals having increased very short chain carnitines (C2 and C4) and decreased palmitoyl-carnitine, consistent with reduced fatty acid oxidation of exogenous fat and increased lipid synthesis. **This presentation will describe the UPLC/Synapt G2 mass spectrometry based lipidomic analysis performed to identify changes in intact lipids between the transgenic and wild type mice.**

Discussion in plenum on Lipidomics and metabolomics (Her audience will have the opportunity to present their challenges – and get feedback)

The meeting is free of charge, no registration required!

Coffee and cake will be served to ensure a good spirit