

Dear All,

We are pleased to invite you to participate in ‘**Epigenetics & Metabolism**’ international live web seminar series. Everyone is welcome.

Speaker:



Prof. Ferdinand von Meyenn

Assistant Professor

Nutrition and Metabolic Epigenetics

ETH Zurich, Switzerland

Topic: “Obesity induced long-term remodelling of the adipocyte epigenome”

When: Thursday, 26. January 2023, 16:00-17:00 CET.

Where: On Zoom (Meeting ID: 848 3517 6193; Passcode: 69610258). Free registration Link: https://us02web.zoom.us/webinar/register/WN_MFPkxXFPR-6-fW_4deiOQA

Summary: Chronic nutritional challenges can alter the function and capacity of adipose tissue (AT) to adapt to new challenges, contributing to AT dysfunction and pathophysiological conditions which can persist long-term. We study how high fat diet (HFD), can elicit a long-term nutritional memory, including cellular, molecular, and epigenetic changes in the epididymal AT (epiAT), and how this is maintained even after weight loss. We fed mice a HFD for 12 or 24 weeks and then switched them back to a chow diet (CD) for 8 weeks. Body weight and glucose homeostasis did rapidly normalize in the 12 week HFD challenged cohort, but single nuclei sequencing (snRNAseq), physiological phenotyping, and epigenetic characterization of the epiAT showed that several features of high fat diet feeding did not reverse. We found that an expansion of macrophage and progenitor cells (APCs), a strong decrease in the proportion of adipocytes, and the appearance of new APCs clusters upon HFD. The cellular obese phenotypes were largely resolved by weight loss in the 12 week HFD, while 24 week HFD result in permanent epiAT remodeling. Molecular analysis indicate that these changes are also imprinted in the epigenome of the adipocytes and cannot be reversed completely. We expect that human obesity closely resembles our long-term HFD and understanding the cellular and molecular mechanisms of epiAT plasticity will help to mitigate obesity-related diseases and increase the efficacy of the treatments.

We are looking forward to see you at our web seminar.

Best wishes,

Indra & Carlos

Hosts: Dr. Indrabahadur Singh (German Cancer Research Center) & Dr. Carlos Sebastian (University of Barcelona)

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