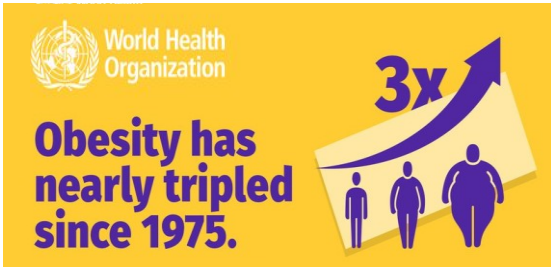


Role of histone deacetylase 3 and downstream players in physiopathology of adipose tissue

Lara Coppi¹, Carolina Peri¹, Raffaella Longo¹, Nicolas Guex², Tiziana Caputo², Béatrice Desvergne², Maurizio Crestani¹

¹DiSFeB – Università degli Studi di Milano, ²University of Lausanne

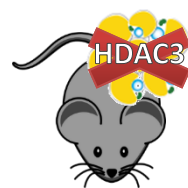
1) BACKGROUND



Futile cycle of FA metabolism which supports thermogenesis

2) AIM AND EXPERIMENTAL PLAN

To capture *early changes* induced by *diet* + *HDAC3* role



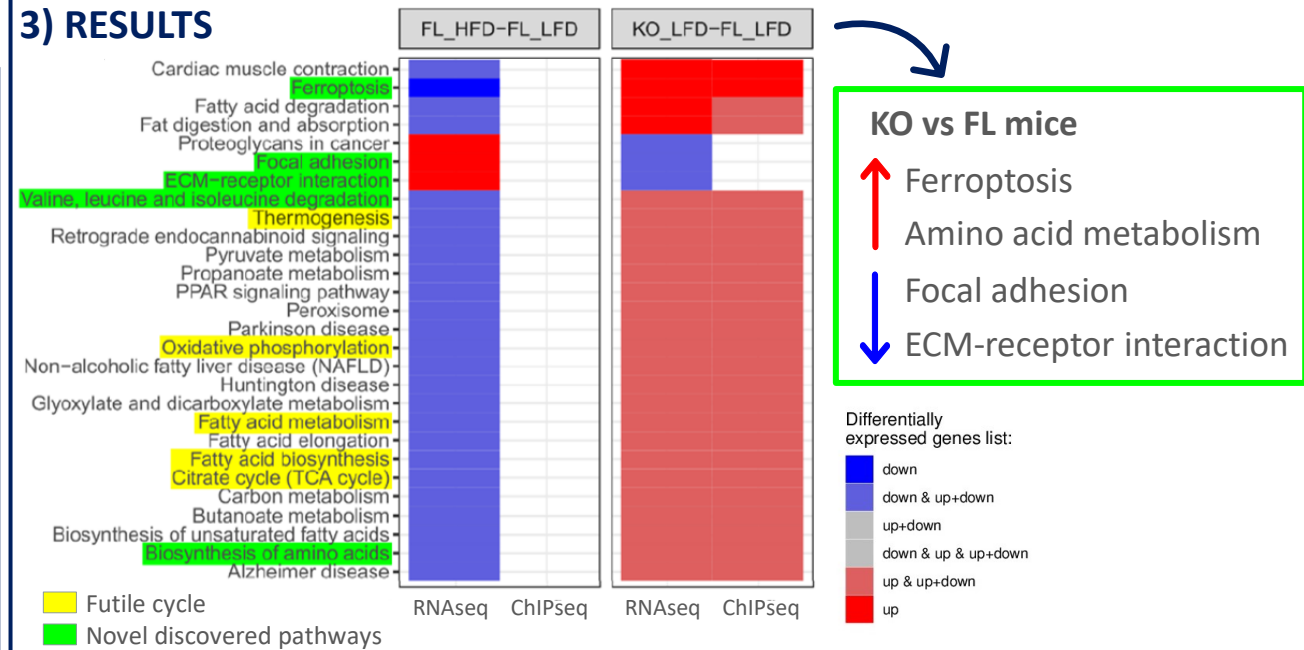
8-weeks old mice
+
4 weeks of LFD/HFD
=
12-weeks old mice

RNAseq
ChIPseq (H3K27ac)

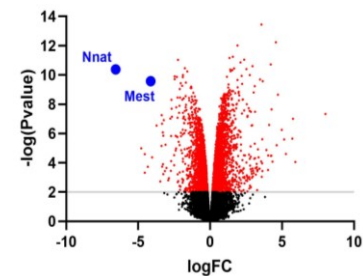
4) CONCLUSIONS

- **HDAC3 KO** → WAT browning
- Browning linked to futile cycle of branched chain **amino acid metabolism, ferroptosis** and **cytoskeleton** remodeling
- **Nnat** and **Mest** are critical genes controlling the **phenotypic switch of WAT**

3) RESULTS



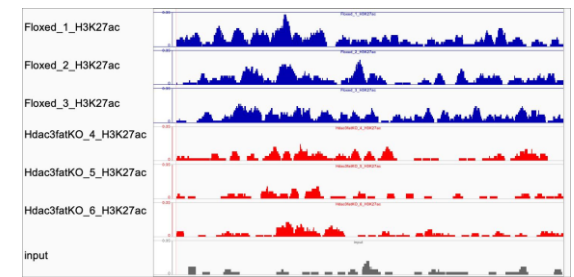
Volcano plot KO vs. FL LFD



Nnat → regulator of browning and catabolic genes

Mest → associated with adipocyte triglyceride accumulation

ChIPseq KO vs. FL LFD



Hypoacetylated region around 39 Kb **upstream the TSS of Nnat** in KO LFD vs. FL LFD