Functions of leptin in tuberculosis and diabetes: multi-omics studies across species

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Propositions accompanying the dissertation

Functions of leptin in tuberculosis and diabetes: multi-omics studies across species

1. Metabolic changes caused by tuberculosis are highly conserved across species (Chapter 2).

2. The effects of leptin knockdown on the metabolomes and transcriptomes in adult mice and larval zebrafish are surprisingly similar (Chapter 4).

3. A mutation of leptin in zebrafish results in a higher level of lipids in the larval stage as well as visceral fat accumulation in adult zebrafish (Chapter 3 and 4).

4. Leptin deficiency leads to increased susceptibility towards mycobacterial infection (Chapter 5).

5. Particular metabolite changes in the host predict the onset of tuberculosis (Adapted from Weiner 3rd et al., Nature Communications, 2018).

6. Multi-omics can provide researchers insights into the primary cause of disease (genetic, environmental, or developmental) (Adapted from Hasin et al., Genome Biology, 2017).

7. Weight loss and wasting in cachexia patients are usually accompanied by metabolic reprogramming (Adapted from Koopman et al., Front. Physiol. 2014).

8. Since zebrafish larvae don't need feeding they provide particular advantages to investigate the functions of the anti-hunger hormone leptin.

9. Our life journey is a game of problem solving.

10. The secret of staying young is to keep learning.

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Leiden, 7th December 2021