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Comprehensive metabolomics of the experimental opisthorchiasis

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Stellingen behorend bij het proefschrift getiteld:
**“Comprehensive metabolomics of the experimental
opisthorchiasis”**

1. Infection with *Opisthorchis felinus* and onset of egg production trigger a strong metabolic response affecting the energy, amino acid, and lipid metabolism; which can be interpreted as a metabolic stress (this thesis).
2. Already at the acute stage, severe opisthorchiasis can cause pathological changes in the bile ducts leading to an increased excretion of the bile acids in urine of the infected animals (this thesis).
3. The main features of the host metabolic adaptation to chronic opisthorchiasis are the increased concentration of the circulating serum fatty acids and depletion of the amino acids pool in liver, spleen, and jejunum (this thesis).
4. During chronic opisthorchiasis, the host develops “metabolically mediated immunosuppressive status” (this thesis).
5. Animal studies will remain essential in medical research; Animal models enable experimental designs that control for multiple confounding factors and provide the possibility to study systemic effects.
6. Integration of metabolomic data with clinical chemistry laboratory tests, demographic data, and genomic traits, can broaden the data analysis repertoire and increase value of the data.
7. Metabolomic studies which often lean towards a simple two-groups design, could adopt more sophisticated study designs from the field of epidemiology.
8. Low sensitivity is the most reproached disadvantage of Nuclear Magnetic Spectroscopy, however using sample concentration and chemical derivatization, nanomolar levels of concentrations can be reached.
9. “Data do not speak for themselves”, but need to be judged within the context of the procedures of data collection, analysis, and presentation (W. Forstmeier, *Biol Rev Camb Philos Soc.*, 2017)
10. Be present in the moment; yesterday is history, tomorrow is a mystery, but today is a gift. That is why it's called the present (Oogway, 2008)
11. The world is changing, women will be hidden no more... (Janelle Monáe, 2017)