Lecture of

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Novel approaches for the treatment of the fox tapeworm Echinococcus multilocularis

Alveolar echinococcosis (AE) is caused by the zoonotic parasite *Echinococcus multilocularis* – also known as the small fox tapeworm. Though it is a relatively rare disease, AE is the highest ranking foodborne parasitic zoonosis in Europe, and it is lethal if not treated. Current drug treatment of AE relies on benzimidazoles, which have only limited potential to bring about a cure from infection (not acting parasitically), and they require lifelong treatment at high doses. This underlines the urgency in developing alternative treatment options against AE.

We have established *in vitro* culture techniques for the disease-causing stage and stem cells of the multicellular *E. multilocularis*, as well as an *in vitro* screening platform for the identification of novel drugs against the parasite, which can then be followed-up in established mouse models of AE. In our *whole-organism based drug screening* we assess activities of mostly repurposed compounds *in vitro* and in the mouse model, investigate their mode of action, as well as structure activity relationships. In several of these studies we have identified the energy metabolism of the parasite to be a promising target for future treatment. Based on this we have developed *target-based approaches* for future treatment of AE. In the seminar, the models and examples of our whole-organism and target-based drug development approaches will be presented.

Wednesday, November 03, 2021
17:15 - 18:15
Online – Seminar
Host: Prof. A. Odermatt
Molecular & Systems Toxicology