

## *Galba truncatula* and Helminths, the Importance of Microbes

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Liver fluke (*Fasciola hepatica*) and rumen fluke (*Calicophoron daubneyi*) are endemic in the UK. Liver fluke is estimated to cost the UK agriculture industry approximately £300 million per year, particularly due to lamb deaths and liver condemnations. Rumen fluke is fatal in severe infections and only one flukicide, oxclozanide, has been shown to effectively reduce rumen fluke burdens. The desirable potency of triclabendazole has stimulated its overuse for liver fluke control resulting in widespread anthelmintic resistance. Therefore, there is an urgent need to develop new control strategies for fasciolosis.

The microbiome is defined as the combined genetic material of the microorganisms inhabiting a particular environment. A host's microbiome is known to play a key role in many aspects of health and disease, including susceptibility to parasitic infection. While most microbiome studies have focused on the mammalian hosts of helminths, their intermediate hosts should also be considered. The interaction between the snail microbiome and life stages of parasitic trematodes residing in their intermediate hosts has not been investigated to any large extent.

In this project we have shown that the snail host regulates its microbiota differently than the environmental microbiome and that the microbiome of infected snails differs from uninfected snails. These data indicate a decrease/increase in abundance of certain bacteria under a series of conditions. This novel study is a starting point for further study of the microbiota of the intermediate hosts of helminths.