

## ***Trypanosoma carassii*, a model for whole host interaction studies.**

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*Trypanosoma carassii* is a freshwater fish parasite that infects a variety of cyprinids (carp family). The prevalence approaches 100%, both in the wild and in fish farms. Here, the procedures for long term culture and transgenesis of *T. carassii* are described as the first step in developing a model to study host-pathogen interaction in zebrafish. We show that *T. carassii* can be genetically modified using approaches developed in *T. brucei* and these have been used to make *T. carassii* cell lines expressing mNeonGreen and Ruby fluorescent protein transgenes driven by either RNA pol II or RNA pol I. The cell lines are currently being used to infect transparent zebrafish larva to allow the tracking of all trypanosomes infecting a host. The response of the fish immune system will be visualised during infections of zebrafish lines with marked immune cell lineages. Together, these experiments will answer long standing questions about tissue tropism, sites of proliferation and extravascularisation, and how the host immune system responds in different tissues.