

**The dynamics of neutrophils in zebrafish (*Danio rerio*) during infection
with the parasite *Ichthyophthirius multifiliis***

Louise von G Jørgensen

In this study a transgenic line of zebrafish (Tg(MPO:GFP)i114) with GFP-tagged neutrophils was infected with the protozoan parasite *I. multifiliis*. The neutrophil influx in the caudal fin was quantified and interactions between the parasites and the neutrophils were investigated. Twenty-four hours post infection (pi) the neutrophil count had gone up with an average of 3.4 fold. Forty-eight h pi the neutrophil count had dropped 12% and 72 h pi it had dropped to 21% compared to 24 h pi. At 72 h pi the neutrophil count was 2.7 times higher than prior to infection. A few dead parasites (3%) were observed, which were disintegrated and covered internally and externally with neutrophils. Live parasites, both surrounded by neutrophils and with no neutrophils in the near vicinity, were found during the infection. A neutrophil cell was found to directly interact with a parasite with pseudopod formation projecting towards the pathogen but in response to that, the parasite ingested the cell. The zebrafish immune system was unable to control the infection.