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Evaluation of immunological genes at gill of *Ictalurus punctatus* immunized with live theronts of *Ichthyophthirius multifiliis*

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In aquaculture systems, fish are commonly infected by parasite *Ichthyophthirius multifiliis* (Ich) that can result in heavy economic losses for aquaculture. There is limited information on innate and adaptive immune gene expression in the gill of channel catfish, *Ictalurus punctatus* immunized with Ich theronts. The objective of this study is to evaluate differential expression of innate and adaptive immune genes, including immune cell receptor, immunoglobulin, recombination-activating gene (RAG), cytokine and inflammatory protein in gill from channel catfish at different times after immunization with live theronts of Ich. In the adaptive response, the T cell receptor TCR- α and TCR- β showed a similar pattern of expression with a peak of up-regulation at D20. The immunoglobulin IgM exhibited an up-regulation at all time point while the IgD showed a down-regulation at 4h. The peak of up-regulation of both Igs was observed at D10. Expression of RAG1 and RAG2 exhibited a rapid increase with a peak of up-regulation at D10 and 4h respectively. The gene expression of innate system such as cytokine (IL1- β a, IL1- β b, IFN- γ and TNF- α) exhibited a peak of up-regulation at D1 post immunization. Inflammatory protein lysozyme-G showed high up-regulation at D20 but both genes COX-2 and transferin did not showed a significant up-regulation. This study demonstrated genes expression at the gill of channel catfish involved in innate and adaptive response against Ich following live theront vaccination.

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Biography

Gabriel S. A. Moreira is a graduate in Biological Sciences from the Centro Universitário de Ensino Octavio Bastos, Brazil by arrangements in 2008 and a BA Degree in 2009. In 2013 completed the Master USP in the campus of Animal Science and Food Engineering program at Animal Science, Brazil. Currently he is a PhD student at the same university where he is developing the study on the expression of genes in *Pseudoplatystoma corruscans*, *Pseudoplatystoma reticulatum*, and its hybrid immunized with *Ichthyophthirius multifiliis*. Has experience in parasitology, molecular biology and immunology

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