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## Effect of cypermethrin and deltamethrin on transcriptional levels of detoxification proteins in *Caligus rogercresseyi*

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**Introduction:** *Caligus rogercresseyi* severely affects the salmon farming industry in Southern Chile, producing direct and indirect economic losses due to secondary infections and their respective pharmacological treatments. Currently, decreased efficiencies have been reported for the drugs used to treat *C. rogercresseyi* infections. The aim of this study was to determine the effect of the antiparasitic drugs used in Chile, cypermethrin and deltamethrin, on transcriptional levels of some detoxification proteins in adult *Caligus rogercresseyi*.

**Material and Methods:** Quantitative RT-PCR was used to determine mRNA expression levels of the detoxification proteins CYP3A, FMO and GST in adult *C. rogercresseyi* treated *in vitro* with deltamethrin and cypermethrin.

**Results:** Adult *C. rogercresseyi* specimens treated with both antiparasitic showed a slight decrease or no change in CYP3A mRNA expression levels. Also for some treatments, a decrease in the expression levels of GST was observed. Finally, the FMO levels tend to decrease in all specimens treated, particularly at the highest concentrations used with cypermethrin.

**Discussion:** These results show that the cypermethrin and deltamethrin treatments reduced the transcriptional expression levels of CYP3A, FMO and GST in *Caligus rogercresseyi*, which it does not seem to be related to drug resistance evidenced by *C. rogercresseyi* to these antiparasitic. The knowledge about the mechanism involved in antiparasitic resistance observed in *C. rogercresseyi* will allow us to develop effective alternative treatments against this parasite.

### Biography

Carcamo Juan G is currently working as Professor in Interdisciplinary Center for Aquaculture Research (INCAR), Universidad Austral de Chile, Chile.

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