

{rokbox title=|Structure and conserved domains of the *Physella acuta* proteins code by the sequences identified :: Image:

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Patricia Caballero, Marina Prieto-Amador and José-Luis Martínez-Guitarte, 2023. [Gene expression response of the non-target gastropod *Physella acuta* to Fenoxycarb, a juvenile hormone analog pesticide.](#)

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Abstract:Pesticides are an environmental problem. The search for new pest control methods has focused on compounds with low or no toxic effects in non-target organisms. Analogs of the juvenile hormone (JH) interfere endocrine system of arthropods. However, the lack of effect on non-target species requires confirmation. This article analyzes the impact of Fenoxycarb, an analog of JH, on *Physella acuta*, an aquatic gastropod. For 1 week, animals were exposed to 0.01, 1, and 100 µg/L and the RNA was isolated to analyze the gene expression by retrotranscription and Real-Time PCR. Forty genes related to the endocrine system, the DNA repair mechanisms, the detoxification mechanisms, oxidative stress, the stress response, the nervous system, hypoxia, energy metabolism, the immune system, and apoptosis were analyzed. Three of the genes, AchE, HSP17.9, and ApA, showed responses to the presence of Fenoxycarb at 1 µg/L, with no statistically significant responses in the rest of the genes and at the remaining concentrations. From the results, it can be concluded that Fenoxycarb shows a weak response at the molecular level in *P. acuta* in the tested time and concentrations. However, Aplysianin-A, a gene related to immunity, was altered so the long-term effect could be relevant. Therefore, additional research is required to confirm the safety of Fenoxycarb in non-arthropod species in the long term.

Keywords:Cell biology,Environmental sciences,Molecular biology.