

EFFECT OF URANIUM CHRONIC EXPOSURE ON THE MOULT IN CRAYFISH

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Throughout any ecological risk assessment, one can try to establish a link between pollutant in the ecosystem and adverse biological effects. A number of methodological approaches are based on the development of the use of biomarkers such as the enzyme activity measurements (biotransformation enzymes, antioxidant enzymes) and/or bioaccumulation markers (metal in target-organs). These data allow obtaining an early-warning signal of exposure and potential involved effects and help risk management. However, the effects at higher hierarchical levels (organism or population) are not frequently considered because they tend to occur after longer exposure periods. On the basis of previous results obtained to quantify uranium biokinetics in the crayfish *Orconectes limosus* and to understand the influence of the exposure pathway, a chronic exposure experiment was performed for 100 days at an environmentally relevant uranium concentration in water (low level concentration ranging from ?? to 100 nM). The main effect studied was focused on the moult; moulted animals being the most sensitive to pollutants. Effects on the moult process were assessed in terms of occurrence, delay, and success. Preliminary results that indicated no induction of the moult by U exposure and better survival rate to uranium exposure must be confirmed. Simultaneously, both enzymatic biomarkers of effect quantifying the oxidative status (catalase, superoxide dismutase and glutathione peroxidases) and markers of exposure (uranium distribution at organs and cellular levels and MET observations) were studied. Results obtained from complementary experiments on the uranium fluxes all over moult states were used to discuss the link between biomarkers responses and observed effects on the moult.