

## **ULTRASTRUCTURAL OBSERVATIONS OF TARGET-ORGANS OF THE CRAYFISH *ORCONECTES LIMOSUS* EXPOSED TO METALLIC POLLUTANTS: APPLICATION TO URANIUM**

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Using electron microscopy associated with energy dispersive X-ray microanalysis (EDAX-TEM), ultrastructure and elemental analysis in subcellular microlocalization can bring understanding to both metabolic cycle of a metallic pollutant and its potential effects at the subcellular scale. The approach consists in comparing both structures and microlocalization in various tissues/organs ultrathin sections (70-140 nm thickness) obtained from control organisms (*ie* not exposed to a given metal) and exposed organisms. However, the observations of ultrastructural effects of metal exposure involved robust comparison to reference subcellular and cellular organization. Consequently, preliminary developments presented in this poster have been performed from the non-contaminated freshwater crayfish *Orconectes limosus* (adult at intermoult state). Studies of ultrastructural images and elemental composition of subcellular mineral deposits were carried out on target organs of uranium accumulation such as the digestive gland, the gills, the intestine and the antennal gland, organs participating in the detoxification, primary accumulation and depuration mechanisms. Observations indicated cell-specific architecture (identification of main organelles, frequency, length of cells), the range of natural variation of the cell organisation between individuals and identification of cellular types. Information will allow then to focus on these identified specific organization after metallic exposure. These ultrastructural observations performed on reference organisms constitute necessarily a first set of data for the cellular metallic effects analysis.