

MO166 Effect of temperature on nickel biodynamics in *Daphnia magna* as determined with stable isotope experiment C.S. Pereira, GhEnToxLab; C. Janssen, Ghent University / Laboratory of Environmental Toxicology and Aquatic Ecology GhEnToxLab unit; R. Blust, Systemic Physiological and Ecotoxicological Research group University of Antwerp; K. De Schamphelaere, Ghent University (UGent) / Laboratory for Environmental Toxicology and Aquatic Ecology GhEnToxLab unit. Temperature has a strong influence on the physiological state of ectothermic organisms like *Daphnia magna*. The physiological state of the organism can influence metal uptake, detoxification, sequestration and elimination and consequently metal toxicity. The information available about metal uptake rates in *Daphnia* is limited to studies with only one clone and organisms which were not acclimated prior to testing. An acclimation period is necessary in order to achieve the same performance across the different temperature treatments. The objective of the present study was to assess the effect of temperature on nickel uptake in four *D. magna* clones. The uptake of nickel was studied in four *Daphnia magna* clones at 15, 20 and 25°C. Four *D. magna* clones from the same natural population were acclimated during two generations to the temperature treatments. Nickel exposure concentrations were based on the 21 d 50% effect concentration on reproduction of the four *D. magna* clones at 15°C and 20°C, i.e. 50 and 70 µg Ni.L⁻¹ respectively plus a control treatment. To determine uptake rates organisms five day old were exposed to the stable isotope ⁶²Ni during 72h and samples were collected at the time points 0, 8, 24, 48 and 72h. To avoid uptake via food organism were not fed during this period. Results showed that nickel body concentrations varied among the four *D. magna* clones. After 48h of exposure nickel concentrations in daphnia were lower at 25°C than at 15 and 20°C. A steady state was generally reached within 24h for all clones at 25°C in contrast with 15°C, which generally only reached a steady state after 48h of exposure.