examine the effects of low, environmentally relevant nAg levels on *Xenopus laevis* tadpoles during metamorphosis. Throughout the exposure deviations in developmental progression were monitored, and nAg body burden was determined after 28 days. Furthermore, gene expression changes after 2 days were examined with microarray and QPCR technology. The morphometrics were not significantly altered due to nAg exposure at any concentration in contrast to earlier studies with the native bullfrog species. However, several genes responded strongly and could be considered for use as biomarkers of low level nAg exposure. These results show differential species sensitivities, and emphasize the importance of a comprehensive evaluation of the sublethal effects on various aquatic species.

T35 Zinc oxide and silver nanoparticles influence the antioxidative status in a higher aquatic plant, Spirodela punctata.

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Here we present evidence of free radical activity and resultant anti-oxidative defence in Spirodela plants after exposure to 0.01-1000 mg/L of ZnO and Ag nanoparticles (NPs) over 96-h and 14-d. The quantification of reactive nitrogen and reactive oxygen species (RNS/ROS) revealed elevated (α=0.05) free radical activity only in samples exposed to 0.01 and 0.1 mg/L of ZnO and Ag, respectively, relative to the control over 96-h. The 14-d exposures showed most significant increase of RNS/ROS, and were nanoparticle concentration dependent whilst 100% mortality occurred at the highest Ag NPs exposure. No significant H2O2 increase over 96-h was observed, however, increases of H2O2 production under certain nanoparticle concentrations were recorded during the 14-d exposure. The biochemical anti-oxidative status of the plant specimens were investigated using quantitative analysis of total antioxidant capacity, peroxidase and activity of catalase and superoxide dismutase. The anti-oxidative defence mechanisms were non-uniform relative to exposure period and NPs concentration variations; however, evidence of NPs influence was observed. The characterization of NPs using TEM, DLS and XRD, and also exposure water chemistry analysis yielded data that was useful in accounting for the resultant biochemical response. The study highlights the influence of NPs physicochemical properties and environmental factors on nanoecotoxicity.

T36 Assessing risk for TiO_2 phototoxicity under natural sunlight conditions

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