
Assessment of Pt (IV) kinetics in an ecotoxicological aquatic test with *Dunaliella salina*

Ana Romero-Freire¹, Antonio Cobelo-García¹

¹Marine Biogeochemistry Research Group, Instituto de Investigaciones Mariñas (CSIC), Vigo, Spain

e-mail: anaromero@iim.csic.es; acobelo@iim.csic.es

A metal spike added to natural waters may take times ranging from hours to months to equilibrate with the natural pool of both organic and inorganic ligands [1], implying that its accumulation and toxicity in spiked solutions will not necessarily mimic real speciation conditions. This situation is especially critical for elements like Pt, which is well-known to display extremely slow reaction kinetics [2]. The aim of this work is, therefore, to discuss if Pt speciation spiked to model solutions reflects the natural speciation after few days of equilibration and according to this, how different equilibration periods may affect the observed platinum toxicity. To this aim, toxicity test using the marine green microalgae *Dunaliella salina* was selected. To detect potential variation of the spiked Pt speciation with time, media was measured by UV-vis spectroscopy to detect speciation changes and total dissolved platinum was determined by ICP-MS. Toxicity was studied from Pt spiked aged solutions and from freshly spiked. Preliminary results show that kinetic of Pt had differences between freshly and aged Pt, and results will be discussed in terms of how equilibration of the spiked Pt may influence toxic assessments.

References

- [1] T.M. Florence et al., *The Science of the Total Environment* 125, 1-13 (1986).
[2] F. Reith et al., *Earth-Science Reviews* 131, 1-21 (2014).

Acknowledgements

The authors would like to acknowledge support by the Spanish Ministry of Science, Innovation and Universities within the program Juan de la Cierva-Formación (FJCI-2016-28622).