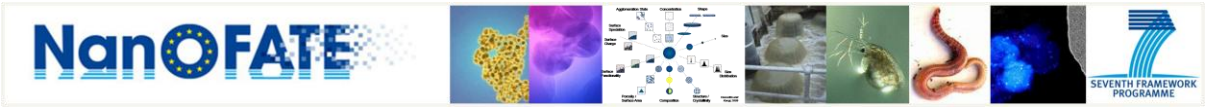

NanoFATE Deliverable 3.1

Standard operation procedures for ecotoxicity testing: Collating a set of standard operating procedures detailing best practice exposure conditions, test media, biological endpoints, for assessing toxic effects of ENPs

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Best practice collation - Summary

The aim of this deliverable D3.1 is to define the best approaches for testing the toxicity of engineered nanoparticles (ENPs) to aquatic (fresh water or marine) and terrestrial invertebrates and unicellular plants.

Already existing standardized or well established protocols for toxicity testing of new and existing chemicals were taken as a starting point. These protocols were adapted to make them suitable for testing ENPs, taking into account the different properties that characterise and distinguish nanoparticles from micro-particle compounds and 'regular' chemicals.

Tests considered included both soil and water organisms. Soil tests included isopods, Collembola and earthworms, the aquatic organisms *Daphnia magna*, green algae, cyanobacteria, diatoms and aquatic microbial communities, and the marine mussel *Mytilus galloprovincialis*. Since the work in NanoFATE concentrates on metal-based ENPs, in particular ZnO and Ag nanoparticles, adaptations focused mainly on these types of ENPs. Adaptations of existing protocols were related principally to adjusting properties of test media to sustain stability of ENP suspensions, changes in media renewal frequencies to support continuous exposure, and adjustment of soil and food spiking methodologies to ensure homogenous distribution of the ENPs.

The resulting procedures are applied in subsequent NanoFATE studies.