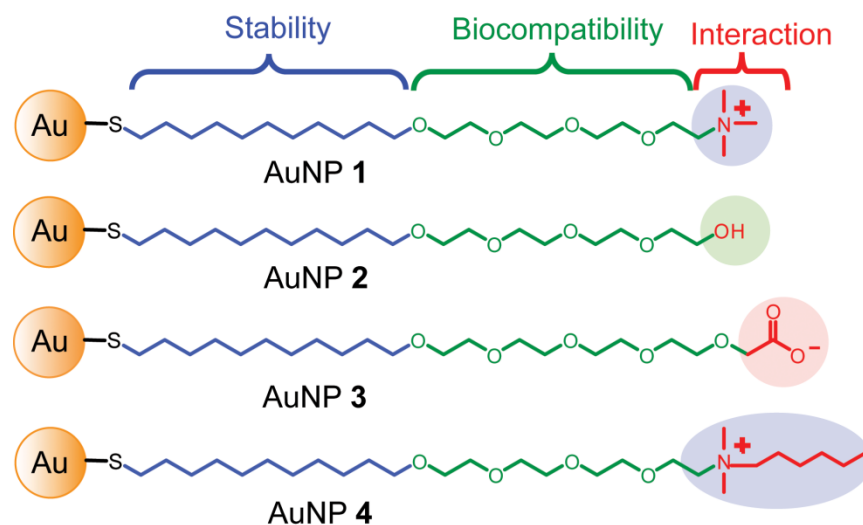


# Nanoparticle Surface Properties Dictate Uptake and Toxicity in Fish

Very little is currently understood regarding the role of surface properties in determining in vivo behavior of nanomaterials. In studies using Medaka fish, we have found that hydrophilic NPs 1-3 are found predominantly in the gills and intestines and are cleared from the fish over time. Hydrophobic particle 4, however, is rapidly taken up and distributed throughout the fish with toxic consequences. These studies show that surface properties are key determinants of the environmental impact of nanomaterials.



2 nm core diameter (~8 nm overall) nanoparticles

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