Nanomaterial safety for microbially-colonized hosts: Microbiota-mediated physisorption interactions and particle-specific toxicity

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The first tissues of plants and animals that encounter environmental pollutants are colonized by microbes. Collectively, these microbes affect the toxicity of environmental pollutants like nanomaterials. Through a combination of zebrafish larvae experiments and computational tehniques, this dissertation unravels and quantifies the effects of interactions between microbes and nanomaterials, and between hosts and microbiota, on nanomaterial toxicity. Ultimately, this can serve as a stepping stone for including microbiota-mediated interactions into mechanistic pathways for nanomaterial safety assessment.

Nanomaterial safety for microbially-colonized hosts

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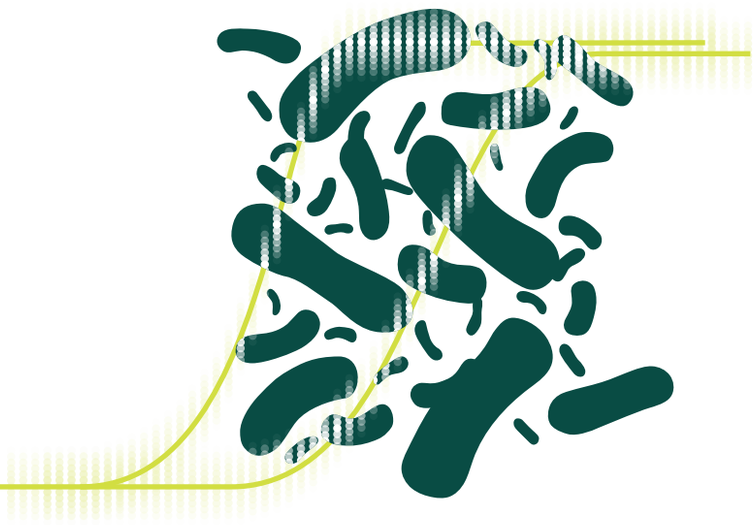

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