

Title of Research:

13_S02-01

Study on the cellular and environmental effect related with solubility of industrial nanomaterials

Principal Investigator:

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Summary of Research:

A nano-object is defined as an object with one or more external dimensions being nanoscale (1-100 nm). Nano-objects have possible impacts on cellular and environmental effects and are of significant concern. However, the accumulation of toxicity evaluations under the strictly controlled experiments teaches us the essential factor that is concern to solubility of nano-object.

To confirm the solubility contribute the toxicity of nano-object, we focused on the following three issues.

1. Characterization of solubility by nano-object in the solvents.
2. Evaluation of nano-object that may cause environmental effects using microbes.
3. Studies on solubility of nano-object in the cells.

Timeline: From November 2013

Topics:

Publications:

The effect of titanium dioxide (TiO₂) nanoparticles to microbes under Ultra Violet (UV) irradiation.
Ikuho Yamada, Kazuki Nomura, Hitoshi Iwahashi, and Masanori Horie

The 10th International Symposium on Advanced Environmental monitoring and modeling
August 11-13, 2014 Doubletree by Hilton Berkeley Marina Berkeley, California, USA

Solubility of nano-particles.



Research on the safety of new chemical substances including nanomaterials
Masamitsu Fujita, Ikuho Yamada, Hitoshi Iwahashi
The 10th International Symposium on Advanced Environmental monitoring and modeling
August 11-13, 2014 Doubletree by Hilton Berkeley Marina Berkeley, California, USA

Standard and essential protocols before starting in vitro toxicity tests for nano-objects
Hitoshi Iwahashi, Haruhisa Kato, Shigehisa Endoh, and Masanori Horie
The 10th International Symposium on Advanced Environmental monitoring and modeling
August 11-13, 2014 Doubletree by Hilton Berkeley Marina Berkeley, California, USA

Essential protocols before starting in vitro toxicity tests for nano-objects
Hitoshi Iwahashi, Haruhisa Kato, Shigehisa Endoh, and Masanori Horie
The 20th Meeting of THE JAPANESE SOCIETY OF ENVIRONMENTAL TOXICOLOGY
2014 Sept. 10th-11th Toyama Japan

The effect of titanium dioxide (TiO₂) nanoparticles to microbes under Ultra Violet (UV) irradiation.
Ikuho Yamada, Kazuki Nomura, Hitoshi Iwahashi, and Masanori Horie.
Chemoshere (under communication)