<Poster 발표 1>

The Potential Toxicity of Organic Wastes on the Biomarker, Heat Shock Protein70 Extracted from Earthworm, *Eisenia fetida*

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Heat shock protein70 (hsp) has been used as biomarker in response to exposure to complex mixtures including contaminants. The heat shock response is characterized by the induction of a set of stress proteins, namely, heat shock proteins (HSPs). A number of environmental pollutants has been found to induce HSP synthesis in many organisms or cell tissues.

In this study, the potential toxicities of five type wastes were evaluated using one of environmental biomarkers, Hsp70. The hsp70 expression began to increase after treatments and showed high peak at 6 hr after treatment, followed by zero level at 12 hr. The quantity of hsp70 expressed by the exposure to municipal sewage sludge, industrial sewage sludge, leather processing sludge, alcohol fermentation processing sludge, and pig manure compost was 3.3-, 4.4-, 4.7-, 3.0-, and 1.9-fold higher compared with that of distilled water as control, respectively.

The results indicate that this rapid and simple test measuring induced hsp70 might be used for assessing long-term effects of wastes introduced into soil.

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