SYSTEMS BIOLOGY APPROACHES IN NANOSAFETY RESEARCH

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Abstract

Transcriptomics, or gene expression profiling, could aid in the prediction of mechanisms of toxicity. Indeed, the use of global “omics” technologies coupled with computational approaches to determine statistically significant perturbations of genes or pathways represents an attractive method to identity the potential hazards and mechanisms of action of engineered nanomaterials. In this lecture, examples of gene expression profiling studies using cDNA microarray or next-generation RNA sequencing methodologies are presented to illustrate the predictive potential of this approach.

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