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Nanotoxicity: from in vivo and in vitro models to health risks / editors, Saura C. Sahu and Daniel Casciano

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Abstrak

Nanomaterials, substances smaller than 100 nanometers in size, have been added in recent years to an increasing numbers of consumer products used in day-to-day life; in food packaging, medical devices, pharmaceuticals, cosmetics, odor-resistant textiles and household appliances. The extensive application of nanomaterials in a wide range of products for human use poses a potential for toxicity risk to human health and the environment. Such adverse effects of nanomaterials on human health have triggered the development of a new scientific discipline known as "nanotoxicity" - the study of the toxicity of nanomaterials. Nanotoxicity: From in vivo and in vitro Models to Health Risks provides up-to-date state-of-the-art information presented by recognized experts in this emerging new field in toxicology. It discusses the safety evaluation of nanomaterials in foods, drugs, medical devices, cosmetics and other regulated products and its use in risk analysis for potential regulatory use. Topics covered include: biomarkers for nanotoxicity assessment nanotoxicity assessment by gene expression analysis in vivo and in vitro models for nanotoxicity testing mechanisms of nanotoxicity pharmakokinetics of nanomaterials nanotoxicity of foods including food processing, food packaging and food safety nanotoxicity of drugs including drug development and drug delivery nanotoxicity of cosmetics and consumer products health and environmental impact of nanotoxicity safety evaluation of nanomaterials regulatory impact of nanomaterials.