Nanomaterial [Impacts on Cell Biology and Medicine /

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Monografía

The rapidly developing field of nanomaterials has expanded in many commercial areas. More recent studies have begun to provide a foundation for understanding how nanomaterials influence cells and how they also can serve as methodological tools for studies in medicine and cell biology, include research into stem cells. Recent investigations have shown affects of nanomaterials on specific subcellular structures, such as the actin-based brush border network in cells with an increasing emphasis on the barrier function of epithelial tissues. While other studies have shown involvement of nanoparticles in specific cytoplasmic signal transduction events such as the rise in intracellular free calcium, a signaling event known to regulate many changes in cell architecture and function. In parallel, nanomaterials are increasingly used in medicine for drug delivery, treatment of cancer, and an increasing number of new applications. This book investigates these areas and also includes new methods for assessment in cell biology and medicine

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Contenido: 1 Presence in, and release of, nanomaterials from consumer products -- 2 Nanoparticle aggregation -- 3 Influences of nanomaterials on the barrier function of epithelial cells -- 4 Engineered nanoparticles induced brush

border disruption in a human model of the intestinal epithelium -- 5 Nanoparticles: Cellular uptake and cytotoxicity. -6 Atomic force microscopy study of the interaction of DNA and nanoparticles -- 7 Intracellular signal modulation by nanomaterials -- 8 Nanomaterials: Impacts on cells and cell organelles -- 9 Design, synthesis, and functionalization of nanoparticles for therapeutic drug delivery -- 10 Preparation of nanoscale pulmonary drug delivery formulations by spray drying -- 11 Nanomedicine: The Promise and Challenges in Cancer Chemotherapy -- 12 Transgenerational effects of NMs -- 13 Stem cells and nanomaterials -- Index

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