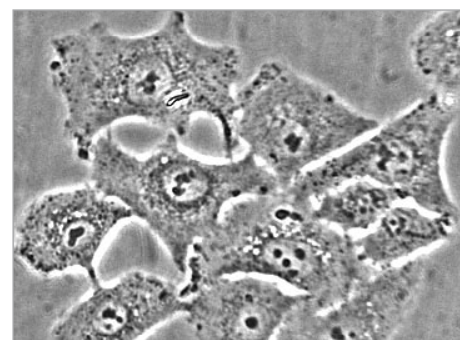


Center for Applied Nanotechnology

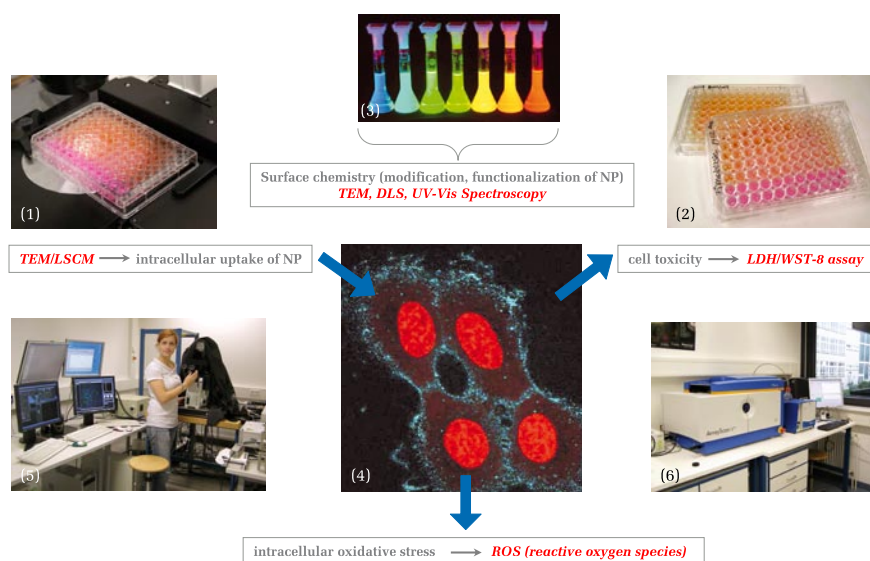
Medical Applications

Nanoparticle Toxicity Assessment

CAN GmbH is developing various standardized *in vitro* toxicity assays (1,2) for nanoparticles. A key feature is the systematic variation of nanoparticle size, shape and surface properties (3) and determination of the respective influence on interactions with human tissue models (4). CAN GmbH has therefore established test facilities with a variety of cell lines from the skin, respiratory system and bowel. The experimental setup also includes advanced confocal microscopy techniques (5) as well as automated screening (6) and electron microscopy imaging.



CAN cell culture: Lung epithelial cells



CAN expertise	
Basic	<i>Toxicity Parameter</i> <ul style="list-style-type: none"> • Cell Survival • Cell Stress
Process	<i>Phys. Process Screening</i> <ul style="list-style-type: none"> • Apoptosis vs. Necrosis • Cytokine Profiles
Cellular	<i>Subcellular Localization</i> <ul style="list-style-type: none"> • NP Uptake • Kinetic Tracking • Stability

Combinatory levels of CANtox modules

This research area also includes the generation of a database to allow the correlation of biological features (e.g. toxicity and cellular uptake) with physico-chemical particle properties. Ultimately, the combination of broad synthetic expertise and the generated biological data will lead to a straightforward development, such as innovative nanoparticle-based biomedical markers for molecular targeting.

CAN GmbH offers companies and research institutions contract research and development services in the area of nanotechnology and participates in national and international research programs. The focus of activities is on the utilization of new findings made in chemical nanotechnology and analysis, particularly in the areas of consumables, special polymers and health care. The main areas of expertise include the production of numerous nanoparticulate materials, the encapsulation of active substances, the development of toxicity assays as well as the development of nanoparticle-based biological and medical markers.

CAN GmbH

Grindelallee 117
20146 Hamburg, Germany
www.can-hamburg.de

Contact

Dr. Thomas Frahm
email: tf@can-hamburg.de
T +49.40.428 38 - 71 94

Dr. Andrea Salcher
email: as@can-hamburg.de
T +49.40.428 38 - 20 90