



TAL 797 – Seminário

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TOXICOLOGY OF NANOMATERIALS

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In recent years, we have observed great development of nanotechnology and growth in the application of nanomaterials in products used on a large scale worldwide. This exposure of humans and the environment to nanoparticles makes it necessary to understand and measure the effects of these substances on health. Nanotechnology relates to manipulation and/or construction of materials, substances or devices on a nanometer scale. Nanomaterials are promising due to the unique characteristics conferred by their small size, such as high reactivity. The same properties that make nanomaterials attractive may also be responsible for damage to living organisms. Due to their small size, they may have greater permeability through the skin, mucous and cell membranes. Research were developed to evaluate the toxicological effects of nanoparticles and this is today the biggest challenge for nanotechnology. These involve *in vitro* and *in vivo* testing and there are many difficulties due to the complexity of these materials and their interactions with living beings and the environment, so that few testing protocols are documented. The evaluation of nanotoxicology is a multifactorial problem that involves characteristics of nanoparticles, their concentration, application and their transformations in the environment in which they are found. Therefore, industry, governments, researchers and regulatory agencies need to work together to ensure safe production and exposure, as well as medium and long-term studies on its effects.

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