

Molecular Toxicology of Nanomaterials

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ABSTRACT

The nanomaterials have their dimensions in the range of 1 to 100nm and their properties originate from their chemical nature, shape and size [1]. This definition was applied to encompass materials containing at least 1% of non-aggregated, aggregated or agglomerated submicron size particles [2]. The nanomaterials due to their atypical properties when compared to materials of larger scale, ended up drawing the attention of researchers to their applications in several research areas, such as biomedical applications [3]. The broad excitation profile, adjustable emission spectra of nanomaterials that can be used as quantum dots make them a promising tool for optical coding applications and medical diagnostics. But the same quantum size effects also increase the reactivity of nanomaterials in liquid media [4]. Gold, which is known to be an inert metal, is highly reactive in nanometric dimensions. This unusual reactivity of nanomaterials can generate toxic effects and make nanomaterials a potential threat to the environment and humans [5].

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