Abstract

In past years, nanoparticles have been studied as possible platform to be used in biomedicine. In order to establish the application potential of nanoparticles, its impact to biological systems have to be determined. Herein, several silicon-based nanoparticles of different origins were studied in respect of their influence on metabolic activity of human cells, namely osteoblast cell line SAOS-2 and monocytic cell line THP-1. The obtained results proposed that the impact of nanoparticles on cells is highly dependent on cultivation conditions in which nanoparticles are administered to cells. Furthermore, microscopy experiments were implemented in order to localize the particles within cells, where conventional microscopy limitations are evident.

Key words: *silicon nanoparticles, quantum dots, cell-particle interaction, cytotoxicity*