

Abstract

Nanoparticles are submicroscopic structures made from various materials which have a huge therapeutic potential. They represent a novel tool for tissue targeting and drug delivery. Many attempts have been made to develop therapeutics more compatible with the body and to enhance the efficacy of modern drugs. Unlike the commonly used drug delivery methods, encapsulated drug nowadays display a large advantage in a matter of reducing the side effects of traditional medicaments.

In the present thesis, advantages of nanoparticles utilisation are compared with their potential hazards, especially with their influence on the immune system. As toxicity differs according to the nanoparticles chemico-physical characteristics and the tissue in which NP may accumulate, convenient strategy has to be chosen in order to prevent any harmful effects. For this reason, precautions have to be considered and nanoparticles correctly modified. Furthermore, induction of particular response and its consequence has to be appropriately monitored. High attention has to be given to nanoparticle preparation to avoid contamination and danger for operators.

Key words

Nanoparticles, drug delivery, immunity, toxicity, theranostics