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Authors: S. Rajeshkumar, Poonam Naik

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REVIEW

Synthesis and biomedical applications of Cerium oxide nanoparticles – A Review

S Rajeshkumar and Poonam Naik

Nano-Therapy Lab, School of Bio-Sciences and Technology, VIT University, Vellore- 632014, TN, India

***Corresponding author Email: ssrajeshkumar@hotmail.com**

Highlights

- To synthesis the cerium oxide nanoparticles using different sources
- Biomedical applications of cerium oxide nanoparticles
- Applications of cerium oxide nanoparticles in toxicity studies

ABSTRACT

A cerium oxide nanoparticles (nanoceria) has a wide range of applications in different fields, especially biomedical division. As a matter of concern, it has a major impact on the human health and environment. The aim of this review is to address the different ways of synthesis of nanoceria using chemical and green synthesis methods and characterization and the applications of nanoceria for antioxidant, anticancer, antibacterial activities and toxicological studies including the most recent studies carried out *in vivo* and *in vitro* to study the problems. We have exclusively discussed on the toxicology of nanoceria exposed to the general public along with recent advances in the studies of antimicrobial, toxicity and anti-oxidant activity.

Keywords: cerium oxide nanoparticles; Synthesis; Antibacterial activity, Antioxidant activity; Toxicity

1. Introduction