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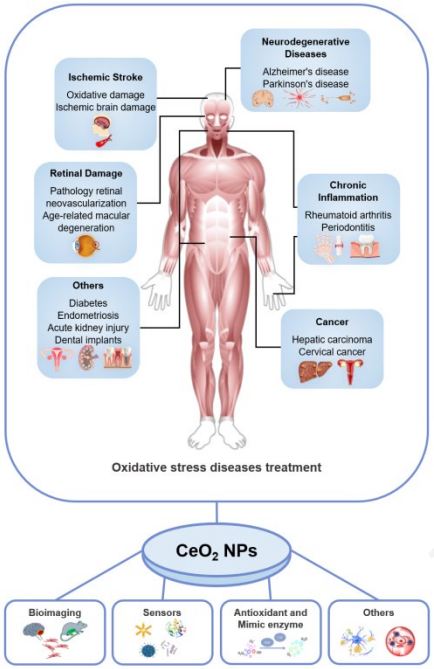
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Ceria nanoparticles: biomedical applications and toxicity

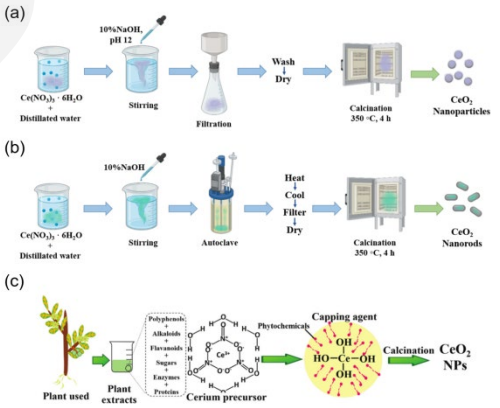
Key words: **Ceria nanoparticle; Synthetic method; Biomedical application; Oxidative stress; Toxicity**

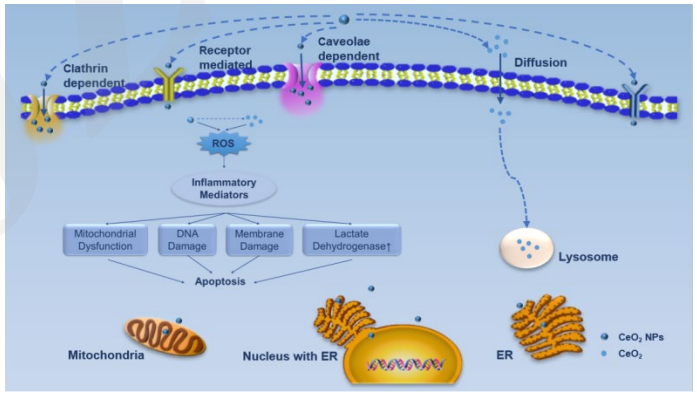
Research Summary

This review mainly focuses on both fundamental discoveries and exploratory progress in ceria nanoparticle (CeO_2 NP) research, and summarizes the research progress of CeO_2 NP in the following aspects:



- Synthesis methods
- Functions in biomedical fields
- Potential toxicity



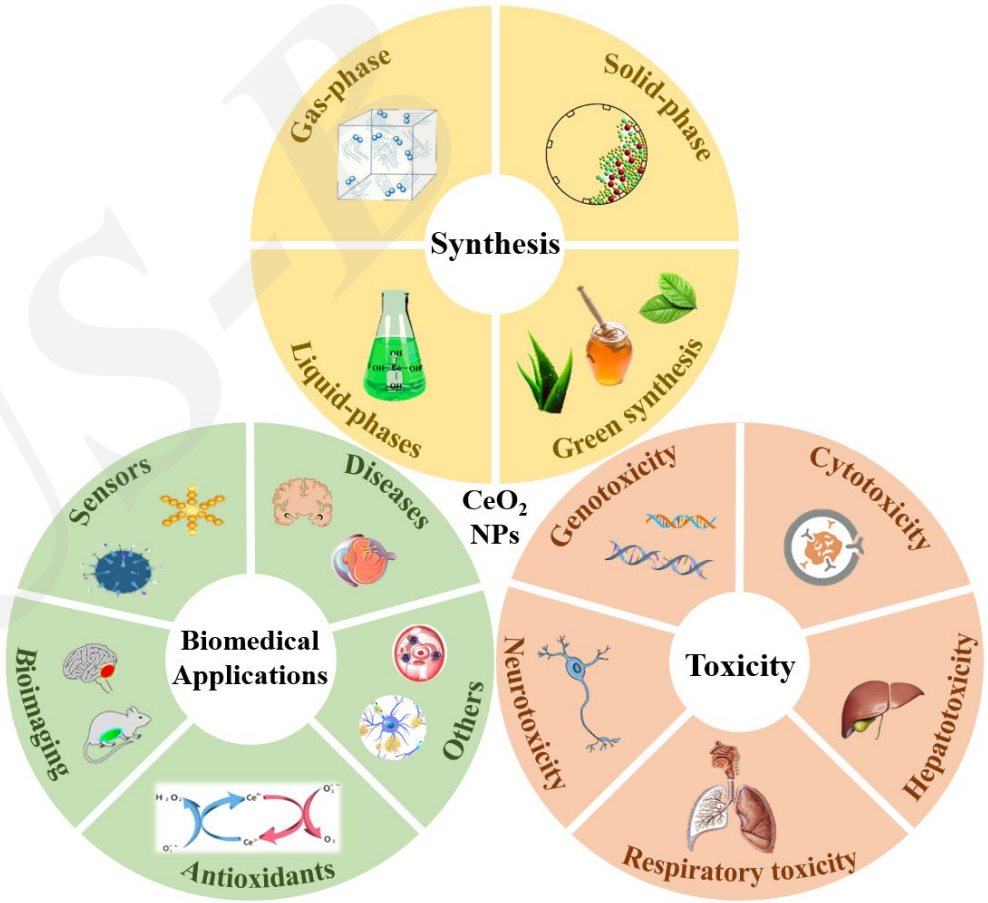


Innovation points

- **Introduction** of the synthesis methods of cerium oxide nanoparticle (CeO_2 NPs).

- **Summary** of the functions of CeO_2 NPs in biomedical fields, including their use as sensors, antioxidant mimics, etc.

- **Emphasis** of the toxicity of CeO_2 NPs, including cytotoxicity, genotoxicity, respiratory toxicity, neurotoxicity, and hepatotoxicity.



Innovation points

A series of comprehensive tables were generated to summarize the latest knowledge about CeO_2 NPs.

Table 1 | Synthesis of CeO_2 NPs

Table 2 | Applications of CeO_2 NPs in biomedicine

Table 3 | Examples of potential toxicity of CeO_2 NPs

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