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Recent Developments and Future Prospects of Gold Nanoparticles in Biomedicine and Diagnostics

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Abstract:
Nanoparticle technology is the fastest growing and shows significant future promise regarding its applications in the area of biomedicine and diagnostics. Gold nanoparticles (AuNPs) are relatively inert in the biological environment and have a number of physical properties that are suitable for several biomedical applications. Gold nanoparticles are the subject of intense studies due to the exceptional photo-optical properties combined with the biocompatibility and have proved to be a powerful tool in various nanomedical applications. The present review aims to summarize recent developments of AuNPs in biomedicine and diagnostics and discuss future prospects. Relevant theory and examples of the use of AuNPs in these applications have been cited and discussed to create a thorough understanding of the developments in this field. We further provided conclusions of present challenges and future perspectives of AuNPs for fundamental investigations and practical biomedical applications.
Keywords: Gold nanoparticles (AuNPs), Nanoparticle technology, biomedical applications.

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