

## عنوان مقاله:

Current perspective on theranostic gold nanoparticles: Synthesis and biomedical applications

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## خلاصه مقاله:

As one of the most well-known metal nanoparticles, gold nanoparticles (AuNPs) have attracted much attention for the biological applications. This great interest in AuNPs can be attributed to their outstanding physical and chemical properties, such as special optical and electrochemical characteristics, high X-ray attenuation ability, strong X-ray absorption, photothermal effect, stability and biocompatibility. In addition, due to the ease of synthesis and modification of the surface of AuNPs, it is possible to control their shape, size and surface characteristics. All these features suggest that AuNPs can be used for biosensing strategies, drug delivery, photothermal therapy, nanobrachytherapy, enhanced radiotherapy and CT imaging. In addition, they can be used as antibacterial and antifungal agents. This minireview focuses on the key principles, research achievements and new opportunities in the synthesis of AuNPs as well as their biological applications. In fact, the growing progress in the use of AuNPs for the diagnostic and therapeutic applications is described in this survey. Overall, a better understanding of the key aspects of the synthesis methodologies will lead to the development of new protocols that can provide ideas for more cost-effective and reliable approaches to the production of AuNPs.

## کلمات کلیدی:

AuNPs, Diagnosis, Synthesis, Therapy

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