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## **Emerging Trend in Gold Nanoparticle**

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Nanoparticles have extremely small size and high surface area hence their surfaces has been available for further modification with hydrophobic, hydrophilic, cationic, anionic or any neutral moieties to the surrounding environment so they have many application in biological sciences. Metal Nanoparticles attract strong interest both because they open up a new field in fundamental science and because of their potential technological applications. Gold Nanoparticles have a great application not only functionalities for specific drug delivery and cellular in bio sensing drugs but also in drug, gene and protein uptake scattering. Gold nanoparticles (Au NPs) have been brought to the forefront of cancer research in recent years because of their facile synthesis and surface modification, strongly enhanced and tunable optical properties as well as excellent biocompatibility feasible for clinic settings. Gold nanoparticles exhibit novel optical and catalytic properties, are nontoxic and biocompatible, and attract considerable interest in a range of applications, e.g. photonics, diagnostics, and therapeutics. The morphology (size and shape) of the nanoparticles and their surface/colloidal properties are very important in the various application