



GOLD NANOPARTICLES FOR BIOLOGICAL TARGET CONJUGATES

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Abstract

Nanotechnologies may have properties of self-assembly, stability, specificity, drug encapsulation and biocompatibility as a result of their material composition. Nano-particles are being actively developed for tumour imaging in vivo, bio-molecular profiling of cancer biomarkers, and targeted drug delivery. These particles are stable, environmentally benign, and their chemical properties can be easily tailored by chemically modifying their surfaces.

Conjugated with pharmacological agents and targeting molecules, organic nano-vectors are potent vehicles for drug delivery and selective imaging of different human cancers.

Fluorescent nano-particles can be linked to biomolecules to form sensitive long-lived probes that target and identify specific cellular compounds.

The preparation of biological target Au-NP probes is presented in this paper as a precursor for DNA – gold – nanoparticle conjugates.

Au – NP has been prepared by two methods:

- a chemical method (citrate reduction of H₂AuCl₄ gold precursor salt)
- a photochemical method (from H₂AuCl₄ · 3 H₂O solution) by lamp irradiation.

Specific analytical methods have been applied for nanoparticles characterisation (ICP-AES, UV-VIS, XRD, XRF).

Key words: gold nanoparticles, in vivo, nanotechnologies

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