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Gold Nanoparticles for Skin Drug Delivery System

Sakshi Arvind Thokal, Avinash S Jiddewar, Asst. Prof Dhiraj D. Mangam
Miss. Rajnadini Vinod Dahapute, Miss The Anushri Balaji Konde
NSPM College of Pharmacy Darwha, Yavatmal

Abstract: *Gold nanoparticles (Au NPS) are becoming an effective Nano carrier for targeted and controlled drug delivery through the skin. Their special properties-such as very small size, high surface area, adjustable chemistry, and good Biocompatibility – help them pass through the skin barrier quickly and keep drugs at the target area for a longer time.*

Au NPs can also be combined with different medicines, peptides, or ligands to improve how well they work and to reduce side effects. Their optical and heat- based properties also make them useful for both treatment and diagnosis in skin –related therapies.

This review explains how gold Nano particles are made, analyses, and modified, as well as how they penetrated the skin and their potential use in treating conditions like skin cancer, infections, and inflammatory diseases, although they have many advantages, challenges like toxicity, large- scale Production, and regulatory approval must be solved before they can be widely used.

Overall, gold Nanoparticles show promise as effective tools for future skin drug- delivery systems.

Keywords*:* Gold Nano particles (Au NPs), Skin drug delivery, Nano carriers, Biocompatibility, penetration enhancement Skin permeation, Characterization

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