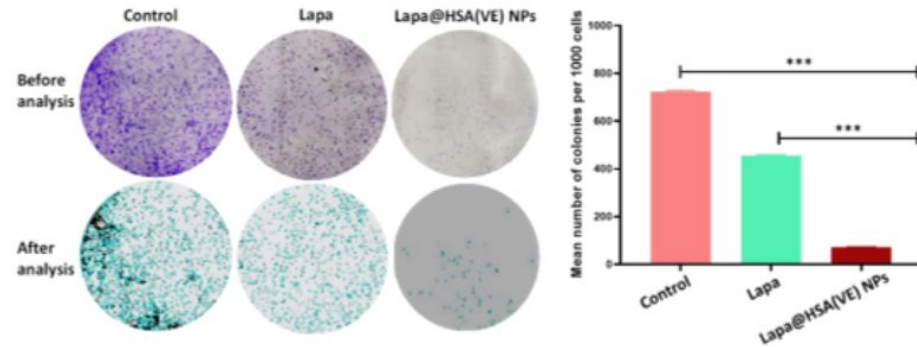


**PENDING****(IN202411000876)**

## Nanoparticle composition for lapatinib delivery in cancer and method of preparing the same



## NEED

Around 40% of targeted cancer therapies fail because drugs like lapatinib degrade before reaching tumors. Ineffective delivery systems waste over \$3B annually and worsen survival rates. A better method is urgently needed to safely carry drugs inside the body without loss.

## TECHNOLOGY OVERVIEW

This invention presents nanoparticles where human serum albumin (HSA) and vitamin E (VE) form a shell encapsulating lapatinib. The design achieves high drug loading (10.5%) and encapsulation efficiency (82.5%), ensuring better drug protection, controlled release, and deeper tumor penetration without disrupting standard medical workflows.

## TECHNOLOGY KEY FEATURES

HSA-VE covalent conjugate shell, 101.2 nm particle size, 10.5% drug loading, 82.5% encapsulation efficiency, biocompatible core, enhanced tumor uptake, protection against drug degradation, scalable synthesis, stable lyophilized form, suitable for multiple solid tumor therapies.

[Read more here](#)

## MARKET ANALYSIS

Global nanoparticle drug delivery market grows at 20.5% CAGR to \$228.5 billion by 2033 (source: Precedence Research, 2024). Indian nano-pharmaceuticals sector grows at 18.3% CAGR, driven by cancer burden and demand for safer therapies (source: IMARC Group, 2024).

## Target Industries

Nanoformulation R&D Labs, Targeted Therapy Manufacturers, Oncology-focused CROs, Nanomedicine developers, clinical trial organizations, cancer drug formulation specialists, customized oncology treatment developers.

## AT A GLANCE

- SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation and Infrastructure)

Technology is available for licensing/ co-development.

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