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DEPARTMENT OF
SCIENCE & TECHNOLOGY
सत्यमेव जयते

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TECHNOLOGY
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PENDING

(IN202311071310)
A drug delivery system for photodynamic therapy and method of preparing the same

NEED

Cancer treatment faces 30% therapy failure and 60% severe side effects because drugs lack targeted delivery. But what if a single carrier could deliver photosensitizer and chemotherapy together directly to tumors—reducing damage to healthy cells?

MARKET ANALYSIS

Indian cancer nanomedicine market CAGR: 15% (till 2028); Global photodynamic therapy market CAGR: 9.2% (till 2033); Demand driven by reduced systemic toxicity and enhanced targeting. [Sources: IMARC, GVR]

TECHNOLOGY OVERVIEW

A lipid-polymer hybrid nanocarrier co-encapsulates HPPH and Olaparib in a 1:2–1:10 ratio, using stearylamine and PVA. It enables controlled photodynamic and chemotherapeutic action in one platform, improving tumor selectivity and reducing systemic exposure in one solid formulation.

Target Industries

Target Industries: drug delivery platform developers, oncology nanocarrier researchers, PDT therapeutic kit integrators and/or cancer treatment device manufacturers, clinical formulation labs and/or academic-industrial pharma R&D centers.

TECHNOLOGY KEY FEATURES

Lipid-polymer hybrid; Dual payload (HPPH + Olaparib); Precise 1:2–1:10 ratio; Sonication-driven encapsulation; Biotin-PEG-PLGA targeting

AT A GLANCE

SDGs: 3 (Good Health & Well-being), 9 (Industry, Innovation & Infrastructure)

Read more here

Technology is available for licensing/ co-development.

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