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SCIENCE & TECHNOLOGY
सत्यमेव जयते

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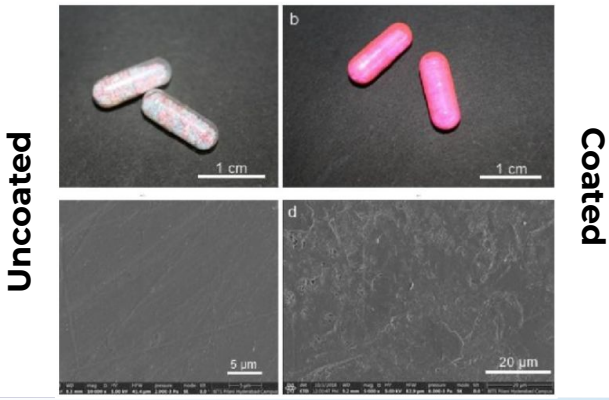
GRANTED

(IN383805)
A targeted drug delivery system comprising a polymeric film in capsule



NEED

Over 1.9 million deaths annually are linked to colorectal and related cancers. Current treatments suffer from low targeting efficiency, leading to high toxicity and reduced success rates. Drug waste, organ damage, and treatment resistance worsen outcomes. But what if drug delivery became organ-specific—without systemic side effects?

TECHNOLOGY OVERVIEW

This technology presents a polymer-based, targeted drug delivery system for colorectal cancer and inflammatory bowel diseases. It uses electrostatically bound polyelectrolyte layers with a drug-loaded functional layer and a non-soluble backing, enabling directional, site-specific release in the gastrointestinal tract using pH and ligand cues.

TECHNOLOGY KEY FEATURES

Site-specific delivery to colon; pH-sensitive capsule; 10 µm–2 mm film thickness; folic acid-based targeting; 5–50% drug load; uses biocompatible materials; minimizes systemic toxicity; applicable to 20+ drugs.

Read more here

MARKET ANALYSIS

The global targeted drug delivery market is expected to reach $285.7 billion by 2033, growing at a CAGR of 7.2%. Key drivers include precision medicine demand, chronic disease prevalence, and reduced off-target effects. [Source: Precedence Research, 2024]

Target Industries

Biopharma R&D, Oncology Therapeutics, Drug Delivery Platforms. , Controlled-release platform developers, advanced packaging for pharma, research labs in precision therapeutics and inflammatory disease targeting.

AT A GLANCE

- SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation and Infrastructure), SDG 12 (Responsible Consumption and Production)

Technology is available for licensing/ co-development.

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