

GRANTED

(IN364102)

# A hydrophilic redox-responsive polymeric micelle comprising chlorin E6 for photodynamic therapy

## NEED

Photodynamic therapy (PDT) for cancer treatment often faces challenges like poor targeting and inefficient drug delivery. This invention provides a solution with redox-responsive micelles for enhanced drug delivery and therapeutic efficacy.

## TECHNOLOGY OVERVIEW

The patent discloses a redox-responsive polymeric micelle containing Chlorin e6 (Ce6), a photosensitizer for photodynamic therapy. The micelle is formed using an amphiphilic copolymer, methoxy poly(ethylene glycol)-poly(lactic acid), and a disulfide linker degraded by glutathione (GSH), enabling targeted delivery.

## TECHNOLOGY KEY FEATURES

1) Redox-responsive micelle for enhanced cancer treatment. 2) Ce6-loaded micelle with a disulfide linker for targeted drug release. 3) Amphiphilic copolymer (mPEG-PLA) for improved stability and biocompatibility.

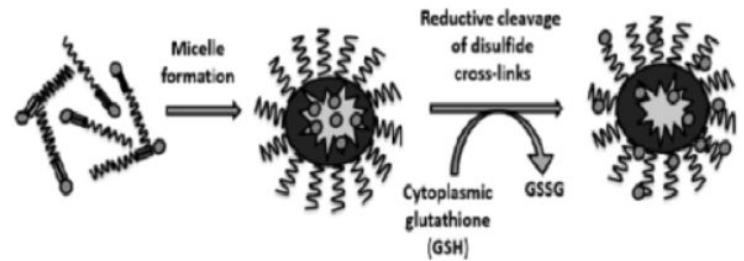
[Read more here](#)

Technology is available for licensing/ co-development.

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● Chlorin e6    W Poly(lactic acid)    W Methoxy-polyethylene glycol    ■ Disulfide bond



## MARKET ANALYSIS

The global photodynamic therapy market is projected to grow at a CAGR of 7.8% from 2023 to 2033, driven by increasing cancer incidence and advancements in drug delivery technologies. (Source: Market Research Future, 2023)

## Target Industries

1) Pharmaceutical companies developing novel cancer therapies and delivery systems. 2) Biotechnology firms focusing on redox-responsive drug delivery solutions. 3) Healthcare providers using innovative cancer treatment techniques like PDT.

## AT A GLANCE

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