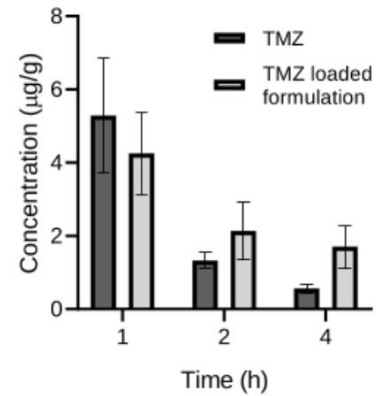
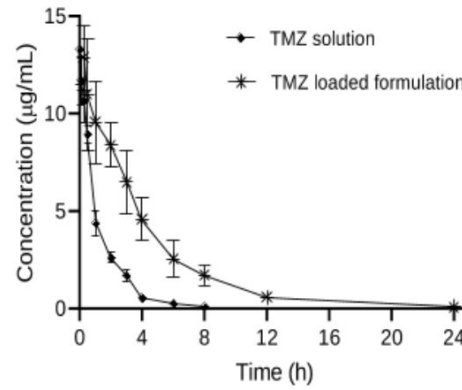


PENDING

(IN202111026752)

## Temozolomide lyotropic lipid nanoparticle composition



## NEED

Temozolomide, used for treating brain tumors, loses up to 60% of its activity within hours due to rapid degradation in the bloodstream. This leads to frequent dosing, higher toxicity, and poor patient compliance. But what if treatment stayed effective for much longer—with less drug and fewer side effects?

## TECHNOLOGY OVERVIEW

This invention delivers temozolomide using lyotropic liquid crystal nanoparticles, combining lipids, PEGylated agents, and surfactants for slow and stable release. The formulation maintains pH 3–6 stability and controls particle size between 80–120 nm, improving drug retention, lowering systemic toxicity, and supporting more effective glioblastoma therapy.

## TECHNOLOGY KEY FEATURES

Nanosized (80–120 nm) lyotropic liquid crystals; 1–20% lipid base; PEGylated phospholipid stability; surfactant and buffer tuning; sustained release; stable pH (3–6); reduces dose frequency; protects active drug from degradation.

[Read more here](#)

## MARKET ANALYSIS

Global nanomedicine market projected to reach \$428B by 2033 at 11.2% CAGR. Indian oncology drug delivery segment growing at 10.1% CAGR. Trends include nanoformulations, PEGylation, and controlled release tech. (Sources: IMARC Group, Market Research Future)

## Target Industries

Oncology formulation developers; nanocarrier platform integrators in drug delivery; pharmaceutical R&D groups focusing on brain-targeted therapies and injectable nanoformulations.

## 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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