

Licensing Opportunity

Novel, Highly Effective and Less Toxic Drug Delivery System

The Invention

This invention relates to a highly effective drug delivery system for treatment of patients suffering from breast cancer, gastric cancer, non-small cell lung cancer, prostate cancer, or head and neck cancer. The invention is specifically a vehicle for delivery of predominantly anti-cancer drugs either in encapsulated or conjugated pattern in nano-particle forms. The lipid based nano-particle-drug formulation is aggregated in supra molecular form to attain different structural assemblies which is useful in target specific drug delivery. The inventors have approached the problem of delivery, toxic nature and insufficient retention time of hydrophobic and hydrophilic cancer drugs using a lipid-based formulation.

Unique Selling Proposition

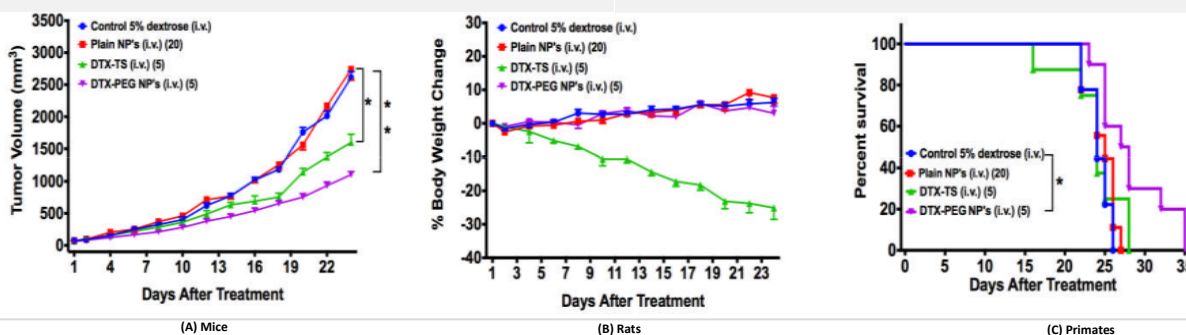
- Four-fold enhancement in bioavailability in mice, rats and non-human primates over commercial formulations
- Three times higher drug concentration at tumor site in murine tumor model
- Reduced toxicity in murine and non-human primates than commercial formulations
- Enhanced drug entrapment efficacy
- Simple and easy steps in nanoparticle preparation

Proof of Concept

- Established through animal studies in mice and Rhesus Monkeys
- Antitumor activity established in murine models
- In-depth toxicology and pharmacokinetic studies in murine and Rhesus monkeys

Technology User

Cancer patients diagnosed with breast cancer, non-small cell lung cancer, gastric cancer, prostate cancer, or head and neck cancer



Comparison of pharmacokinetic profiling of commercial DTX-TS and developed DTX-PEG NPs in mice (A), Rats (B), and Primates (C).

Stage of the Technology

Laboratory Scale validated

IP status

PCT and Indian patent applications filed in 2017

Potential Applications

Treatment of cancer, bacterial infection, fungal infection, diabetes and inflammatory diseases

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