CSIR-Indian Institute of Chemical Biology

Title: **Synergistic Liposomal Formulation For The Treatment Of Cancer**

INTRODUCTION:

Targeted delivery of anticancer drugs are highly essential for greater effectivity and mitigation of deleterious side effects of high dosage of these drugs in free form. We have designed a novel cationic liposome, Phospatidylcholine-stearylamine (PC-SA), which specifically targets cancer cells through an interaction with surface exposed phosphatidylserine (PS), on cancer cell surface, and kill cancer cells as a stand alone therapy, or encapsulated with anticancer drugs like doxorubicin(DOX) and camptothecin (CPT).

CHALLENGE/APPLICATION DOMAIN :

Drugs like Dox and CPT have well established toxicities, due to high dose requirements. Only way to mitigate this, would be to reduced the administered amount. Herein, ten times lower concertation of drug administered encapsulated in our PC-SA liposomes have shown synergistic effectivity against three established tumor models, without any signs of known toxicity.

OPPORTUNITY:

As the formulation has shown effective anti-cancer potential it may attract pharmaceutical companies.

STAGE OF TECHNOLOGY DEVELOPMENT:

We have received the US patent (US 10426728) and Europian patents (3046542) for the formulations. Very soon we will start the process of commercialization.

REFERENCES/ PATENTS

Patent : 196NF2013/IN AU, NZ, EP (DE, FR) US

Publication: De M, Ghosh S, Sen T, Shadab M, Banerjee I, Basu S, Ali N. A Novel Therapeutic Strategy for Cancer Using Phosphatidylserine Targeting Stearylamine-Bearing Cationic Liposomes. Mol Ther Nucleic Acids. 2018

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