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Novel Drug Delivery System to overcome Drug-Induced Hepatotoxicity

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Abstract

Hepatotoxicity is the injury or liver damage by exposure to drugs; it is an adverse drug reaction that may be common but serious. Most common hepatotoxic drug sulfonamide is used as our drug model. Diatom is widespread unicellular photosynthetic marine algae to produce exclusive extremely ordered silica cell wall (frustule). Diatom biosilica is suggested that targeting drug delivery and cost-effective transporter for water-insoluble medications applied in oral drug delivery system due to its high porosity, large surface area, modifiable surface, and biocompatibility. Most of the drug is continuously used, rapid metabolized and cause side effect. In the present study, we have envisaged the naturally occurring diatoms and its potential capacity in in vitro drug loading and release profile is a marine driven diatom with homogenous pore size distribution which can serve as a potential functional drug carrier. This work exhibits that the live marine diatoms can be a capable stage for targeted drug delivery is used owing to its stability, biocompatibility, cellular uptake, and drug release profiles.

Biography

Dr.Neha Kapoor has completed her PhD and extensively performed studies on synthesis of curcumin, its derivative and their biological evaluation. Subsequent to her PhD instinct, She moved to National Institute of Immunology, New Delhi to work with Prof. Surolia in the area of design, development, docking studies and synthesis of 2'-substituted triclosan analogs as inhibitors *for Plasmodium falciparum*. Since 2010, She has working as assistant professor in department of chemistry at Hindu College affiliated to Delhi University. She has been worked at the chemistry and biology interface to find application of scientific fundamentals towards advancing research and teaching in the interest of students, budding researchers and betterment of society. All her findings have been published in 14 research papers and featured in reputed journals. There are 2 patents that have been granted to her credit. She have successfully concluded on two innovation projects and participated in various UGC and ICMR sponsored Workshops. Due to her research contribution to society, she received, best employee with disability National award 2014 from ministry of social justice & empowerment, department of disability affairs. Currently, She has working on cancer diagnostic tool and diatom based smart drug delivery systems.

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