Abstract

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Immune-safe and biocompatible drug delivery system based on non-lamellar liquid crystalline nanostructures

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Abstract

Cubosomes and hexosomes are attracting a lot of interest in drug delivery because of their unique features, nanostructural diversity, and ability to solubilize a wide range of medicines and bio-imaging probes. However, their low biocompatibility in human blood, as well as the risk of hemolysis and unintentional activation of the complement system (the body's first line of defence), restrict their usage in parenteral applications (e.g., IV). As a first step toward designing safe and efficient injectable nanocarriers, it is critical to understand the factors affecting these incompatibility issues, such as the stability of these nanostructured dispersions on direct exposure to biological fluids such as plasma and the potential toxicity of the main lipid constituents or stabilisers. This study is supplementary to the previous work. This work present complementary biophysical methods involving SAXS, cryo-TEM, and NTA that were used to gain insight into the structural stability, morphological and size characteristics of these non‐lamellar liquid crystalline (LC) nanodispersions upon plasma incubation, as well as to highlight the mechanistic issues pertaining hemocompatibility..

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Biography

The Intan Diana Mat Azmi is a senior research fellow at the Institute of Nuclear medicine and Allied Sciences, India. She isin the third year of her Ph.D. and is a holder of DST-INSPIRE fellowship. Shehas qualified UGC NET exam twice. The Intan Diana Mat Azmi is a senior research fellow at the Universiti Putra Malaysia, India. She is in the third year of her Ph.D. and is a holder of DST-INSPIRE fellowship.

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