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Title:	Tailoring liquid crystals as vehicles for encapsulation and enzyme- triggered release.
Authors:	Pal, Santanu Kumar (/jspui/browse?type=author&value=Pal%2C+Santanu+Kumar)
Keywords:	Tailoring liquid crystals vehicles for encapsulation enzyme-triggered release
Issue Date:	2022
Publisher:	Royal Society of Chemistry
Citation:	Journal of Materials Chemistry B, 10(16), 3032-3038.
Abstract:	Nanoscale assemblies of amphiphiles have been vividly explored in pharmaceutical formulations as drug nanocarriers. Aqueous interfaces of liquid crystals (LCs) are known to direct the self-assembly of a range of amphiphiles. These amphiphile-decorated interfaces of LCs have evoked interest for applications as diverse as the detection of disease markers, screening of toxins, mimicking complex biomolecular interactions, and cell-based sensing. Aiming to explore these interfaces for encapsulation and enzyme-triggered release, we report a simple and rational design of enzyme-responsive LC interfaces programmed with a cleavable non-ionic surfactant. We encapsulated a hydrophobic dye within the surfactant micelles and investigated the enzyme-triggered dye release. Interestingly, we found that LC droplets, when decorated with the dye-loaded micelles, offer significant advantages over the conventional micellar nanocarriers. The LC droplets showed controlled release features which weren't affected at high dilutions. Our work, although exploratory in nature, provides fresh approaches for tailoring LC interfaces as vehicles for drug delivery.
Description:	Only IISER Mohali authors are available in the record.
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