pharmaceutics

MDPI

The impact of bilayer rigidity on the release from magnetoliposomes vesicles controlled by PEMFs

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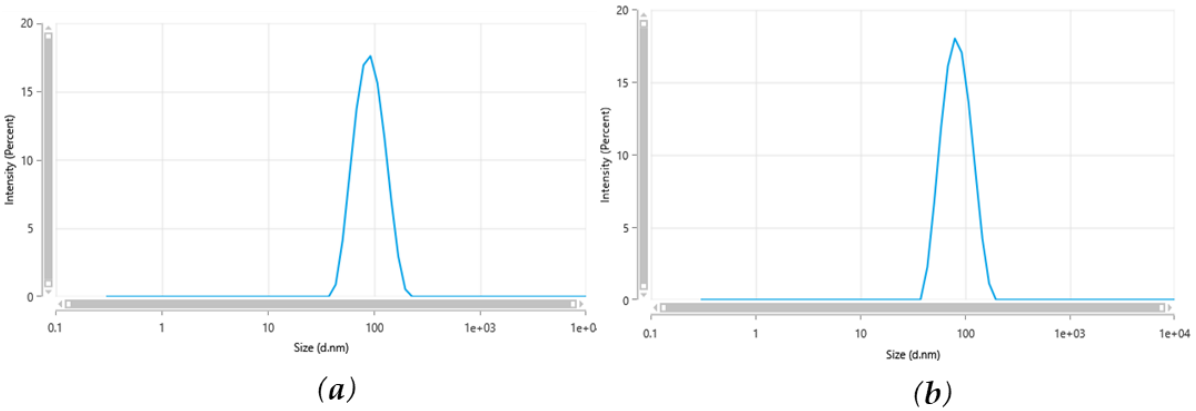
Thin Layer Evaporation Techniques (TLE)

For TLE technique, liposomes were prepared as previously reported by Petralito et al., with slight modification [16]. Briefly, 40.0 mg of Egg-PC were dissolved in 3 mL of chloroform (supplemented with 0.5 mg of MNPs for MLs) and evaporated to form a thin film. The thin film was hydrated with 5 mL of HEPES buffer solution (10 mM, pH 7.4), agitated with a vortex and then extruded through membrane filters having 0.8, 0.4 and 0.2 μm pores size.

Figure S1. Visible MNPs aggregate formation on membrane filters with consequent loss of magnetic material.

*Figure S2. DLS analysis of MLs before (**a**) and after (**b**) PEMFs exposure.*



Differential scanning calorimetry (DSC) charactrization

Samples (5 mg) of the different mixtures were weighed in sealable aluminum pans, 20 µl of distilled water was added, and then the pans were hermetically sealed. At least three heating/cooling cycles in a temperature range from 30 to 60 °C or from -20 to 25 °C under nitrogen flow (20 mL/min) were performed with a scan rate of 2 °C/min, on each sample. An empty aluminum pan was used as reference. This method was used to evaluate all membrane phase transitions and how the presence of MNPs in the bilayer influences this parameter.

Figure S3. DSC analysis of Liquid Disorder (a), Liquid Order (b) and Gel (c), in the presence or not of MNPs.