Supplementary Information

Nanostructure and Cytotoxicity of Self-Assembled Monoolein-Capric Acid Lyotropic Liquid Crystalline Nanoparticles

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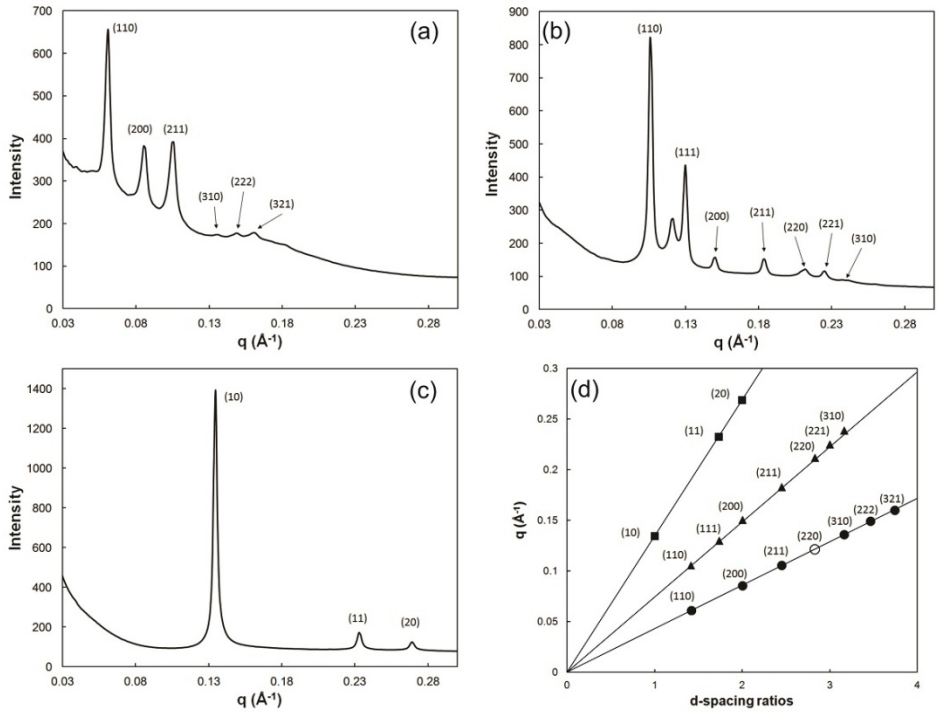

Figure S1. SAXS profiles of MO/CA dispersions NT-02 (a), NT-04 (b), and NT-05 (c) at 25°C. The peaks are indexed using standard reflections of the primitive cubic phase (Im3m), double diamond cubic phase (Pn3m), and H_{II} phase respectively. The unidentified peak in NT-04 (b) could belong to a H_{II} phase. Indexing of the SAXS data of NT-02 (●), NT-04 (▲), and NT-05 (■) samples (d). The open symbol (○) show reflection which, although allowed by the space group, was not clearly observed. For the cubic phase, *q(hkl)* was plotted against $(h^2+k^2+l^2)^{1/2}$ and for the hexagonal phase *q(hk)* was plotted against $(h^2+k^2+hk)^{1/2}$, where *h, k,* and *l* are Millers indices.

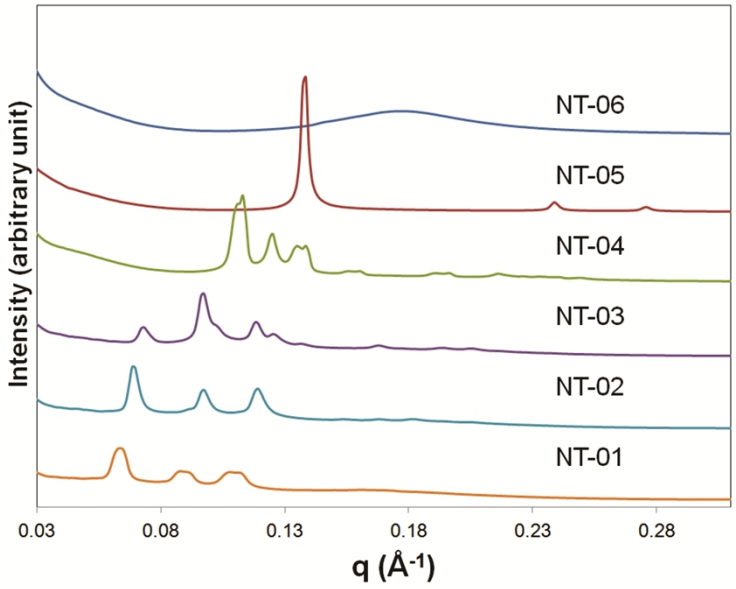

Figure S2. 1D scattering profiles of the samples at 37°C collected by synchrotron SAXS.

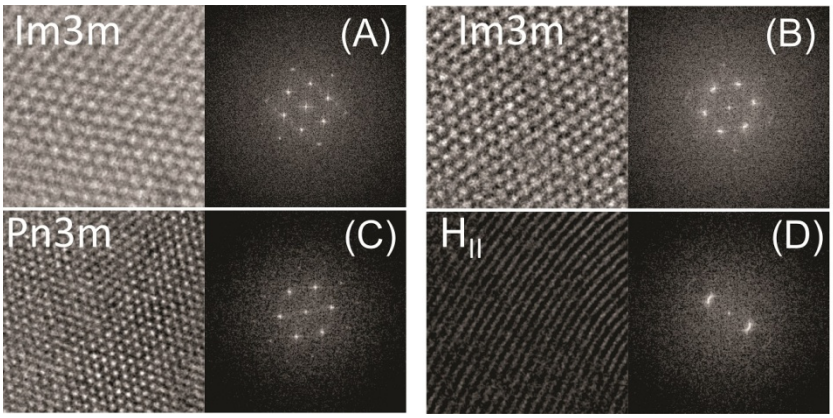

Figure S3. Cryo-TEM images of cubic and hexagonal phase nanoparticles with Fast Fourier Transformation of the particles. Cubic phase particles are viewed from the [111] direction in samples NT-01 (A), NT-02 (B), and NT-04 (C). Typical patterns of the hexagonal phase nanoparticles in sample NT-05 is also visible (D).

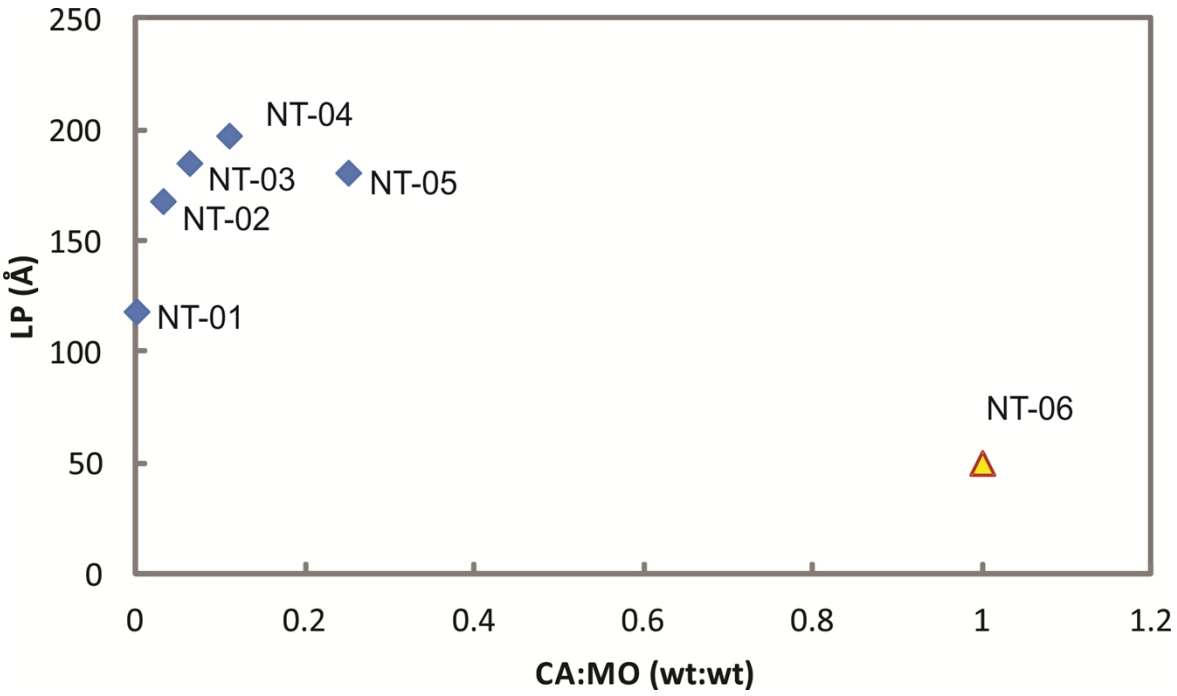

Figure S4. Lattice parameters of self-assembled nanoparticles in cell media at 25°C. Particles with cubic phase Q_{II}^{P} (♦) and hexagonal phase H_{II} (△) were observed.

Table S1. Lattice parameters of lipid nanoparticles at 37°C

	NT-01	NT-02	NT-03	NT-04	NT-05	NT-06
Phase	Q_{II}^{P}	Q_{II}^{P}	Q_{II}^{P} / Q_{II}^{D}	Q_{II}^{D} /Q_{II}^{D} /H_{II}	H_{II}	EME
Space group	Im3m	Im3m	Im3m/Pn3m	Pn3m/Pn3m/H_{II}[#]	H_{II}	L_2
Lattice parameter[*] (Å)	141	130	123/91	81/80/59	53	36[$]

[#] Two Pn3m phases were detected in sample NT-04. These two phases have very close lattice parameters.

[$]This value is the characteristic distance of the non-ordered L_2 phase.