Supplementary materials

Mesoscopic Structure of Lipid Nanoparticles Studied by Small-Angle X-Ray Scattering: A Spherical Core-Triple Shell Model Analysis

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The expression for the Gaussian function is given by:

$$f(x) = a\exp\left[-\frac{\left(x-x_c\right)^2}{2\sigma^2}\right] + c_0 \quad \text{(S1)}$$

where, a denotes the peak amplitude of the characteristic peak, x_c indicates the position of the characteristic peak, σ represents the width of the characteristic peak, which is its standard deviation, and c_0 signifies the baseline of the characteristic peak.

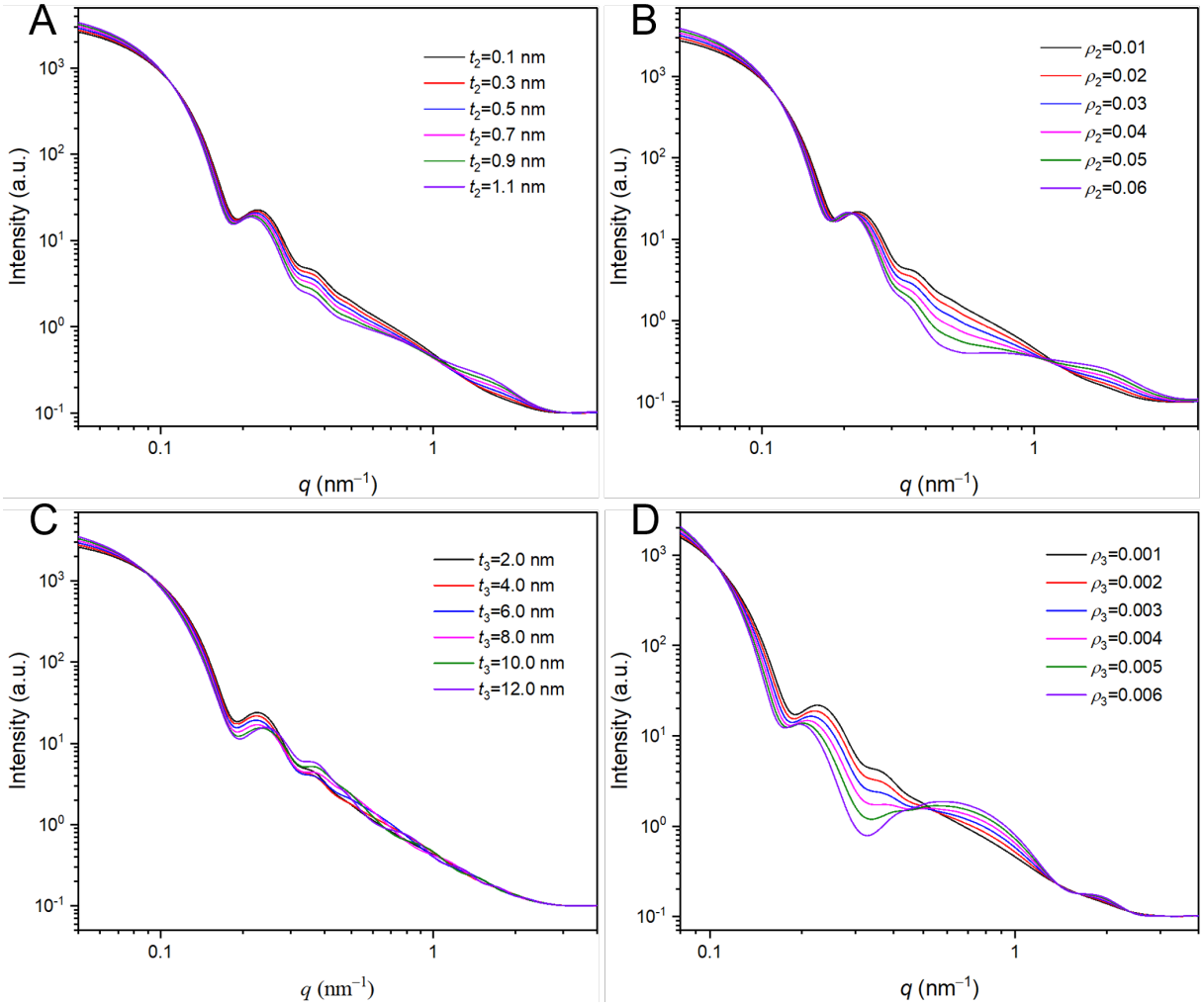


Figure S1. Simulation results of the core-triple shell model where R_0 = 25 nm, σ=3 nm, ρ_c = 0.01 and ρ_s = 0 are fixed (the unit of SLD is arbitrary units): (A) Effect of t_2 on the scattering curves with ρ_2 = 0.01; (B) Effect of ρ_2 on the scattering curves with t_2 = 0.3 nm; (C) Effect of t_3 on the scattering curves with ρ_3 = 0.001; (D) Effect of ρ_3 on the scattering curves with t_3 = 4 nm.

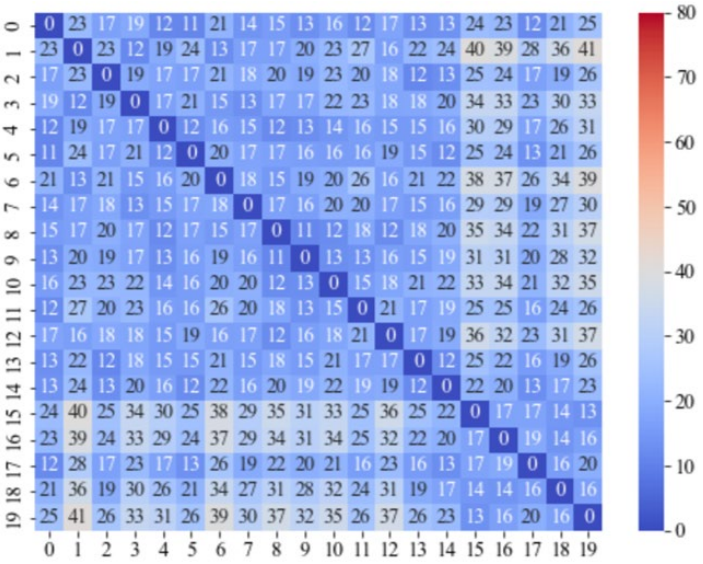


Figure S2. SAXS profile similarity matrix for the evaluated LNPs.