

Transition of Reverse Cylindrical Micelles into Spherical Micelles by Diverse Alcohols

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Soy lecithin self-assembles into reverse spherical micelles in organic solvents. When the lecithin is mixed with inorganic salts, the reverse spherical micelles grow to reverse cylindrical micelles, inducing organogels. The cylindrical micelles can be transformed into spherical micelles by addition of a small amount of alcohols, resulting in organosols. The conversion of organogels into organosols is important to have diverse applications in food industry, drug delivery and gelled fuels. In this study, we investigated the effects of the chain length of alcohols on the transition of cylindrical micelles into spherical micelles. The rheometer, small-angle x-ray scattering (SAXS), FT-IR and isothermal titration calorimetry (ITC) were used to study the mechanism of the transition.