

## Effect of aliphatic solvents on the organogels by mixtures of lecithin and calcium chloride mixtures

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Lecithin can form a self-assembled structure such as reverse spherical micelle in a variety of nonpolar solvents. Upon addition of salts like  $\text{CaCl}_2$ , the reverse spherical micelles axially grow to reverse cylindrical micelles. When the reverse cylindrical micelles are long enough to be entangled, the organogels are formed. In this study, we investigated the effect of aliphatic solvents on the organogels by mixtures of lecithin and  $\text{CaCl}_2$ . The strength of organogels increases in a longer hydrocarbon aliphatic solvent. In addition, at the same number of hydrocarbon chain, the viscosities of the mixtures in alkanes have higher than those in alkenes. Rheometer was used to investigate the interactions of the gels and the viscosities interactions between lecithin and  $\text{CaCl}_2$ . Small-angle x-ray scattering (SAXS) confirmed that the increase in viscosity is closely related to the length of the reverse cylindrical micelles. Fourier transform infrared spectroscopy (FT-IR) was also used to investigate the interactions between lecithin and  $\text{CaCl}_2$ , which play a key role for the formation of the reverse cylindrical micelles.