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Formulation and physical characterization of liquid-liquid dispersion through various emulsification method

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Liquid-liquid dispersion has been increasingly applied in recent years, include emulsion, micelle and micromulsion. In preparation, different formulation or process might change the result which are structure of phase or physical property of liquid-liquid dispersion, even phase stratification. It might cause decrease efficacy and bioavailability of drug. But the research to study structure and inversion of phase are very few in the past years.

In this study, we intend to investigate the method to form stable factor of emulsion, micelle and microemulsion. The factors include variable of process and formulation. By process, we change the sequence adding of oil phase and water phase, Initial dispersion phase influence of surfactant, stirring intensity of emulsification and emulsification time. And formulation, we alter the ratio of oil and water phase and the concentration of surfactant.

Then, we use mineral oil, span 80, tween 80 and water to observe different processes and formulation whether change the result that structure of phase or physical property of liquid-liquid dispersion. In addition, we use microscope with dye, texture analysis, conductivity and freezing point measurement to show that preparation of stable formation method and mechanisms of emulsion, micelle and microemulsion.