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Effects of Salts and pH on the Emulsion Stabilities of Digalactosylmonoacylglycerol and Trigalactosylmonoacylglycerol

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The effects of salts and pH on the emulsion stabilities of water/kerosene (1:1, w/w) emulsions prepared with digalactosylmonoacylglycerol (DGMG) and trigalactosylmonoacylglycerol (TGMG) were investigated. The creaming stabilities of the emulsions prepared with 0.05% DGMG and TGMG did not change up to 0.2 M CaCl₂, and their medium droplet sizes were constant. The creaming stabilities of their emulsions with salts were higher, and the medium droplet sizes of their emulsions were smaller than those of the sucrose esters of fatty acids and lysolecithin. The ratio of the oil phase weight to total weight separated by centrifuging the DGMG and TGMG emulsions were constant up to 0.2 M CaCl₂, and were smaller than those of the sucrose esters of fatty acids and lysolecithin. The creaming stabilities of the emulsions prepared with 0.05% DGMG and TGMG did not change with various pHs, and their medium droplet sizes were constant. The creaming stabilities of their emulsions in an acidic pH were higher than those of the sucrose esters of fatty acids. The oil phase separation by centrifuging the DGMG and TGMG emulsions were constant at various pHs.

Keywords: emulsion stability, glyceroglycolipid, pH, salt

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