Influence of Dodecyltrimethylammonium Halides on Thermotropic Phase Behaviour of Phosphatidylcholine/Cholesterol Bilayers

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Effects of dodecyltrimethylammonium chloride (DTAC), dodecyltrimethylammonium bromide (DTAB) and dodecyltrimethylammonium iodide (DTAI) on thermotropic phase behaviour of phosphatidylcholine bilayers containing cholesterol as well as on ^{1}H NMR spectra were studied. Two series of experiments were performed. In the first one the surfactants were added to the water phase while in the other directly to the lipid phase (a mixed film from cholesterol, surfactant and phosphatidylcholine was formed). The effects of particular surfactants on the main phase transition temperature, T_m, were more pronounced when added to the lipid phase (2nd method) than to the water phase (1st method); the opposite happened when cholesterol was absent (Różycka-Roszak and Pruchnik 2000, Z. Naturforsch. **55 c,** 240–244). Furthermore, in the case of the first method the transitions were asymmetrical while in the second method nearly symmetrical. It is suggested that surfactant poor and surfactant rich domains are formed when surfactants are added to the water phase.