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The effect of the membrane fluidity of *Platycodon grandiflorum* fractions on liposomal phospholipid membranes

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The object of this study was to investigate the effect of membrane fluidity of *Platycodon grandiflorum* A. DC(PG) fractions in phosphatidylcholine(PC) liposomes, measured with high-sensitivity differential scanning calorimetry(DSC). We used dipalmitoylphosphatidylcholine(DPPC) bilayers which make most stable liposomes among the other phosphatidylcholine. The sample PG was extracted and fractionated to five different types, butanol(PGMB), ethylacetate(PGMEA), ethylether(PGMEE), hexane(PGMH) and methanol(PGMM) fractions. Among five different solvent fractions, the PGMEA, PGMEE and PGMH fractions markedly affected the thermotropic properties of DPPC liposomes, broadened and shifted the thermograms, and reduced the cooperative unit. The incorporation of PGMEA, PGMEE and PGMH in DPPC liposomes were preferentially located in the hydrophobic core of DPPC bilayers compared to the other fractions PGMM and PGMB. These results suggest that certain substances in the PGMEA, PGMEE and PGMH fractions might have biologically significant effect on the membrane fluidity.