

Surface Modification of Phospholipid Vesicles and Its Functionality as a Molecular Assembly

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Mixed vesicles including phosphatidylcholine (PC), phosphatidyl serine (PS) and amphoteric crown ether compound (C_{18} -OCH₂-18-crown-6) with different component fractions were prepared and their ion-complexing phenomena was examined by measuring their electrophoretic mobilities in different salt solutions. The crown ether compounds retained their selectively ion-complexing ability for some special cations (K^+ and Ba^{2+}) even on the vesical surfaces. The zeta-potentials of the mixed vesicles of PC+PS+crown were determined extensively by fraction of the PS component and variation in metal cations in aqueous solution. That is, this parameter shifted remarkably in a negative direction with increase in the PS-fraction only in salt solutions containing K^+ or Ba^{2+} . No shifting of zeta-potentials could be detected in the case of (i) PC + PS vesicles without crown ether or, (ii) salt solutions that did not complex with the crown ether (Li^+ or Ca^{2+}).