

Investigation on nano-channels made from lipo-amino acid surfactants on phospholipids vesicles

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Incorporation behavior of N-amino acid-type surfactant into phospholipid vesicle membrane has been studied. It was known that leakage of the vesicle-entrapped probe took place slowly at a very low concentration in the sulfate- or sulfonate-type surfactant systems, on the other hand it occurred rapidly at the concentration just below the CMC in the amino acid-type surfactant systems. These results suggest that the amino acid-type surfactants adsorb cooperatively on the vesicle surface, and as a result, the surfactant molecules organize to make a kind of channel which is large enough for the entrapped molecules to pass through easily. In this study, the effect of amino acid residue on the incorporation into the vesicle membrane was investigated from the both view points of morphology and interaction. Furthermore the control of the release of entrapped-molecules from vesicles by temperature or pH was examined.