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# Monitoring of membrane damages by dialysis treatment: Study with membrane chip analysis

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**ABSTRACT**

The liposome immobilized on indium tin-oxide electrode was prepared as a ''membrane chip'' to evaluate the liposome–liposome interaction. Three kinds of neutral liposomes entrapping the fluorescence probe, calcein, were utilized as a sensory liposome. Twenty four kinds of liposomes were used to construct a membrane library based on the calcein release behavior. The loading of liposome including the unsaturated phospholipid into the dialyzer induced the variation of surface state of liposome membrane. We analyzed the above liposome by a comparison of it with the membrane library constructed by Membrane Chip. The liposome after its dialysis treatment was found to show the membrane property of the liposome with domain-like structure prior to the interaction with amyloid β protein. Also the above liposome showed the oxidized liposome-like membrane property. In conclusion, we demonstrated a membrane library-based method to evaluate the surface state of the model biomembranes with unclear surface property.

*Keywords*: Membrane chip; Liposome; Oxidation; Amyloid β protein

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