Supporting Information

Fabrication of Charged Membranes by the Solvent-Assisted Lipid Bilayer (SALB) Formation Method on SiO$_2$ and Al$_2$O$_3$

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SI-Fig. 1 Frequency and dissipation response for DOPS containing bilayer formation on SiO$_2$ at pH 5 using vesicle fusion method. Arrows indicate the injection of (1) tris buffer (10mM Tris, 150mM NaCl, pH 7.5), (2) buffer at pH 5 (10mM Tris, 150mM NaCl, pH 5), (3) lipid vesicle mixture in buffer at pH 5 [red curve: PC/PS (4/6), dashed line: PC/PS (9/1)], (4) buffer wash (pH 7.5), (5) BSA in annexin 5A buffer (10mM Tris, 150mM NaCl, 2 mM CaCl$_2$, pH 7.5) and (6) annexin 5A (5 µg/ml).
SI-Fig. 2 Summary of QCM-D frequency and energy dissipation responses corresponding to formation of supported bilayer composed of DOPC/DOEPC produced by vesicle fusion and SALB formation method on (a, b) SiO$_2$ and (c, d) Al$_2$O$_3$. 

(a) SiO$_2$

(b) SiO$_2$

(c) Al$_2$O$_3$

(d) Al$_2$O$_3$
SI-Fig. 3 Comparison of nonspecific adsorption of BSA protein to bare and positively charged bilayers-coated Al₂O₃. Negative QCM-D frequency changes upon injection of 0.1 mg/mL BSA indicates protein binding to bilayer defects. The final frequency shift after bilayer formation was set to zero and used as a baseline for frequency.