

Supporting Information

Effects of membrane interaction and aggregation of amyloid β -peptide on lipid mobility and membrane domain structure

Kenji Sasahara,^{a,*} Kenichi Morigaki,^{b,c} Kyoko Shinya^a

^a Division of Zoonosis, Department of Microbiology and Infectious Diseases, Graduate School of Medicine, Kobe University, Kobe 650-0017, Japan

^b Research Center for Environmental Genomics, Kobe University, Kobe 657-8501, Japan

^c National Institute of Advanced Industrial Science and Technology (AIST), Ikeda 563-8577, Japan

*To whom correspondence should be addressed. E-mail: sasahara@med.kobe-u.ac.jp. Tel: +81-78-382-5701; Fax: +81-78-382-5701.

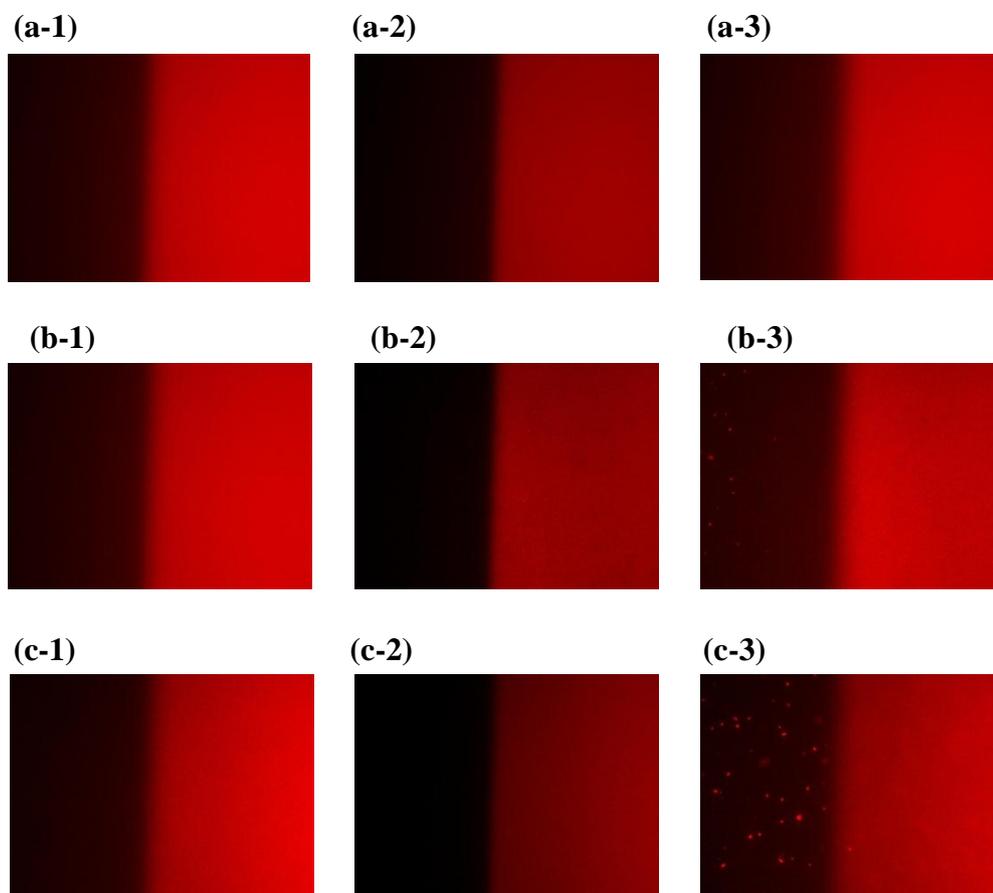


Figure S1. Changes in membrane fluidity upon the injections of $A\beta(1-42)$ and buffer solutions. (a–c) Images of the SPBs containing GM1 at the concentrations of 0% (a), 1.3% (b), and 3.8% (c). (1) TR-PE fluorescence images of the lipid bilayers. (2 and 3) Images of the bilayer after the injections of $A\beta$ (2) and buffer (3) solutions. The images were taken just after photobleaching (left-hand side areas). The sizes of the images are approximately $140\ \mu\text{m} \times 100\ \mu\text{m}$.

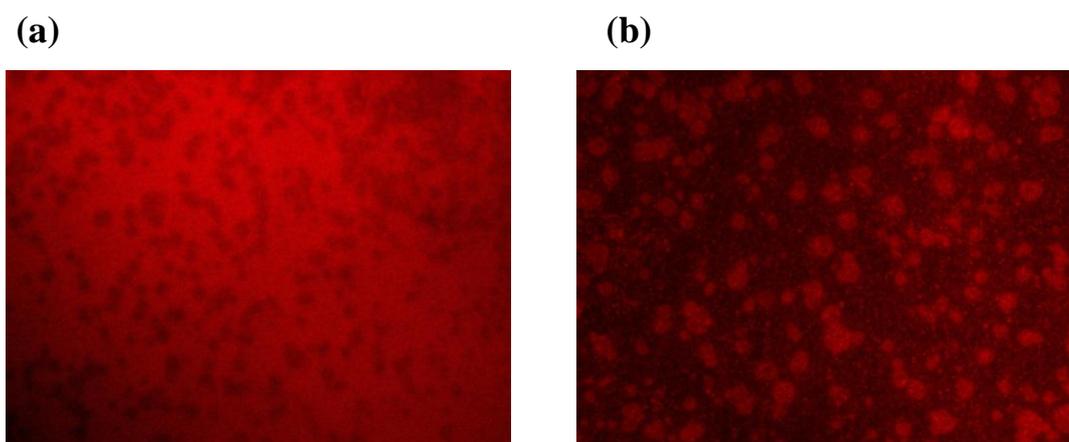


Figure S2. Fluorescence images from TR-PE of the SPBs (DOPC/DOPS/SM/Chol/GM1/TR-PE). The concentrations of GM1 were 6.3% (a) and 12.5% (b). Brightness and contrast of each image are separately adjusted to show the difference of surface heterogeneity. The sizes of the images are approximately $140\ \mu\text{m} \times 100\ \mu\text{m}$.

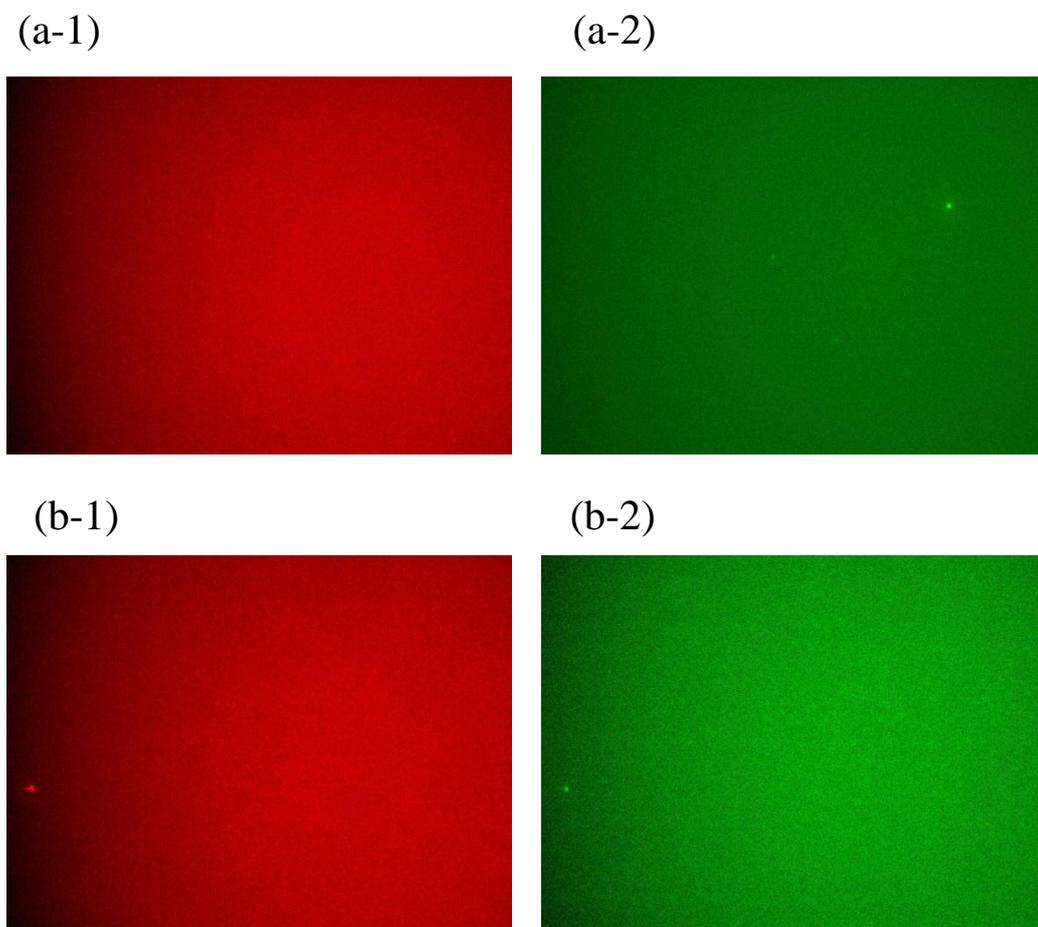


Figure S3. Images of the SPBs (DOPC/DOPS/SM/Chol/GM1/TR-PE) stained with CTB-488. Fluorescence images from TR-PE (1) and CTB-488 (2) were taken for the SPBs containing GM1 2.5% (a) and 3.8% (b). The sizes of the images are approximately $140 \mu\text{m} \times 100 \mu\text{m}$.

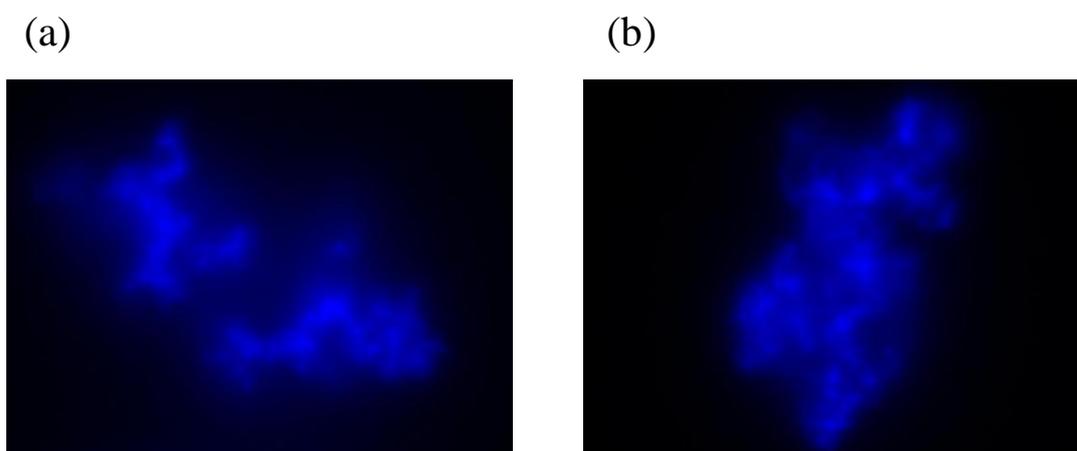


Figure S4. Images of amyloid aggregates of A β (1–42) on the SPBs. The solutions (150 μ L) of A β (22.2 μ M) aggregates formed in buffer were mixed with the same buffer solution (150 μ L) containing ThT (5 μ M). The mixtures were added onto the SPBs formed in the open well chambers. After the incubation for 30 min, the images from ThT fluorescence were recorded for the SPBs containing GM1 2.5% (a) and 3.8% (b). The sizes of the images are approximately 85 μ m \times 60 μ m.