

## Supporting Information

### Membrane Nanotubes Increase the Robustness of Giant Vesicles

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### Movie Captions

**Movie 1.** GUV with in-tubes as prepared from POPC and 4 mol% GM1. Before the observation, 55  $\mu\text{L}$  of the GUV suspension was transferred in a chamber filled with 550  $\mu\text{L}$  of 1 mM HEPES buffer. The chamber was closed using sealing paste (Korasilon from Carl Roth, # 0856.1) to stop fluid flow and evaporation. The movie displays a stack of confocal  $xy$  cross-sections at different  $z$ -positions. Each confocal image displays the corresponding  $z$ -value in the lower left corner, in units of  $\mu\text{m}$ . The value  $z = 0$  corresponds to the vesicle bottom. The scale bar represents 10  $\mu\text{m}$ .

**Movie 2.** Complete aspiration of a GUV with 4 mol% GM1 at constant suction pressure. The movie displays a sequence of confocal  $xy$  cross sections of a GUV with in-tubes kept at constant aspiration pressure. The frame numbers are indicated on the lower left corner. The GUV is aspirated completely (in frame 20, the GUV has traveled inside the pipette). The zoom is changed in frame 19 as can be seen by the size of the scale bar representing 25  $\mu\text{m}$ .

**Movie 3.** Repeated aspiration and release of a single GUV with 4 mol% GM1 as observed with epi-fluorescence microscopy. The movie displays the response of the same tubulated GUV to several changes in the suction pressure and represents a sequence of five subsequent recordings including three full cycles of strong aspiration into and subsequent release from the micropipette. The total number of recorded frames is 18021, corresponding to a total recording time of 68 min that has been compressed to 1 min in the movie. The scale bar is 10  $\mu\text{m}$ .