Electronic Supplementary Material (ESI) for Soft Matter.

SUPPORTING INFORMATION

The combination of block copolymers and phospholipids to form Giant Hybrid Unilamellar Vesicles (GHUVs) does not systematically lead to "intermediate" membrane properties.

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I- Membrane mechanical properties, micropipette aspiration

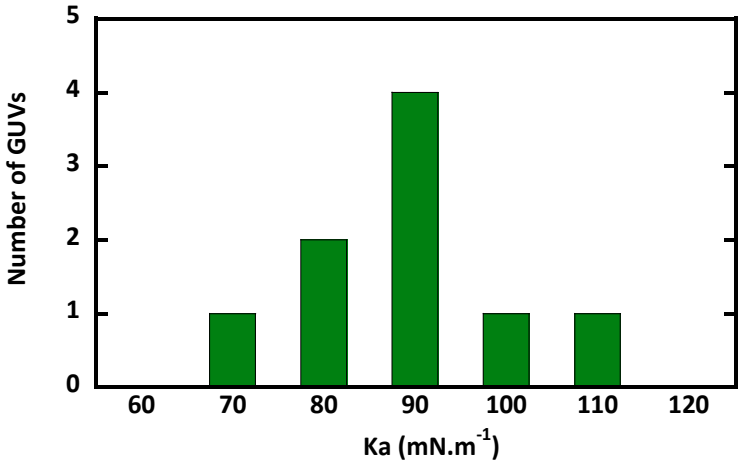

Figure S1. Distribution of area compressibility moduli measured for 9 individual DOW GUVs. The average value was $\overline{K}_a$ = 84.3 ± 12.2 mN.m^{-1}.

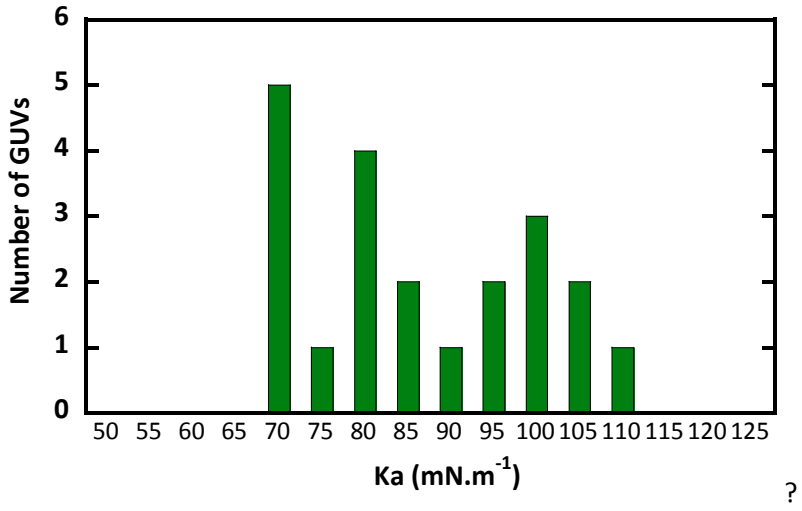

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Figure S2. Distribution of area compressibility moduli measured for 21 individual 3K. The average value was K_a = 84± 13 mN.m^{-1}.

Sample	K_a ± SD (mN.m^{-1})	α_c ± SD (%)	σ_c± SD (mN.m^{-1})
3K	84 ± 13	7.3 ± 1.3	5.5 ± 1.7
3K/POPC 95/5	109± 20	1.8 ± 0.6	1.9 ± 0.5
3K /POPC 90/10	128 ± 11	1.8 ± 0.5	2.0 ± 0.4
3K /POPC 80/20	130 ± 30	1.9 ± 0.5	2.0 ± 0.3

Table S1. Mechanical properties under stretching for hybrid vesicles:

II- Lateral diffusion coefficients, FRAP Experiments

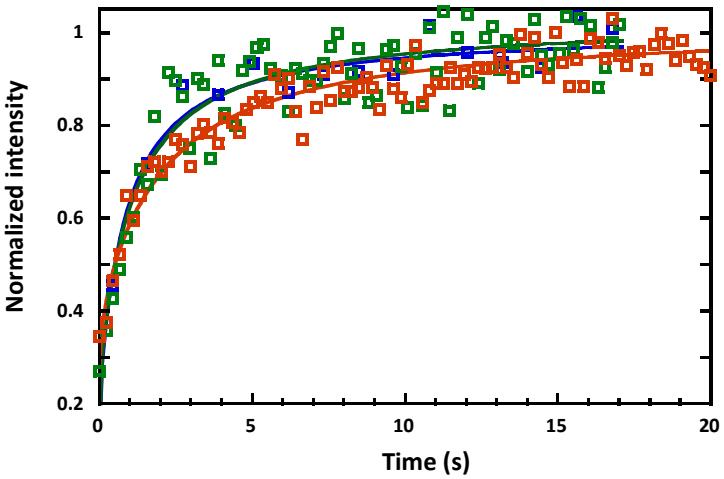

Figure S3. Representative FRAP data obtained for different polymersomes: (□): DOW, (□): 1.5K; (□):3K containing 1.5 mol% of DOW-F. The smooth lines correspond to the fits of the formalism described in experimental section.

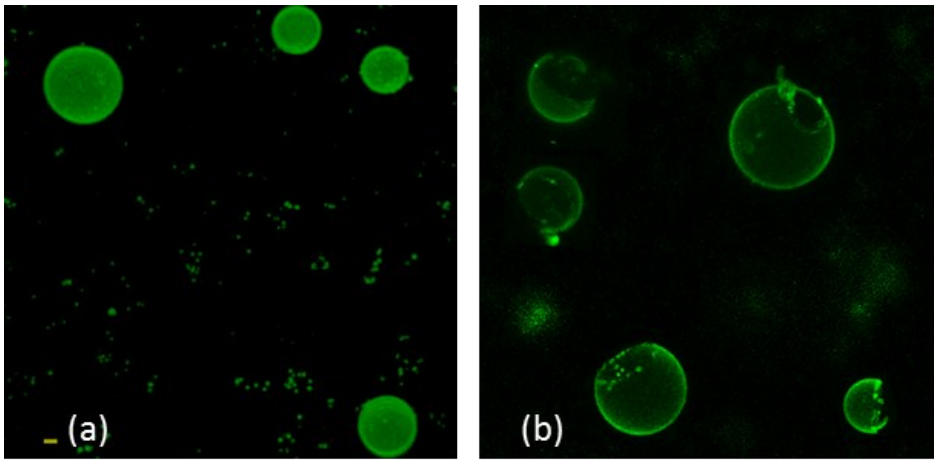

Figure S4 2D maximum intensity projection images of 1.5K/POPC GHUVs labeled with 1.5% $PDMS_{26}$-*g*-$(PEO_{12})_2$-FITC: (a): 10% POPC (no macroscopic domains) and (b): 50% POPC (macroscopic POPC domains appear as non-fluorescent phases); scale bars: 5 µm.

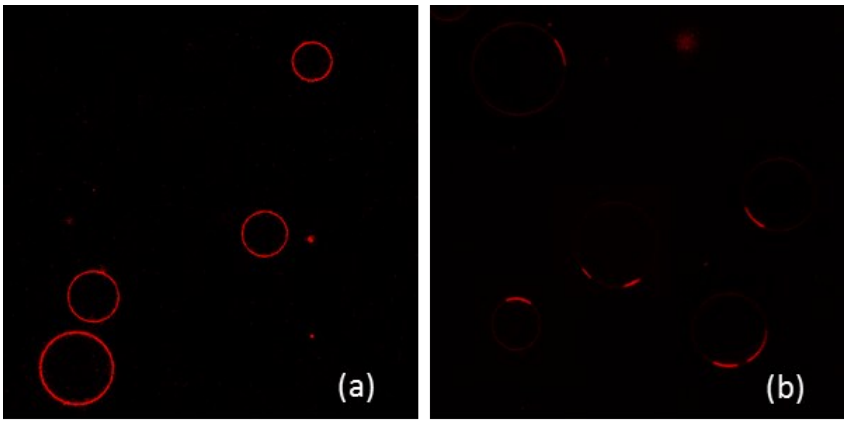

Figure S5: Equatorial images of 1.5K/POPC GHUVs labeled with 0.2 mol% DOPE-Rhod and composed of (a): 10% POPC and (b): 30% POPC.