

Phase Behavior of Mixed Lipid Monolayers on Perfluorocarbon Nanoemulsions and its Effect on Acoustic Contrast

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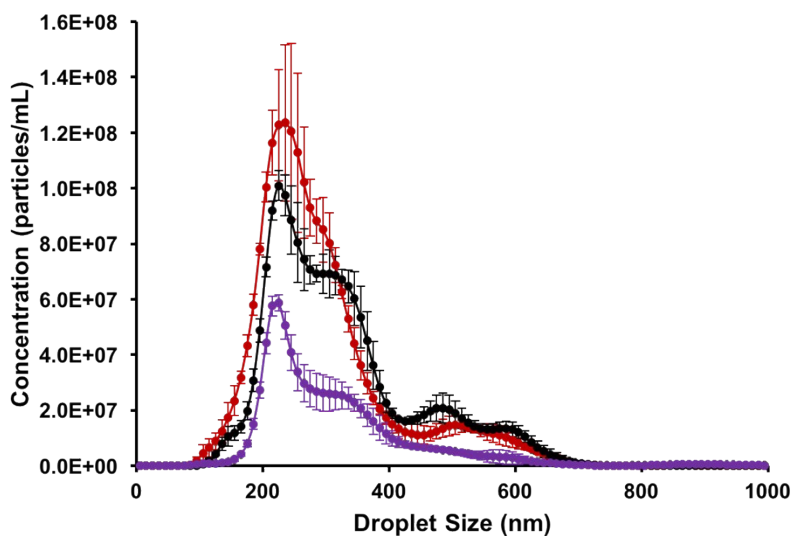


Figure S1. Size Distributions of 400 g fractionated PFH droplets for representative monolayer compositions (*purple*: 100:0:0; *black*: 60:30:10; *red*: 47.5:47.5:5). 1 Error bar: 1 SEM. Because concentrations must be adjusted prior to NTA, these concentrations in the figure are not the same as the as-made yields, which are calculated based on the dilution of each sample prior to NTA.

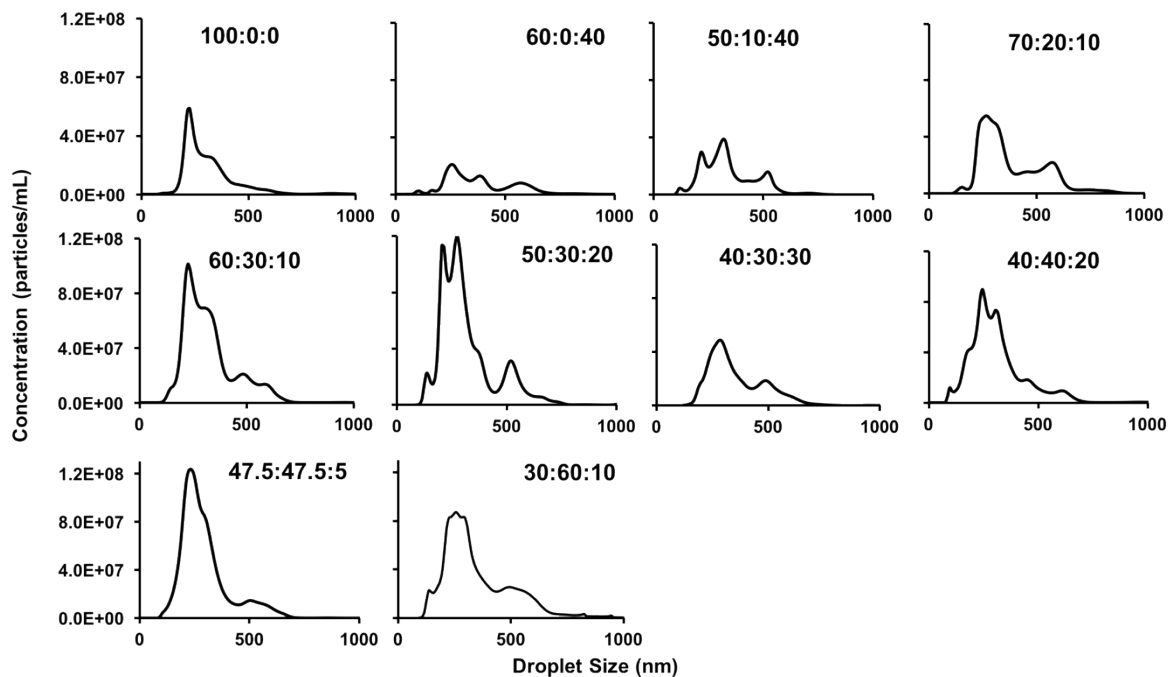


Figure S2. Size Distributions of 400 g fractionated PFH droplets for different monolayer compositions. Because concentrations must be adjusted prior to NTA, these concentrations in the figure are not the same as the as-made yields, which are calculated based on the dilution of each sample prior to NTA.

Shell Composition	Mean Diameter (nm)	Std. Error (nm)	Std. Deviation (nm)
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100:0:0	335.7	5.2	142.6
60:0:40	371.4	10.0	148.0
50:10:40	336.1	16.2	116.1
70:20:10	380.0	16.4	150.1
60:30:10	318.1	2.4	117.5
50:30:20	312.6	7.2	127.3
40:30:30	351.6	5.4	128.4
40:40:20	302.9	9.0	126.0
47.5:47.5:5	289.8	6.2	110.3
30:60:10	343.6	4.4	152.4

Table S1. Mean diameters, standard error, and standard deviation for droplets with different shell compositions.

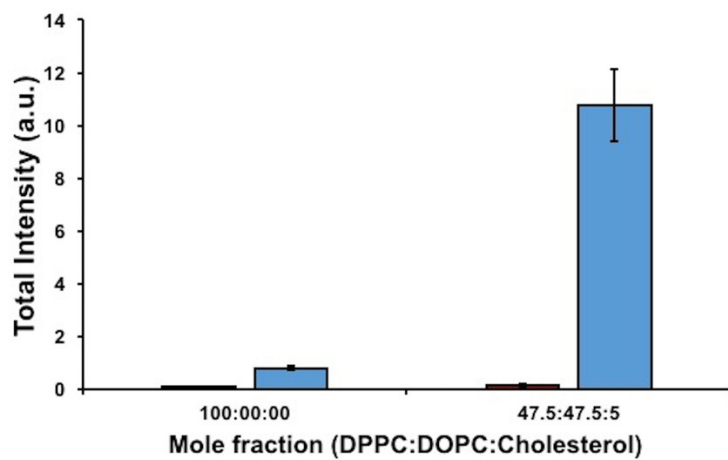


Figure S3. Comparison between HIFU responses of liposomes (*red*) and droplets (*blue*) for representative lipid-cholesterol compositions.

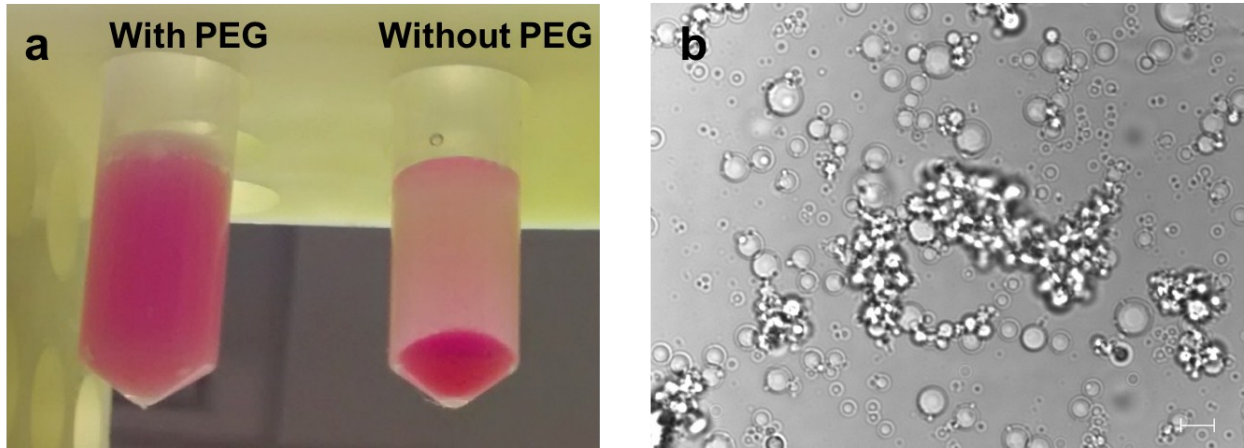


Figure S4. (a) 100:0:0 PFH emulsions formulated with and without DSPE-PEG2000; (b) Microscopy image of 100:0:0 PFH droplets without DSPE-PEG2000. Scale bar: 5 μm .

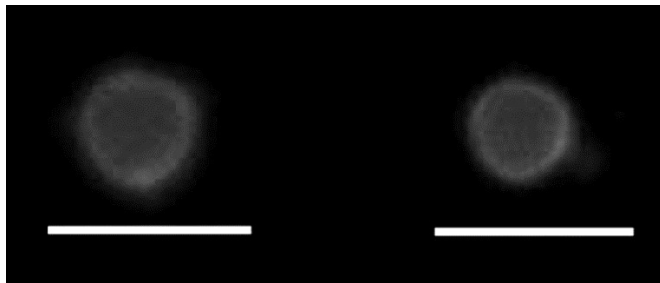


Figure S5. Fluorescence microscopy images of 50 g sample 47.5:47.5:5 PFH droplets with 20% (by mole) DSPE-PEG2000. Scale bar: 5 μm .

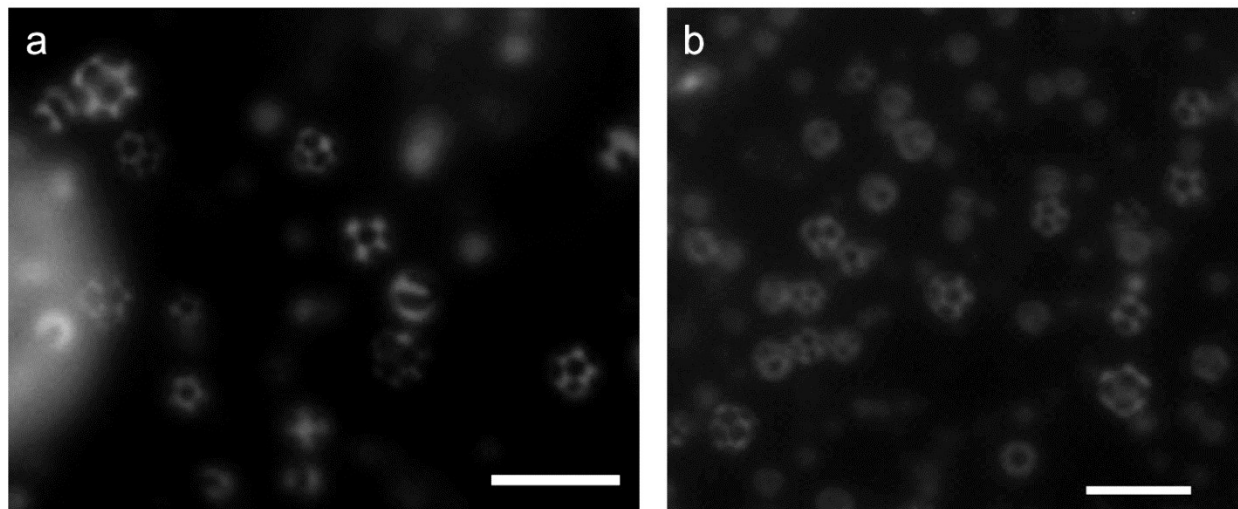


Figure S6. Fluorescence microscopy images of 50 g 100:0:0 PFH droplets after 30 min of heating at 37°C (**a**) and 15 min of cooling in an ice-bath (**b**) immediately after droplet preparation. Scale bar: 5 μm .

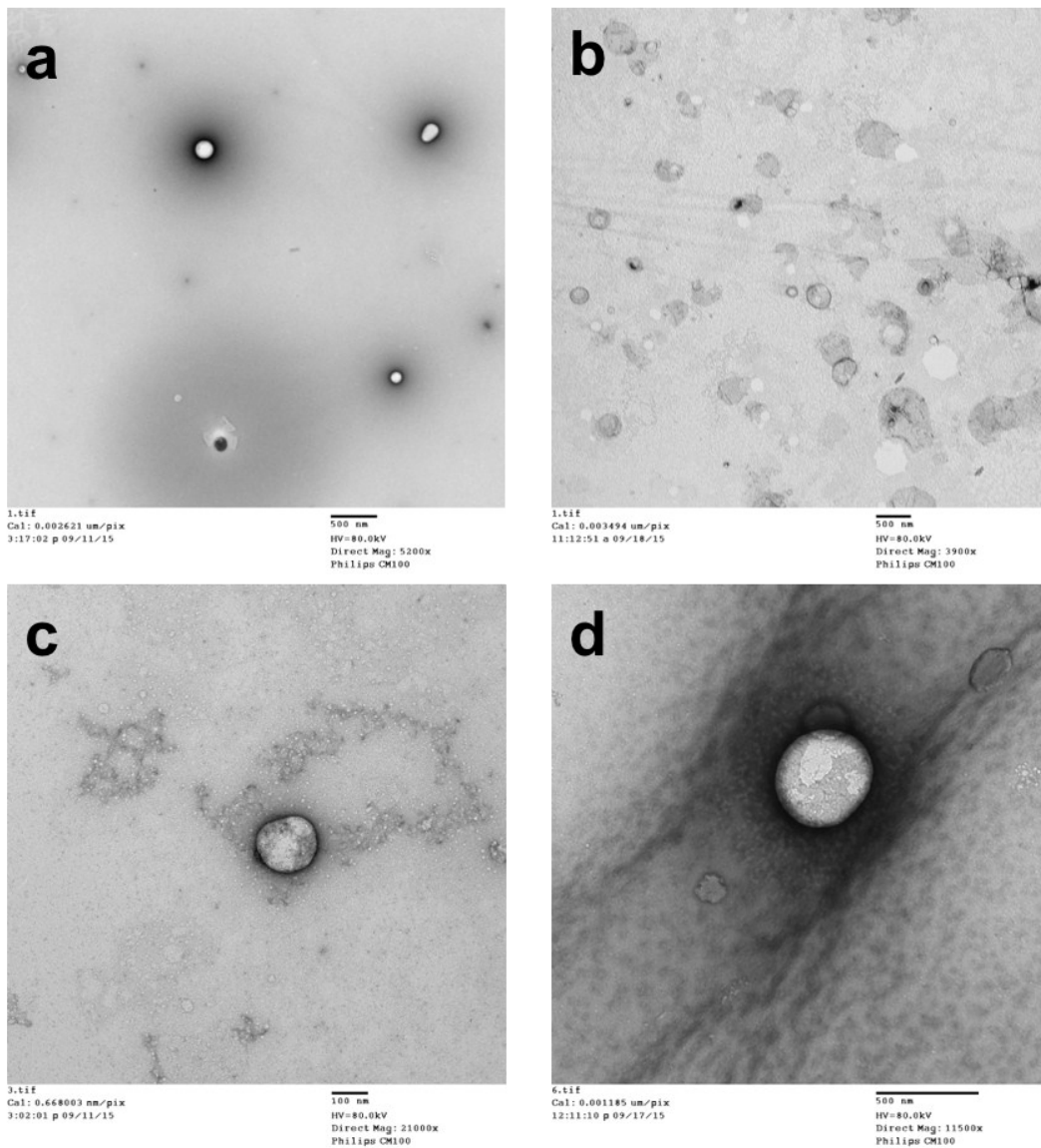


Figure S7. TEM images of PFH droplets of representative monolayer compositions (mole % DPPC:DOPC:Cholesterol): 100:0:0 (a), 60:30:10 (b), and 47.5:47.5:5 (c-d). Scale bars for a, b, and d: 500 nm. Scale bar for c: 100 nm.

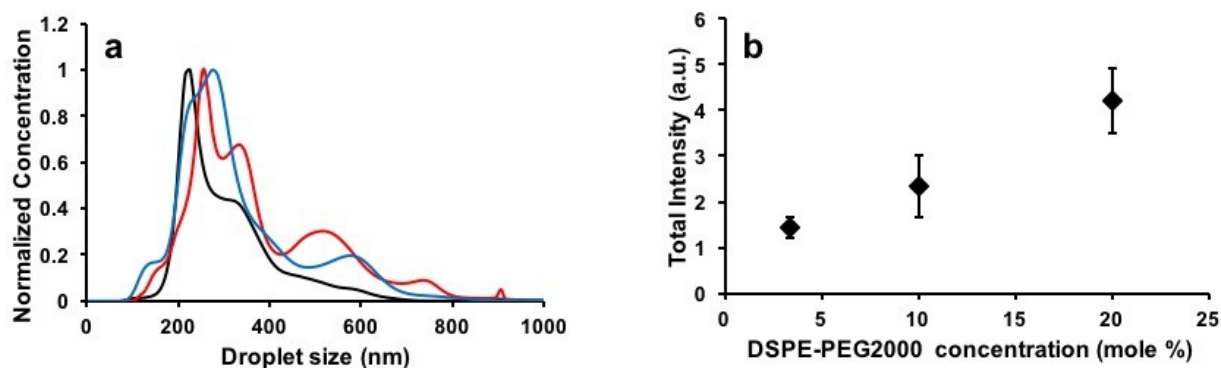


Figure S8. (a) Normalized size distributions of 400 g fractionated 100:0:0 droplets with 3.33% (black), 10% (red), and 20% (blue) DSPE-PEG2000 concentration; (b) HIFU response of 100:0:0 droplets of mean size 300-400 nm as a function of DSPE-PEG2000 concentration.

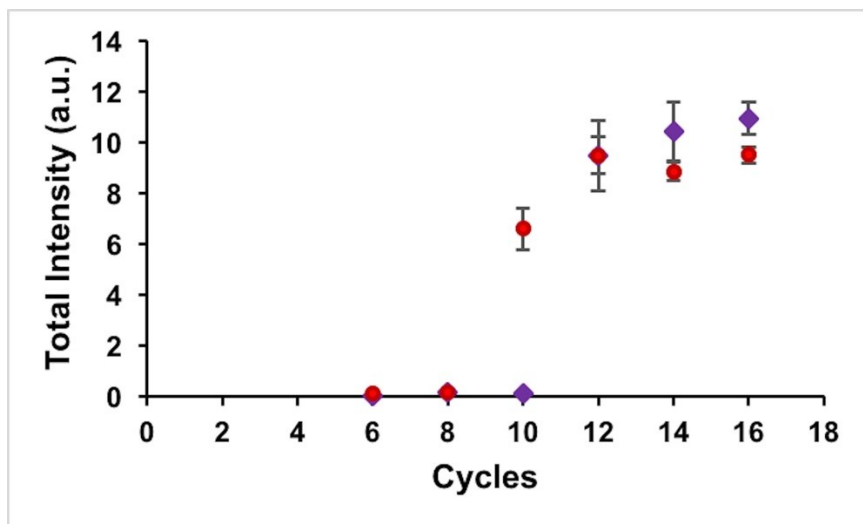


Figure S9. Variation of HIFU responses of 300-400 nm (mean diameter) PFH droplets, formulated out of 100:0:0 (purple diamonds) and 47.5:47.5:5 (red circles) compositions with number of HIFU cycles applied.

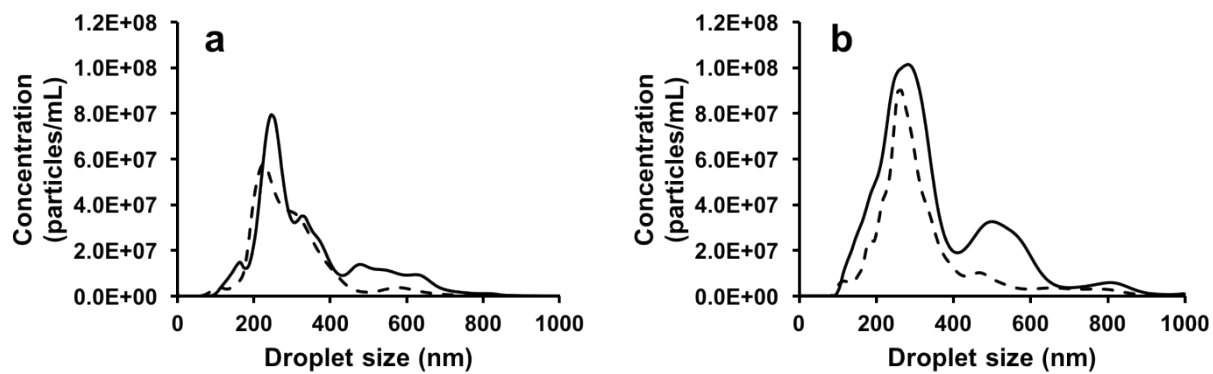


Figure S10. Size distributions of fractionated PFH droplets formulated out of 100:0:0 (a) and 47.5:47.5:5 (b) shell compositions; *solid line*: Day 1 of droplet preparation, *dashed line*: Day 7.