

# Supporting Information

## Synthesis of Fluorosurfactants for Emulsion-Based Biological Applications

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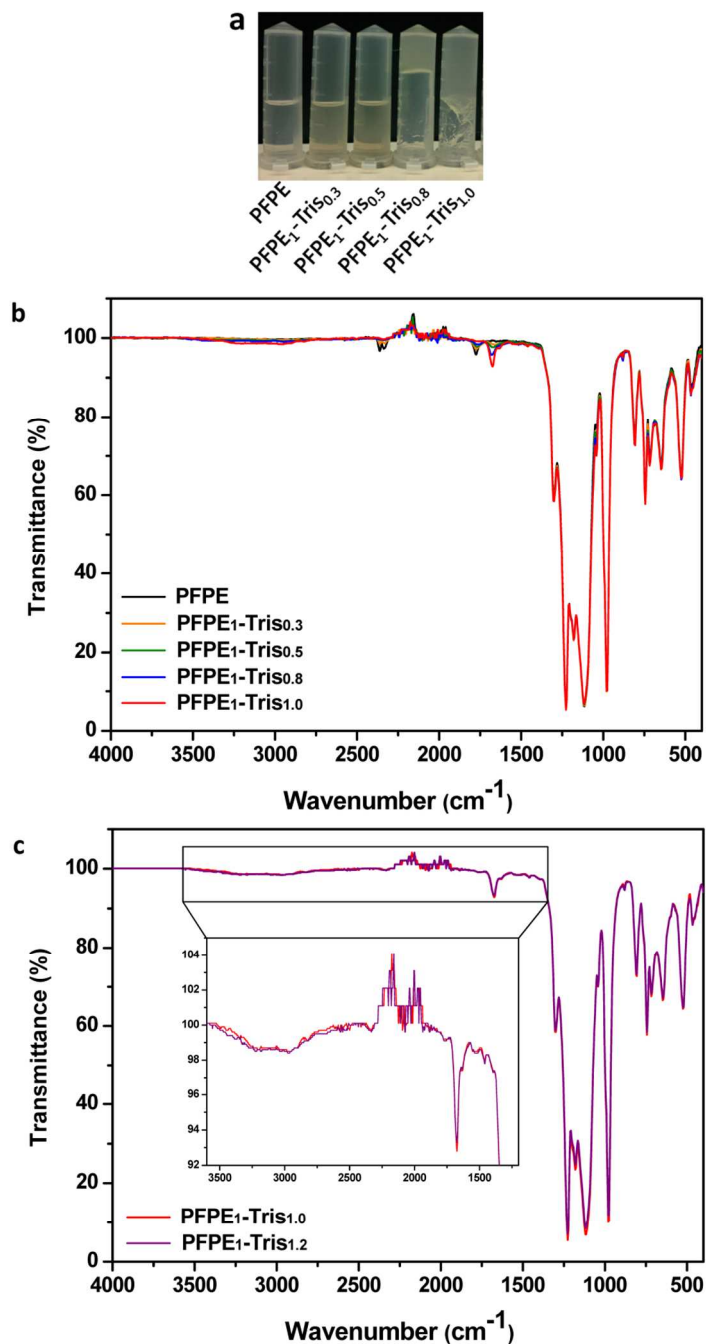
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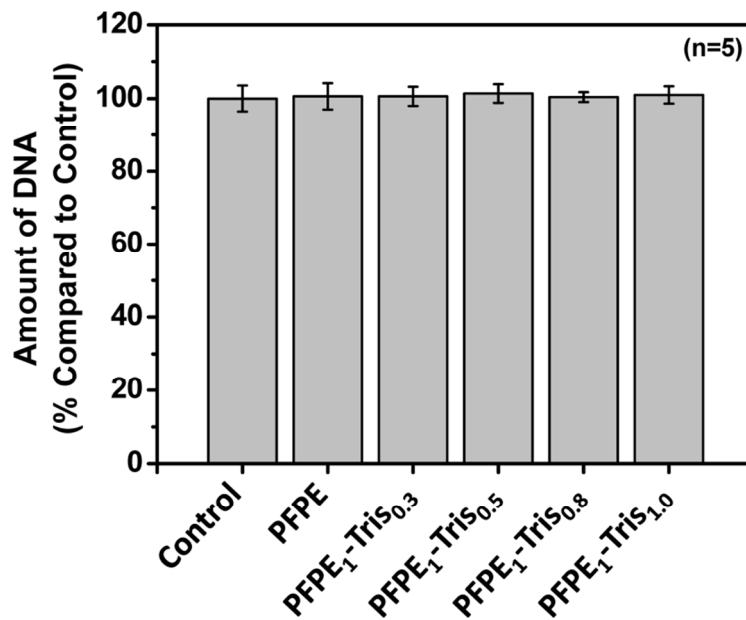
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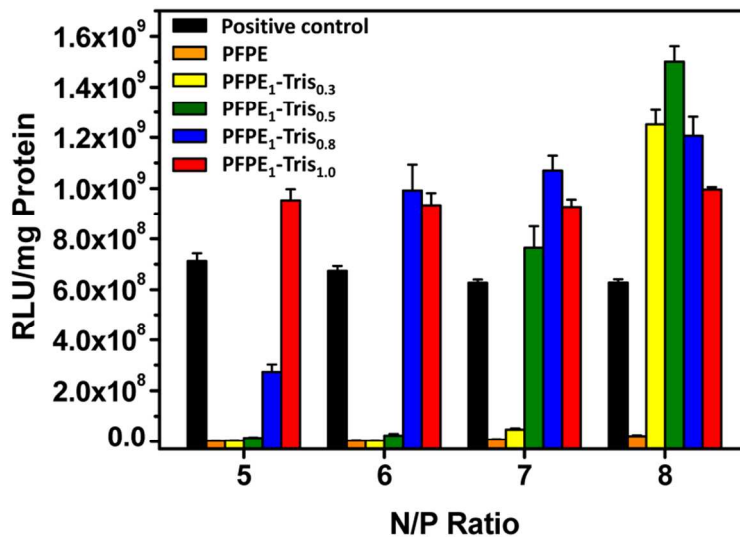
## Supplementary Figures



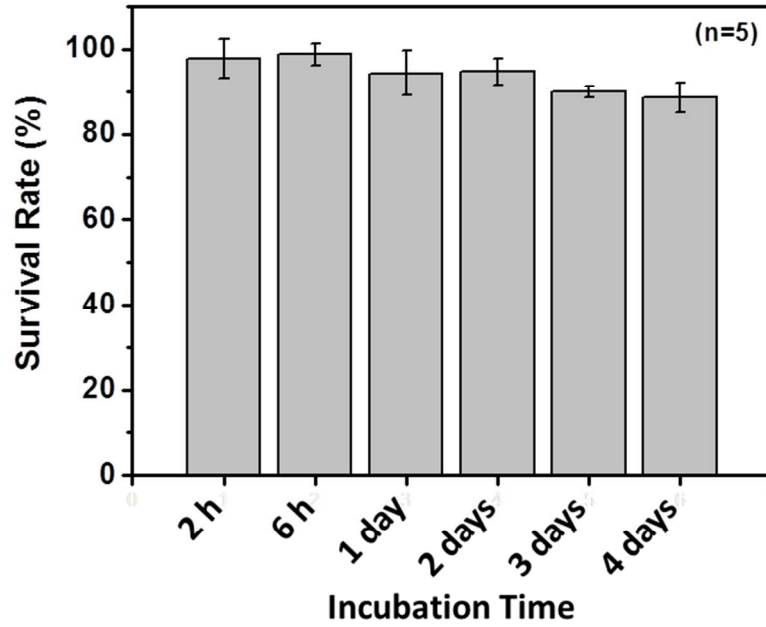
**Figure S1.** (a) Photograph of the synthesized PFPE-Tris surfactants with increasing the feed molar ratio of Tris to PFPE from 0.3, 0.5, 0.8 to 1.0 and (b) their full-scale FT-IR spectra. (c) Comparison of FT-IR spectra of the synthesized PFPE-Tris surfactants at Tris/PFPE feed molar ratios of 1.0 (PFPE<sub>1</sub>-Tris<sub>1.0</sub>) and 1.2 (PFPE<sub>1</sub>-Tris<sub>1.2</sub>) showed no major difference, indicating a complete conversion of PFPE-Tris occurred at the feed molar ratio of 1.0.



**Figure S2.** Amount of DNA recovered from w/o emulsion after disrupting the droplets by a droplet breaking agent.



**Figure S3.** Luciferase activities of the transfected cells. Cells were transfected *in vitro* using jetPEI<sup>TM</sup>/DNA complexes synthesized in w/o emulsion droplets stabilized with different test surfactants. The jetPEI<sup>TM</sup>/DNA polyplexes formulated without emulsion treatment was used as a positive control.



**Figure S4.** Survival rate of hMSCs cultured in the emulsion droplets. hMSCs maintained their viability (>85%) in the w/o/w droplets for at least 4 days.