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Supporting information

Fluorination on Polyethylenimine Allows Efficient 2D and 3D Cell Culture Gene Delivery

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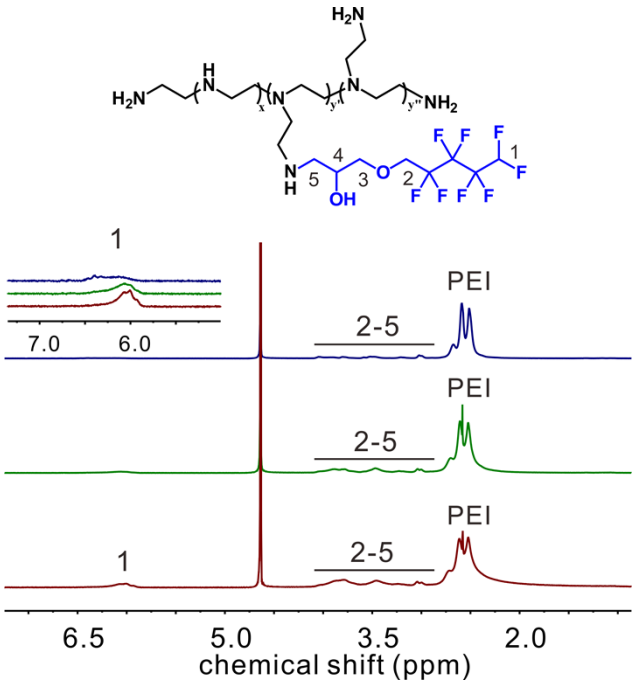

Fig. S1. ^{1}H NMR spectra of the synthesized PEI-O-F8$_{36}$, PEI-O-F8$_{78}$ and PEI-O-F8$_{133}$ in D_2O. The chemical structure of the synthesized materials with proton labeling is also shown in the figure. The number of fluoroalkyl chains conjugated to each PEI was calculated according to the peak integration ratio of proton 1 on the fluoroalkyl chain and protons on the PEI scaffold.

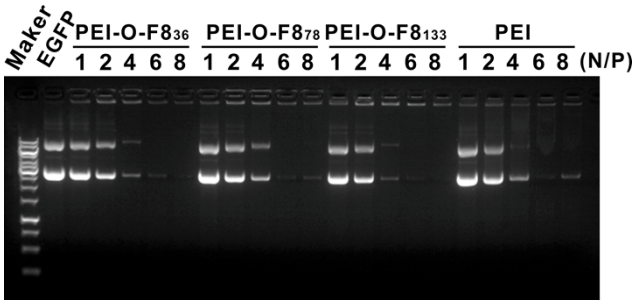

Fig. S2. Agarose gel electrophoresis analysis of PEI-O-F8$_{36}$, PEI-O-F8$_{78}$, PEI-O-F8$_{133}$ and PEI polyplexes with EGFP plasmids. The polyplexes were prepared at N/P ratios of 1:1, 2:1, 4:1, 6:1 and 8:1, respectively.

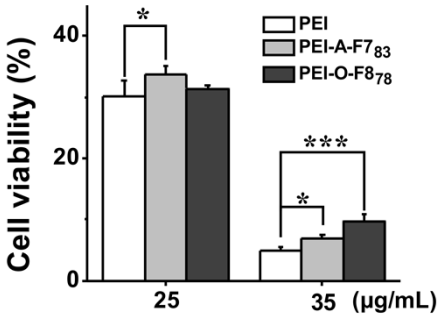

Fig. S3. Cytotoxicity of PEI, PEI-A-F7$_{83}$ and PEI-O-F8$_{78}$ on HeLa cells at 25 and 35 μg/mL, respectively. The data are analyzed by Student's t-test, * $p < 0.05$, ***$p < 0.001$.

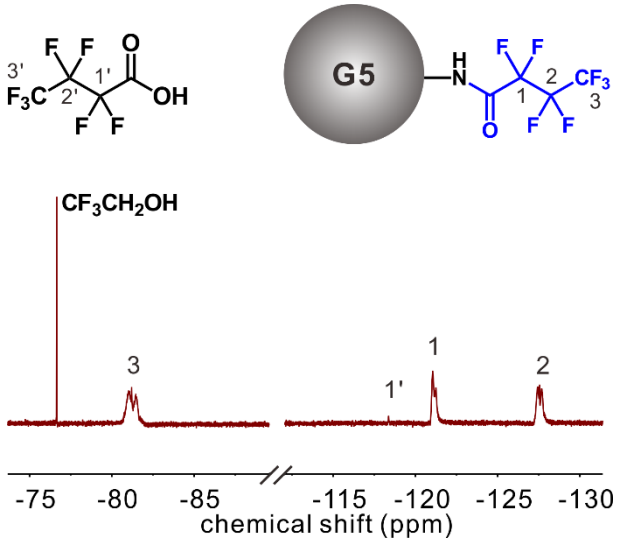

Fig. S4. ^{19}F NMR spectra of G5-F7$_{68}$ after one year storage in water.

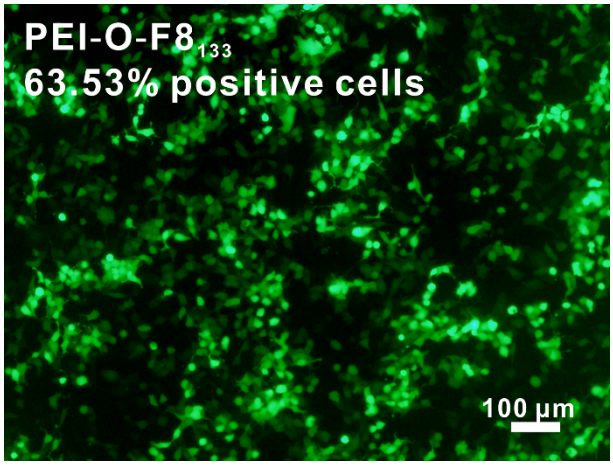

Fig. S5. Fluorescence microscopy image of HeLa cells transfected by PEI-O-$F8_{133}$ at an N/P ratio of 4:1. The samples were stored in water for 6 months before gene transfection experiments. EGFP transfection efficacy (%) of the material is given in the image.