

Supporting information

Octadecyl chain-bearing PEGylated poly(propyleneimine)-based dendrimersomes: physicochemical studies, redox-responsiveness, DNA condensation, cytotoxicity and gene delivery to cancer cells

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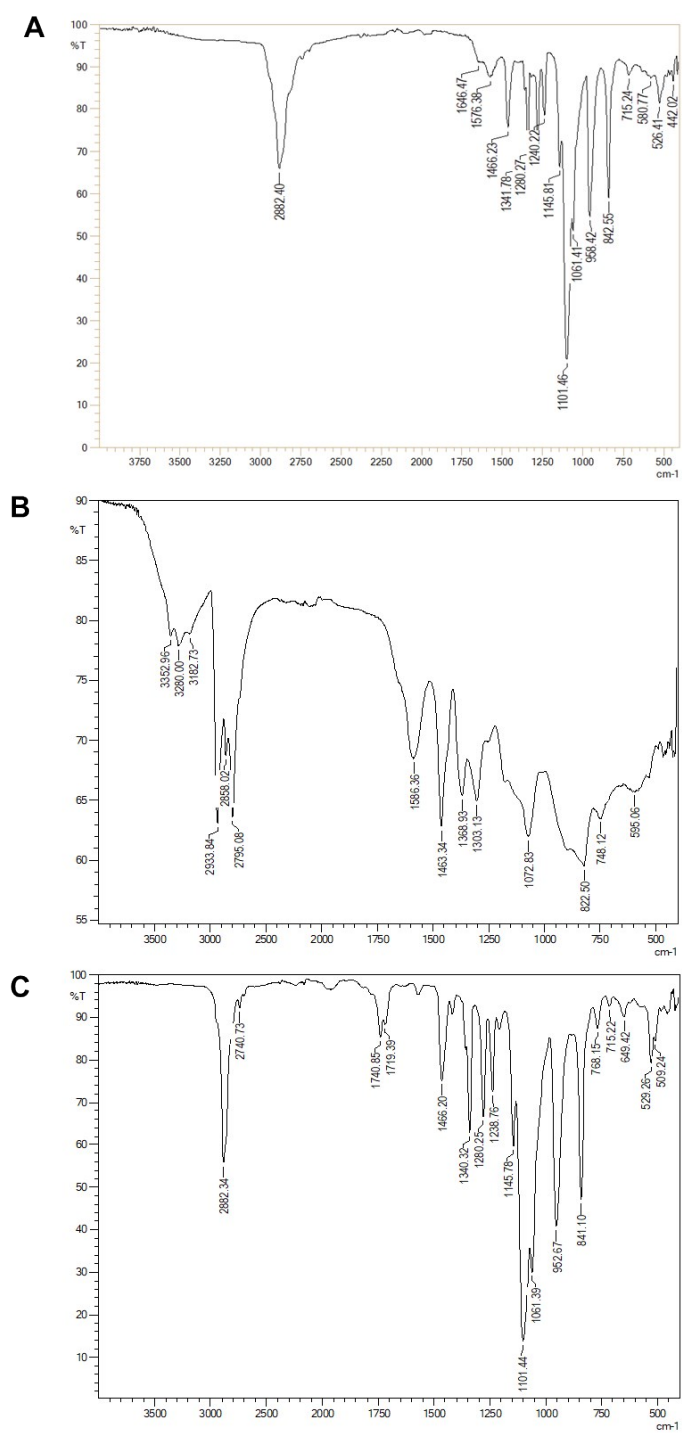


Figure S1. FTIR spectra of lipid-bearing PEGylated DAB dendrimer (DAB-PEG-SS-ODT) (A), DAB (B), and OPSS-PEG-SCM (C).

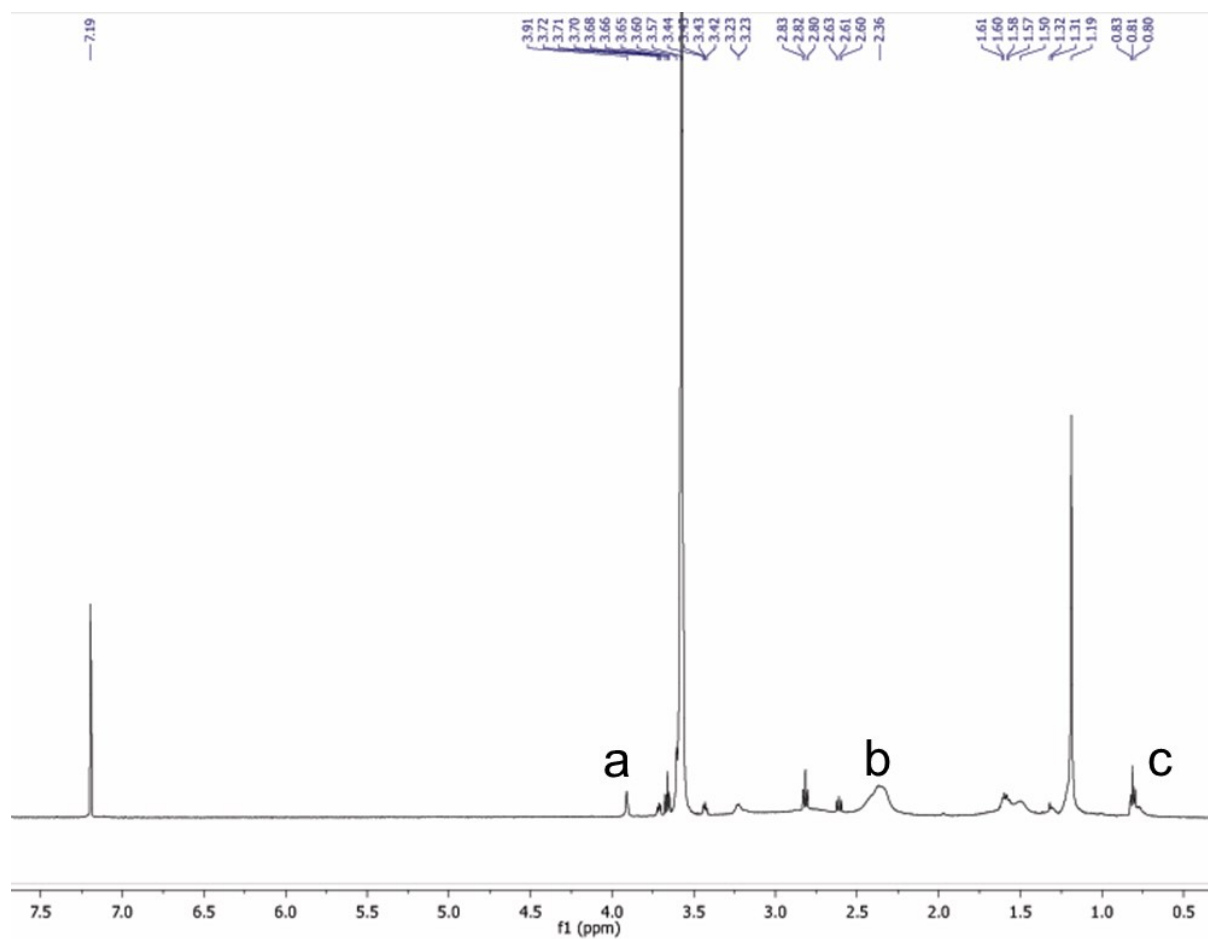


Figure S2. ^1H -NMR spectrum of DAB-PEG-SS-ODT dendrimer (in CDCl_3 , 500 MHz).

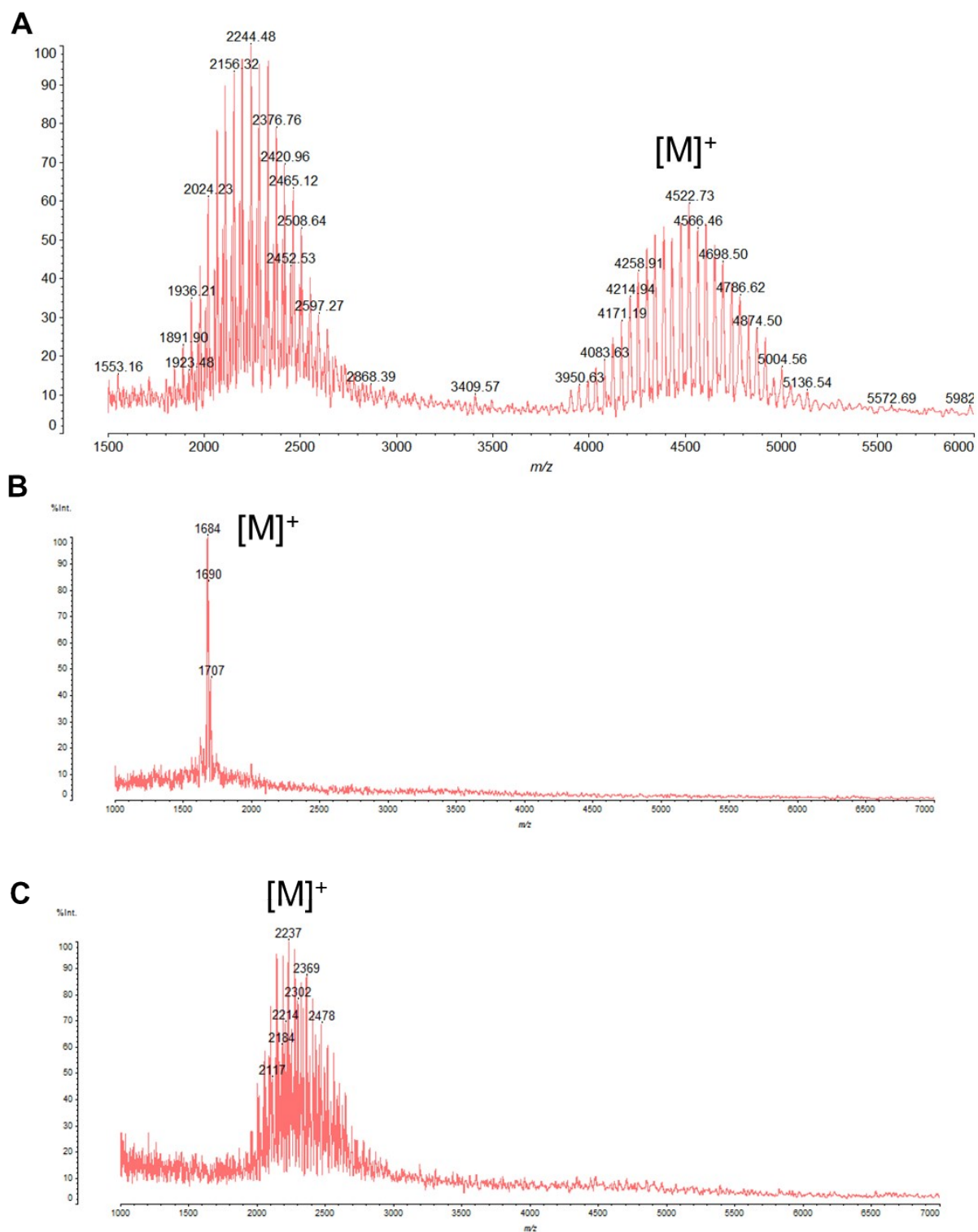


Figure S3. MALDI-TOF MS spectra of DAB-PEG-SS-ODT (A), DAB (B) and OPSS-PEG-SCM (C).

Section S1. Amount of conjugated lipid to dendrimer

The amount of lipid loading to modified dendrimer (DAB-PEG-SS-ODT) is calculated as the weight of conjugated ODT as a percentage of the total average molecular weight:

$$\text{Lipid-loading (\%)} = \{(n \times \text{MW}_{\text{ODT}})/[\text{M}]^+\} \times 100$$

Where, n is the number of ODT conjugated to modified dendrimer, MW_{ODT} is the molecular weight of ODT and $[\text{M}]^+$ is the average molecular weight of the modified dendrimer (DAB-PEG-SS-ODT) analyzed from MALDI-TOF MS.

$$\text{Amount of ODT in DAB-PEG-SS-ODT (\%)} = \{(1 \times 286.56)/4522.73\} \times 100 = 6.33\%$$

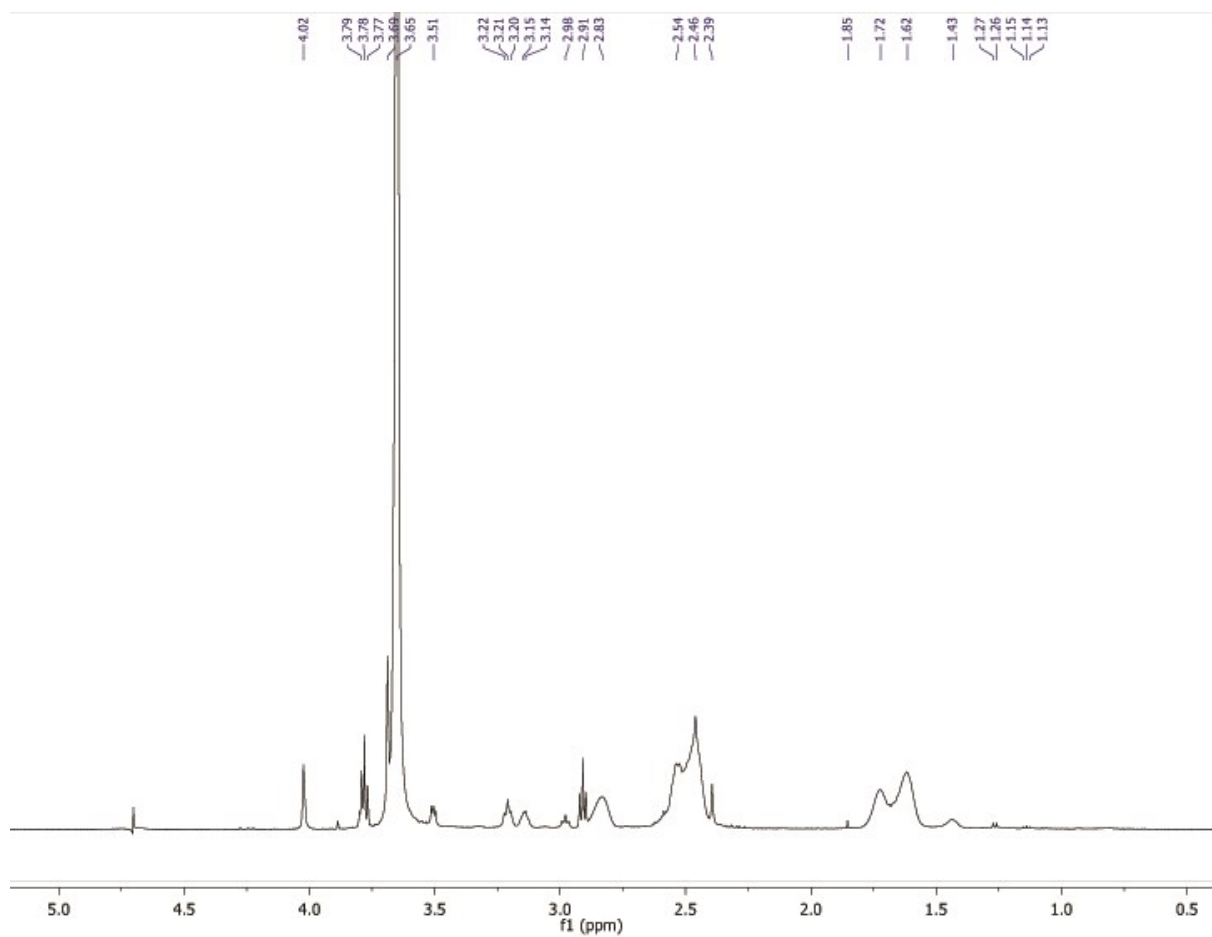


Figure S4. ¹H-NMR spectrum of DAB-PEG-SS-ODT dendrimer (in D₂O, 500 MHz).

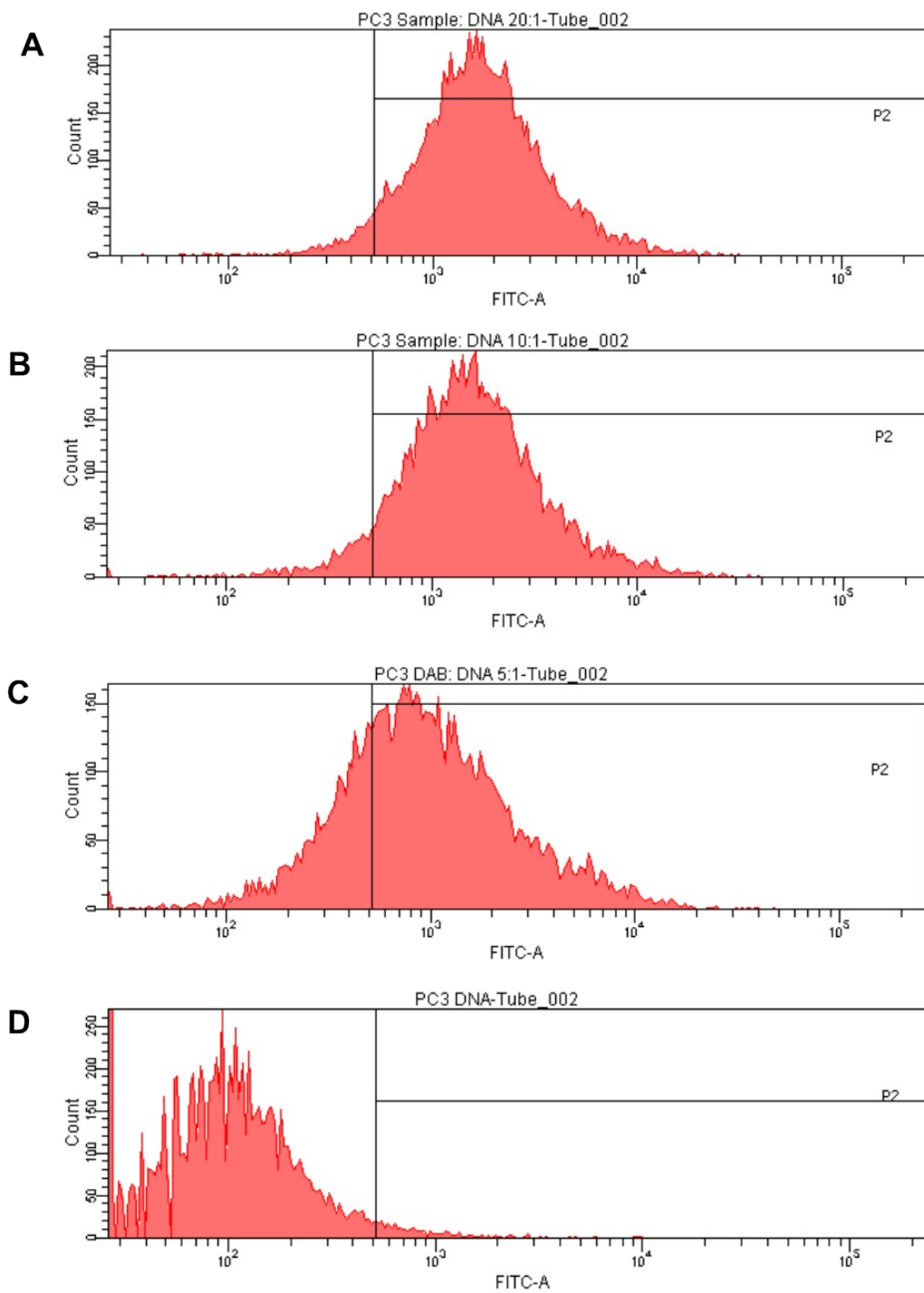


Figure S5. Flow cytometry histograms of PC3-Luc cells following 2-h incubation with dendriplexes (DAB-PEG-SS-ODT dendrimer: fluorescein-labeled DNA weight ratios: 20:1 (A), 10:1 (B)) (controls: DAB dendriplex (dendrimer: fluorescein-labeled DNA weight ratio 5:1 (C)) and fluorescein-labeled DNA solution (D)).

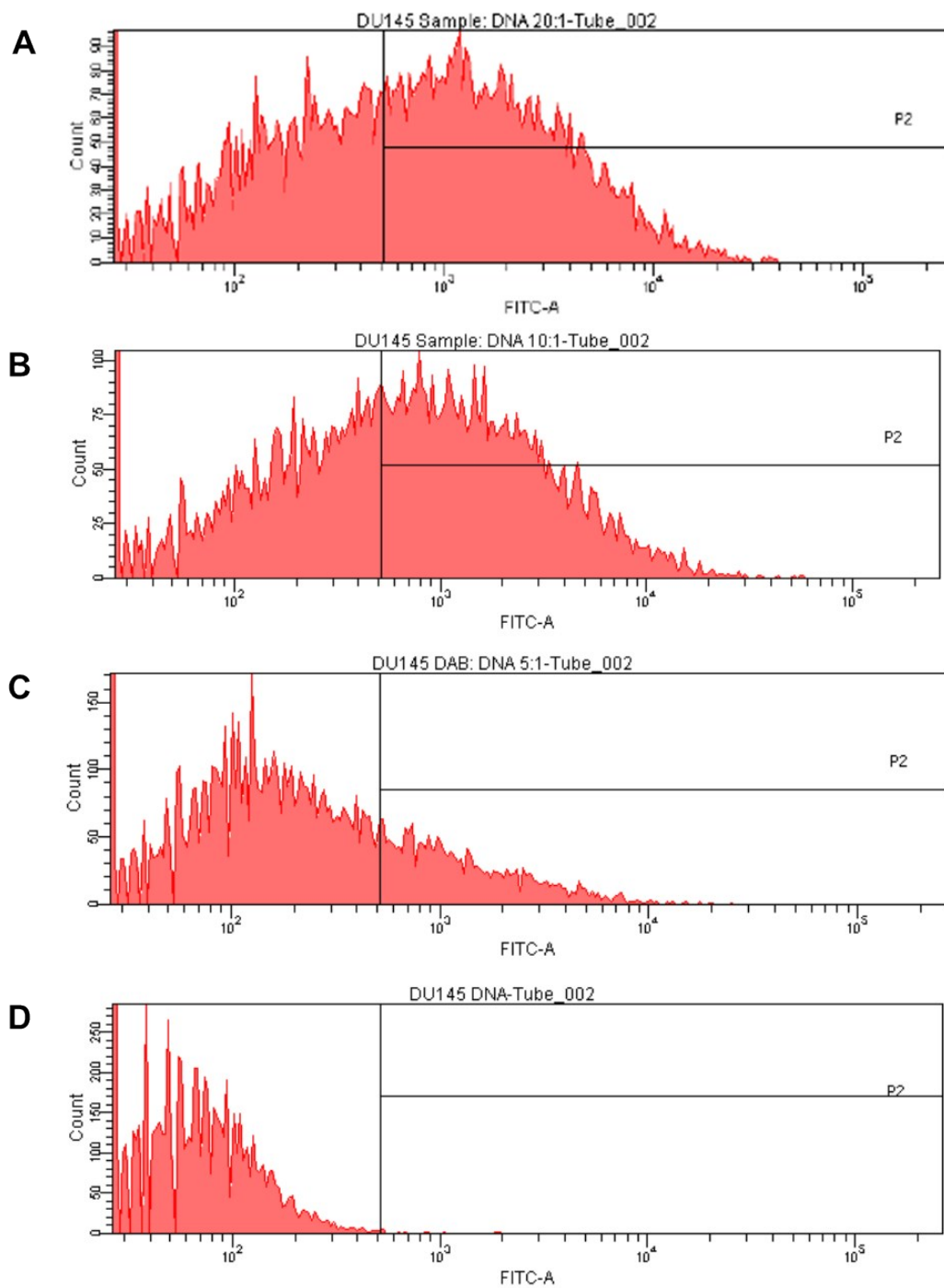


Figure S6. Flow cytometry histograms of DU145 cells following 2-h incubation with dendriplexes (DAB-PEG-SS-ODT dendrimer: fluorescein-labeled DNA weight ratios: 20:1 (A), 10:1 (B)) (controls: DAB dendriplex (dendrimer: fluorescein-labeled DNA weight ratio 5:1 (C)) and fluorescein-labeled DNA solution (D)).