

Electronic Supporting Information

Construction of Core-shell Tecto Dendrimers Based on Supramolecular Host-Guest Assembly for Enhanced Gene Delivery

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This article is specially contributed in memoriam of Prof. Dr. Fritz Vögtle (1939–2017), one of the first innovative pioneers of cascade molecules/dendrimers.

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Table S1. Physicochemical parameters of the formed vectors.

Vector	G3-Ad	G5-CD	G5-CD/Ad-G3
Mw^a	7139.1	35669.8	79231.3
Mean number of primary amines per dendrimer	26	64	83

^a Molecular weights were estimated by ¹H NMR spectra.

Table S2. Polydispersity index (PDI) data of the vectors (N/P = 0) and vector/pDNA polyplexes under different N/P ratios.

N/P	G3-Ad	G5-CD	G5-CD/Ad-G3
0	0.39±0.02	0.41±0.03	0.32±0.04
1	0.18±0.07	0.45±0.06	0.54±0.03
5	0.42±0.05	0.36±0.04	0.21±0.01
10	0.23±0.03	0.63±0.07	0.32±0.07
20	0.35±0.03	0.29±0.06	0.38±0.03
40	0.42±0.06	0.44±0.06	0.36±0.01
60	0.54±0.03	0.62±0.09	0.24±0.05

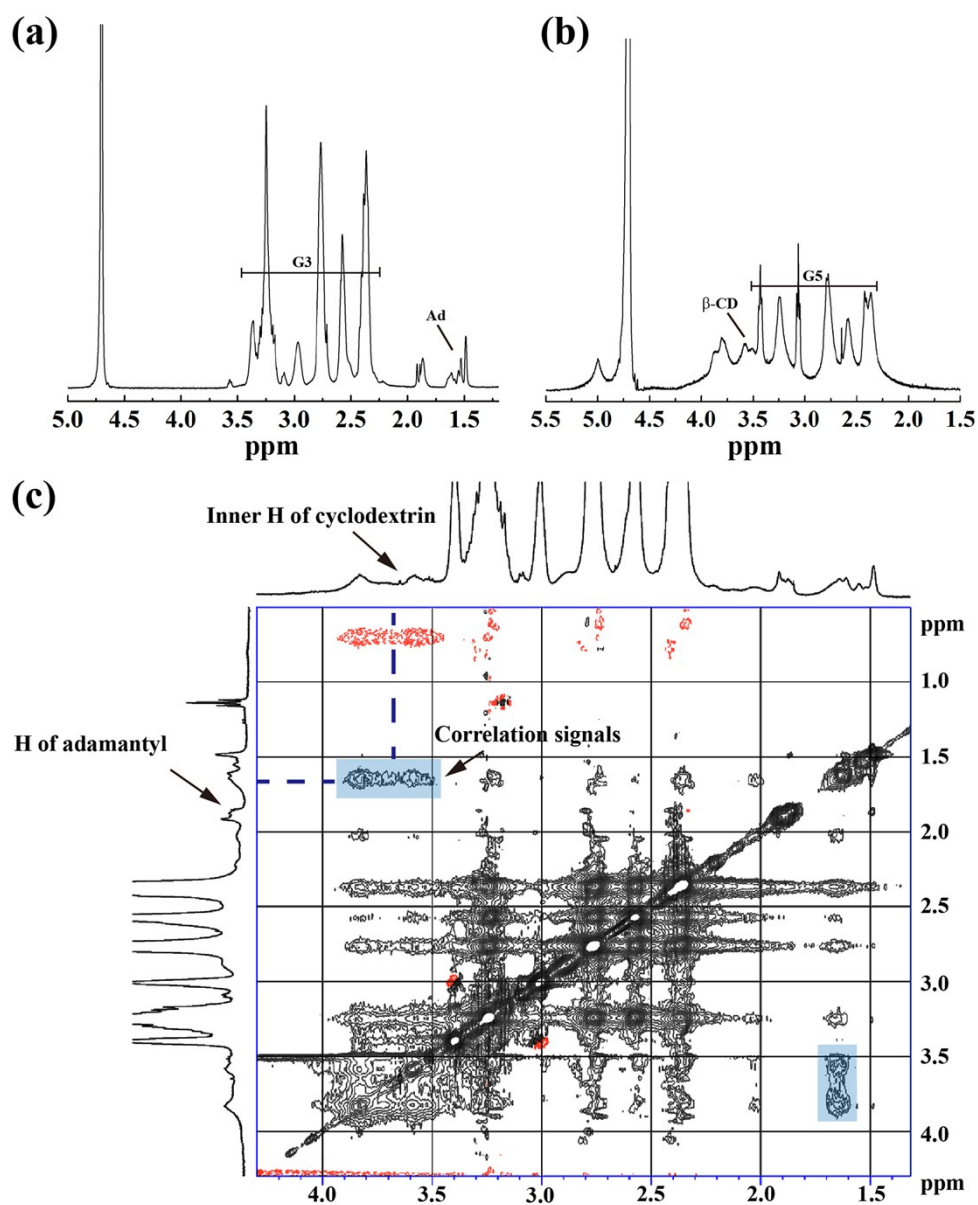


Figure S1. ^1H NMR spectrum of G3-Ad (a) and G5-CD (b) dendrimers in D_2O . 2D NOESY ^1H NMR spectrum of G5-CD/Ad-G3 dendrimers is shown in (c).

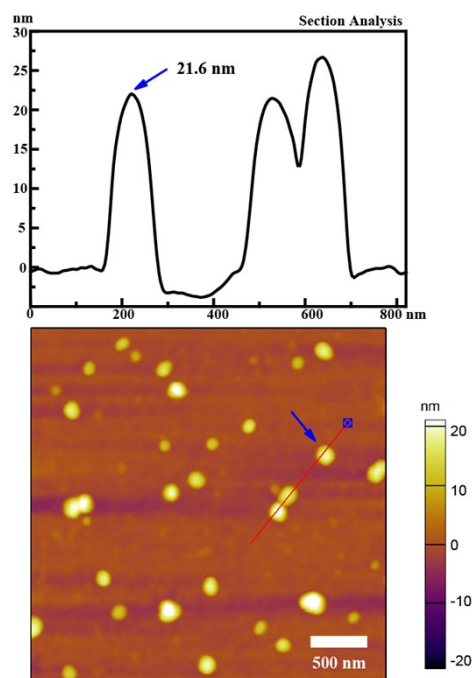


Figure S2. AFM image of G5-CD/Ad-G3/pDNA polyplexes at the N/P ratio of 60:1.

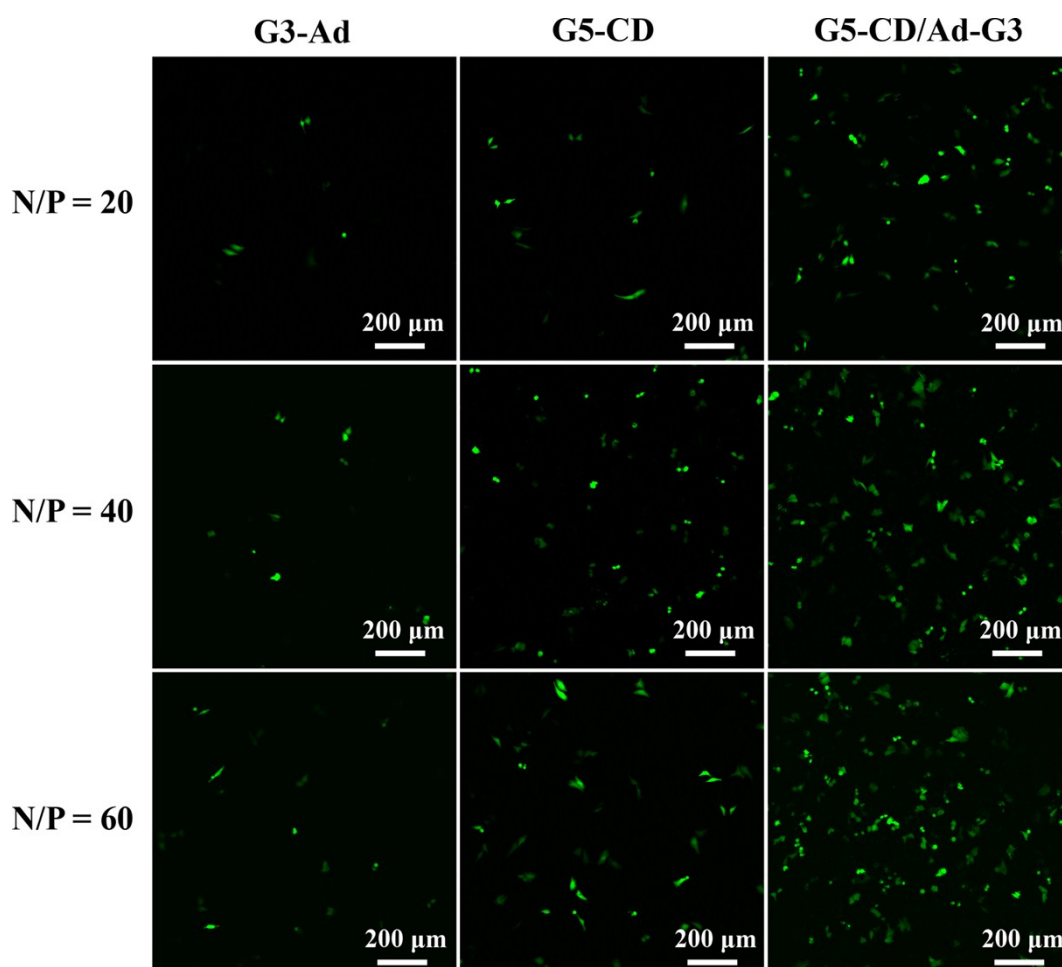


Figure S3. Confocal microscopic images of HeLa cells transfected with different vector/EGFP pDNA polyplexes at different N/P ratios (20:1, 40:1, and 60:1 respectively) for 24 h. Transfection was performed at a dose of 1 μ g/well of pDNA. EGFP plasmid DNA expression in HeLa cells was observed in green fluorescence.

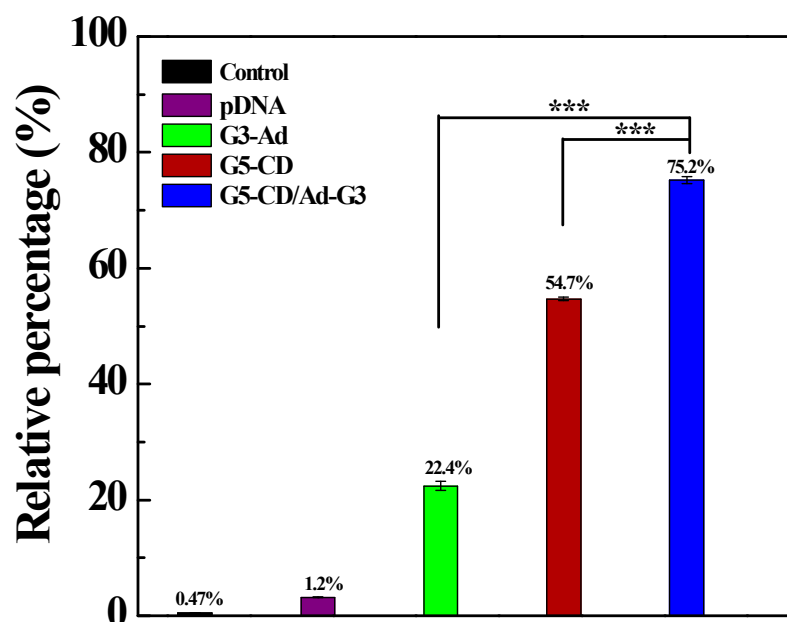


Figure S4. Flow cytometry analysis of the intracellular uptake of vector/Cy3-labeled pDNA polyplexes (1 μ g of Cy3-labeled pDNA per well) at an N/P ratio of 60:1 for 4 h. G3-Ad, G5-CD and G5-CD/Ad-G3 dendrimers were used as vectors. The cells without treatment or treated with naked pDNA were used as control.