Supplementary Information

A facile modular approach toward multifunctional supramolecular polyplexes for targeting gene delivery

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Fig. S1 (A) ESI-MS spectrum and (B) $^1$H NMR spectrum (in D$_2$O) of Ad-RGD.
Fig. S2 $^1$H NMR spectra of Boc-PEG-NH$_2$ (A), Boc-PEG-Ad (B), Ad-PEG-NH$_2$ (C) in CDCl$_3$, FA-PEG-Ad (D) in D$_2$O, LA-PEG-Ad in D$_2$O (E) and Ad-PEG-NH$_2$ in D$_2$O (F).
Fig. S3 $^{13}$C NMR spectra of FA-PEG-Ad (A) and LA-PEG-Ad (B) in D$_2$O,
Fig. S4 HPLC traces of FA-PEG-Ad, NH2-PEG-Ad and folate by RI (A) and UV (280 nm, B and 363 nm, C) detectors.
Fig. S5 Calibration curve for folic acid (363 nm) in DMSO by UV-Vis (A) and UV-Vis spectra of 0.04 mg/mL folic acid in DMSO, 0.2 mg/mL FA-PEG-Ad in DMSO and water (B).

Fig. S6 HPLC traces of LA-PEG-Ad and NH$_2$-PEG-Ad by RI detector.
**Fig. S7** Transmission electron microscopy (TEM) images of PPS and PEG-PPS at N/P 10.

**Fig. S8** The particle sizes of PEI-Ad/PCD based polyplexes (PPS) at N/P 10 with different functionalization (RGD-PPS, FA-PEG-PPS and LA-PEG-PPS) in 20 mM Hepes, 130 mM NaCl (pH 7.4) over time.
Fig. S9 Quantitative analysis of green fluorescence intensity of HeLa (A) and HepG2 (B) cells after incubation 4 hours with YOYO-1 stained pCMV_Luc polyplexes by ImageJ software.