Polyethyleneimine-grafted poly(N-3-hydroxypropyl)aspartamide as a biodegradable gene vector for efficient gene transfection

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SUPPORTING INFORMATION

The effect of degree of grafting on transfection efficiency

Fig. S1 shows the effect of degree of grafting of PHPA-PEI on transfection efficiency for pDNA (pRL-CMV) delivery in the presence of serum, in comparison with those of branched PEI (25 kDa). Three representative PHPA-PEIs with degree of grafting of 14%, 30%, and 76% were used to evaluate their transfection activity. PHPA-PEI with neither low (14%) nor high (76%) degree of grafting could mediate efficient gene transfection at 36 h post-transfection. In sharp contrast, PHPA-PEI with a degree of 30% was found to be highly efficient for gene transfection, which is much more superior than PEI as described previously. These results demonstrate that only PHPA-PEI with medium degree of grafting is most effective for gene transfection.



Fig. S1 *In vitro* gene transfection efficiency as a function of N/P ratio in (a) 3T3, (b) HEK293 and (c) COS7 cell lines in the presence of serum at 36 h post-transfection (mean \pm SD, n=3). Representative PHPA-PEI polymers with a degree of grafting of 14% (PHPA-PEI-L), 30% (PHPA-PEI-M), and 76% (PHPA-PEI-H) were tested for their transfection efficiency. Branched PEI with a molecular weight of 25 kDa (PEI25k) was used as a control.