Supporting Information

of

Design of Hepatocyte-targeted Gene Transfer Vector and Its in vitro Transfer of Tumor-suppressor p53 Gene

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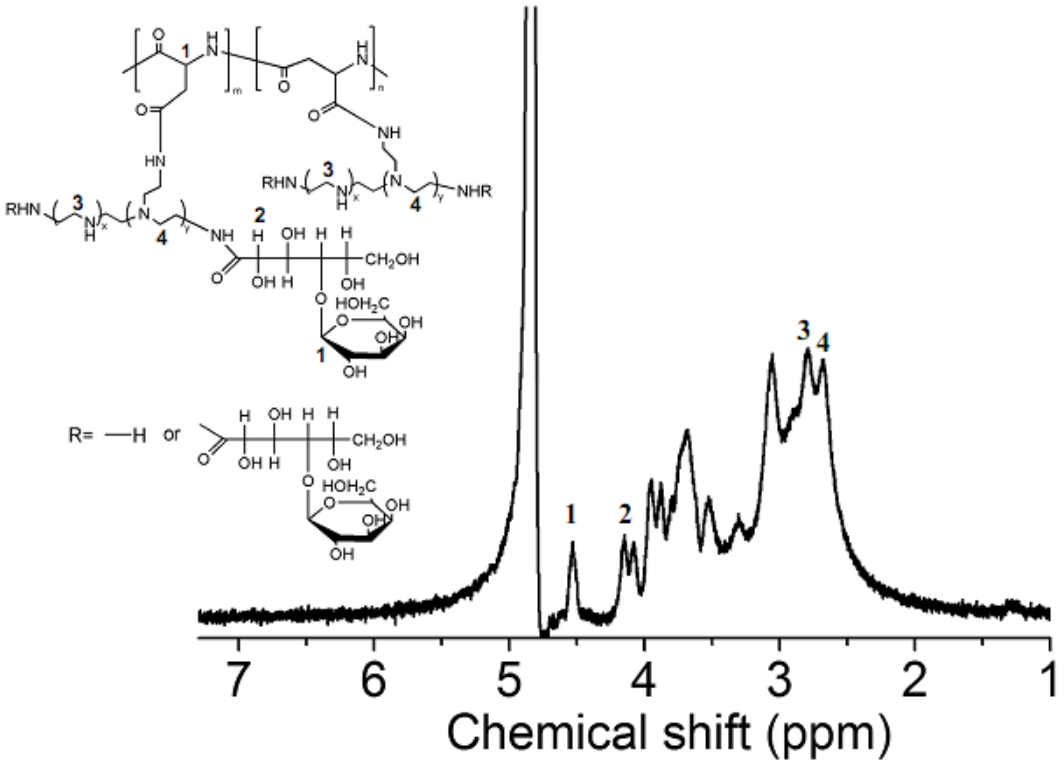

Figure S1. ^{1}H NMR spectrum of PSI-g-PEI-g-LA in D_2O.

Acid–base titration

The buffer capabilities of polymers were examined by acid-base titrations over the pH range from 10.43 to 2.67. Briefly, 0.2 mg·mL^{-1} sample solution was prepared in 30 mL of 150×10^{-3} M NaCl solution before titration. The sample solution was firstly titrated with 0.1 M NaOH to pH 10.43. HCl solution (0.1 M) was then gradually added to the solution. During the titration process, the solution pH was monitored simultaneously by a microprocessor pH meter. Data were shown as mean ± standard deviation (SD) based on triplicate independent experiments.

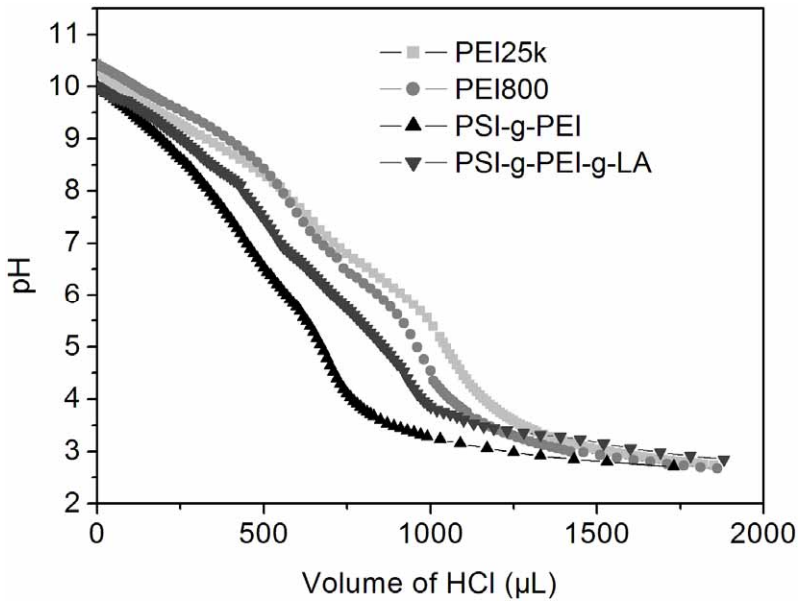

Figure S2. Acid-base titration profiles of PEI25k, PEI800, PSI-g-PEI and PSI-g-PEI-g-LA in 0.15M NaCl. Data were shown as mean ± SD (n=3).

Agarose gel retardation assay

PSI-g-PEI/pEGFP-C1 and PSI-g-PEI-g-LA/pEGFP-C1 complexes at different W/W ratios (weight ratio of polymer relative to pDNA) ranging from 0.0625:1 to 4:1 were prepared by adding appropriate volume of the polymer solution (in 150×10^{-3} M NaCl solution) to 1.3 μL of pEGFP-C1 solution (80 ng·μL^{-1} in 40×10^{-3} M Tris–HCl buffer solution). The obtained complex solution was then diluted by 150×10^{-3} M NaCl solution to the total volume of 5 μL and incubated at 37 °C for 0.5 h. After 1 μL of GelRed™ was added to the complexes, the incubated complexes were electrophoresed on a 0.7% agarose gel which was put in Tris–acetate (TAE) running buffer at 80 V for 1.2 h. DNA was visualized under an ultraviolet lamp with a Vilber Lourmat imaging system.

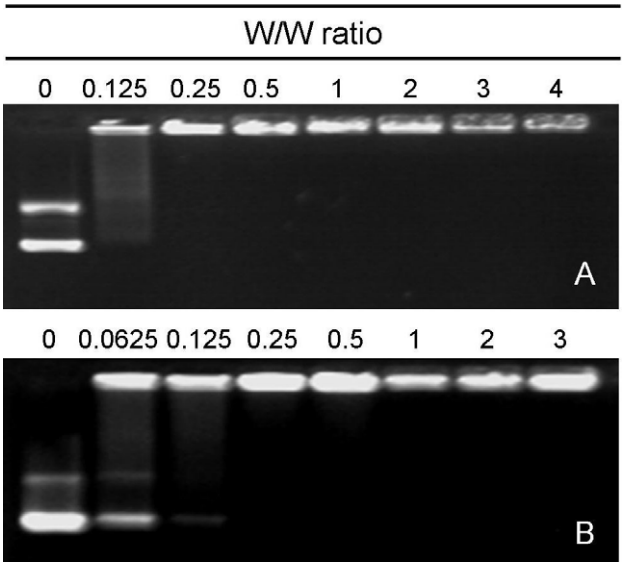

Figure S3. Agarose gel electrophoresis retardation assay of PSI-g-PEI (A) and PSI-g-PEI-g-LA (B). Plasmid DNA (pEGFP-C1) was mixed with the polymers at different W/W ratios.