

Support information

Dextranated Poly(Urethane Amine)s Designed for Systemic Gene Delivery in Ovarian Cancer Therapy

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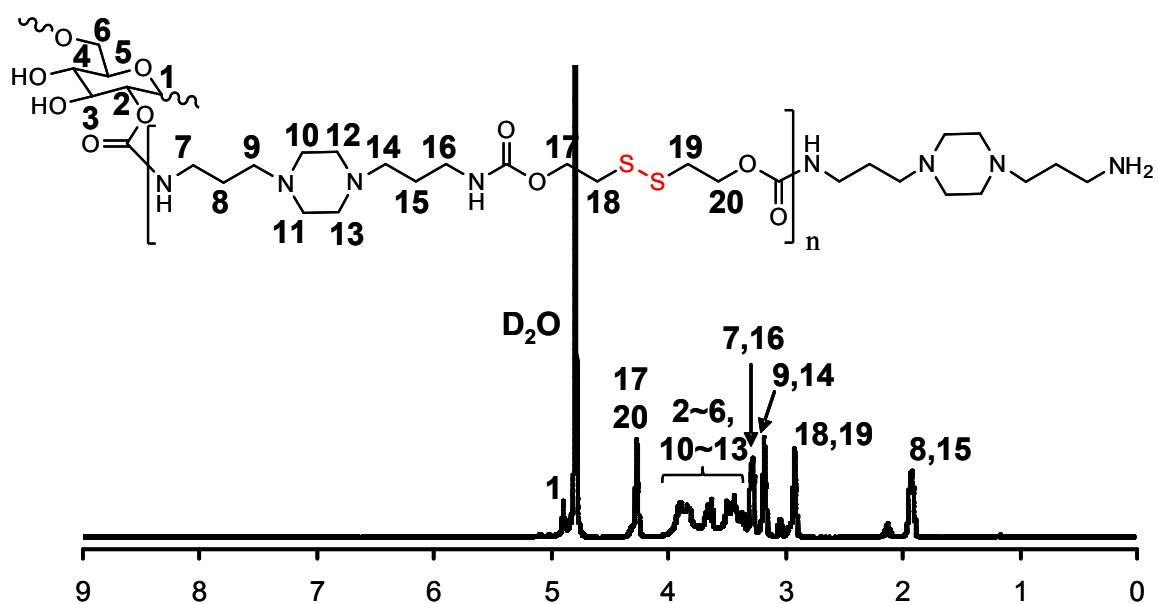


Fig. S1. ¹H NMR spectrum of dextran-PUA conjugate.

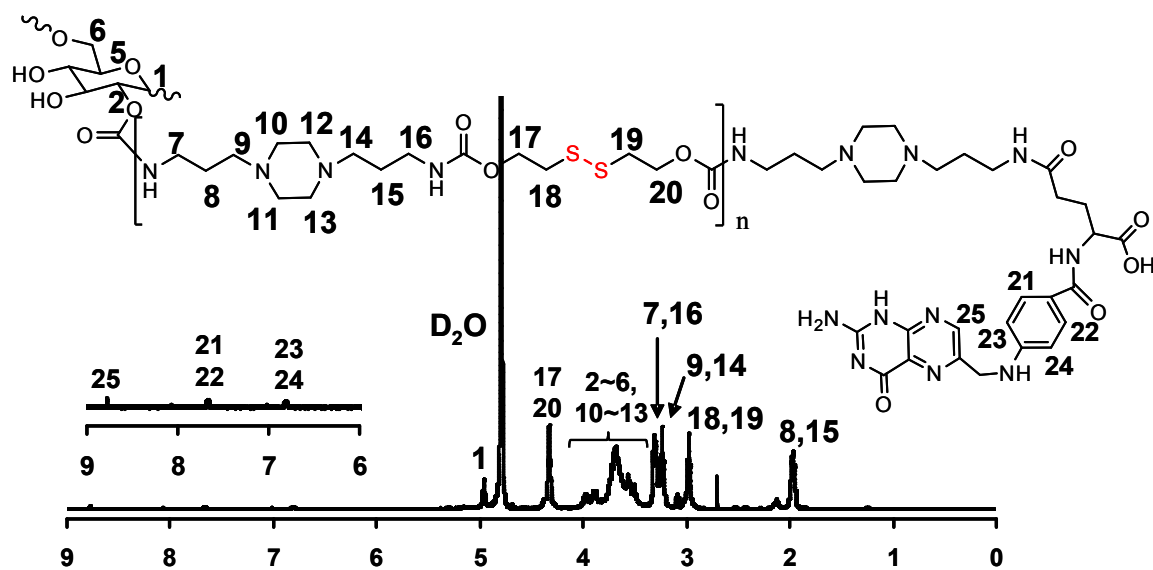


Fig. S2. ¹H NMR spectrum of folate-modified dextran-PUA conjugate.

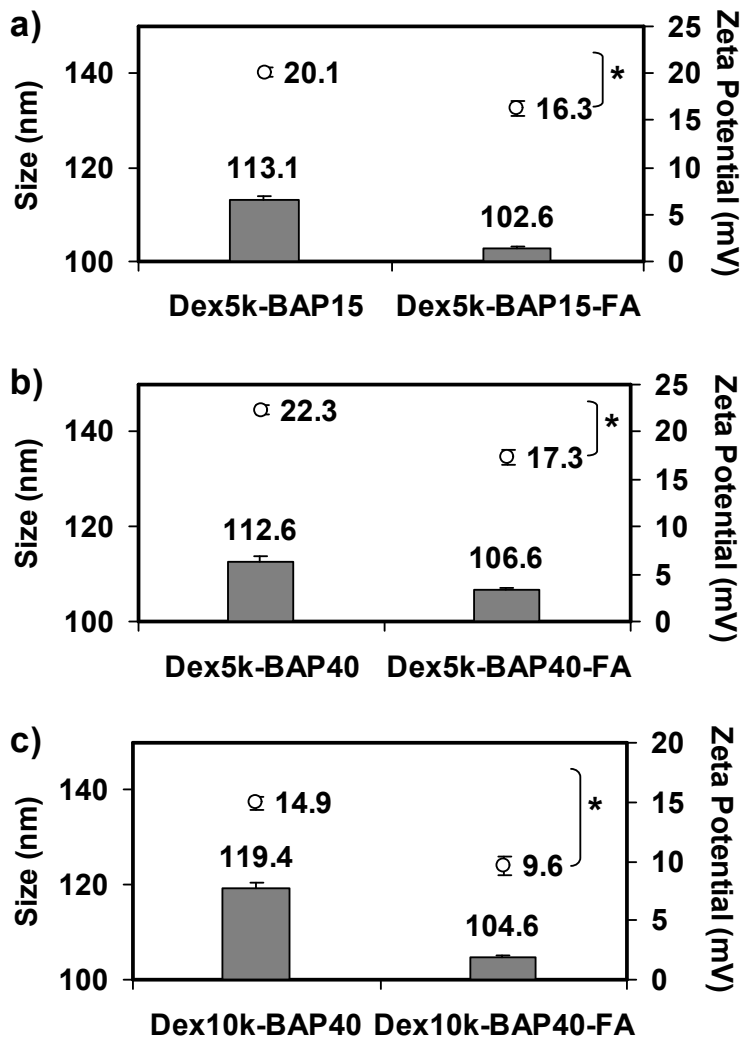


Fig.S3. Particle size and zeta potential of Dex-PUA or Dex-PUA-FA polyplexes. *P<0.05.

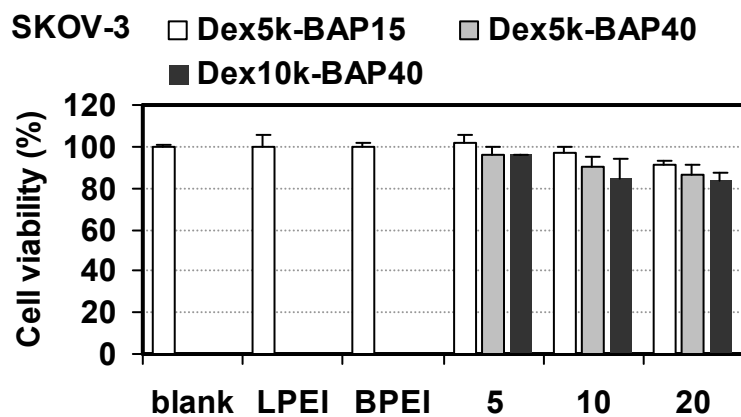


Fig.S4. Cytotoxicity analysis showing cell viability after SKOV-3 cells were co-incubated with the polyplexes of Dex-PUA polycations at different N/P ratios (5/1-20/1). The LPEI and BPEI were used as a control.

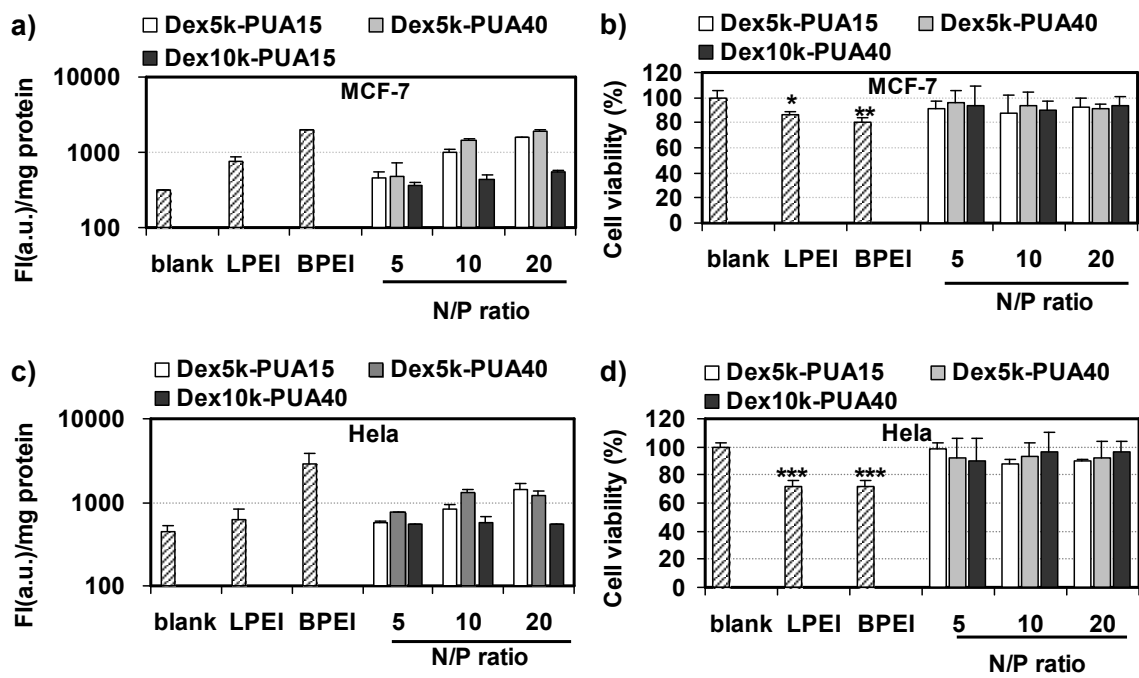


Fig.S5. a, c) Transfection activity in vitro of Dex-PUA based polyplexes in a) MCF-7 cells and c) HeLa cells; b,d) Cytotoxicity in vitro of Dex-PUA based polyplexes in b) MCF-7 cells and d) HeLa cells; e) cytotoxicity of Dex-PUA polycations against SKOV -3 cells as a function of polymer concentrations. BPEI at an N/P ratio of 10/1 is used as a control. * $P < 0.05$, ** $P < 0.01$ and *** $P < 0.001$.

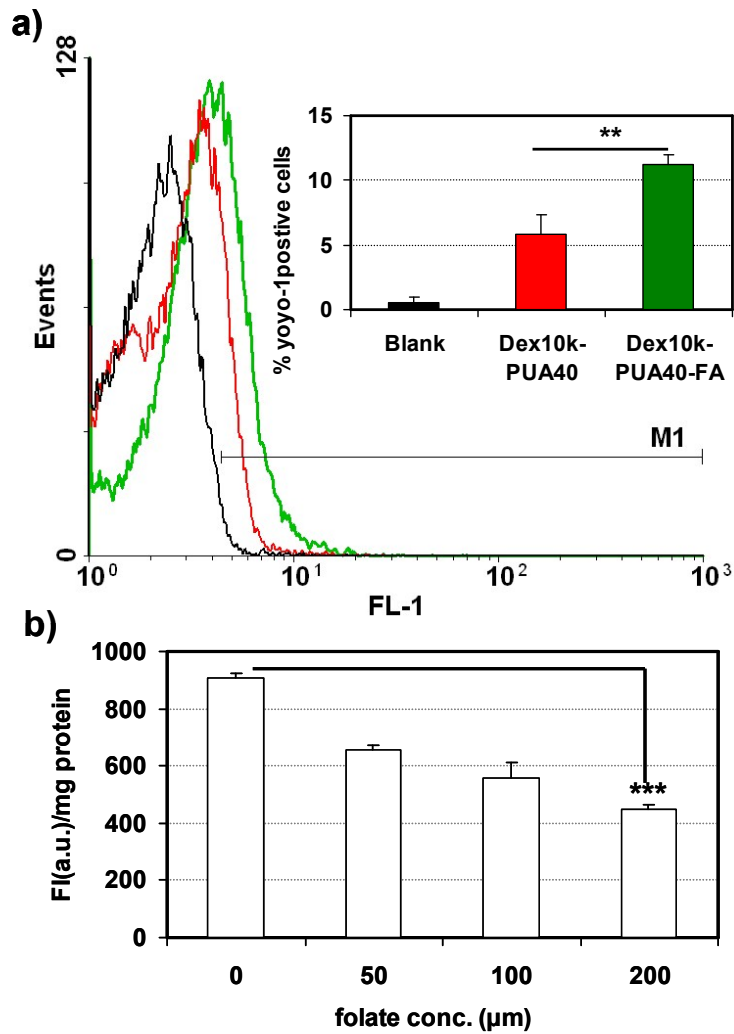


Fig.S6. a) Fluorescence histogram of SKOV-3 cells treated by yoyo-1-labeled DNA containing polyplexes of Dex10k-PUA40 (red) and Dex10k-PUA40-FA (green). Untreated cells (black) were used as a blank control. The inserted is quantitative data on the percentage of yoyo-1 positive SKOV-3 cells, which shows that Dex10k-PUA40-FA can induce higher gene uptake into the cells as compared to Dex10k-PUA40; b) Free folate (50-200 μ M) inhibits transfection efficiency of Dex10k-PUA40-FA against SKOV-3 cells. *** $P < 0.001$, ** $P < 0.01$

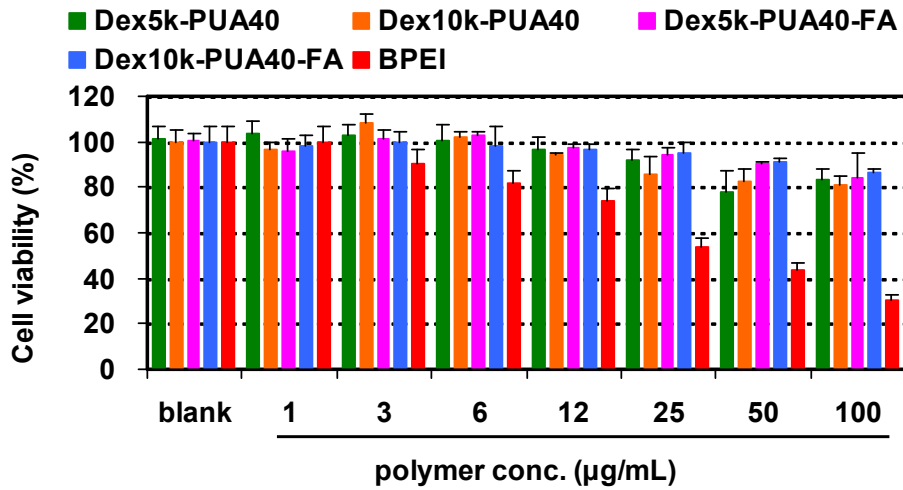


Fig.S7. Cell viability 24 h after co-incubating SKOV-3 cells with Dex-PUA, Dex-PUA-FA polymers and 25kDa BPEI at different polymer concentrations.

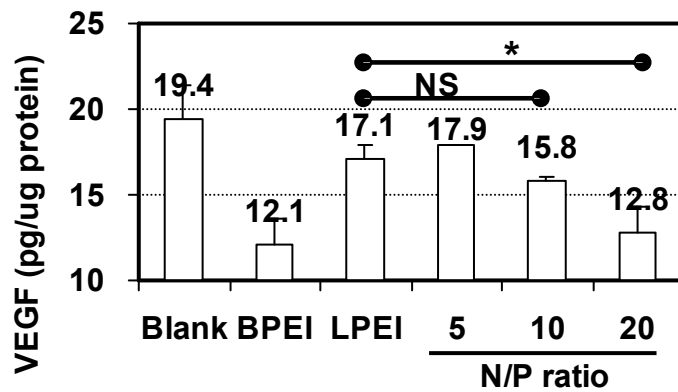


Fig.S8. ELISA assay showing VEGF expression in SKOV-3 cells 24 h after transfection with Dex10k-PUA40-FA polyplexes containing shRNA-VEGF at different N/P ratios. BPEI and LPEI polyplexes were used as a positive control. *P<0.05; NS: not significant

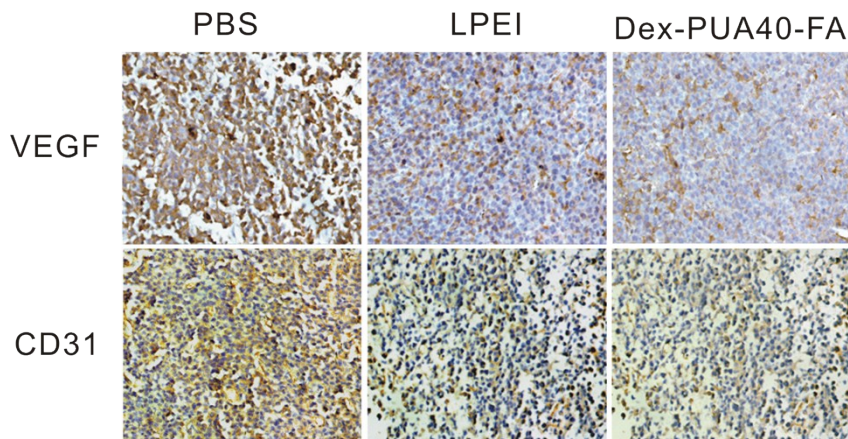


Fig.S9. Immunohistochemistry staining showing VEGF (up) and CD31 (down) expression in tumor tissue 11 days after shRNA-VEGF gene therapy using Dex10k-PUA40-FA.

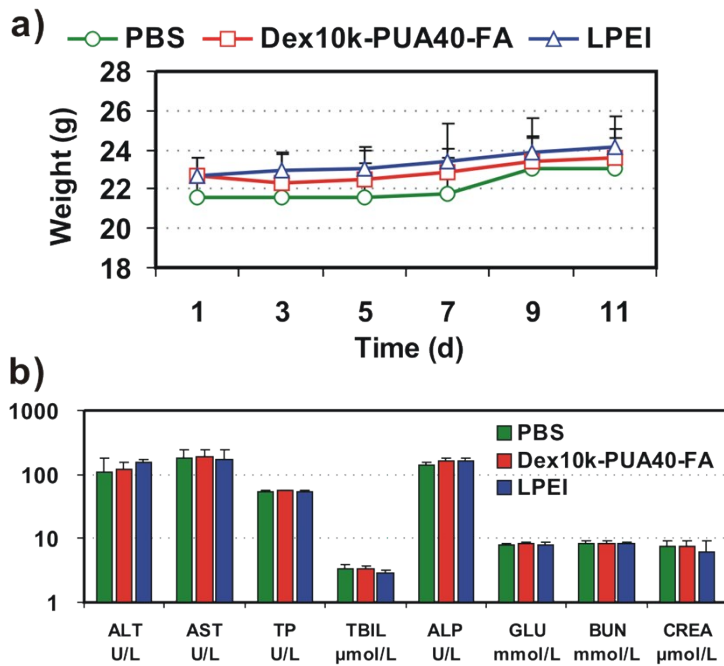


Fig.S10. a) Mouse weight as a function of time within 11 days of shRNA-VEGF gene therapy; b) Routine blood assays showing typical biomarkers 11 days after the gene therapy using polymeric vectors or PBS as a blank control.