Supplementary Information

How does the polymer architecture and position of cationic charges affect cell viability?

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Gel Permeation Chromatography: Chromatograms of copolymers P2-P7.

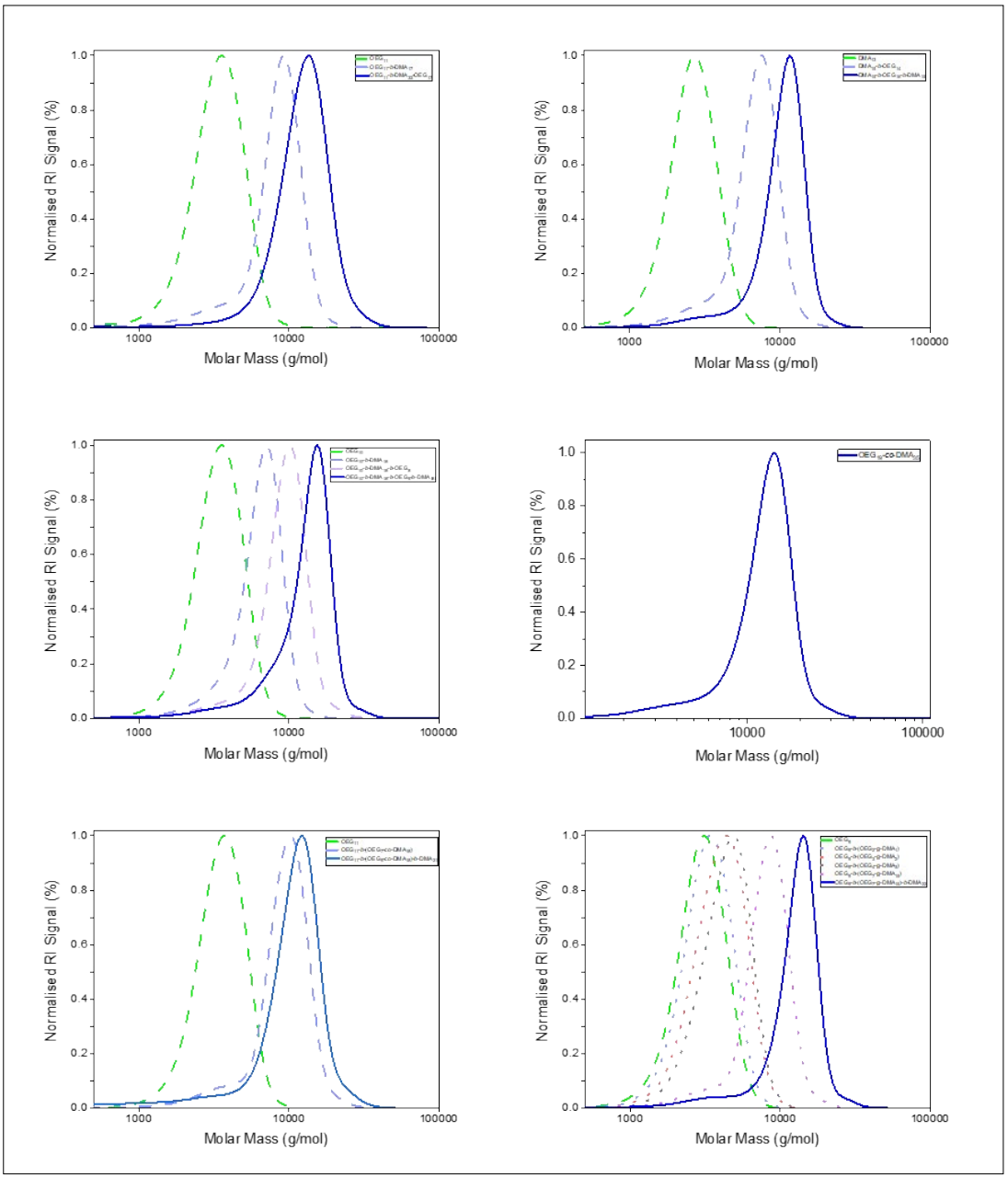


Figure S1. GPC chromatogram of all copolymers synthesised and their precursors. Precursors are represented by the dashed lines of varying colour and the final polymers are represented by blue solid line. Composing units PEGMA300$_x$ and DMAEMA$_x$ are abbreviated PEG$_x$ and DMA$_x$ on inset legend, respectively.

MTT Assay: Cytotoxic Effects of PEI, control, and of copolymers P1-P7.

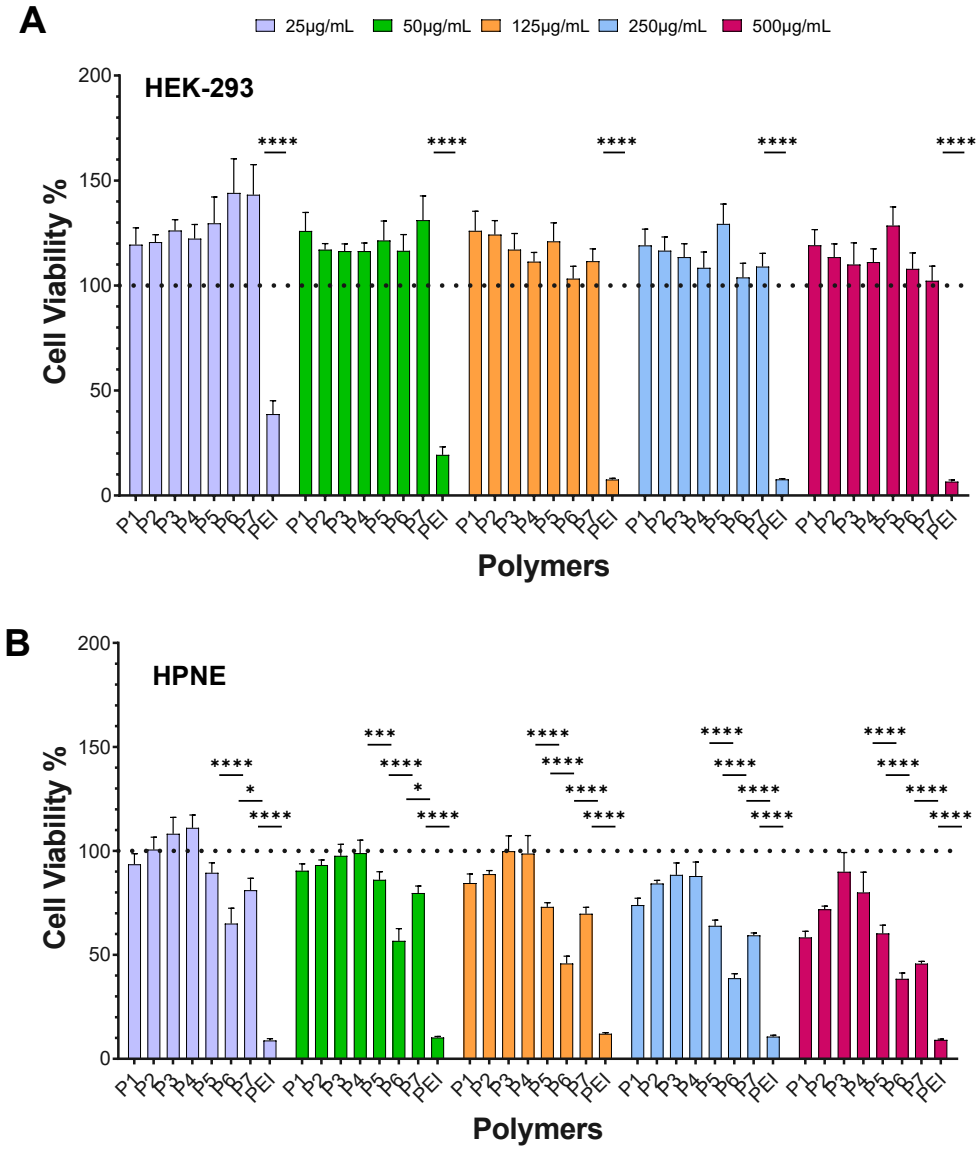


Figure S2. **Effect of monomer distribution on non-malignant cell lines.** HEK-293 (top) and HPNE (bottom) were treated with increasing concentrations of polymer solutions for 48 hours. Polymer concentrations, for all copolymers, are: 25 µg/mL (lilac), 50 µg/mL (green), 125 µg/mL (orange), 250 µg/mL (blue) and 500 µg/mL (pink). Polymer abbreviations for P1 to P7 are AB, ABA, BAB, ABAB, AcoB, A(AcoB)B and gradient, respectively. PEI was used a positive control (cytotoxic). Cell viability is reported as percentage relative to untreated control cells (0 µg/mL, not plotted). Black dotted line indicates 70% cell viability. Data shown as mean ± SEM from triplicates. Differences in mean cell viability between polymers was investigated using Two-way ANOVA and Tukey's multiple comparison testes. Significance denoted **** P <0.0001, *** P < 0.001, ** P < 0.01, * P < 0.05.

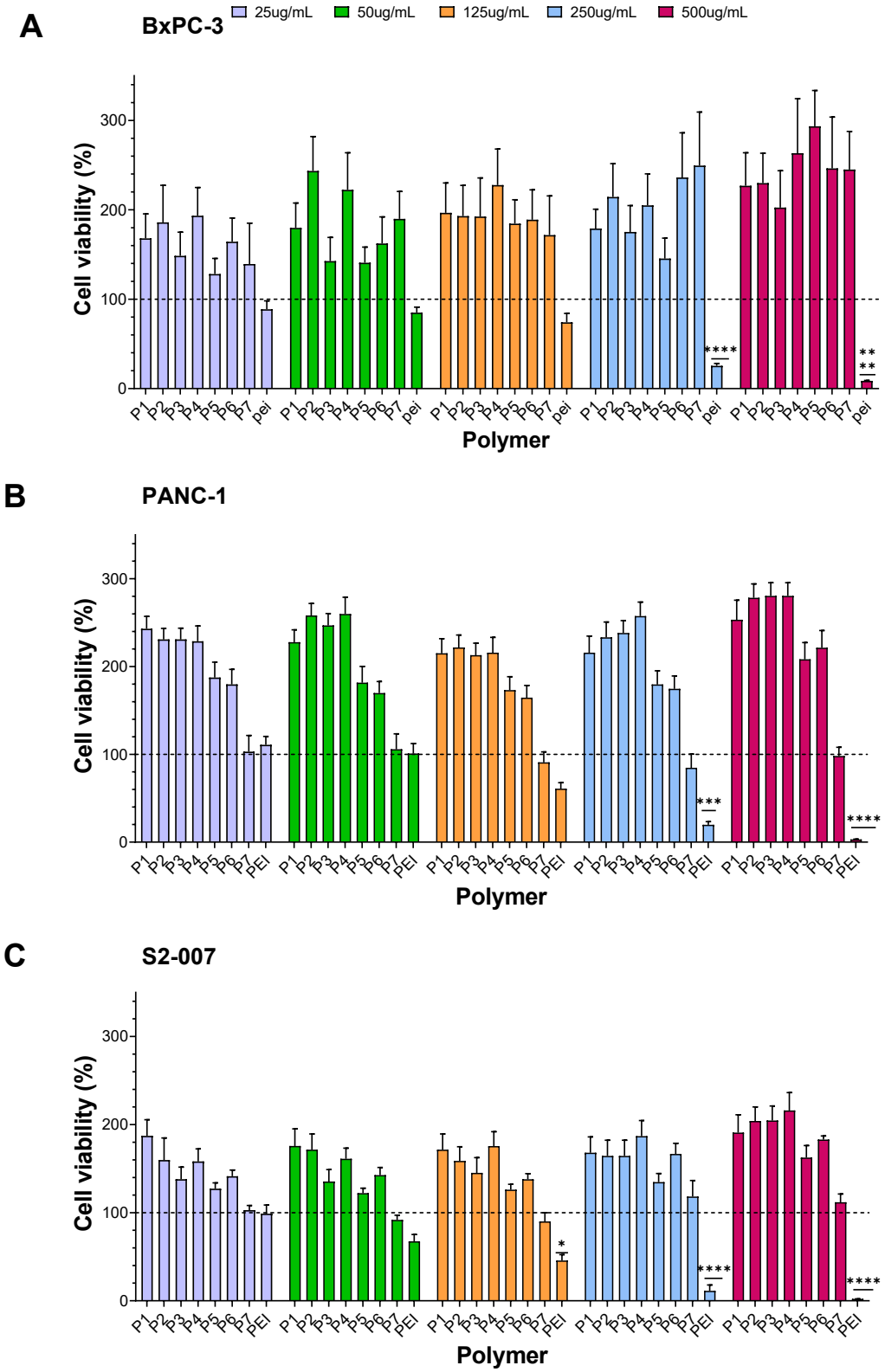


Figure S3. **Effect of monomer distribution on PDAC cell lines.** BxPC-3 (top), PANC-1 (middle) and S2-007 (bottom) were treated with increasing concentrations of polymer solutions for 24 hours. Polymer concentrations, for all copolymers, are: 25 µg/mL (lilac), 50 µg/mL (green), 125 µg/mL (orange), 250 µg/mL (blue) and 500 µg/mL (pink). Polymer abbreviations

for P1 to P7 are AB, ABA, BAB, ABAB, AcoB, A(AcoB)B and gradient, respectively. PEI was used a positive control (cytotoxic). Cell viability is reported as percentage relative to untreated control cells (0 μg/mL, not plotted). Black dotted line indicates 70% cell viability. Data shown as mean ± SEM from triplicates. Differences in mean cell viability between polymers was investigated using Kruskal-Wallis tests and Dunn's multiple comparison testes. Significance denoted **** $P < 0.0001$, *** $P < 0.001$, ** $P < 0.01$, * $P < 0.05$.

Hydrodynamic Diameter Graphical Data:

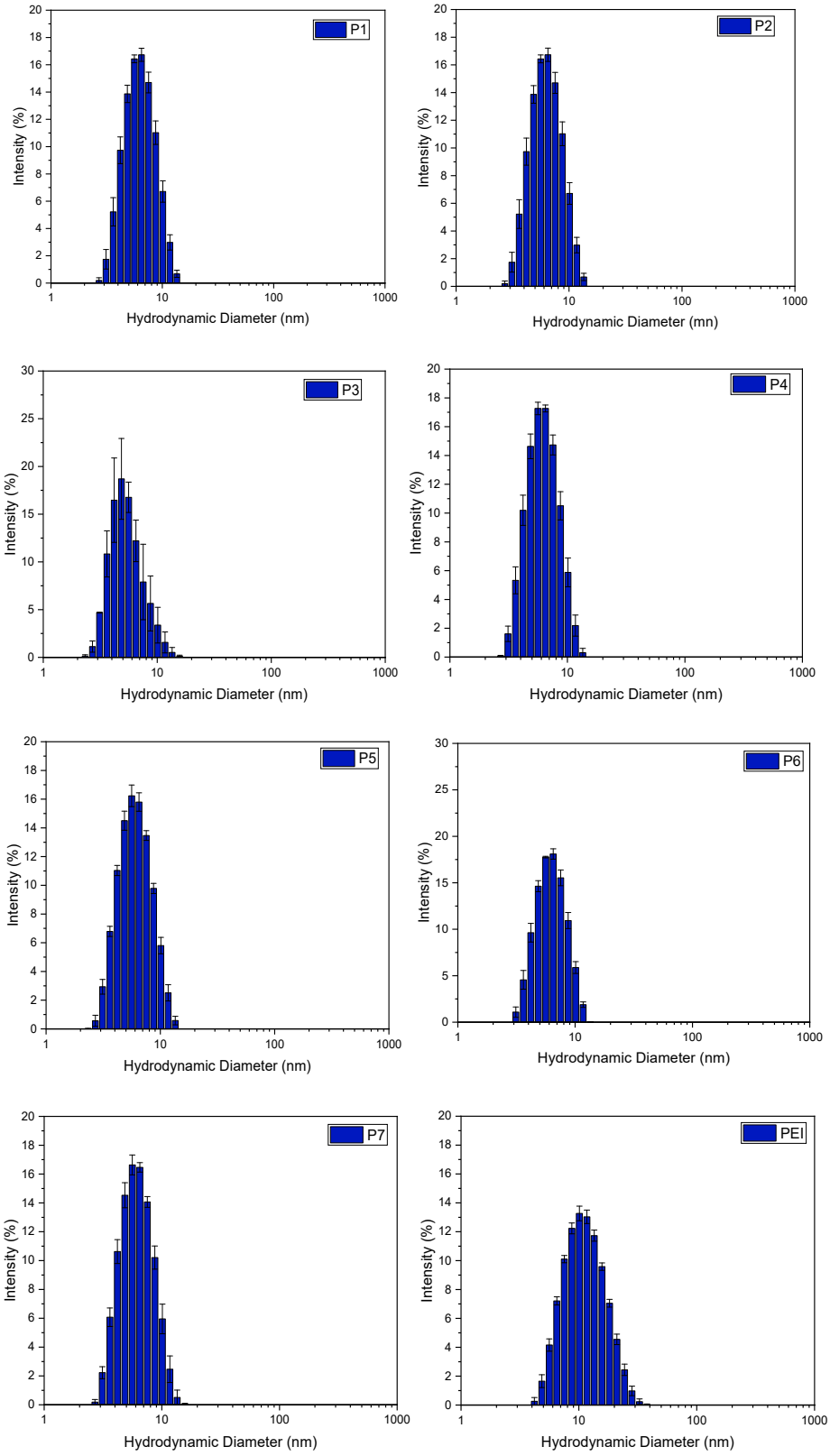


Figure S4**.** Data distribution (histograms) of all copolymers and PEI, investigated at the solution's original pH (~8).

Physiological pH:

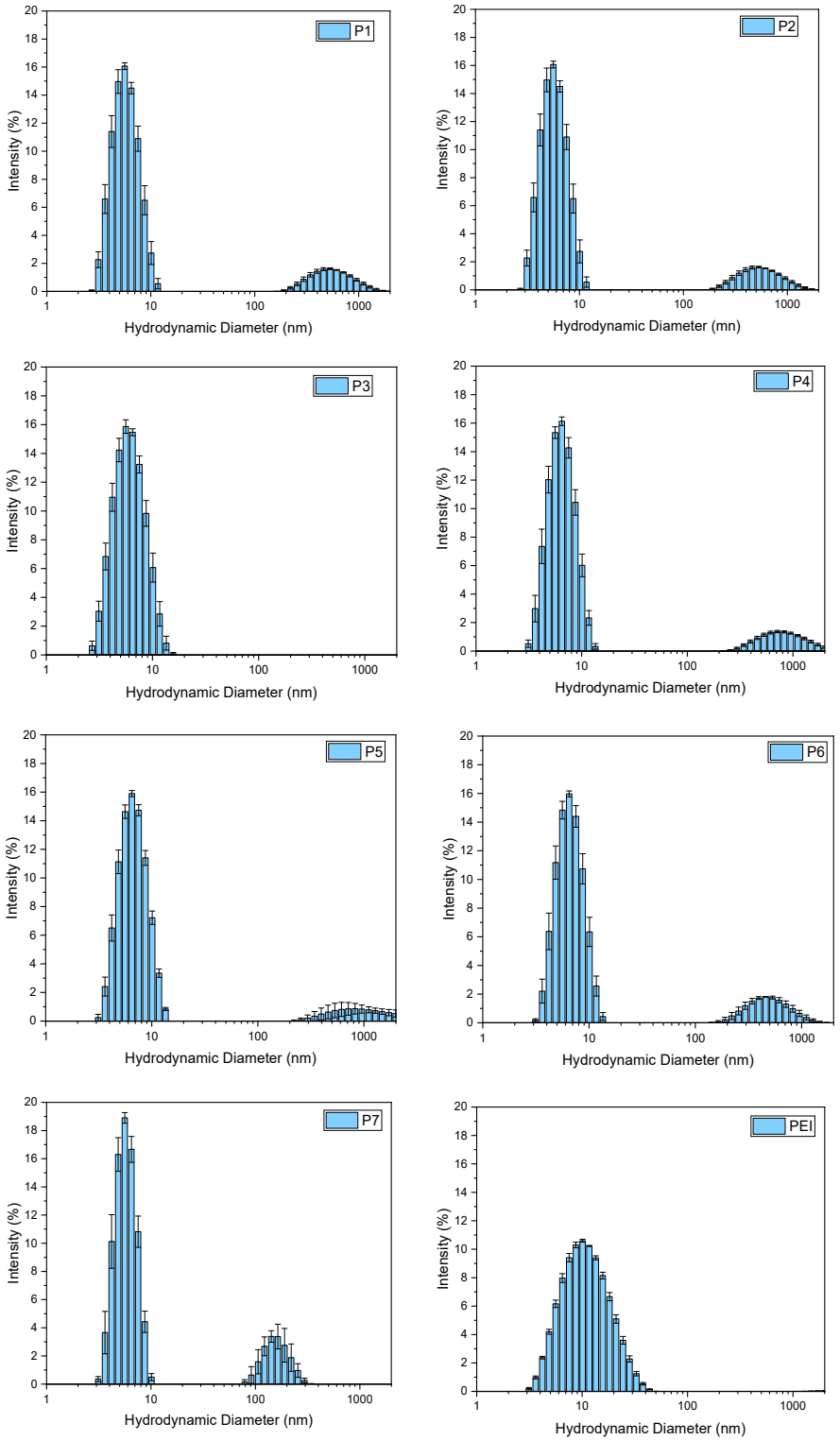
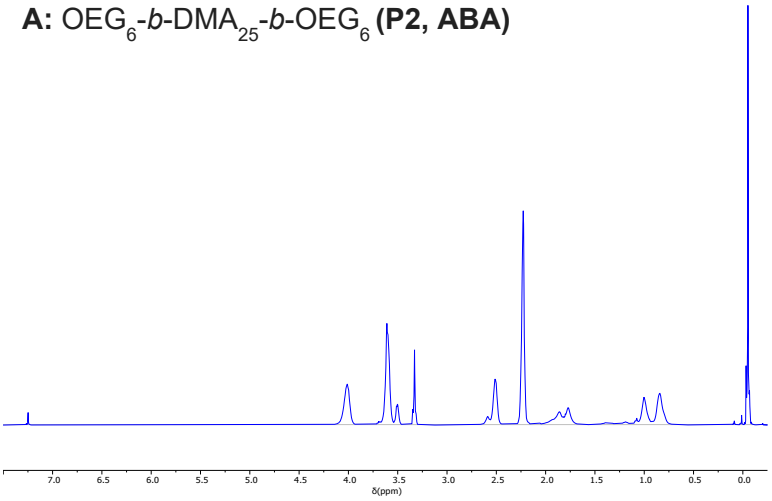


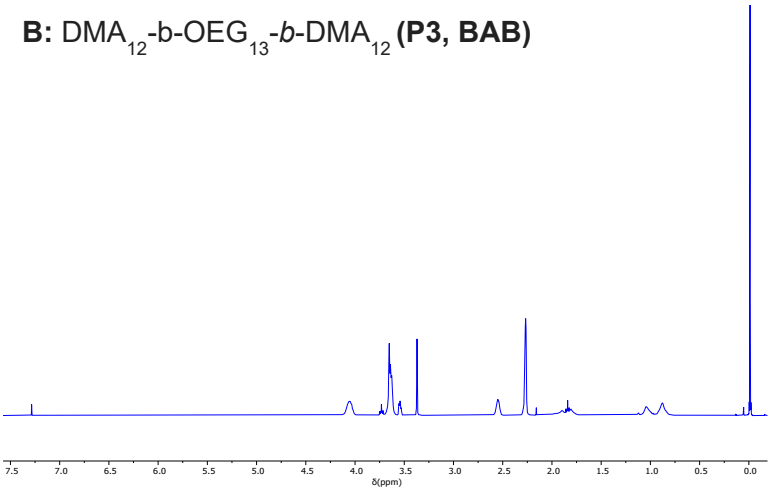
Figure S5. Data distribution (histograms) of all copolymers and PEI, investigated, at physiological pH.

^{1}H NMR Spectra:

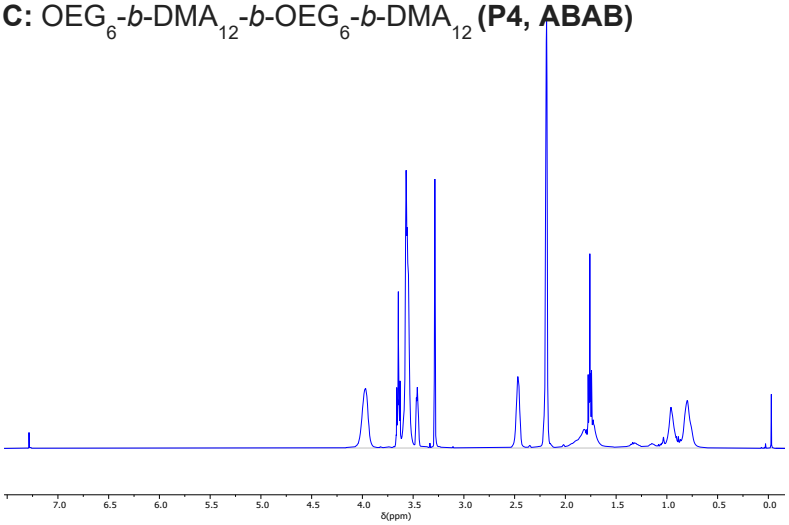
A: OEG_6-*b*-DMA_{25}-*b*-OEG_6 **(P2, ABA)**



B: DMA_{12}-b-OEG_{13}-*b*-DMA_{12} **(P3, BAB)**



C: OEG_6-*b*-DMA_{12}-*b*-OEG_6-*b*-DMA_{12} **(P4, ABAB)**



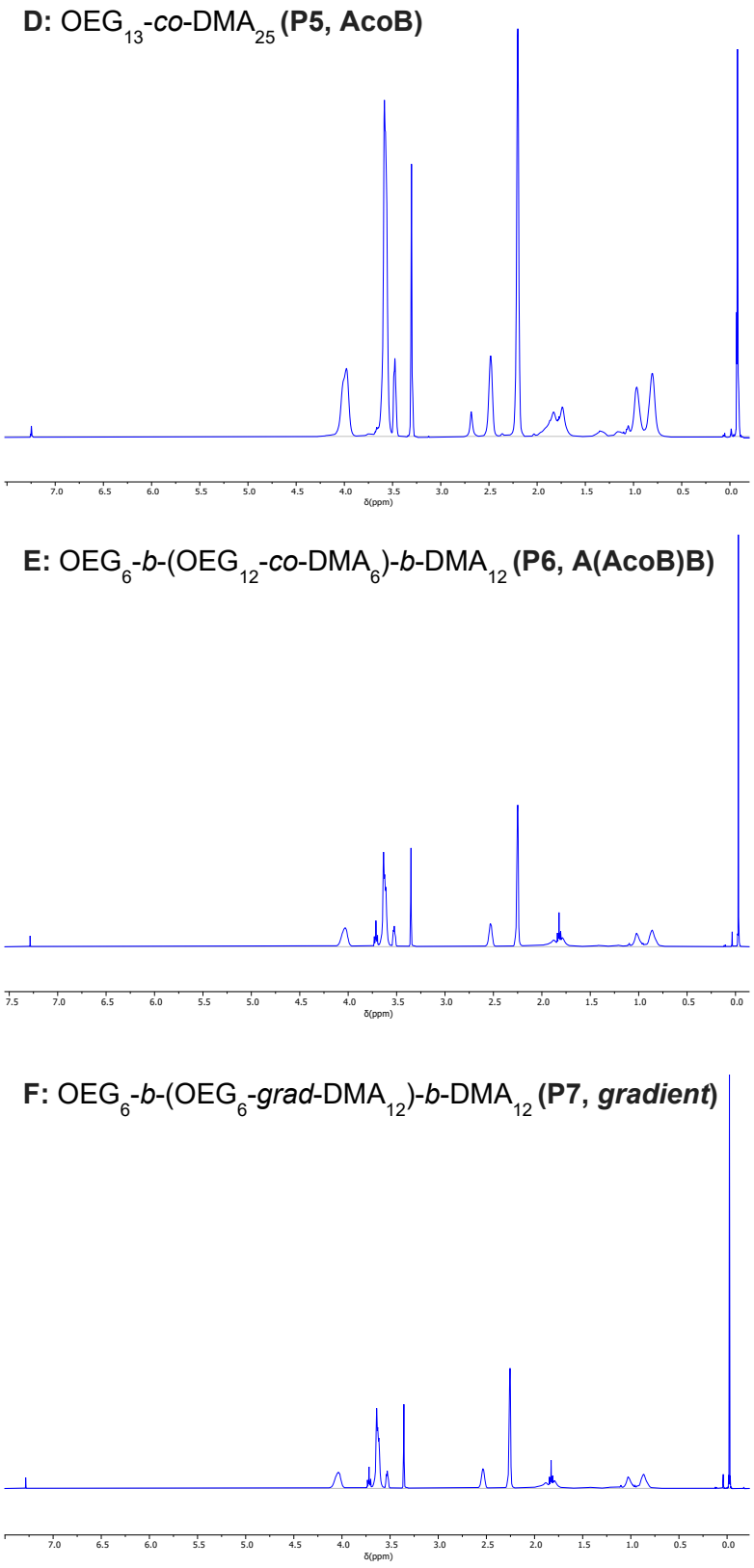


Figure S6. H^1 NMR spectra for each copolymer P2-P7, A-F, respectively.

UV-Vis Graphical Data:

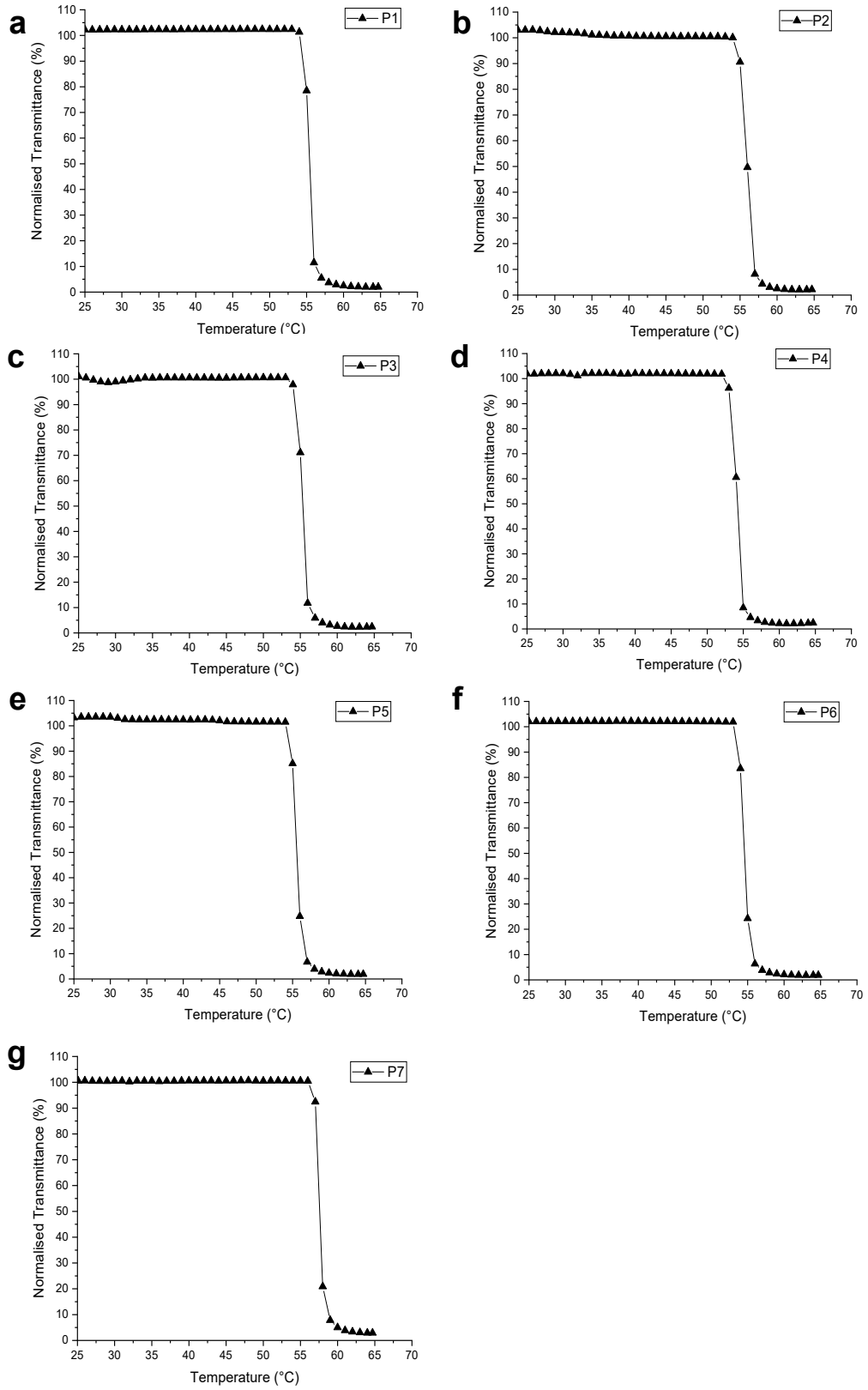


Figure S7. Heating curves of all copolymers, P1-P7, a) to g) respectively. All copolymer solutions, prepared in PBS, non-protonated state (pH 9), were heated in 1°C increments.