



Figure S1. PBAE synthesis and resulting polymer structures. (A) Synthesis of 4-4-6 PBAE. Acrylate and amine monomers react for 24h at 85C, followed by an end-capping reaction, resulting in a linear capped polymer. (B) Resulting structures of 4-4-6, 4-5-7, 4-5-39, and 5-3-6 polymers. (C) Dynamic light scattering measurements and electrophoretic mobility for PBAE and PEI nanoparticles in HEK or CHO media. Measurements represent mean values from  $n=3$  individually prepared replicates.