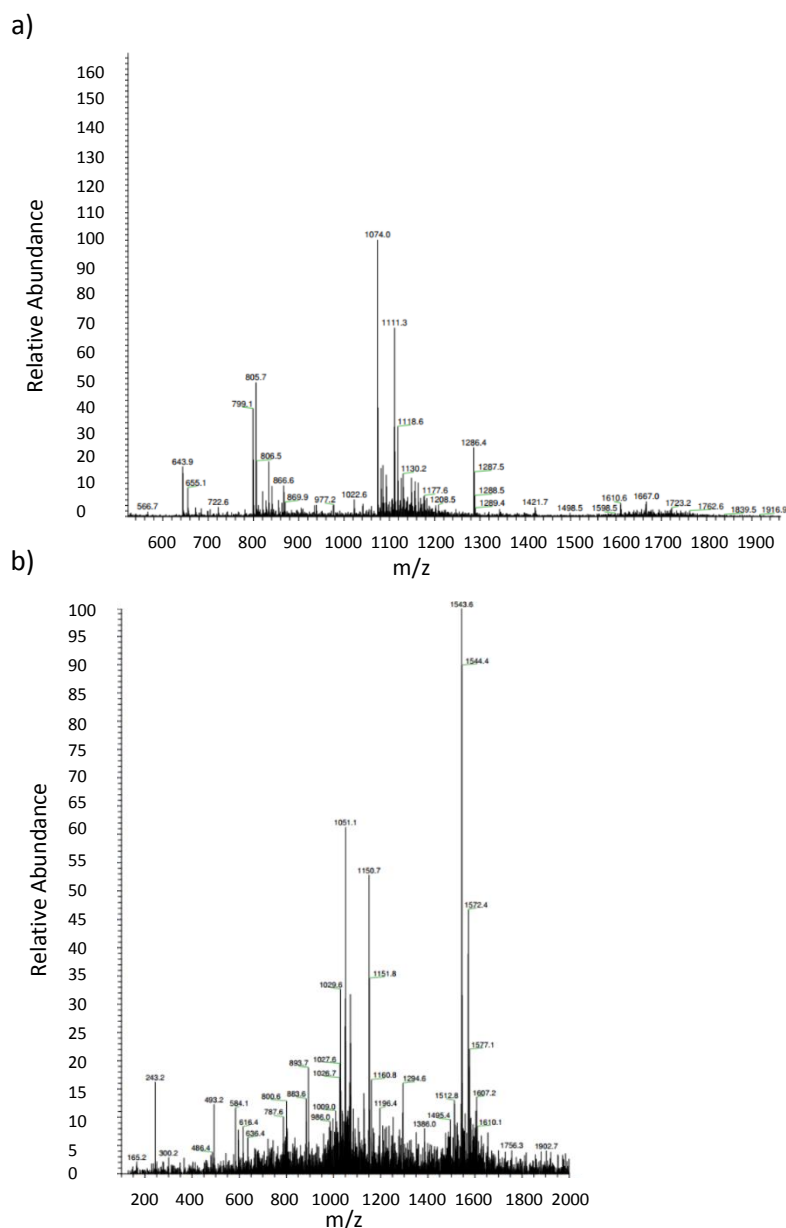
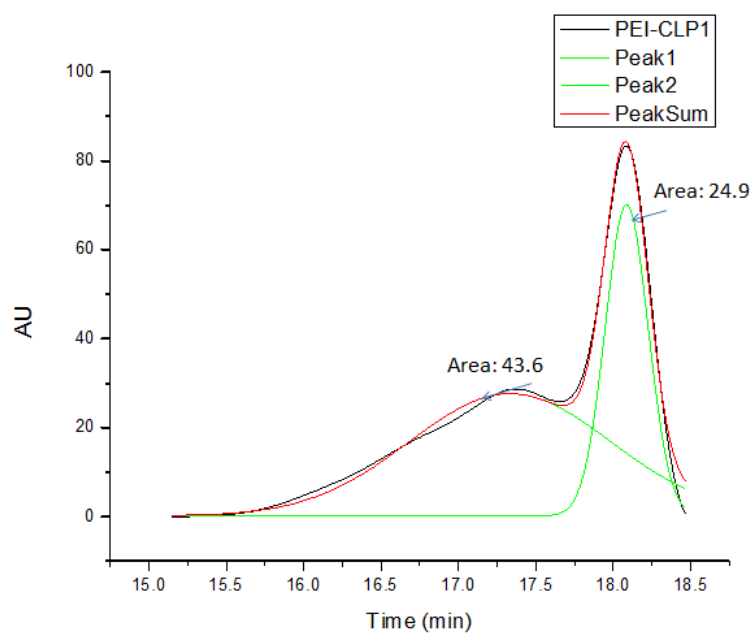


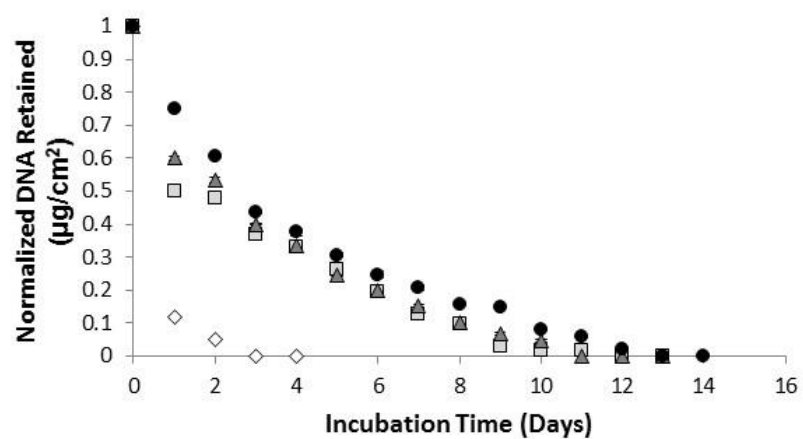
# Supplemental Information (SI)



**Figure S1.** Peptide molecular weight was confirmed using electrospray ionization mass spectrometry. a) For GPP:  $m/z=1610.6$  [ $(M + 2H)^{2+}= 1610.85$ ] and  $m/z=1674.0$  [ $(M + 3H)^{3+}= 1073.9$ ]. b) For GPO:  $m/z=1543.6$  [ $(M + 2H)^{2+}= 1543.6$ ] and  $m/z=1051.1$  [ $(M + 3H)^{3+}+Na= 1051.3$ ].



**Figure S2.** The GPP-PEI conjugation was confirmed with gel permeation chromatography (GPC) and functionality was determined through integrating the GPC refractive index data. The black curve represents the product after conjugation while the green curves are separated peaks for the GPP-PEI and excessive PEI respectively. The red curve is the summation of the green curves and it fits the collected data well. The relative area ratio of the two peaks suggest the functionality is approximately 0.64 GPP-PEI molecule



**Figure S3.** Normalized retention of DNA on collagen films with time, as a function of the percent GPP-PEI within the polyplex including 0% (white diamond), 10% (grey square), 20% (dark grey triangle), and 50% (black circle).