

# Supplementary Materials

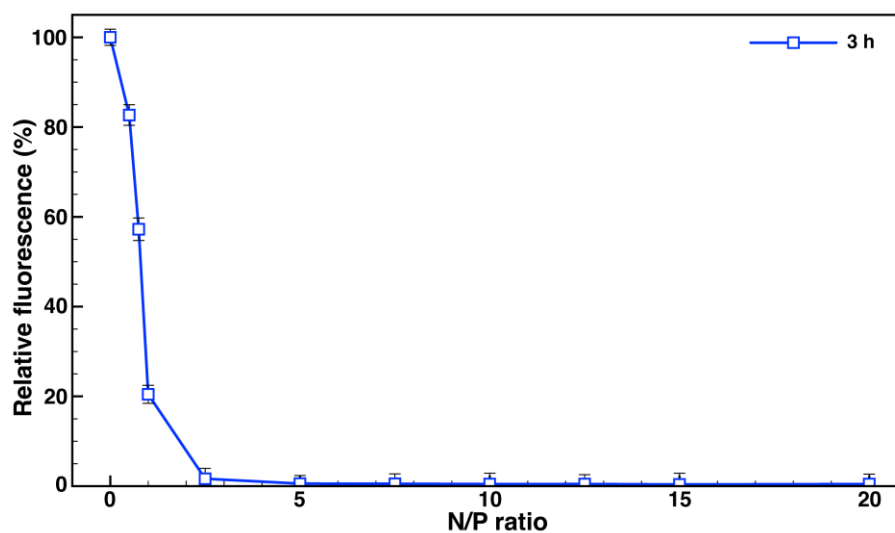
## Solvent-free Synthesis of Multifunctional Block Copolymer and Formation of DNA and Drug Nanocarriers

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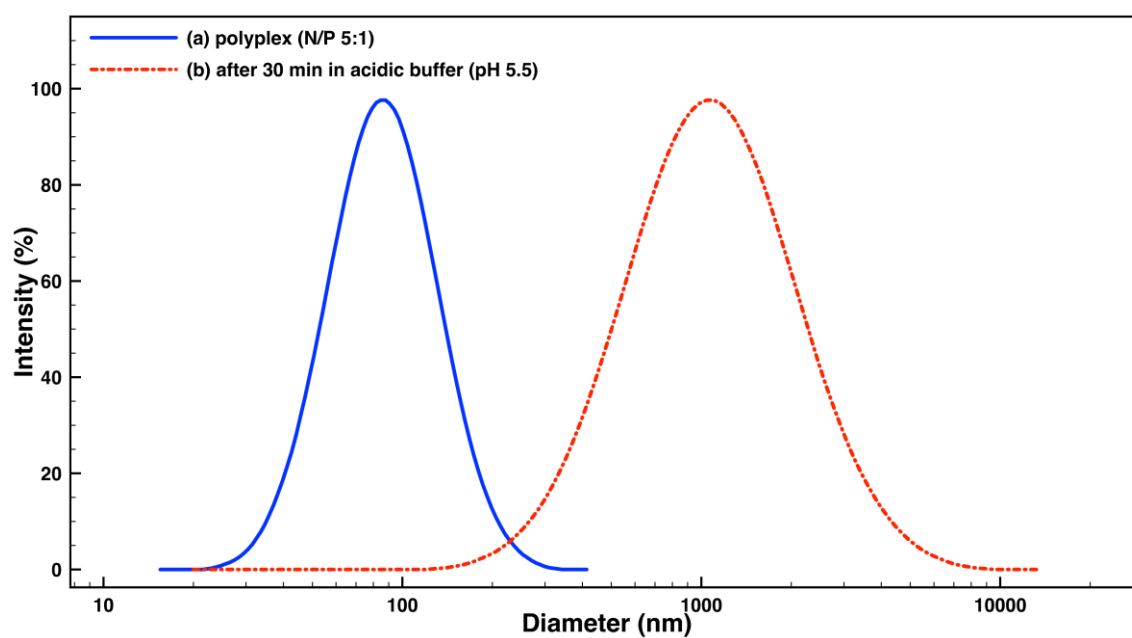
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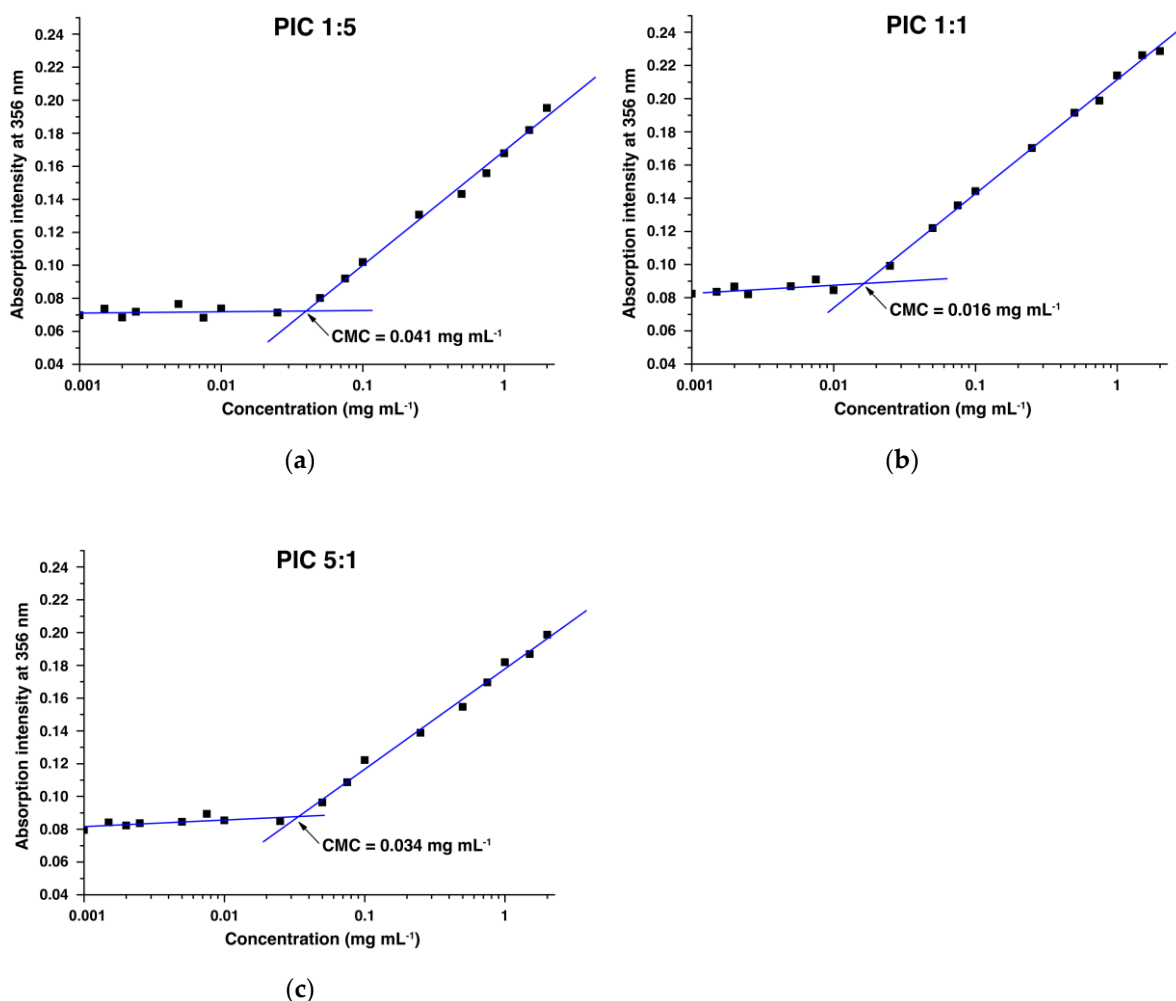
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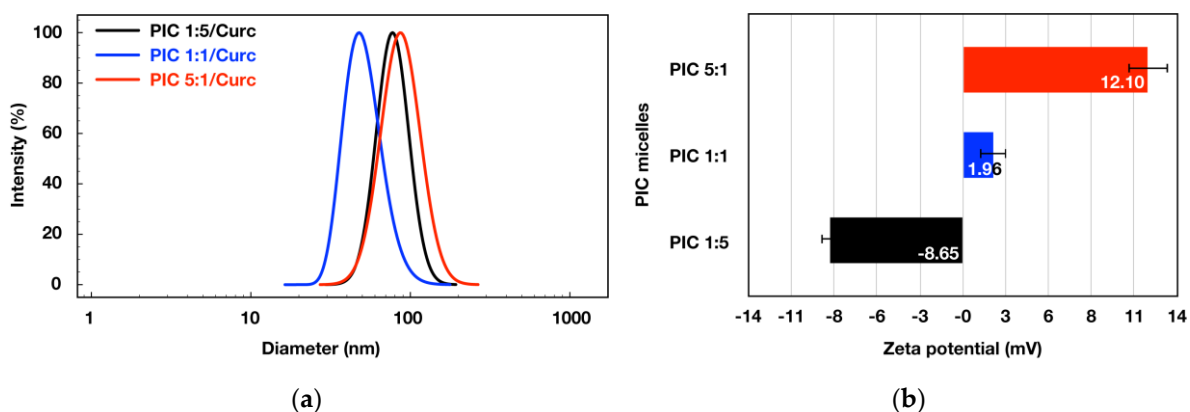
**Figure S1.** Ethidium bromide assay for polyplexes prepared at different N/P ratios. The data are expressed as mean value  $\pm$ SD,  $n = 3$ .



**Figure S2.** Size distribution curves obtained by DLS: (a) of aqueous polyplex dispersion prepared at N/P ratio 5:1 ( $d = 86.12 \pm 0.60$  nm, PDI: 0.185); and (b) after 30 min of incubation into acidic buffer at pH 5.5 ( $d = 1059.68 \pm 0.02$  nm, PDI: 0.519).



**Figure S3.** The effect of the oppositely charged block copolymers concentration on the absorption intensity of DPH at 356 nm in aqueous media for PIC micelles formation at: (a) 1:5, (b) 1:1, and (c) 5:1 ionic groups' molar ratio.



**Figure S4.** Size distribution curves obtained by DLS (a), and zeta potentials obtained by PALS (b) of curcumin-loaded PIC-micelles' dispersions prepared at different molar ratios between the copolymers' oppositely charged side groups: PIC 1:5/Curc ( $d = 79.43 \pm 0.69$  nm, PDI: 0.060,  $\zeta = -8.65 \pm 0.56$  mV), PIC 1:1/Curc ( $d = 47.81 \pm 1.20$  nm, PDI: 0.088,  $\zeta = 1.96 \pm 0.85$  mV), PIC 5:1/Curc ( $d = 86.62 \pm 1.57$  nm, PDI: 0.091,  $\zeta = 12.10 \pm 1.29$  mV).