Supporting Information

Facile Synthesis of Highly Biocompatible Poly(2-methacryloyloxyethyl phosphorylcholine)-Coated Gold Nanoparticles

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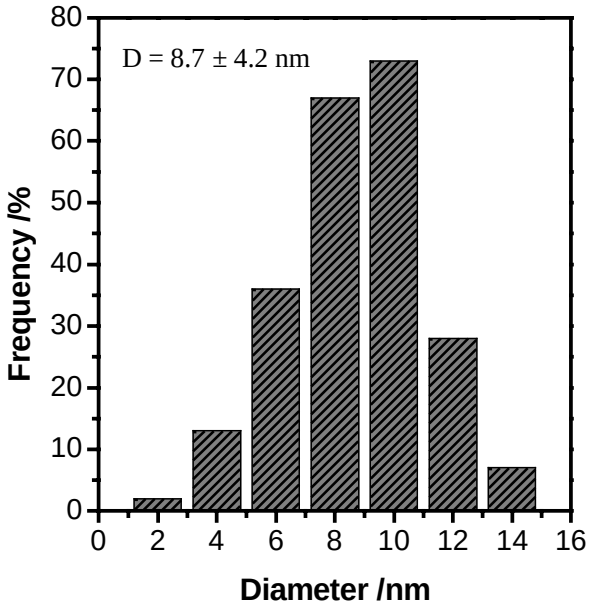


Figure S1. Particle size distribution of gold nanoparticles synthesized using $PDMA_{102}$ homopolymer (calculated by counting approximately 200 particles from TEM images such as that shown in Figure 2B). The synthesis conditions are the same as those described in the caption for Figure 2.

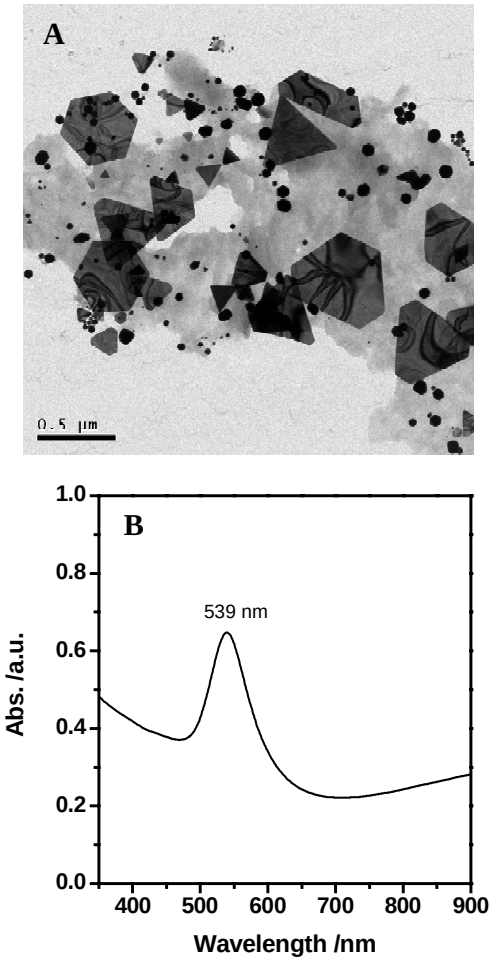
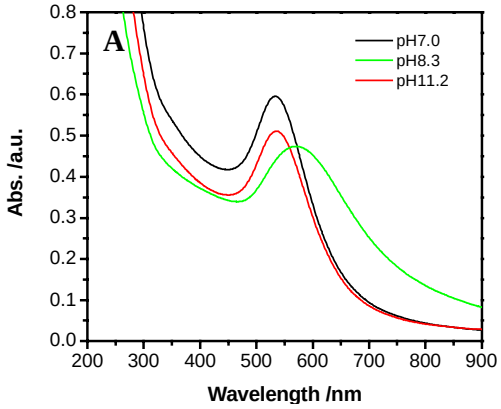


Figure S2. Gold nanoparticles synthesized using the PEO_{45}-$PDMA_{30}$ block copolymer: (A) a representative TEM image; (B) UV-visible absorption spectrum. The nanoparticles were prepared by mixing 0.50 mL of an aqueous solution of the copolymer ([DMA] = 11.1 x 10^{-5} moles) with 3.0 mL of an aqueous solution of 4 mM $HAuCl_4$. This reaction mixture was stirred for 24 h at 20°C. The [DMA]/[$HAuCl_4$] molar ratio was 9.25 and [$HAuCl_4$] = 1.2 x 10^{-5} moles.



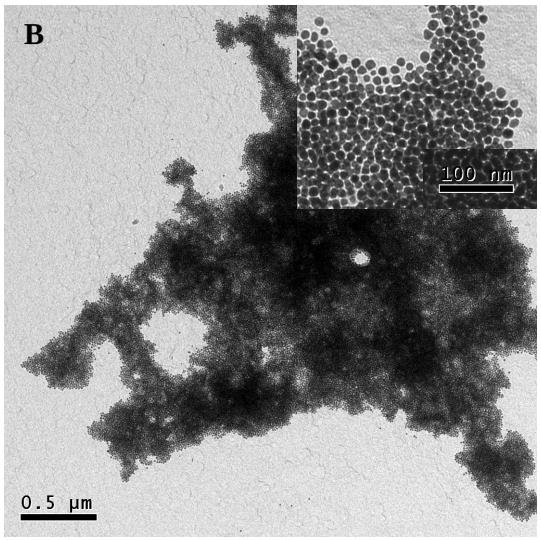


Figure S3. Aggregation of gold nanoparticles at around their isoelectric point (approximately pH 8.3). The gold sol was synthesized using $PDMA_{102}$ homopolymer using the same conditions as those described in the caption for Figure 2: (A) UV-visible absorption spectra recorded for the gold sol at pH 7.0, 8.3 and 11.2; (B) is a representative TEM image depicting the aggregated particles obtained at pH 8.3. The inset shows the primary particles at higher magnification.

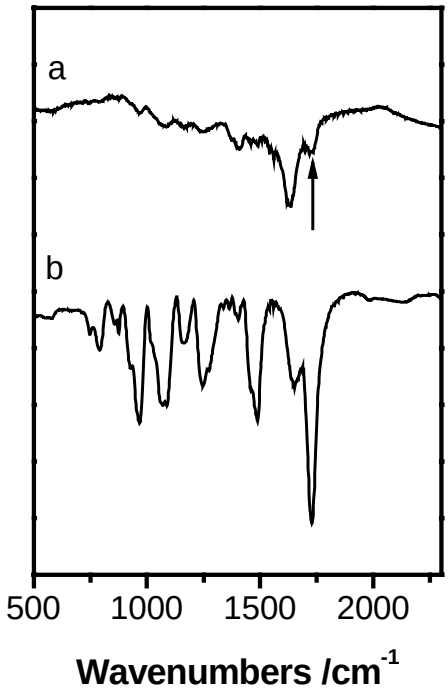


Figure S4. FT-IR spectra recorded for: (a) the $PMPC_{30}$-$PDMA_{30}$ diblock copolymer-stabilized gold nanoparticles (b) the $PMPC_{30}$-$PDMA_{30}$ diblock copolymer. The arrow indicates the weak ester carbonyl stretch due to the minor copolymer component.

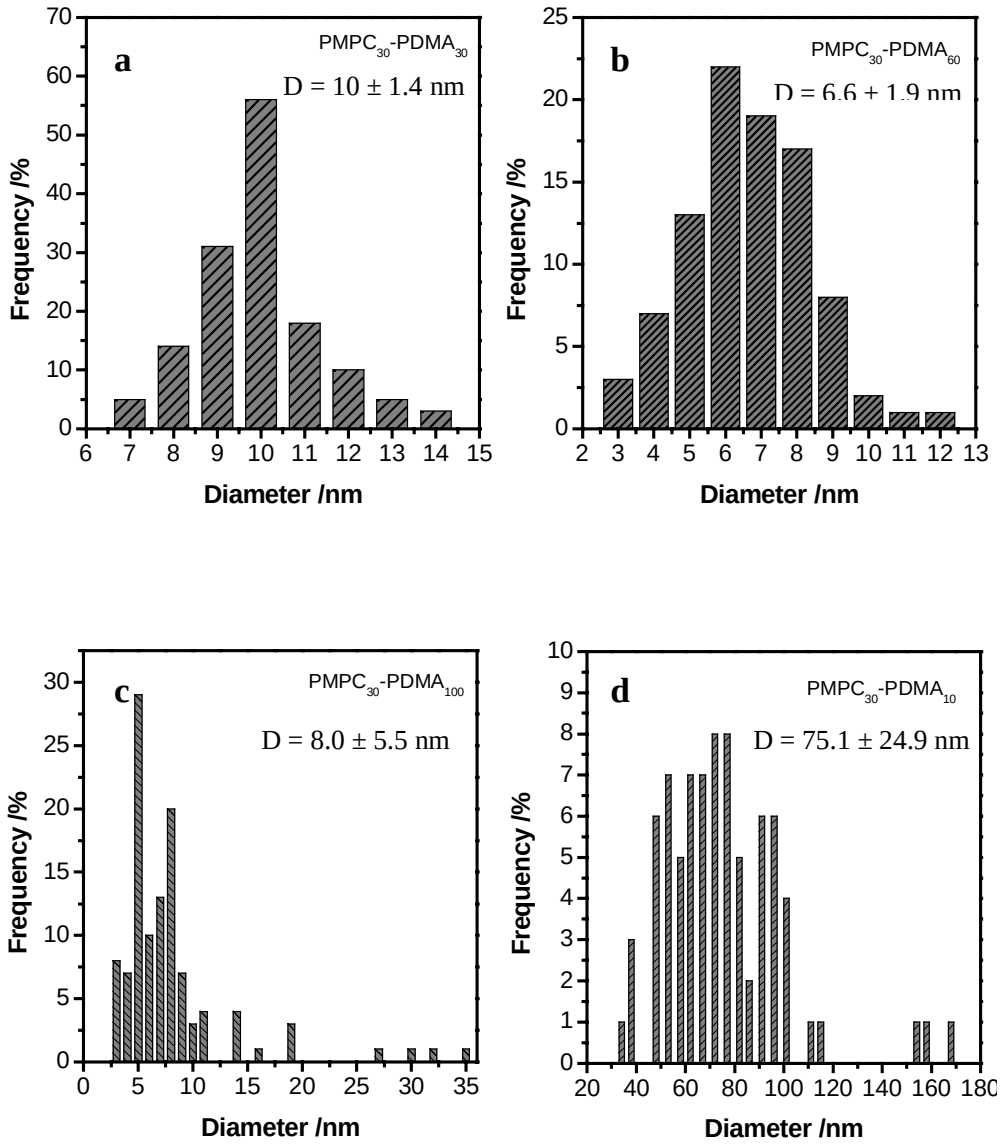


Figure S5. Particle size distributions obtained for the gold nanoparticles shown in (a) Figure 2C, (b) Figure 4A, (c) Figure 4B and (d) Figure 4C.

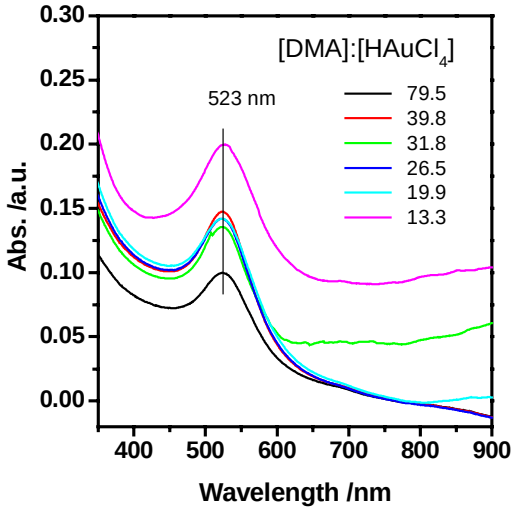


Figure S6. UV-visible absorption spectra recorded for gold sols synthesized using the $PDMA_{102}$ homopolymer with varying [DMA]:[$HAuCl_4$] molar ratios at 20^{o}C for 24 h with continuous stirring. These sols were synthesized by mixing 0.50 mL of a 1.0 wt. % aqueous solution of $PDMA_{102}$ with [DMA]:[$HAuCl_4$] molar ratios of 79.5, 39.8, 31.8, 26.5, 19.9 and 13.3, respectively.