Supporting Information

2-D Gold Nanoparticle Arrays from Thermally Directed Self-Assembly of Peptide-Derivatized Block Copolymers

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Figure S1. Synthetic route for A3 peptide-deviratized block copolymer bioconjugates. PS-b-PMMA was synthesized through a sequential polymerization followed by the “click” chemistry to tether A3 peptide at the end of PMMA.
Figure S2. ESI-MS spectra of alkyne functionalized A3 peptide: 1337.5 (Alkyne-A3 peptide +Na⁺); 1353.5 (Alkyne-A3 peptide +Na⁺+K⁺-H⁺); 1359.5 (Alkyne-A3 peptide +2Na⁺-H⁺).
Figure S3. $^1$H NMR (CDCl$_3$, 500 MHz, ppm, $\delta$) spectra of PS-Br (a) and PS-b-PMMA-Br (b). PS-Br was polymerized and used as the macromolecular initiator to grow PMMA block. PS-Br: 6.30-7.40 (br, 1980H, phenyl rings), 3.50 (s, 3H, $CH_3O$), 1.67-2.15 (br, 396H, $-CH_2CH(-Ar)$), 1.20-1.67 (br, 792H, $-CH_2CH(-Ar)$), 0.93 (s, 6H, -(C=O)$C(CH_3)_2$). PS-b-PMMA-Br: 6.30-7.40 (br, 1980H, phenyl rings), 3.35-3.60 (br, 522H, $CH_3O$), 1.67-2.15 (br, 396H, $-CH_2CH(-Ar)$), 1.20-1.67 (br, 792H, $-CH_2CH(-Ar)$), 0.60-1.00 (br, 522H, -(CH$_3$)$_2$)$C(C=O)$).
Figure S4. SEC spectra (THF, RI detector, PS standard) of PS-Br and PS-b-PMMA-Br. PS-Br was polymerized and used as the macromolecular initiator to grow PMMA block. PS-Br: Mn = 42.1 kDa, Mw = 43.9 kDa, PDI = 1.02. PS-b-PMMA-Br: Mn = 59.5 kDa, Mw = 69.0 kDa, PDI = 1.16.
Figure S5. Fourier transform infrared (FTIR) spectra of PS-b-PMMA-Br, PS-b-PMMA-N$_3$ and PS-b-PMMA-A3. N$_3$ functional group showed signal at 2100 cm$^{-1}$ and disappeared after “Click” reaction.