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Supporting Information of

Minimizing nonspecific phagocytic uptake of biocompatible gold nanoparticles with mixed charged zwitterionic surface modification

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Synthesis of 16 nm Citrate-capped AuNPs

Citrate-capped AuNPs in diameter of ca. 16 nm was prepared following a standard route. Briefly, In a 100 mL round-bottom flask equipped with a condenser, 50 mL Milli-Q water with HAuCl₄ (1 mM) was heated to boil under stirring. After boiling, rapid addition of sodium citrate (38.8 mM, 5.8 mL) to the boiling solution with vigorous stirring resulted in a color change from pale yellow to burgundy. Boiling was continued for 10 min; the heating mantle was then removed, and stirring was continued for additional 15 min. The UV-Vis spectrum exhibits a characteristic plasmon band at 520 nm. The diameter of the particles, confirmed from TEM images, was about 16 nm (16±2 nm).

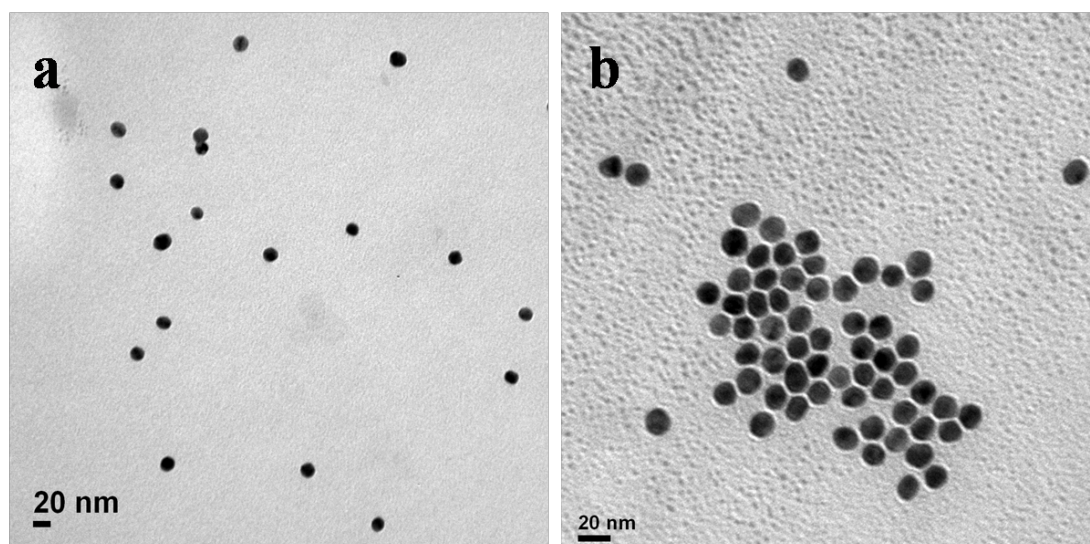


Fig. S1. TEM images of 16 nm citrate AuNPs (a) and the 16-AuNP-C10-SN4 (b).

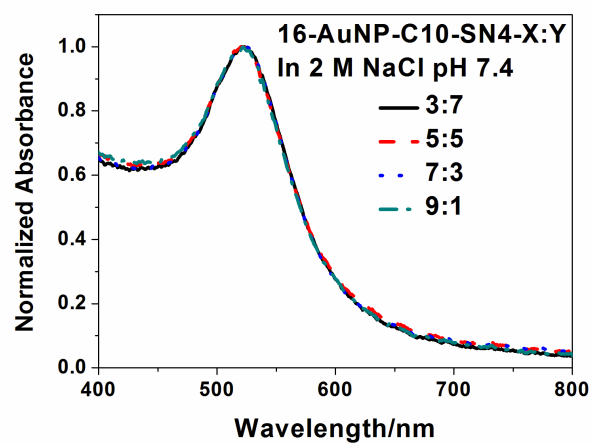


Fig. S2. UV-Vis spectra of 16-AuNP-C10-SN4-X:Y in 2 M NaCl solution (pH 7.4).

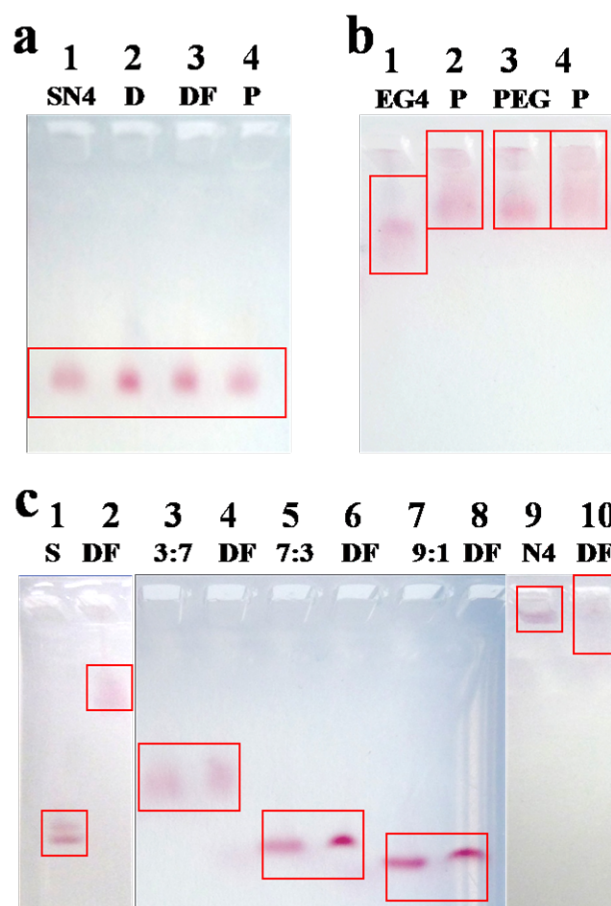


Fig. S3 Gel images of protein adsorption assay (a) Lane 1: 16-AuNP-C10-SN4 mixed with PB solution (pH 7.4), Lanes 2: AuNPs mixed with DMEM without FBS, line 3 AuNPs mixed with DMEM with 10% FBS, and line 4: AuNPs mixed with 100% platelet poor plasma. (b) Line 1 and line 2: 16-AuNP-EG4 mixed with PB solution and 100% platelet poor plasma respectively. Line 3 and line 4 are similar with Line 1 and line 2 except 16-AuNP-PEG2000 was used. (c) Line 1 and line 2: 16-AuNP-C10-S mixed with PB solution and DMEM with 10% FBS respectively. Line 3 and line 4, Line 5 and line 6, Line 7 and line 8, Line 9 and line 10 are similar with Line 1 and line 2 except 16-AuNP-C10-SN4-3:7, 16-AuNP-C10-SN4-7:3, 16-AuNP-C10-SN4-9:1, 16-AuNP-C10-N4 were used respectively. (D: DMEM without FBS, DF: DMEM with 10% FBS, P: 100% platelet poor plasma.).

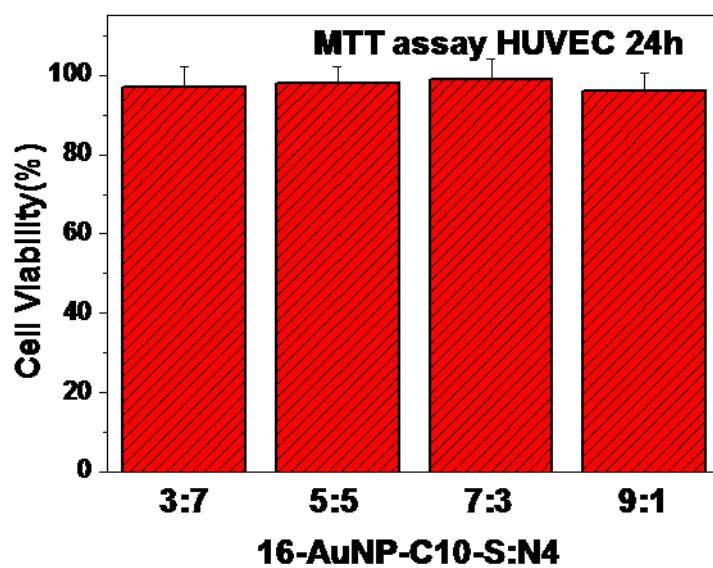


Fig. S4 MTT assay of HUVEC incubated with the 16-AuNP-C10-SN4-3:7 to 9:1 for 24 h at Au concentration of 0.0568 mM.