Supporting Information for

Cross-Linked Polyethylene Glycol Shells for Nanoparticles: Enhanced Stealth Effect and Colloidal Stability

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Figure S1. UV-Vis absorption spectra of citrate-coated AuNPs, Au@PEG-NH$_2$ NPs and Au@CL-PEG NPs at the same concentration (0.4 nM).

Figure S2. Zeta potentials of citrate-coated AuNPs, Au@PEG-OCH$_3$ NPs, Au@PEG-NH$_2$ NPs, Au@PEG-C=C NPs, and Au@CL-PEG NPs before (dark gray frames) and after (gray frames) incubation with 10% FBS for 90 min. The concentration of the AuNPs was fixed to be 0.1 nM. Error bars represent the standard deviations of three parallel samples.
**Figure S3.** Difference values of zeta potentials of citrate-coated AuNPs, Au@PEG-OCH$_3$ NPs, Au@PEG-NH$_2$ NPs, Au@PEG-C=C NPs, and Au@CL-PEG NPs before and after incubation with 10% FBS for 90 min at the same concentration (0.1 nM). Error bars represent the standard deviations of three parallel samples.

**Figure S4.** UV-Vis spectra of (A) Au@PEG-NH$_2$ NPs and (B) Au@CL-PEG NPs in PBS solution containing 10 mM of GSH for different times.
Figure S5. A BCA standard curve for plotting the absorption intensity at 562 nm with different concentrations of BSA. Error bars represent the standard deviations of three parallel samples.

Figure S6. DLS size distribution of Au@PEG-OCH$_3$ NPs, Au@PEG-NH$_2$ NPs, Au@PEG-C=C NPs, and Au@CL-PEG NPs after dissolving in PBS solution containing 10% FBS for 90 min.
Figure S7. Quantitative analysis of the proteins isolated from Au@PEG-OCH$_3$ NPs, Au@PEG-NH$_2$ NPs, Au@PEG-C=C NPs, and Au@CL-PEG NPs after incubating in PBS solution containing 10% FBS for 90 min. Error bars represent the standard deviations of three parallel samples.

Figure S8. SDS-PAGE gel of proteins isolated from Au@CL-PEG NPs (a), Au@PEG-NH$_2$ NPs (b), Au@PEG-C=C NPs (c), and Au@PEG-OCH$_3$ NPs (d) after incubation in PBS solution containing 10% FBS for 90 min.
Figure S9. Evaluation of the viability of 3T3 cells (A) and Raw 264.7 cells (B) after incubation with Au@PEG-OCH$_3$ NPs, Au@PEG-NH$_2$ NPs, Au@PEG-C=C NPs and Au@CL-PEG NPs at various concentrations for 24 h. Error bars represent the standard deviations between three parallel experiments.
**Figure S10.** Dark-field images of the Raw 264.7 cells incubated with Au@PEG-OCH$_3$ NPs, Au@PEG-NH$_2$ NPs, Au@PEG-C=C NPs and Au@CL-PEG NPs for different times. Scale bars, 10 μm.
Figure S11. Dark-field images of the bEnd.3 cells incubated with Au@PEG-OCH$_3$ NPs, Au@PEG-NH$_2$ NPs, Au@PEG-C=C NPs and Au@CL-PEG NPs for different times. Scale bars, 10 μm.
Figure S12. Endothelial cell uptake of Au@PEG-NH$_2$ NPs, Au@PEG-OCH$_3$ NPs, Au@PEG-C=C NPs, and Au@CL-PEG NPs at the same concentration (0.4 nM). (A) Dark-field images of bEnd.3 cells incubated with the four different AuNPs for 24 h. Scale bars, 10 μm. The below images are the zoomed-in regions indicated by the arrows in the corresponding above images. (B) Quantitative analysis of the uptaken AuNPs after 24 h incubation using ICP-MS. Error bars represent the standard deviations of three parallel samples.
Figure S13. Dark-field images of the 293T cells incubated with Au@PEG-OCH$_3$ NPs, Au@PEG-NH$_2$ NPs, Au@PEG-C=C NPs and Au@CL-PEG NPs for different times. Scale bars, 10 μm.
Figure S14. Epithelial cell uptake of Au@PEG-NH$_2$ NPs, Au@PEG-OCH$_3$ NPs, Au@PEG-C=C NPs, and Au@CL-PEG NPs at the same concentration (0.4 nM). (A) Dark-field images of 293T cells incubated with the four different AuNPs for 24 h. Scale bars, 10 μm. The below images are the zoomed-in regions indicated by the arrows in the corresponding above images. (B) Quantitative analysis of the uptaken AuNPs after 24 h incubation using ICP-MS. Error bars represent the standard deviations of three parallel samples.