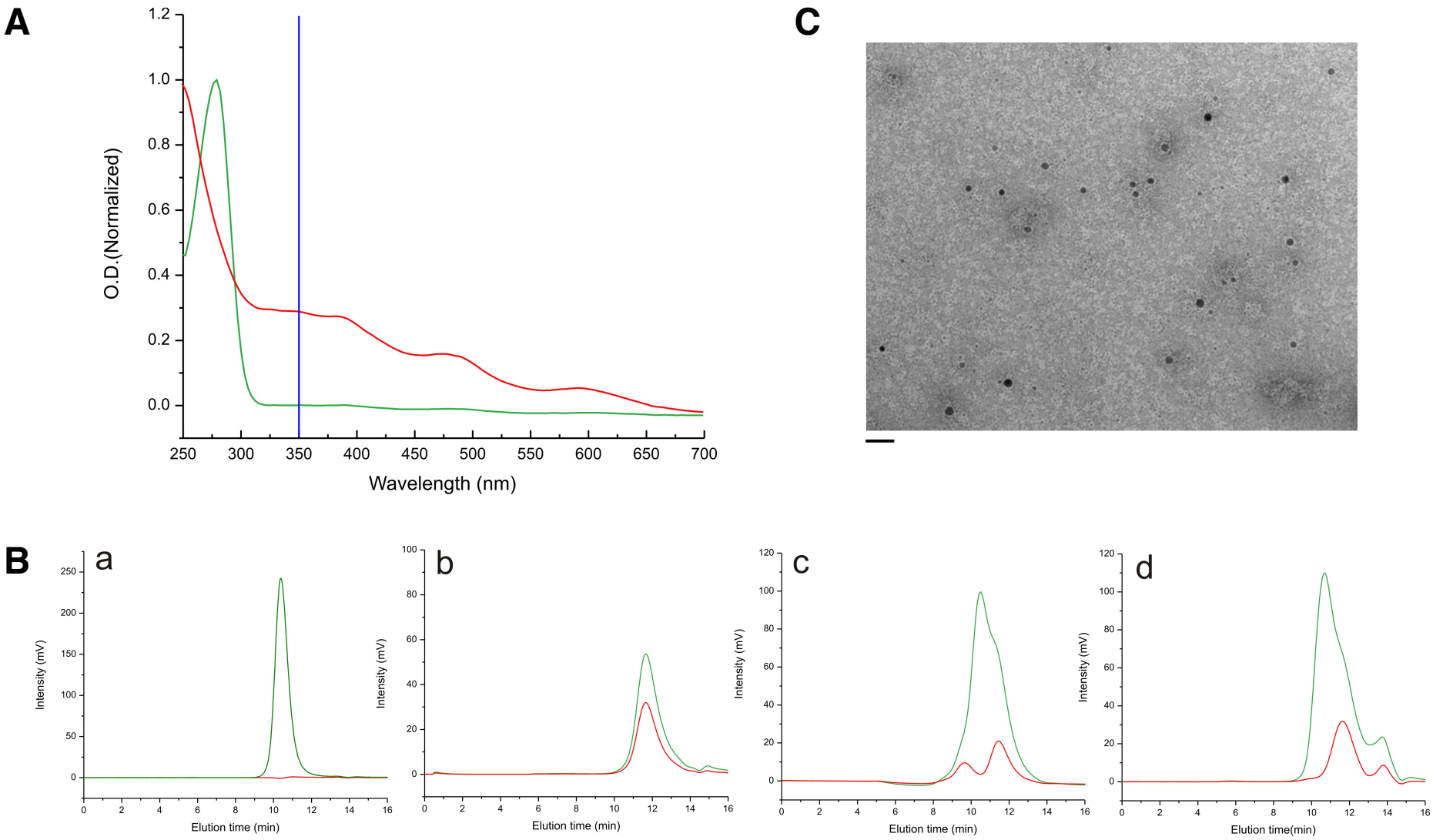
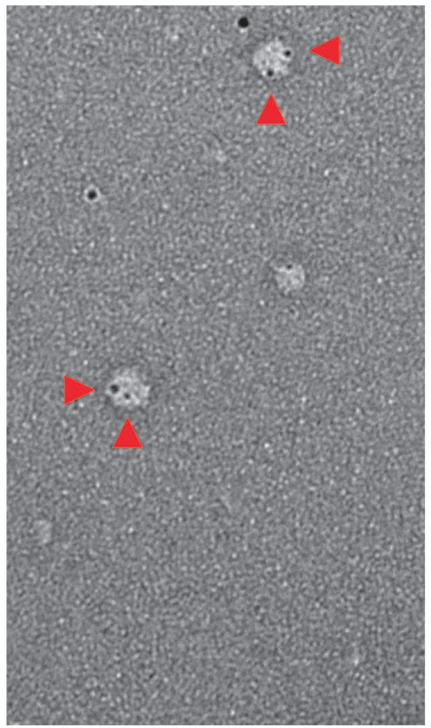

A
O.D.(Normalized)
Wavelength (nm)
C
B
a
b
c
d
Intensity (mV)
Elution time (min)
Elution time(min)

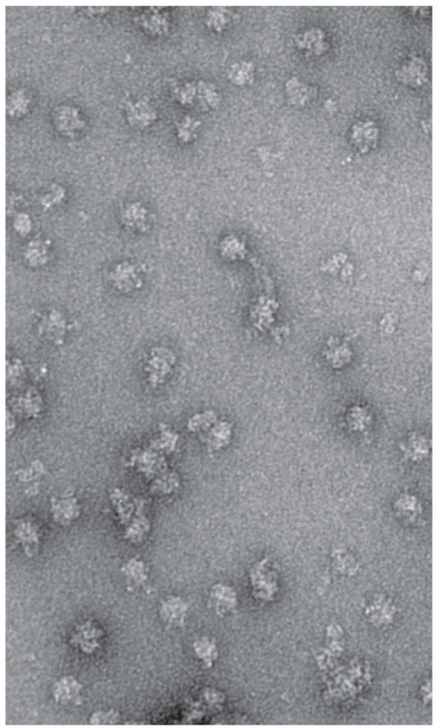
Figure S1, Related to Figure 2.

Characterization of ^{AuNP}tris-NTA. (A) Comparison of the absorption spectra of gold nanoparticle (AuNP) (red line) and a deca-histidine-tagged maltose binding protein (green line). Blue line indicates the wavelength (350 nm) chosen for selectively monitoring the AuNP by size exclusion chromatography. (B) Functional characterization of ^{AuNP}trisNTA by size exclusion chromatography. The size exclusion chromatography traces were acquired at 350 nm (red) for the gold nanoparticle (AuNP) alone and 280 nm (green) for the sum of the AuNP and the deca-histidine-tagged maltose binding protein (MBP-H10). (a) MBP-H10 protein alone; (b) ^{AuNP}trisNTA alone; (c) mixture of 3 μM MBP-H10 with 100 nM ^{AuNP}trisNTA; (d) the same as (c) except in the presence of 10 mM EDTA. The void volume and bed volume of the analytical Superdex 200 5/150 column were at 5 and 14 minutes when a flow-rate of 0.2 mL/min was applied. (C) Uncharged ^{AuNP}trisNTA (8 μM; starting AuNP 1.4 nm in diameter, see figure 2C) stored at 4°C for six months is polydisperse, gold nanoparticles exhibit significant aggregation. Image acquired using an FEI Morgani TEM microscope operating at 80 keV at 56000x magnification. Scale bar is 20 nm. This supplemental figure supports the data presented in figure 2 (see Figure 2).

A



B



C

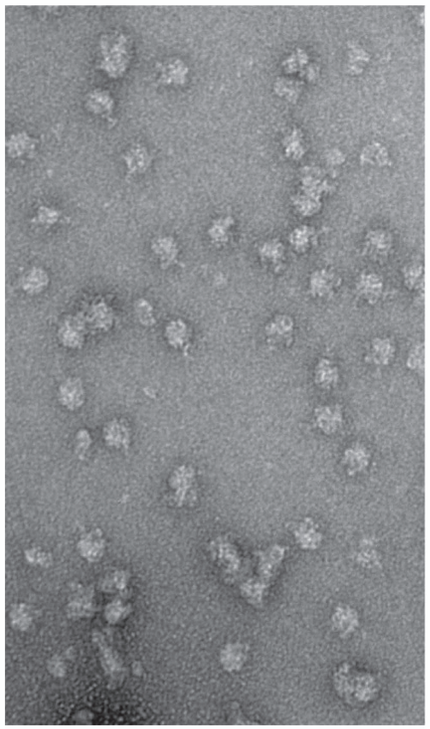


Figure S2, Related to Figure 4. *E. coli* 50S ribosomal gold binding. (A) Shown is a lawn of raw negative-stained *E. coli* 50S-H10 ribosomal subunit particles highlighting the presence of particles with more than single AuNPs bound, indicative of non-specific binding of ^{AuNP}trisNTA. Gold clusters are indicated by red arrowheads. Scale bar is 20 nm. Image acquired using an FEI Morgani TEM microscope operating at 80 keV at 56000x magnification. Sample was negative-stained with 1.5% uranyl acetate. (B) Shown is a lawn of *E. coli* 50S ribosomal subunit particles that do not have His-tagged human Rpl3 incorporated and not incubated with the ^{AuNP}trisNTA. (C) Shown is a lawn of *E. coli* 50S ribosomal subunit particles that do not have His-tagged human Rpl3 incorporated but were incubated with the ^{AuNP}trisNTA following alkylation. The scale bars in panels B and C are at 20 nm. An FEI Morgani TEM microscope operating at 80 keV at 36000x magnification was used to collect the images in panels B and C. This supplemental figure supports the data presented in figure 4 (see Figure 4).