

SUPPLEMENTARY INFORMATION for ANALYST

Electronic Supplementary Information

**New insight into protein–nanomaterial interactions with UV–visible spectroscopy
and chemometrics: human serum albumin and silver nanoparticles**

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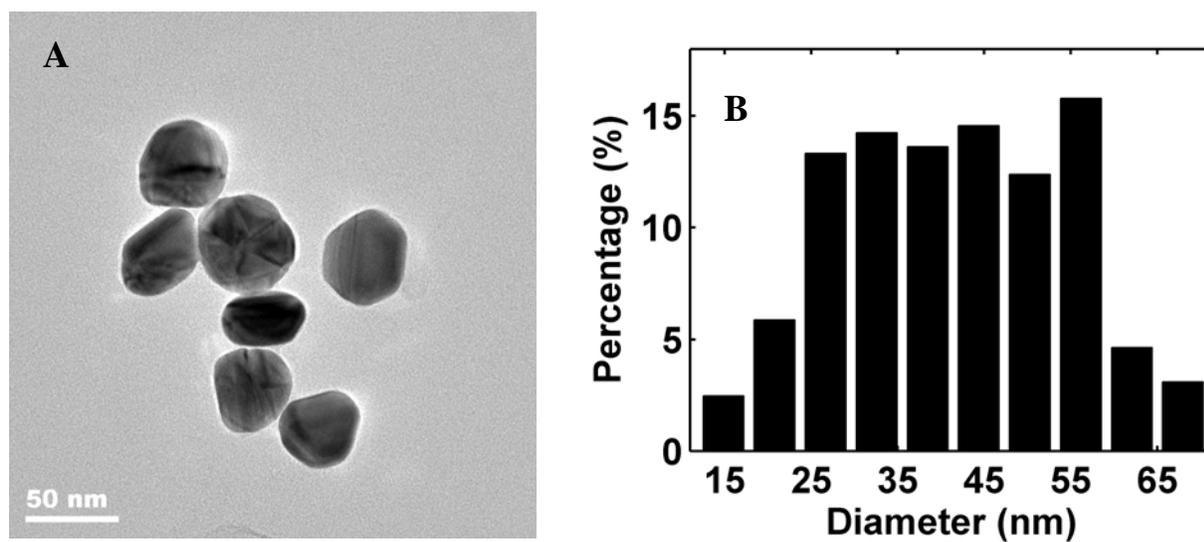


Fig. S1 (A) TEM micrograph of citrate-coated AgNPs. (B) The corresponding size distribution histogram of AgNPs.

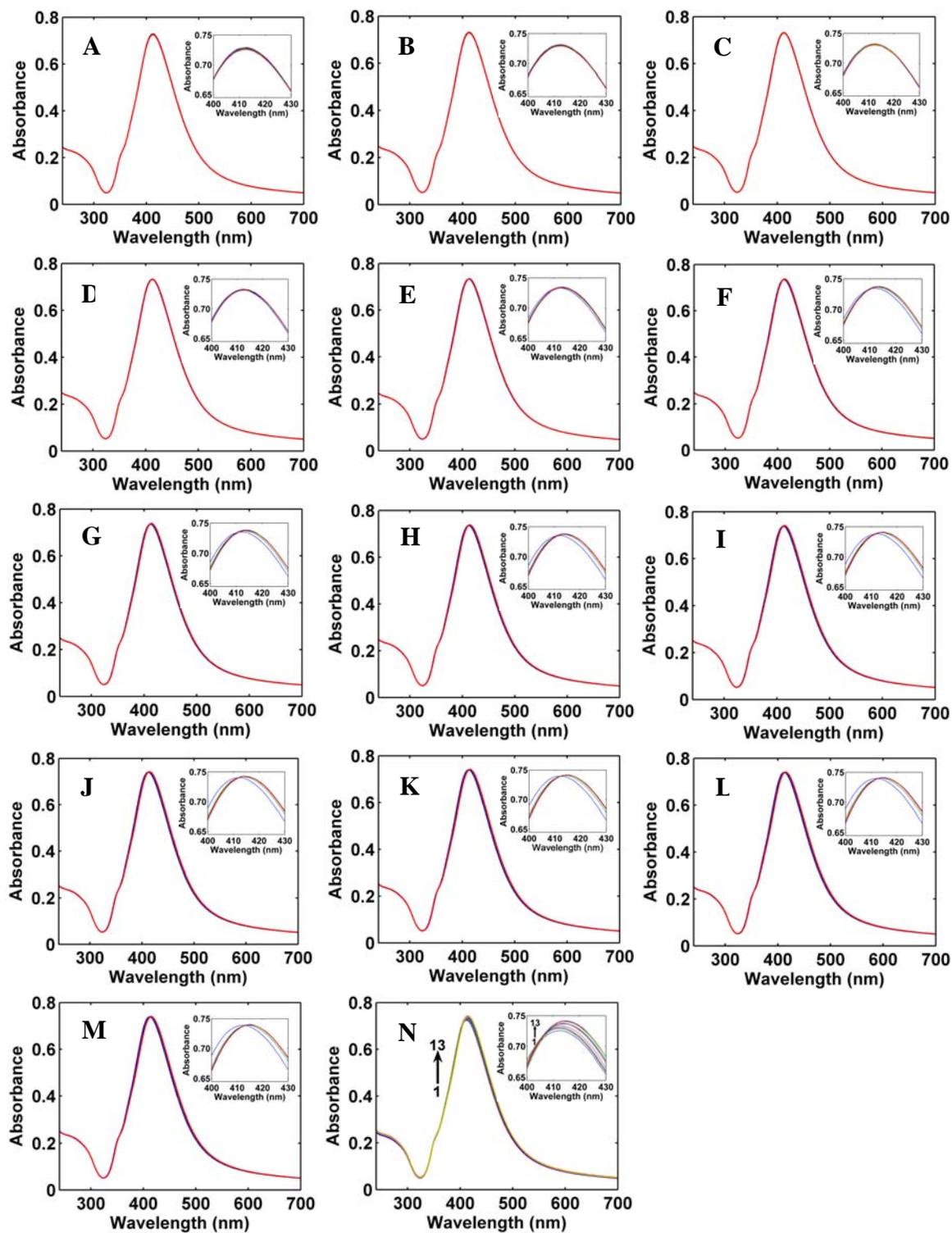


Fig. S2 Time-dependent UV-Visible spectra of 0.0221 nM AgNPs at 303.15 K with different concentrations (nM) of HSA, (A) 0, (B) 1.9, (C) 3.8, (D) 7.5, (E) 15.0, (F) 22.5, (G) 30.0, (H) 37.5, (I) 45.0, (J) 52.5, (K) 60.0, (L) 67.5, (M) 75.0. (N) UV-Visible spectra at the end of the AgNPs-HSA reaction extracted from Fig. S2A-M. Arrow shows spectra with increasing HSA concentration. Inset: enlarged spectra from 400 nm to 430 nm.

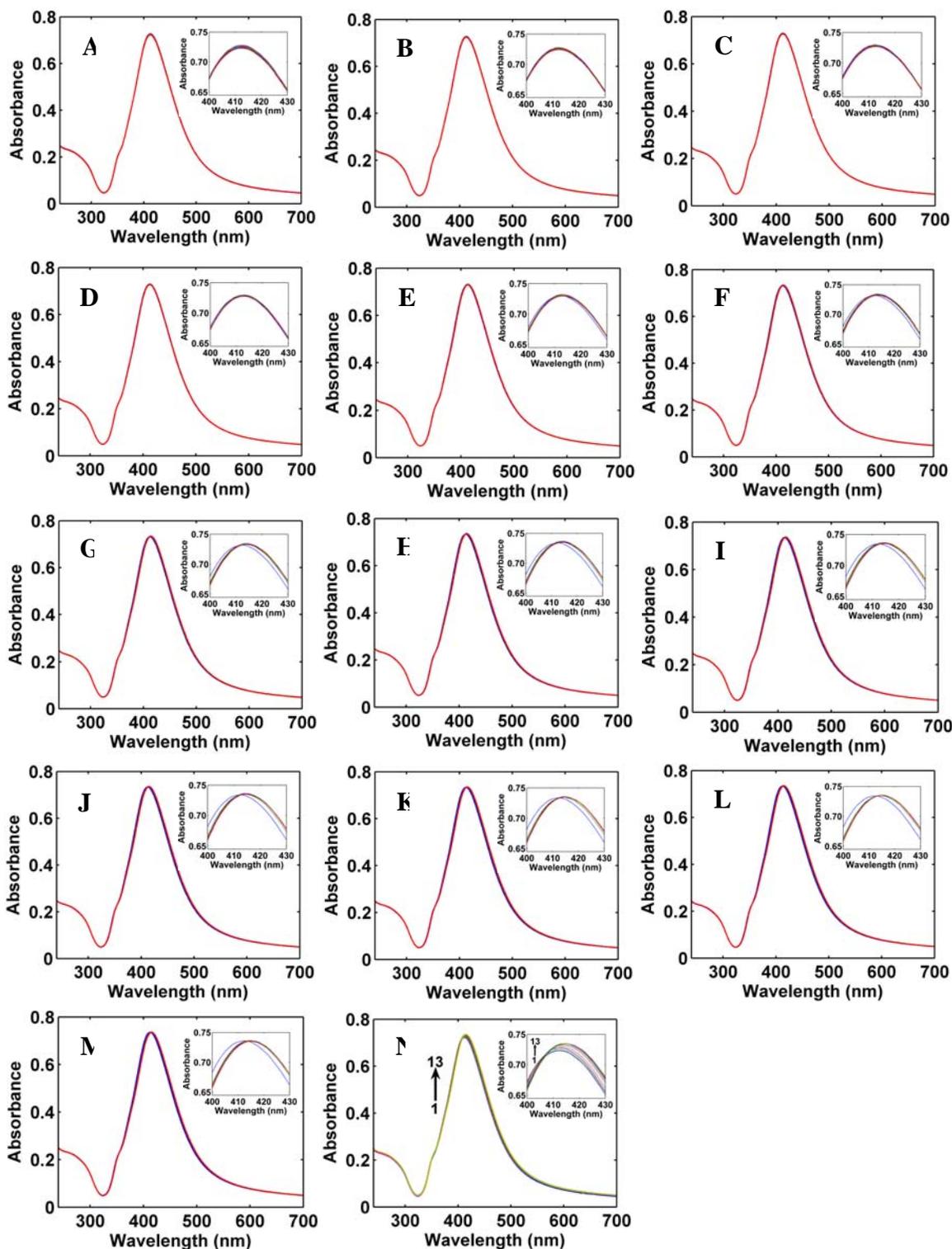


Fig. S3 Time-dependent UV-Visible spectra of 0.0221 nM AgNPs at 308.15 K with different concentrations (nM) of HSA, (A) 0, (B) 1.9, (C) 3.8, (D) 7.5, (E) 15.0, (F) 22.5, (G) 30.0, (H) 37.5, (I) 45.0, (J) 52.5, (K) 60.0, (L) 67.5, (M) 75.0. (N) UV-Visible spectra at the end of the AgNPs-HSA reaction extracted from Fig. S3A-M. Arrow shows spectra with increasing HSA concentration. Inset: enlarged spectra from 400 nm to 430 nm.

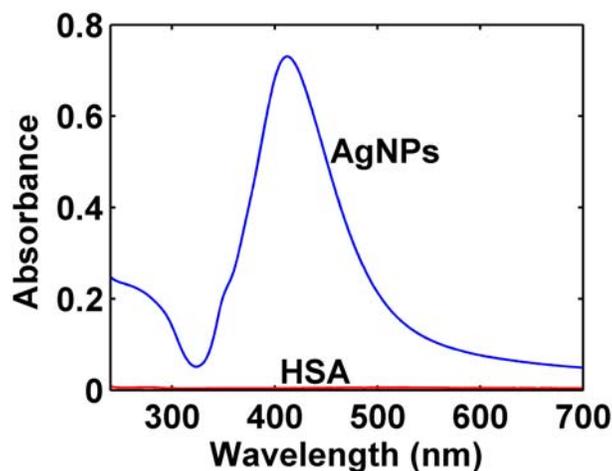


Fig. S4 UV-Visible spectra of citrate-coated AgNPs (0.0221 nM) and HSA (75.0 nM).

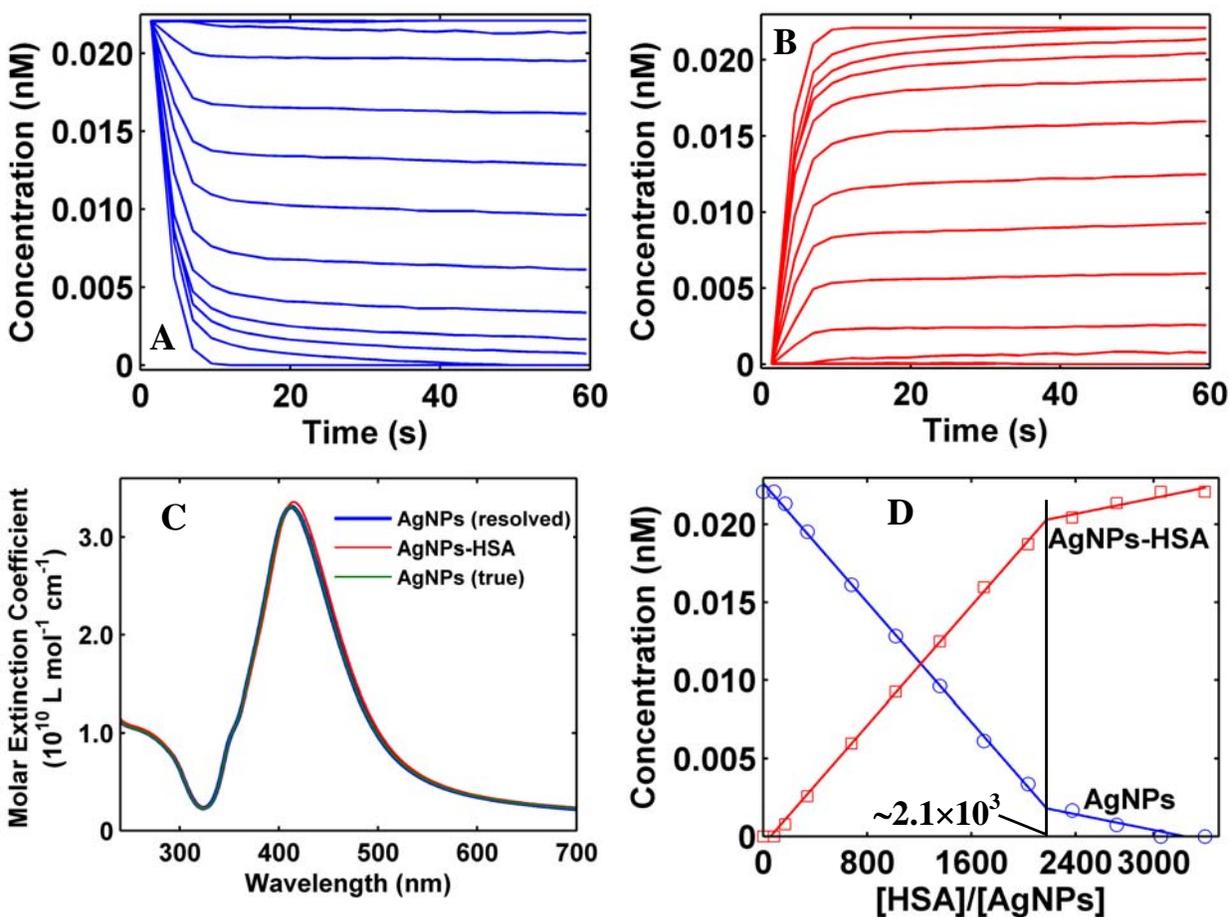


Fig. S5 MCR-ALS resolved kinetic curves of AgNPs (A) and AgNPs-HSA conjugate (B) at 303.15 K. (C) Resolved spectra of AgNPs and AgNPs-HSA conjugate and the true pure spectra of AgNPs. (D) Resolved distribution diagrams of AgNPs and AgNPs-HSA conjugate.

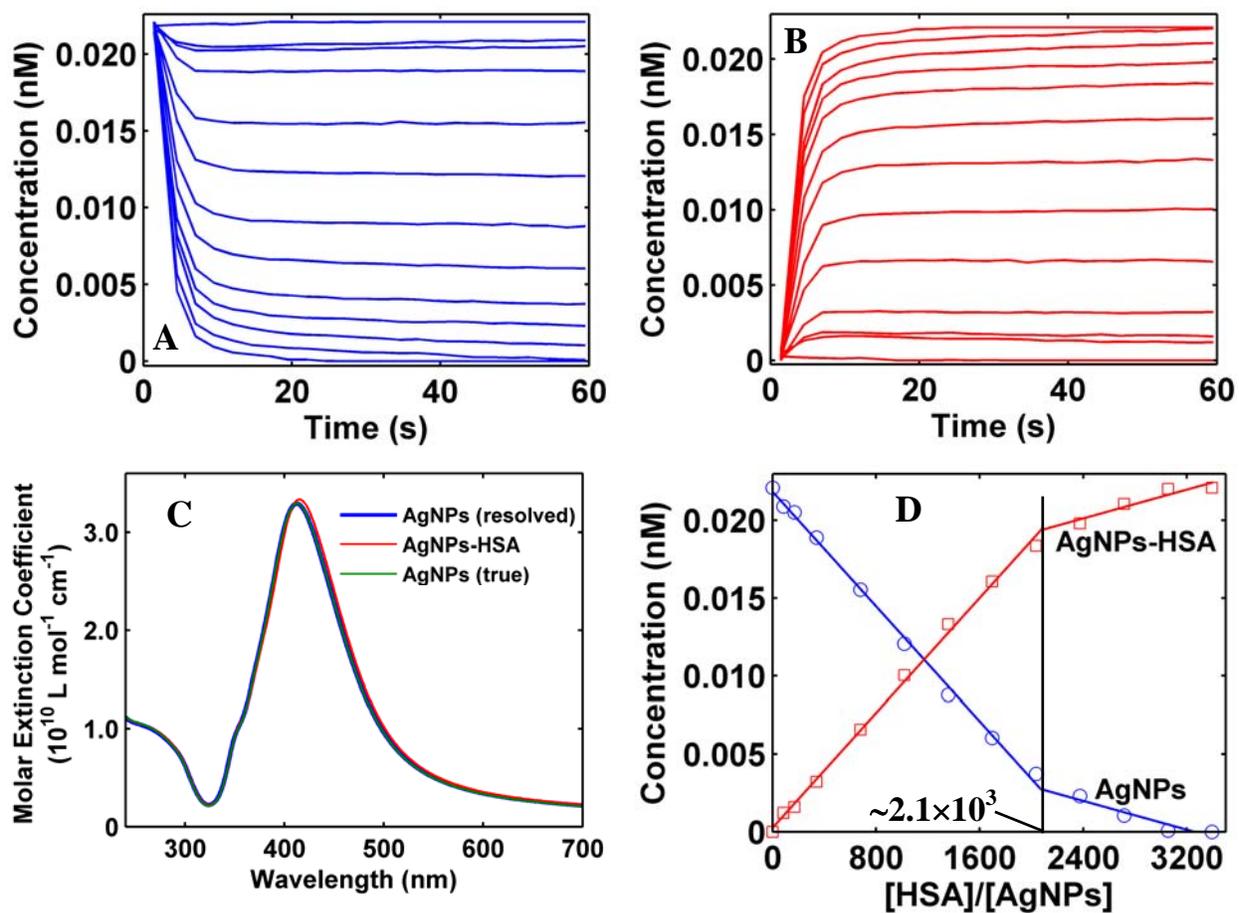


Fig. S6 MCR-ALS resolved kinetic curves of AgNPs (A) and AgNPs-HSA conjugate (B) at 308.15 K. (C) Resolved spectra of AgNPs and AgNPs-HSA conjugate and the true pure spectra of AgNPs. (D) Resolved distribution diagrams of AgNPs and AgNPs-HSA conjugate.