Electronic Supplementary Material (ESI) for Analyst.

Electronic Supplementary Information

Different binding sites of serum albumins in the protein corona of gold nanoparticles

Gergo Peter Szekeres, Janina Kneipp

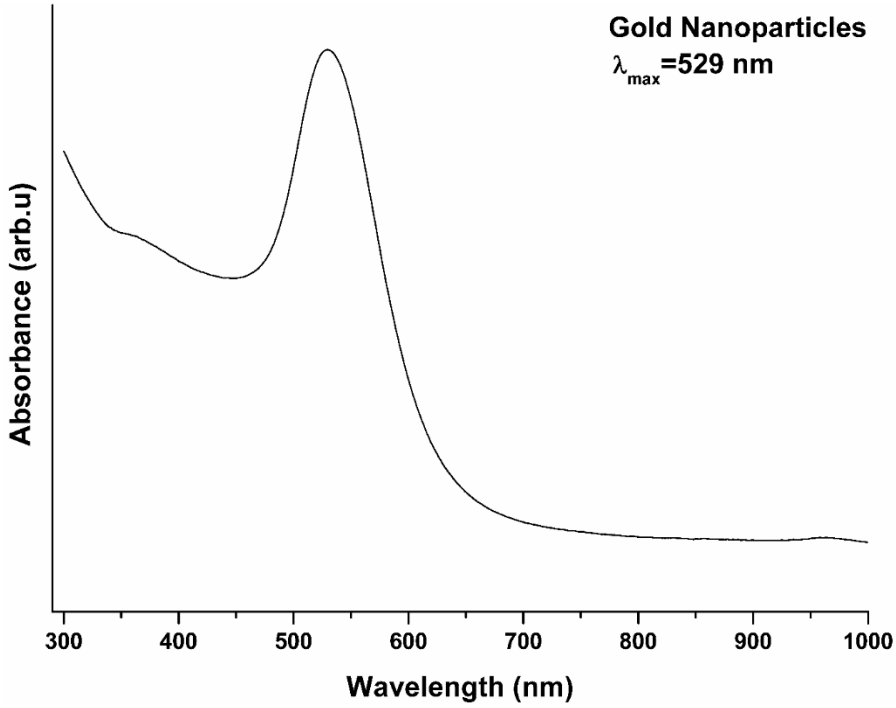

Figure S1. UV-Vis absorbance spectrum of the synthesized 30 nm citrate-stabilized gold nanoparticles. A narrow LSPR band can be observed with a maximum at λ_{max}=529 nm.

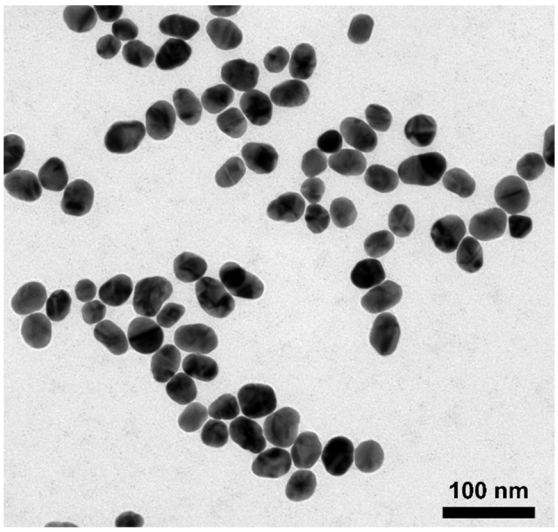

Figure S2. Transmission electron microscopy (TEM) image of the synthesized 30 nm gold nanoparticles.

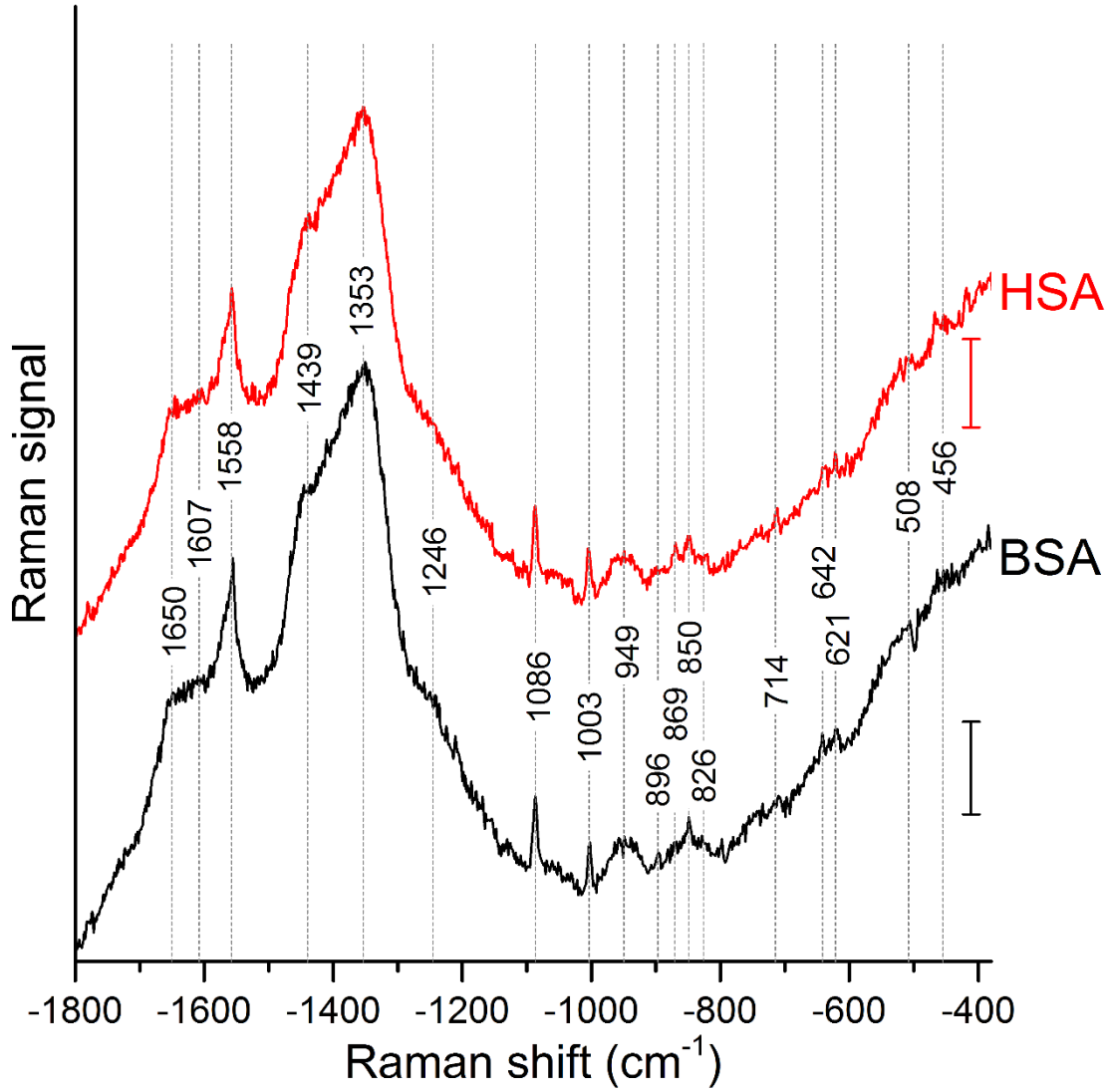

Figure S3. Normal Raman spectra of the 0.05 g/mL solutions of BSA and HSA, respectively. The identical band positions are marked with dashed vertical lines. The scale bars on the right correspond to 300 counts. Excitation wavelength: 785 nm, laser intensity: 5.7×10^5 W/cm^2, acquisition time: 120 s.

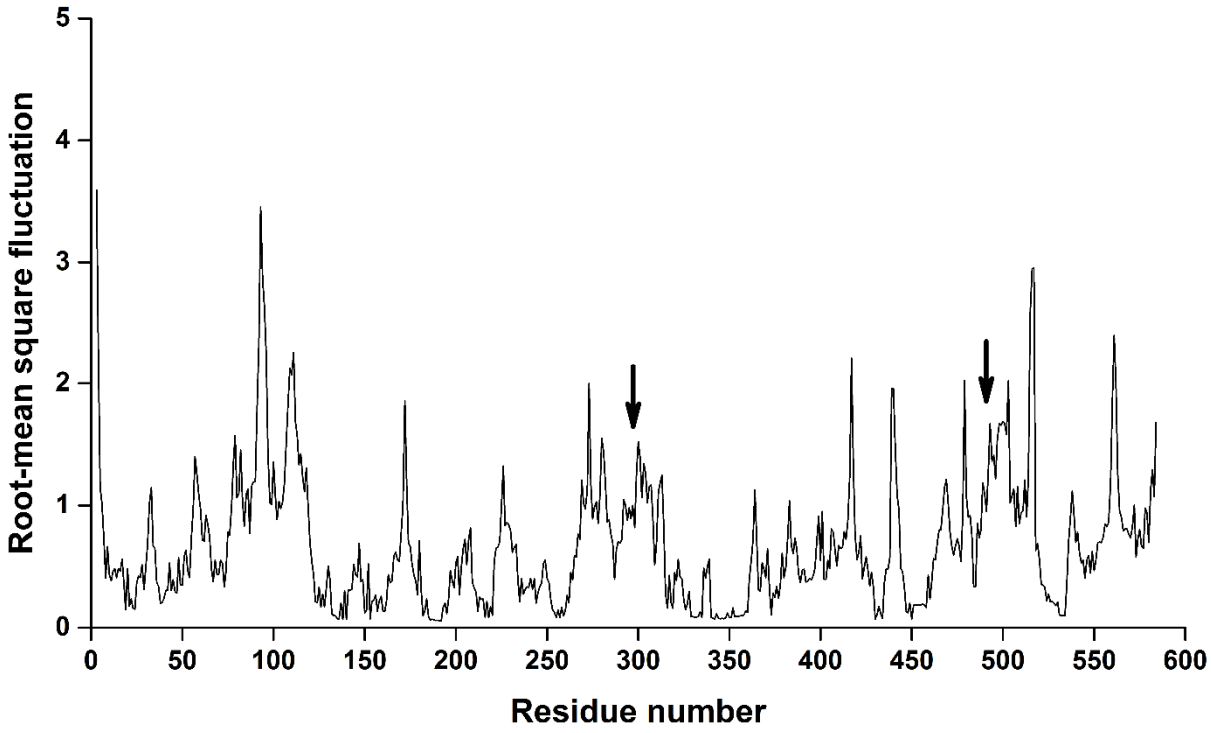

Figure S4. Root-mean square fluctuation calculation results for the HSA chain obtained in a simulation with CABS-flex 2.0. The position of the ...-Val$_{293}$-Glu$_{294}$-Asn$_{295}$-Asp$_{296}$-Glu$_{297}$-Met$_{298}$-... and ...-Leu$_{491}$-Glu$_{492}$-Val$_{493}$-... segments are marked with arrows.

Table S1. Tentative band assignments of the normal Raman spectra of BSA and HSA presented in Figure S3. Assignments are based on ref.[1-3]

Raman shift (cm^{-1})	**Assignment**
1650	Amide I
1607	Phe
1558	Trp
1439	C-H deformation
1353	Trp, C_{α}-H deformation
1246	Amide III
1086	C-N deformation
1003	Phe+Trp ring breathing
949	Trp, Val
896	Trp
869	Tyr
850	Tyr
826	Tyr
714	Trp
642	Tyr
621	Tyr, C-S stretching
508	S-S stretching
456	Trp ring deformation

References

1. V. J. Lin and J. L. Koenig, *Biopolymers*, 1976, **15**, 203-218.
2. A. Rygula, K. Majzner, K. M. Marzec, A. Kaczor, M. Pilarczyk and M. Baranska, *Journal of Raman Spectroscopy*, 2013, **44**, 1061-1076.
3. F. Madzharova, Z. Heiner and J. Kneipp, *The Journal of Physical Chemistry C*, 2017, **121**, 1235-1242.