

Supporting Information

Tris Base Assisted Synthesis of Monodispersed Citrate-capped Gold Nanospheres with Tunable Size

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Table S1. The synthesis of AuNPs in Fig.3 using both SC and TB under different heating time.

Sample	Reductant		pH Value	Heating SC		SPR Peak (dipolar) (nm)	Size of Particles (nm)
	SC (mL)	TB (mL)		Time (min)	Temp (°C)		
A	10	5	7.76	50	137	517	18.8
B	10	5	7.76	40		521	39.2
C	10	5	8.04	20		524	48.8
D	10	5	8.10	10		530	63.7

Table S2. The synthesis of AuNPs in Fig.4 using both SC and TB under different temperatures.

Sample	Reductant		pH Value	Heating SC		SPR Peak (dipolar) (nm)	Size of Particles (nm)
	SC (mL)	TB (mL)		Time (min)	Temp (°C)		
E	10	5	8.18	5	140	534	70.4
F	10	5	8.29		130	542	81.8
G	10	5	8.30		120	561	104.8
H	10	5	8.32		110	571	114.7

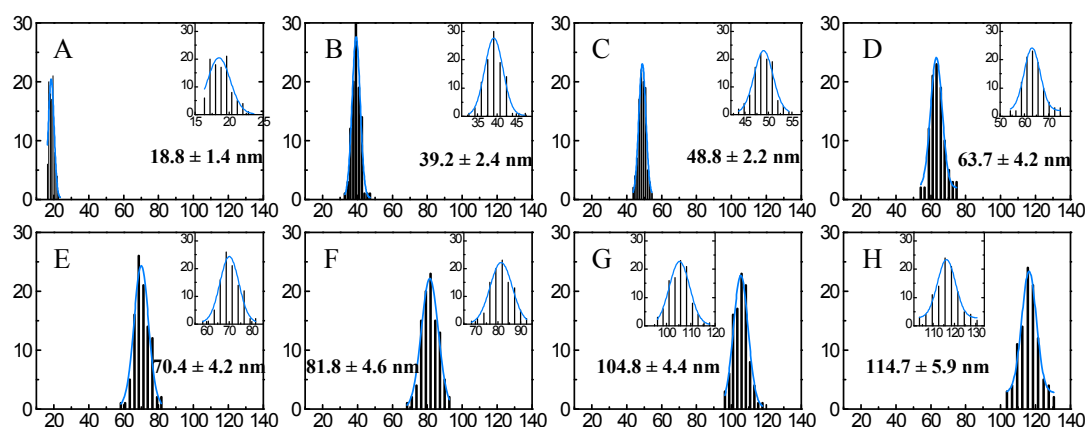


Fig. S1. The statistic diameters of AuNPs based on TEM images. Histograms A-H correspond to the sample A-H in Fig. 3 and Fig. 4, respectively. The horizontal axis represents the diameter and the vertical axis represents the amount of AuNPs. More than 100 NPs were counted in each case.

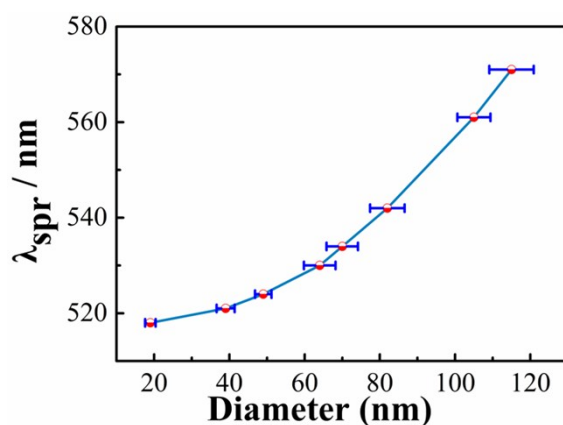


Fig. S2. The relationship between the average diameter of AuNPs and their corresponding plasmonic peaks of UV-vis spectra.

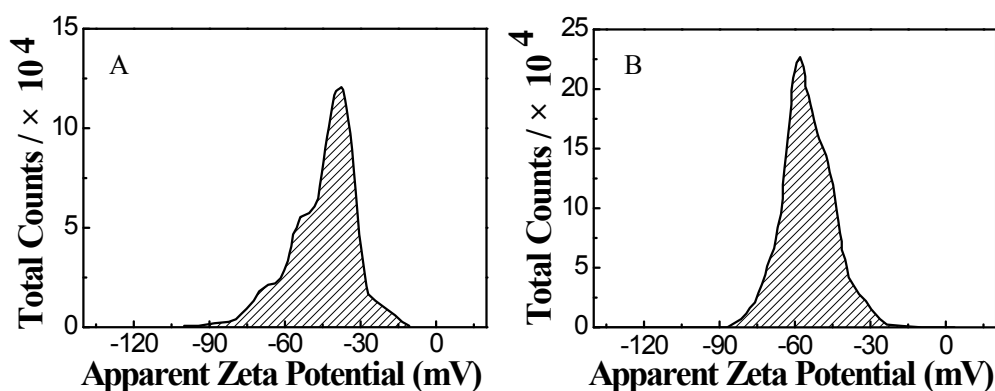


Fig. S3. Zeta potential of AuNPs: (A) -45.3 mV (Table S1C) and (B) -55.2 mV (Table S2H).

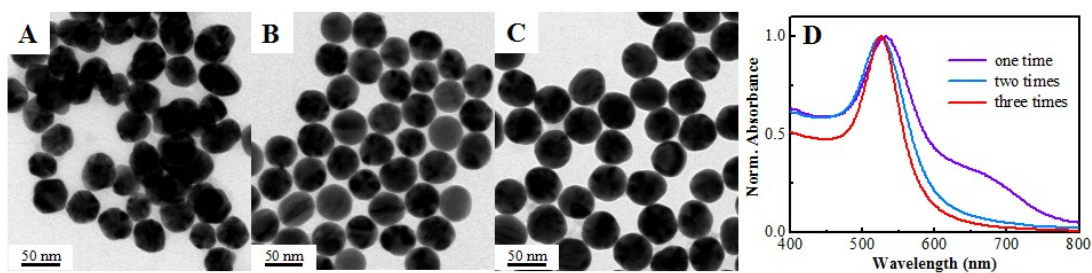


Fig. S4. The SEM images and UV/vis absorption spectra (D) of AuNPs synthesized by adding one time (A), two times (B) and three times (C) HAuCl_4 solution.

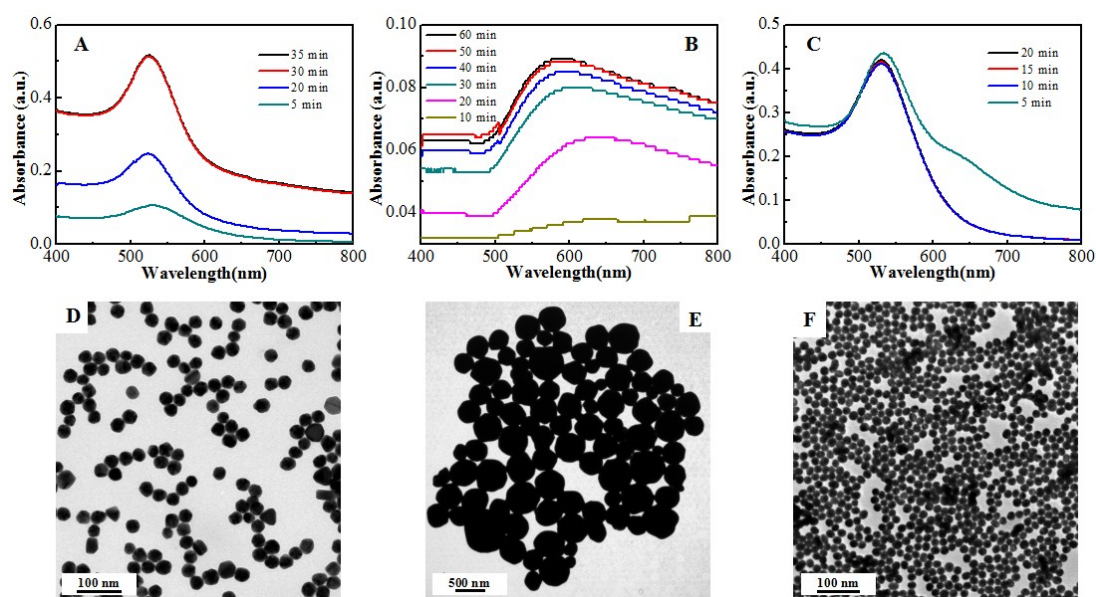


Fig. S5. The UV/vis absorption spectra and corresponding TEM images of AuNPs reduced by SC (A, D), TB (B, E) and SC/TB (C, F).

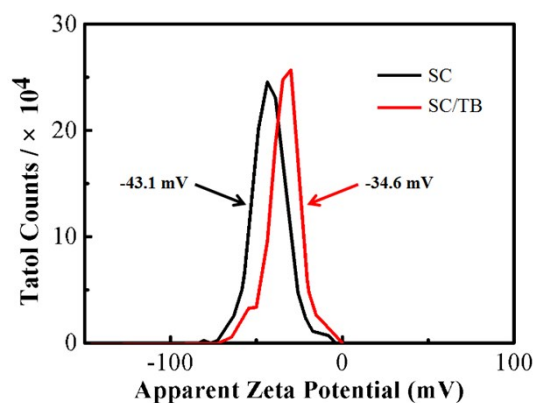


Fig. S6. Zeta potential of AuNPs synthesized by SC (black line) and SC/TB (red line).

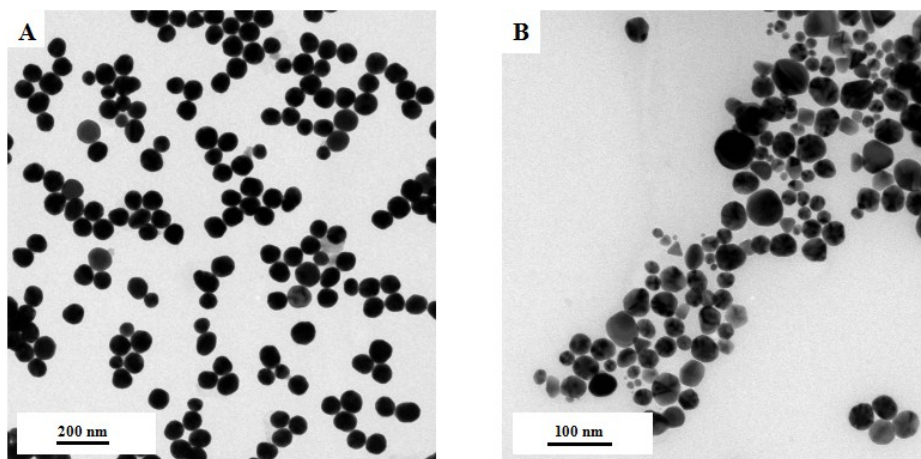


Fig. S7. TEM images of polydispersed AuNPs synthesized by heating 1 minute at 137 °C (A) and heating 30 min at 100 °C (B).