

Influence of Cysteine and Bovine Serum Albumin on Silver Nanoparticle Stability, Dissolution, and Toxicity to *Phanerochaete chrysosporium*

Feng Yi,^{a,b} Guiqiu Chen,^{*,a,b} Guangming Zeng,^{*,a,b} Zhi Guo,^{a,b} Weiwei Liu,^{a,b} Zhenzhen Huang,^{a,b} Liang Hu,^{a,b} kai He^{a,b}

^aCollege of Environmental Science and Engineering, Hunan University, Changsha 410082, P.R. China

^bKey Laboratory of Environmental Biology and Pollution Control (Hunan University), Ministry of Education, Changsha 410082, P.R. China

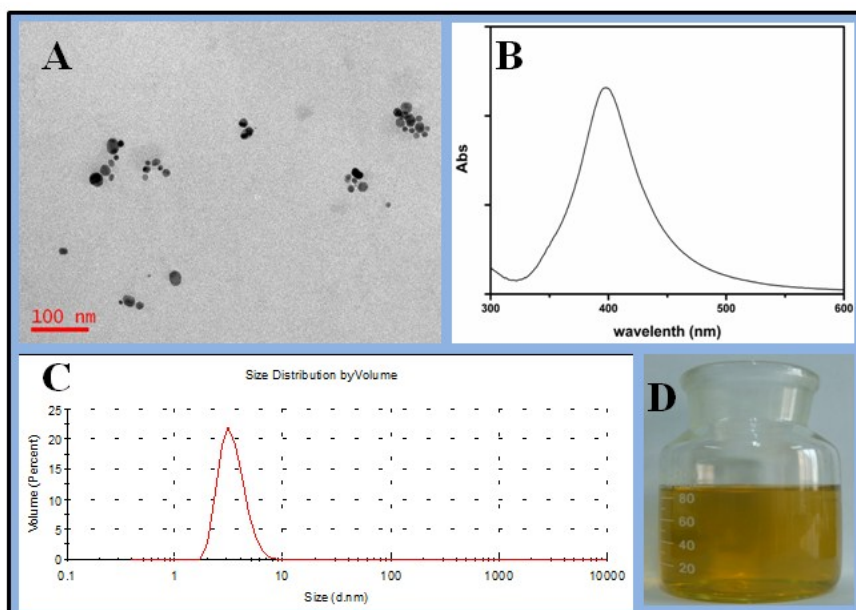


Figure S1. (A) Transmission electron microscopy (TEM) micrographs of citrate-stabilized AgNPs. (B) UV-vis spectrum of citrate-stabilized AgNPs. (C) Size distribution by volume of citrate-stabilized AgNPs. (D) Colloidal suspension of stock citrate-stabilized AgNPs.

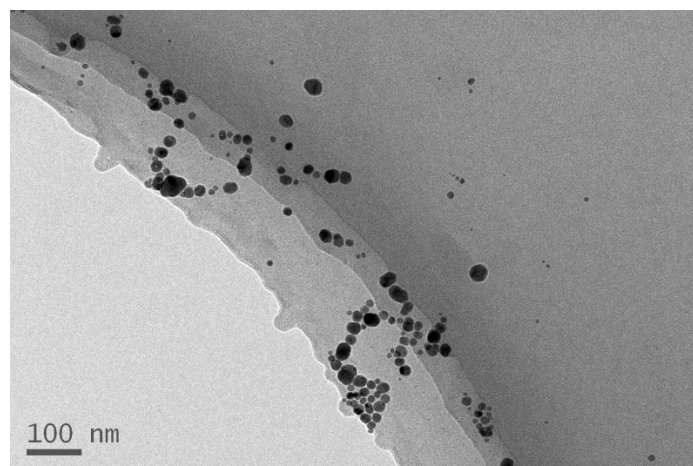


Figure S2. Transmission electron microscopy (TEM) micrographs of AgNPs after addition of CYS.

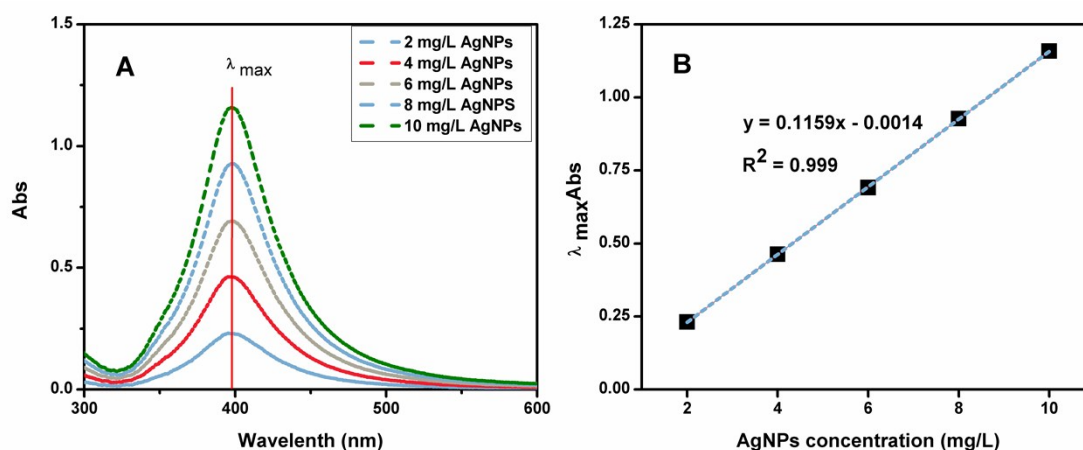


Figure S3. (A) UV-vis absorption spectra of various concentrations of citrate-stabilized AgNP suspension in ultrapure water. (B) 20 nm citrate-stabilized AgNP concentrations versus the intensity of the λ_{max} absorbance.

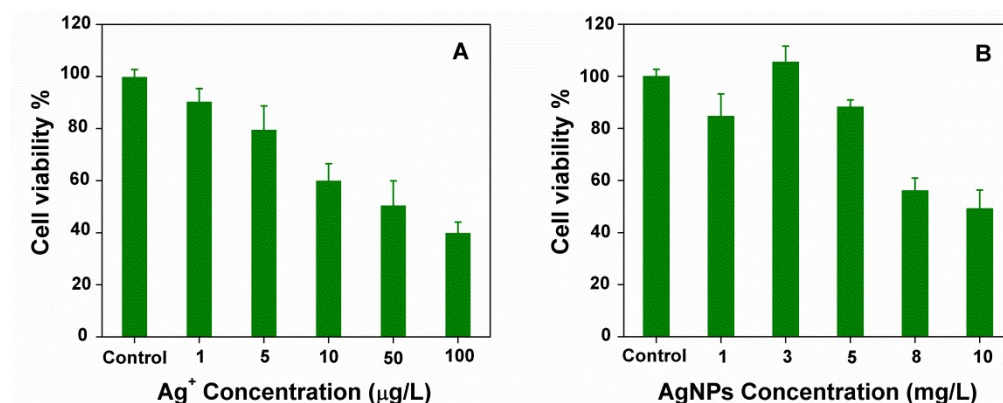


Figure S4. Concentration-dependent effects on cell viability in *P. chrysosporium*. The cells were exposed to (A) dissolved Ag^+ (as $AgNO_3$), or (B) citrate-stabilized AgNPs. Error bars are sample standard deviations from triplicate measurements. Exposure time = 12 h.

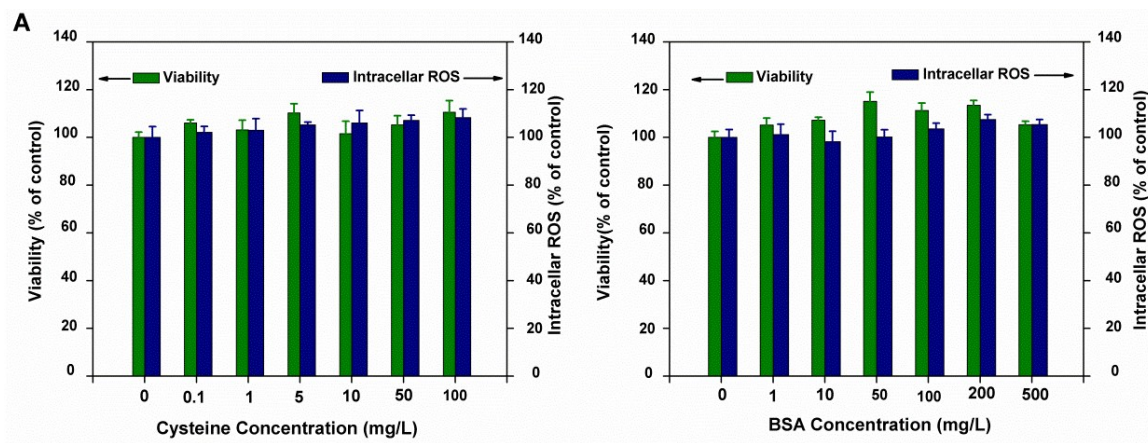


Figure S5. Concentration-dependent effects on cell viability and intracellular ROS level in *P. chrysosporium*. The cells were exposed to (A) CYS, (B) BSA

Table S1.FWHM (nm) of AgNPs in the presence of CYS

CYS concentration	0 h	3 h	6 h	9 h	12 h
0.1 mg/L	72 ± 2.3	78 ± 0	82 ± 2.3	84 ± 0.6	84 ± 1.1
10 mg/L	82 ± 1.1	90 ± 0.9	94 ± 0.80	96 ± 0.9	102 ± 1.7
50 mg/L	82 ± 2.5	88 ± 1.3	96 ± 1.1	100 ± 1.0	106 ± 1.5
100 mg/L	86 ± 1.9	90 ± 0.8	100 ± 0.7	102 ± 0.9	102 ± 1.0

Table S2.FWHM (nm) of AgNPs in the presence of BSA

BSA concentration	0 h	3 h	6 h	9 h	12 h
1 mg/L	62 ± 0	64 ± 1.5	66 ± 0.7	66 ± 1.0	68 ± 0.9
10 mg/L	62 ± 0.9	66 ± 0	66 ± 0.7	68 ± 1.1	68 ± 0.7
100 mg/L	64 ± 1.0	66 ± 0	66 ± 0.9	70 ± 0.6	72 ± 1.2
500 mg/L	66 ± 1.7	68 ± 0.9	70 ± 1.2	70 ± 2.5	72 ± 1.7