



Article

Silver Nanoparticles Stable to Oxidation and Silver Ion Release Show Size-Dependent Toxicity In Vivo

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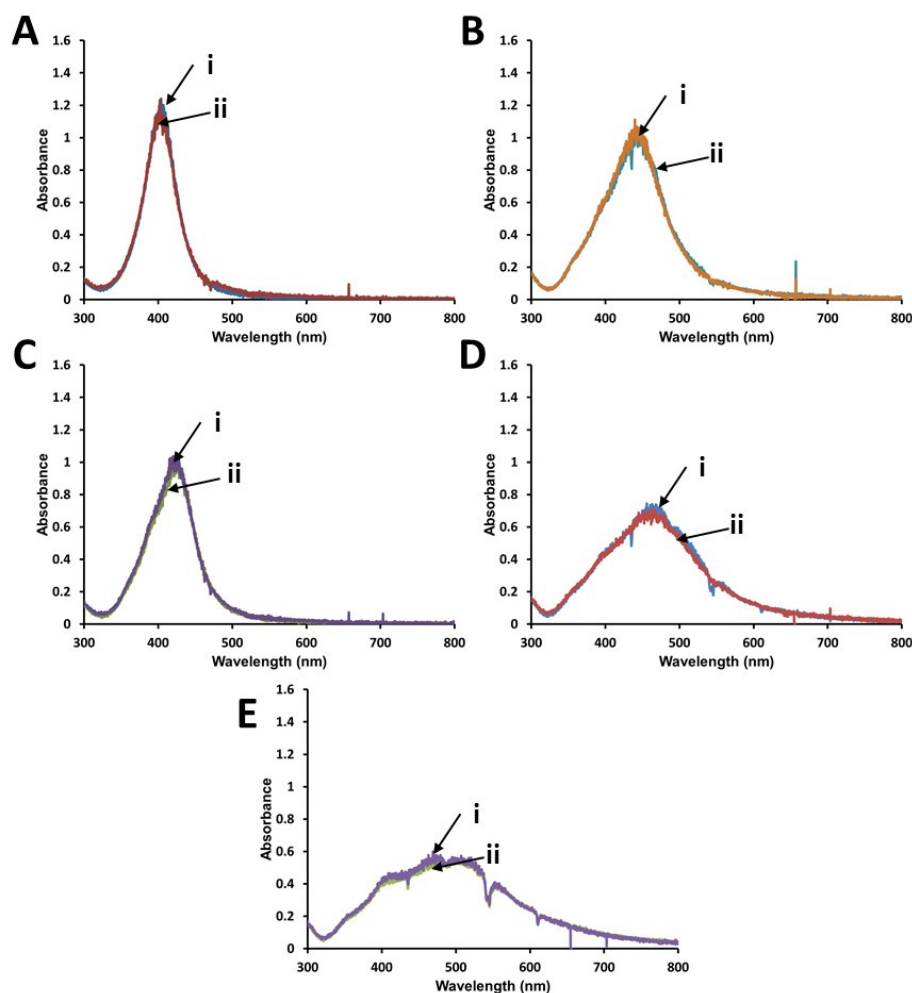


Figure S1. Representative UV-vis spectra of purified spherical Ag-SOA-PC-HT at the same concentration (6 mg Ag/L). **A)** 20 nm, **B)** 40 nm, **C)** 60 nm, **D)** 80 nm, and **E)** 100 nm nanoparticles **i)** before and **ii)** after exposure to KCN (6 mM) in water.

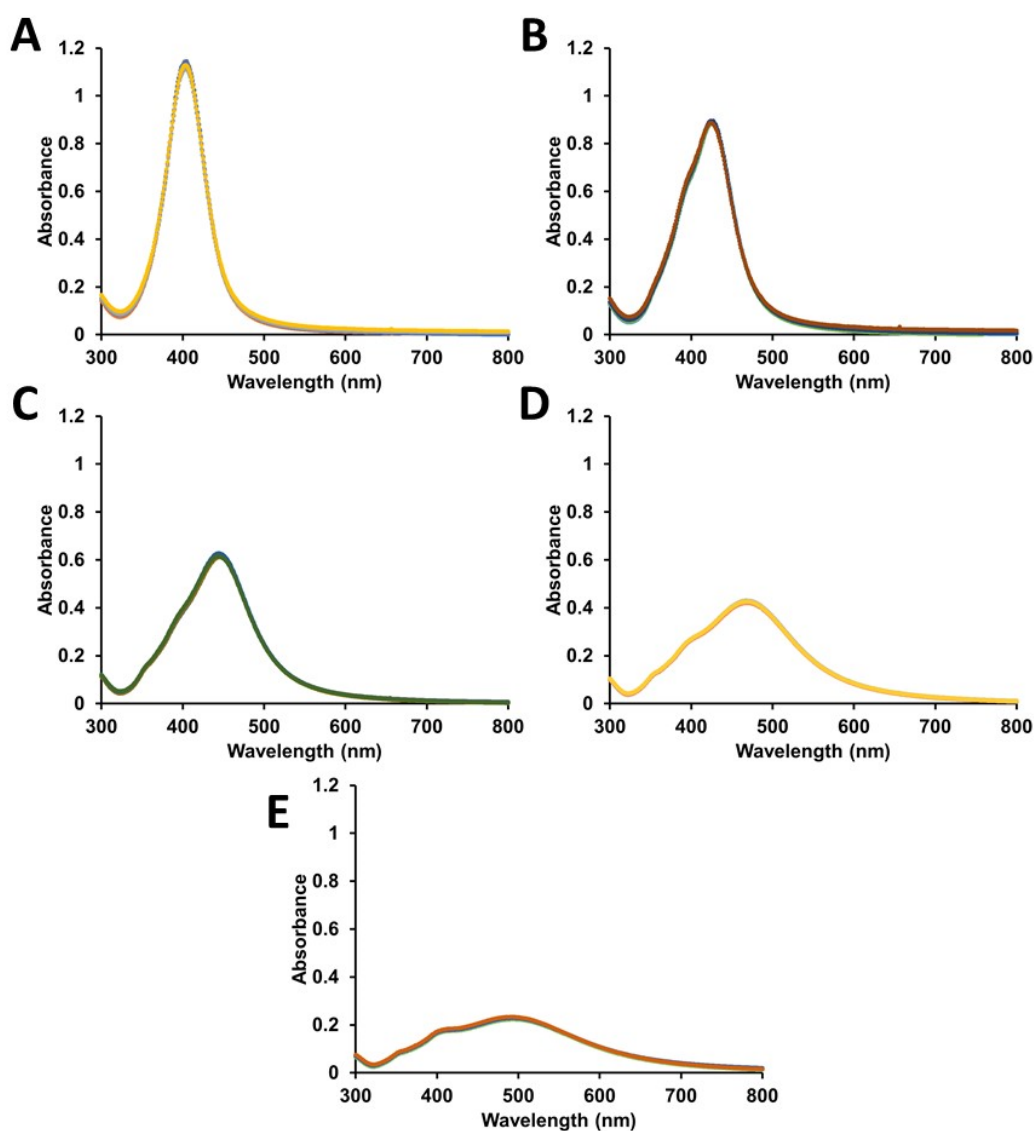


Figure S2. Representative |% change| in the O.D. of Ag-SOA-PC-HT nanoparticles **A)** 20 nm, **B)** 40 nm, **C)** 60 nm, **D)** 80 nm, and **E)** 100 nm nanoparticles at 1-day, 5 days, and 7 days post synthesis in FW.

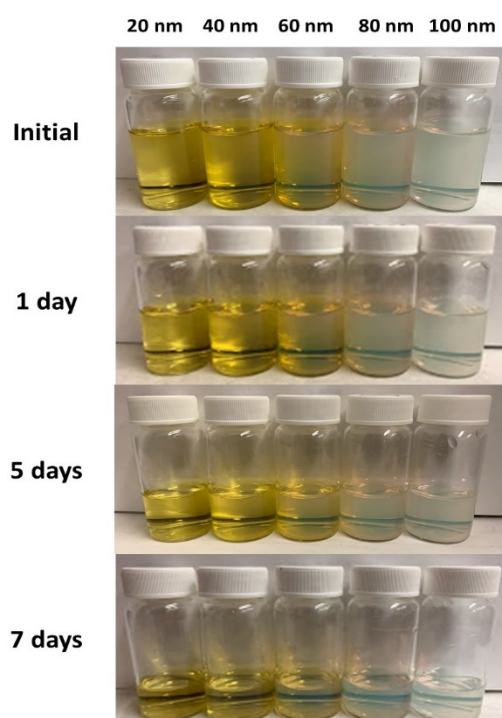


Figure S3. Photographs of the Ag-SOA-PC-HT nanoparticles (6 ppm) after initial synthesis, day 1, 5-days, and 7-days post synthesis in FW at 25 °C.

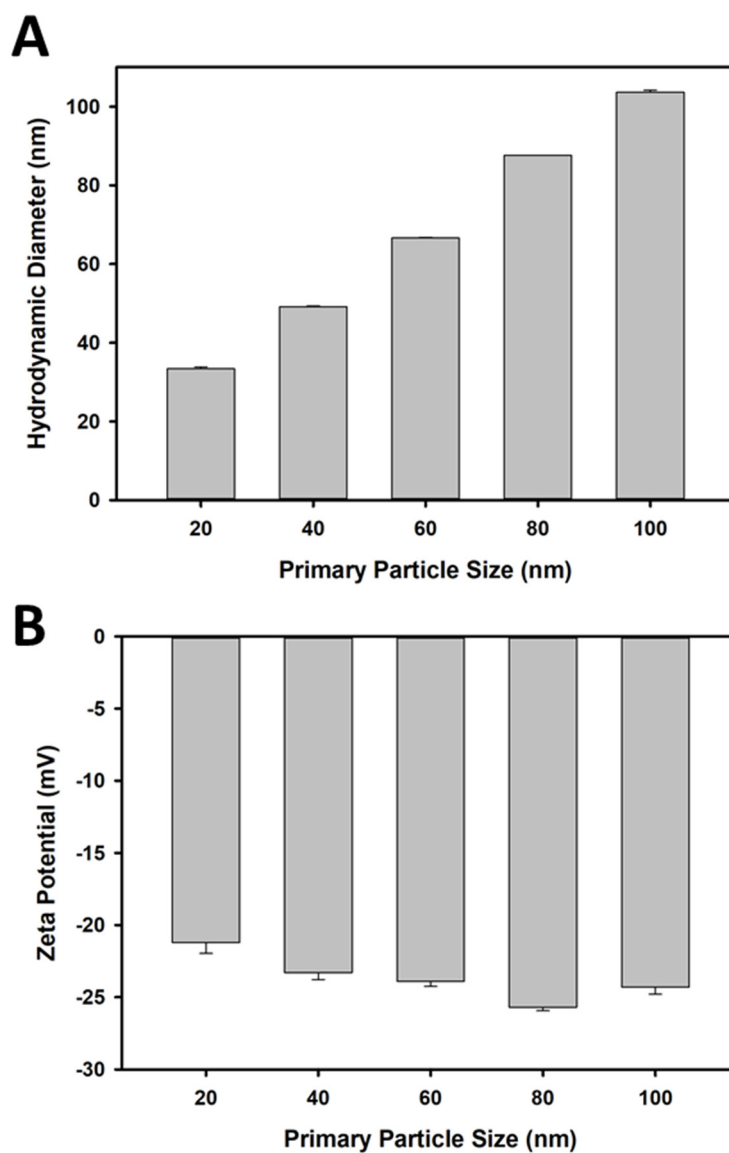


Figure S4. A) Hydrodynamic diameter and B) zeta potential of 20, 40, 60, 80 and 100 nm Ag-SOA-PC-HT nanoparticles at 12 mg Ag/L in fishwater.

Table S1. Properties of citrate-capped AgNP properties from manufacturer (NanoComposix, San Diego, CA).

AgNP Size (nm)	HDD (nm)	Zeta (mV)	Particle Concentration (AgNPs/mL)	λ_{\max} (nm)	OD _{max}
19.7 ± 3.6	23	-41	4.9*10 ¹¹	392	4.21
41 ± 5	44	-50	5.4*10 ¹⁰	417	2.9
59 ± 6	64	-51	1.8*10 ¹⁰	438	1.93
80 ± 9	85	-52	7.3*10 ⁹	463	1.37
97 ± 13	101	-51	4.2*10 ⁹	485	1.05

Table S2. Ag-SOA-PC-HT concentrations determined by ICP-MS.

AgNP Size (nm)	Particle Concentration (mg Ag/L)	Particle Concentration (AgNPs/mL)
20	32.98	7.7×10^{11}
40	37.78	9.7×10^{10}
60	41.37	3.5×10^{10}
80	42.01	1.5×10^9
100	59.71	1.2×10^{10}

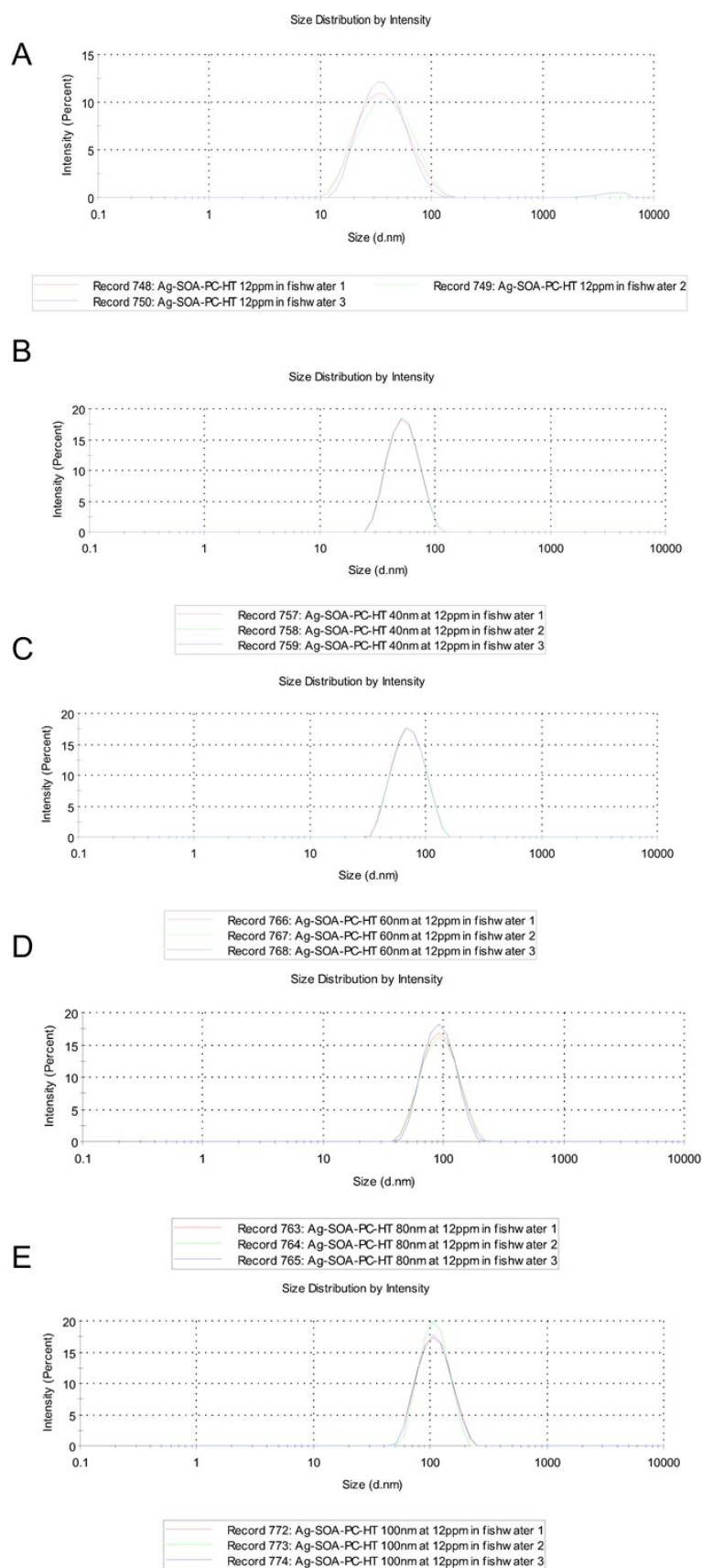


Figure S5. Size distribution by intensity curves for (A) 20 nm, (B) 40 nm, (C) 60 nm, (D) 80 nm, and (E) 100 nm Ag-SOA-PC-HT NPs.