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Horseradish peroxidase-mediated *in situ* synthesis of silver nanoparticles: Application for sensing of mercury

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Supplementary Information

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Fig. S1. UV–visible spectra during the formation of AgNPs in the presence of $AgNO_3$ (0.1 mM) and $NaBH_4$ (1 mM) with different concentrations of HRP (0.01 to 10 µM).

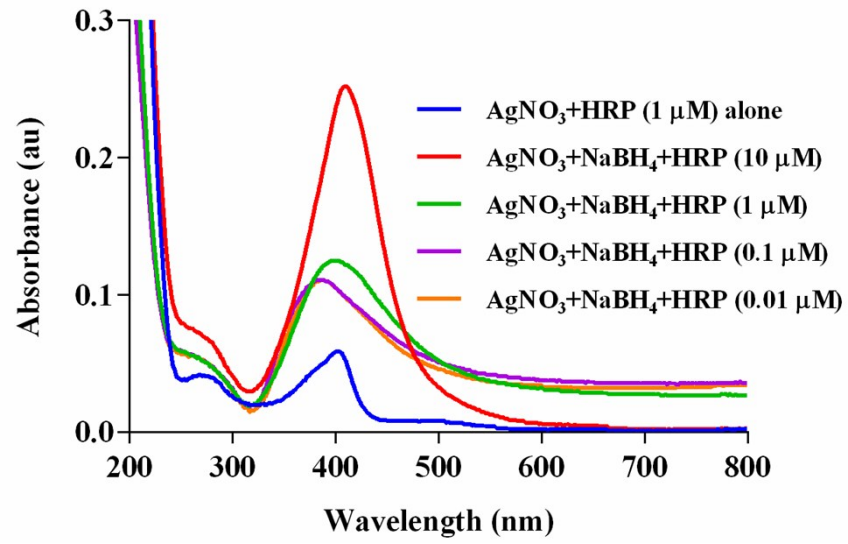

Fig. S2. A) UV–visible spectra during the formation of AgNPs in the presence of $AgNO_3$ (0.1 mM), $NaBH_4$ (1 mM), HRP (1 µM), and H_2O_2 (10 mM) with different concentrations of ABTS (10^{-5} – 10^{-9} M). **B)** Graph showing absorbance intensity of AgNPs at 394 nm plotted against different ABTS concentrations.

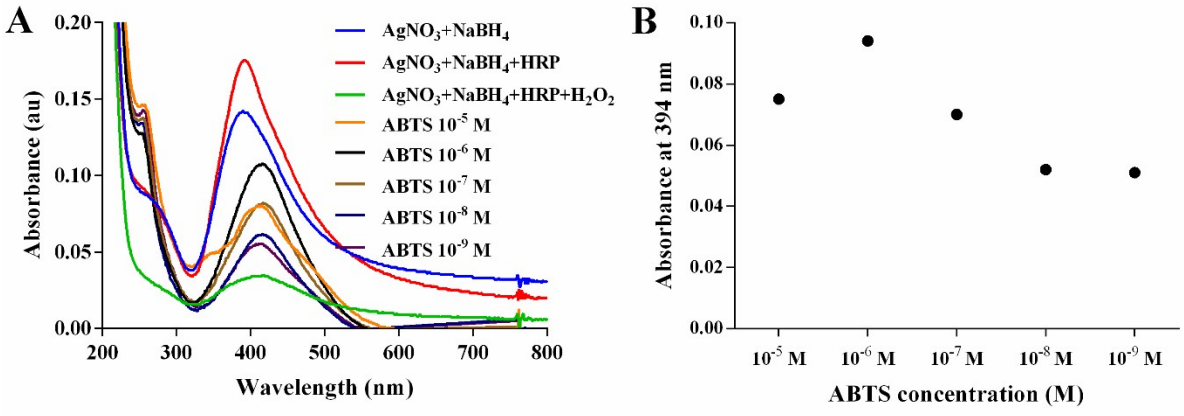

Fig. S3. UV–visible spectra during the formation of AgNPs in the presence of $AgNO_3$ (0.1 mM), $NaBH_4$ (1 mM), HRP (1 μM), H_2O_2 (10 mM), and ABTS (1 μM) of different volumes (10 – 100 μL).

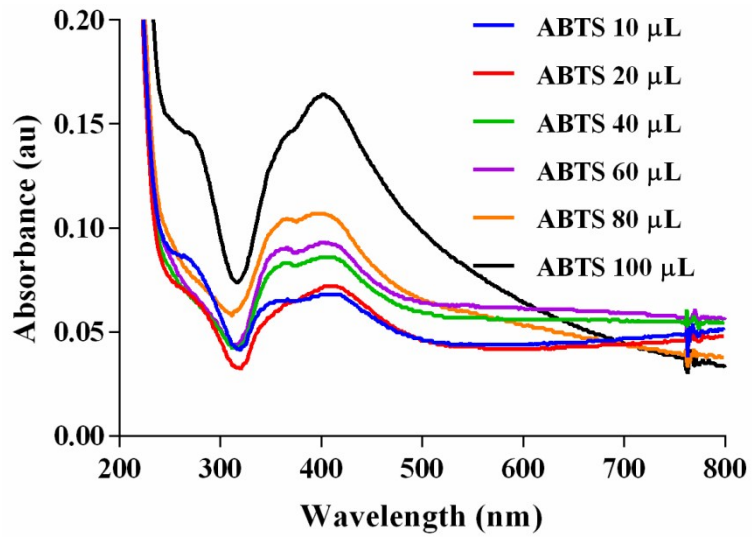

Fig. S4. UV–visible spectra during the formation of AgNPs in the presence of $AgNO_3$ (0.1 mM) and $NaBH_4$ (1 mM) with and without addition of HRP (1 μM), and H_2O_2 (10 mM) alone in the reaction system.

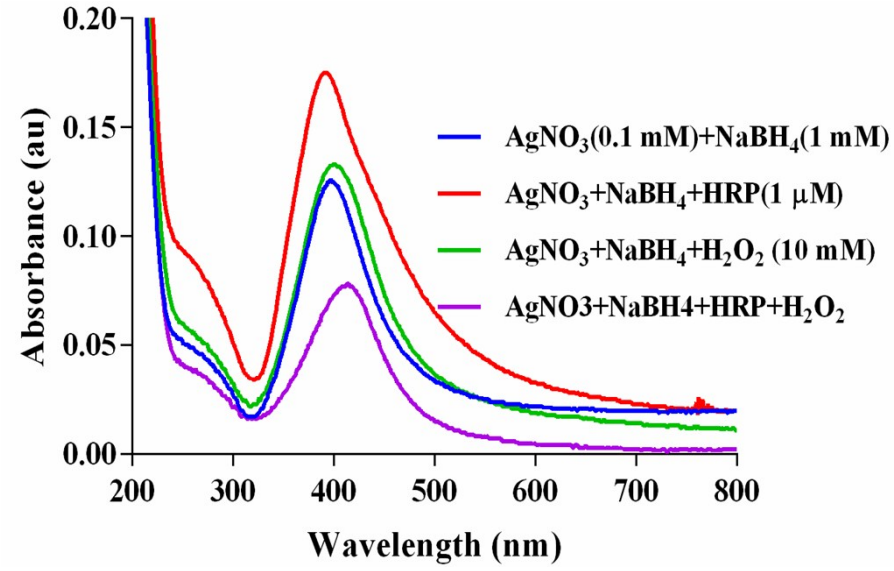

Fig. S5. UV–visible spectra during the formation of AgNPs in the presence of $AgNO_3$ (0.1 mM) and $NaBH_4$ (1 mM) with different concentrations of H_2O_2 (10 – 100×10^{-9} M) in the reaction system.

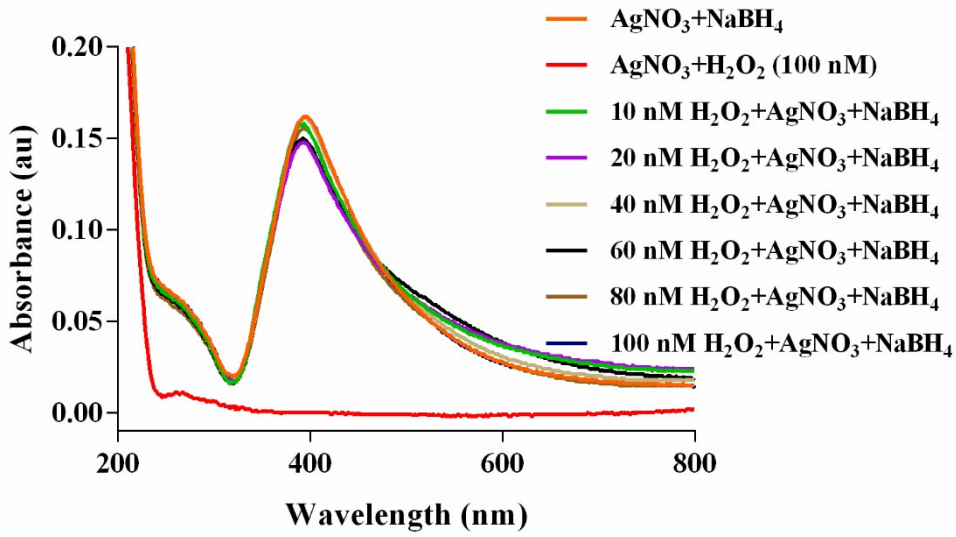

Fig. S6. UV–visible spectra during the formation of AgNPs in the presence of **A)** $AgNO_3$ (0.1 mM), $NaBH_4$ (1 mM), with different concentrations of Hg^{2+} (10, 50, and 100×10^{-9} M).

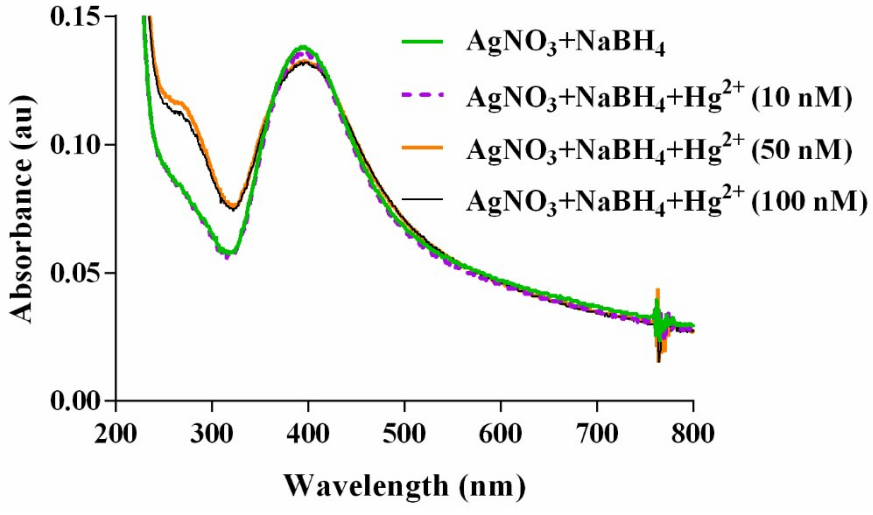

Fig. S7. UV–visible spectra during the formation of AgNPs in the presence of **A)** $AgNO_3$ (0.1 mM), $NaBH_4$ (1 mM), and HRP (1 µm) with different concentrations of Hg^{2+} (10, 30, 60, and 100×10^{-9} M). B) Linear correlation graph for AgNP at 394 nm against different concentrations of Hg^{2+}