Supporting Information for

Effect of Tryptophan Residues on Gold Mineralization by a Gold Reducing Peptide

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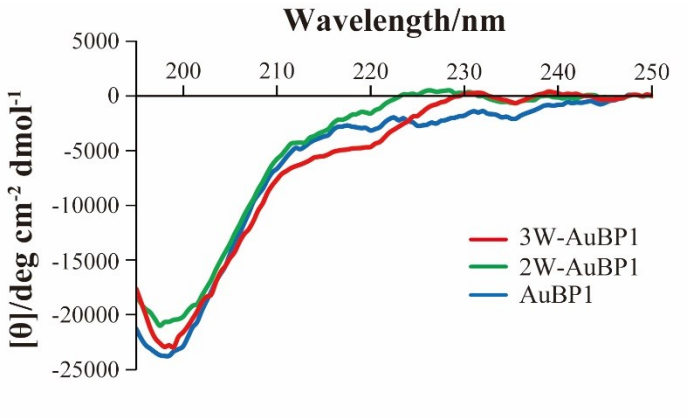

Fig. S1 CD spectra of 10 µM AuBP1, 2W-AuBP1, and 3W-AuBP1.

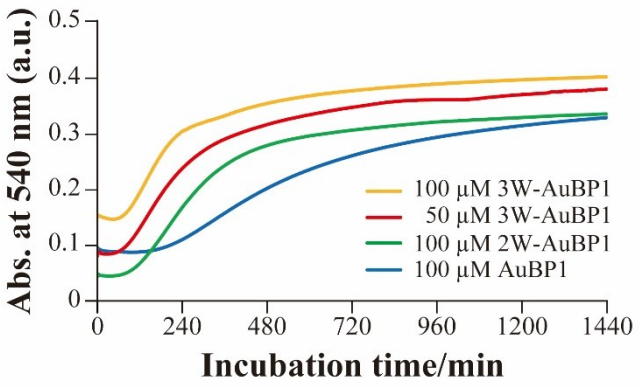

Fig. S2 Growth of absorbance derived from SPR at 540 nm over time of each peptide.

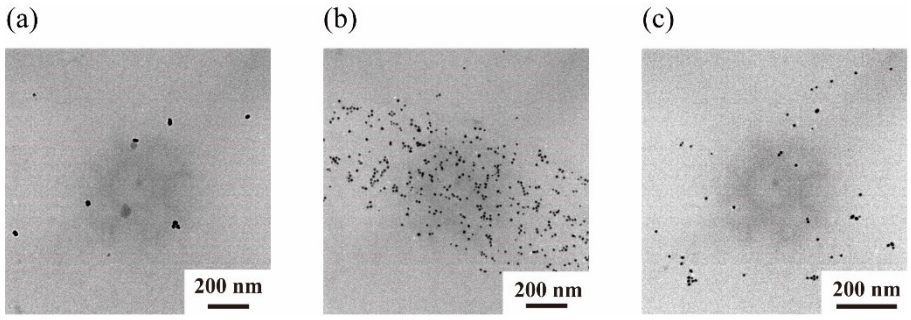

Fig. S3 TEM images of the sample after gold mineralization using (a) 100 µM AuBP1, (b) 100 µM 2W-AuBP1, and (c) 100 µM 3W-AuBP1.

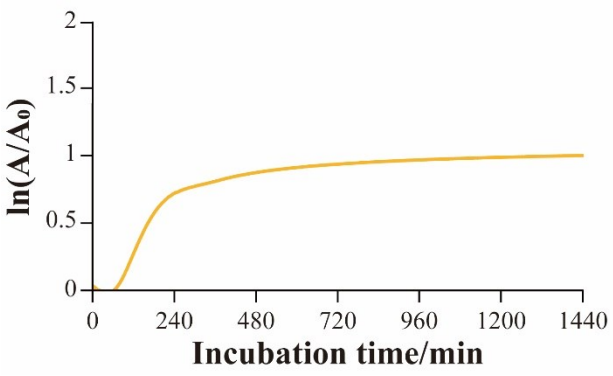

Fig. S4 Pseudo-first-order kinetic analysis of the reduction of Au^{3+} to Au^{0} using 100 μM 3W-AuBP1.

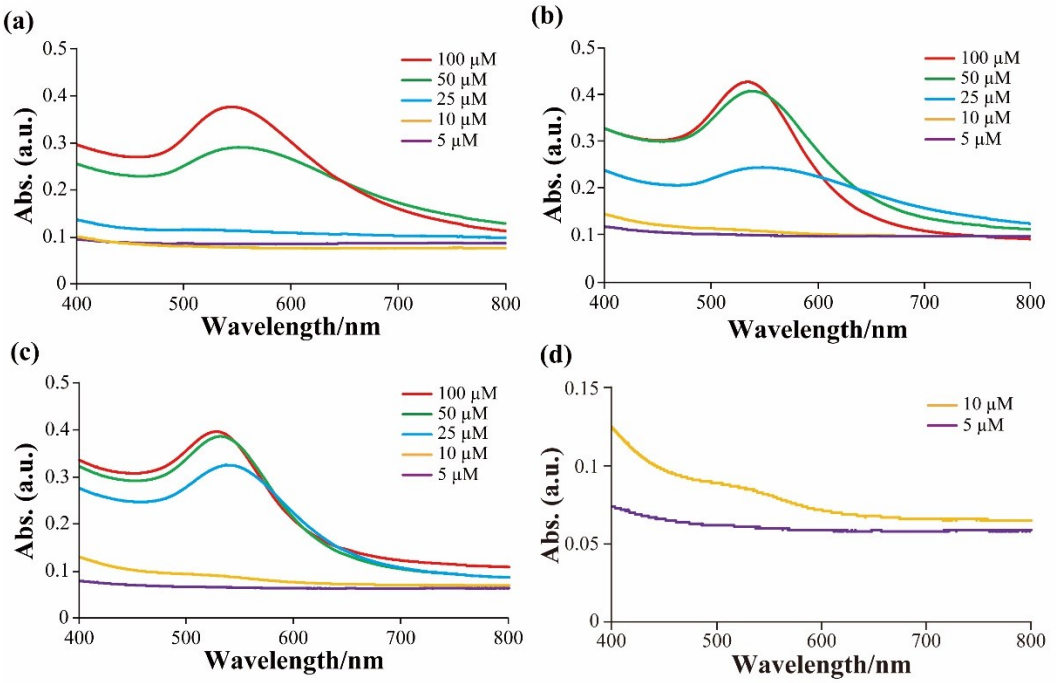

Fig. S5 UV-VIS spectra of the sample after gold mineralization using (a) AuBP1, (b) 2W-AuBP1, and (c), (d) 3W-AuBP1.

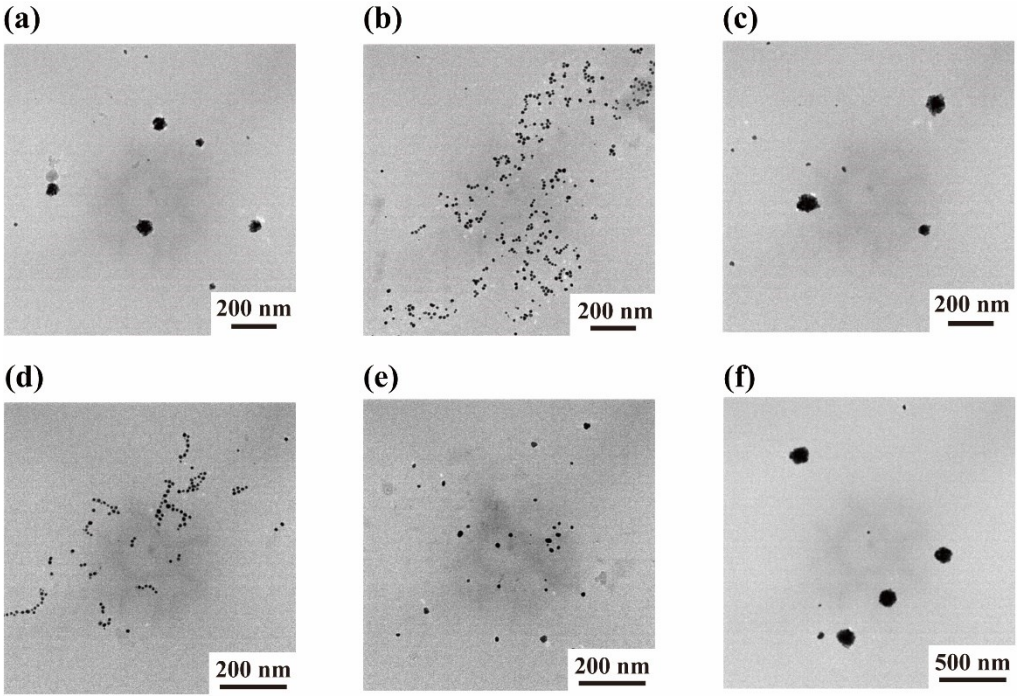

Fig. S6 TEM images of the sample after gold mineralization using (a) 50 μM AuBP1, (b) 50 μM 2W-AuBP1, (c) 25 μM 2W-AuBP1, (d) 50 μM 3W-AuBP1, (e) 25 μM 3W-AuBP1, and (e) 10 μM 3W-AuBP1.

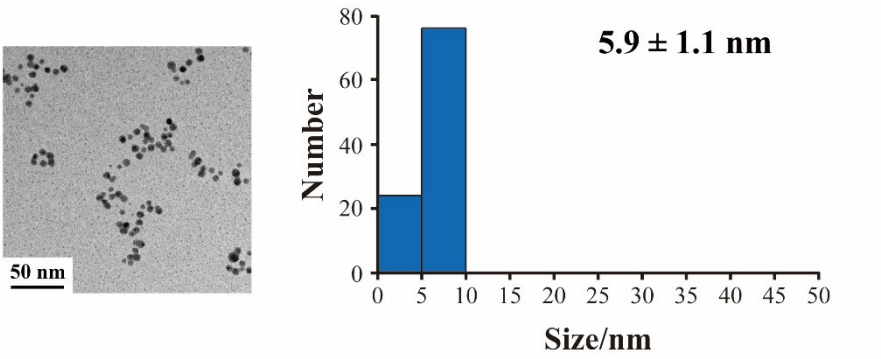

Fig. S7 TEM image and particle histogram of the commercial gold nanoparticle (Sigma-Aldrich, 741949).

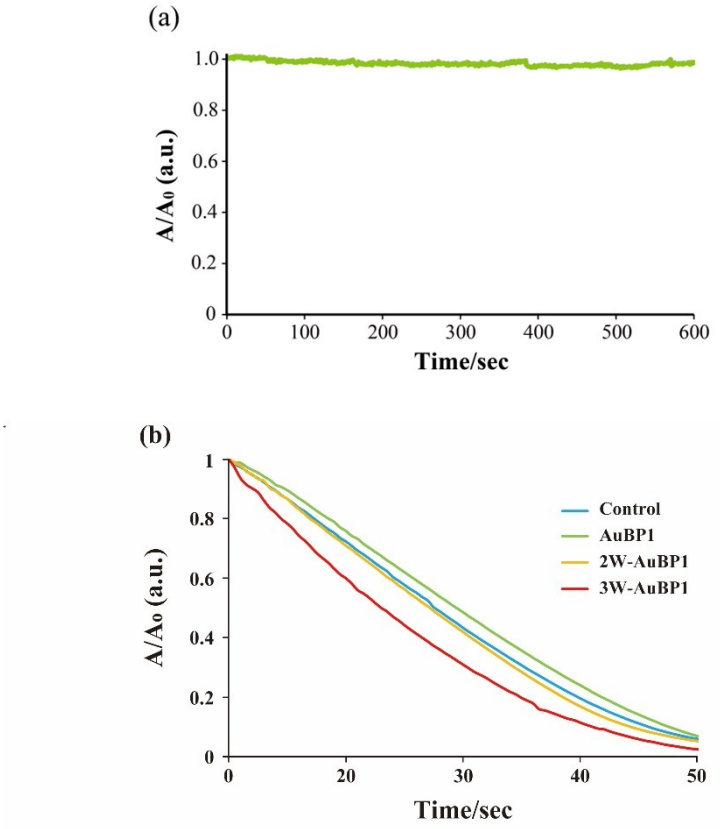

Fig. S8 (a) Time course of reduction reaction of 4-nitrophenol to 4-aminophenol without gold nanoparticles at 20°C. (b) Time course of reduction reaction of 4-nitrophenol to 4-aminophenol using gold nanoparticles at 30°C.

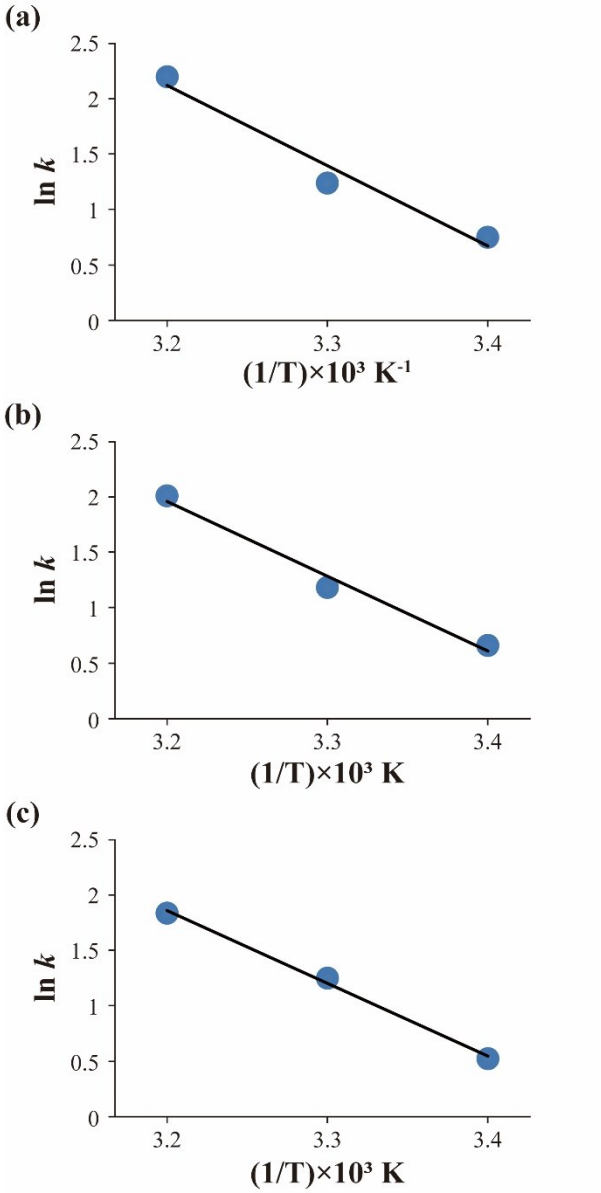

Fig. S9 Arrhenius plots of reduction reaction of 4-nitrophenol using (a) AuBP1, (b) 2W-AuBP1, and (c) 3W-AuBP1.

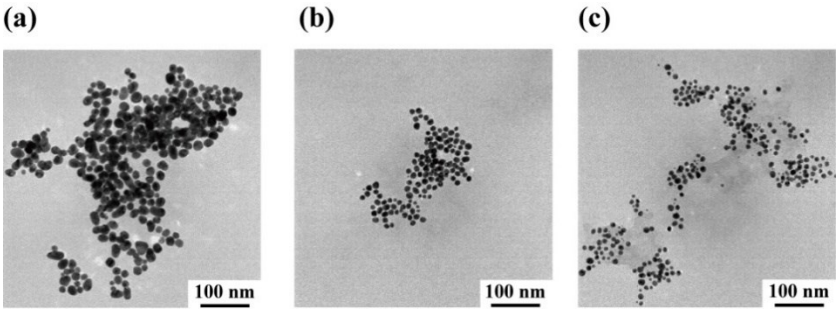

Fig. S10 TEM images of mineralized gold nanospheres with (a) 100 μM AuBP1, (b) 100 μM 2W-AuBP1, and (c) 100 μM 3W-AuBP1 after reduction reaction of 4-nitrophenol to 4-aminophenol is completed.

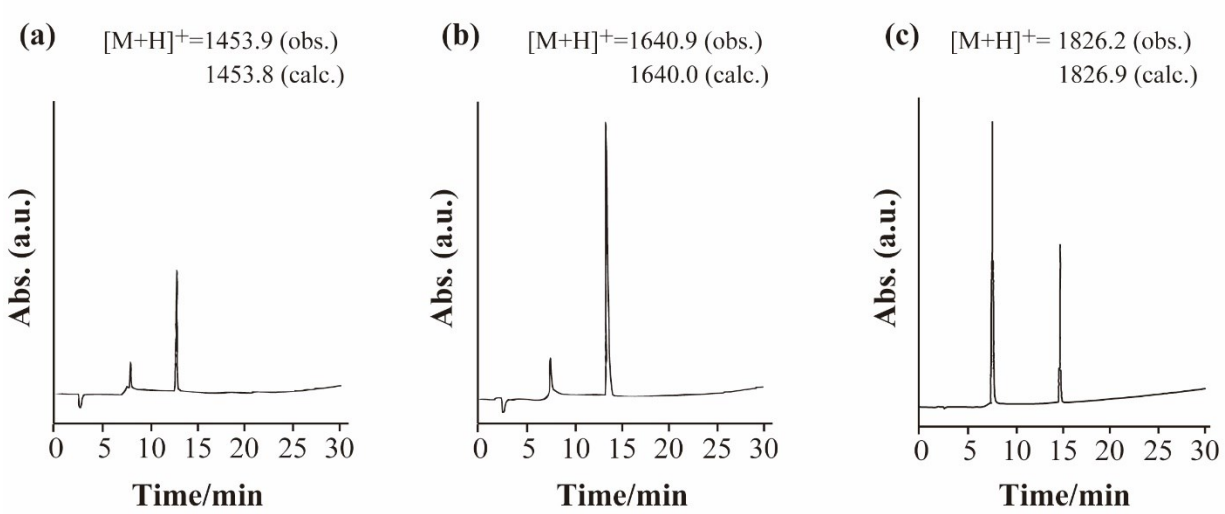

Fig. S11 HPLC for purified (a) AuBP1, (b) 2W-AuBP1, and (c) 3W-AuBP1 separated on an ODS column (150 × 4.6 mm, 5 mm) with MilliQ water (containing 0.1% TFA) using a gradient from 0% to 100% acetonitrile (containing 0.08% TFA) over 30 min, 1.0 mL/min; detection at 220 nm.