SUPPLEMENTAL MATERIAL

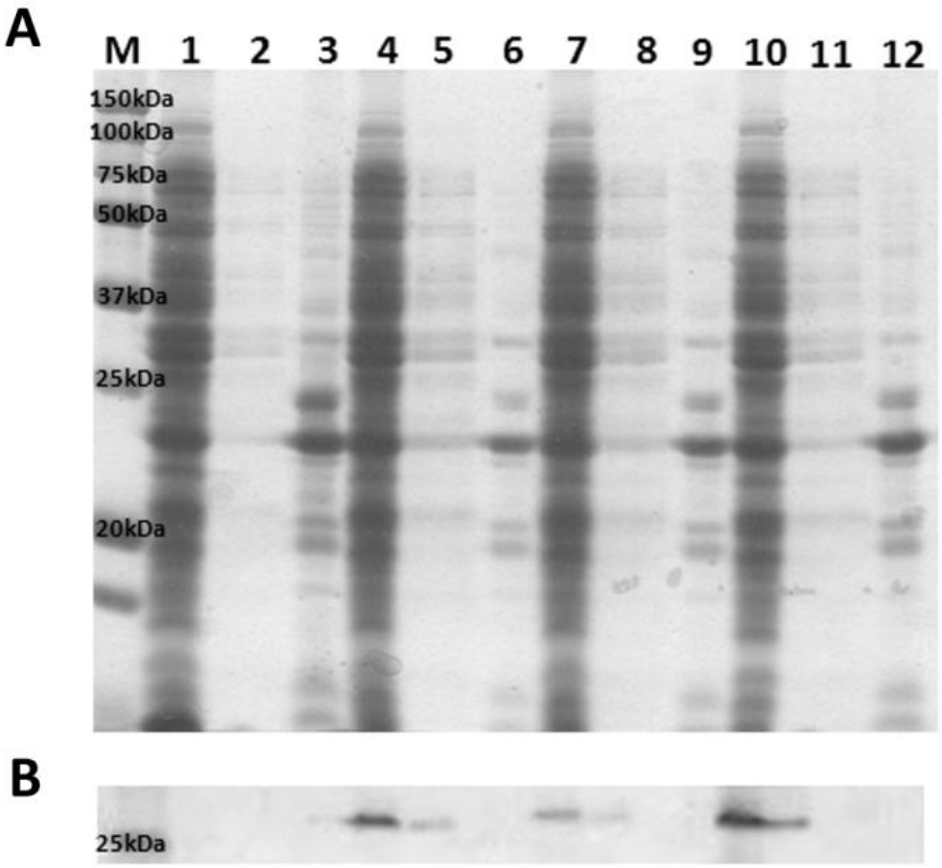

Figure S1. SDS-PAGE Analysis and Immunoblotting Analysis (A) SDS-PAGE analysis and (B) Western blot analysis of recombinant *E. coli* XL10-Gold cells expressing OmpW-PerPA fusion proteins. Lane M, molecular mass standards; lane 1, whole-cell lysate of XL10-Gold harboring pOW13F-PerPA1; lane 2, soluble fraction of XL10-Gold harboring pOW13F-PerPA1; lane 3, outer membrane fraction of XL10-Gold harboring pOW13F-PerPA1; lane 4, whole-cell lysate of XL10-Gold harboring pOW13F-PerPA2; lane 5, soluble fraction of XL10-Gold harboring pOW13F-PerPA2; lane 6, outer membrane fraction of XL10-Gold harboring pOW13F-PerPA2; lane 7, whole-cell lysate of XL10-Gold harboring pOW13F-PerPA3; lane 8, soluble fraction of XL10-Gold harboring pOW13F-PerPA3; lane 9, outer membrane fraction of XL10-Gold harboring pOW13F-PerPA3; lane 10, whole-cell lysate of XL10-Gold harboring pOW13F-PerPA4; lane 11, soluble fraction of XL10-Gold harboring pOW13F-PerPA4; lane 12, outer membrane fraction of XL10-Gold harboring pOW13F-PerPA4.

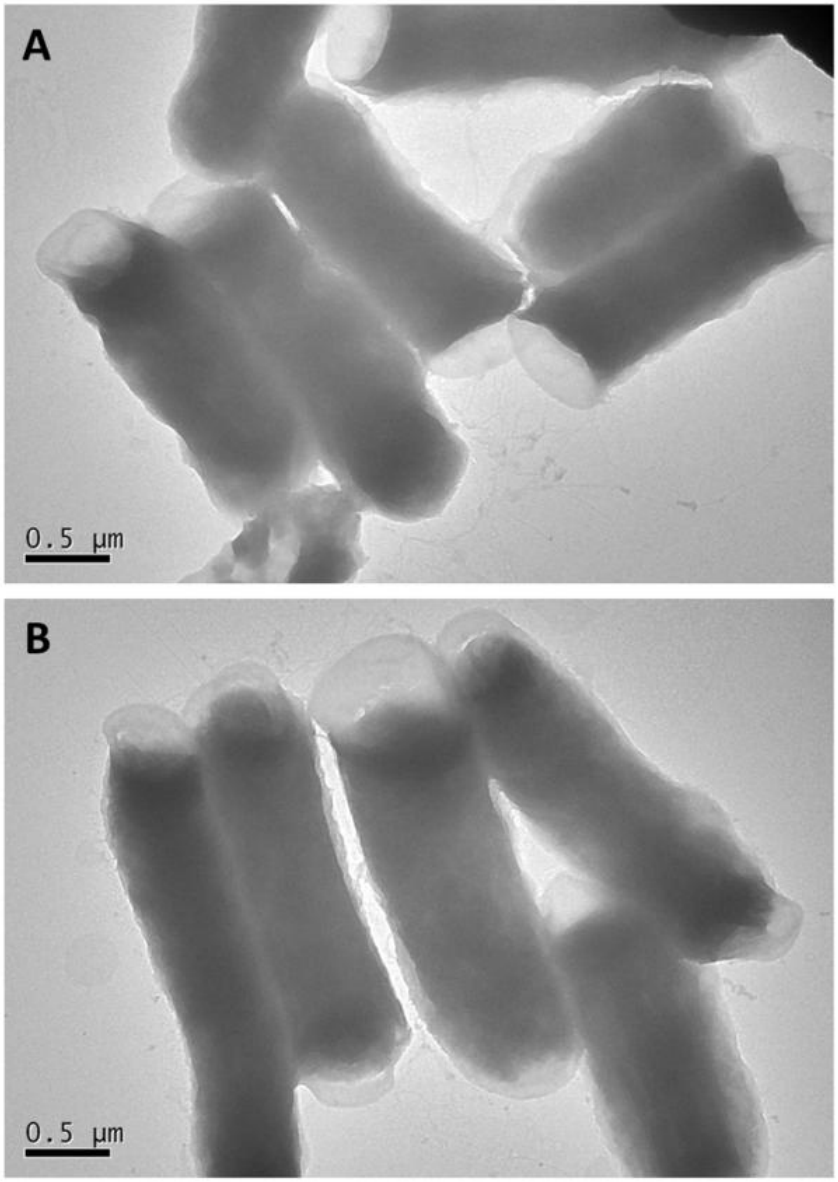

Figure S2. TEM analysis of XL10-Gold cell harboring (A) pOW19F-PerpA3 and (B) pOW19F-PerPA4 after incubation in gold solution ($HAuCl_4$) without tyrosinase. No gold nanoparticle formation was observed in both recombinant *E. coli*.

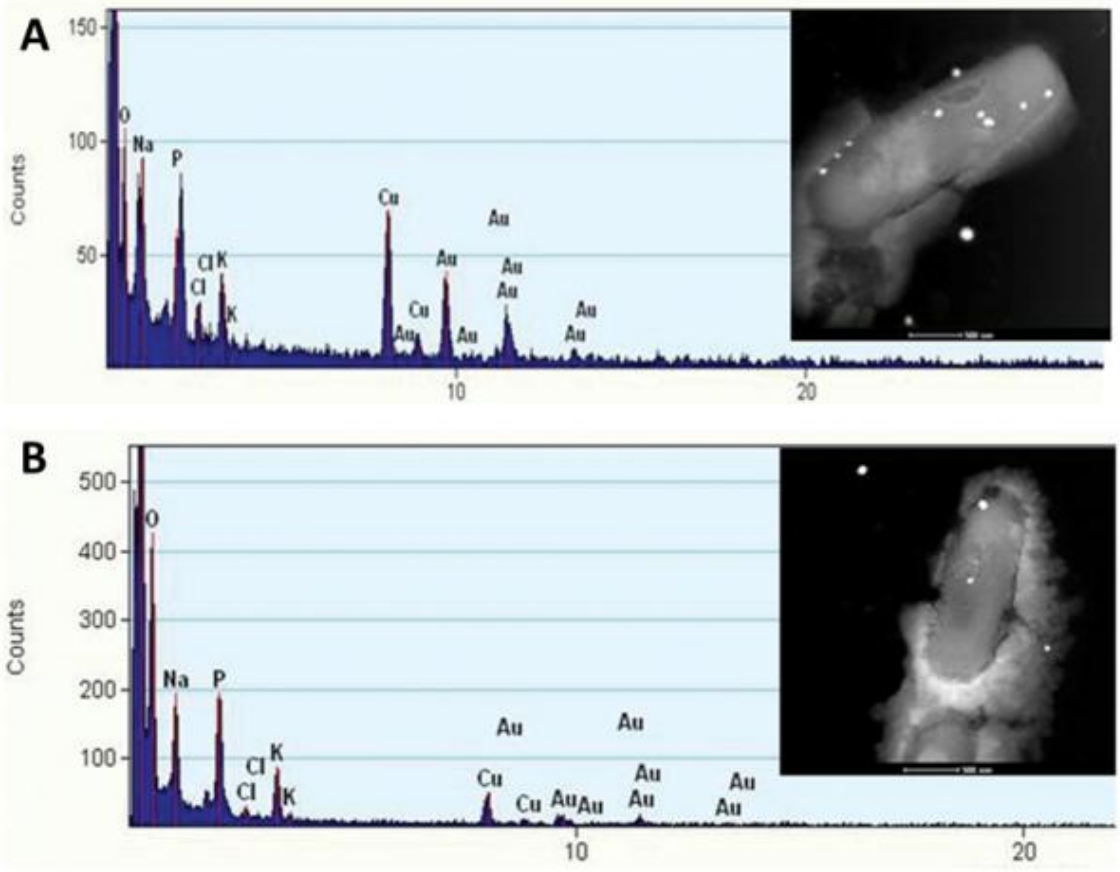

Figure S3. The gold nanoparticles formed when XL10-Gold cell harboring (A) pOW19F-PerpA3 and (B) pOW19F-PerpA4 were incubated with tyrosinase and gold solution ($HAuCl_4$). The TEM-EDS analysis confirmed the formation of gold nanoparticles.

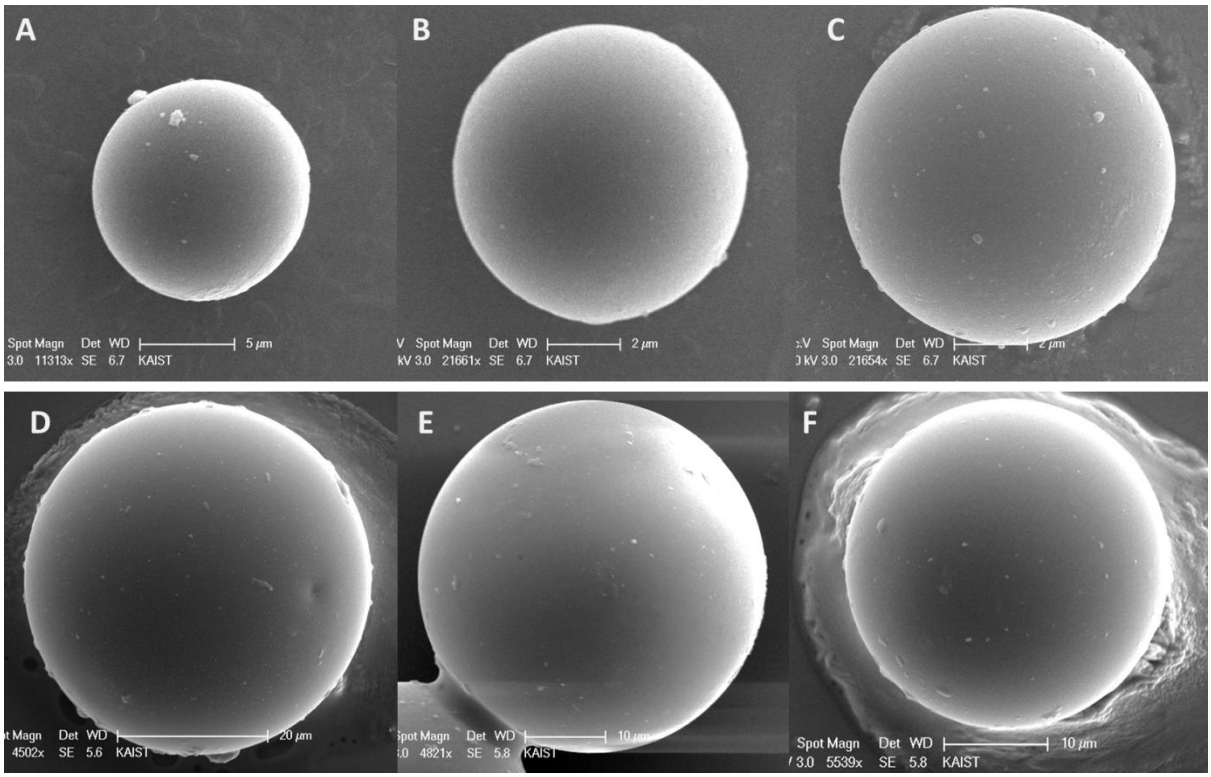

Figure S4. Cell adhesion test Cell adhesion test was performed on (A,B,C) silica microparticles and (D,E,F) glass microparticles. SEM analysis was employed to observe the surface of the microparticles. Control (A,D) E. coli XL10-Gold and recombinant *E. coli* harboring (B,E) pOW19F-PerPA1 and (C,F) pOW19F-PerPA2. All of the control cells were treated with tyrosinase.