Supporting Information

Facilitated Extracellular Electron Transfer of *Shewanella loihica* PV-4 by Antimony-doped Tin Oxide Nanoparticles as Active Microelectrodes

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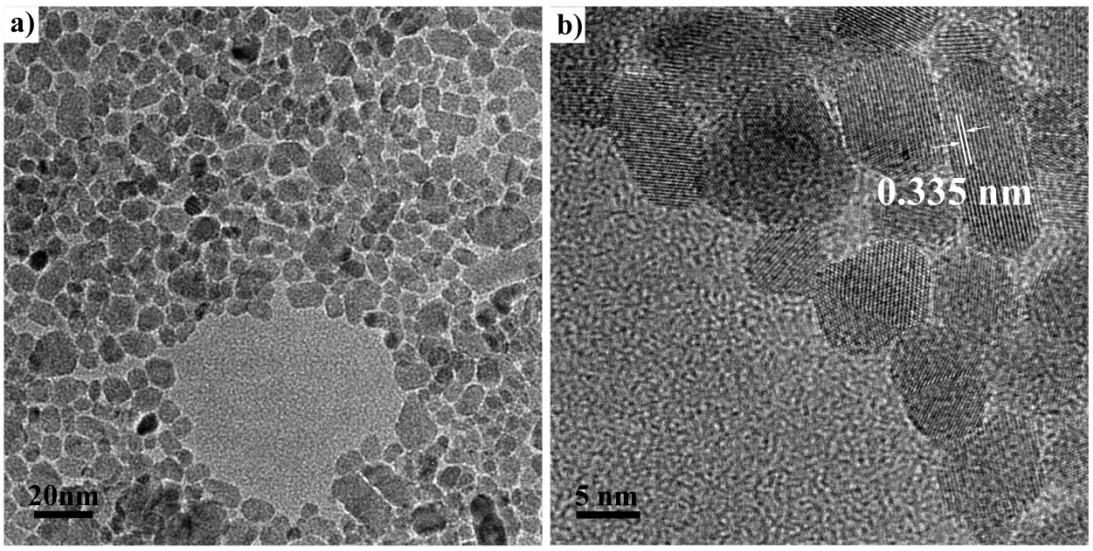

Fig. S1 TEM images of ATO nanoparticles used in the experiment. The lattice fringe spacing of ATO nanoparticles is 0.335 nm in the HRTEM image (b), in accordance with the 110 basal plane of rutile type SnO_2 crystals.[1]

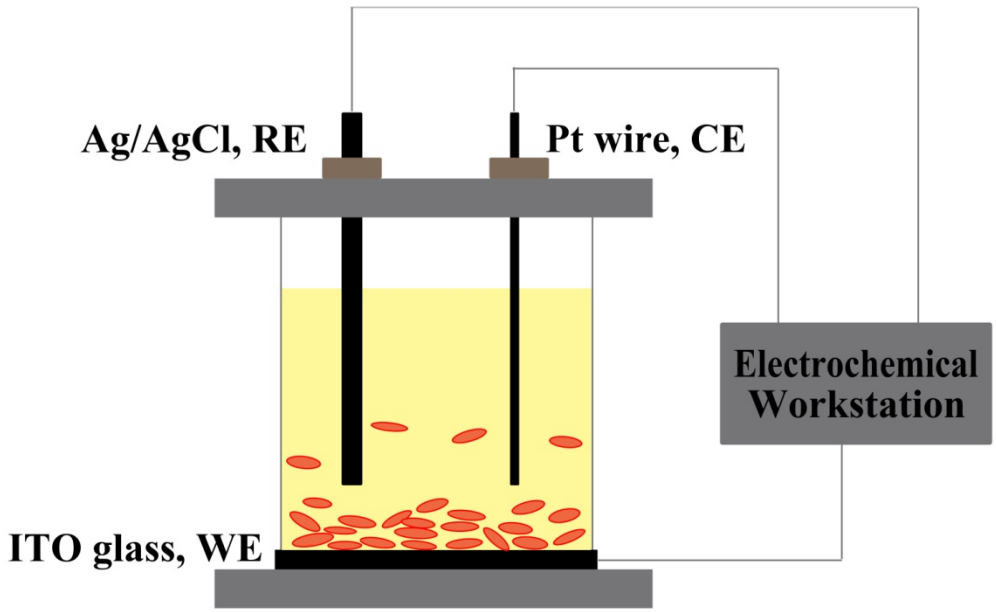

Fig. S2 The diagram of the electrochemical set up used in the experiment. It is a single-chamber, three-electrode system, including Ag|AgCl (saturated KCl) as reference electrode (RE), a platinum wire as counter electrode (CE), and an ITO glass placed on the bottom as working electrode (WE).

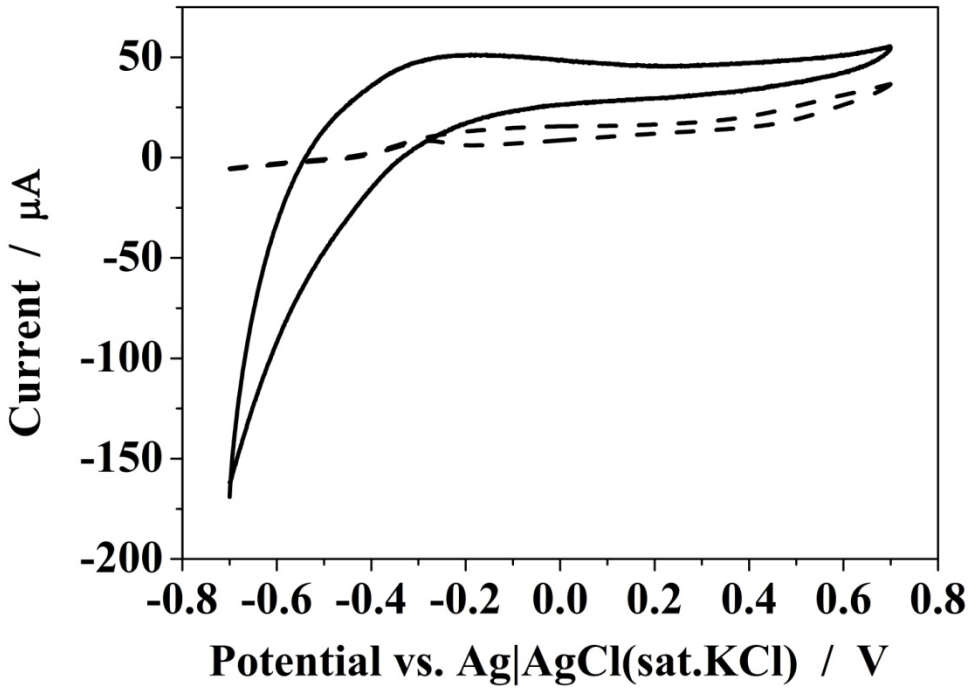

Fig. S3 Cyclic voltammetry curves of *S. loihica* PV-4 cells in the presence of 20 mM (solid curve) and 2 mM (dashed curve) ATO nanoparticles.

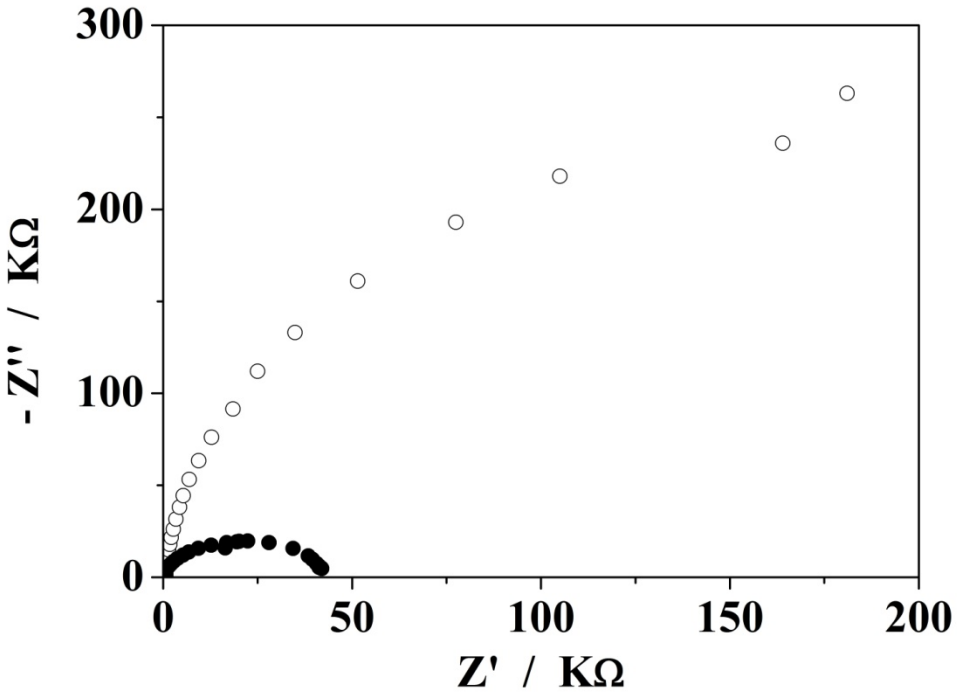

Fig. S4 Nyquist plots of the electrochemical impedance spectroscopy of the *S. loihica* PV-4 cells cultured on the ITO electrode in the presence (solid circle) and the absence (hollow circle) of ATO nanoparticles.

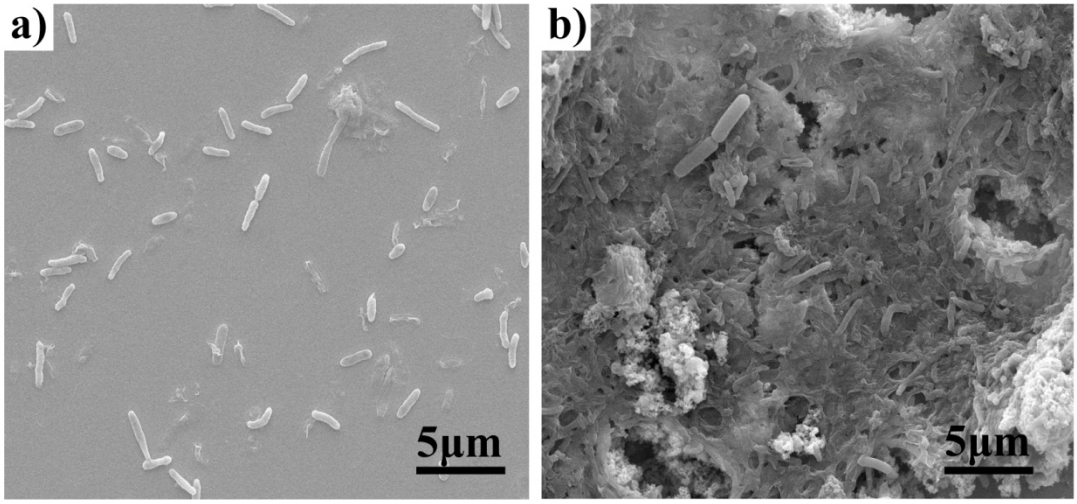

Fig. S5 SEM images of *S. loihica* PV-4 cells that fixed on the ITO electrode for the naturally occurring biofilm without ATO nanoparticles (a) and the biofilm formed in the presence of ATO nanoparticles (b).

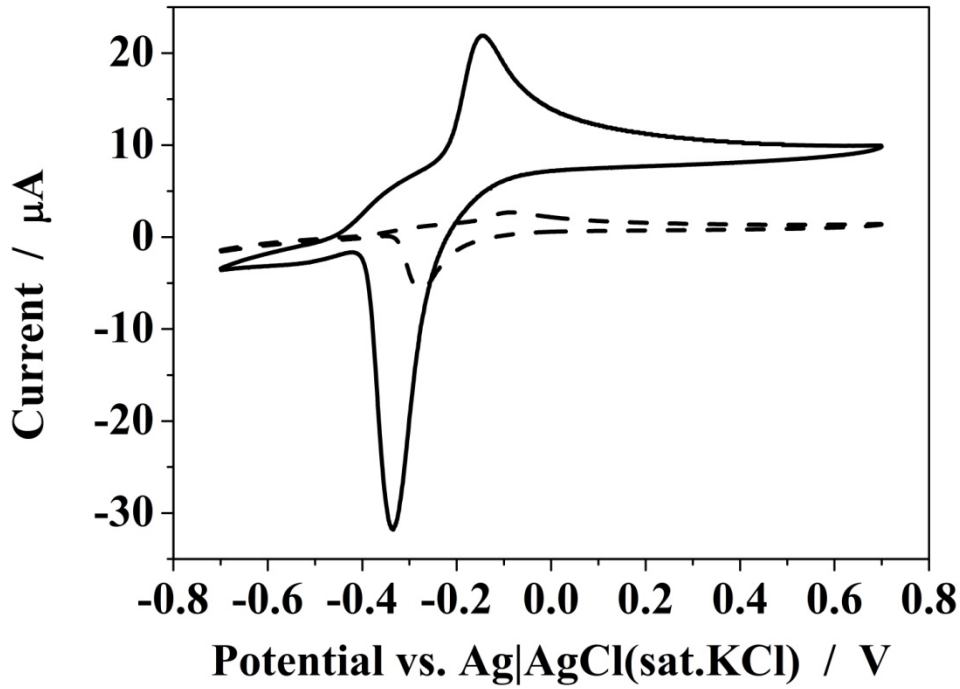

Fig. S6 Cyclic voltammetry curves of *S. loihica* PV-4 wild type (solid curve) and Δ2525 mutant (dashed curve) cells cultured on ITO electrode at a scanning rate of 1mV • s^{-1}.

Reference

1. K. Sakthiraj and K. Balachandrakumar, *Journal of Magnetism and Magnetic Materials*, 2015, **395**, 205-212.