

Supplementary Information

Smart Sensing Flexible Sutures for Glucose Monitoring in House Sparrows

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Electroless deposition of gold on suture:

Figure S1 shows the absorbance of a glass slide that was coated with gold in the same procedure described in the main text that was used to coat the sutures with gold (electroless deposition). This absorbance data was obtained using a UV-Vis spectrometer. The longer the glass slide is submerged in the plating solution, the higher the absorbance becomes, which corresponds to more reduction of gold nanoparticles on the surface and formation of gold layer. However, the absorbance plateaus, which is why the deposition process was repeated three times with fresh plating solution every time. This process is also reported in another work that was published from our group by Owyung, R. et al [16].

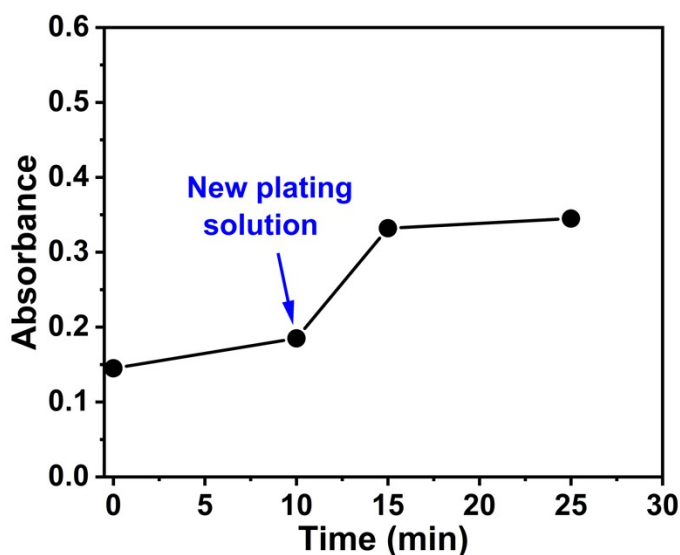


Figure S1. Absorbance as a function of time for the electrodeposition of gold on a glass slide (one cycle) using the same procedure used to deposit gold on sutures.

Energy dispersive spectroscopy (EDS) on gold-coated suture:

Figure S2 shows an EDS graph obtained using SEM of the gold-coated suture by scanning the region imaged in Figure 1e. Figure S2 shows the presence of carbon at ~ 0.25 keV and oxygen at 0.5 keV (from polymer backbone) and gold at ~ 2.1 keV (from the outer coat).

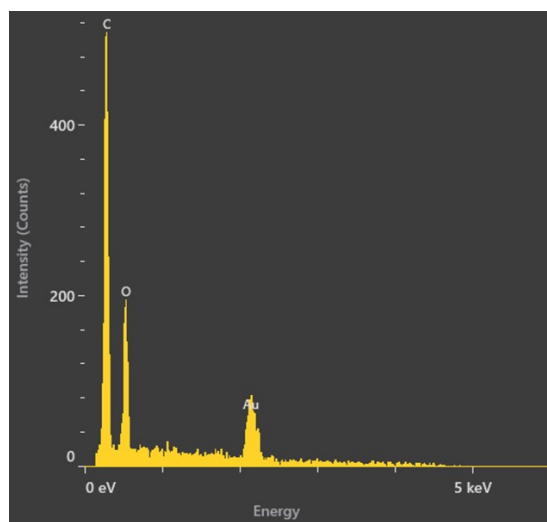


Figure S2. Energy dispersive spectroscopy (EDS) on gold-coated suture showing the presence of carbon, oxygen, and gold.

Cyclic voltammetry (CV) for electro-assisted Prussian blue deposition onto gold-coated sutures:

The following parameters were set for CV: -0.1 V initial voltage, 0.4 V high voltage, 50 mV/s scan rate, 0.01 V intervals, and 7 sweeps. The suture is then rinsed with DI water and dried off with nitrogen gas. CV curve is shown in Figure S3.

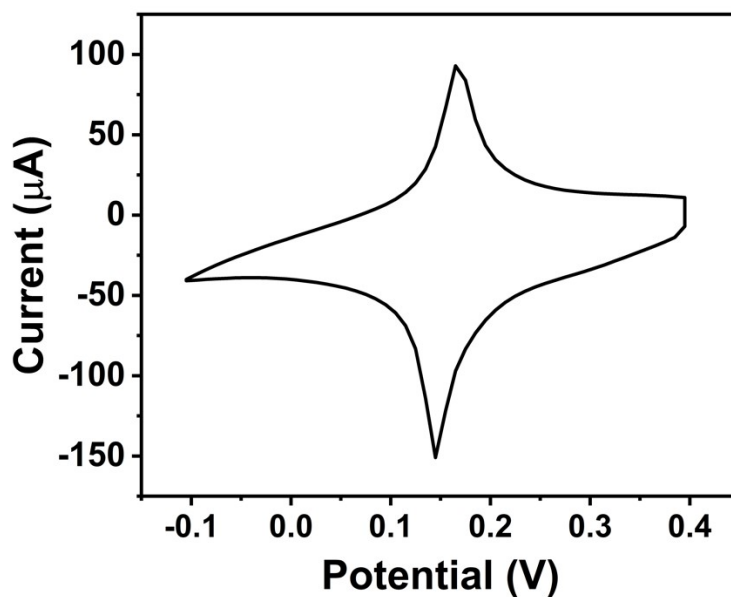


Figure S3. Cyclic voltammetry (CV) plot for the deposition of Prussian blue onto the gold-coated suture. The redox peaks for Prussian blue are at 0.165 V and 0.145 V.