

**(a)**



**(b)**



**(c)**



**(d)**



**(e)**



**(f)**

**Figure S1**: Scan Rate Study of (a) Au-CuO (C), (b) Au-CuO (M), (c) Au-Fe2O3 (C), (d) Au-Fe2O3 (M), (e) Au-Al2O3 (C) and (f) Au-Al2O3 (M) at 25 – 500 mV/s in 0.1 M PBS containing 1mM β-Hematin



**(b)**

**(a)**



**(d)**

**(c)**



**(e)**

**(f)**

**Figure S2:** Cyclic Voltammograms (20 cycles) showing the **s**tability of: (a) Au-CuO (C), (b) Au-CuO (M), (c) Au-Fe2O3 (C), (d) Au-Fe2O3 (M), (e) Au-Al2O3 (C) and (f) Au-Al2O3 (M) electrodes in 0.1 M PBS containing 1.0 mM β-Hematin (scan rate: 50 mV/s).



**(a)**



**(b)**



**(c)**



**(d)**

 

**(f)**

**(e)**

**Figure S3:** Concentration Study of: (a) Au-CuO (C), (b) Au-CuO (M), (c) Au-Fe2O3 (C), (d) Au-Fe2O3 (M), (e) Au-Al2O3 (C) and (f) Au-Al2O3 (M) Electrodes in 0.1 M PBS containing 1mM β-Hematin using Square Wave Voltammetry Technique.



**(f)**

**(e)**

**(d)**

**(c)**

**(b)**

**(a)**

**Figure S4:** Plot of peak current (Ip) versus t-½ for: (a) Au-CuO (C) (b) Au-CuO (M), (c) Au-Fe2O3 (C), (d) Au-Fe2O3 (M), (e) Au-Al2O3 (C) and (f) Au-Al2O3 (M) Electrodes in 0.1 M PBS containing 1mM β-Hematin using Chronoamperometric Technique.



**(a)**



**(b)**

**Figure S5:** (a) Calibration Curve for β-Hematin Standards (2, 4, 6, 8, 10 μM) (b)Square Wave Voltammograms of urine samples (n=5) spiked with 10 μM β-Hematin using Au-CuO(C) electrode.



**Figure S6:** Typical cyclic voltammograms showing the detection of β-Hematin in an infected mouse in the presence and varying concentrations of antiserumVI. (Inset: overlaid CVs confirming the presence of β-hematin in human serum (at around -0.82 V) and -0.7 V for antiserum VI in human serum using Au-CuO (C) electrode; while the “Control” is the CV for uninfected human serum sample respectively).