

Oxidation of L-Cysteine at a Fluorosurfactant-Modified Gold Electrode: Lower Overpotential and Higher Selectivity

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Supporting Information

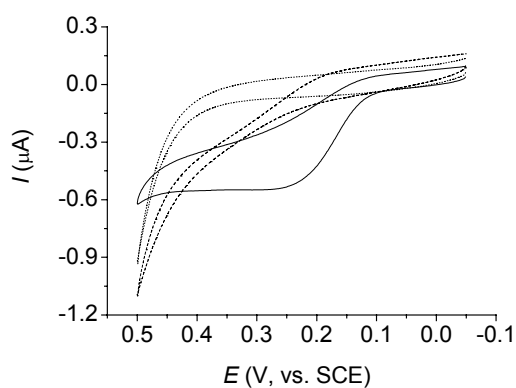


Figure S1. Cyclic voltammograms of CySH-Au (dotted line), and 100 μM CySH at bare Au (dashed line) or FSO-Au (solid line) electrodes. Scan rate, 10 mV/s. Solution, 0.15 M PBS (pH 7.0). The CySH-Au electrode was obtained by dipping a clean Au electrode in 1 mM CySH solution for 5 min followed by thoroughly water rinsing. Since the oxidative desorption of the adsorbed CySH at Au or FSO-Au electrodes started at ~ 0.4 V, the oxidation waves observed in the potential region from 0.1 to 0.4 V should be attributed to the oxidation of CySH molecules in solution.

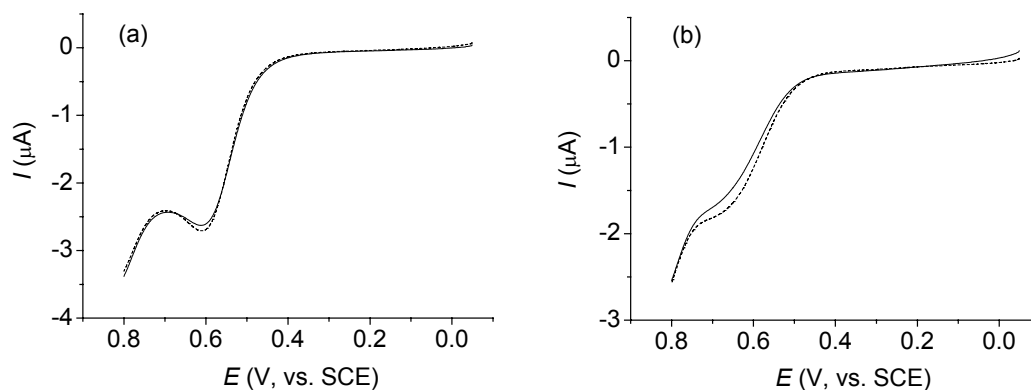


Figure S2. Linear sweep voltammograms of Triton-Au (solid line) and bare Au (dashed line) electrodes after dipping in 1 mM CySH (a) or cystine (b) solutions for 5 min and thoroughly water rinsing. Scan rate, 10 mV/s. Solution, 0.15 M PBS (pH 7.0).

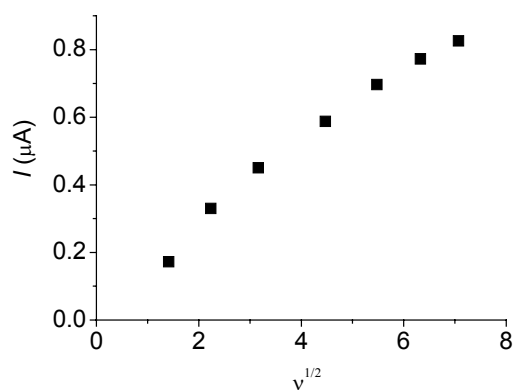
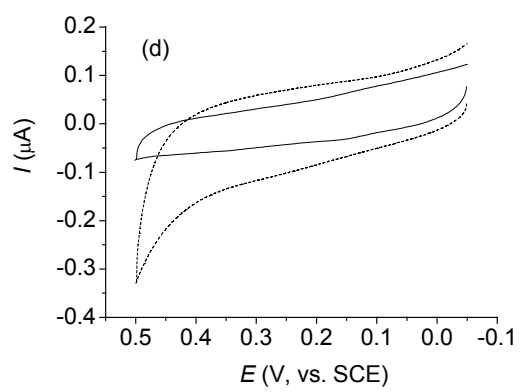
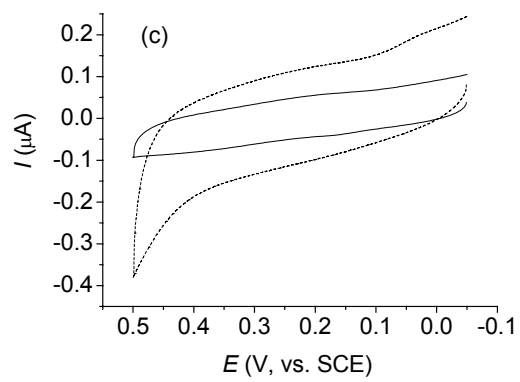
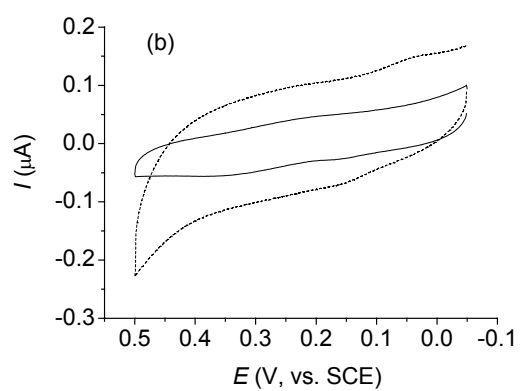
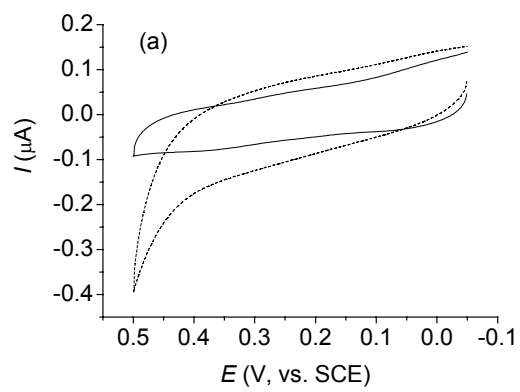


Figure S3. Plot of peak current (background signal subtracted) versus square root of scan rate ($V^{1/2}$) obtained at the FSO-Au electrode. Solution, 0.15 M PBS (pH 7.0) containing 100 μM CySH.



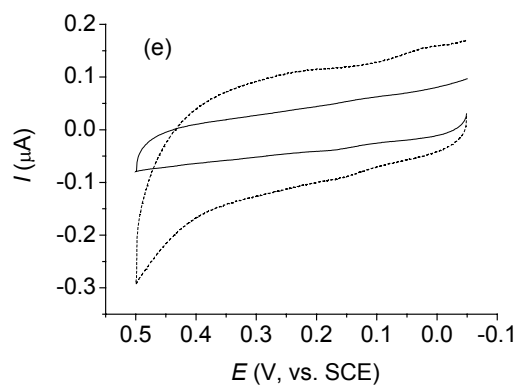


Figure S4. Cyclic voltammograms of 100 μM cystine (a), methionine (b), tyrosine (c), tryptophan (d), and oxalate (e) at FSO-Au (solid line) and bare Au (dashed line) electrodes. Scan rate, 10 mV/s. Solution, 0.15 M PBS (pH 7.0).