

Electronic Supplementary Information

**Fundamentals of Fast-Scan Cyclic Voltammetry for Dopamine
Detection**

B. Jill Venton* and Qun Cao

Dept. of Chemistry, University of Virginia, PO Box 400319, Charlottesville, VA 22901

Experimental Details

Cyclic voltammetry

Cyclic voltammetry was performed at Gamry Reference 600 (Gamry Instruments, Warminster, PA) A three electrode system was used, the working electrode was glassy carbon (CH Instruments, Inc. Austin, TX), the reference electrode was a standard Ag/AgCl electrode, and the counter electrode was a Pt wire. A waveform scanned from -0.2 V to 0.6 V was used for dopamine at a scan rate of 100 mV/s in a phosphate-buffered saline (PBS) (131.25 mM NaCl, 3.00 mM KCl, 10 mM NaH₂PO₄, 1.2 mM MgCl₂, 2.0 mM Na₂SO₄, and 1.2 mM CaCl₂ with pH adjusted to 7.4) to the desired concentration.

Fast-scan cyclic voltammetry

Fast-scan cyclic voltammetry were conducted using a two-electrode system. T-650 carbon fiber (7 μ m diameter, Cytec Engineering Materials, West Paterson, NJ) was the working electrode and Ag/AgCl was the reference electrode. The electrodes were connected to a ChemClamp potentiostat and headstage (Dagan, Minneapolis, MN) and HDCV software (UNC Chapel Hill). Unless specified, a triangle waveform was used with a holding potential of -0.4 V, switching potential of +1.3 V, scan rate of 400 V/s, and repetition frequency of 10 Hz. The PBS buffer and test solutions were injected with flow cell (Harvard Apparatus, Holliston, MA) at a flow rate of 2 mL/min.