Supplementary Information

Self-Assembly of Supramolecular Aptamer Structures for Optical or Electrochemical Sensing

*Ronit Freeman, Yang Li, Ran Tel-Vered, Etery Sharon, Johann Elbaz and Itamar Willner**

Institute of Chemistry, The Hebrew University of Jerusalem, Jerusalem 91904, Israel

Analyzing ATP using a self-assembled redox active supramolecular structure of aptamer subunits:

The thiolated nucleic acid 5'-HS-ATACCTGGGGGAGTATATAAT-3' was assembled on a Au surface, and the amino-functionalized nucleic acid 5'-ATTATAGCGGAGGAAGGTAT-$(CH_2)_6NH_2$-3' was modified with methylene blue to yield the redox labeled nucleic acid.

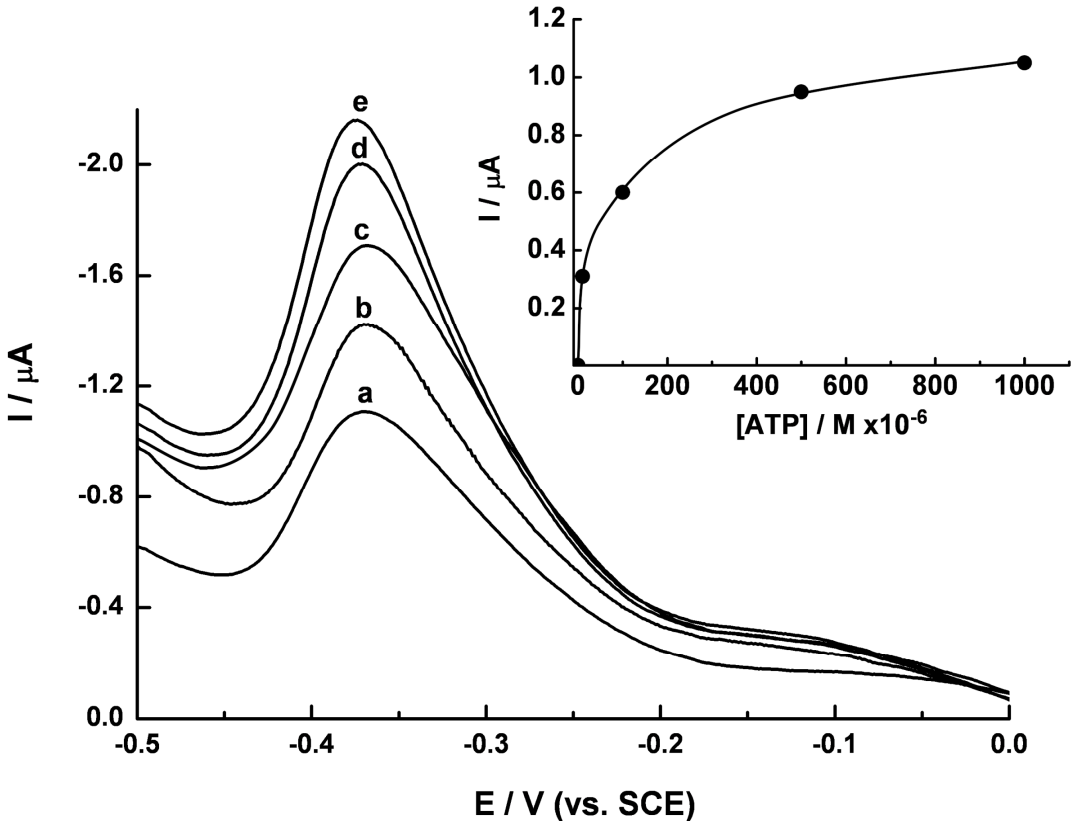

Figure S1: Linear sweep voltammograms corresponding to the analysis of variable concentrations of ATP: (a) 0 M.(b) 1×10^{-5} M. (c) 1×10^{-4} M. (d) 5×10^{-4} M. (e) 1×10^{-3} M. All experiments were performed in the presence of the (**3**)-functionalized electrode and (**2**) 1×10^{-5} M. Voltammograms were recorded under argon after equilibration of the system for 20 minutes.

Inset: Calibration curve corresponding to the analysis of cocaine by the (**3**)-modified Au electrode and MB^+-functionalized (**2**) as redox reporter. ATP could be analyzed by the functionalized electrode with a sensitivity that corresponded to 1×10^{-5} M.