

Supplementary information

## Co-Detection of Dopamine and Glucose with High Temporal Resolution

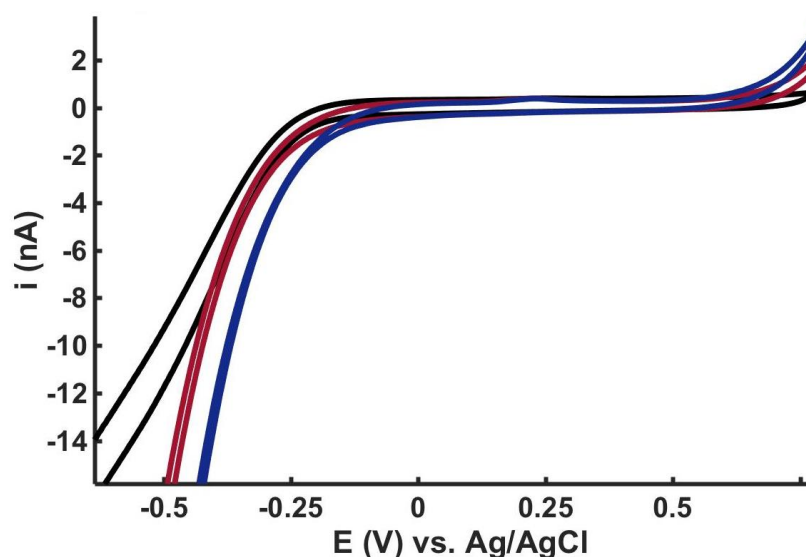
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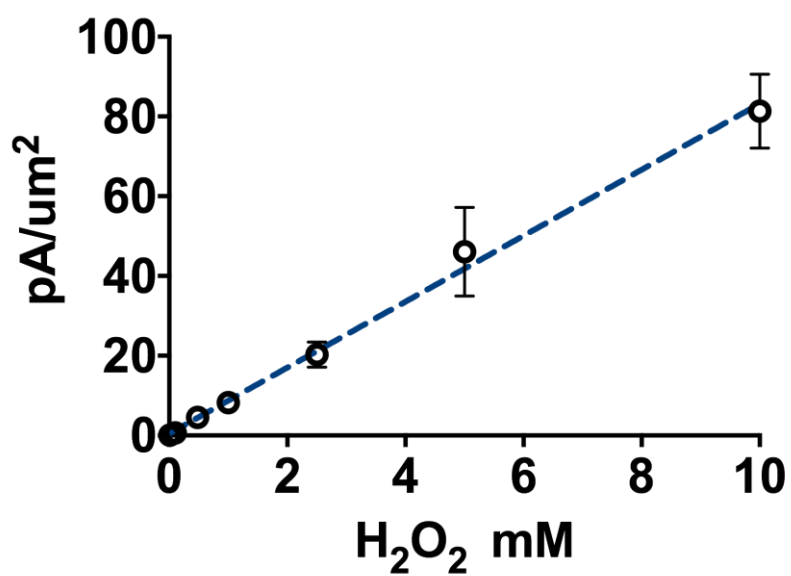
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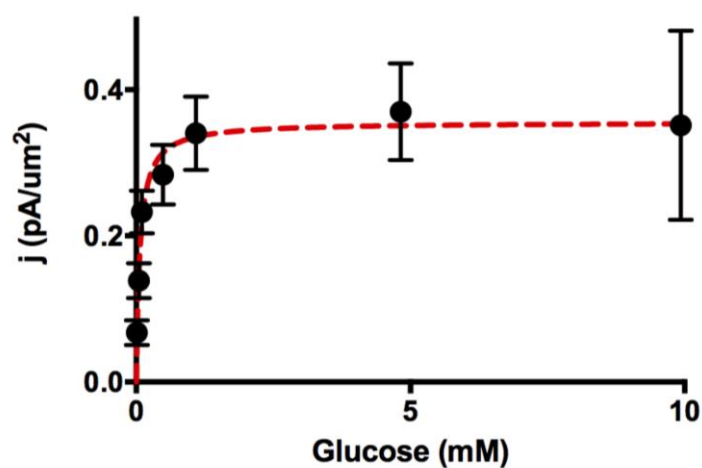
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**Figure S.1** Cyclic voltammetry of a CFME-AuNP in PBS buffer (black) 5 mM H<sub>2</sub>O<sub>2</sub> (red) and 10 mM H<sub>2</sub>O<sub>2</sub>. The voltammogram shows that H<sub>2</sub>O<sub>2</sub> is reduced at potentials below -0.25 V and that no oxidation reaction occurs involving H<sub>2</sub>O<sub>2</sub> when potential +0.5 V is applied.



**Figure S.2** The AuNP-CFME response to H<sub>2</sub>O<sub>2</sub> shows linearity over a large concentration range (10  $\mu$ M – 10 mM) and display a sensitivity of  $8.4 \pm 0.5$  pA mM<sup>-1</sup> $\mu$ m. (R-square 0.996).



**Figure S.3** The GOx-AuNP-CFME response to glucose for the whole concentration range tested (10  $\mu$ M – 10 mM).