SUPPORTING INFORMATION

Mediator-free amperometric glucose biosensor based on glucose oxidase entrapped in poly(vinyl alcol) matrix

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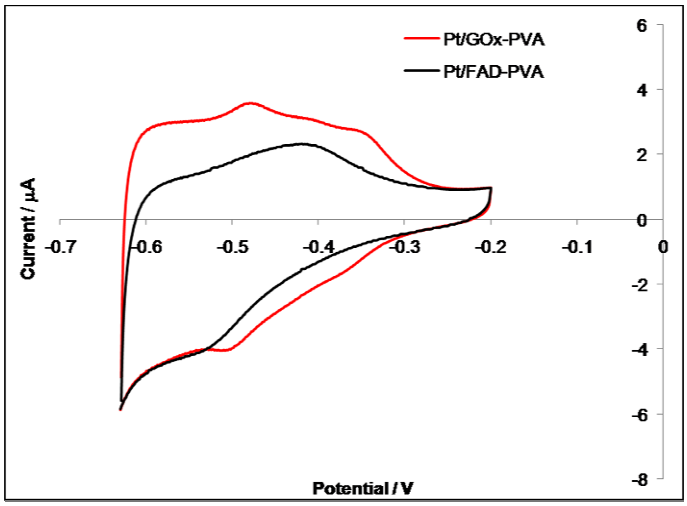

Fig. S1 – CV curves between -630 and -200 mV on Pt/GOx-PVA (red curve) and on Pt/FAD-PVA (black curve) electrodes in nitrogen saturated PBS (pH 7.0, I = 0.2) at scan rate of 50 mV/s.

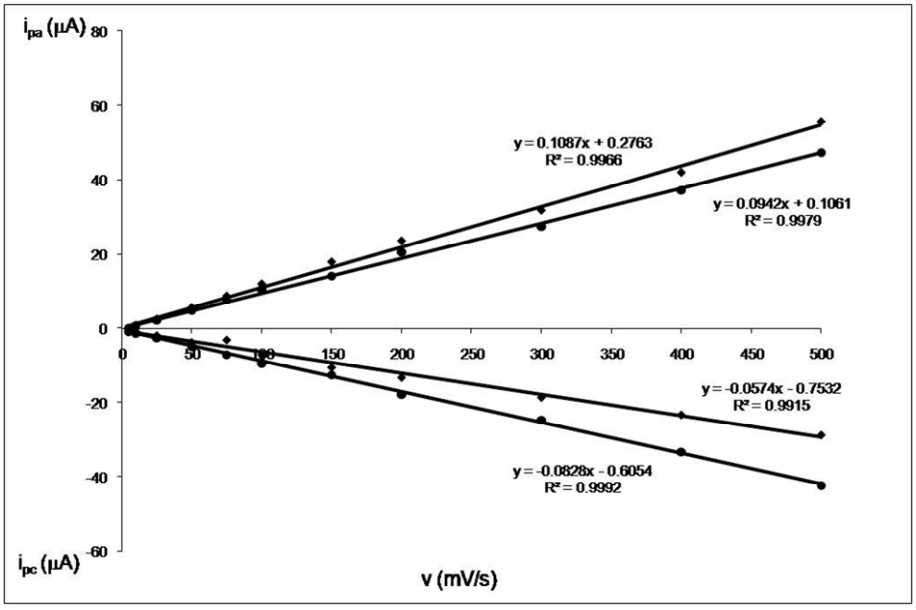

Fig. S2 – Plot of I (◆) and II (●) current peak pairs against scan rate v (range 5 – 500 mV/s) obtained in CV experiments on Pt/GOx-PVA in nitrogen saturated PBS (pH 7.0, I = 0.2).

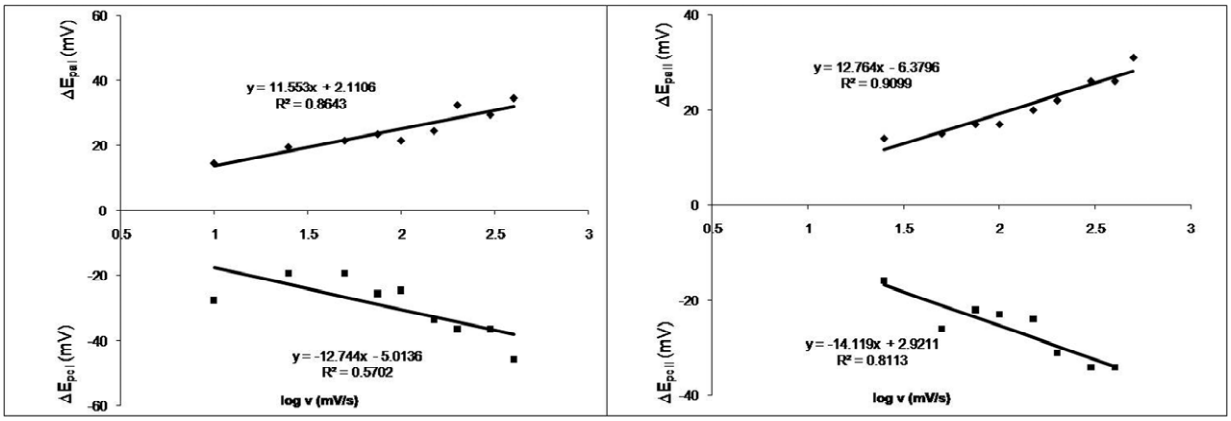

Fig. S3 – Plot of $\Delta E_{pa(I)}$, $\Delta E_{pa(II)}$, $\Delta E_{pc(I)}$ and $\Delta E_{pc(II)}$ against logarithm of scan rate (log v) (range 10 – 400 mV/s for $\Delta E_{p(I)}$ and 25 – 500 mV for $\Delta E_{p(II)}$). ΔE values represent the difference between each E_{pa} and E_{pc} values and the correspondent E_{surf}. Experimental conditions as in Figure S2.

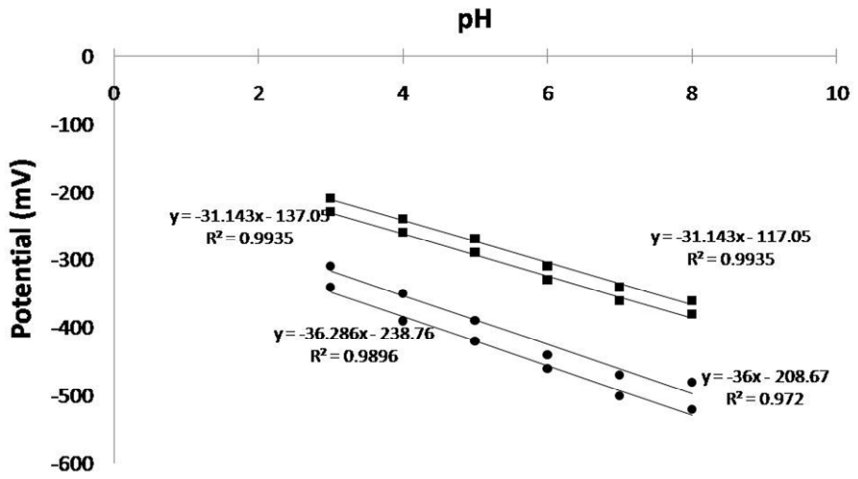

Fig. S4 – Shift of $Ep_a(I)/Ep_c(I)$ pair (■) and $Ep_a(II)/Ep_c(II)$ pair (●) with pH in the range 3-8. Experimental conditions as in Figure S2.

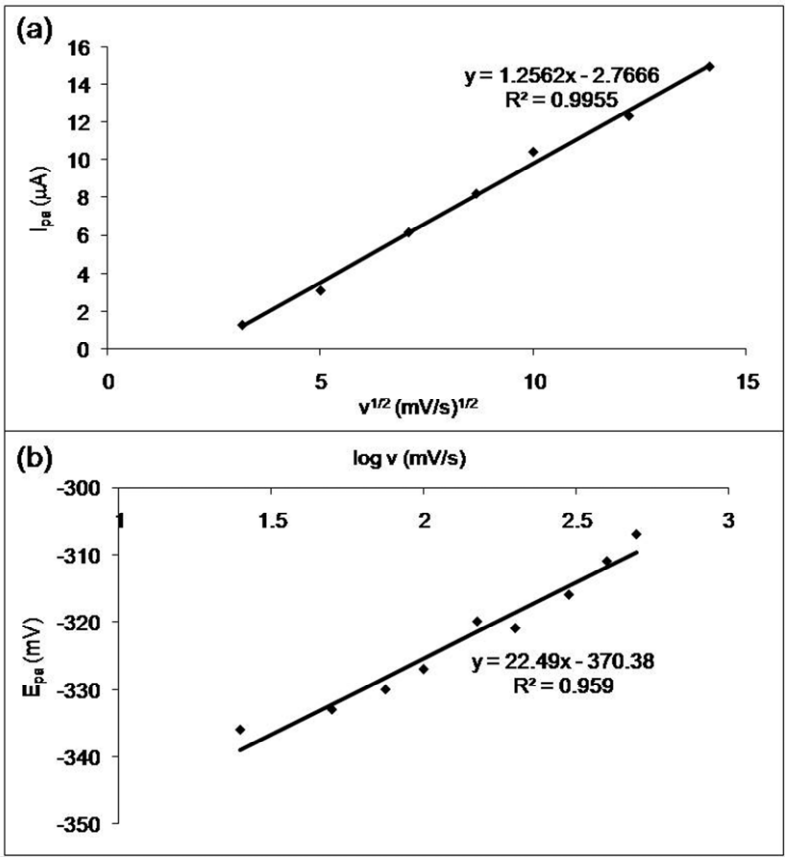

Fig. S5 – Plot of anodic current peak i_{pa} against the square root of scan rate v in the interval 10 – 200 mV/s (a) and of anodic potential peak E_{pa} against logarithm of scan rate (log v) (range 25 – 500 mV/s). CV experiments were performed on Pt/GOx-PVA in nitrogen saturated PBS (pH 7.0, $I = 0.2$) in glucose 10 mM.

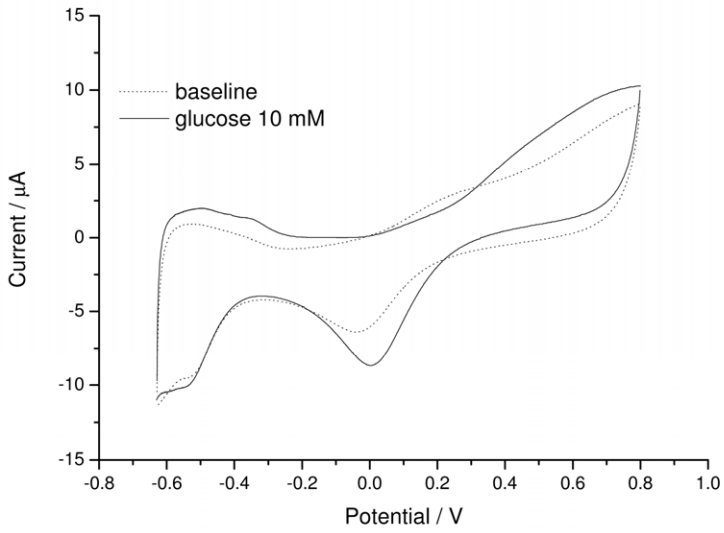

Fig. S6 – CV curves in not deaerated PBS (pH 7.0, I = 0.2) without (dotted curve) and with (solid curve) glucose 10 mM on Pt/GOx-PVA electrode.

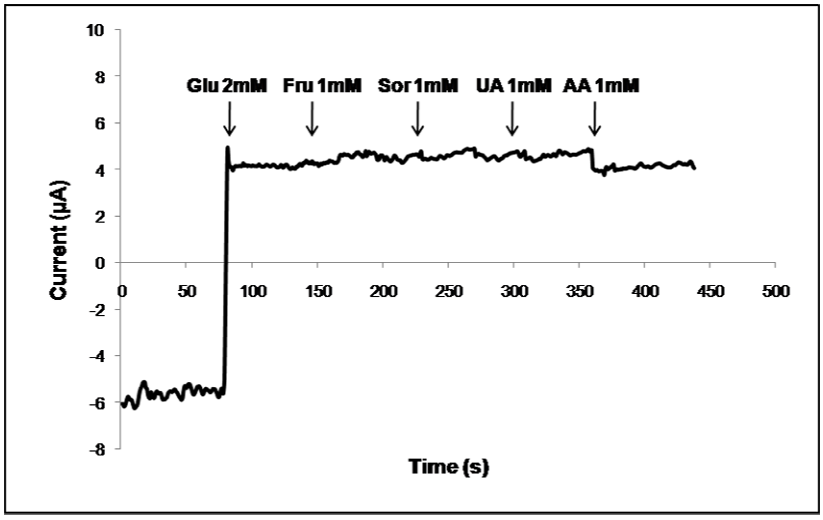

Fig. S7 – Amperometric responses of Pt/GOx-PVA electrode to glucose (Glu) 2 mM and to fructose (Fru), sorbitol (Sor), uric acid (UA) and ascorbic acid (AA) 1 mM in stirred and nitrogen saturated PBS (pH 7.0, I = 0.2). Measurements were performed in PAD mode (600 mV for 0.2 s; -630 mV for 0.2 s; detection potential: -400 mV).