

The Development and Evaluation of Reagentless Glucose Biosensors Using Dendritic Gold Nanostructures as a Promising Sensing Platform

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Supplementary data



Figure S1. Image of GOx modified GR electrode storage in a closed vessel over 25% solution of GA for 15 min at $+20 \pm 2$ °C.

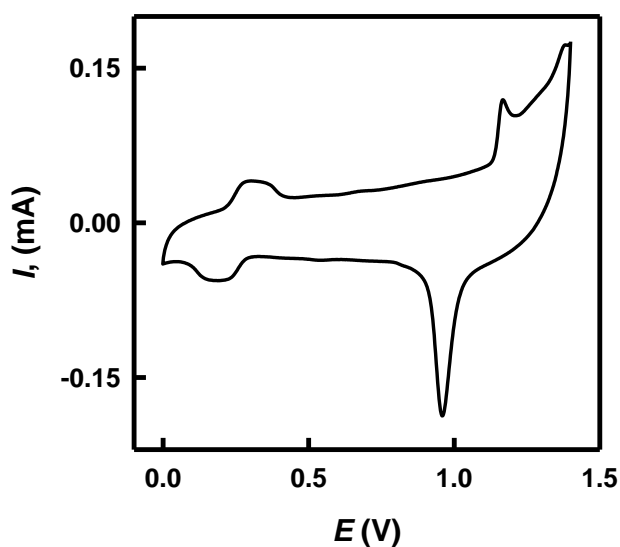


Figure S2. Cyclic voltammogram registered using GR/DGNs electrode in $0.5 \text{ mol L}^{-1} \text{ H}_2\text{SO}_4$ solution.

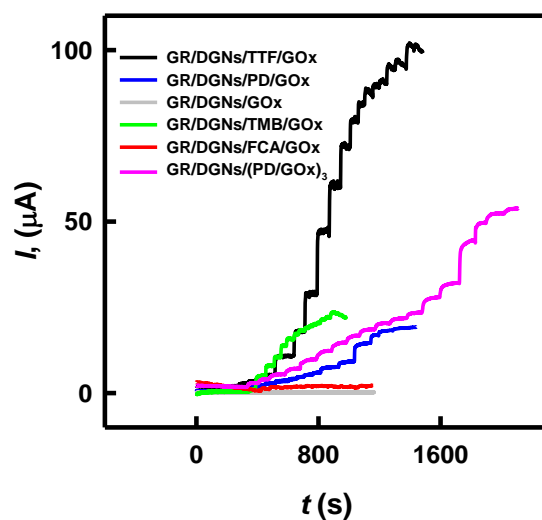


Figure S3. Amperograms registered using enzymatic glucose biosensors based on GR electrodes modified by DGNs, without or with redox mediators. Experiments were performed in 0.05 mol L⁻¹ SA buffer, pH 6.0, with 0.1 mol L⁻¹ KCl. (Supplement to Figure 3)

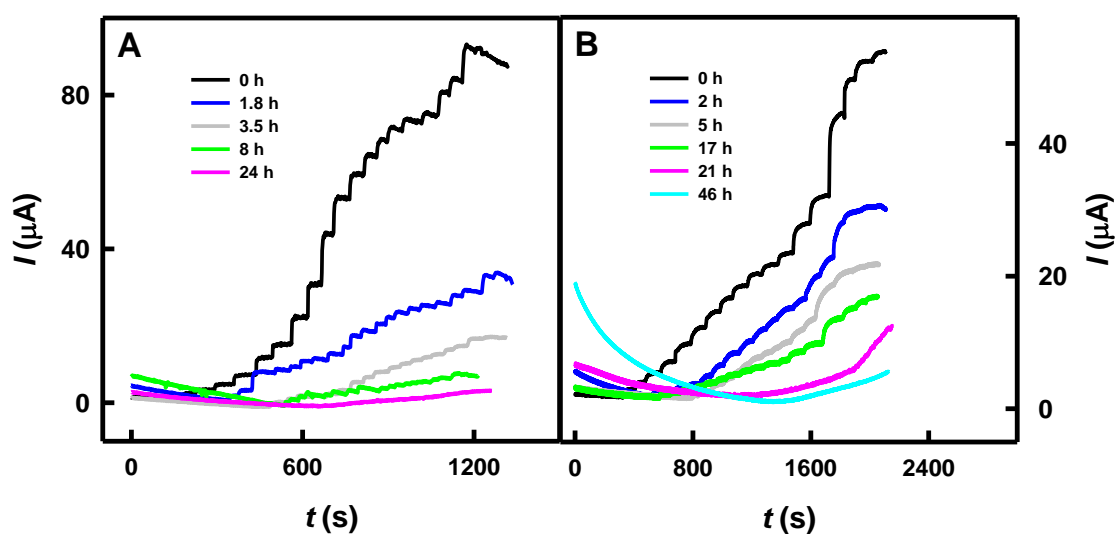


Figure S4. Amperograms registered using biosensors based on GR/DGNs/TTF/GOx/Ppy (A) and GR/DGNs/(PD/GOx)₃/Ppy (B) electrodes fabricated using various polymerization times. Experiments were performed in 0.05 mol L⁻¹ SA buffer, pH 6.0, with 0.1 mol L⁻¹ KCl at +0.40 V vs Ag/AgCl(3 mol L⁻¹ KCl). (Supplement to Figures 4 and 5)

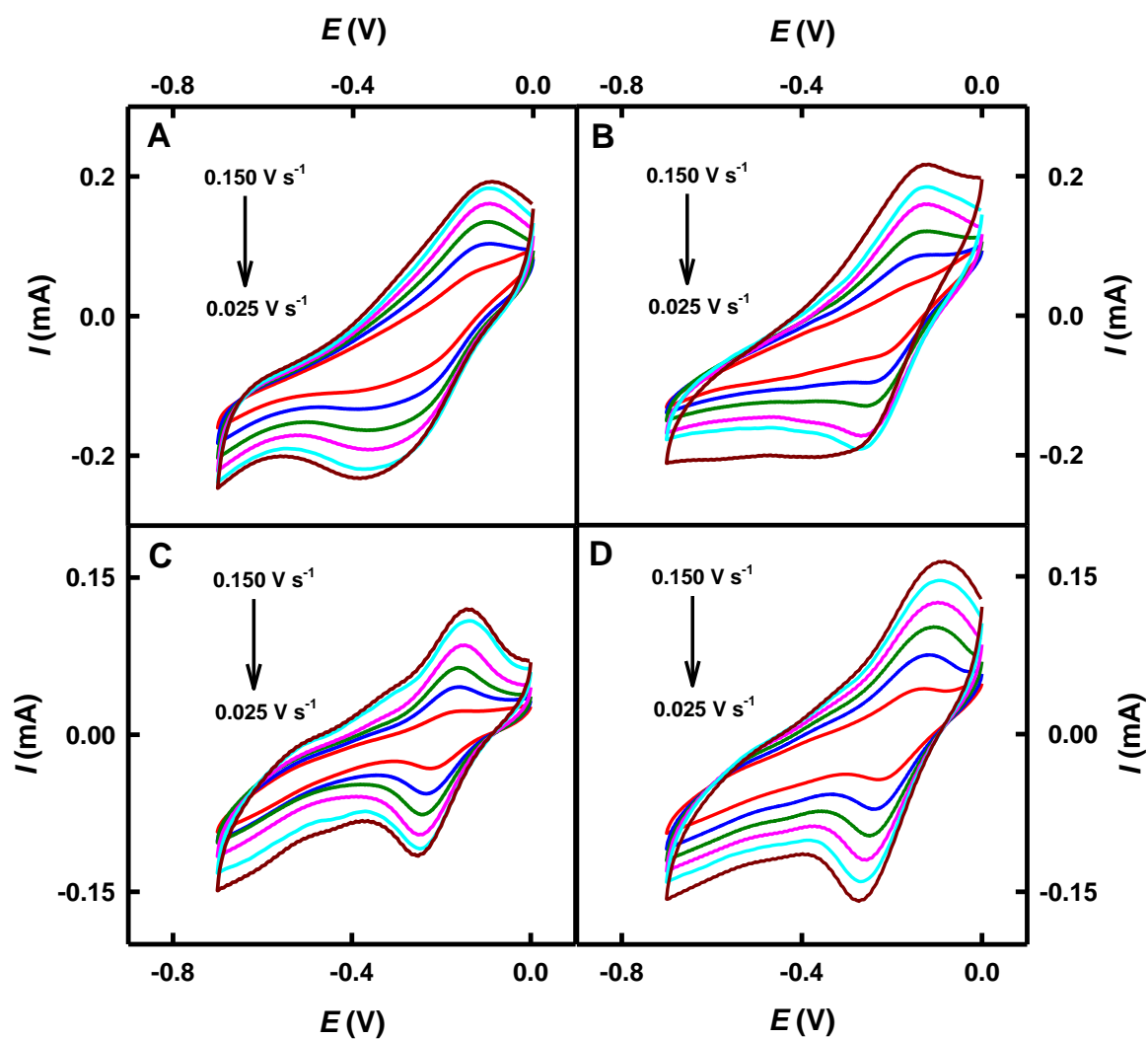


Figure S5. Cyclic voltammograms of GR/DGNs/TTF/GOx (A), GR/DGNs/TTF/GOx/Ppy(3.5 h) (B), GR/DGNs/(PD/GOx)₃ (C) and GR/DGNs/(PD/GOx)₃/Ppy(5 h) (D) electrodes registered at different scan rates from 0.025 to 0.150 V s^{-1} in the solution of 0.1 mol L^{-1} KCl with 1 mmol L^{-1} $\text{Ru}(\text{NH}_3)_6\text{Cl}_3$.

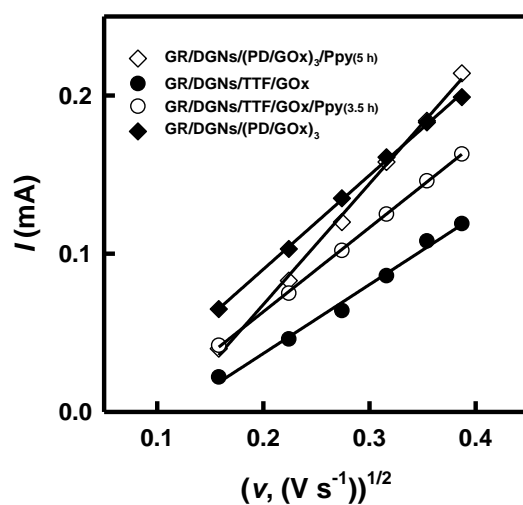


Figure S6. The relationships between square root of scan rate and registered peak anodic current.

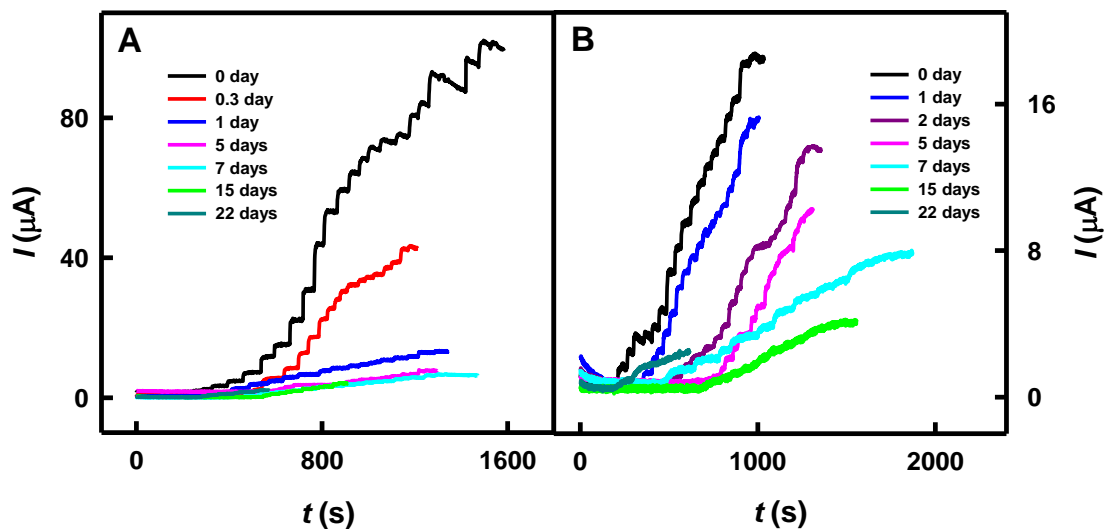


Figure S7. Amperograms registered at different times after preparation of biosensors based on GR/DGNs/TTF/GOx (A) and GR/DGNs/TTF/GOx/Ppy(3.5 h) (B) electrodes. Experiments were performed in 0.05 mol L⁻¹ SA buffer, pH 6.0, with 0.1 mol L⁻¹ KCl at +0.40 V vs Ag/AgCl(3 mol L⁻¹ KCl). (Supplement to Figure 6A,B)

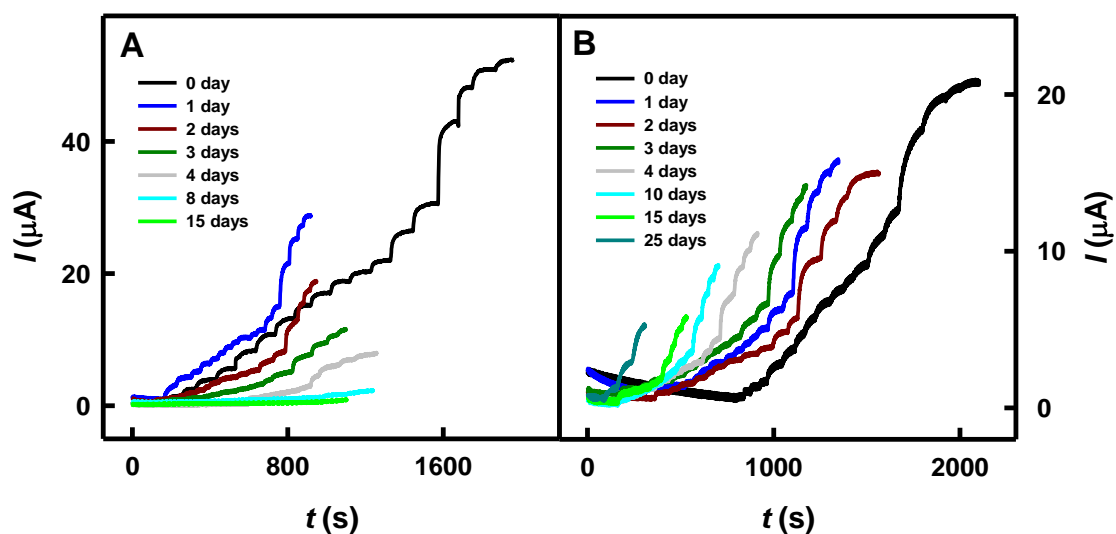


Figure S8. Amperograms registered at different times after preparation of biosensors based on GR/DGNs/(PD/GOx)₃ (A) and GR/DGNs/(PD/GOx)₃/Ppy(5 h) (B) electrodes. Experiments were performed in 0.05 mol L⁻¹ SA buffer, pH 6.0, with 0.1 mol L⁻¹ KCl at +0.40 V vs Ag/AgCl(3 mol L⁻¹ KCl). (Supplement to Figure 6C,D)