

Rapid and simple preparation of a reagentless glucose electrochemical biosensor†

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Supplementary Table S1. Comparison of the developed glucose biosensing method in present study with other published glucose biosensing formats.

EC glucose biosensing strategies	Preparation time (in hours)	EC method, Applied Pot. (vs. Ag/AgCl, if not specified)	Linear Range (Dynamic Range, in mM)	Interference study	Real sample testing	Storage stability	Reference
Nafion/APTES-GOx/GCE	~ 1.5 hrs	Amperometry, -0.45 V	0.5 - 48	Negligible interference from physiological levels of interfering substances, (for pathophysiological levels of interferents, ~8% false current signal was observed by the injection of 1.1 mM uric acid, 3.62 mM salicylate and 3.7 mM tolbutamide, while <4% extra signal was observed for 1.7 mM ascorbic acid	It detects 1.3 – 28.2 mM Streck Sugar-Chex blood glucose linearity standards	There was no decrease in glucose detection response when the developed biosensor was stored at RT in dry state for 4 weeks	Mentioned in this manuscript
GOx immobilized on poly-ethylenedioxythiophene-NiO	> 24 hrs	Amperometry, -0.45 V	Up to 1.5	N.M.	N.M.	N.M.	S1

nanocomposites							
GOx immobilized on hierarchically structured one-dimensional TiO ₂	> 24 hrs	Amperometry, -0.45 V	Up to 1.5	Negligible effect from 0.3 mM ascorbic acid, 0.2 mM dopamine and 0.5 mM uric acid for the detection of 0.6 mM glucose	N.M.	91.2% activity is retained after two weeks when stored at 4 °C	S2
GOx in Nafion on MWCNTs-AuNPs/GCE	>12 hrs	Amperometry, N.M.	0.05-22	N.M.	N.M.	N.M.	S3
PdNP-SWCNT hybrid nanostructures on GCE	>12 hrs	Amperometry, -0.35 V	0.5-17	When the detection potential is more positive than -0.35 V, the interferences from UA, AA, and DOPAC are significant	Detect up to 10.56 mM of blood glucose	N.M.	S4
GOx/PVP-protected graphene-PFIL/GCE	> 48 hrs	Amperometry, -0.49 V	2 - 14	N.A.	N.A.	Stable for one week	S5
GOx/APTES/ER-graphene oxide/GCE	>36 hrs	Cyclic voltammetry, -0.6 to +0.4 V	0 - 24	N.A.	N.A.	N.A.	S6

Nafion-GOx-graphene-CdS/GCE	>24 hrs	Cyclic voltammetry, -0.7 to -0.1 V	2 - 16	Negligible interference from 0.1 mM ascorbic acid and 0.5 mM uric acid, relative to 5 mM glucose	Recovery test were done in human plasma sample by adding 1 mM and 2 mM glucose, with recoveries of 92.2% and 105.1%	At 4 °C in 0.05 M PBS, 93% of the initial response was retained after four weeks	S7
GOx/poly(ViBuIm ⁺ Br ⁻)-graphene/GCE	>48 hrs	Cyclic voltammetry, -0.7 to -0.1 V	0.8 - 20	N.A.	N.A.	At 4 °C in PBS (pH 6.5), 80% of initial response was retained after three weeks	S8
GOx self-assembled on CS-graphene/GCE	>12 hrs	Amperometry, -0.79 V	2 - 22	N.A.	N.A.	N.A.	S9

Supplementary Table S2. Stability of the developed Nafion/APTES-GOx/GCEs stored under various conditions.

Signal Strength	RT dry	RT in 50 mM PBS, pH 7.4	4°C dry	4°C in 50 mM PBS, pH 7.4
<i>No dec. in signal</i>	27 th day	20 th day	Dec. continuously	23 rd day
<i>20% dec. in signal</i>	40 th day	38 th day	15 th day	33 rd day
<i>50% dec. in signal</i>	62 nd day	61 st day	38 th day	60 th day

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