One-step synthesis of Pt-decorated graphene-carbon nanotube for electrochemical sensing of dopamine, uric acid and ascorbic acid

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Analyte Levels in Real Samples

Table S1: Comparison of the linear ranges and detection limits of the Pt-Gr-CNT/GCE sensing platform with the levels of ascorbic acid, dopamine and uric acid in blood and urine.

Analyte	Normal Levels µM	Linear Range (µM) (Pt-Gr-CNT/GCE)	Detection limit in buffer (µM)
AA	**I**[1]: 3.29–10.67 **II**[1]: 7–522	200–900	50
DA	**I**[2]: 0.000065–0.00039 **II**[2]: 0.420–2.612	0.2–30	0.01
UA	**I**[3]: 80–440 **II**[4]: 1480–4430	0.1–50	0.1

I: blood and II- Urine

Calculation of the Surface Area of Pt-Gr-CNT/GCE and GCE

The electrochemical behavior of GCE and Pt-CNT-GR/GCE was studied using cyclic voltammetry in 1mM ferricyanide solution at a scan rate 50 mV/s. It was found that both electrodes displayed reversible behavior. Using a diffusion coefficient of 6.3×10^{-6} cm^2/s [5,6], the electroactive surface area was calculated from Randles-Sevcik equation given,

$$i_p = \left(2.69 \times 10^5\right) n^{3/2} D^{1/2} \upsilon^{1/2} AC \quad (1)$$

where n is the number of electrons, A is the electrode surface area, C is the concentration, D is the diffusion coefficient and V is the scan rate.

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