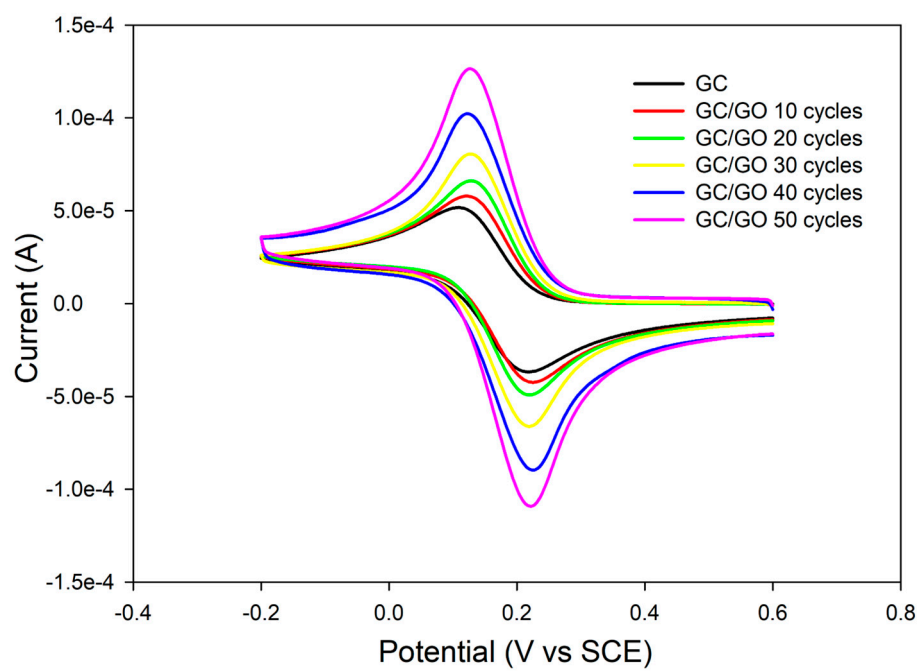
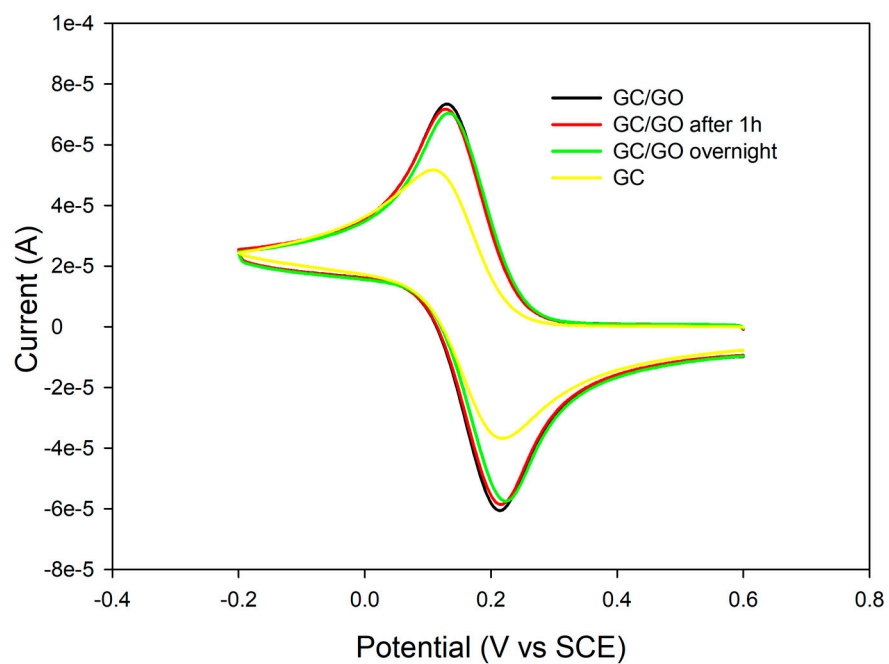


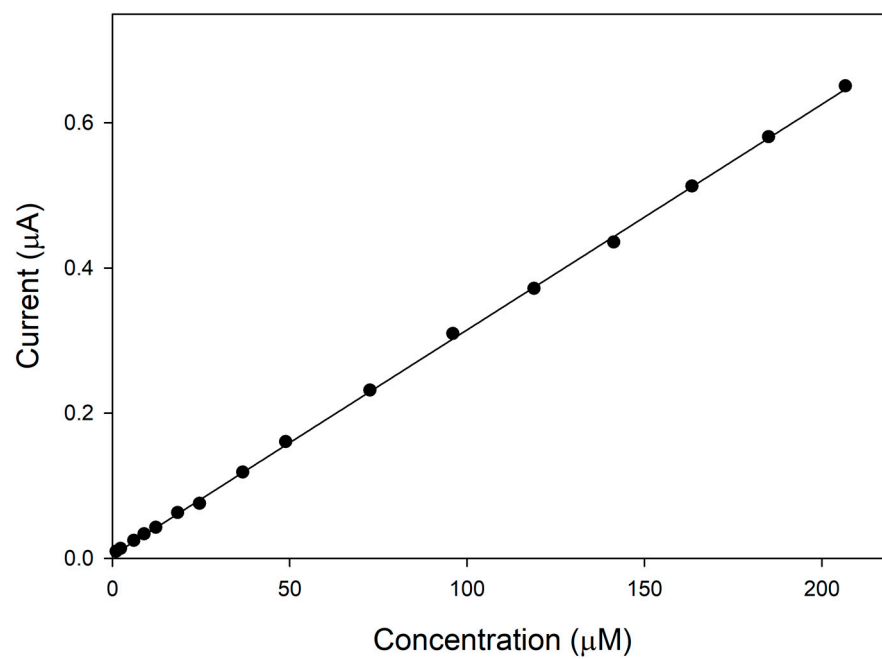
**Figure S1.** Chronoamperogram acquired in phosphate buffer solution (pH 7.0, I 0.1 M) upon successive injections of the following compounds: 2.5  $\mu$ M L-Dopa (LD), 0.32  $\mu$ M dopamine (DA), 0.2  $\mu$ M carbidopa (CRD), 2.5  $\mu$ M tyrosine (Tyr), 100  $\mu$ M ascorbic acid (AA), 20  $\mu$ M homocysteine (HCY) and 0.15  $\mu$ M serotonin (SER). Rotation rate: 500 rpm.



**Figure S2.** Cyclic voltammograms relevant to 5 mM potassium ferricyanide in 0.1 M  $\text{KNO}_3$  acquired on GC electrode (black profile) and on GC electrode modified with graphene oxide (GC/GO) grown for 10, 20, 30, 40 and 50 cycles. Scan rate: 50mV/s.



**Figure S3.** Cyclic voltammograms relevant to 5 mM potassium ferricyanide in 0.1 M  $\text{KNO}_3$  acquired on GC electrode (yellow profile) and on GC electrode modified with graphene oxide (GC/GO) grown for 30 cycles soon after its deposition (black profile), after 1h from the deposition (red profile) and after one night from the deposition (green profile). Scan rate: 50mV/s.



**Figure S4.** Linear range of the calibration curve for a typical GC/GO/TYR/Nafion biosensor. Rotation rate: 500 rpm. Supporting electrolyte: phosphate buffer solution pH 7.0, I 0.1 M.