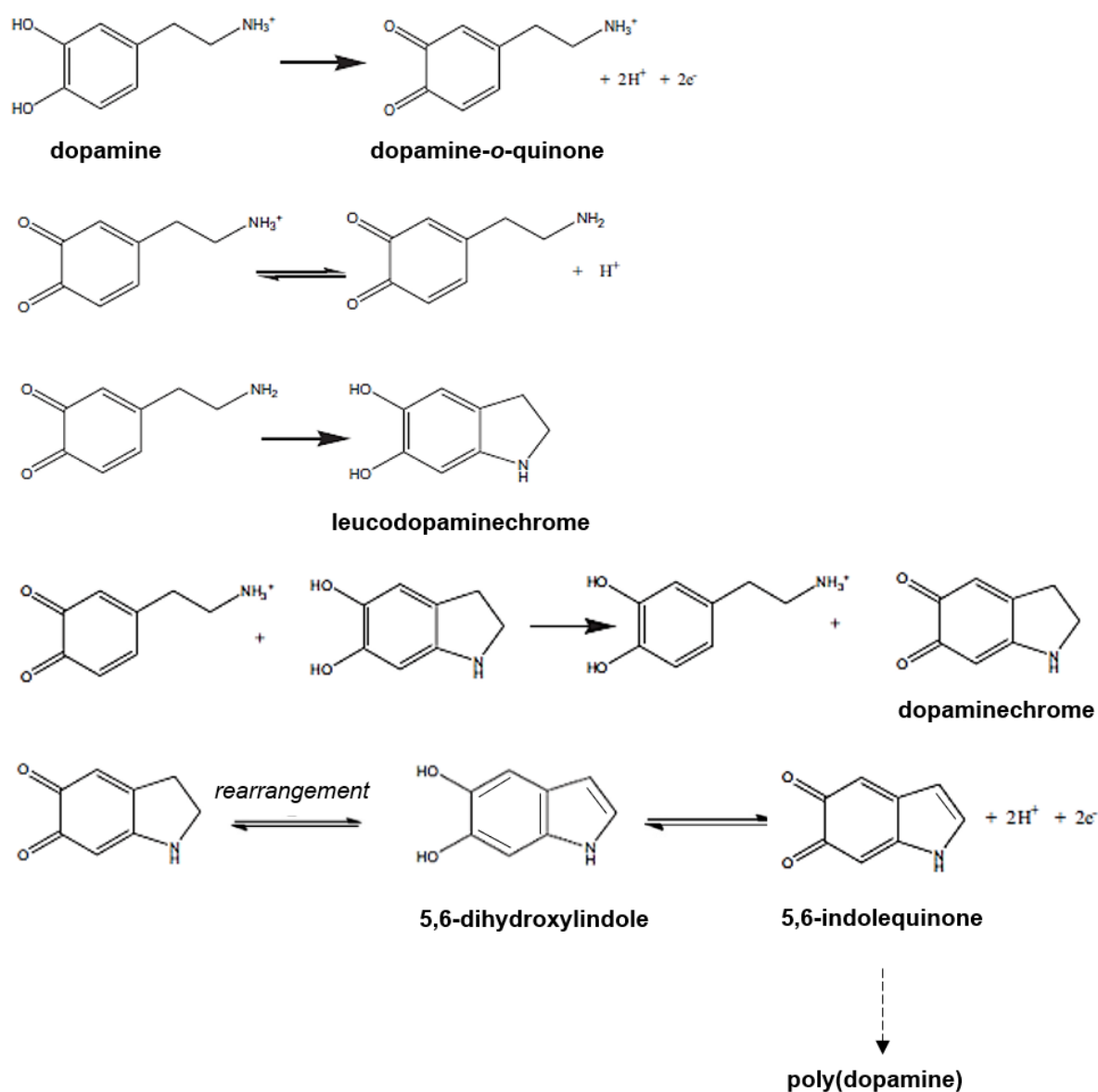
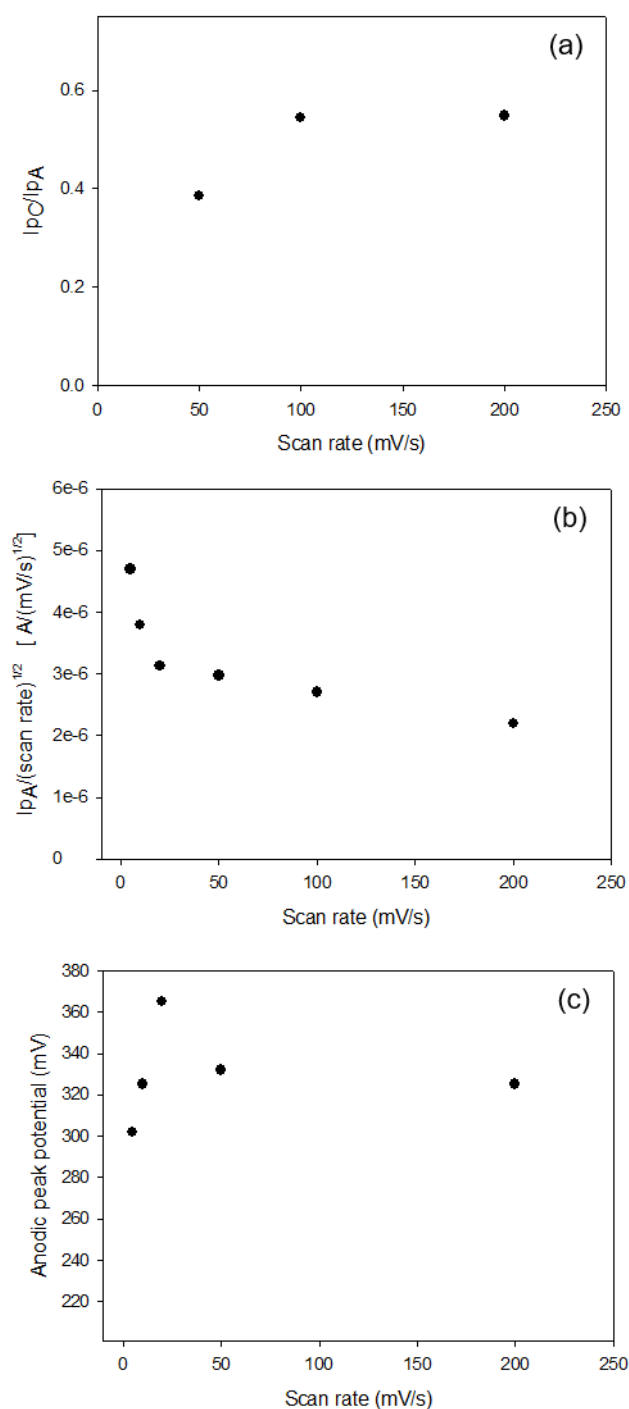


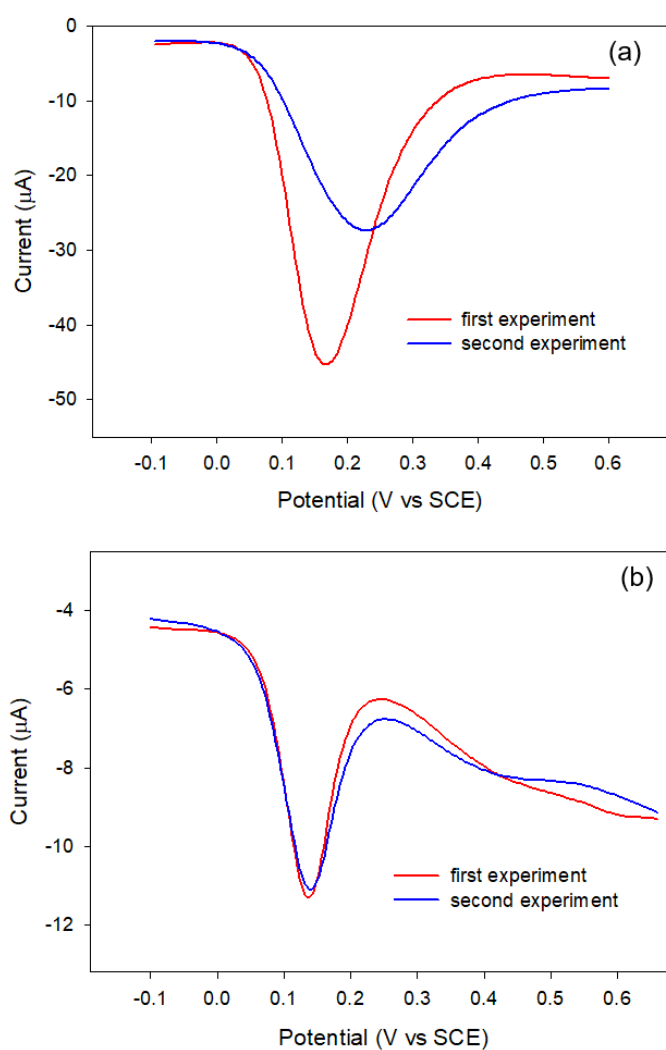
## Supplementary Materials



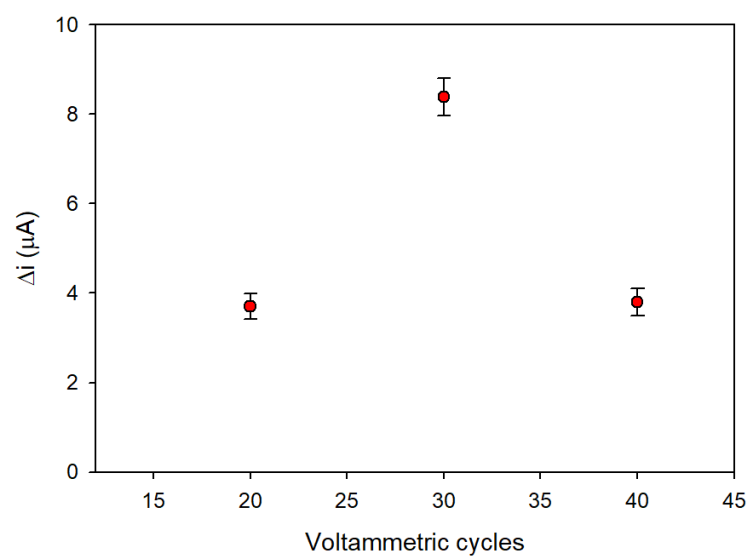
**Scheme S1.** Schematic representation of the electrochemical and chemical processes involved upon dopamine oxidation, causing the formation of poly(dopamine).



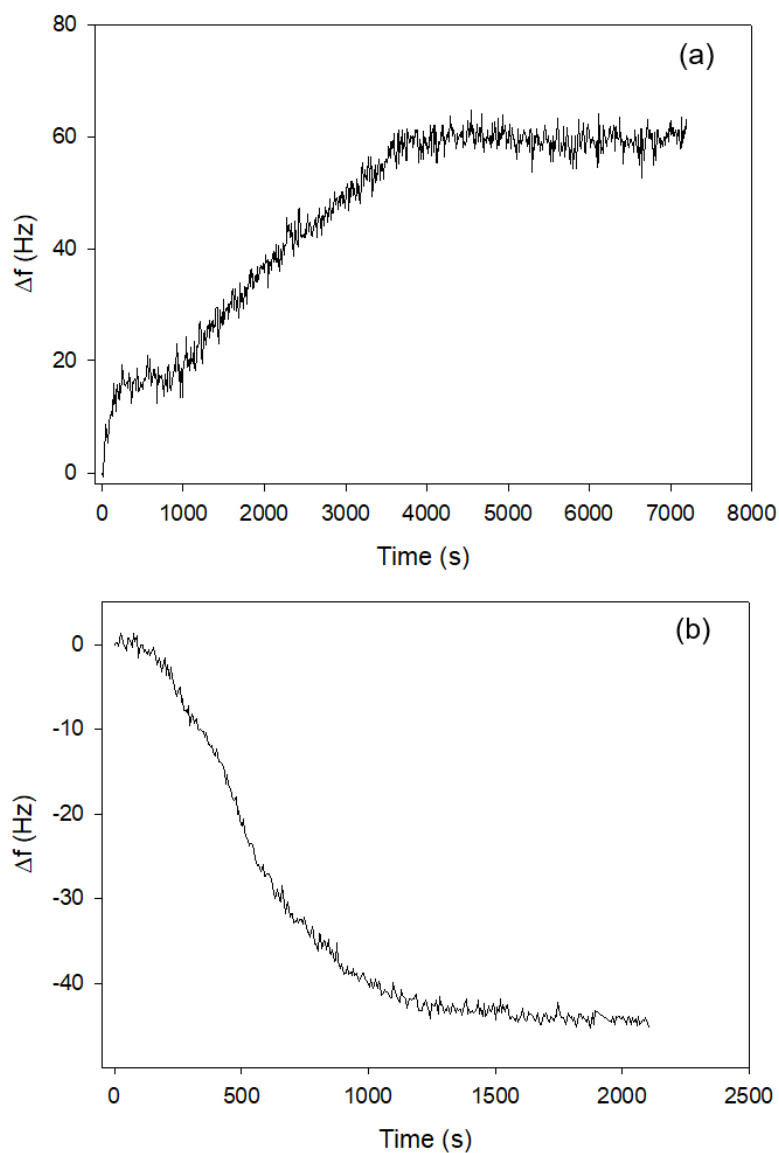
**Figure S1.** Diagnostic tests for Electrochemical Chemical (EC) reactions. **(a)** Test 1:  $|I_{pC}/I_{pA}|$  is less than one but tends to unity as scan rate is increased, where  $I_{pC}$  and  $I_{pA}$  are the cathodic and anodic peak currents, respectively. The test has been verified from 50 mV/s since at lower scan rates the cathodic peak is not present, and is satisfied. **(b)** Test 2:  $I_{pA}/v^{1/2}$  decreases slightly with increasing scan rate. The test is satisfied in the whole range of scan rates investigated. **(c)** Anodic peak potential shifts positively with increasing scan rate. The test is satisfied only at lower scan rates.



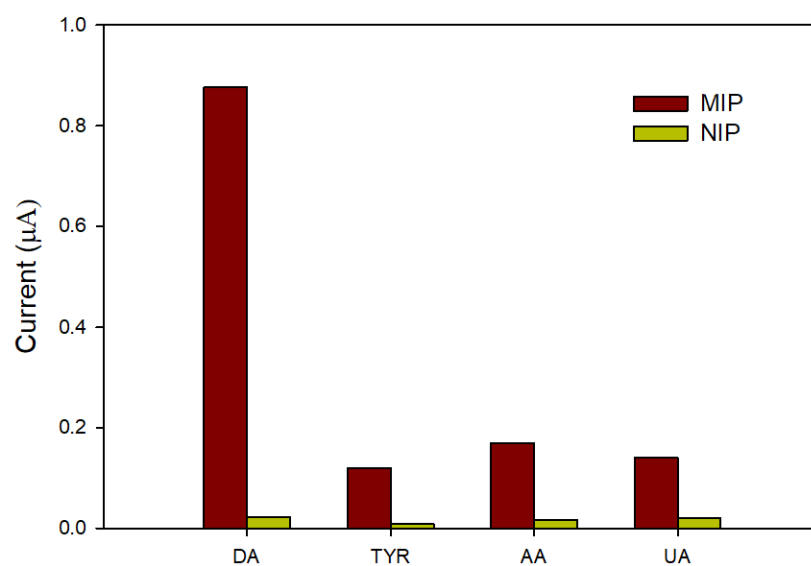
**Figure S2.** DPV profiles of a dopamine solution 2.5 mM **(a)** and 0.1 mM **(b)** in phosphate buffer pH 7.0, I 0.1 M, acquired on a platinum electrode during two successive experiments. Potential increment: 4 mV, sampling width: 20 ms, pulse amplitude: 50 mV, pulse period: 0.2 s, pulse width: 50 ms.



**Figure S3.** Influence of the scan cycles on the MIP performances. Each value represents the mean of triplicate measurements; the error bars represent the relevant standard deviations. MIP deposition was carried out by scanning the potential in the range -0.1/0.9 V vs SCE at a scan rate of 50 mV/s, employing a 5 mM monomer and 2.5 mM dopamine solution in acetate buffer at pH 5.0.



**Figure S4.** (a) Frequency variation recorded by QCM during dopamine extraction from the MIP by immersion in a solution of  $\text{H}_2\text{SO}_4$  0.5 M. (b) Frequency variation recorded by QCM during dopamine entrapment by immersing the MIP in a 0.1 mM dopamine solution in phosphate buffer at pH 7.0.



**Figure S5.** DPV current signals relevant to 10  $\mu\text{M}$  DA, 50  $\mu\text{M}$  TYR, 100  $\mu\text{M}$  AA and 100  $\mu\text{M}$  UA at the NIP and at the MIP. The NIP, not imprinted polymer, was electrosynthesized employing the same experimental conditions of Figure 4 (a) in the absence of DA. For each compound current signal was measured at the oxidation potential indicated in Table 1.