

Supplementary files:

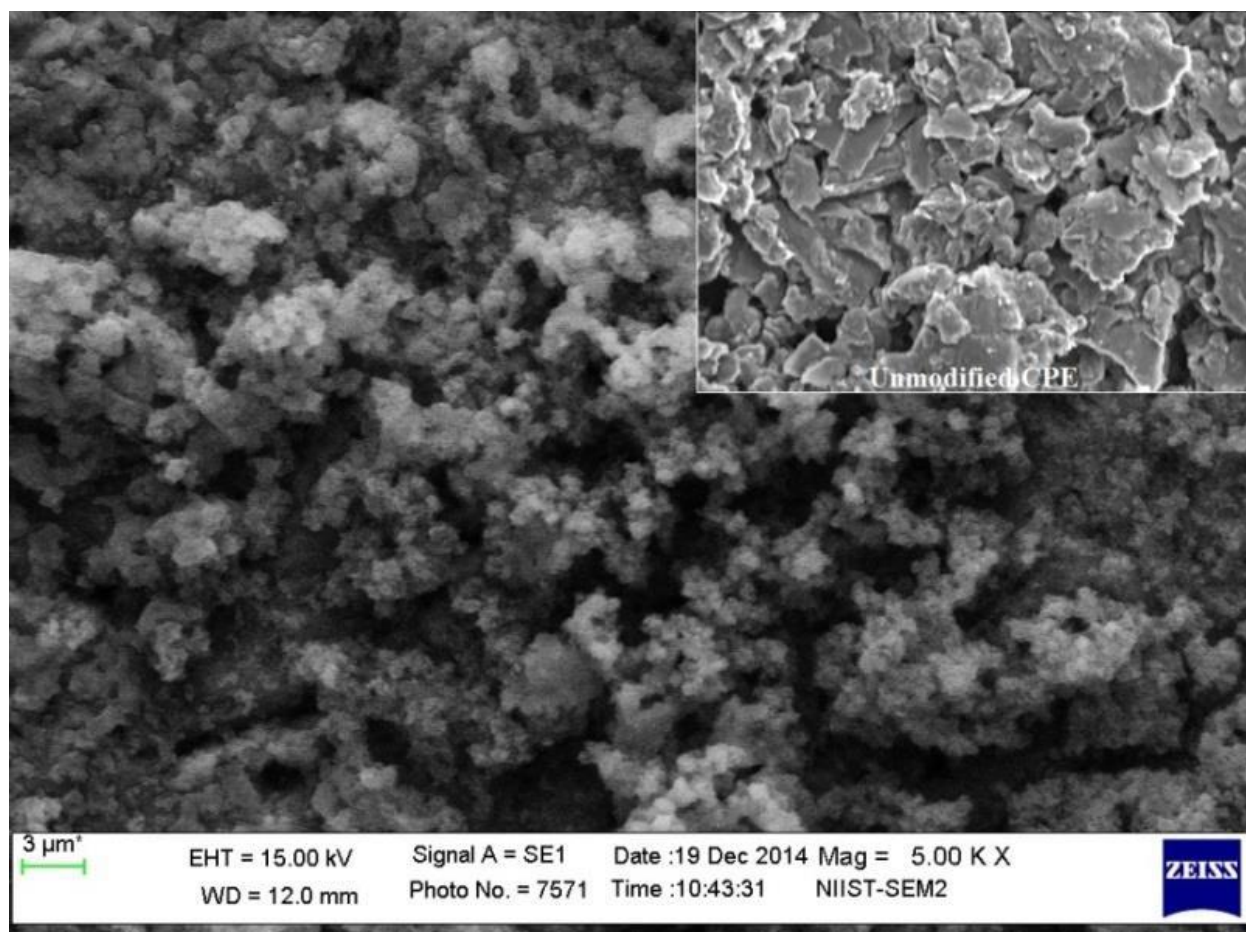


Figure. S1: Surface morphology of TOABMCPE and BCPE (inset).

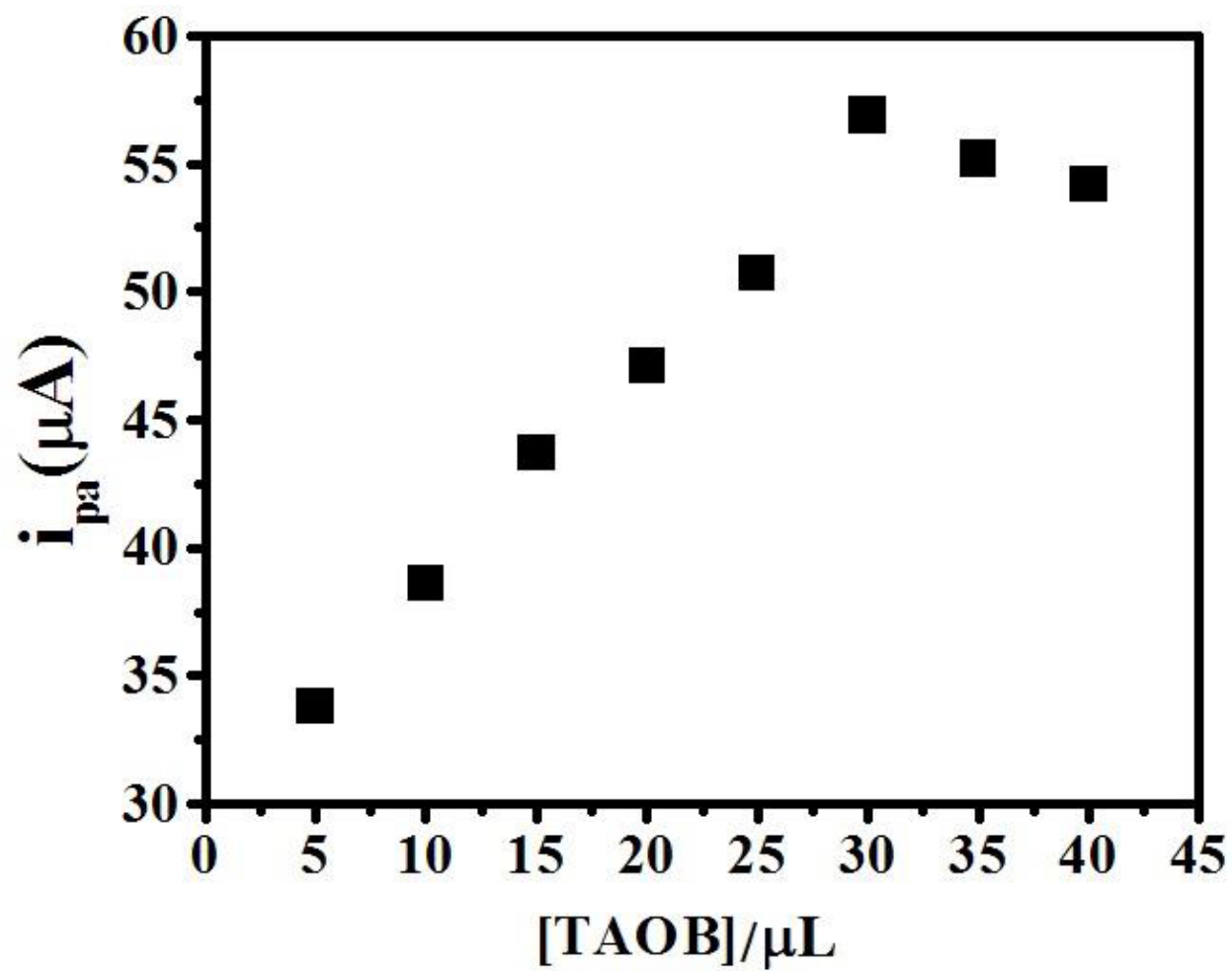


Figure. S2a: Plot of current vs. concentration of TAOB (from 5 μL to 30 μL) in 1 M KCl, scan rate 50 mV/s.

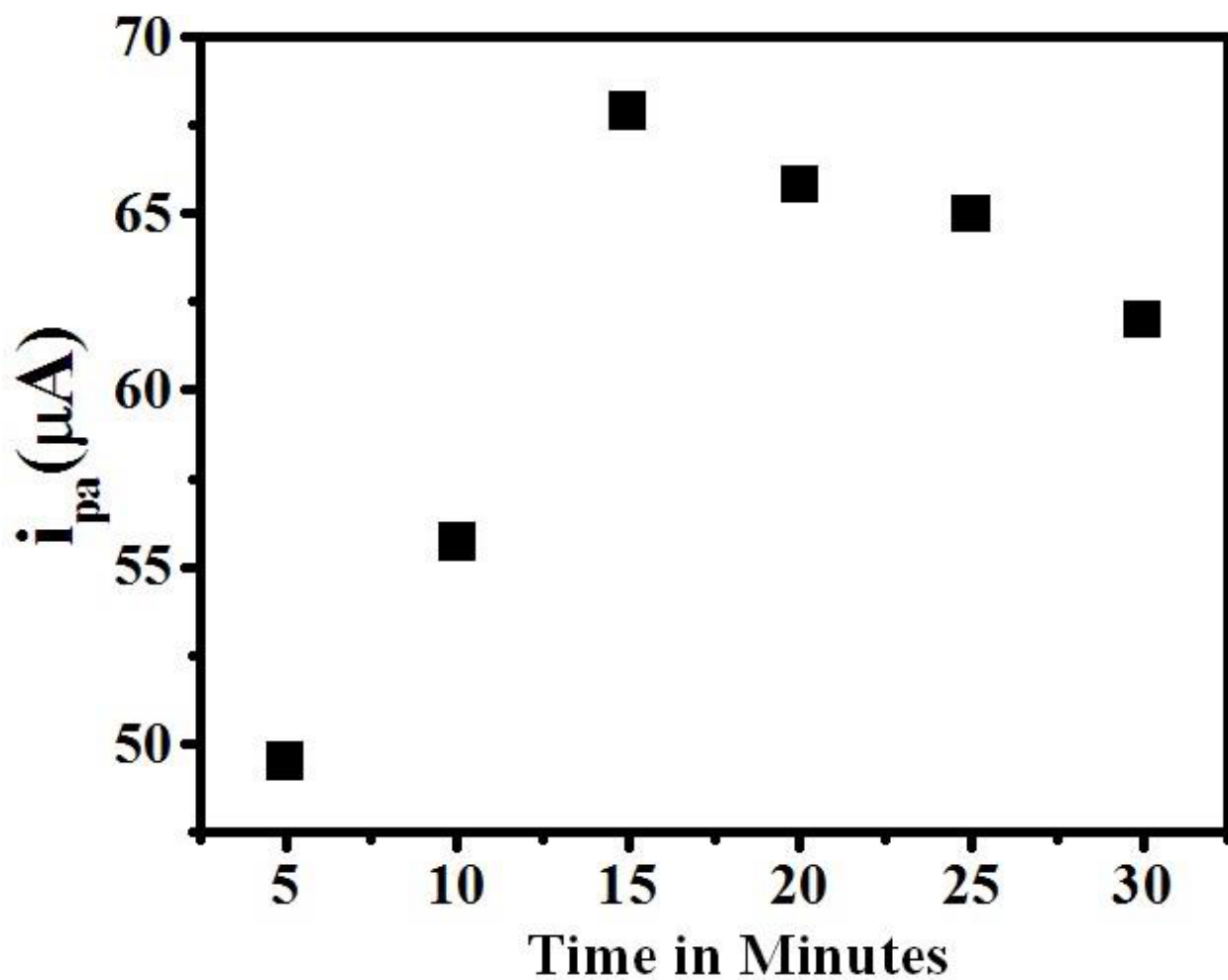


Figure. S2b: Plot of current vs. immobilization time (from 5 to 30 minutes) in 1 M KCl, scan rate 50 mV/s.

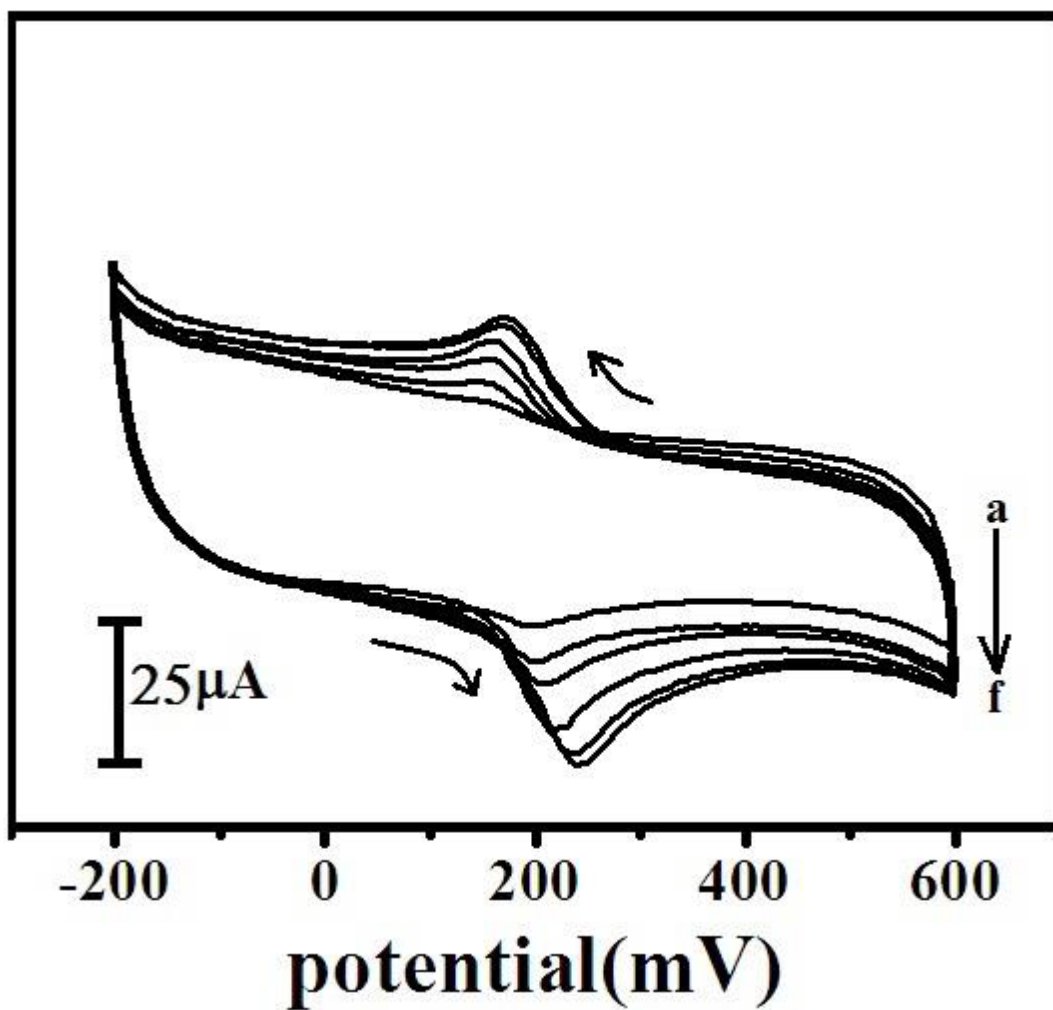


Figure. S3: Cyclic voltammogram of DA at different concentration (a – f; 1 μM to 6 μM DA) in pH 7.4 PBS with a scan rate of 50 mV/s

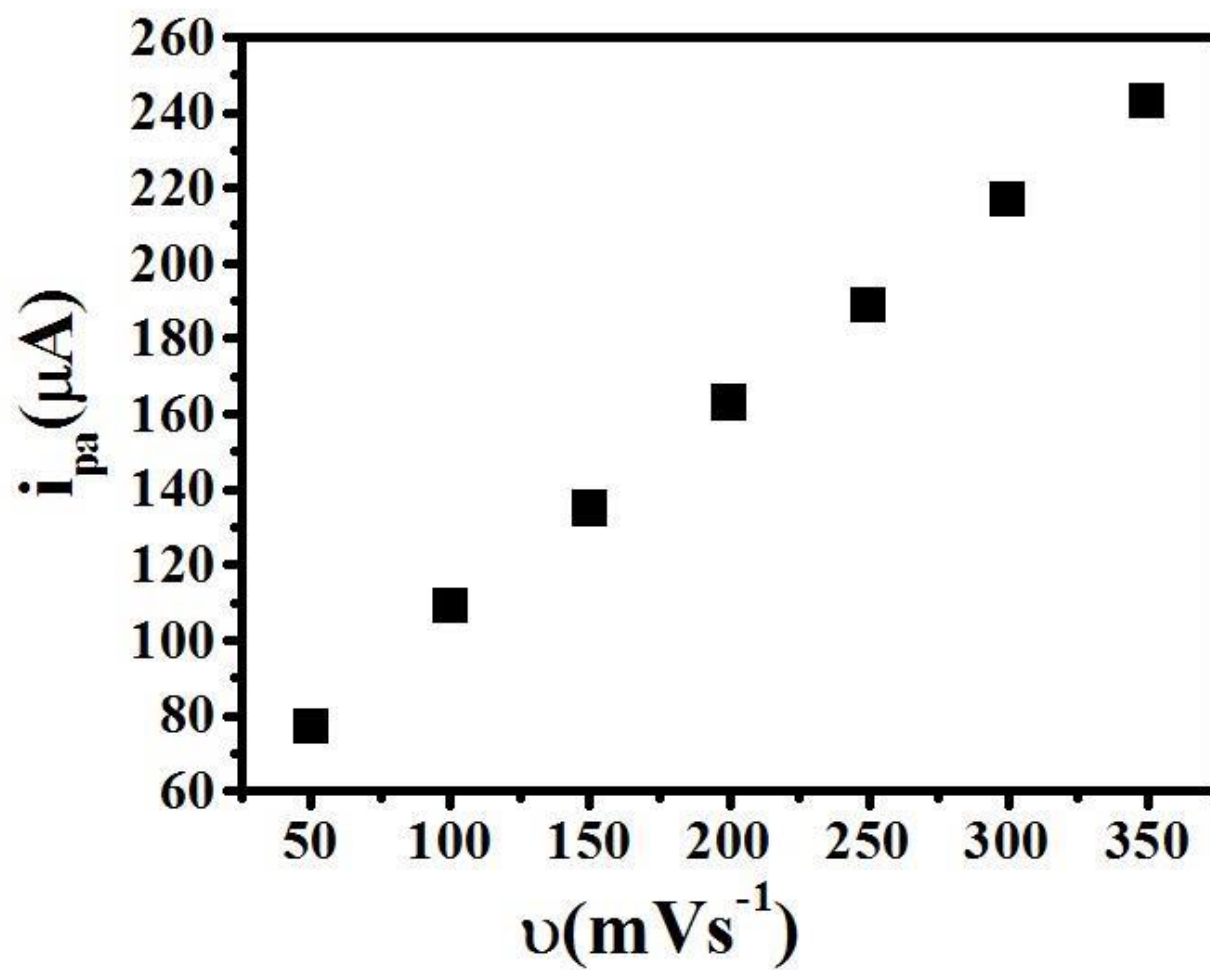


Figure. S4: Graph of square root of scan rate vs. anodic peak current

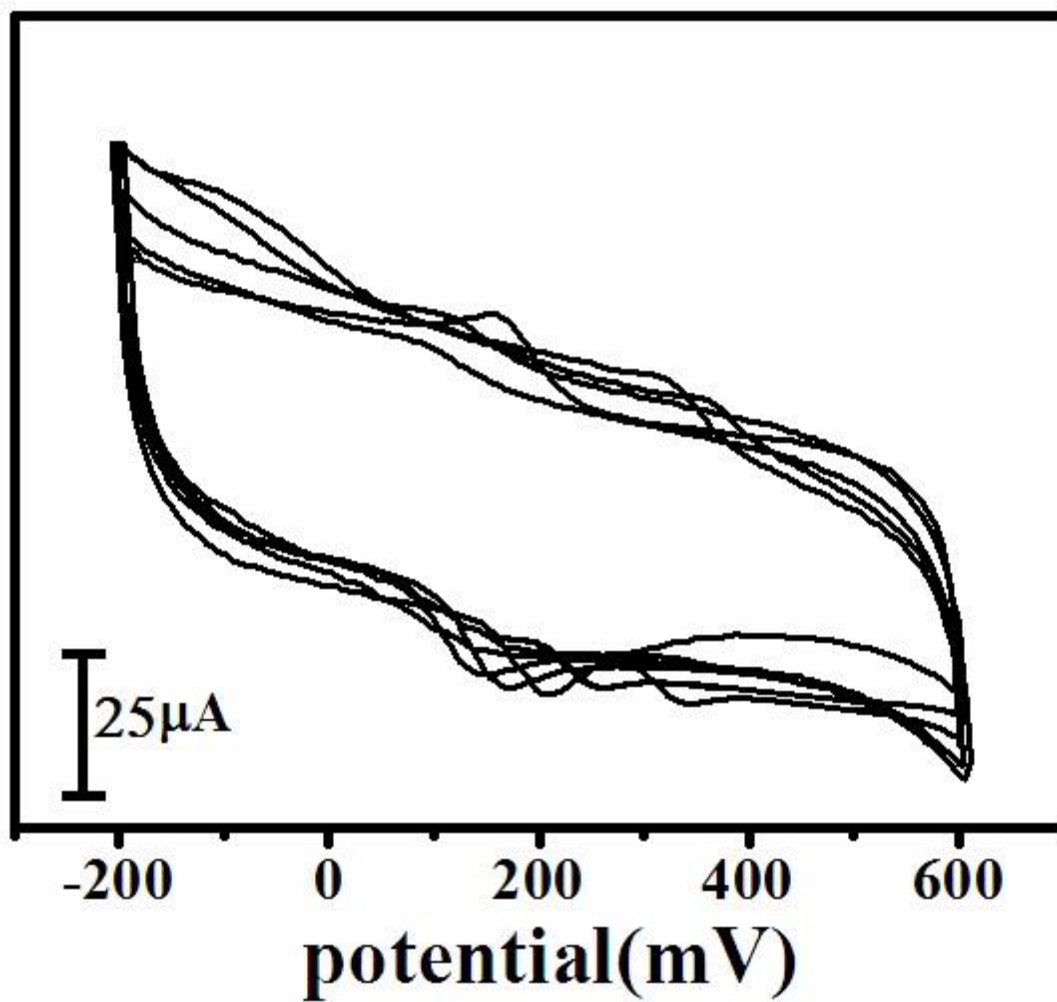


Figure. S5a: Cyclic voltammogram of DA at TOABMCPE in 0.1 M PBS of different pH value at 50 mV/s.

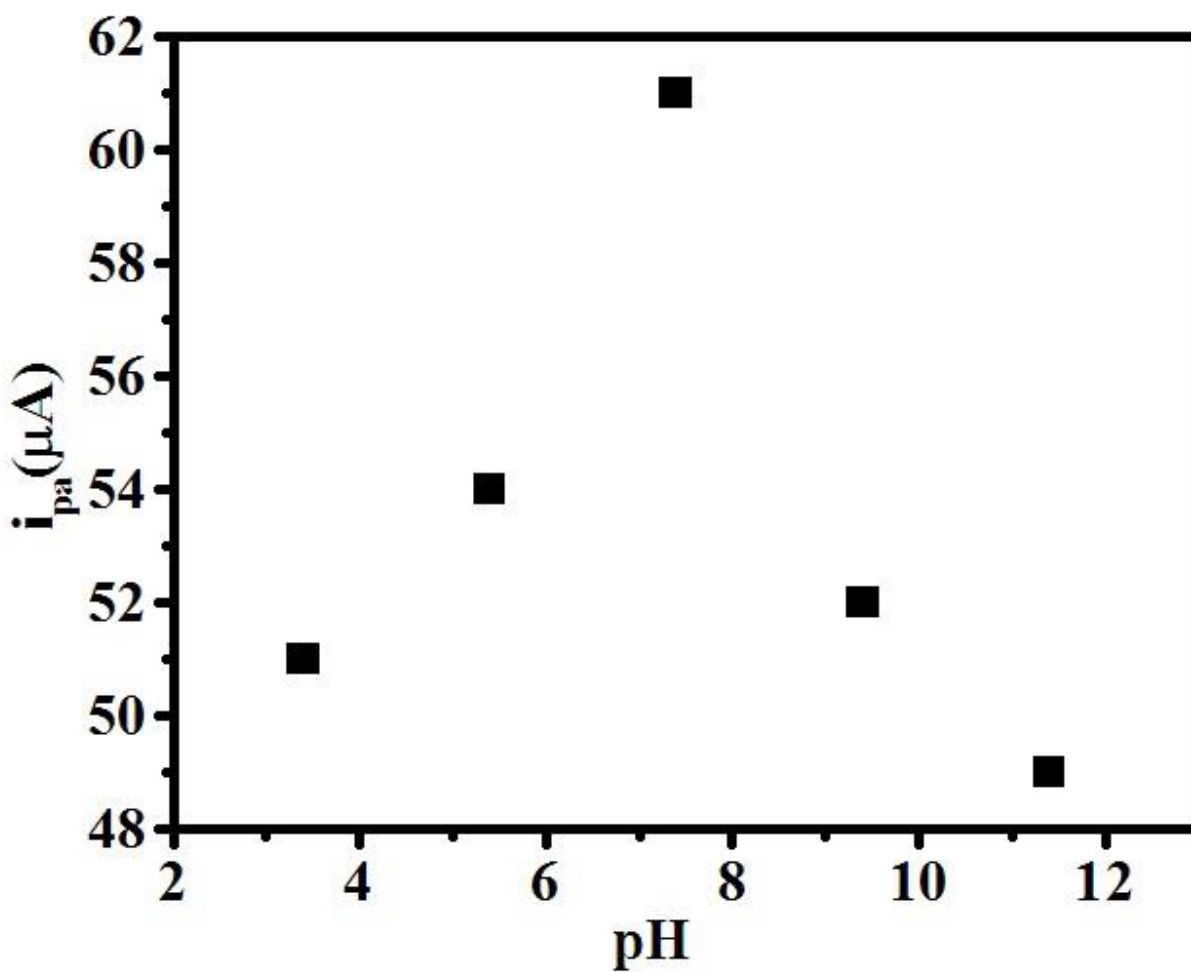


Figure. S5b: Effect of 0.1 M phosphate buffer solution of different pH on anodic peak current with 1 μM DA at TOABMCPE.

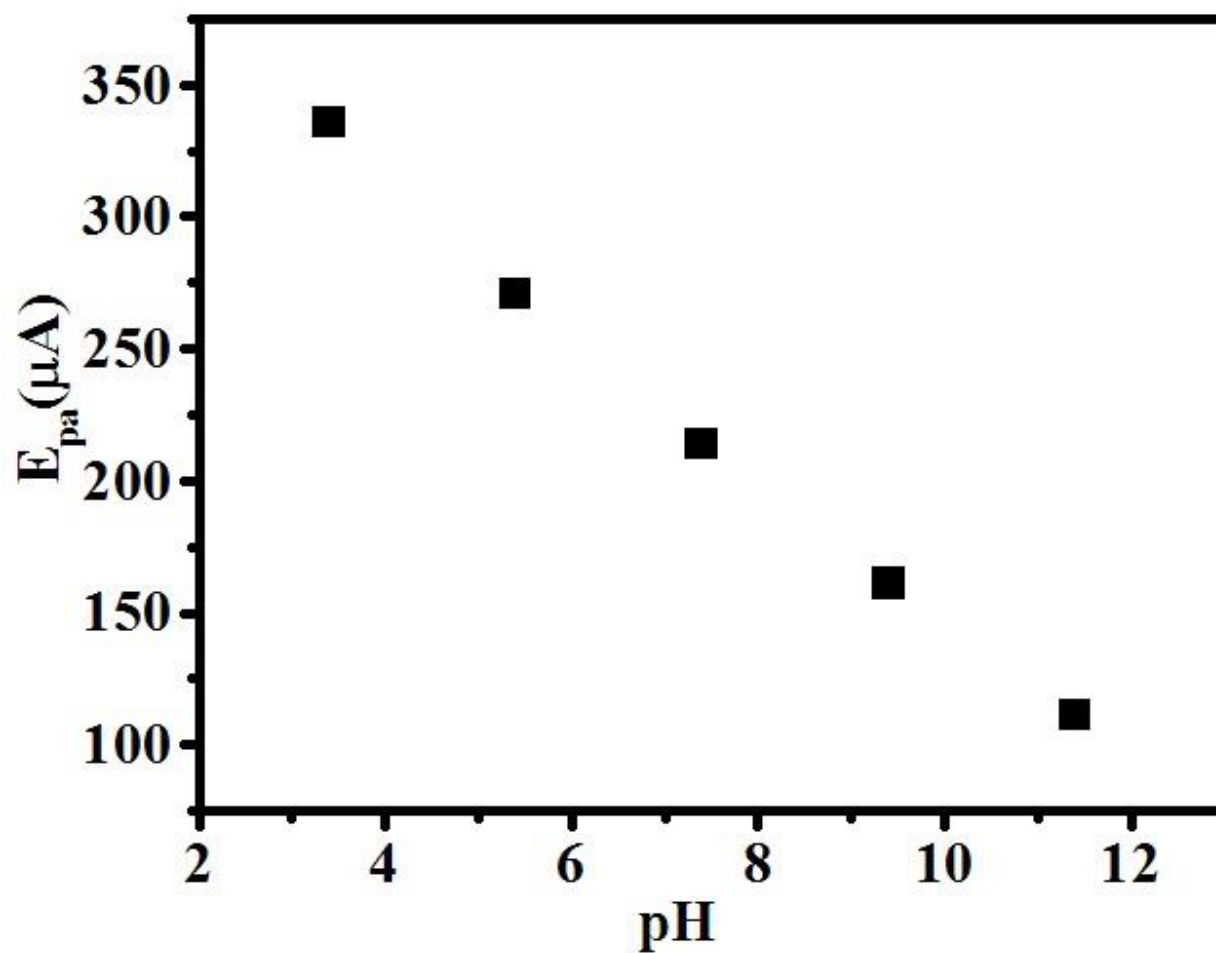
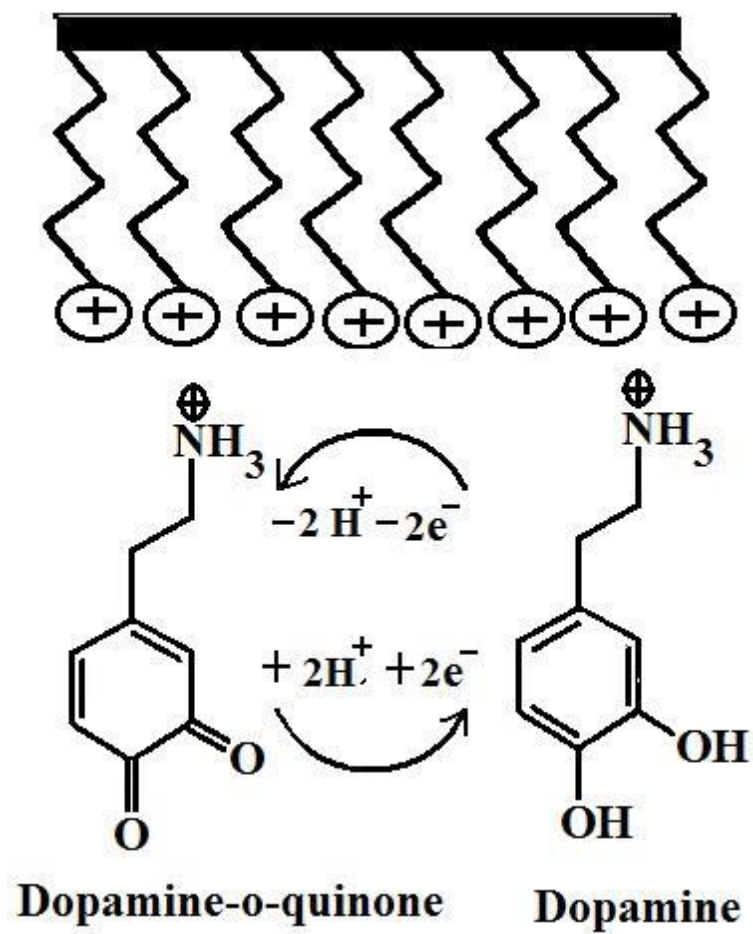


Figure. S5c: Graph of 0.1 M PBS of different pH vs. anodic peak potential with 1 M DA at TOABMCPE.



Scheme S1: Electrochemical interaction and reduction mechanism of DA at TOABMCPE

Electrode	Detection limit	Linear range	Method	Reference
Nafion/sodium dodecylbenzenesulfonate composite film MGCE	0.05 μ M	0.4 to 80 μ M	DPV	[9]
Cobalt salophen-MCPE incorporating a cationic surfactant	0.5 μ M	1 to 100 μ M	DPV	[16]
SDS-CPE	7 μ M	9 to 105 μ M	CV	[24]
Didodecyldimethylammonium bromide film MGCE	—	—	—	[13]
SDS/CPE	0.1 μ M		CV	[13]
TOABMCPE	0.019 μ M	0.04 to 6 μ M	CA	This work
		6 to 100 μ M		

Table. S1. Comparison of TOABMCPE with reported surfactant modified electrodes.

Sample	Added (mM)	Found (mM)	RSD(%)	Recovery (%)
1	3	2.89 \pm 0.84	1.73	96.3
2	3	3.05 \pm 1.06	0.86	101.6
3	3	3.13 \pm 1.20	0.76	104.3

Table. S2. Percentage of DA recovered from dopamine hydrochloride injection with TOABMCPE.