Supporting Information

A novel electrochemical sensor based on TAPT-TFP-COF/COOH-MWCNT for simultaneous detection of dopamine and paracetamol

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1. Optimization of the experimental conditions

In order to maximize the sensitivity of the TAPT-TFP-COF/COOH-MWCNT electrochemical sensor for the detection of dopamine and paracetamol, the dripping amounts of TAPT-TFP-COF and COOH-MWCNT were optimized by differential pulse voltammetry (DPV). When the amount of COOH-MWCNT was fixed at 5 μL and that of TAPT-TFP-COF was changed from 2 μL to 7 μL, the peak current responses are shown in the **Fig. S2a**. The oxidation peak currents of DA and PA at first increased remarkably and then decreased gradually with the TAPT-TFP-COF amount increasing. When TAPT-TFP-COF was added 5 μL, the peak current reached maximum value. Therefore, the optimal amount of TAPT-TFP-COF was 5 μL. Similarly, when the amount of TAPT-TFP-COF was fixed at 5 μL and that of COOH-MWCNT was changed from 2 μL to 7 μL (**Fig. S2b**), the peak current showed a similar change tendency. When COOH-MWCNT was 3 μL, the current reach the biggest, so the

optimal amount of COOH-MWCNT was selected as 3 μL.

2. Supplementary figures

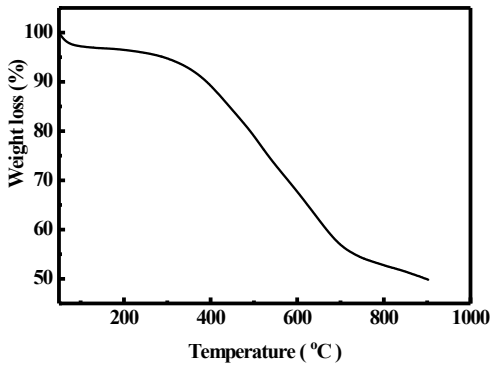


Fig. S1 TGA curves of TAPT-TFP-COF.

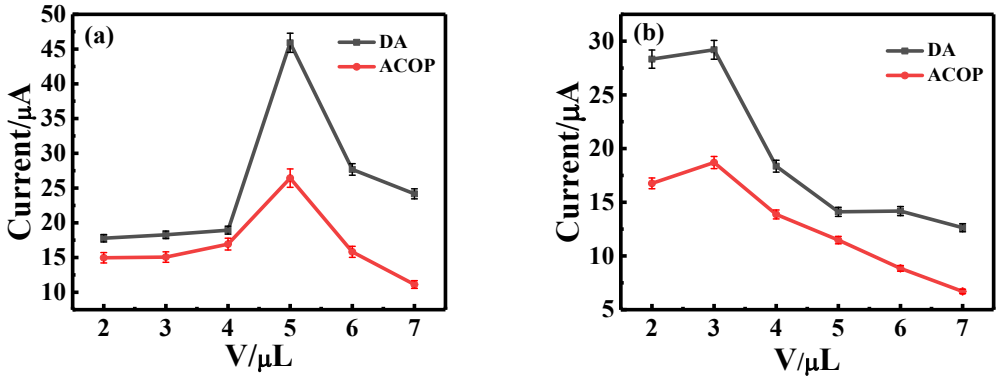


Fig. S2 Effects of the addition amount of the TAPT-TFP-COF**(a)** and COOH-MWCNT**(b).**

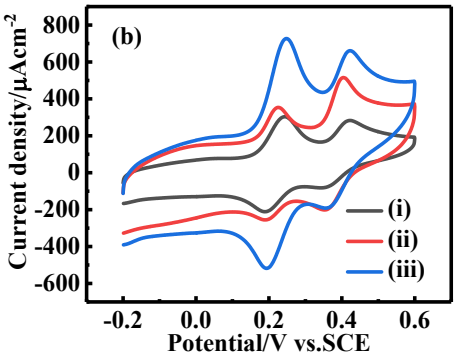


Fig. S3 Effects of different electrolyte including 0.1 M citrate buffer (i), acetate buffer (ii) and phosphate buffer(iii).

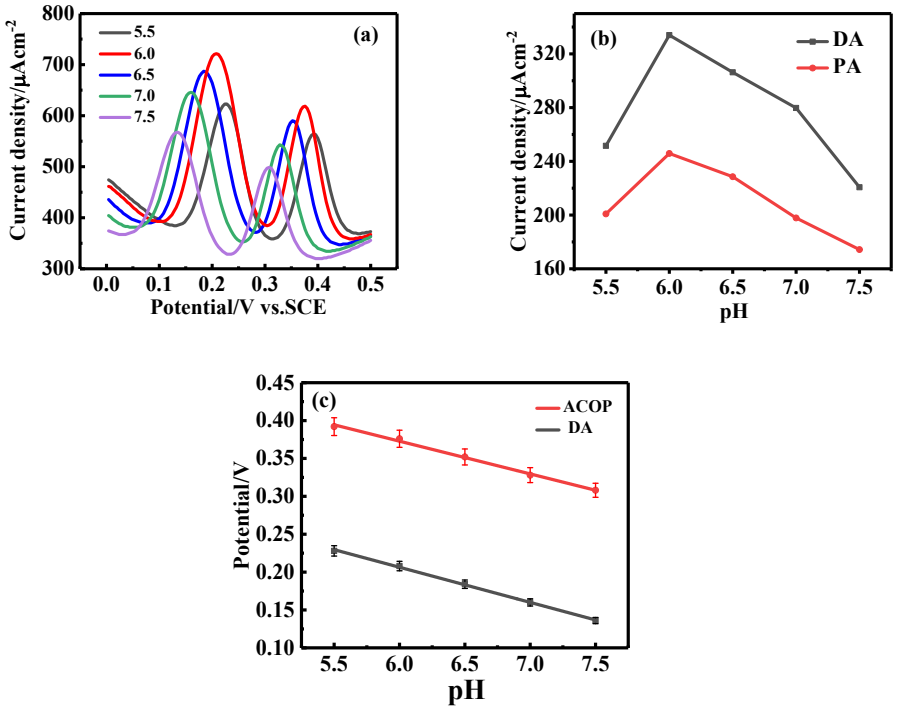
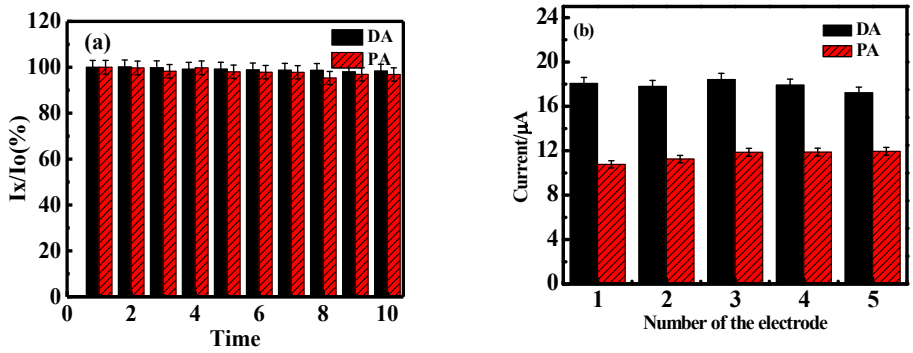


Fig. S4 (a) DPV curves of DA and PA on the composite modified electrode in the different pH buffer (5.5 - 7.5), **(b)** peak current densities and (c) peak potentials of 100 μM DA and PA at different pH.



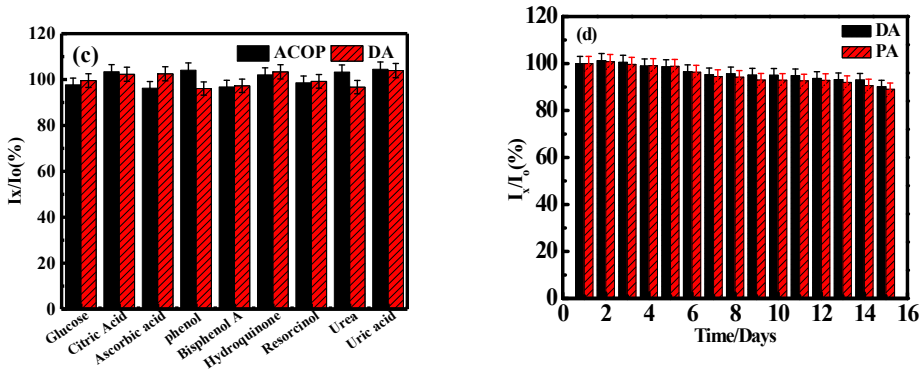


Fig. S5 (a) Change of the peak currents of 100 μM DA and PA on TAPT-TFP-COF/COOH-MWCNT/GCE during continual 10 DPV scans. **(b)** DPV peak currents of 0.1 mM DA and PA on five separately prepared TAPT-TFP-COF/COOH-MWCNT modified GCEs. **(c)** The effects of some possible inorganic and organic interferents on electrochemical determination of DA and PA on the TAPT-TFP-COF/COOH-MWCNT/GCE. **(d)** Effects of the storage time of TAPT-TFP-COF/COOH-MWCNT/GCE on the DPV peak currents of DA and PA.