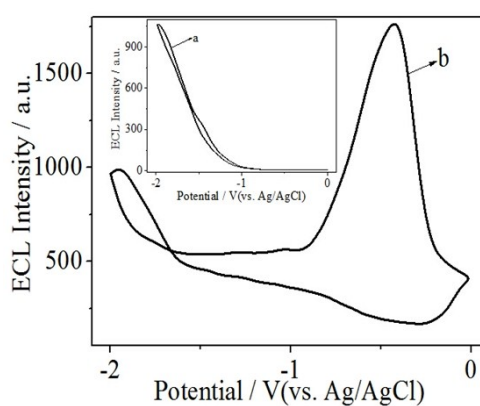


1 **Supplementary Information**

2 **Cathodic Electrochemiluminescence Behavior of an**  
3 **Ammonolysis Product of 3,4,9,10-Perylenetetracarboxylic**  
4 **Dianhydride in Aqueous Solution and Its Application for**  
5 **Detecting Dopamine**

6 Qiyi Lu,<sup>a</sup>Juanjuan Zhang,<sup>a</sup> Yuanya Wu,<sup>b</sup>Ruo Yuan,<sup>a</sup> and Shihong Chen<sup>\*a</sup>

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9 **Fig. S1** ECL responses of bare GCE (a) and PTC-NH<sub>2</sub>/GCE (b) in 0.10 M pH 7.0  
10 PBS with 90 mM K<sub>2</sub>S<sub>2</sub>O<sub>8</sub> under the scanning potential in the range of -2.0~ 0.0 V.

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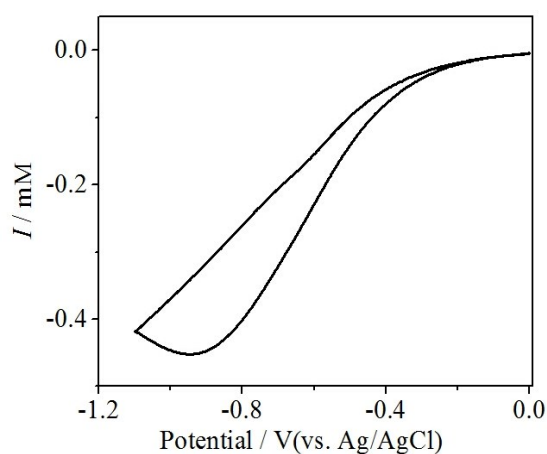
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27 **Fig. S2** CV curve of bare GCE with 90 mM  $K_2S_2O_8$ .

## 28 **The toxicity test of PTC-NH<sub>2</sub>**

29 MV3 (Human melanoma) cells were choose to test the toxicity of PTC-NH<sub>2</sub> on cell.

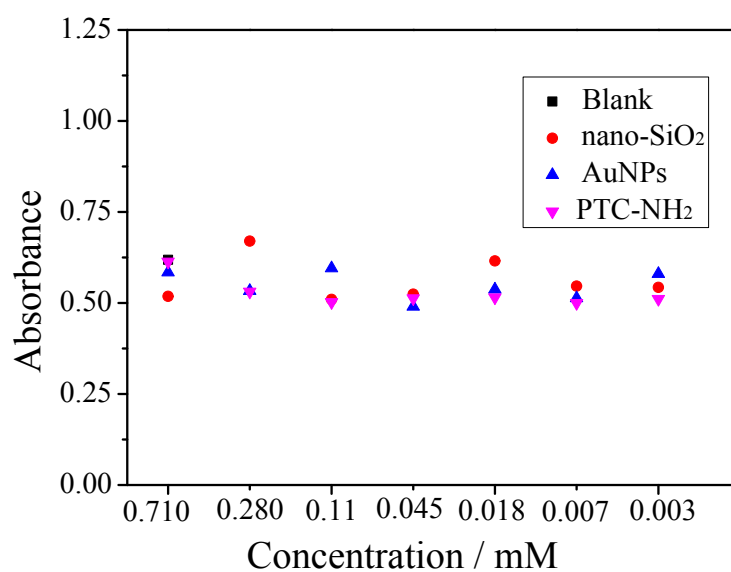
30 And they were seeded in 96-well plates with a density of  $1 \times 10^4/cm^2$  in complete

31 medium. The MTT (3-(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-2-H-tetrazolium

32 bromide) assay was performed to assess mitochondrial activity. The detection

33 principle is as follow. The mitochondrial dehydrogenases can reduce the MTT to

34 insoluble dark blue formazan crystals. Such a reaction only occurs in viable cells  
35 since only active mitochondria contain these enzymes. The absorbance of formazan  
36 can be determined using a Biorad microplate reader at 490 nm to evaluate the cell  
37 viability. Based on the fact that the absorbance of formazan was directly proportional  
38 to cell viability, we tested the absorbance of formazan to evaluate the cell viability in  
39 this work. As is well know, the gold nanoparticles (AuNPs) and nano-SiO<sub>2</sub> have good  
40 bio-compatibility and low toxicity<sup>1,2,3</sup>. Thus, they were chose for control experiments.  
41 The MTT assay was performed with AuNPs and nano-SiO<sub>2</sub> in the same conditions as  
42 those of PTC-NH<sub>2</sub>, respectively. The results were shown in Fig. S3. As seen, the  
43 absorbance of formazan in MV3 cells which were exposed to PTC-NH<sub>2</sub> was closed to  
44 those in the case of nano-SiO<sub>2</sub> and AuNPs, indicating that the toxicity of PTC-NH<sub>2</sub>  
45 was closed to those of nano-SiO<sub>2</sub> and AuNPs on cell. Thus, it could be concluded that  
46 the PTC-NH<sub>2</sub> also exhibits a good bio-compatibility and low toxicity.



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48 Fig. S3. The absorbance of formazan in MV3 cells exposed to varies concentration of

49 nano-SiO<sub>2</sub>, AuNPs and PTC-NH<sub>2</sub>, respectively.

## 50 References

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71 **Table S1.** Recoveries of DA in hydrochloride injection sample at PTC-NH<sub>2</sub>/GCE.

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Sample	Added(nM)	Found(nM)	Recovery(%)
Diluted injection	37.0	36.4	98.4
	60.0	61.2	102
	100	97.6	97.6
	170	178	105
	270	251	92.9

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