Electronic Supplementary Information

One-pot synthesis of active copper-containing carbon dots with laccase-like activities

Xiangling Ren, Jing Liu, Jun Ren, Fangqiong Tang* and Xianwei Meng*

Laboratory of Controllable Preparation and Application of Nanomaterials, Center for Micro/nanomaterials and Technology, Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, 100190, P.R. China.

*Corresponding author. Tel: 86-10-82543521; Fax: 86-10-62554670

E-mail: mengxw@mail.ipc.ac.cn
Figure S1. (A) Fluorescence emission spectra of Cu-CDs and CDs with different temperature. (B) Fluorescence emission spectra of Cu-CDs with different amount of copper ions. (C) Fluorescence emission spectra of Cu-CDs with different reaction time. (D) Fluorescence emission spectra of Cu-CDs kept in room temperature for 6 months.
Figure S2. Time-dependent absorbance changes at 495 nm of 10mM PPD in laccase (0.3U) solution, Cu-CDs (100 μL) solution and Cu-CDs (100 μL) solution storage in room temperature for 6 months.
Figure S3. Photographs of the Cu-CDs solutions in the presence of varying concentrations of HQ.
Figure S4. Time-dependent fluorescence changes of Cu-CDs in the presence of 20 mM HQ.
Figure S5. (A) Fluorescence changes of CDs in the presence of different concentrations of HQ in phosphate buffer (pH=7.0). (B) Relative fluorescence intensity of CDs versus the concentration of HQ in phosphate buffer (pH=7.0).
Figure S6. Fluorescence changes of Cu-CDs in water, phosphate buffer (pH=7.0) and carbonate buffer (pH=9.2).
Table S1. The different methods for the determination of HQ.

<table>
<thead>
<tr>
<th>Materials</th>
<th>Methods</th>
<th>Linear range</th>
<th>LOD</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>HPLC</td>
<td>0.046 mM-1.85 mM</td>
<td>2.59 μM</td>
<td>S. P. Wang et al. [1]</td>
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<tr>
<td>---</td>
<td>MEKC (^a)</td>
<td>0.046 mM-5.55 mM</td>
<td>2.96 μM</td>
<td>M. G. Li et al. [2]</td>
</tr>
<tr>
<td>LDHf (^b)</td>
<td>Electrochemistry</td>
<td>3.2 μM -2.4 mM</td>
<td>1 μM</td>
<td>T. C. Canevari et al. [3]</td>
</tr>
<tr>
<td>SiO(_2)/C/Nb(_2)O(_5)</td>
<td>Electrochemistry</td>
<td>0.16 mM-1.3 mM</td>
<td>1.6 μM</td>
<td>Z. C. Meng et al. [4]</td>
</tr>
<tr>
<td>TiO(_2)/MWCNTs (^c)</td>
<td>Electrochemistry</td>
<td>2.5 μM -0.2 mM</td>
<td>0.8 μM</td>
<td>M. Zhong et al. [5]</td>
</tr>
<tr>
<td>Poly(3-aminophenylboronic acid)/MWCNTs (^c)</td>
<td>Electrochemistry</td>
<td>0.5 μM -0.04 mM</td>
<td>0.2 μM</td>
<td></td>
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<tr>
<td>Cu-CDs</td>
<td>Fluorescence</td>
<td>0.05 mM-2 mM</td>
<td>1 μM</td>
<td>This paper</td>
</tr>
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<td></td>
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<td>1 mM-30 mM</td>
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\(^a\) Micellar electrokinetic chromatography;  
\(^b\) Zn/Al layered double hydroxide film;  
\(^c\) Multi-wall carbon nanotubes;  

    3135-3146.  
    6047-6053.