

**Synthesis of two nitrogen-doped carbon quantum dots to construct fluorescence probes for sensitive Hg<sup>2+</sup> detection with dual signal output**

Chengxiang Chu<sup>a, c</sup>, Chengyue Zou<sup>a</sup>, Yue Qiu<sup>a</sup>, Danqun Huo<sup>a</sup>, Yuanyi Deng<sup>a</sup>, Xianfeng Wang<sup>a</sup>, Guoren Xu<sup>b</sup>, Changjun Hou<sup>b, \*</sup>

<sup>a</sup> Key Laboratory for Biorheological Science and Technology of Ministry of Education, State and Local Joint Engineering Laboratory for Vascular Implants, Bioengineering College of Chongqing University, Chongqing 400044, PR China

<sup>b</sup> State Key Laboratory of Urban Water Resources & Environment, Harbin Institute of Technology, Harbin 150090, PR China

<sup>c</sup> Shanghai Center for Clinical Laboratory, Shanghai 200126, PR China

\* Corresponding authors

E-mail addresses: houcj@cqu.edu.cn (C.J. Hou).

Tel: +86 23 6510 2507

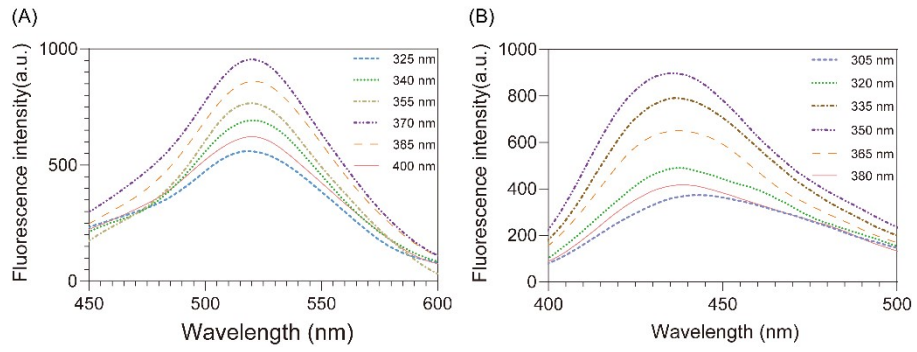


Fig. S1 Excitation-independent photoluminescence of M-CQDs (A), starting from 325 nm to 400 nm with a 15 nm increment. Excitation-independent photoluminescence of P-CQDs (B), starting from 305 to 380 nm with a 15 nm increment.

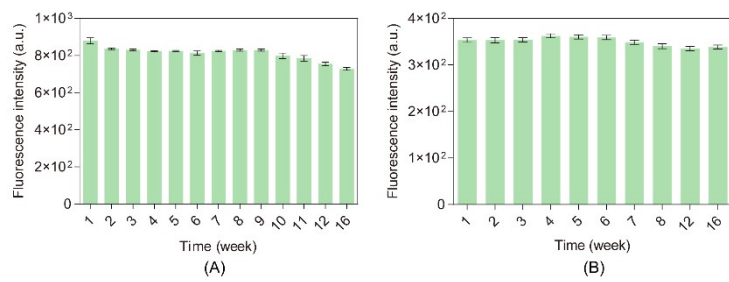


Fig. S2 The fluorescence intensity of M-CQDs (A) and P-CQDs (B) as time goes on (1-16 week).

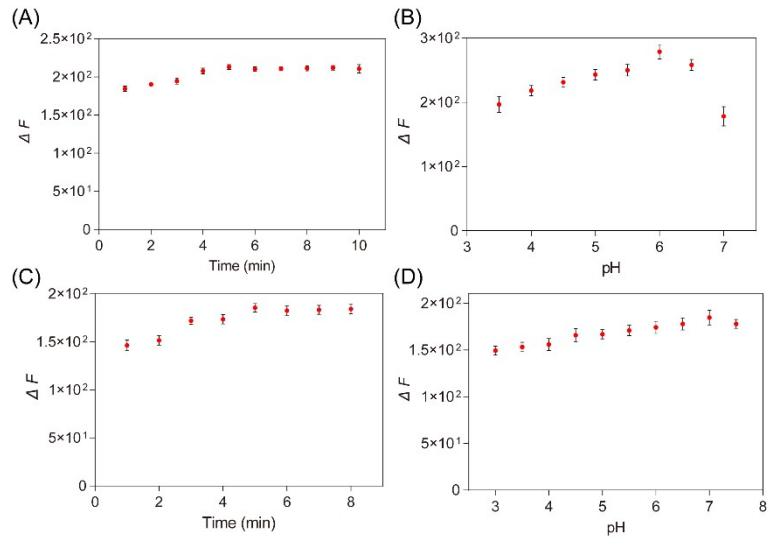


Fig. S3 Effect of time (A) and pH (B) for  $Hg^{2+}$  detection using M-CQDs probe. Effect of time (C) and pH (D) for detection of  $Hg^{2+}$  using P-CQDs probe.