Supporting Information

Dual-Exciting Central Carbon Nanoclusters for the Dual-Channel Detection of Hemin

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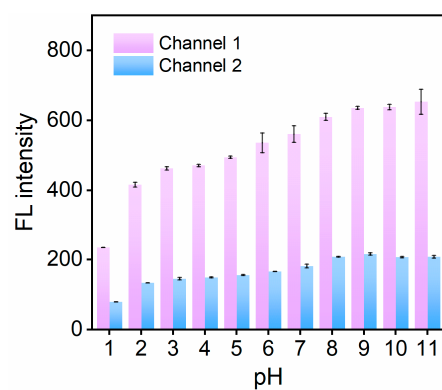* Correspondence: chenbinbin_swu@163.com (B.-B.C.); daweili@ecust.edu.cn (D.-W.L.)

Figure S1. Effect of solution pH on FL emissions of CNCs at two channels. Excitations: 260 nm (channel 1) and 410 nm (channel 2).
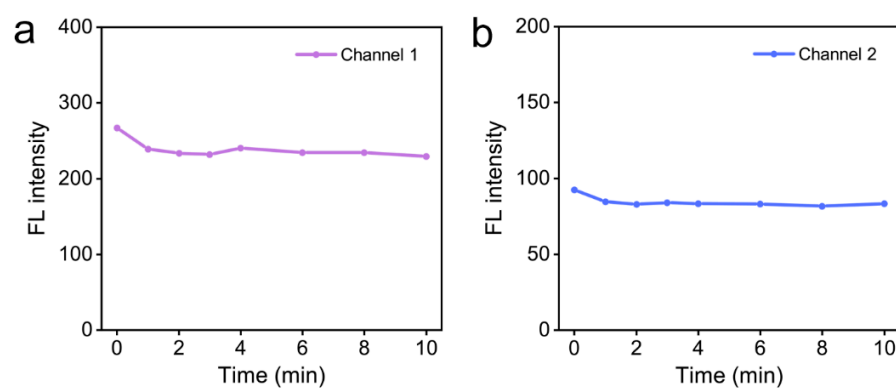
Figure S2. Relationship between FL intensity and incubation time. Excitations at (**a**) 260 nm (channel 1) and (**b**) 410 nm (channel 2).

Table. S1. The comparison of the determination of hemin.

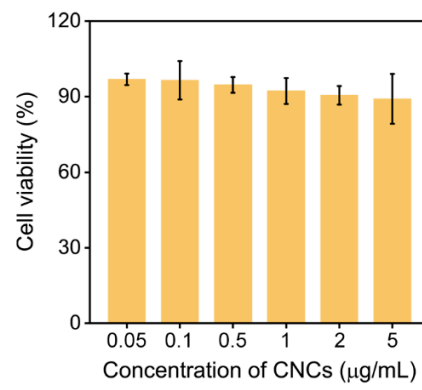| Hemin Probes	Sensing Method	Linear Range	LODs	Ref.
Atemisin-thiamine	Single-channel	2 – 300 nM	0.68 nM	1
Artesunate-luminol	Single-channel	0.8 – 1000 nM	0.22 nM	2
Gold nanoclusters	Single-channel	1 – 25 nM	0.43 nM	3
Graphene and aptamer nanocomposite	Single-channel	1 – 150 nM	0.64 nM	4
Silicon nanoparticle	Single-channel	0.05 – 100 μM	29.5 nM	5
Protoporphyrin IX	Single-channel	50 – 2250 nM	36 nM	6
Graphitic carbon nitride	Single-channel	0.5 – 25 μM	0.15 μM	7
Dual-exciting central CNCs	Dual-channel	0.075 – 10 μM (channel 1) 0.25 – 10 μM (channel 2)	30 nM (channel 1) 90 nM (channel 2)	This work

Figure S3. The biocompatibility of the CNCs. Error bars represent $\pm$ S.D (n = 3).

REFERENCES

1. P. Ni, C. Chen, Y. Jiang, Y. Lu and W. Chen, *Sens. Actuators B-Chem.*, 2018, **273**, 198-203.
2. T. H. Fereja, S. A. Kitte, W. Gao, F. Yuan, D. Snizhko, L. Qi, A. Nsabimana, Z. Liu and G. Xu, *Talanta*, 2019, **204**, 379-385.
3. S. L. Fereja, Z. Fang, P. Li, J. Guo, T. H. Fereja and W. Chen, *Anal. Bioanal. Chem.*, 2021, **413**, 1639-1649.
4. L. Gao, Y. Xiao, Y. Wang, X. Chen, B. Zhou and X. Yang, *Talanta*, 2015, **132**, 215-221.
5. N. Du, H. Zhang, J. Wang, X. Dong, J. Li, K. Wang and R. Guan, *Anal. Bioanal. Chem.*, 2022, **414**, 8223-8232.
6. B. H. Kang, N. Li, S. G. Liu, N. B. Li and H. Q. Luo, *Anal. Sci.*, 2016, **32**, 887-892.
7. Z. Guo, B. Li, Y. Zhang, Q. Zhao, J. Zhao, L. Li, L. Feng, M. Wang, X. Meng and G. Zuo, *ChemistrySelect*, 2019, **4**, 8178-8182.