Supporting information

Biomimetic design for enhancing the peroxidase mimicking activity of hemin

Weiwei Wu,[a,b] Qingqing Wang,[a] Jinxing Chen,[a,b] Liang Huang,[a,b] He Zhang,[a,b] Kai Rong[a,b] and Shaojun Dong*[a,b]

[a] State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, Jilin 130022, PR China

[b] University of Science and Technology of China, Hefei, Anhui 230026, PR China

*Corresponding Author. Tel: +86 431 85692886. Fax: +86 431 85689711.

E-mail: dongsj@ciac.ac.cn

Supporting Figures

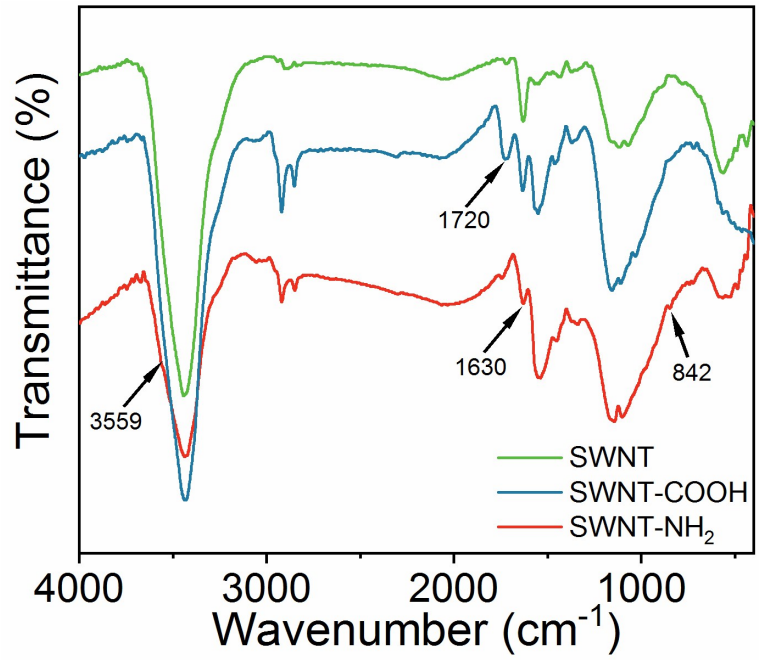

Fig.S1 FT-IR spectra of SWNT@hemin, SWNT-COOH@hemin and SWNT-

NH_2@hemin.

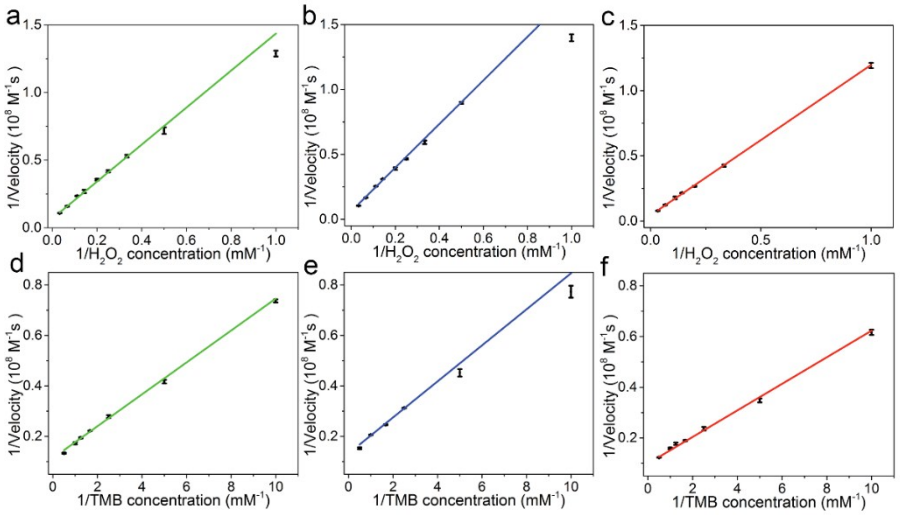

Fig.S2 Lineweaver-Burk plots of SWNT@hemin, SWNT-COOH@hemin and SWNT-NH_2@hemin obtained from Fig.4.

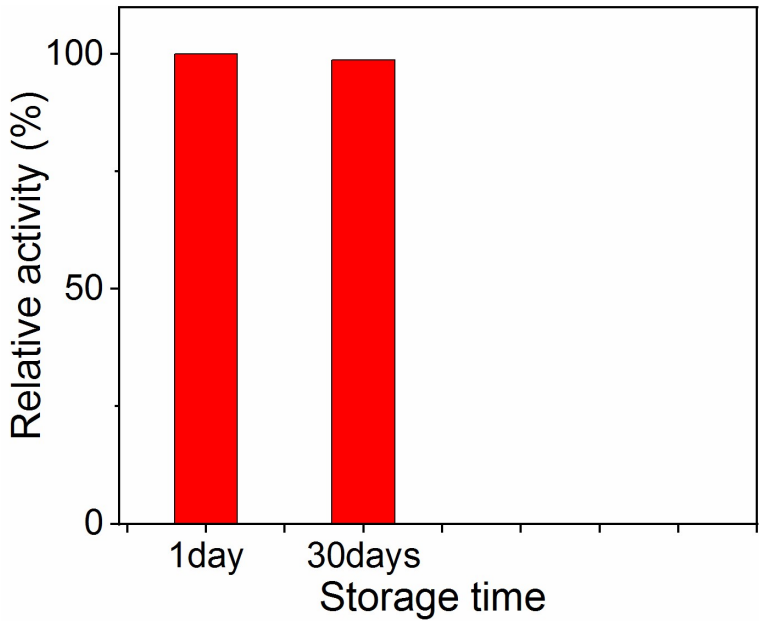

Fig.S3 The stability of SWNT-NH_2@hemin.

Table.S1 H_2O_2 and glucose detection by colorimetric method with peroxidase mimics.

Nanoyzmes	H_2O_2		Glucose		References
	Linear range	LOD	Linear range	LOD	
SWNT-NH_2	0.05-0.35 mM	1.82 μM	0.025-1.625 mM	5.4 μM	This work
CA-BiPtNC@GO	0.01-1500 μM	10 nM	0.5-1000 μM	0.05 μM	Ref.1
Fe–g-C_3N_4	0.5-10 μM	0.05 μM	0.5-10 μM	0.5 μM	Ref.2
Co_3O_4 NPs	29-580 μM	15 μM	0.02-0.2 mM	5 μM	Ref.3
3D-printed Fe_3O_4 multi-well plate	1-100 μM	0.6 μM	5-500 μM	5.2 μM	Ref.4
$LaNiO_3$ nanocubes	0-30 μM /40-500 μM	——	10-50 μM	8.16 μM	Ref.5
GOx@ZIF-8(NiPd) Nanoflower	——	——	0.01-0.3 mM	9.2 μM	Ref.6
Carbon NPs	1-40 μM	1 μM	——	20 μM	Ref.7
Fe_3O_4 NPs	5-100 μM	3 μM	50-1000 μM	30 μM	Ref.8
Au@Ag Nanorods	0.01-10 mM	6 μM	0.05-20 mM	39 μM	Ref.9
GO@SiO_2@CeO_2 nanosheets	50nM-1 μM	9 nM	1.5-25 mM	0.2 mM	Ref.10

References:

1. Y. Liu, Y. Zheng, Z. Chen, Y. Qin and R. Guo, Small, 2019, **15**, e1804987.
2. J. Tian, Q. Liu, A. M. Asiri, A. H. Qusti, A. O. Al-Youbi and X. Sun, Nanoscale, 2013, **5**, 11604-11609.
3. H. Jia, D. Yang, X. Han, J. Cai, H. Liu and W. He, Nanoscale, 2016, **8**, 5938-5945.
4. C.-K. Su and J.-C. Chen, Sens. Actuators, B., 2017, **247**, 641-647.
5. X. Wang, W. Cao, L. Qin, T. Lin, W. Chen, S. Lin, J. Yao, X. Zhao, M. Zhou, C. Hang and H. Wei, Theranostics, 2017, **7**, 2277-2286.
6. Q. Wang, X. Zhang, L. Huang, Z. Zhang and S. Dong, Angew. Chem., Int. Ed. Engl., 2017, **56**, 16082-16085.

7. X. Wang, K. Qu, B. Xu, J. Ren and X. Qu, Nano Res., 2011, **4**, 908-920.

8. H. Wei and E. Wang, Anal. Chem., 2008, **80**, 2250-2254.

9. L. Han, C. Li, T. Zhang, Q. Lang and A. Liu, ACS Appl. Mater. Interfaces, 2015, **7**, 14463-14470.

10. L. Deng, C. Chen, C. Zhu, S. Dong and H. Lu, Biosens. Bioelectron., 2014, **52**, 324-329.