

Supporting Information

for

Colorimetric determination of thiol compounds in serum based on Fe-MIL-88NH₂ metal-organic framework as peroxidase mimetics

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Synthesis of Fe-MIL-88NH₂: Fe-MIL-88NH₂ was prepared according to the previous work of our group.¹ Briefly, 0.187g (0.692mmol) of FeCl₃•6H₂O and 0.126g (0.692mmol) of 2-aminoterephthalic acid were dissolved in 15mL of DMF, and 200μL acetic acid was added into this mixture. The mix solution was placed in an oil bath at 120 °C for 4 h to crystallize. After cooling to room temperature, the particles were isolated by centrifugation and washed with DMF and ethanol three times to remove the excess reactants, respectively. Finally, the Fe-MIL-88NH₂ was dried in a vacuum oven.

Additional figures

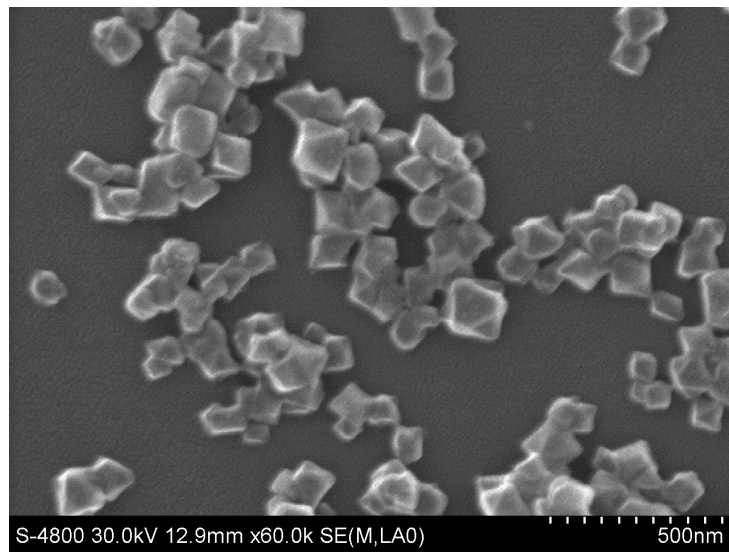


Fig.S1 SEM images of Fe-MIL-88NH₂ microcrystals

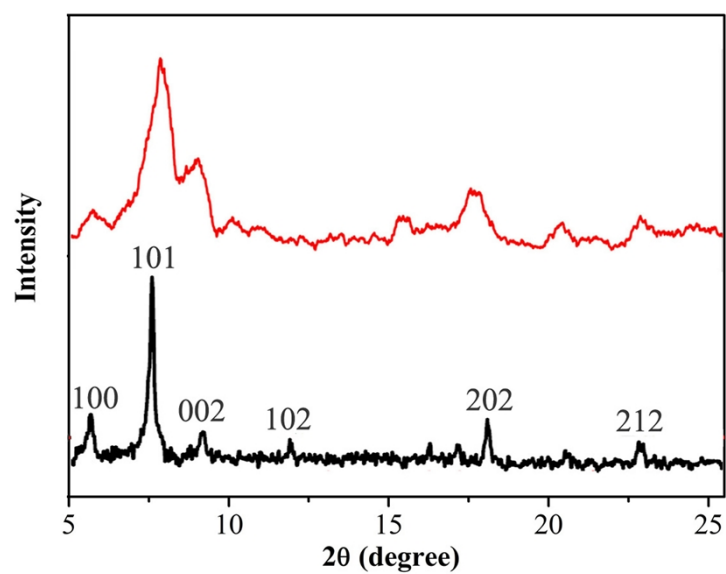


Fig.S2 Powder XRD patterns of Fe-MIL-88NH₂ (red), and the simulated XRD pattern of the reported Fe-MIL-88NH₂ (black).²

Table S1: The comparison of present method with other methods for thiols detection

Analyte	Detection method	Linear range	Detection limit	Reference
		/ μM	/ μM	
Homocysteine	Capillary		0.5	
Glutathione		1.0-200.0	1	(3)
Cysteine	Electrophoresis		2	
Cysteine	Near-infrared			
	fluorescent	10.0-500.0	1.26	(4)
Cysteine	Fluorometry	16.5-33.0	1.0	(5)
Cysteine		1.0-80.0	0.39	
Homocysteine	Colorimetry	1.0-80.0	0.4	Present
Glutathione		1.0-100.0	0.45	method

References

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4. Y. S. Guan, L. Y. Niu, Y. Z. Chen, L. Z. Wu, C. H. Tung and Q. Z. Yang, *RSC Adv.*, 2014, **4**, 8360-8364.
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