

Supplementary Information

An enhanced fluorescent probe through the strategy of MgWO_4 nanosheets to enhance terbium ion luminescence for highly sensitive and point-of-care visual quantitative testing of ciprofloxacin integrated with a low-cost smartphone-based platform

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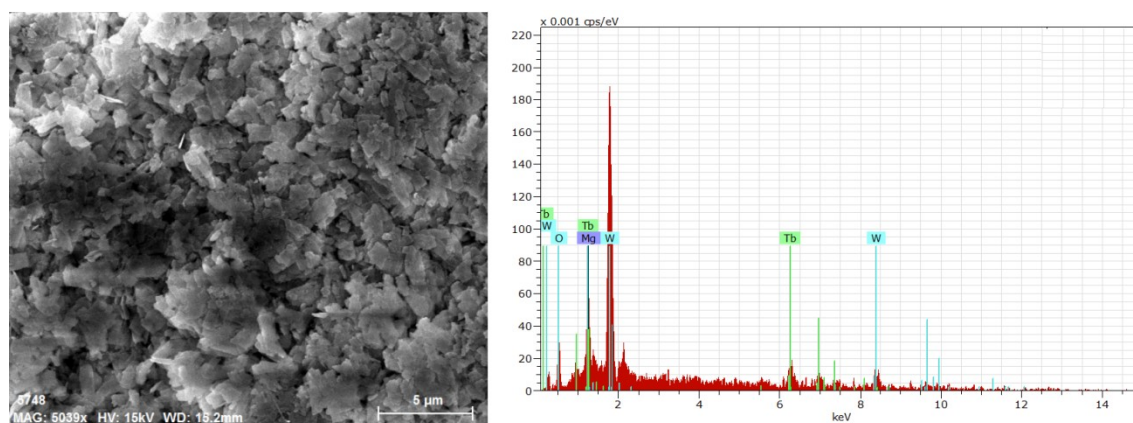


Figure S1 SEM image of EDS selected area and corresponding EDS spectra of Mg, O, W and Tb of Tb^{3+} - MgWO_4 nanosheets

Table S1 Comparison of our fluorescent probe with the reported fluorescent probe for the detection of CIP.

Fluorescent material	Spiked sample	Concentration range	Detection limit	Recovery (%)	RSD (%)	Refs
In(III)-MOFs	Tap water	0 nM-300 μ M	220 nM	none	none	[1]
Ad/Tb CPNPs	Tablet and urine	60 nM-14 μ M	60 nM	99.47~103.4 %	\leq 0.83	[2]
DNA-AgNCs-Cu ²⁺	Human urine and tablets	5 to 100 nM	1.0 nM	105.5–107.1%	none	[3]
CDs/SiDs-BPMA-Cu ²⁺	Injection, tablets, urine and serum	0.01–150 μ M	2.0 nM	95.56~104.53%	1.43–4.84	[4]
CdS QDs	Water	(1.25–8.75) $\times 10^{-4}$ mg mL ⁻¹ (8.75–1200) $\times 10^{-4}$ mg mL ⁻¹	7.64 ng mL ⁻¹	95~105 %	1.5~2.5	[5]
MIPs@CdTe/CDs@SiO ₂	Urine	10~ 60 nM	0.0127 nM	98.78–102.08%	0.42~0.96	[6]
Ln ³⁺ -MOF	Water	none	43.91 ng mL ⁻¹	none	none	[7]
Tb ³⁺ -MgWO ₄	Tap water and mouse serum	10 nM -20 μ M	2 nM	97-102.2%	1.35-5.53	Our work

References

1. W.-B. Zhong, R.-X. Li, J. Lv, T. He, M.-M. Xu, B. Wang, L.-H. Xie and J.-R. Li, *Inorg. Chem. Front.*, 2020, **7**, 1161-1171.
2. H. Tan, L. Zhang, C. Ma, Y. Song, F. Xu, S. Chen and L. Wang, *ACS Appl. Mater. Inter.*, 2013, **5**, 11791-11796.
3. H. R. Wang, X. Yan, J. Sun, X. Wang, X.-E. Zhao, W. Liu and S. Zhu, *Anal. Methods*, 2018, **10**, 4183-4188.

4. Z. Chen, S. Qian, J. Chen, J. Cai, S. Wu and Z. Cai, *Talanta*, 2012, **94**, 240-245.
5. D. Li, Z.-Y. Yan and W.-Q. Cheng, *Spectrochim. Acta. A*, 2008, **71**, 1204-1211.
6. X. Liu, T. Wang, Y. Lu, W. Wang, Z. Zhou and Y. Yan, *Sensor Actuat. B-Chem.*, 2019, **289**, 242-251.
7. T.-Y. Liu, X.-L. Qu and B. Yan, *Dalton Trans.*, 2019, **48**, 17945-17952.