

A novel electrochemiluminescence sensor based on AgMOF@N-CDs composites for sensitive detection of trilobatin

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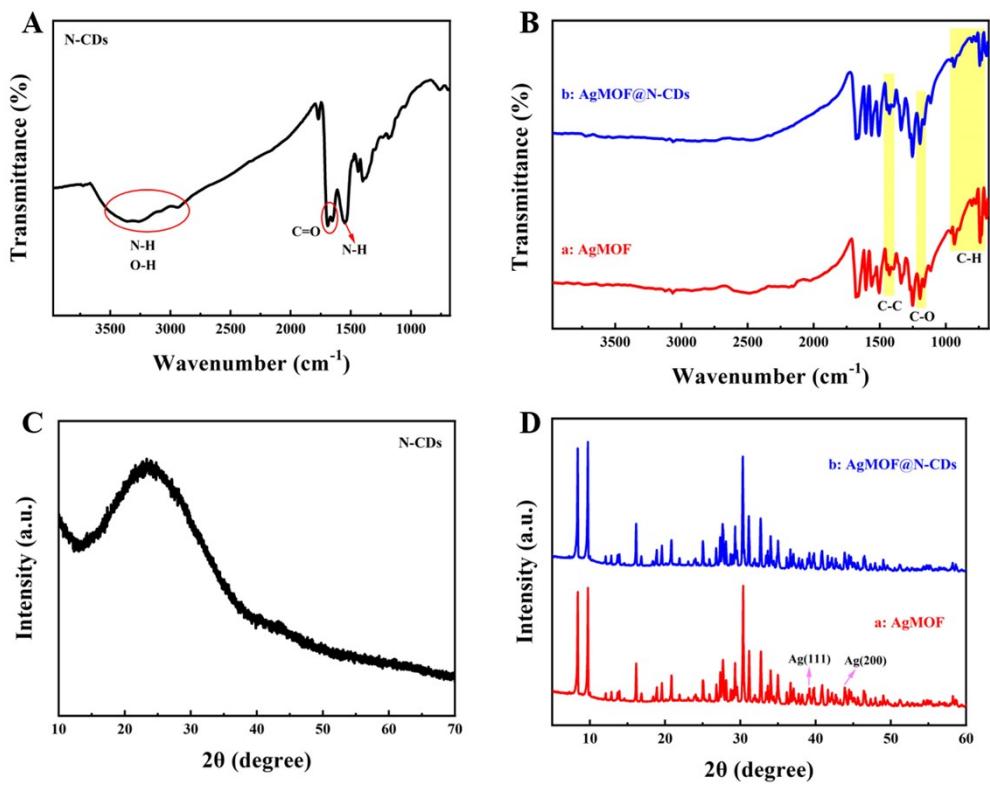


Fig. S1 (A) FT-IR spectra of N-CDs; (B) FT-IR spectra of AgMOF and AgMOF@N-CDs; (C) XRD spectra of N-CDs; (D) XRD spectra of AgMOF and AgMOF@N-CDs

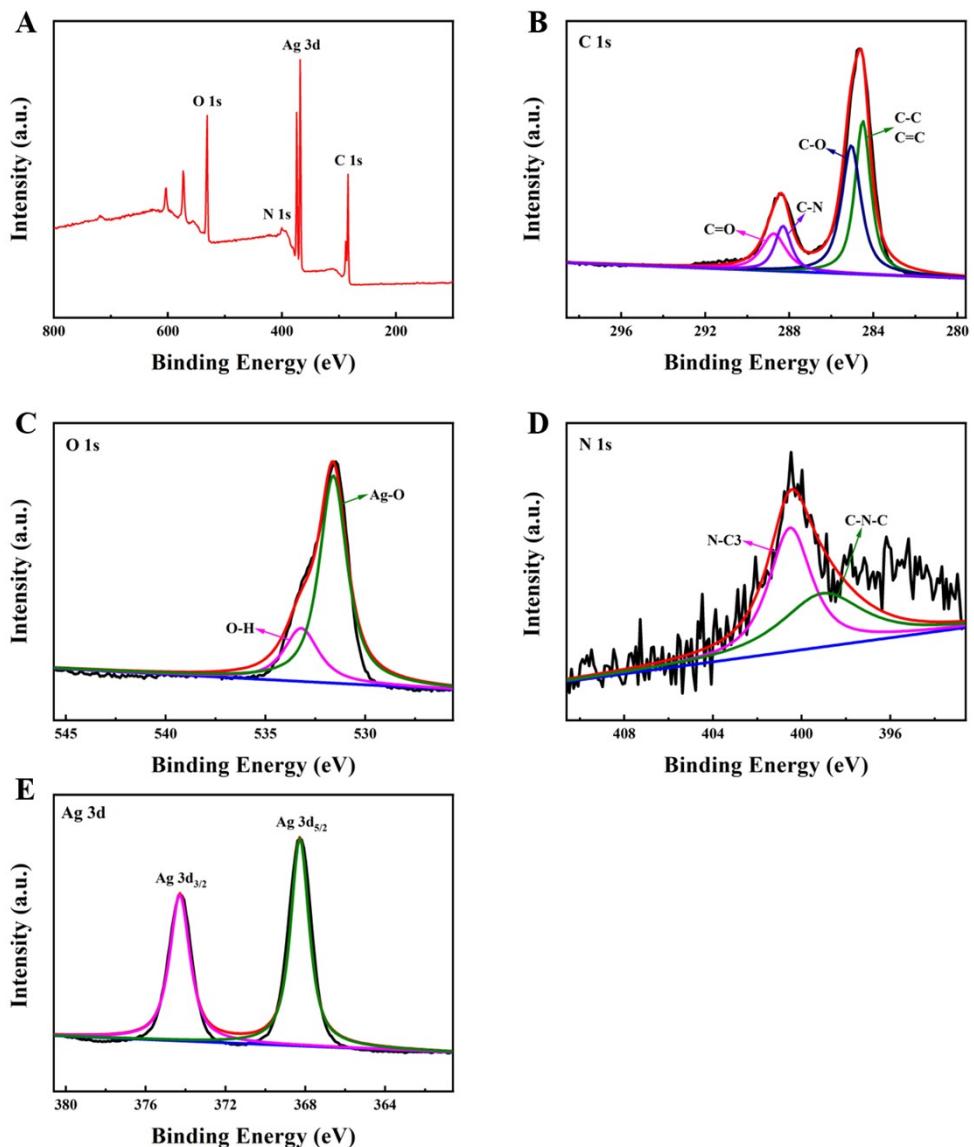


Fig. S2 (A) Full spectrum of AgMOF@N-CDs; (B) C 1s high-resolution spectrum; (C) O 1s high-resolution spectrum; (D) N 1s high-resolution spectrum; (E) Ag 3d high-resolution spectrum

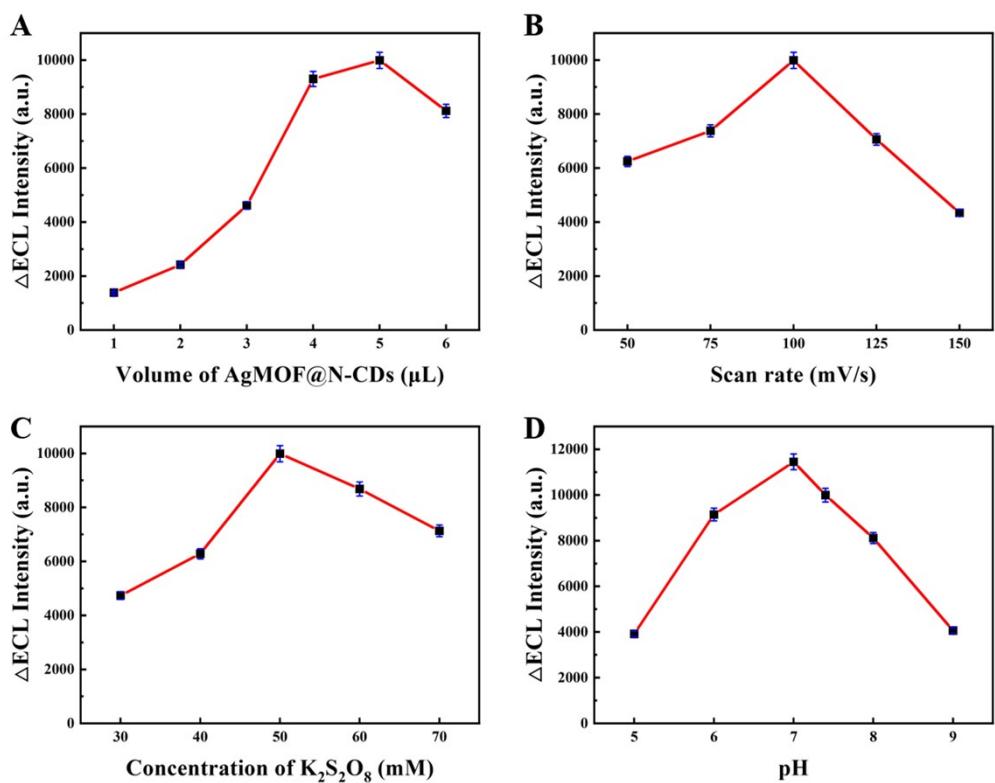


Fig. S3 Effect of modification volume of AgMOF@N-CDs (A); scan rate (B); concentration of $\text{K}_2\text{S}_2\text{O}_8$ (C); and pH value of PBS solution (D) on the performance of AgMOF@N-CDs/GCE sensor

Table S1 Comparison of different methods for determining trilobatin.

Methods	Linear range	LOD	Ref.
UV	3.7×10^{-6} M~ 9.2×10^{-5} M	--	1
HPLC	2.0×10^{-5} M~ 5.1×10^{-3} M	1.15×10^{-7} M	2
DPV	5.0×10^{-6} M~ 1.0×10^{-3} M	2.55×10^{-6} M	3
ECL	1.0×10^{-7} M~ 1.0×10^{-3} M	5.99×10^{-8} M	This work

References

1. H. Q. Dong, Z. X. Ning, L. J. Yu, L. Li, L. C. Lin and J. B. Huang, Preparative separation and identification of the flavonoid phlorhizin from the crude extract of *Lithocarpus polystachyus* Rehd, *Molecules*, 2007, **12**, 552-562.
2. M. Wei, Y. L. Tuo, Y. Zhang, Q. Deng, C. Y. Shi, X. X. Chen and X. Zhang, Evaluation of Two Parts of *Lithocarpus polystachyus* Rehd. from Different Chinese Areas by Multicomponent Content Determination and Pattern Recognition, *J. Anal. Methods Chem.*, 2020, **2020**, 8837526.
3. X. Mei, W. C. Wang, Q. Y. Li, M. X. Wu, L. Y. Bu and Z. D. Chen, A novel electrochemical sensor based on gold nanobipyramids and poly-l-cysteine for the sensitive determination of trilobatin, *Analyst*, 2023, **148**, 2335-2342.