Supporting Information

Ratiometric fluorescence method based on silver nanoclusters for sensitive detection of β-galactosidase activity

Sisi Zhang [a,#], Weiping Liu [b,#], Sikai Wang [a], Lei Wang [a], Lin Lv [a], Yan Zhao [a,c,d *]

[a] School of Science, Xihua University, Chengdu, 610039, China

[b] Department of Clinical Laboratory, Zigong First People's Hospital, Zigong 643000, Sichuan, China

[c] Asymmetric Synthesis and Chiral Technology Key Laboratory of Sichuan Province, Xihua University, Chengdu 610039, China

[d] Sichuan Engineering Research Center for Molecular Targeted Diagnostic & Therapeutic Drugs, Xihua University, Chengdu 610039, China

[#] Sisi Zhang and Weiping Liu contributed equally to this work.

*Corresponding authors:

Dr. Yan Zhao, Email address: zhao518yan@163.com

Table S1. Comparison of methods for the determinations of β-Gal activity

Method	Probe material	Linear range (U/L)	Detection limit (U/L)	Reference
Colorimetry	Au-Pt NCs	15-55	5.2	[S1]
Fluorimetry		2.5-25	1.2	
Fluorometry	Si NPs	2-120	1.36	[S2]
Colorimetry		6-120	1.07	
Fluorimetry	NIR probe (TMG)	0-200	0.86	[S3]
Fluorimetry	BPQDs	0-200	0.76	[S4]
Fluorimetry	β-CD-CQDs	1.9-70	0.6	[S5]
Fluorimetry	Copper nanocluster	3.3-91.8	0.45	[S6]
Fluorimetry	HBT-Gal	0-25000	0.19	[S7]
Fluorimetry	AgNCs	0.2-50	0.031	This work

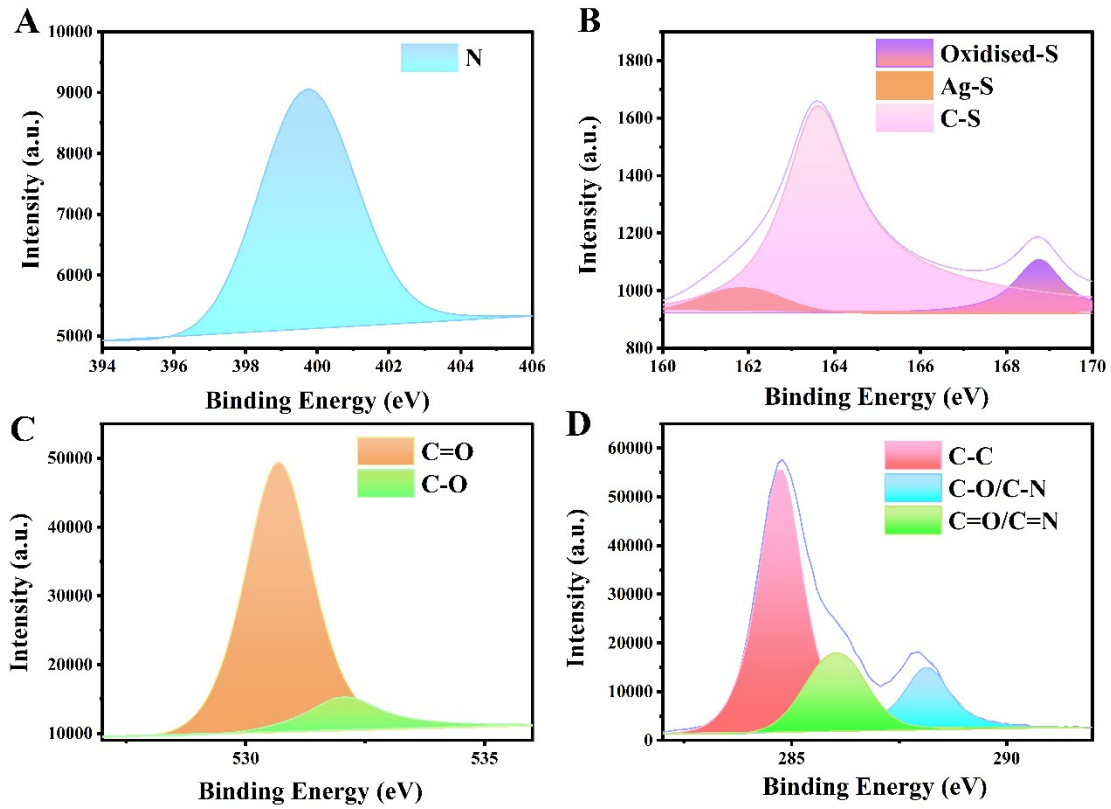

Fig. S1. High-resolution XPS spectra of (A) N 1s, (B) S 2p, (C) O 1s, and (D) C 1s of AgNCs.

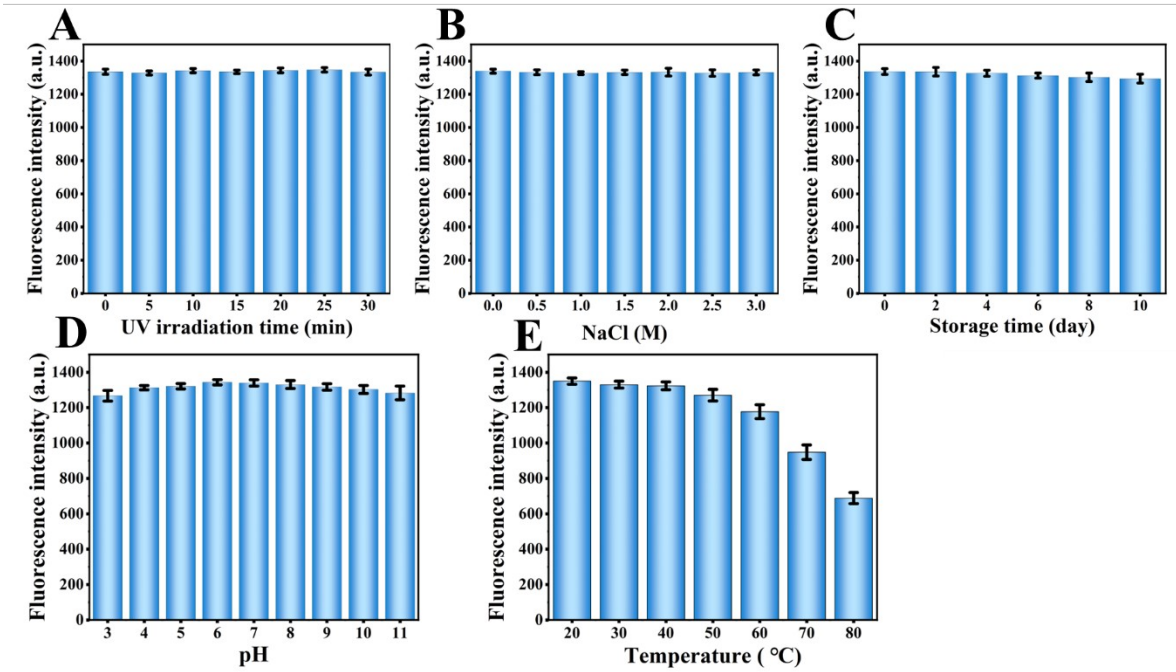

Fig. S2. Influence of (A) UV irradiation time, (B) ionic strength, (C) storage time, (D) pH, and (E) temperature on the fluorescence intensity of AgNCs.

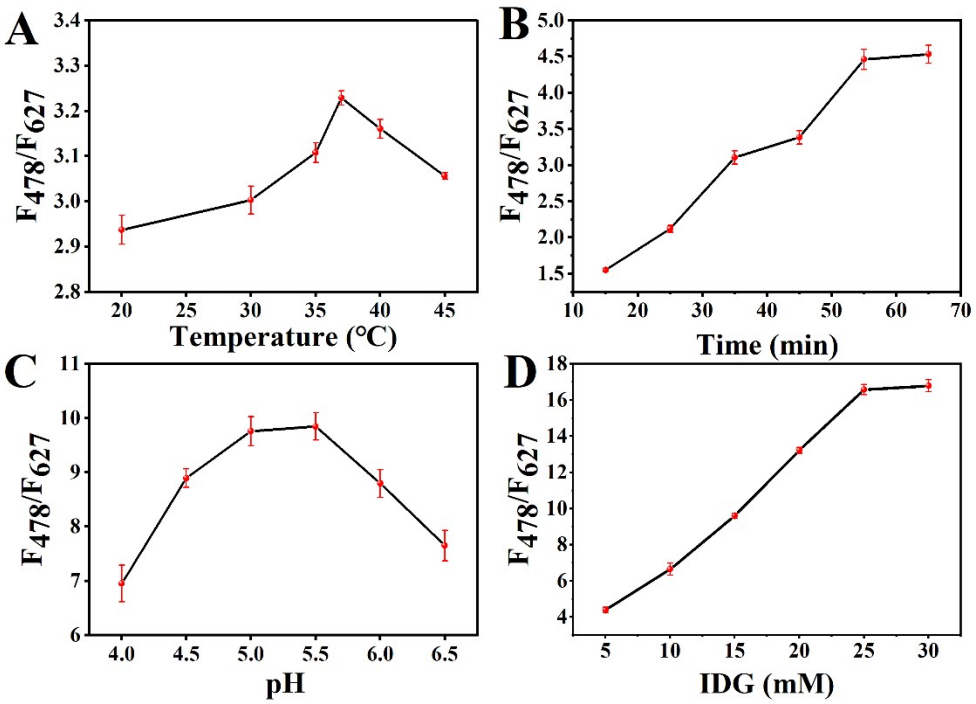

Fig. S3. Influence of (A) reaction temperature, (B) reaction time, (C) reaction pH, and (D) concentration of IDG on the fluorescence intensity ratio of F_{478}/F_{627}.

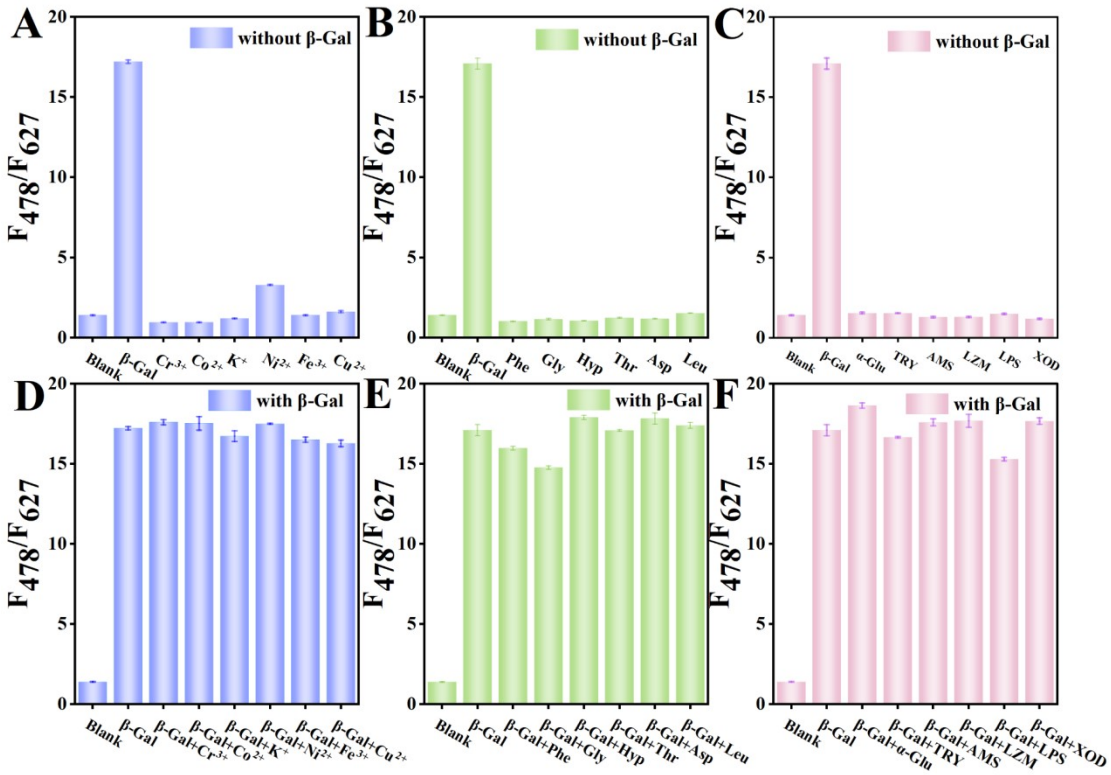

Fig. S4. (A-C) Selectivity of AgNCs/IDG system and (D-F) anti-interference of AgNCs/β-Gal/IDG system for β-Gal activity analysis, respectively. The concentrations of metal ions, amino acids, and biomolecules were 0.01 M, 10 mg/mL, and 10 U/mL, respectively.

References

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