

Electronic Supplementary Material

**An ATMND/SGI based three-way junction ratiometric fluorescence
probe for rapid and sensitive detection of bleomycin**

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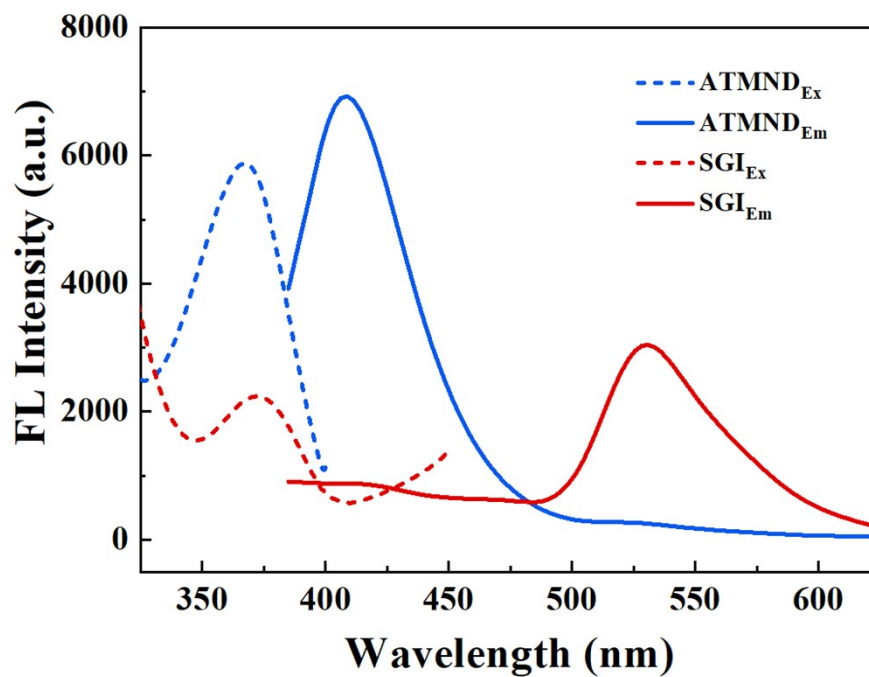


Fig. S1 The fluorescence excitation and emission spectra of ATMND and SGI. Concentrations:

[ATMND] = 125 nM, [SGI] = 0.35 ×, [D6] = 1 μM.

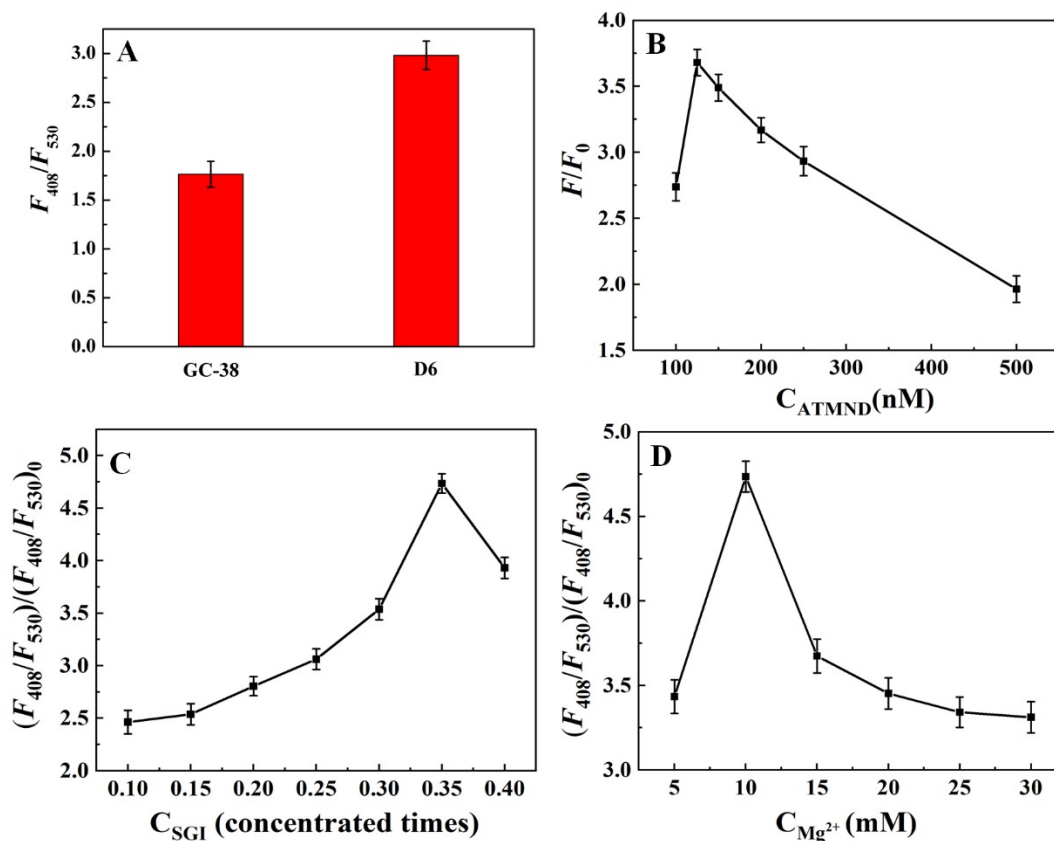


Fig. S2 (A) Comparison of ratiometric fluorescence detection performance towards BLM between GC-38 and D6 sequence. (B) The fluorescence quenching ability of D6 sequence on ATMND with different concentrations, where F_0 and F are the fluorescence intensity of ATMND with and without D6 sequence, respectively. The effect of SGI (C) and (D) Mg^{2+} concentrations on the ratiometric fluorescence detection performance of D6-ATMND/SGI system towards BLM, where (F_{408}/F_{530}) and $(F_{408}/F_{530})_0$ are the fluorescence ratio in the presence and absence of BLM. Concentrations: $[\text{ATMND}] = 125 \text{ nM}$, $[\text{SGI}] = 0.35 \times$, $[\text{D6}] = 1 \mu\text{M}$, $[\text{BLM-Fe(II)}] = 800 \text{ nM}$.

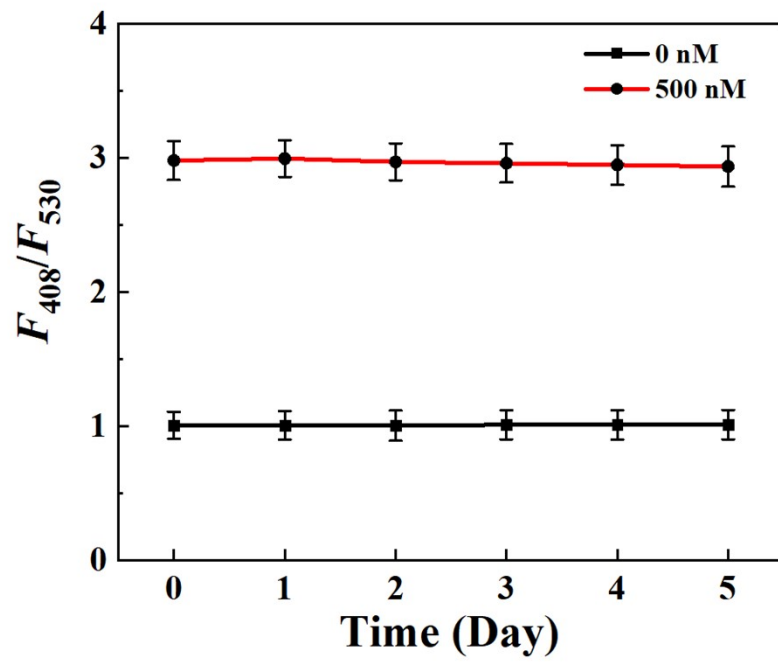


Fig. S3. The stability investigation of D6-ATMND/SGI within 5 days for the detection of BLM.

Table S1. Comparison of different fluorescent probes for the detection of BLM.

Probe	Signal	Linear range (nM)	Detection limit (nM)	Total time	Ref.
FAM-labeled ssDNA	Turn-on	0.5-1000	0.3	23 min	1
FAM-labeled ssDNA	Turn-on	5.0-1000	0.2	30 min	2
GQDs	Turn-on	0.5-1000	0.2	26 h	3
G4-NMM	Turn-on	2-220	0.34	200 min	4
G4-NMM/Cu ²⁺	Turn-on	0.1-75	0.1	65 min	5
N-GQDs/ssDNA	Turn-on	0.34-1300	0.34	15 min	6
DNA-CuNCs	Turn-off	500-1600	270	5 min	7
DNA-AgNCs	Ratiometric	0.2-1000	0.067	280 min	8
GQDs@AuNCs	Ratiometric	0.8-1800	0.27	42 h	9
Cu ²⁺ -AA-OPD system	Ratiometric	0.1-300	0.05	135 min	10
D6-ATMND/SGI	Ratiometric	0.5-1000	0.2	30 min	this work

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