Supporting Information for

Bispyrene/AgNPs-based ratiometric nanoprobe for supersensitive fluorescent and colorimetric sensing of etimicin †

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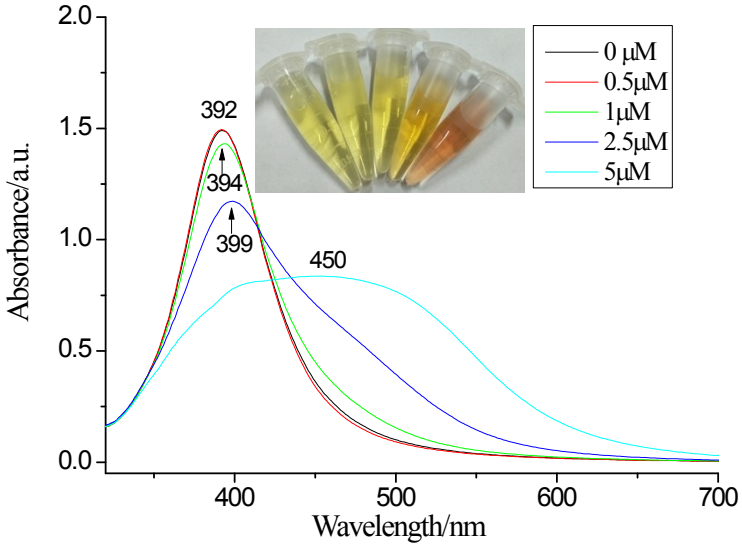

Fig. S1 UV-vis spectra of AgNPs in the presence of various concentrations of **probe 1**, [AgNPs] = 1.2×10^{-4} M, pH = 8.0. The inserts are the corresponding photographs of AgNPs in the presence of various concentrations of **probe 1** (from left to right: 0 M, 5.0×10^{-7} M, 1.0×10^{-6} M, 2.5×10^{-6} M, 5.0×10^{-6} M).

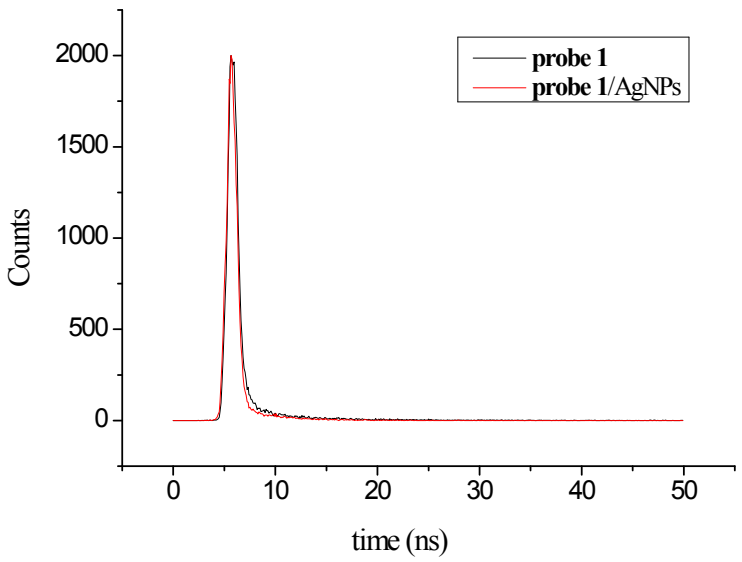

Fig. S2 Kinetic decay curve of **probe 1** in the absence and presence of AgNPs. [**probe 1**] = 2.0×10^{-5} M, [AgNPs] = 1.2×10^{-4} M.

Table S1

Excited state lifetime collected from **probe 1** and **probe 1**/AgNPs.

	Lifetime (ns)		
	τ_1	τ_2	τ_{av}
Probe 1	0.4003 (59.38%)	3.5215 (40.62%)	1.6681
Probe 1/AgNPs	0.3576 (70.87%)	3.8769 (29.13%)	1.3828

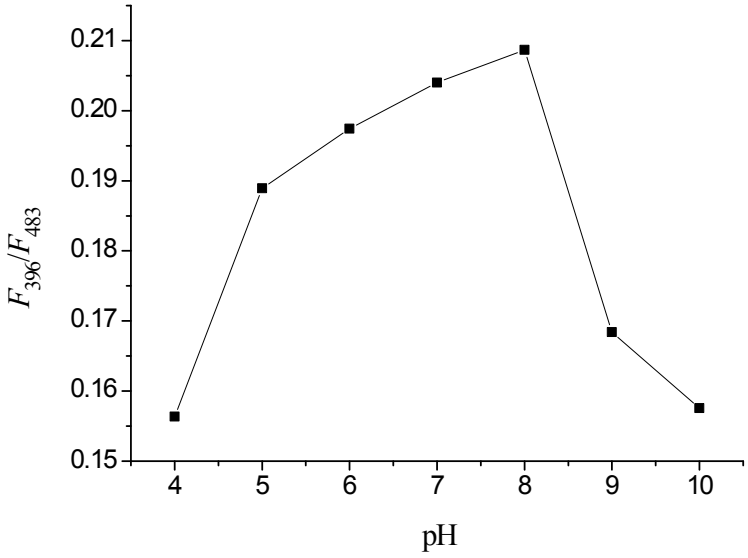

Fig. S3 Plot of the emission ratio variation of **probe 1**/AgNPs with time. [AgNPs] = 7.2×10^{-5} M, [**probe 1**] = 5.0×10^{-7} M, [etimicin] = 5.0×10^{-7} M, the excitation wavelength was 345 nm.

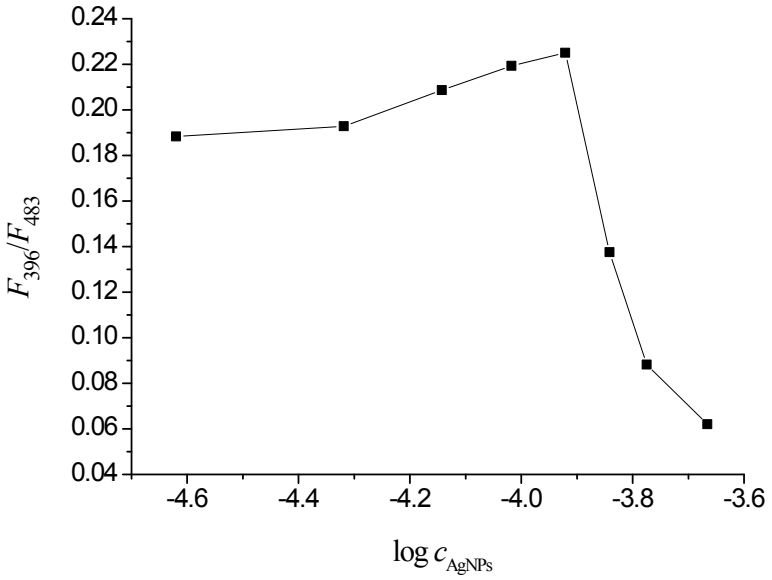

Fig. S4 Effect of AgNPs concentration on the detection of etimicin in H_3Cit-Na_2HPO_4 buffer solution (pH = 8.0). [**probe 1**] = 5.0×10^{-7} M, [etimicin] = 5.0×10^{-7} M, the excitation wavelength was 345 nm.

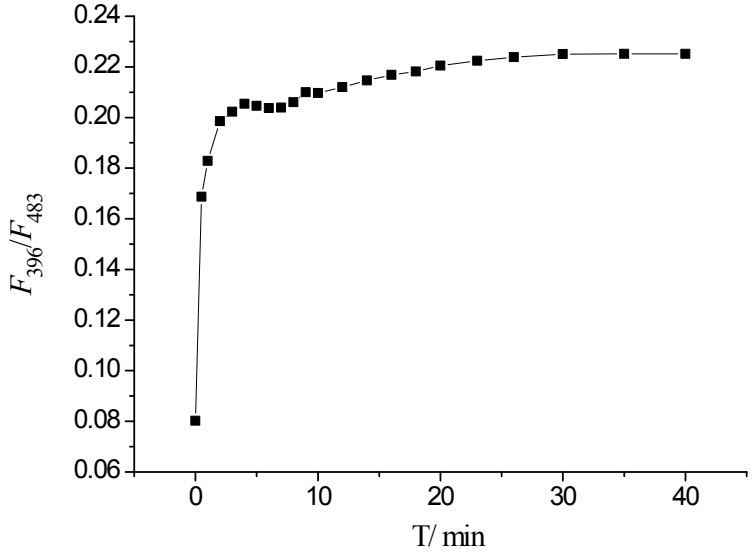

Fig. S5 Plot of the emission ratio variation of **probe 1**/AgNPs with time. [AgNPs] = 1.2×10^{-4} M, [**probe 1**] = 5.0×10^{-7} M, [etimicin] = 5.0×10^{-7} M, pH = 8.0, the excitation wavelength was 345 nm.

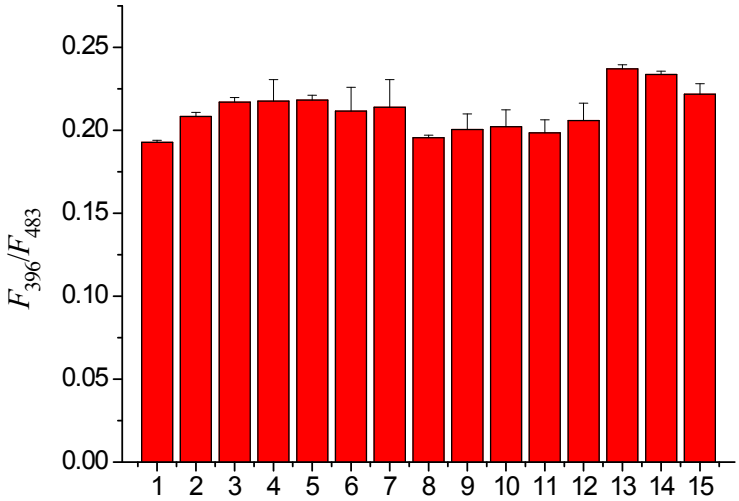

Fig. S6 Ratiometric fluorescence response of the **probe 1**/AgNPs system toward etimicin in the presence of various interference analytes at pH 8.0 (1. glucose 2. lactose 3. Thr 4. Trp 5. Ser 6. Lys 7. Cys 8. Al^{3+} 9. K^{+} 10. NH_4^{+} 11. SO_4^{2-} 12. PO_4^{3-} 13. melamine 14. urea 15.etimicin). [**probe 1**] = 5.0×10^{-7} M, [AgNPs] = 1.2×10^{-4} M. The concentration of etimicin is 5.0×10^{-7} M, the others are all 5.0×10^{-6} M. λ_{ex}=345 nm.

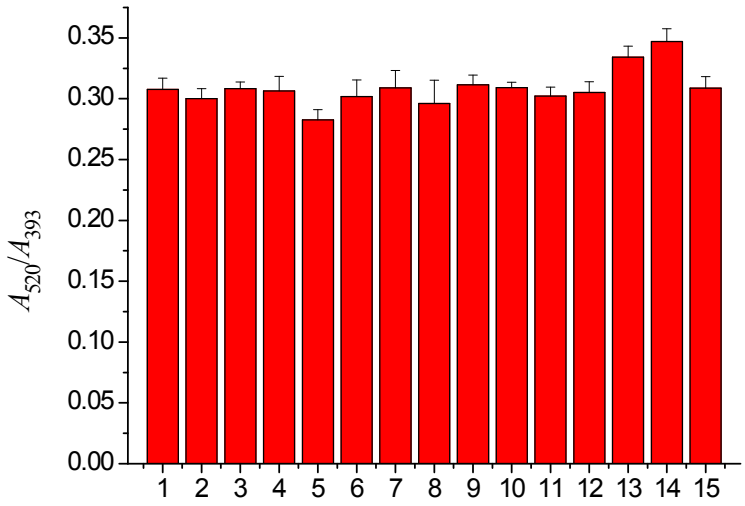

Fig. S7 The absorbance ratio of the **probe 1**/AgNPs system toward etimicin in the presence of various interference analytes at pH 8.0 (1. glucose 2. lactose 3. Thr 4. Trp 5. Ser 6. Lys 7. Cys 8. Al^{3+} 9. K^{+} 10. NH_4^{+} 11. SO_4^{2-} 12. PO_4^{3-} 13. melamine 14. urea 15. etimicin). [**probe 1**] = 5.0×10^{-7} M, [AgNPs] = 1.2×10^{-4} M. The concentration of etimicin is 1.0×10^{-7} M, the others are all 1.0×10^{-6} M.