

A simple salicylaldehyde-based fluorescent “turn on” probe for selective detection of Zn²⁺ in water solution and its application in living cells imaging

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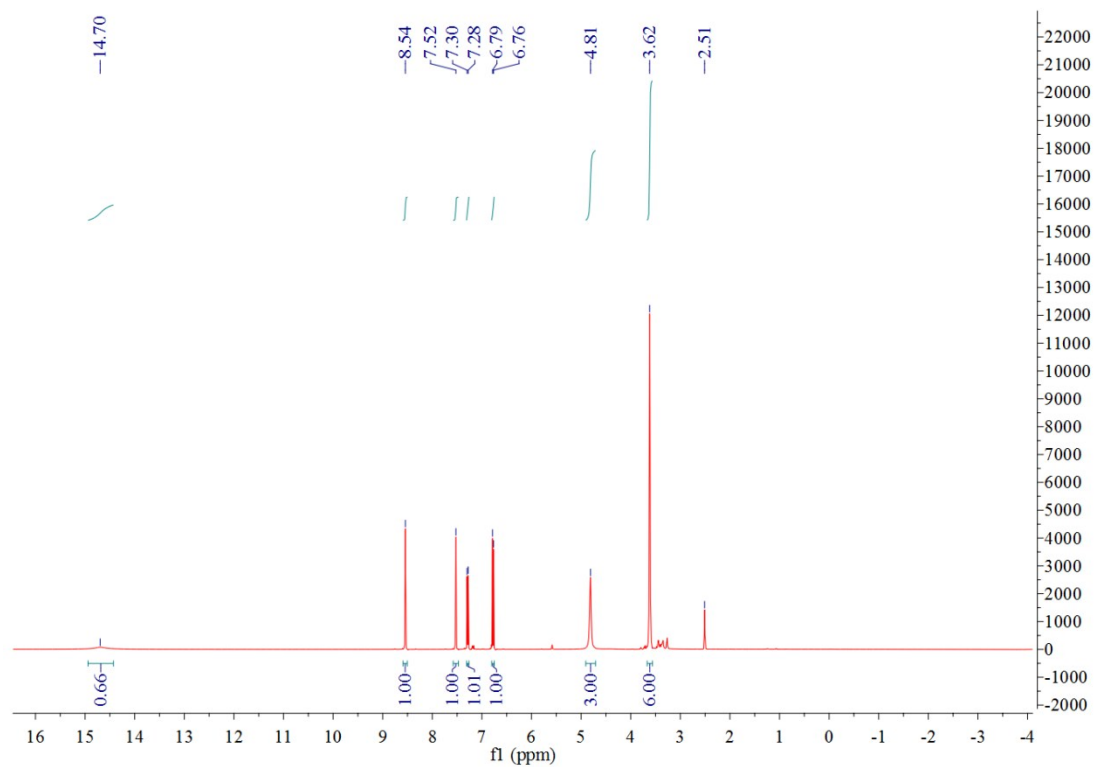


Fig.S1 ¹H NMR of probe 1 in *d*₆-DMSO.

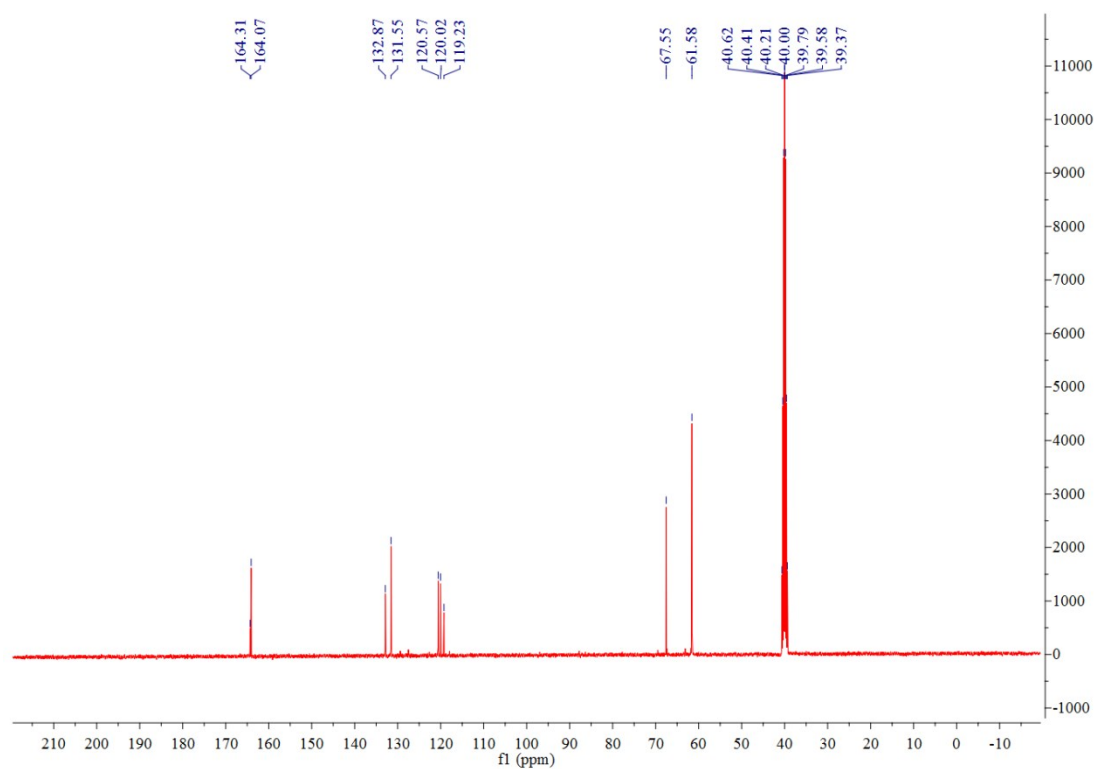


Fig.S2 ¹³C NMR of probe 1 in *d*₆-DMSO.

Table S1 Comparative study of some reported Zn²⁺ probe based on small organic molecule.

Probe no.	[probe](μM)	Fig. S3. EI-MS of probe 1 in CH ₃ OH.	Testing solvent	Detection limit (M)	Interference ions	References
1	10		CH ₃ OH/H ₂ O (1:9, v/v)	2.0×10 ⁻⁸	Ni ²⁺ , Cu ²⁺	32
2	20.0		CH ₃ OH	2.6×10 ⁻⁷	Fe ³⁺ , Cu ²⁺	33
3	5.0		CH ₃ CN/H ₂ O (1:9, v/v)	1.98×10 ⁻⁷	Co ²⁺ , Cu ²⁺	34
4	10.0		CH ₃ CN/H ₂ O (1:1, v/v)	1.33×10 ⁻⁷	Cu ²⁺	35
5	10.0		CH ₃ OH/H ₂ O (4:1 v/v)	5.8×10 ⁻⁶	None	36
6	10.0		DMSO/H ₂ O (1:1, v/v)	3.54×10 ⁻⁶	Cu ²⁺ , Ni ²⁺ , Co ²⁺	37
7	5.0		CH ₃ CN/H ₂ O (9:1, v/v)	4.88×10 ⁻⁷	Fe ³⁺ , Al ³⁺ , Cr ³⁺	38

8	20.0	CH ₃ CN	2.5×10^{-6}	–	39
9	10.0	CH ₃ CN	–	None	40
10	10.0	DMSO/H ₂ O (1:1, v/v)	8.5×10^{-7}	–	41
11	10.0	H ₂ O	5.9×10^{-9}	None	This work

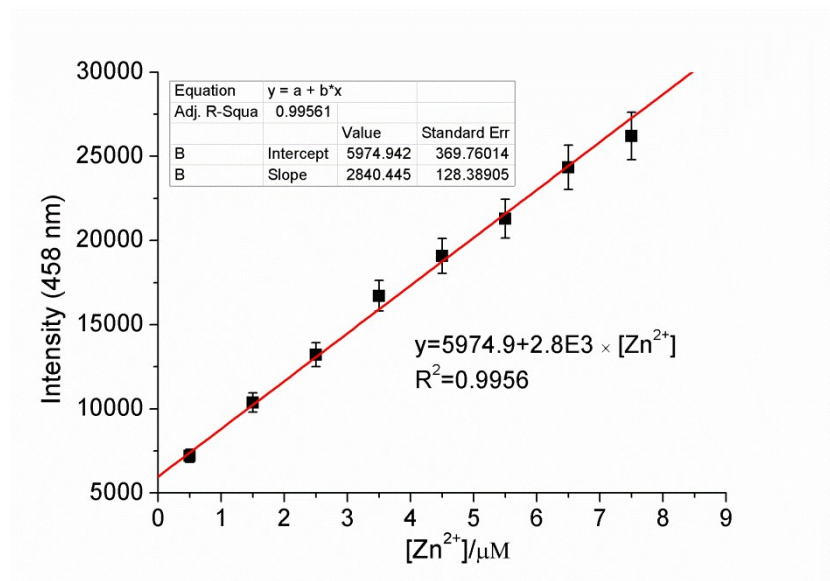


Fig. S4 Calibration curve obtained for fluorescence intensity (at 458 nm) of probe 1 versus the concentration changes of Zn²⁺ ions (0–7.5 μM).

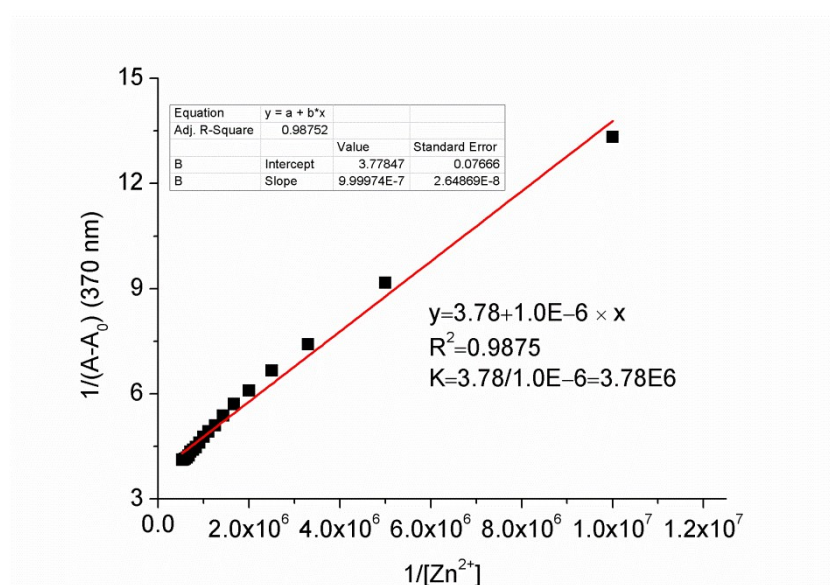


Fig. S5 Benesi–Hildebrand plot of probe 1 (1 μM) and Zn²⁺ (0 to 2.1 equiv.) aqueous

solution at pH 7.2.

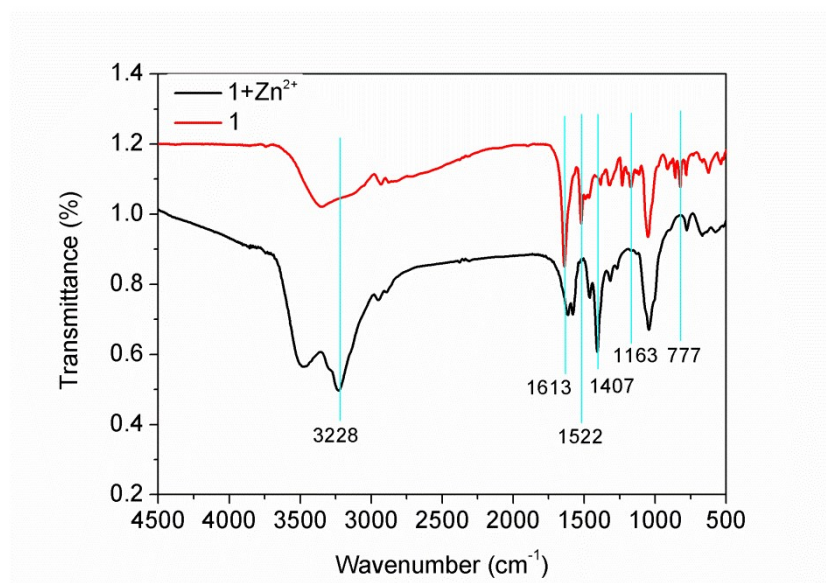


Fig. S6 Comparison of FT-IR spectra of probe 1 and 1-Zn²⁺ complex in KBr pellets.

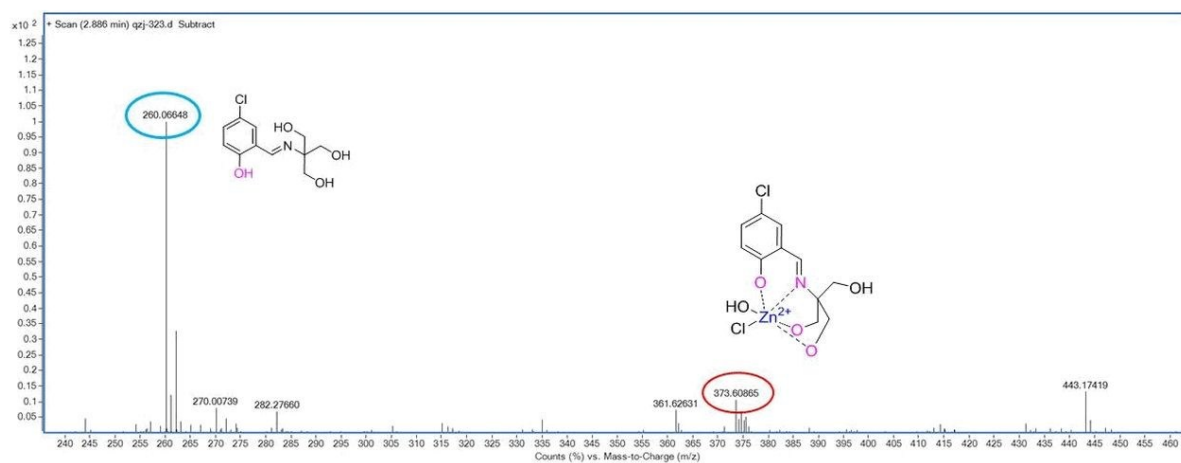


Fig. S7. EI-MS of probe 1 with ZnCl₂ in CH₃OH.