Electronic Supplementary Material (ESI) for Analytical Methods.

A simple camphor based AIE fluorescent probe for highly specific and sensitive detection of hydrazine and its application in living cells

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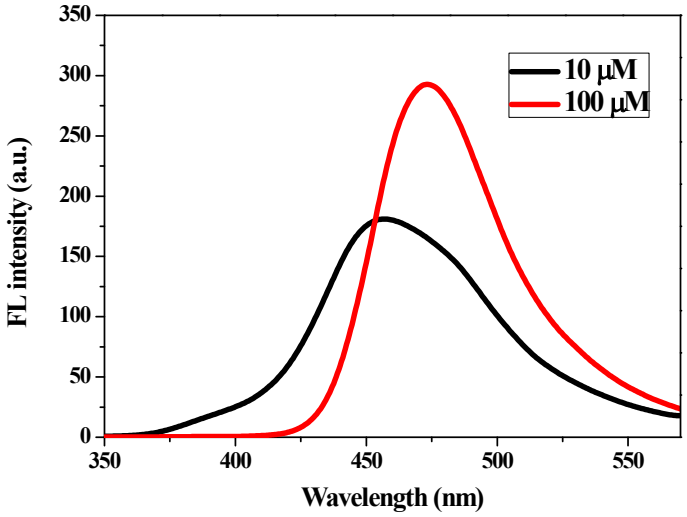


Fig. S1. Fluorescence spectra of probe **CDA** in different concentrations with f_w = 90%. λ_{ex} = 300 nm.

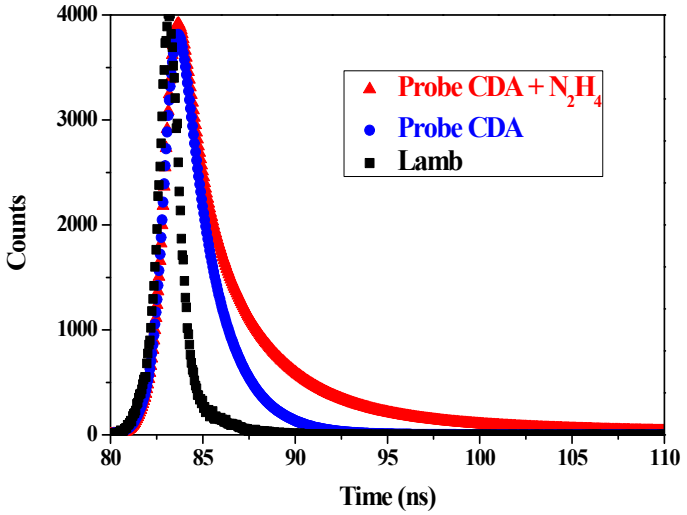


Fig. S2. Fluorescence decay curves of probe **CDA** in the absence and presence of N_2H_4.

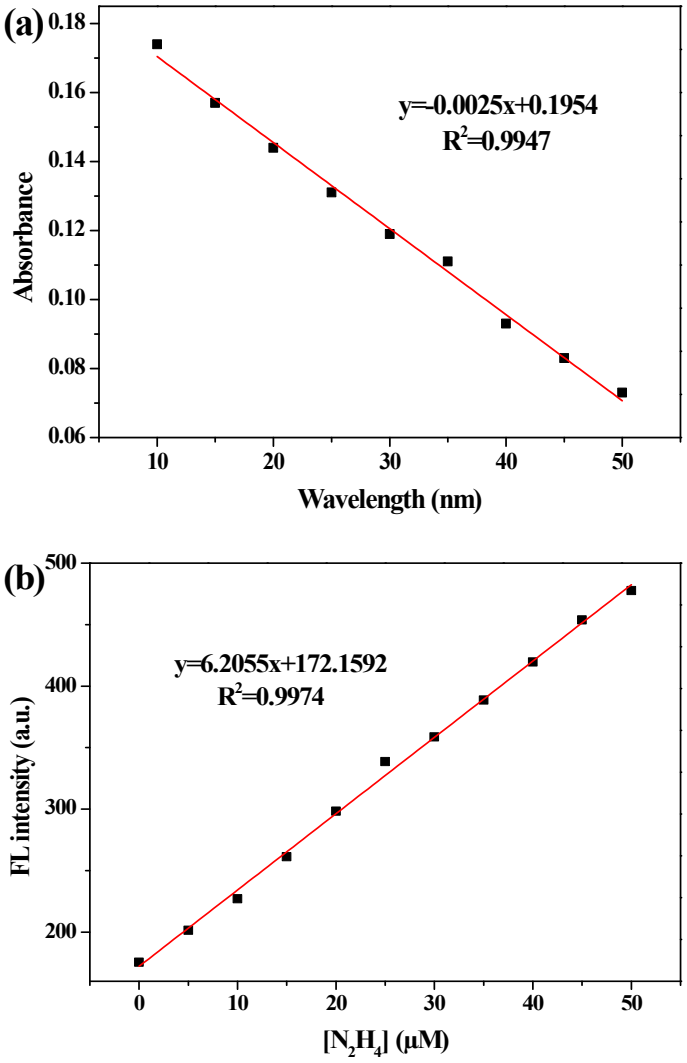


Fig. S3. The linear relationships of the absorption intensity (a) and emission intensity (b) of probe **CDA** against the concentration of N_2H_4. λ_{ex} = 300 nm.

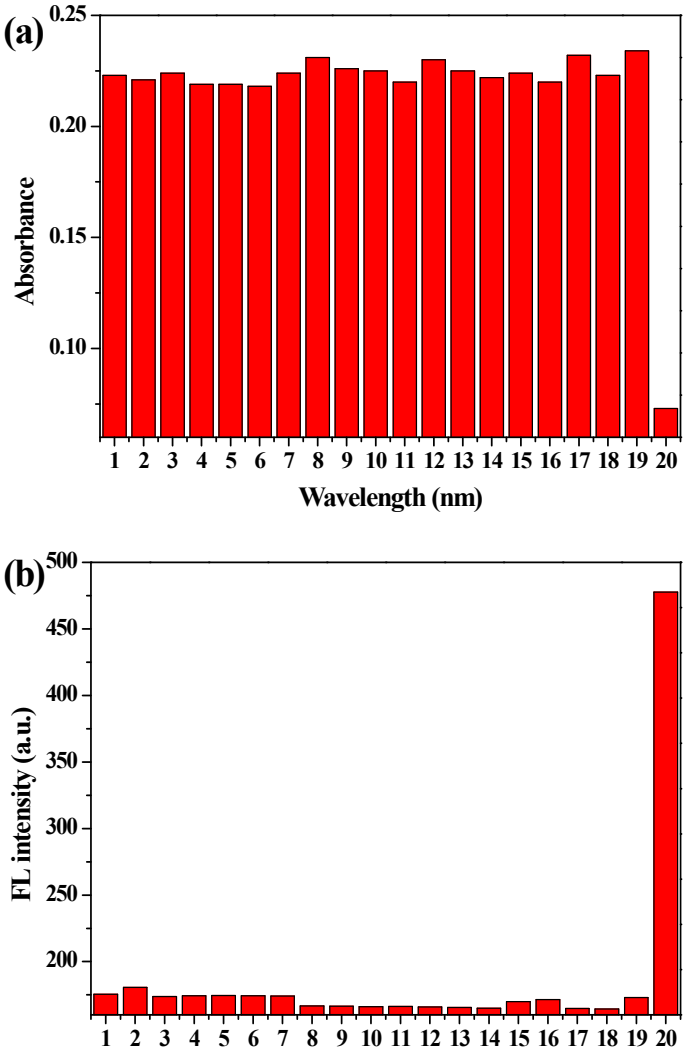


Fig. S4. The absorption intensity (a) and emission intensity (b) of probe **CDA** in the presence of N_2H_4 (40 μM) and other analytes (100 μM) in PBS buffer solution (pH = 7.4, 10 mM, containing 10% EtOH). (1) Blank, (2) Alanine, (3) Asparagine, (4) Lysine, (5) Glutathione, (6) Cysteine, (7) Tyrosine, (8) Valine, (9) Urea, (10) Acethydrazide, (11) Hydroxylamine, (12) Thiosemicarbazide, (13) o-Phenylenediamine, (14) Al^{3+}, (15) Zn^{2+}, (16) Fe^{3+}, (17) Hg^{2+}, (18) NO_3^{2-}, (19) SO_3^{2-}, (20) N_2H_4. λ_{ex} = 300 nm.

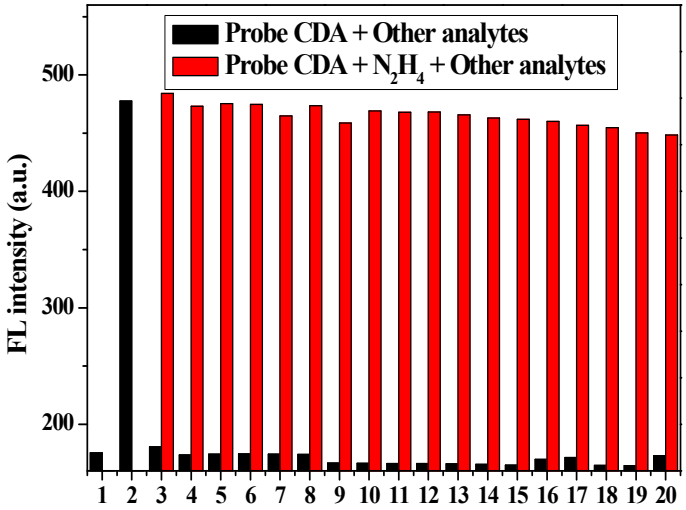


Fig. S5. The emission intensity of probe **CDA** toward N_2H_4 (40 μM) in the absence and presence of other competitive analytes (100 μM) in PBS buffer solution (pH = 7.4, 10 mM, containing 10% EtOH). (1) Blank, (2) N_2H_4, (3) Alanine, (4) Asparagine, (5) Lysine, (6) Glutathione, (7) Cysteine, (8) Tyrosine, (9) Valine, (10) Urea, (11) Acethydrazide, (12) Hydroxylamine, (13) Thiosemicarbazide, (14) o-Phenylenediamine, (15) Al^{3+}, (16) Zn^{2+}, (17) Fe^{3+}, (18) Hg^{2+}, (19) NO_3^{2-}, (20) SO_3^{2-}. λ_{ex} = 300 nm.

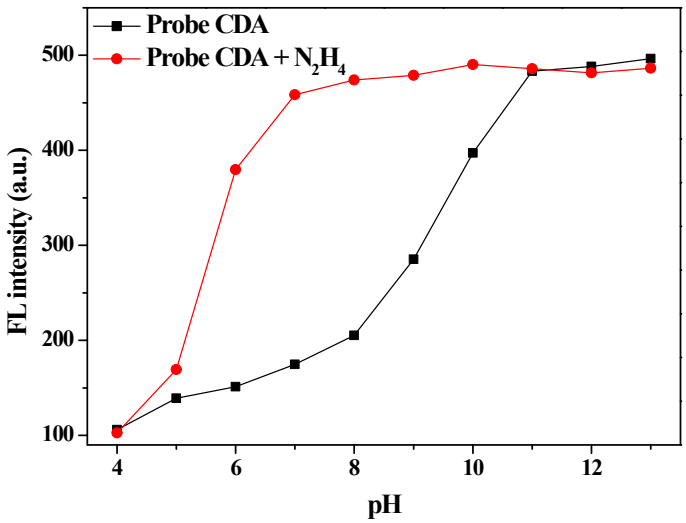


Fig. S6. Effect of pH on the fluorescence intensity of probe **CDA** in the absence and presence of N_2H_4 (40 μM). λ_{ex} = 300 nm.

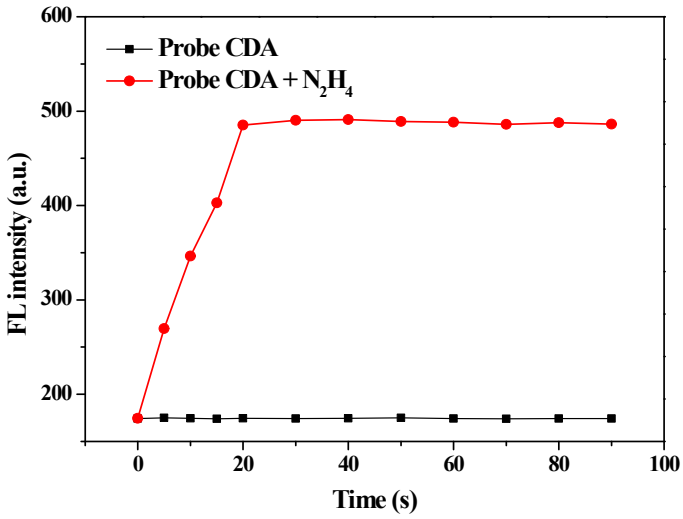
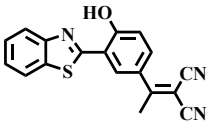
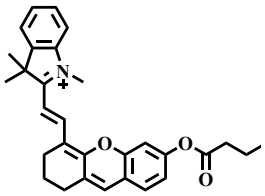
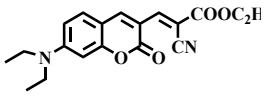
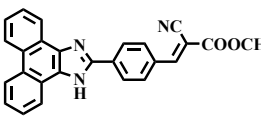
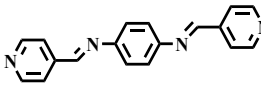
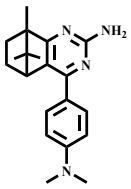


Fig. S7. Time-dependent fluorescence intensity changes of probe **CDA** upon addition of N_2H_4 (40 μM) in PBS buffer solution (pH = 7.4, 10 mM, containing 10% EtOH). λ_{ex} = 300 nm.

Table S1. Comparison with other reported N_2H_4 fluorescence probes.

Probe	Response time	LOD	Detection medium	Reference
	55 min	9.3 ppb	DMF/H_2O (v/v 8/2)	[62]
	30 min	5.09 ppb	DMF/PBS (v/v 1/19)	[63]
	12 min	5.2 ppb	DMF/PBS (v/v 3/7)	[64]
	20 min	51.2 ppb	DMSO/H_2O (v/v 6/4)	[65]

	2 min	3.2 ppb	MeOH/H_2O (v/v 4/6)	[65]
	20 s	2.26 ppb	EtOH/PBS (v/v 1/9)	This work

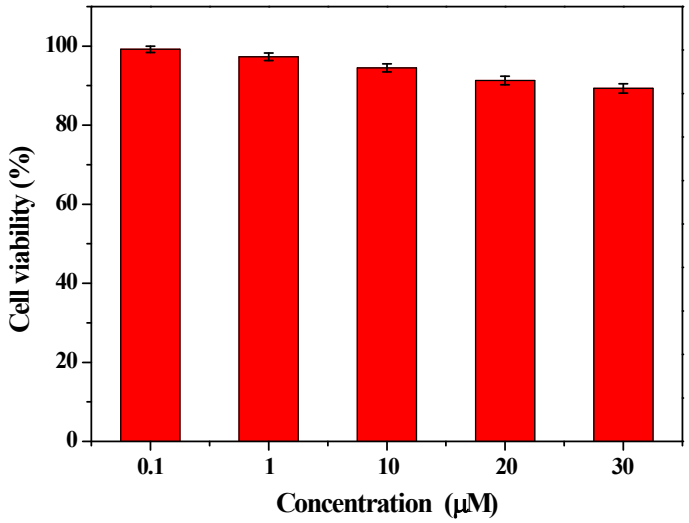


Fig. S8. MTT assay of Hela cells was incubated with 0.1, 1, 10, 20 and 30 μM probe **CDA** for 48 h.

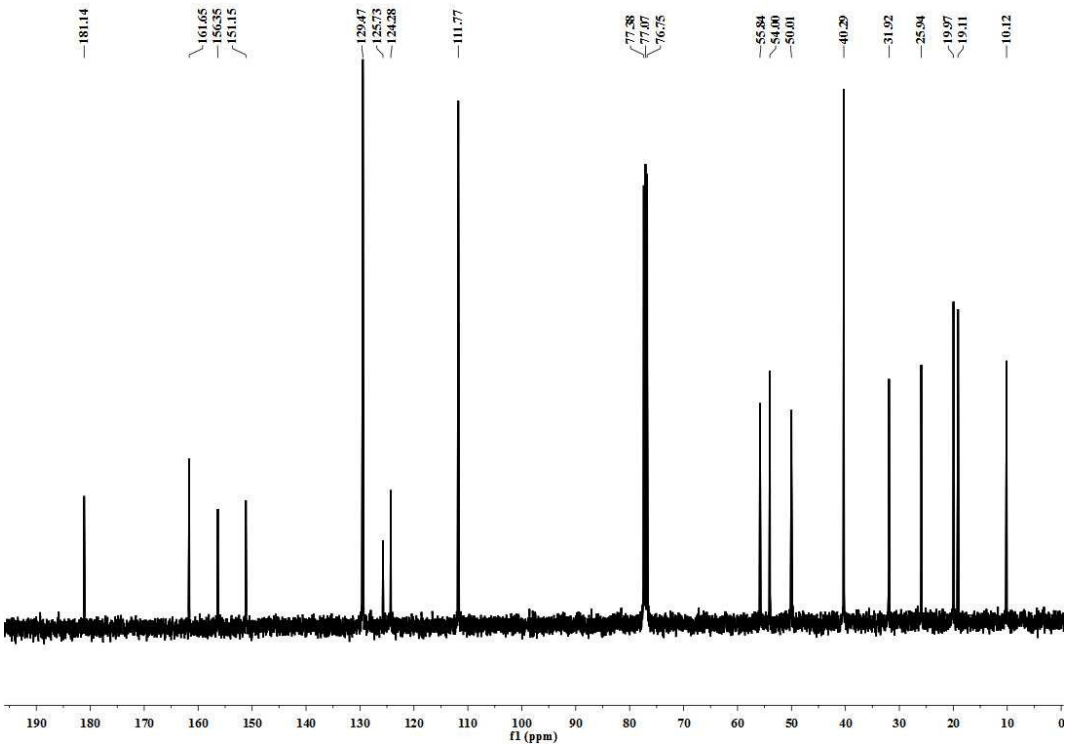


Fig. S9. ^{13}C NMR spectra of probe **CDA** in$CDCl_3$.

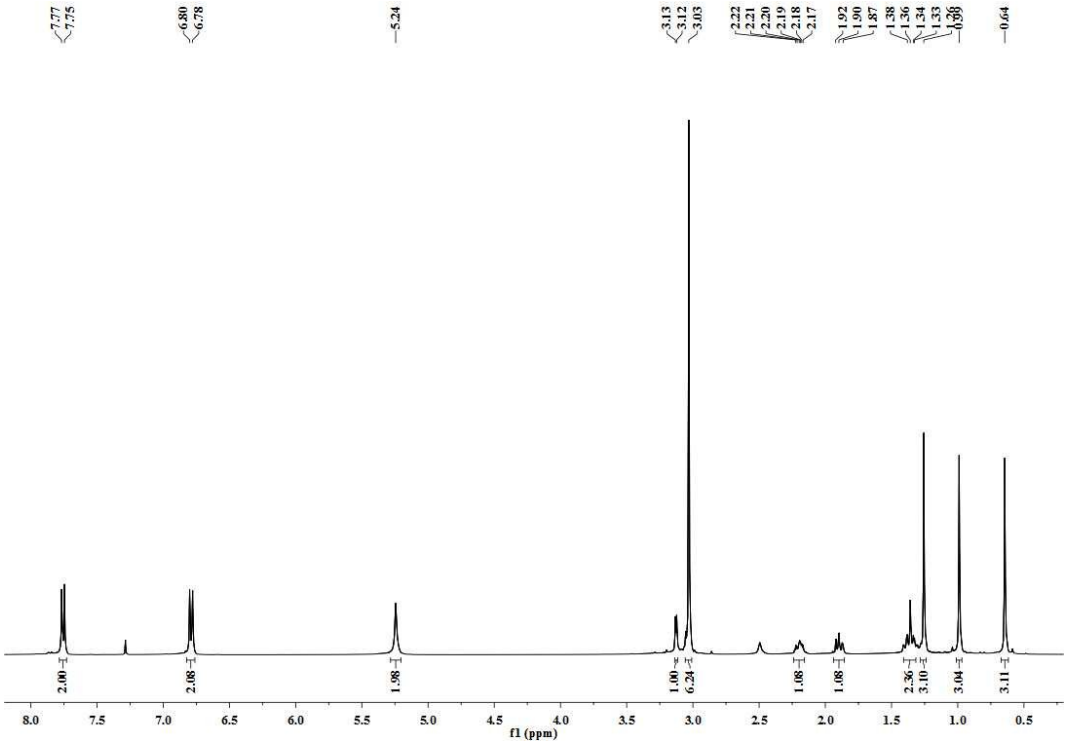


Fig. S10. ^{1}H NMR spectra of probe **CDA** in$CDCl_3$.

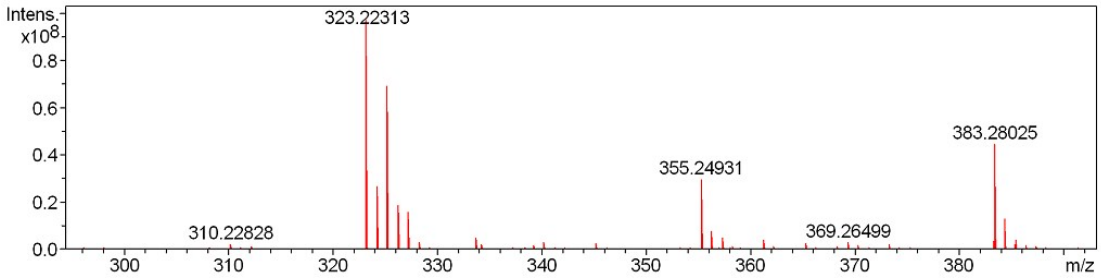


Fig. S11. HRMS of probe **CDA**.