

A novel carbazole-based highly sensitive and selective turn-off fluorescent probe for Cu²⁺ in aqueous DMSO

Figure caption:

Fig. S1 The ¹H NMR spectra of **PCB**

Fig. S2 (a) The full ¹³C NMR spectra of **PCB**. (b) The specific region of ¹³C NMR spectra of **PCB**.

Fig. S3 The LC-MS spectra of **PCB**

Fig. S4 The ¹H NMR spectra of **PCBW**

Fig. S5 (a) The full ¹³C NMR spectra of **PCBW**. (b) The specific region of ¹³C NMR spectra of **PCBW**.

Fig. S6 The HRMS spectra of **PCBW**

Fig. S7 The HRMS spectra of **PCBW-Cu²⁺**

Fig. S8 The *K_a* between **PCBW** probe and Cu²⁺ by using bindfit software to calculate

Fig. S9 The UV-vis spectra of **PCBW** (1 × 10⁻⁵ mol·L⁻¹) in DMSO-H₂O mixture solution with different water content

Fig. S10 Digital photograph of different concentrations of Cu²⁺ (1 μM, 2 μM, 2.5 μM, 3.3 μM, 5 μM, 10 μM) in **PCBW** probe solution under long wavelength UV lamp light

Fig. S11 Particle size of **PCBW** at different moisture contents detected by DLS

Fig. S1

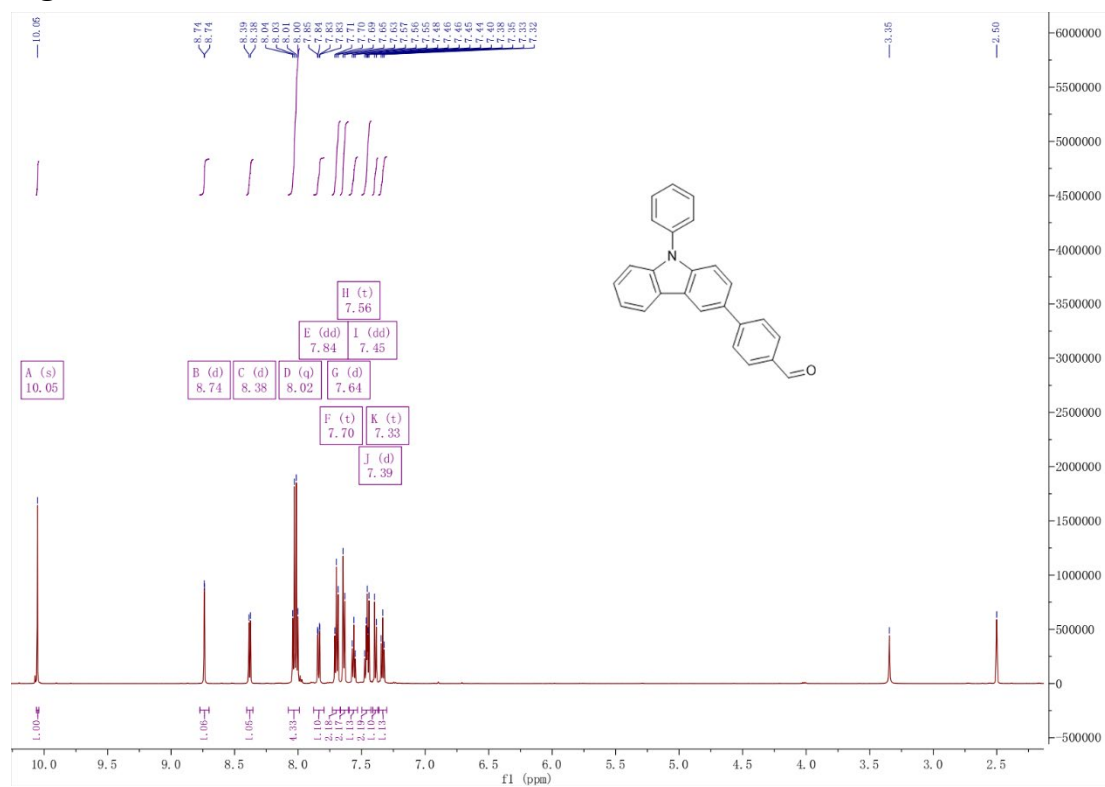


Fig. S2

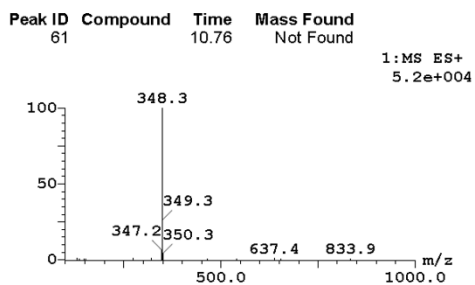
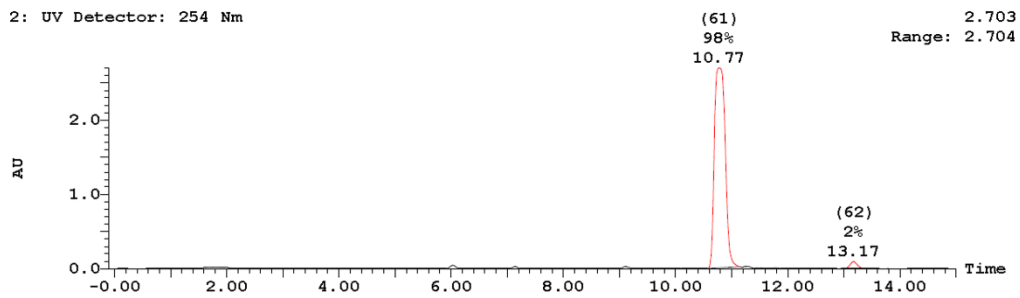


Fig. S4

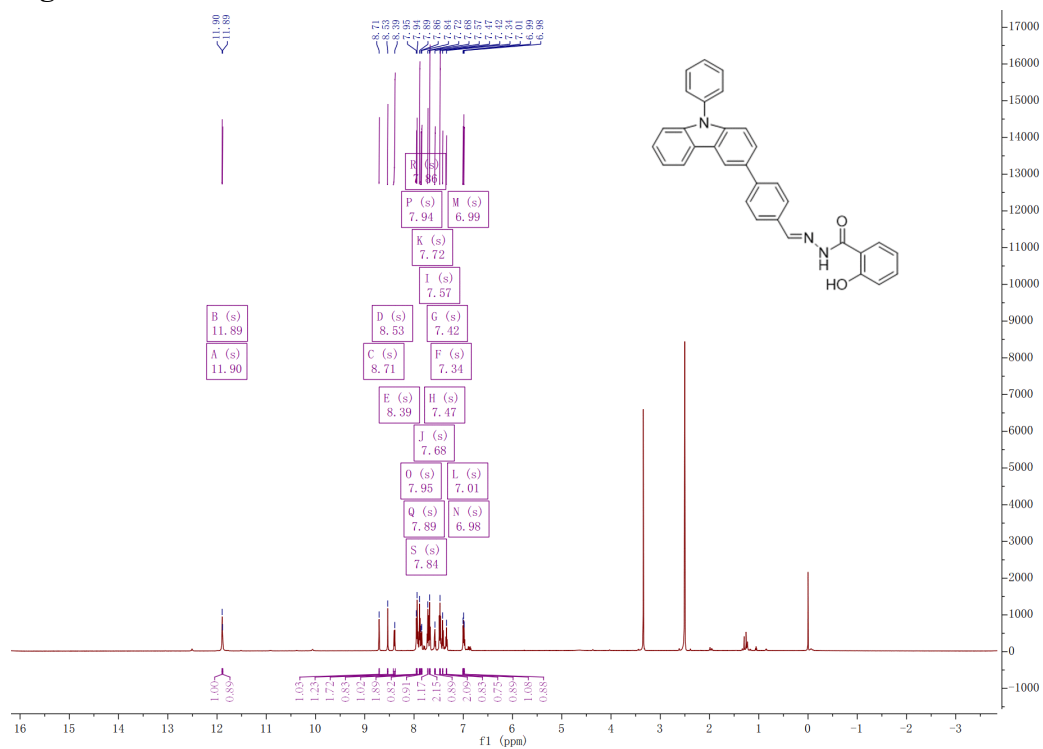
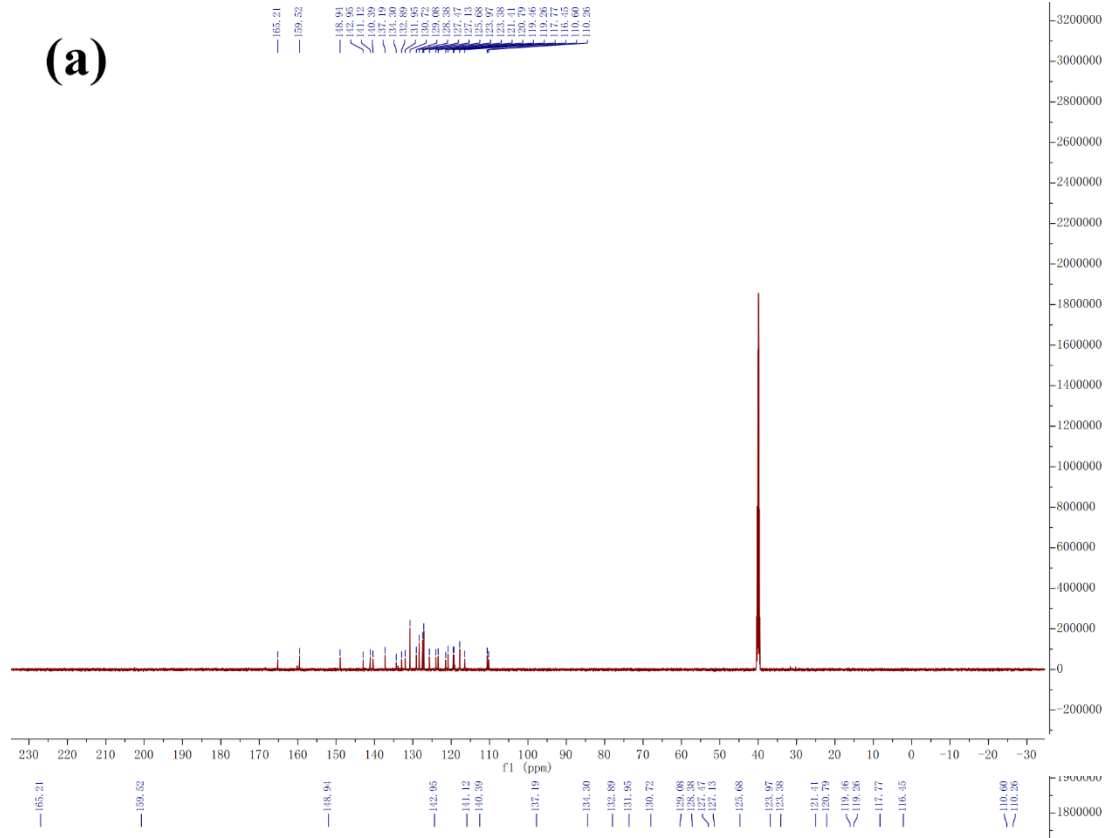


Fig. S5

(a)



(b)

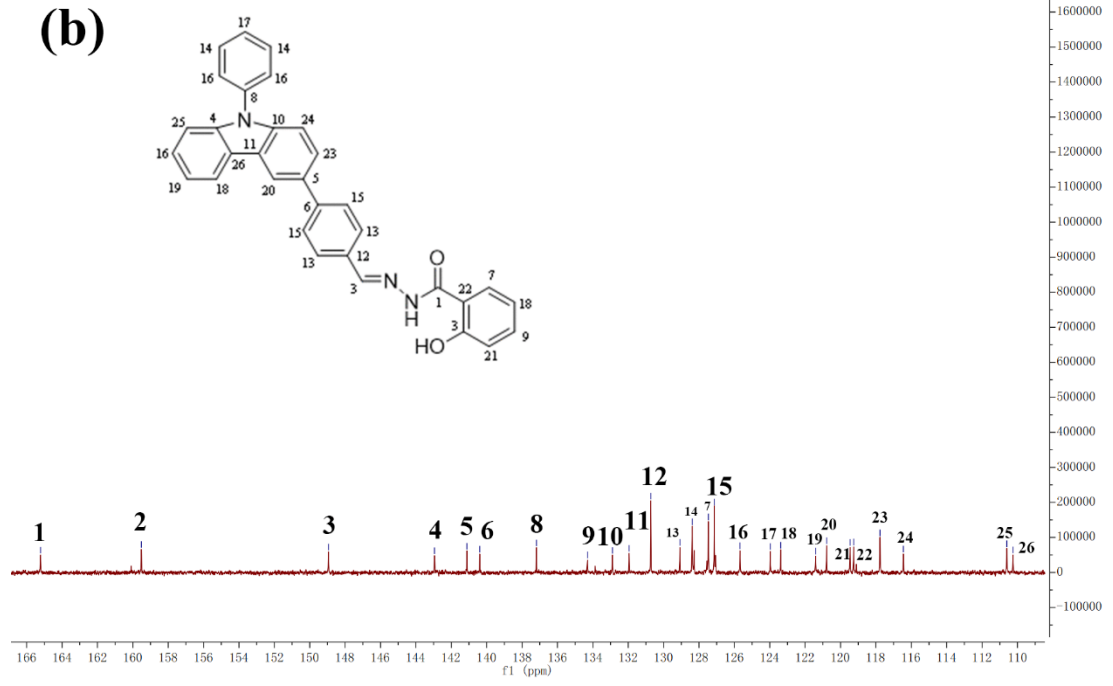
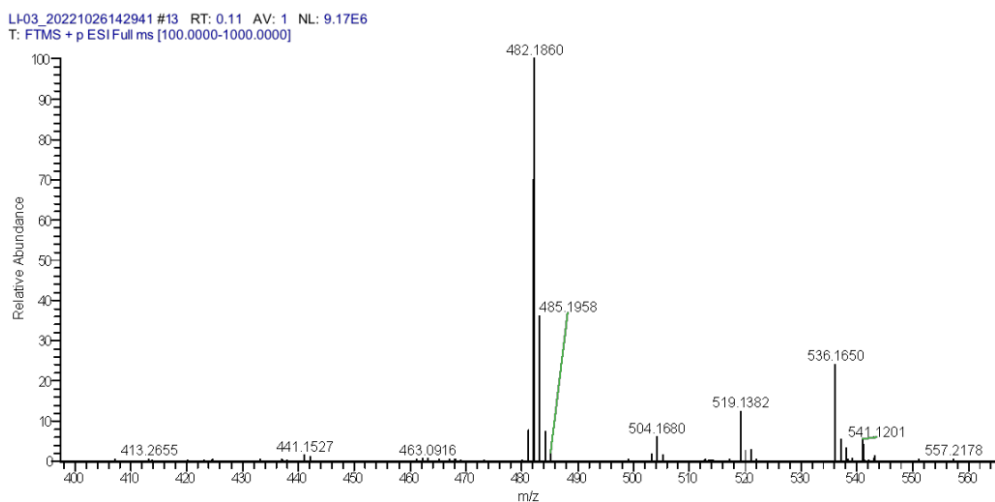


Fig. S6



Elemental composition search on mass 482.1860

m/z = 477.1860-487.1860

m/z	Theo. Mass	Delta (ppm)	RDB equiv.	Composition
482.1860	482.1863	-0.55	22	C ₃₂ H ₂₄ O ₂ N ₃

Fig. S7

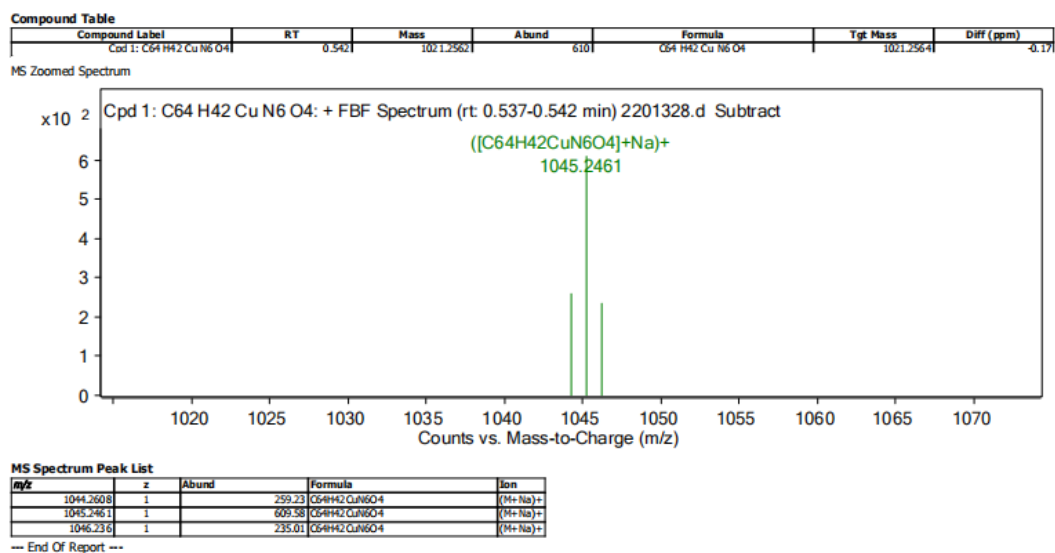


Fig. S8 The K_a between PCBW probe and Cu²⁺ by using bindfit software to calculate



Fig. S9

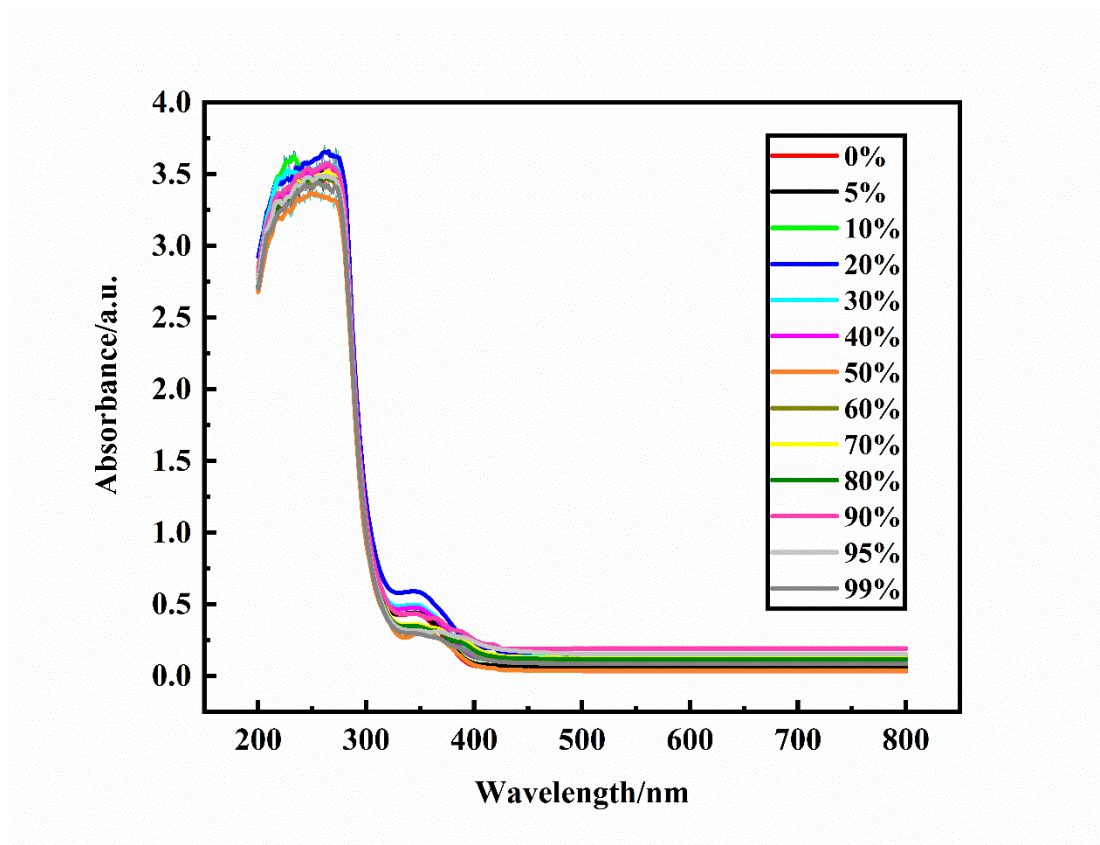


Fig. S10

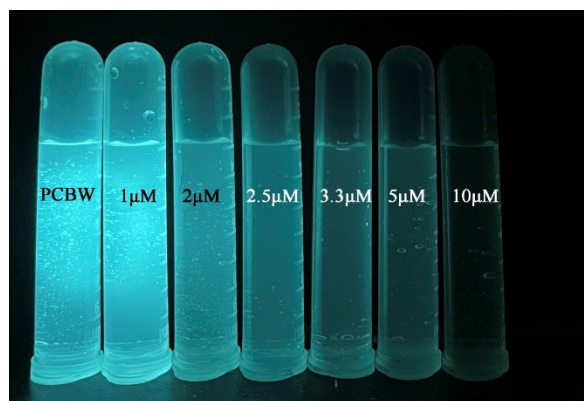


Fig. S11

