

Electronic Supplementary Information

An aggregation-induced emission-based fluorescence turn-on probe for Hg²⁺ and its application to detect Hg²⁺ in food samples

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Sample pretreatment

1. Pretreatment of shrimp and crab meat samples

Shrimp and crab were purchased from the supermarket and the meat was firstly treated with a digestion procedure. Each sample (0.5 g) was soaked overnight in a beaker with HNO₃ (10 mL) at room temperature, then mixture was heated to boil until it was completely dissolved. After cooling, the solution was centrifuged, and the supernatant was adjusted to pH = 7.4 with 1M NaOH solution, and constant the volume to 50 mL a 50 mL volumetric flask.

2. Pretreatment of tea samples

0.500 g of mashed tea was placed in a 100 mL beaker, to which 20 mL of concentrated nitric acid was added separately. The beaker was sealed with a plastic wrap and placed overnight. Then it was put in a microwave oven and digested 6h under 400 W of power. It was then placed in a fume hood to cool, and the supernatant was adjusted to pH = 7.4 with 1 M NaOH solution. Then the solution was transferred to a 100 mL volumetric flask and brought up to volume.

Supplementary figures



Fig. S1. Photograph of Tyndall phenomena of a $\text{CH}_3\text{OH}/\text{PBS}$ (20 mM, pH = 7.4) (3:7, v/v) solution with (A) and without (B) compound **4** via illuminating with a laser pointer.

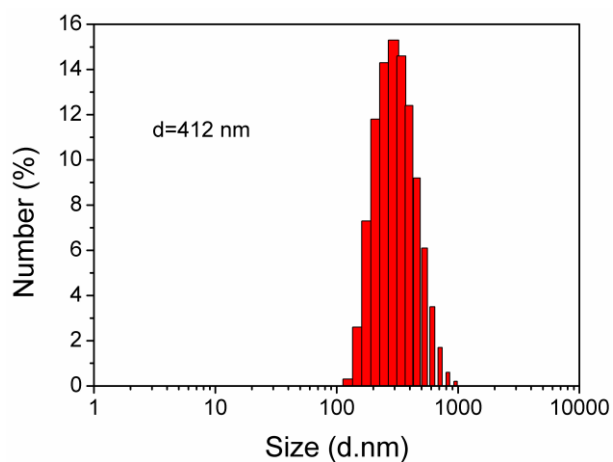


Fig. S2. Particle size distributions of compound **4** in $\text{CH}_3\text{OH}/\text{PBS}$ (20 mM, pH = 7.4) (3:7, v/v) solution.

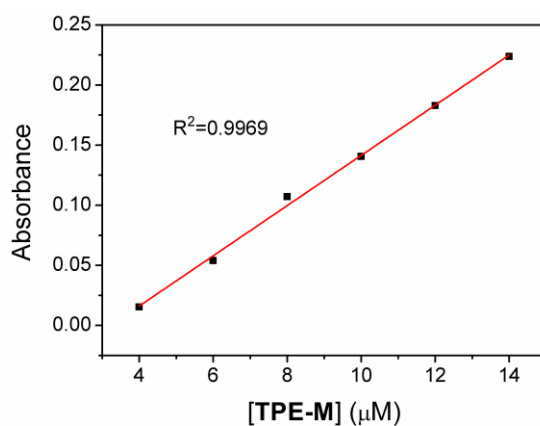


Fig. S3. The linear relationship between absorbance and **TPE-M** concentration in $\text{CH}_3\text{OH}/\text{PBS}$ (20 mM, pH = 7.4) (3:7, v/v) solution.

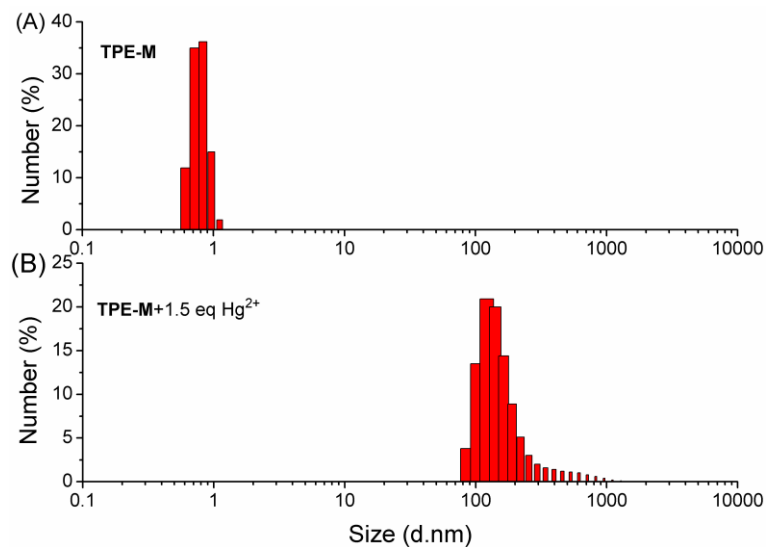


Fig. S4. Particle size distributions of **TPE-M** in CH₃OH/PBS (20 mM, pH = 7.4) (3:7, v/v) solution before (A) and after (B) addition of Hg²⁺.

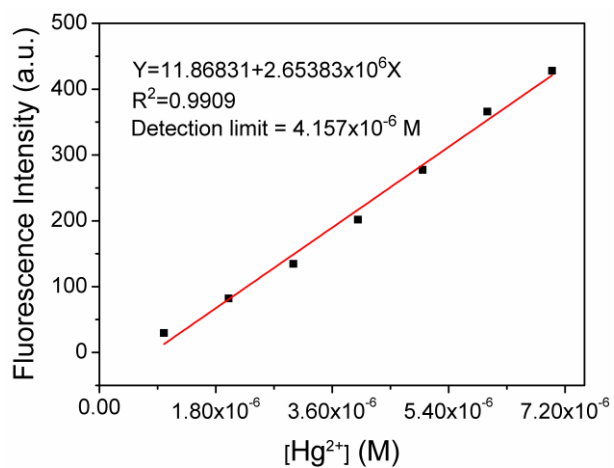


Fig. S5. Standard calibration curve of emission intensity of probe **TPE-M** against Hg²⁺ concentrations (0 to 15 μM) in CH₃OH/PBS (20 mM, pH = 7.4) (3:7, v/v) solution.

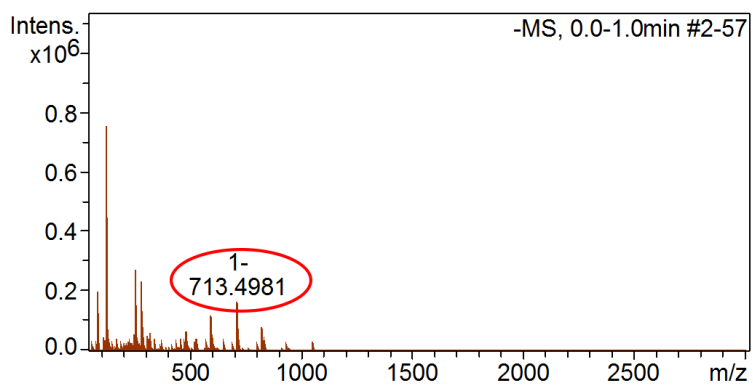


Fig. S6. HRMS (ESI+) spectrum of **TPE-M**+Hg²⁺.

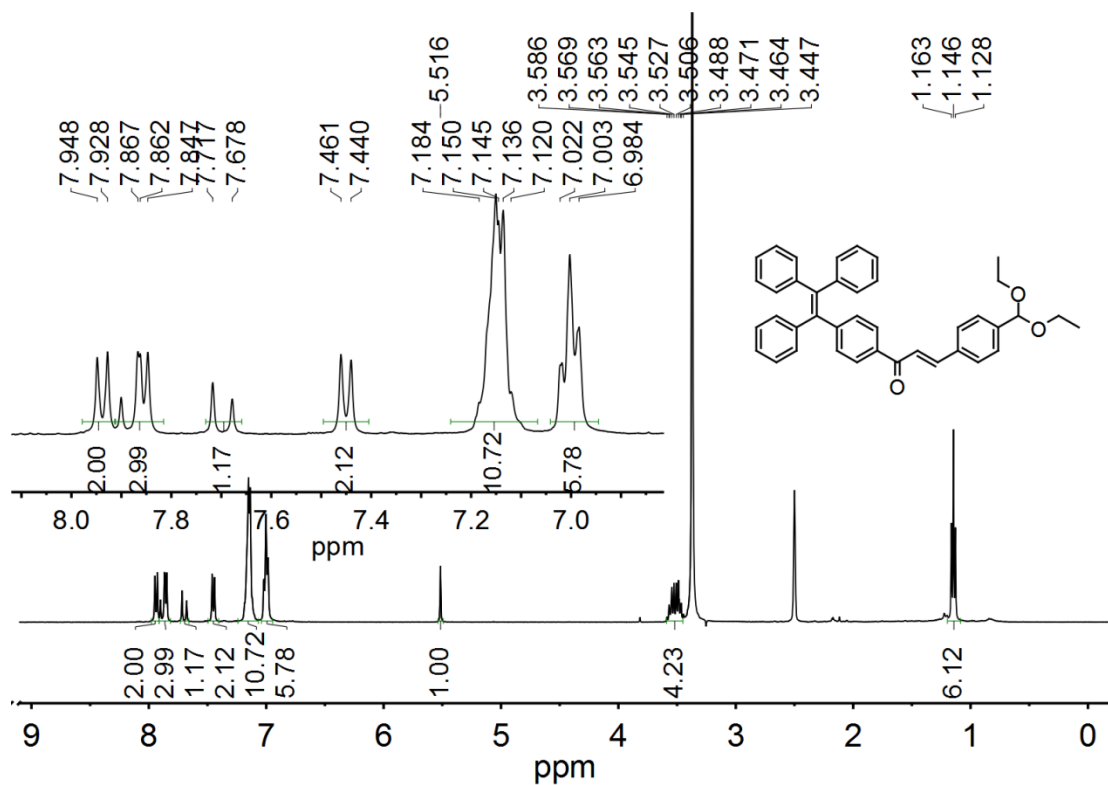


Fig. S7. ¹H NMR spectrum of Compound **3** in DMSO-*d*₆.

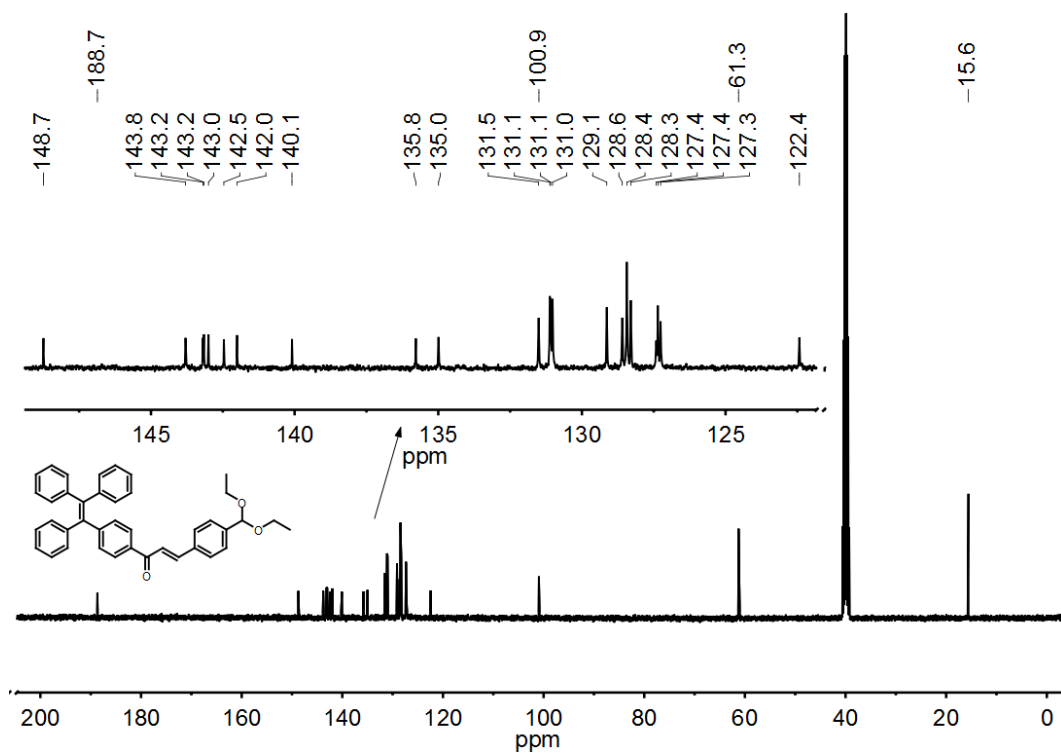


Fig. S8. ¹³C NMR spectrum of compound **3** in DMSO-*d*₆.

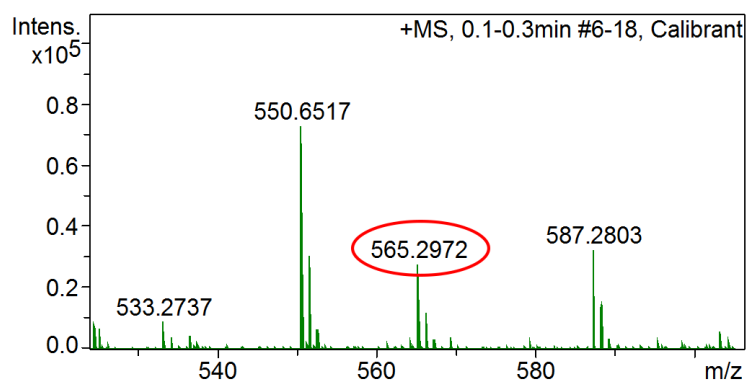


Fig. S9. HRMS (ESI+) spectrum of compound **3**.

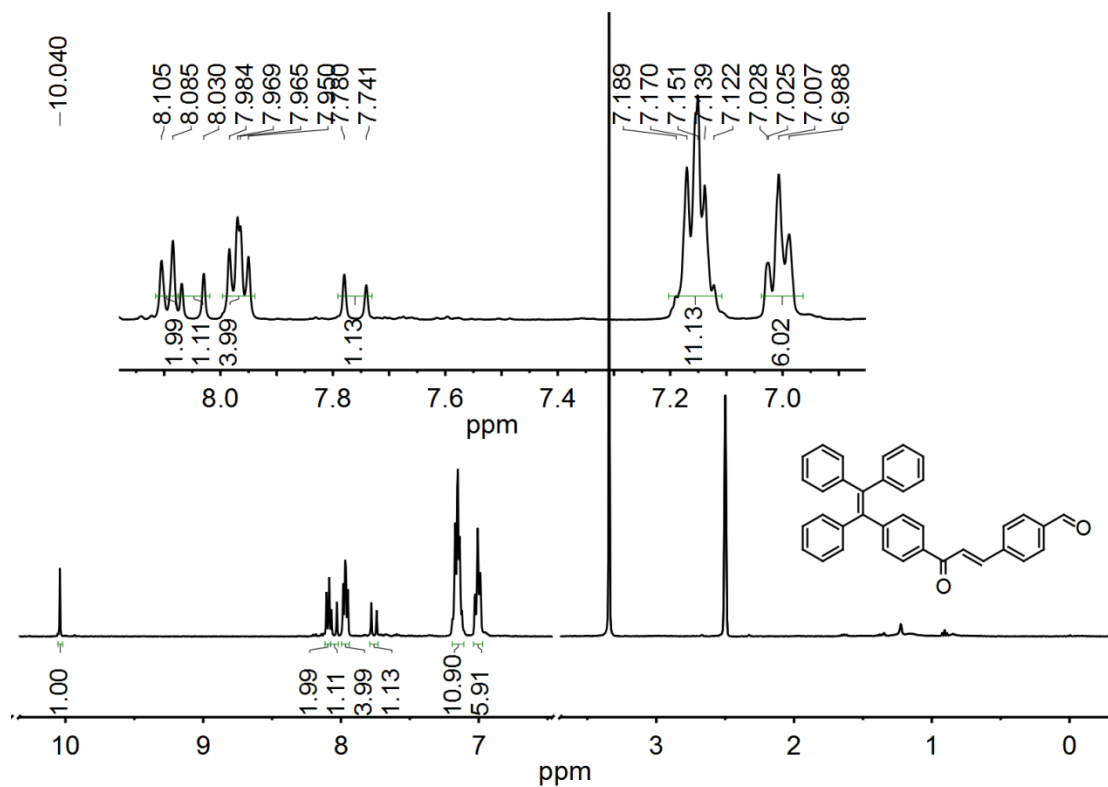


Fig. S10. ¹H NMR spectrum of compound 4 in DMSO-*d*₆.

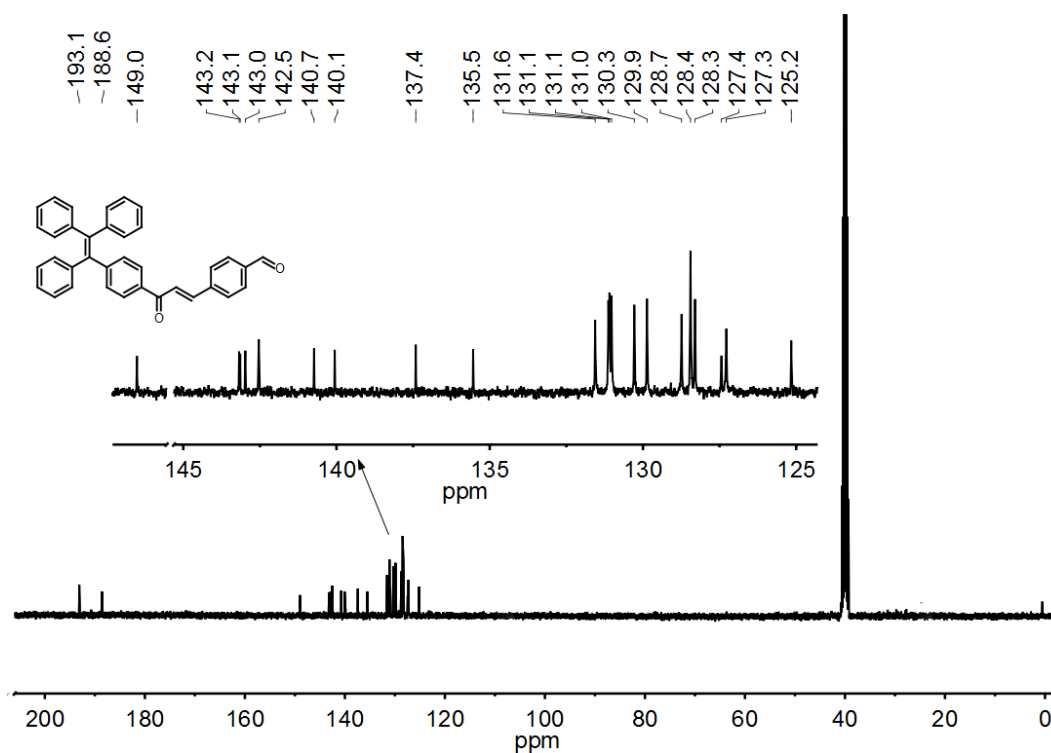


Fig. S11. ¹³C NMR spectrum of compound 4 in DMSO-*d*₆.

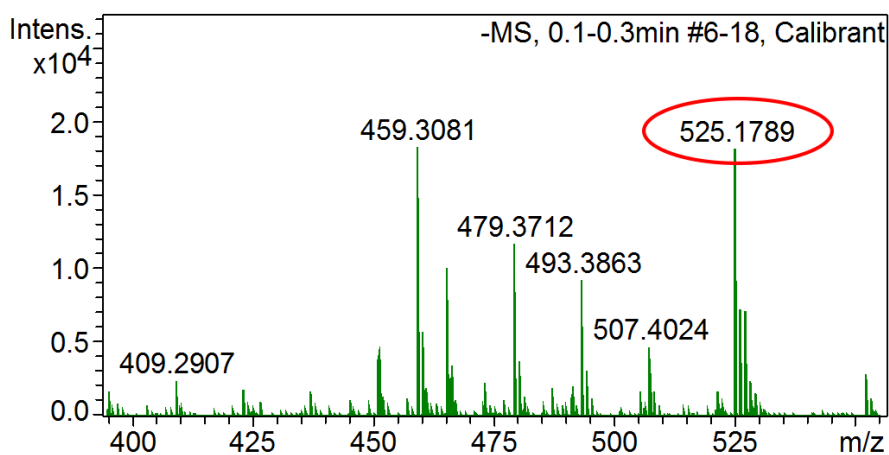


Fig. S12. HRMS (ESI-) spectrum of compound **4**.

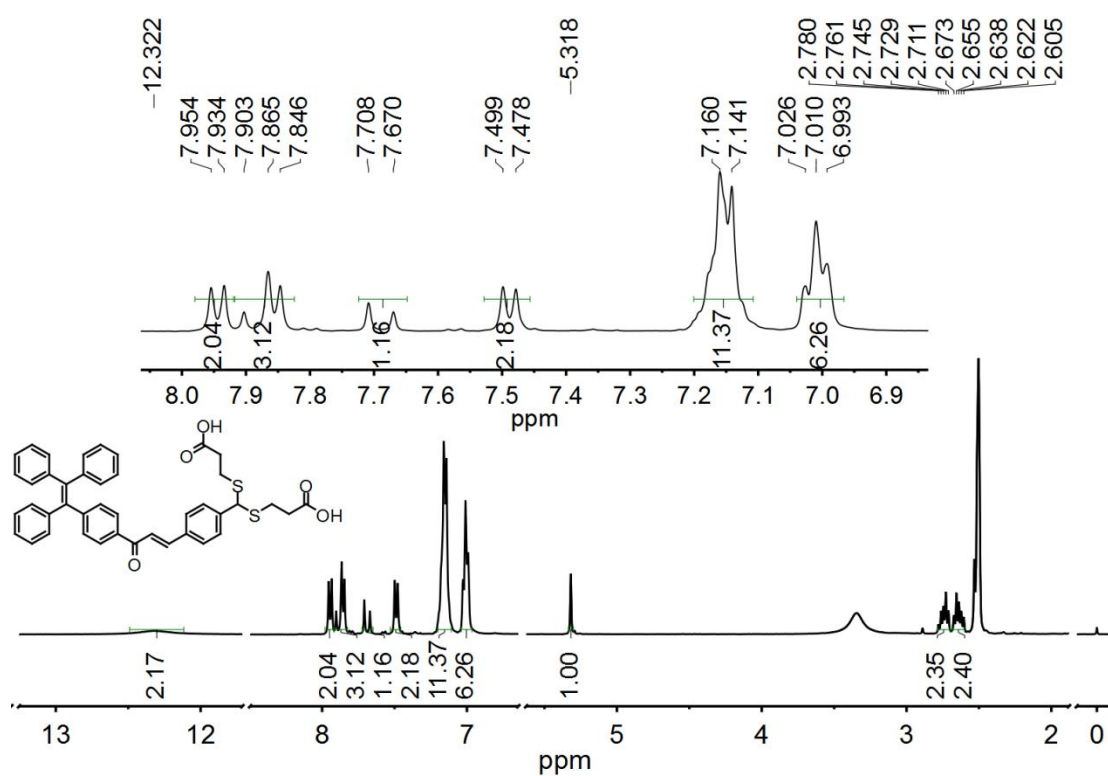


Fig. S13. ¹H NMR spectrum of probe **TPE-M** in DMSO-*d*₆.

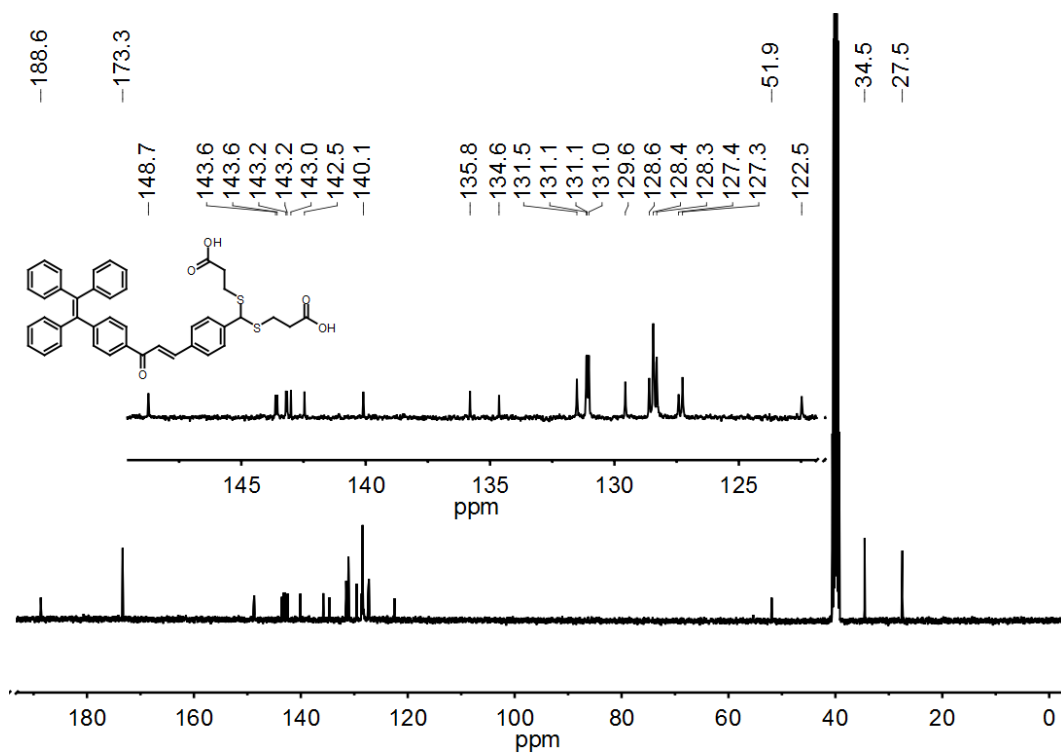


Fig. S14. ^{13}C NMR spectrum of probe TPE-M in DMSO- d_6 .

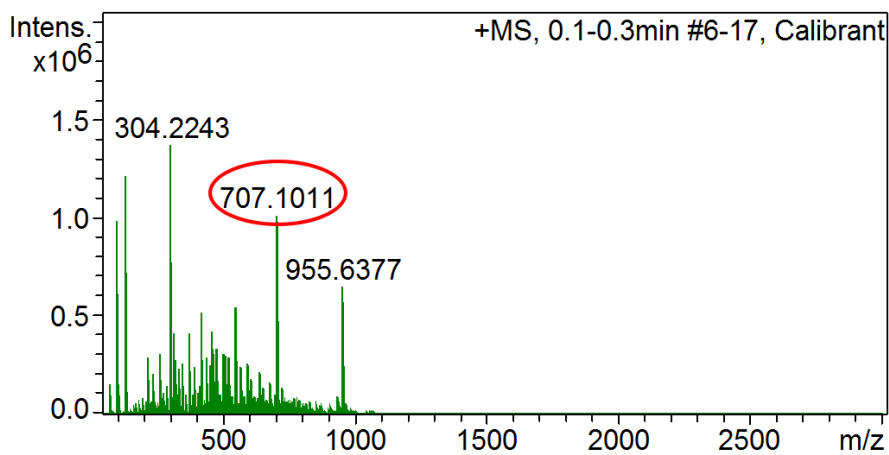


Fig. S15. HRMS (ESI+) spectrum of probe TPE-M.