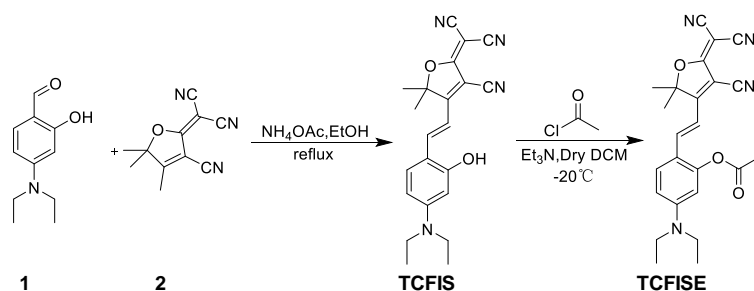


A Fast-Response AIE-Active Ratiometric Fluorescent Probe for the Detection of Carboxylesterase

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Scheme S1. Synthetic route to TCFIS and TCFISE.

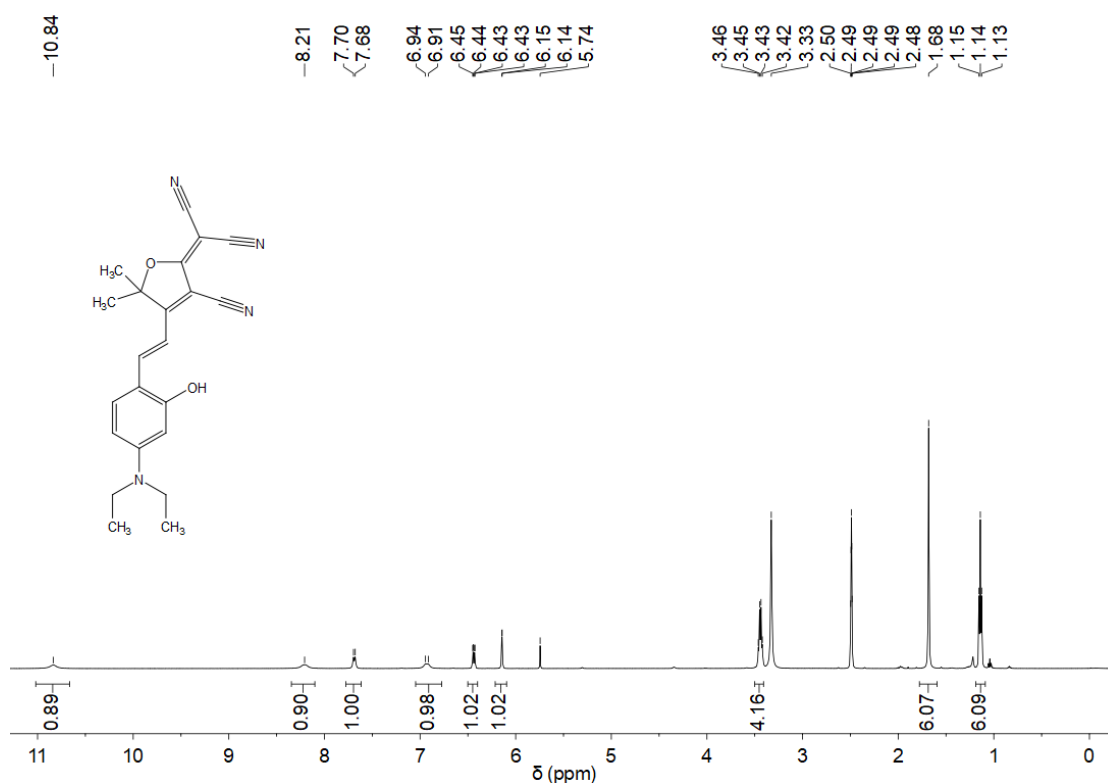


Figure S1. ¹H NMR spectrum of TCFIS in DMSO-*d*₆.

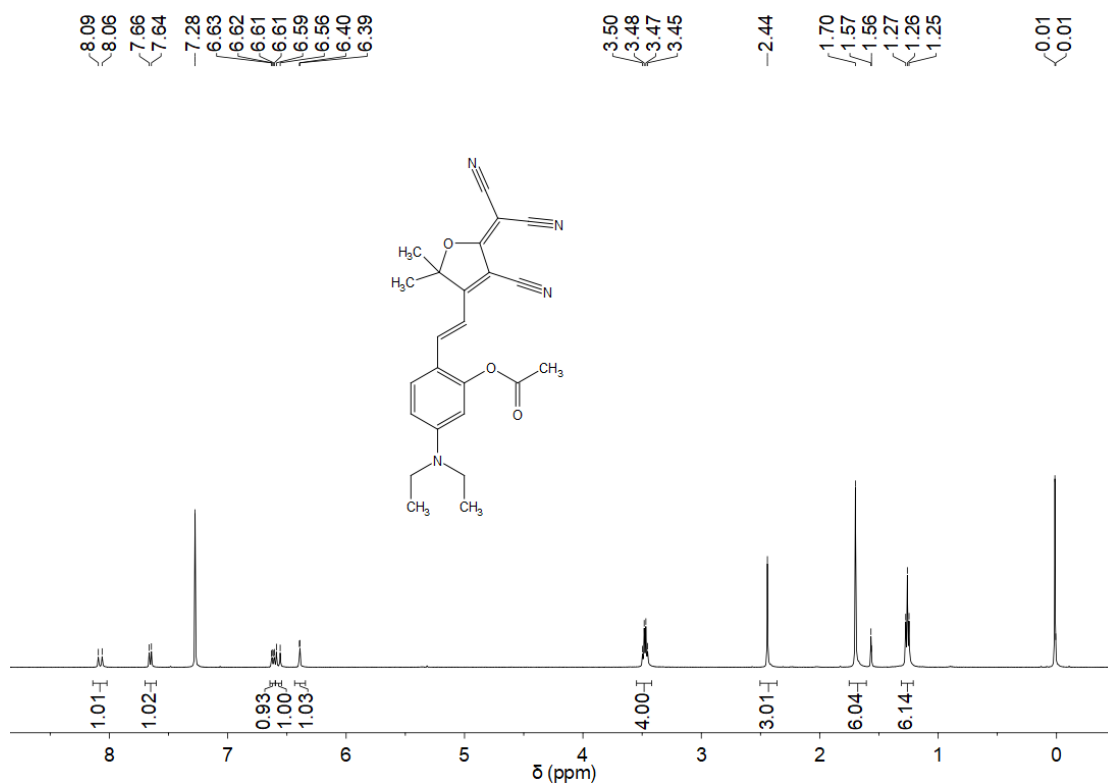


Figure S4. ¹H NMR spectrum of TCFISE in CDCl₃.

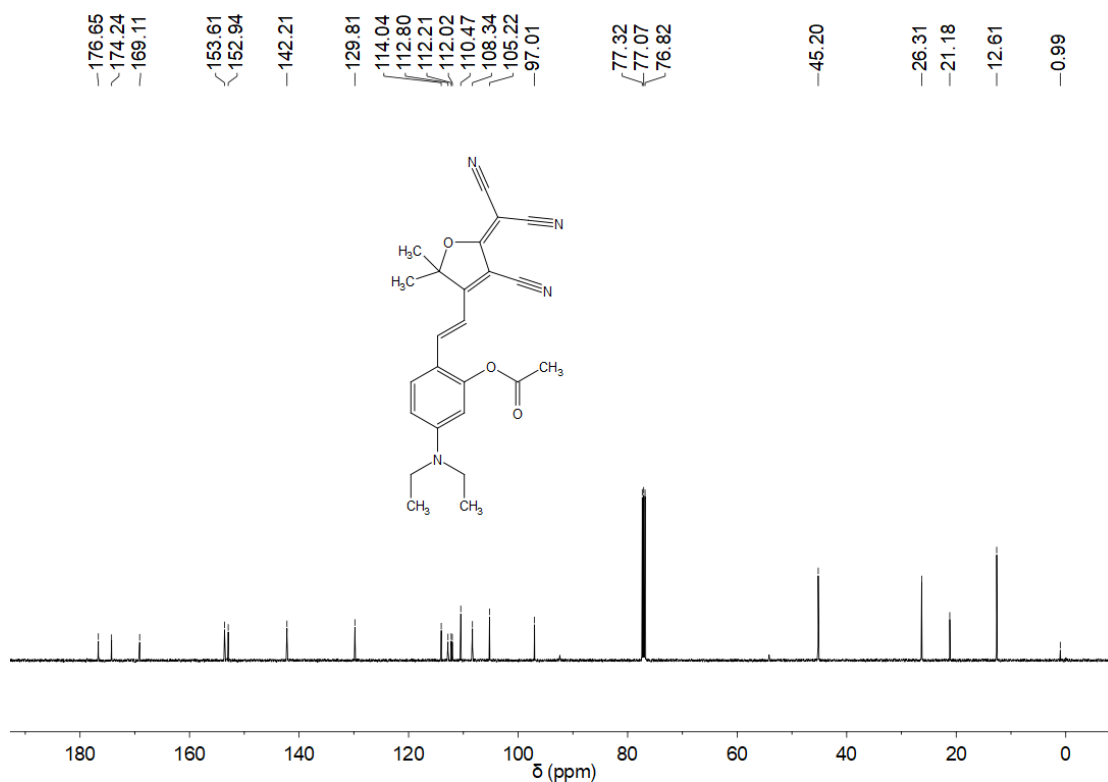


Figure S5. ¹³C NMR spectrum of TCFISE in CDCl₃.

Single Mass Analysis

Tolerance = 5.0 PPM / DBE: min = -1.5, max = 50.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

47 formula(e) evaluated with 1 results within limits (up to 50 best isotopic matches for each mass)

Elements Used:

C: 1-27 H: 0-50 N: 1-4 O: 1-4

S

1206-5-xmt-2 131 (0.744)

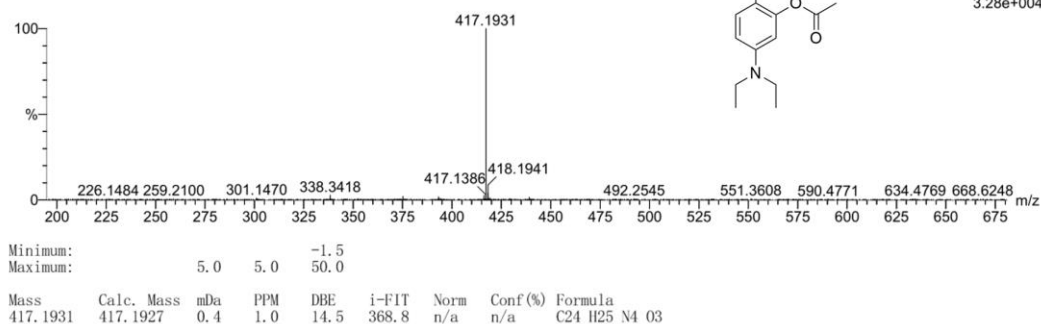


Figure S6. HRMS spectrum of TCFISE.

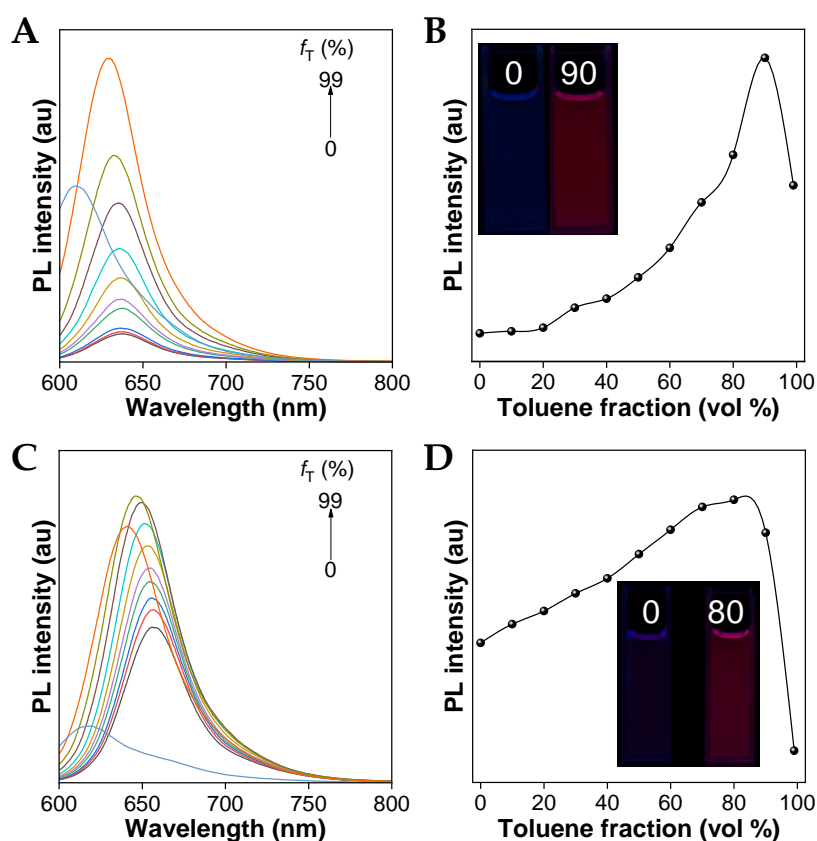


Figure S7. (A) PL spectra of TCFIS (5 μ M) in toluene/DMSO mixed solution with different toluene fractions (f_T). (B) Plot of PL intensity of TCFIS (5 μ M) at maximum emission wavelength versus the toluene fraction in the toluene/DMSO mixtures. (C) PL spectra of TCFISE (5 μ M) in toluene/DMSO mixed solution with different toluene fractions (f_T). (D) Plot of PL intensity of TCFISE (5 μ M) at maximum emission wavelength versus the toluene fraction in the toluene/DMSO mixtures. λ_{ex} =575 nm.

Single Mass Analysis

Tolerance = 5.0 PPM / DBE: min = -1.5, max = 50.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

52 formula(e) evaluated with 1 results within limits (up to 50 best isotopic matches for each mass)

Elements Used:

C: 1-22 H: 0-70 N: 1-4 O: 1-5

S

1206-5-xmt-6 68 (0.398) QT (2)

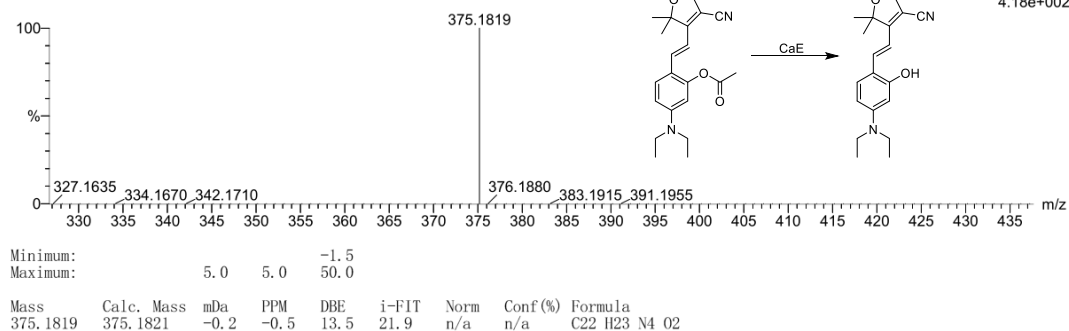


Figure S8. HRMS spectrum of TCFISE after incubation with CaE (1 U/mL) at 37 °C for 20 min.

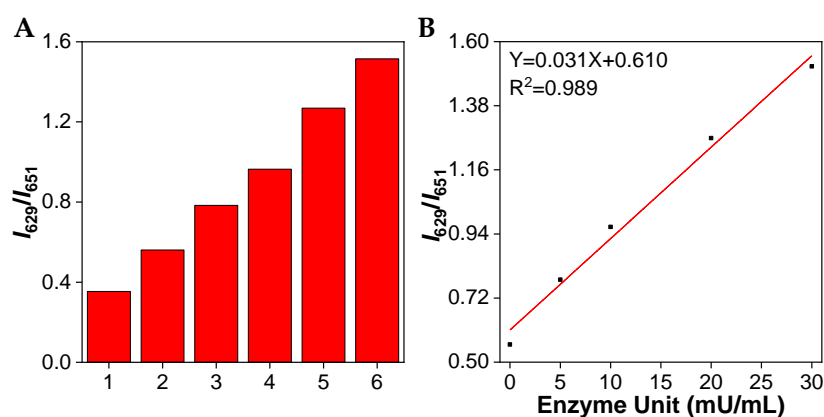


Figure S9. (A) Variation of the relative PL intensity ratios (I_{629}/I_{651}) of TCFISE in 20-fold diluted serum samples. 1: TCFISE only; 2-6: TCFISE + serum samples + CaE (0, 5, 10, 20, and 30 mU/mL). (B) Plot and linear fitting of relative PL intensity ratios (I_{629}/I_{651}) of TCFISE in 20-fold diluted serum samples vs the concentration of spiked CaE (0-30 mU/mL). $\lambda_{ex}=575$ nm.

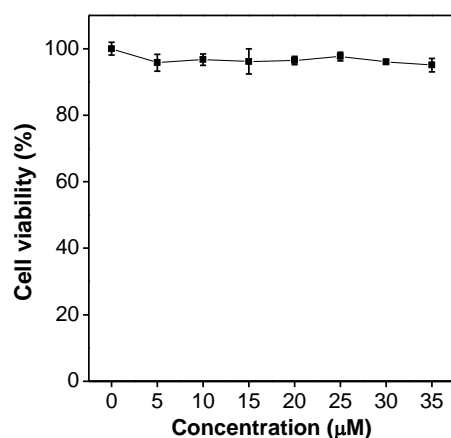


Figure S10. Cell viability of TCFISE toward HeLa cell by using MTT assays.

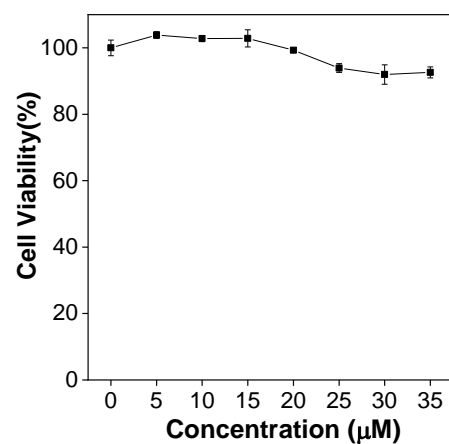


Figure S11. Cell viability of TCFISE toward HepG2 cell by using MTT assays.

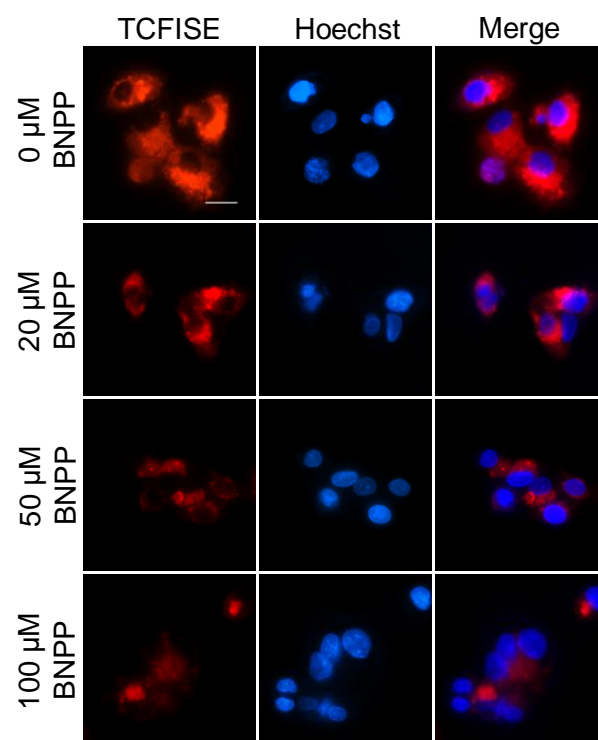


Figure S12. HepG2 cell imaging of TCFISE (5 μM) in the presence of different concentrations of BNPP. Commercial available Hoechst (1 μM) was used for the indication of nucleus. Scale bar: 20 μm.

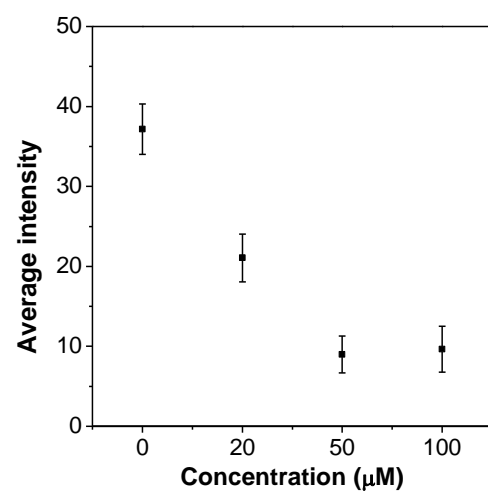


Figure S13. The average intensity of TCFISE channel in the presence of different concentrations of BNPP in Figure S12.