Supporting Information

A π-Conjugation-Extended Thioflavin T Analogue Enables Red-Emissive, Derivatization-Assisted Aptasensing of Acrylamide in Food

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Synthesis of NM-1

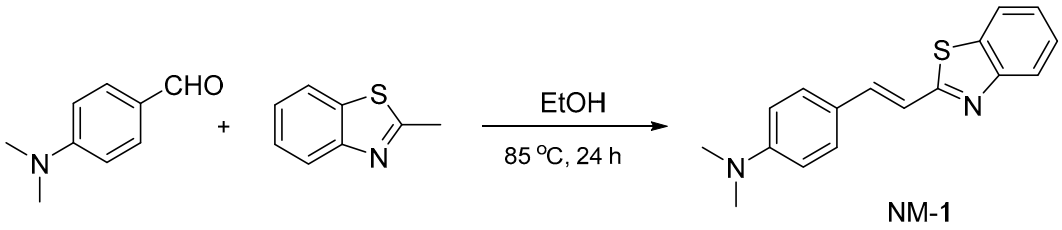


Figure S1 Synthetic route for compound NM-1.

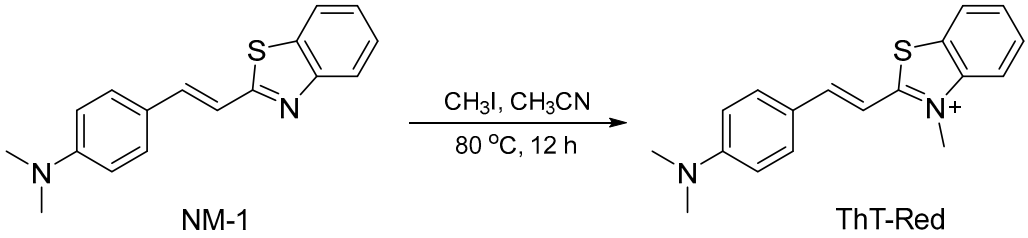


Figure S2 Synthetic route for ThT-Red.

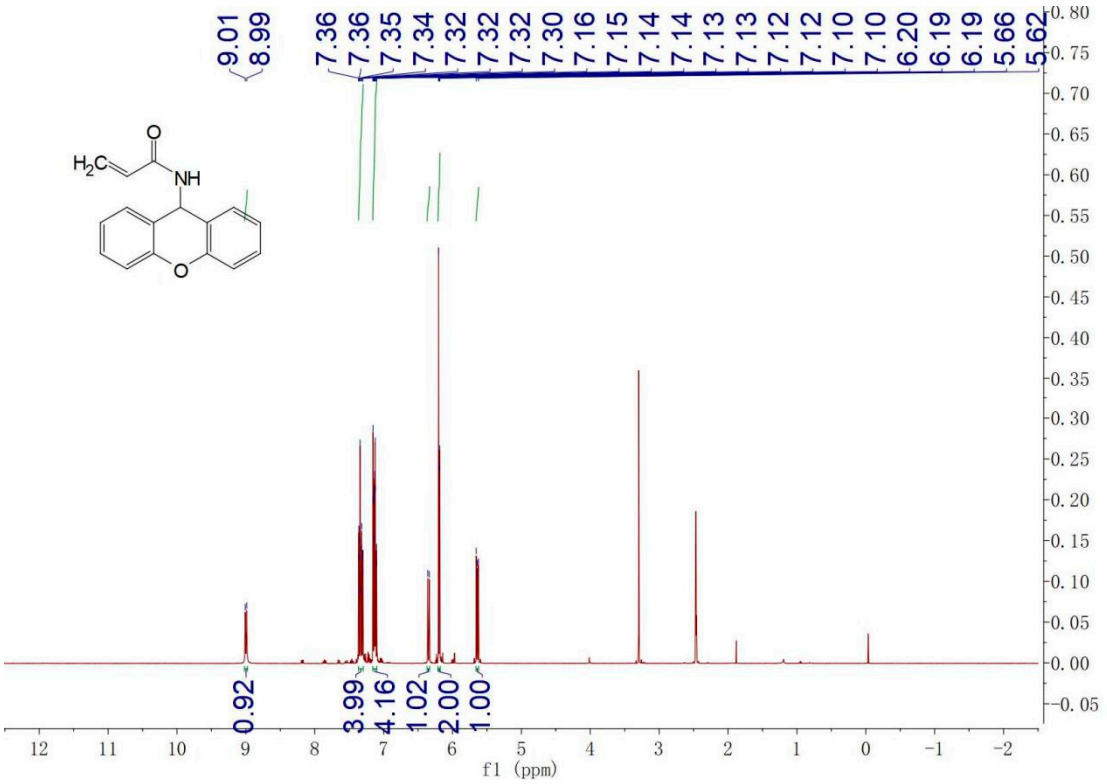


Figure S3 NMR spectra of XAA.[1]H NMR (400 MHz, DMSO-d_6) δ 9.01 (d, J = 8.7 Hz, 1H), 7.37 – 7.30 (m, 4H), 7.16 – 7.10 (m, 4H), 6.35 (d, J = 8.7 Hz, 1H), 6.21 – 6.16 (m, 2H), 5.64 (dd, J = 7.4, 4.9 Hz, 1H).

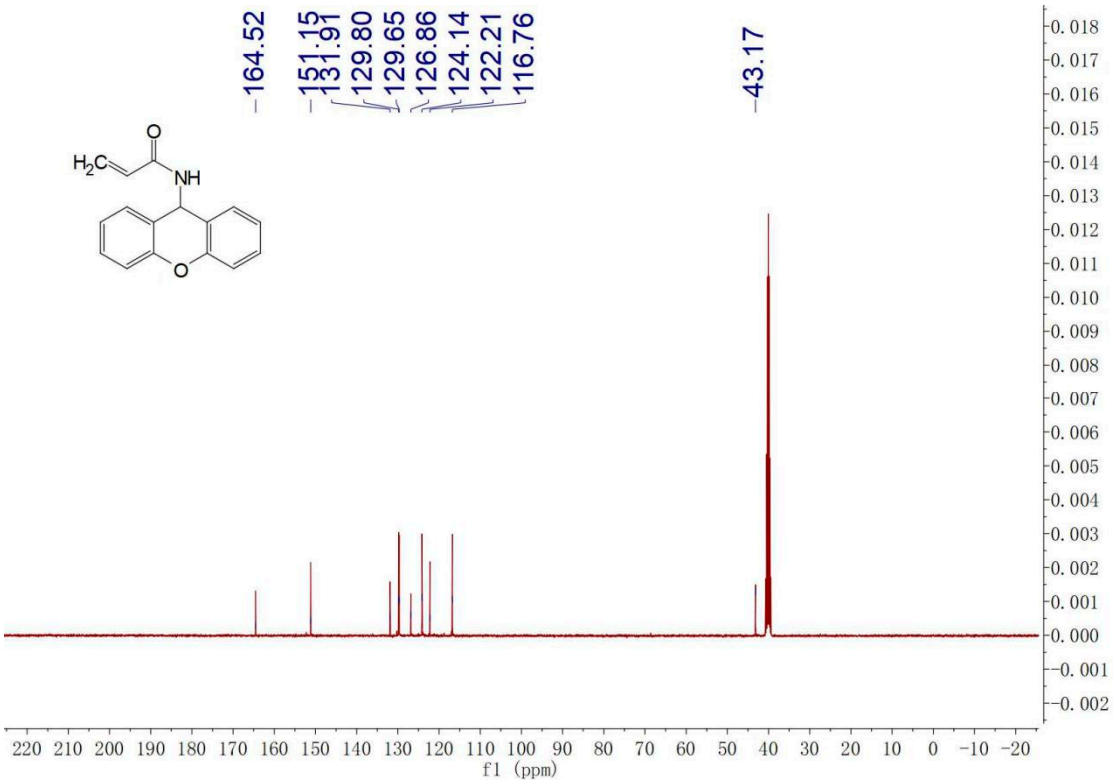


Figure S4 NMR spectra of XAA.[13]C NMR (101 MHz, DMSO-d_6) δ 164.50, 151.13, 131.89, 129.82, 129.67, 126.90, 124.16, 122.19, 116.77, 43.14.

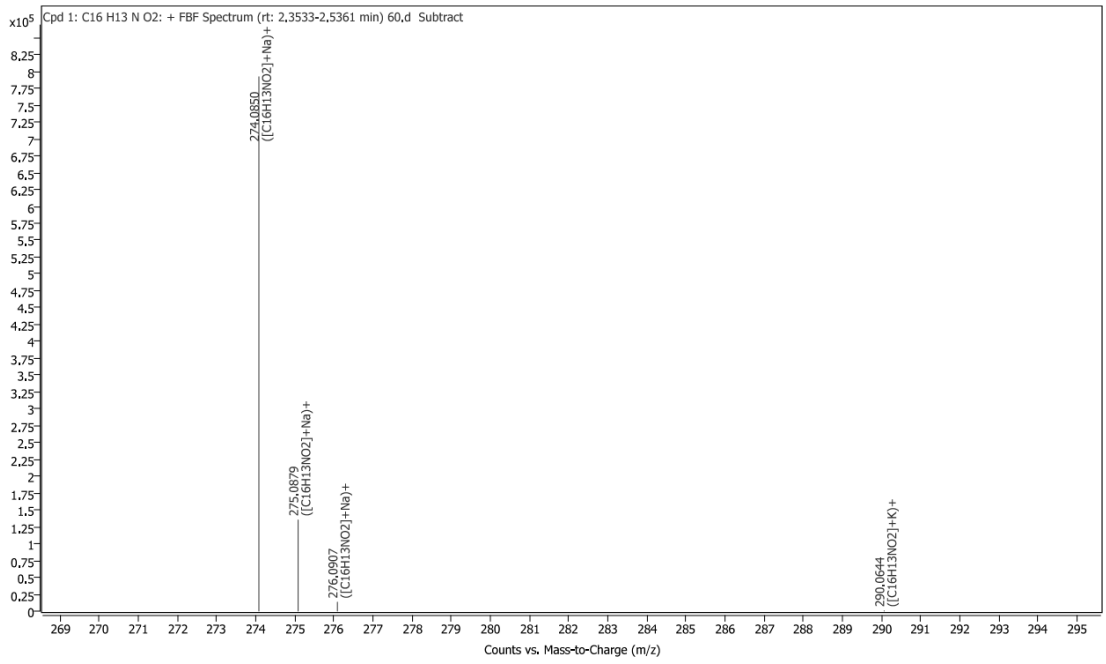


Figure S5 HRMS (ESI) spectrum of XAA.

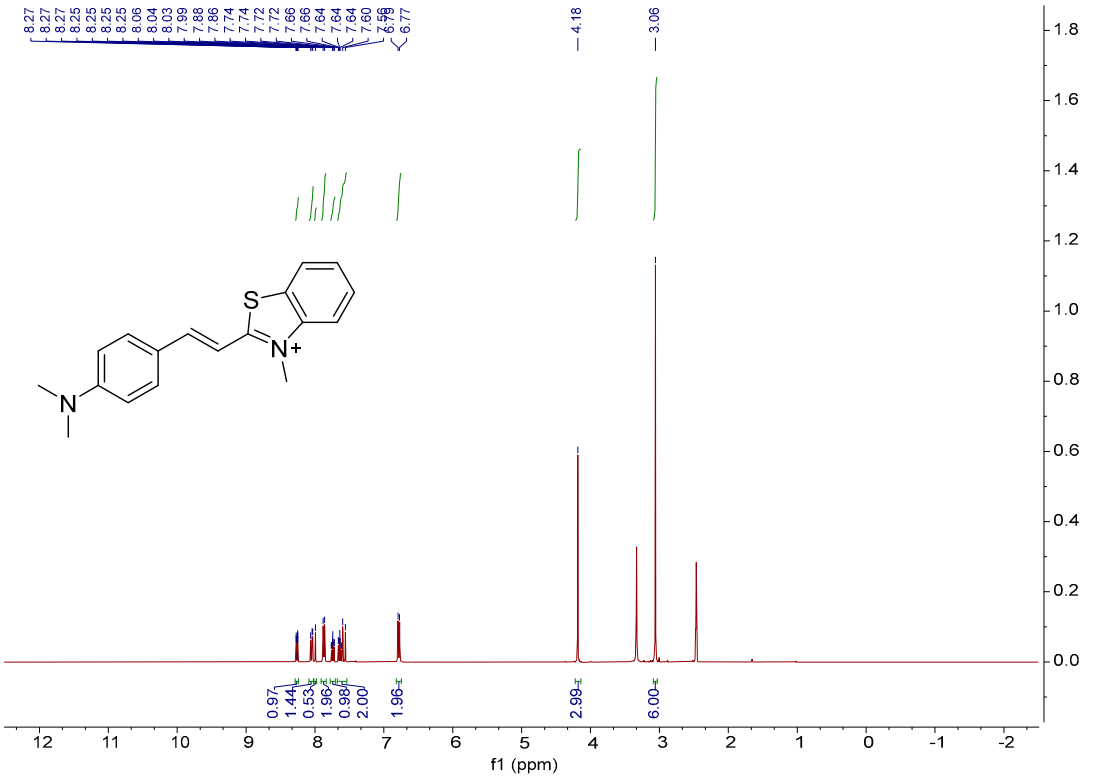


Figure S6 NMR spectra of ThT-Red. ^{1}H NMR (400 MHz, DMSO-d6) δ 8.29–8.24 (m, 1H), 8.09–8.02 (m, 1H), 7.99 (s, 1H), 7.87 (d, J = 9.0 Hz, 2H), 7.74 (ddd, J = 8.5, 7.3, 1.2 Hz, 1H), 7.68–7.54 (m, 2H), 6.78 (d, J = 9.0 Hz, 2H), 4.18 (s, 3H), 3.06 (s, 6H).

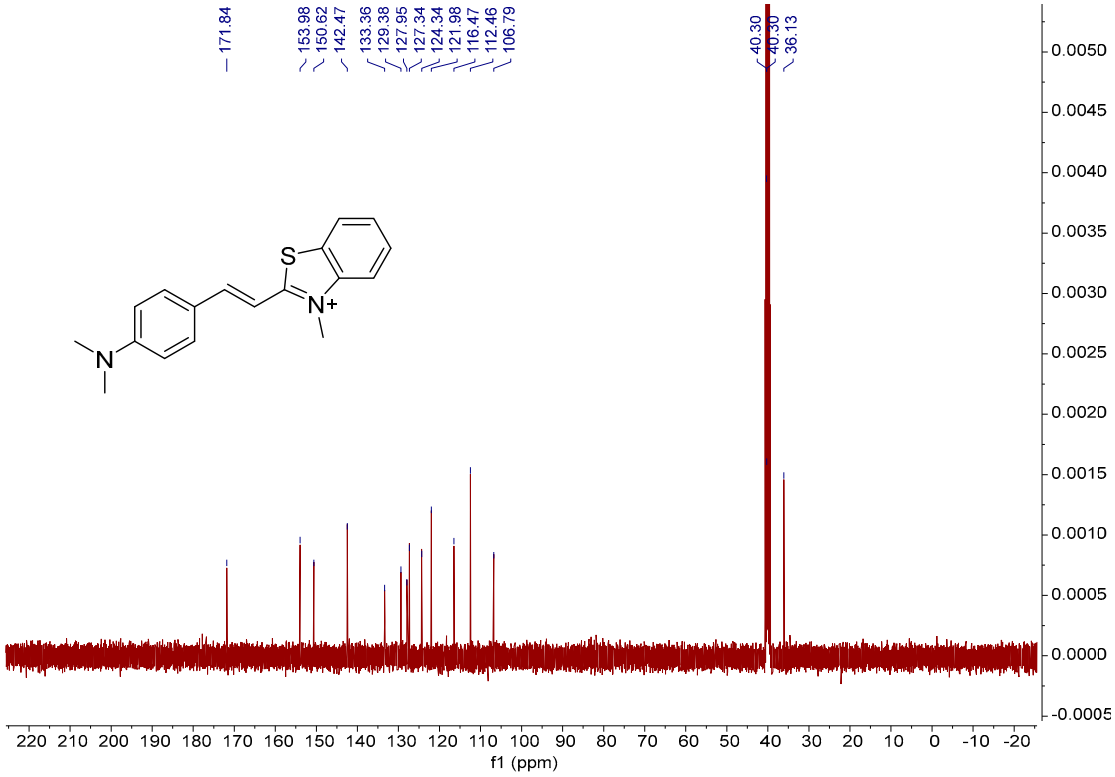


Figure S7 NMR spectra of ThT-Red. ^{13}C NMR (101 MHz, DMSO-d6) δ 171.84, 153.98, 150.62, 142.47, 133.36, 129.38, 127.95, 127.34, 124.34, 121.98, 116.47, 112.46, 106.79, 40.30, 40.14, 36.13.

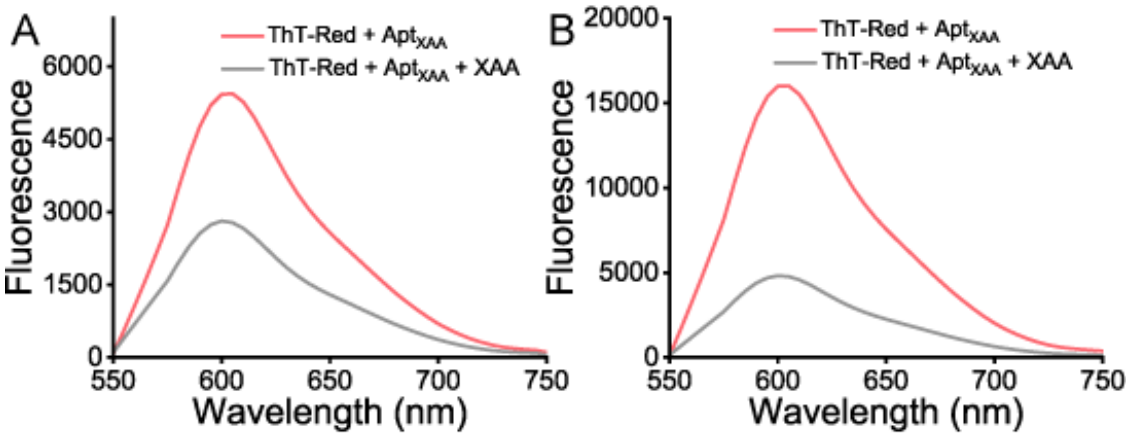


Figure S8 Comparison of the fluorescence responses obtained with two tested ThT-Red concentrations (1.0 and 2.0 μM) upon interaction with AptXAA and XAA.

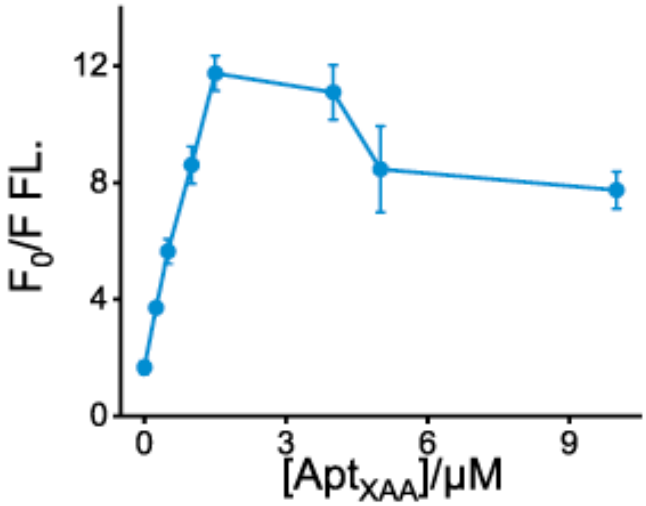


Figure S9 Response of the ThT-Red/Apt$_{XAA}$ system at different Apt$_{XAA}$ concentrations.

Table S1. Estimation of XAA in Potato Chips.

Sample	Added (μM)	Found (μM)	Recovery (%)	RSD (%, n = 3)
Potato Chips （1:20）	0.5	0.599	119.72	12.20
	1	0.90	90.14	6.95
	1.5	1.44	95.71	6.25