

Supporting Information

A Light-up Near-infrared Probe with Aggregation-induced Emission Characteristics for Highly Sensitive Detection of Alkaline Phosphatase

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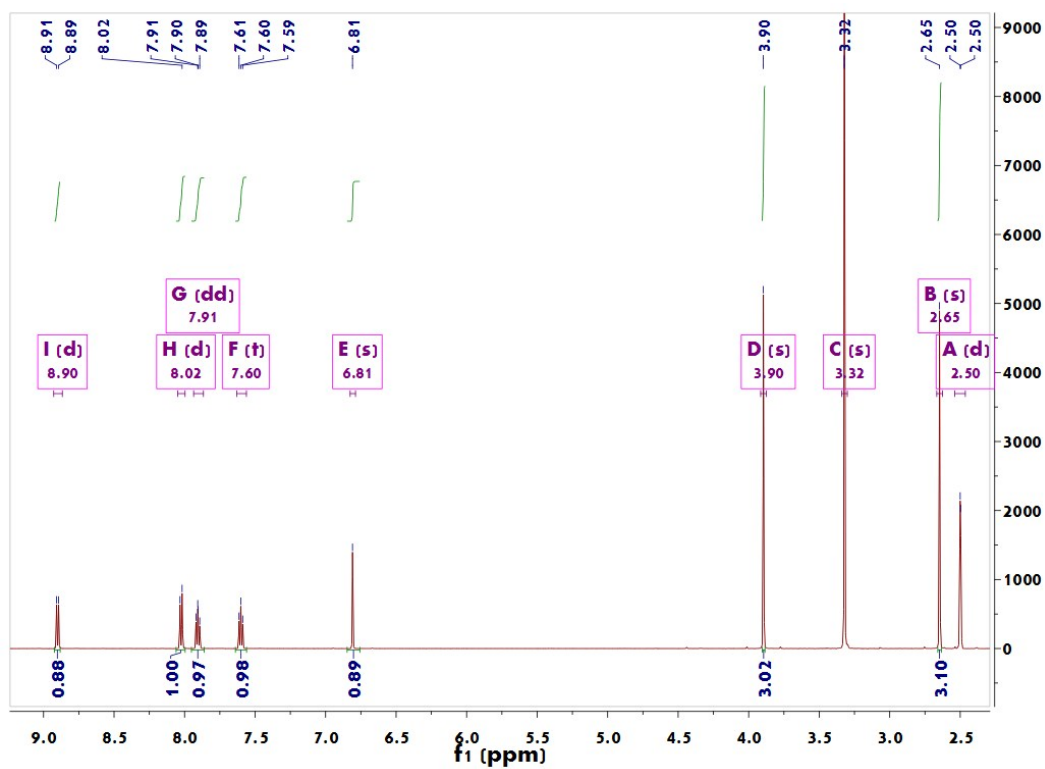


Fig. S1 ¹H-NMR spectrum of Q2.

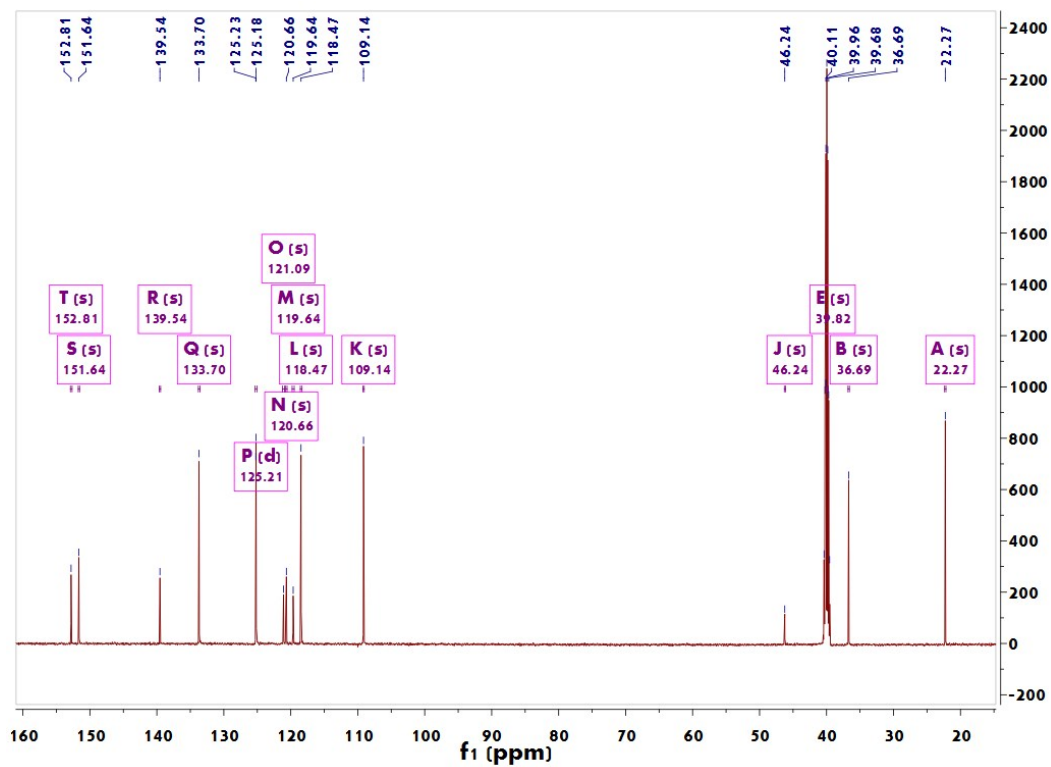


Fig. S2 ¹³C-NMR spectrum of Q2.

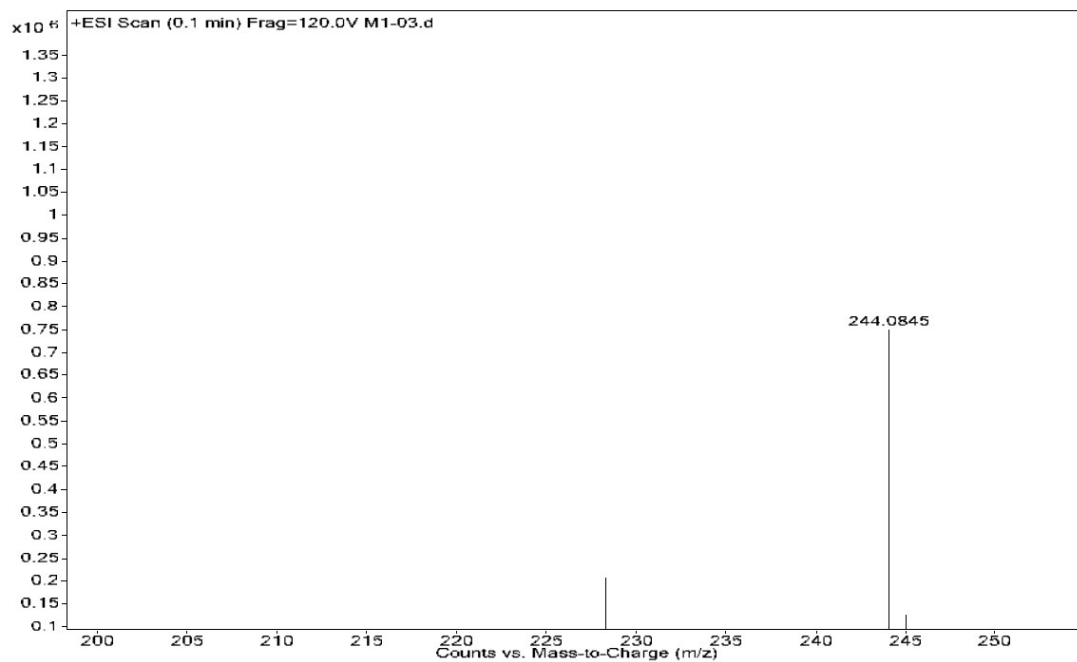


Fig. S3 High resolution mass spectrometry of Q2.

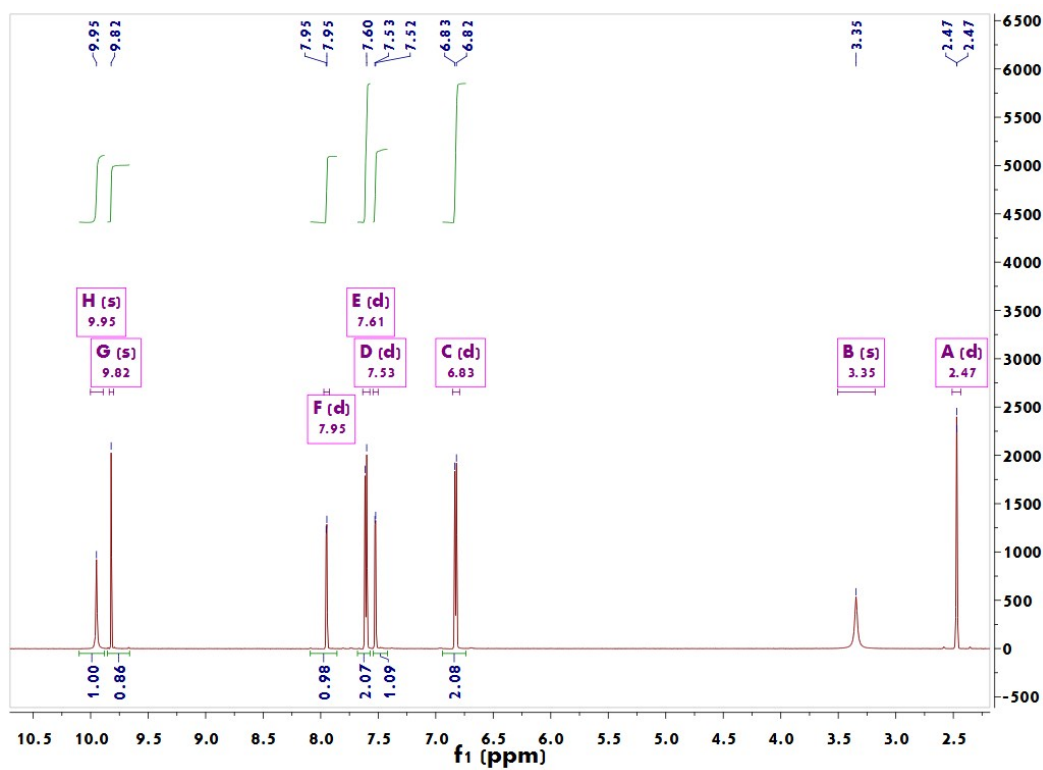


Fig. S4 ¹H-NMR spectrum of T1.

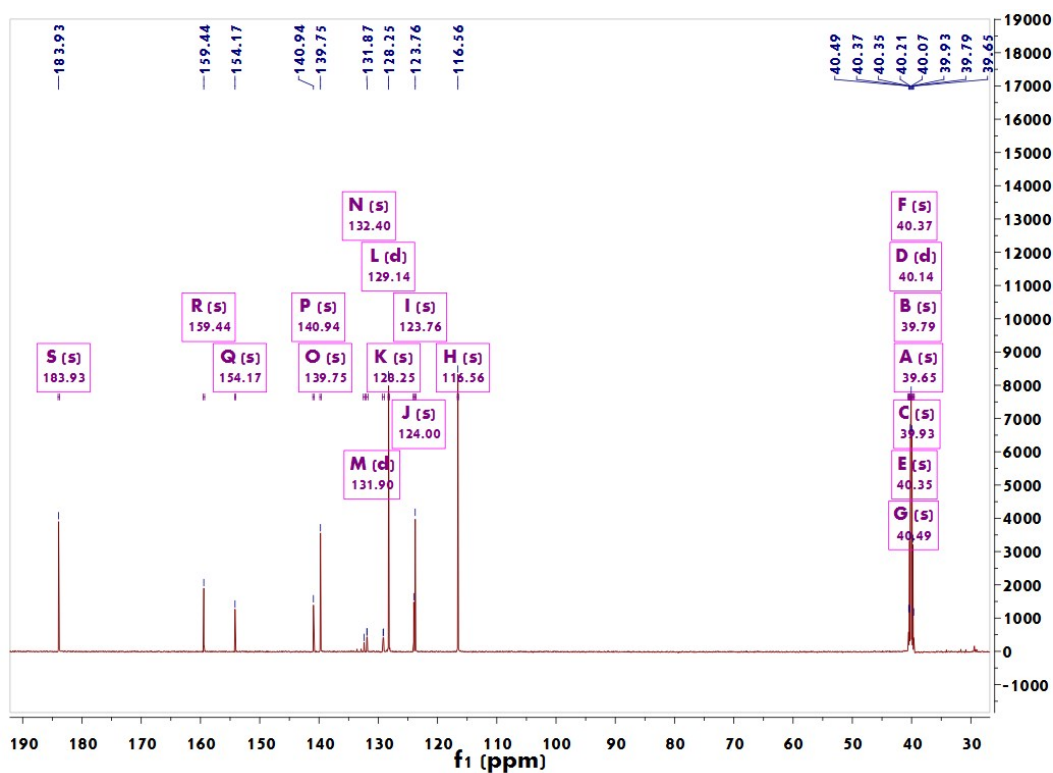


Fig. S5 ^{13}C -NMR spectrum of T1.

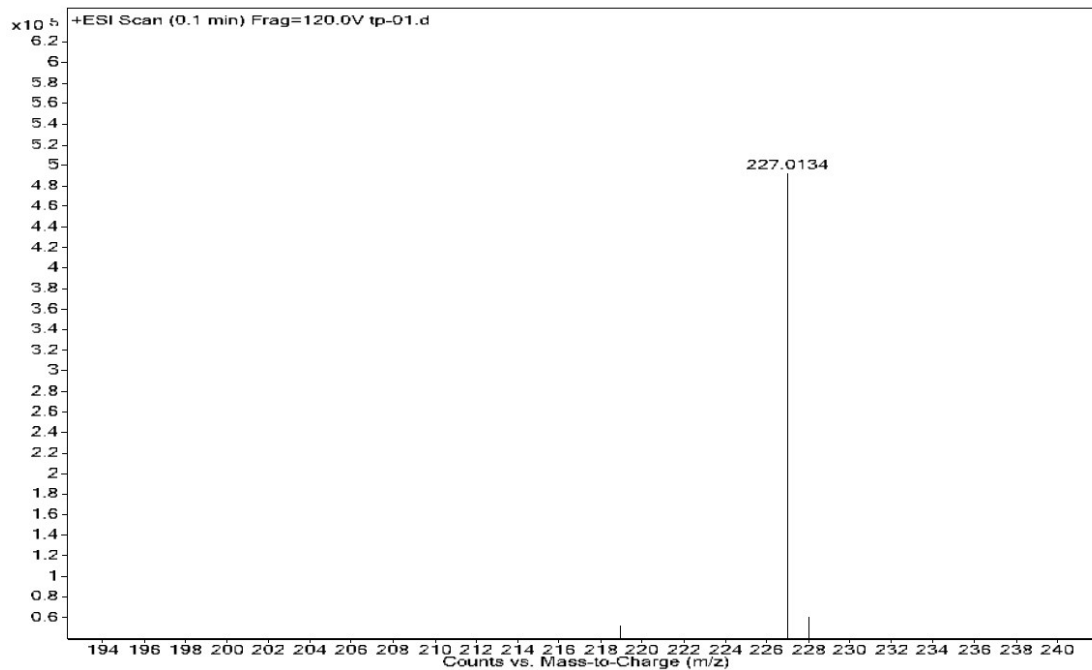


Fig. S6 High resolution mass spectrometry of T1.

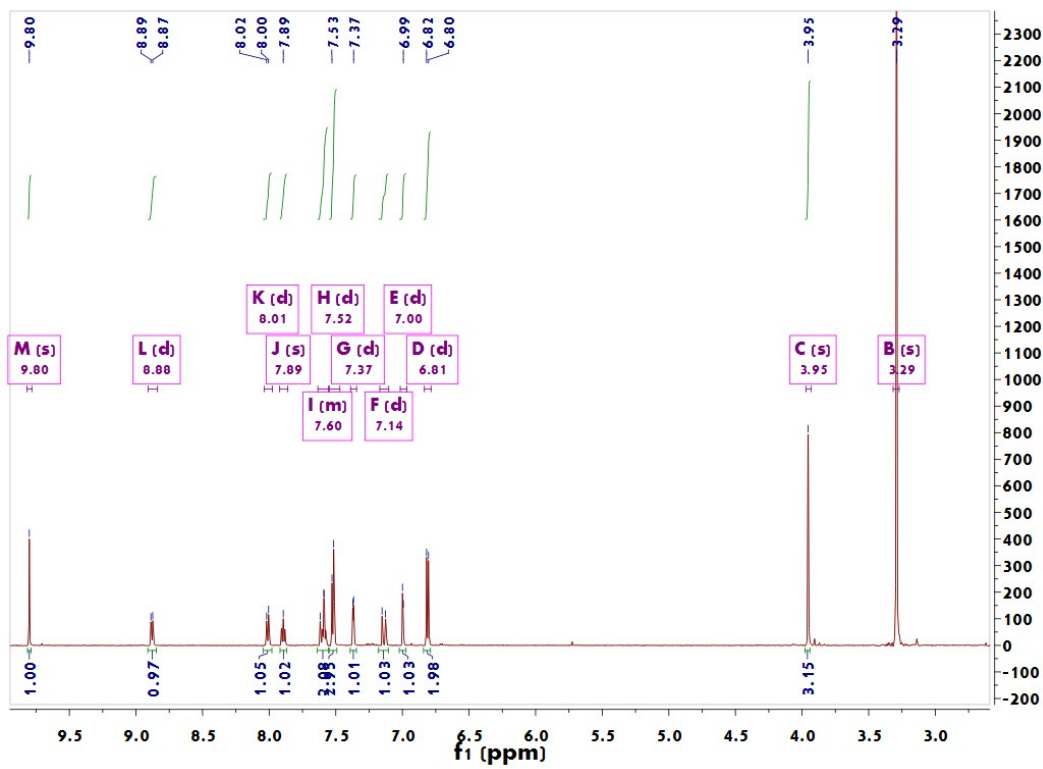


Fig. S7 ¹H-NMR spectrum of QMT.

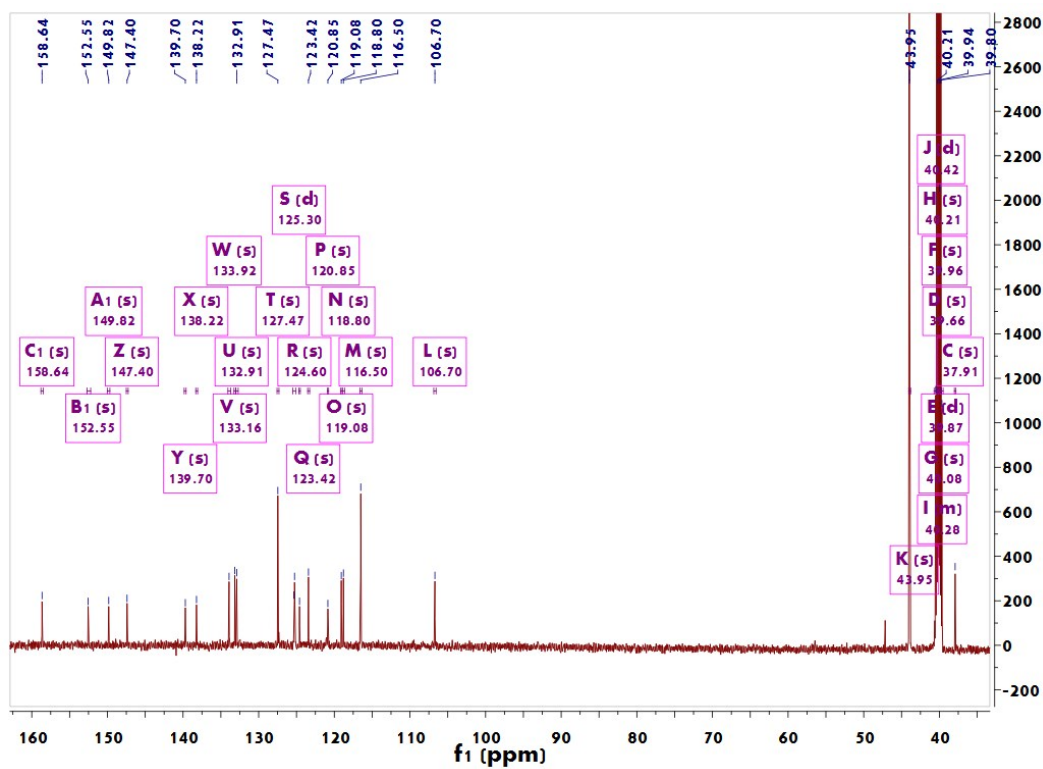


Fig. S8 ^{13}C -NMR spectrum of QMT.

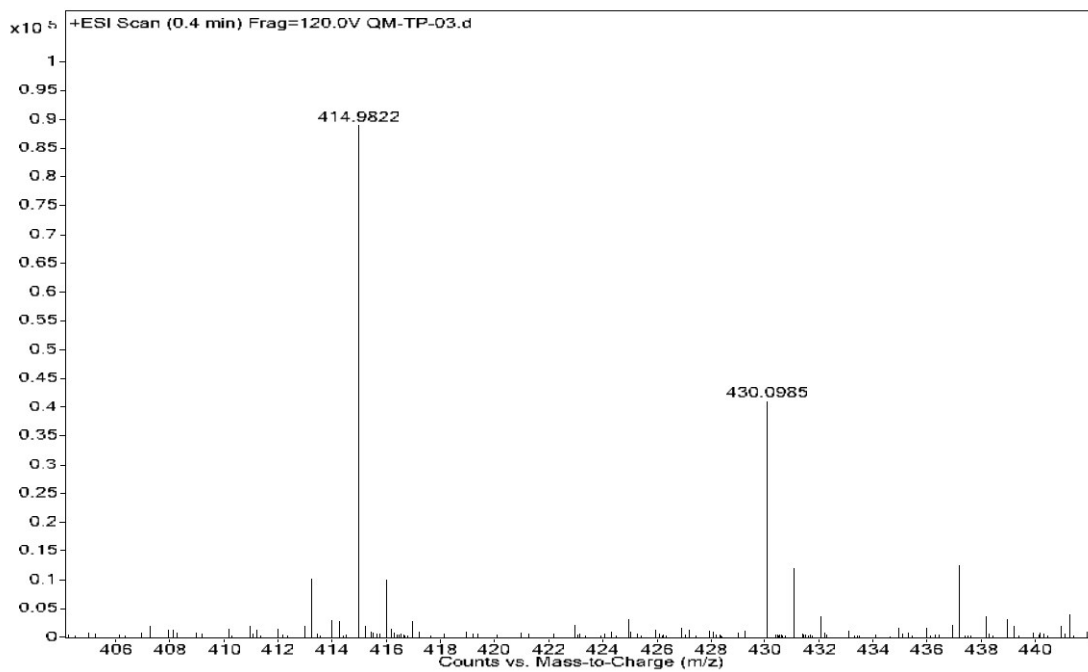


Fig. S9 High resolution mass spectrometry of QMT.

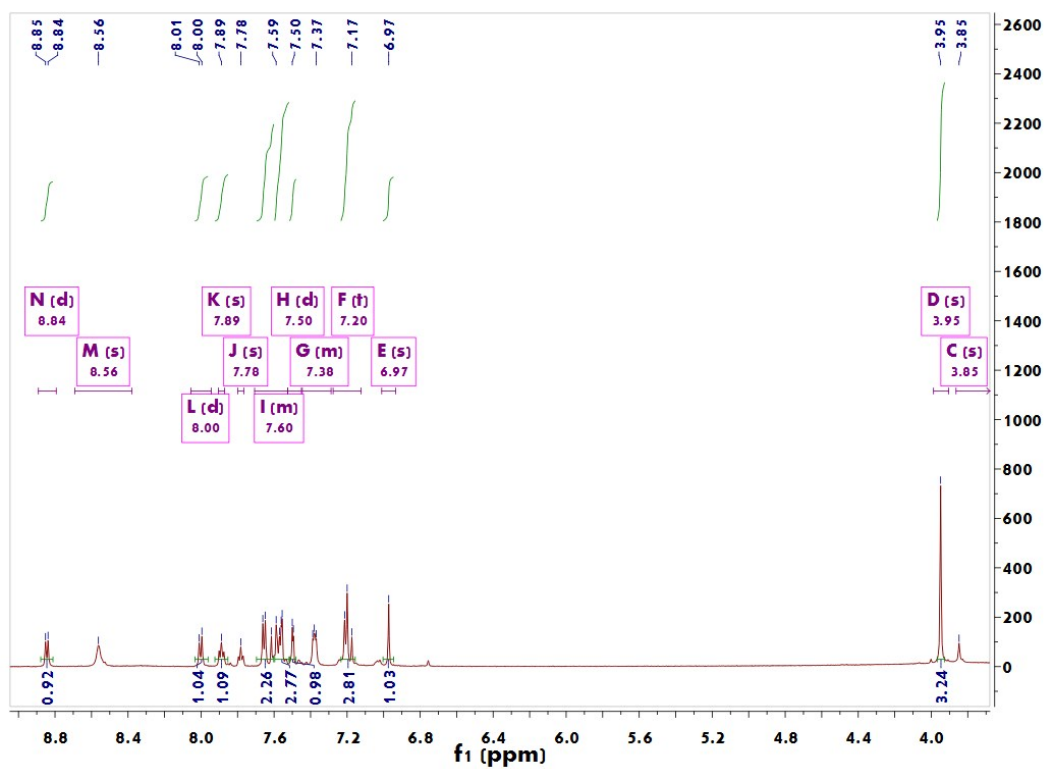


Fig. S10 ¹H-NMR spectrum of QMTP.

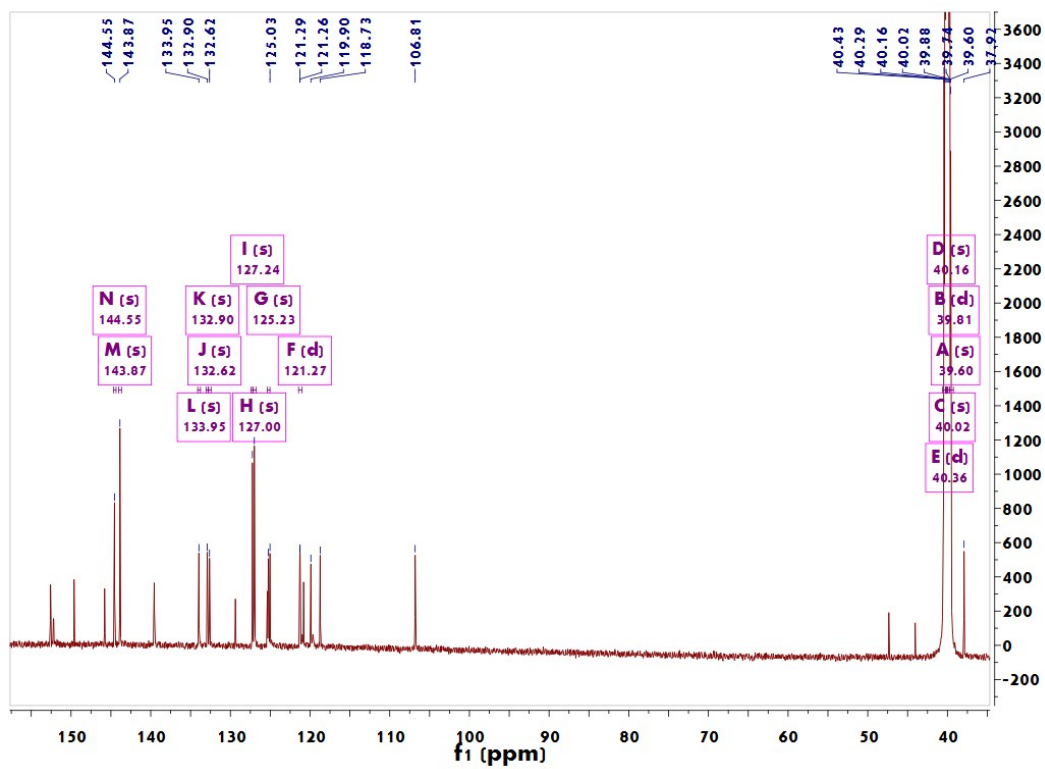


Fig. S11 ¹³C-NMR spectrum of QMTP.

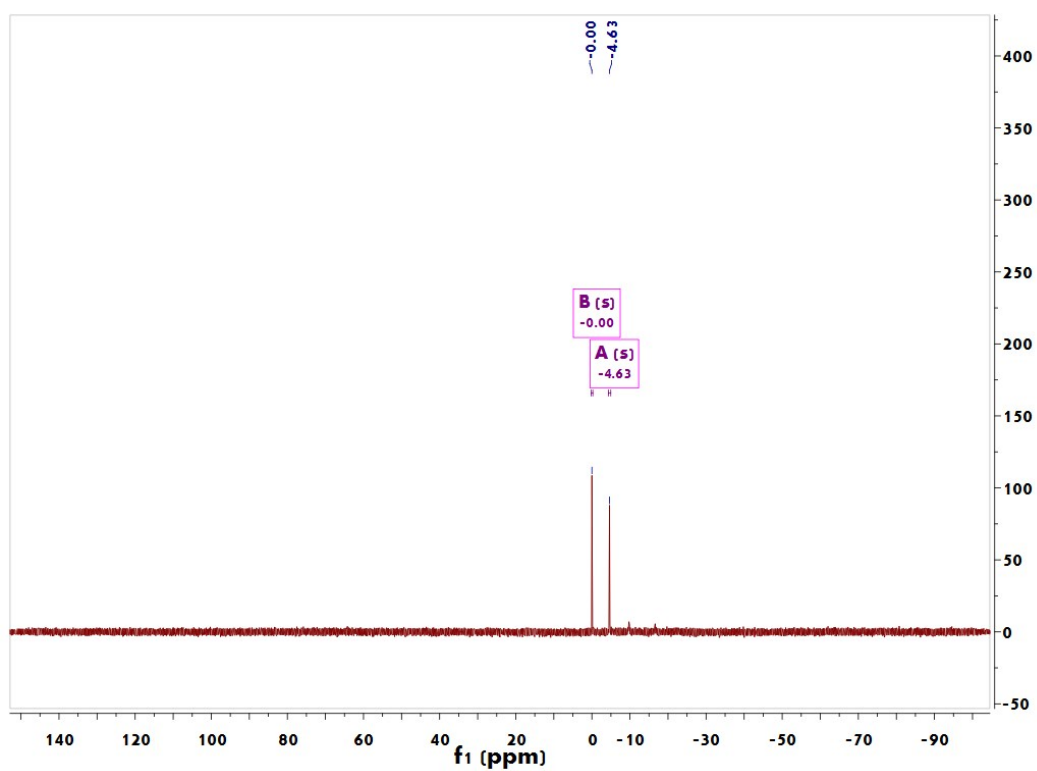


Fig. S12 ^{31}P -NMR spectrum of QMTP.

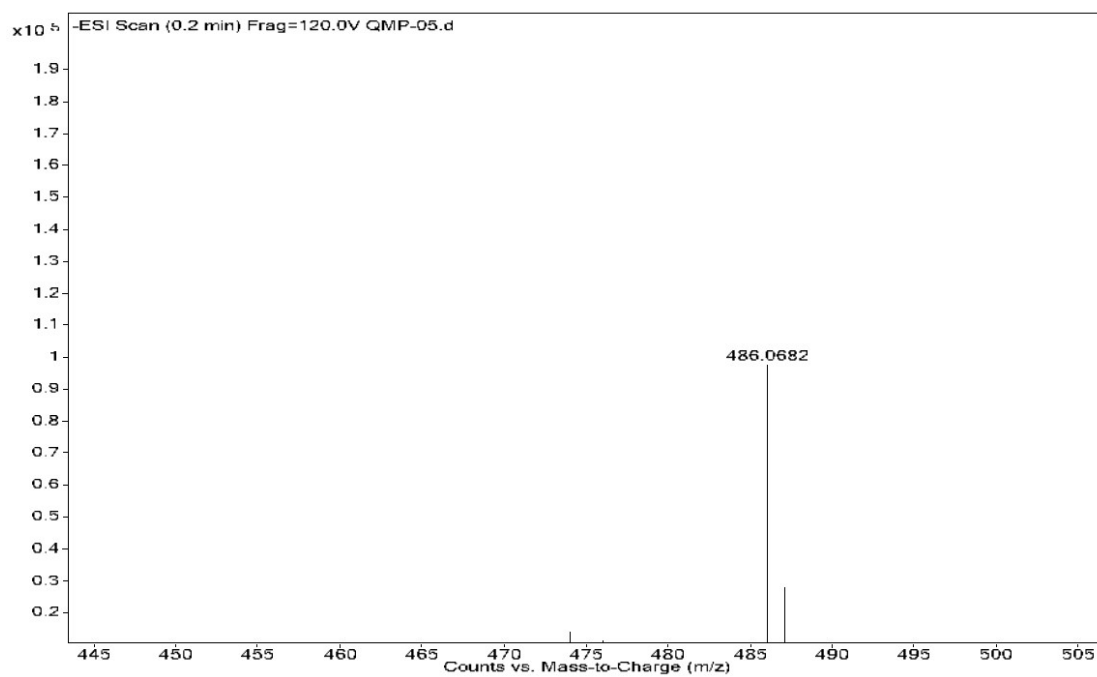


Fig. S13 High resolution mass spectrometry of QMTP.

Table S1 Fluorescence quantum yields of QMT and QMTP in water or DMSO, the reference is rhodamine B.

QY(Φ)	QMT	QMTP
H ₂ O	0.28	0.026
DMSO	0.01	0.031

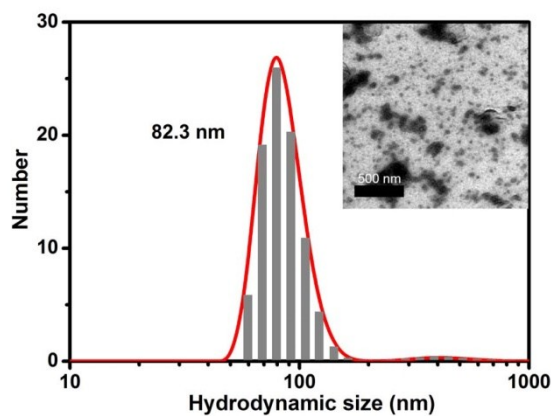


Fig. S14 The hydrodynamic size of QMT. The inset is TEM image. Scale bar: 500 nm.

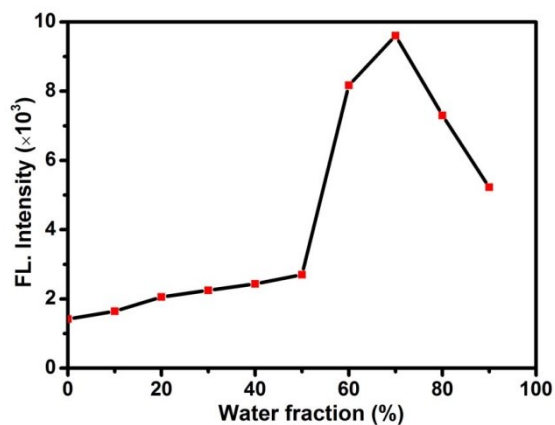


Fig. S15 Plot of fluorescence intensity versus the solvent composition of the DMSO/Water mixture of QMT.

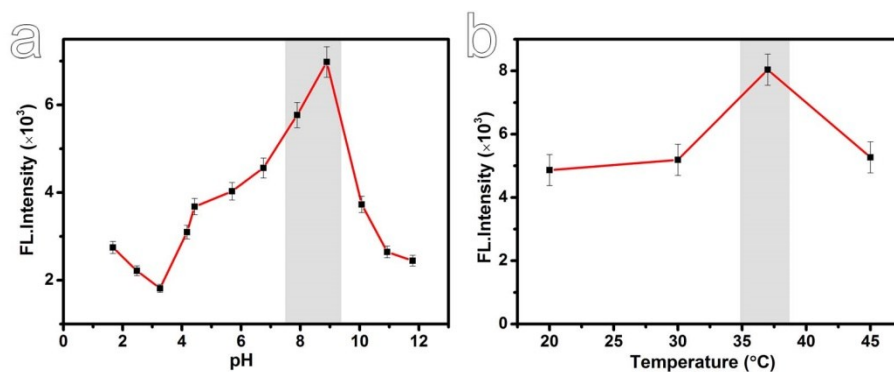


Fig. S16 Effects of pH (a) and temperature (b) on the fluorescence of QMTP (5 μM) with 2000 U L⁻¹ ALP in Tris-HCl buffer.

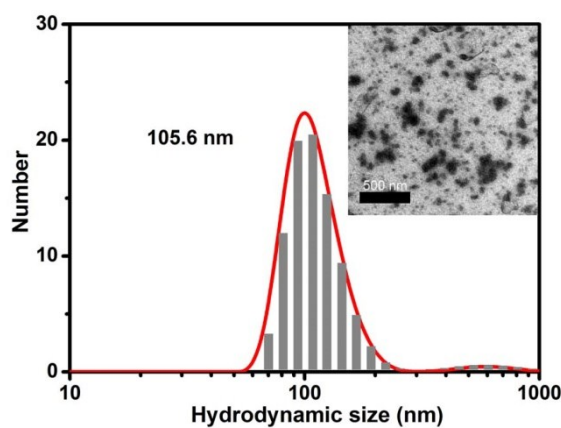


Fig. S17 The hydrodynamic size of QMTP treated with the ALP (2000 U L⁻¹). The inset is TEM image. Scale bar: 500 nm.

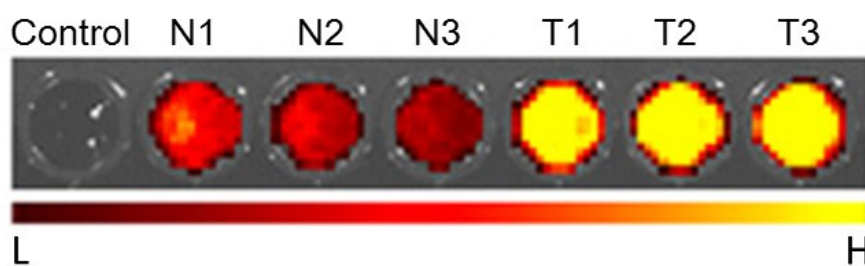


Fig. S18 The fluorescence images of the QMTP (5 μM) recorded after incubated with 10 μL serum of healthy BALB/c (N1-N3) mice and 4T1 tumor-bearing mice (T1-T3) for 1 h at 37 °C in Tris-HCl buffer on an IVIS system ($\lambda_{\text{ex}} = 465 \text{ nm}$ and $\lambda_{\text{em}} = 640 \text{ nm}$).

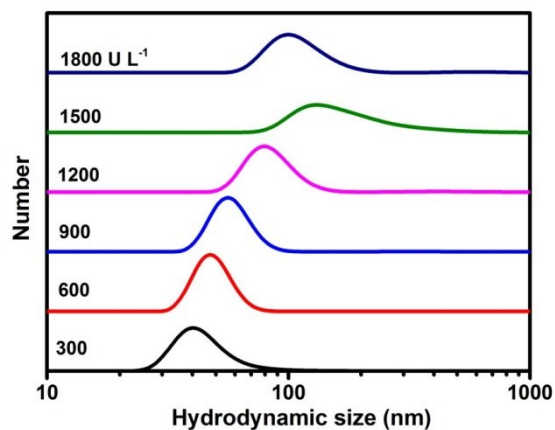


Fig. S19 The hydrodynamic size of QMTP ($5 \mu\text{M}$) treated with different concentrations of ALP ($300\text{-}1800 \text{ U L}^{-1}$).

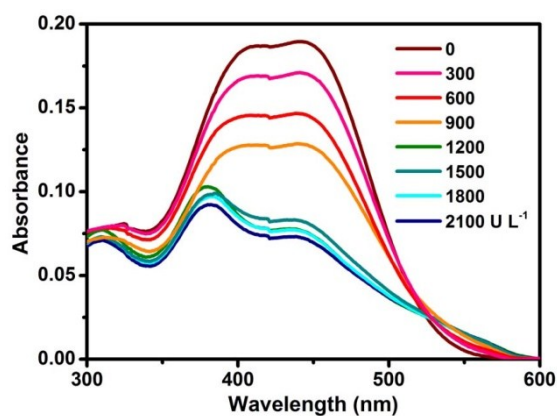


Fig. S20 Changes of absorption spectra of probe QMTP with the different concentrations of ALP in Tris-HCl buffer.

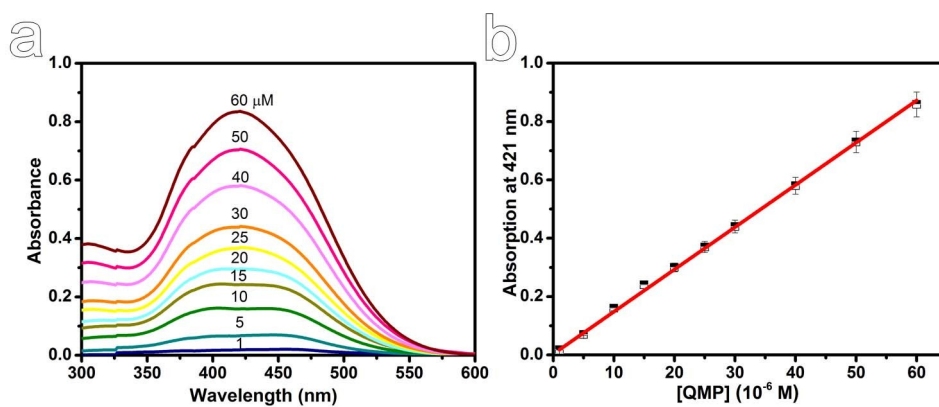


Fig. S21 Absorption spectra (a) and plot of intensity (b) against the concentration of QMTP in H₂O.

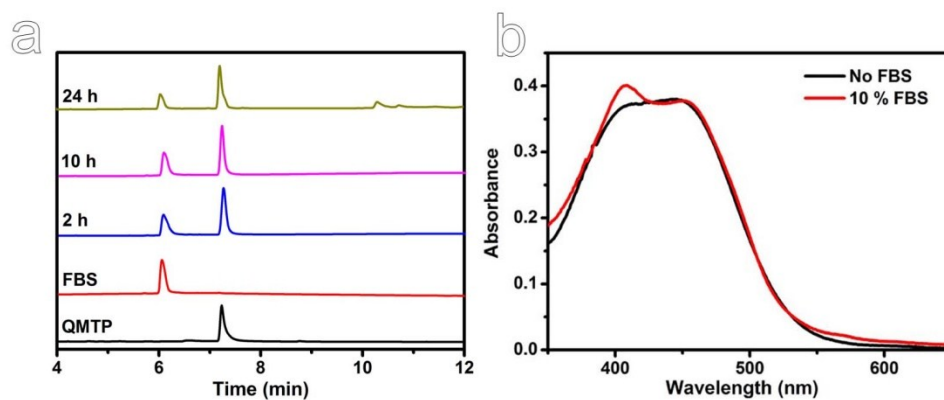


Fig. S22 (a) HPLC profiles of QMTP, FBS and QMTP treated with FBS for different time periods at 37 °C. (b) Absorption spectra of QMTP in Tris-HCl buffer with or without containing 10 % FBS.

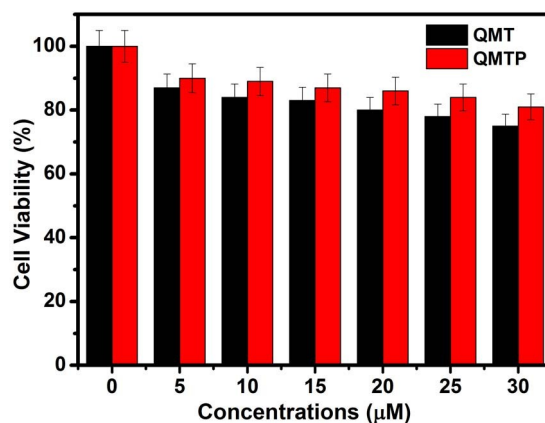


Fig. S23 MTT assays on the viability of HeLa cells after incubated with the different concentrations probes QMT and QMTP, i.e., 0, 5, 10, 15, 20, 25, and 30 μM (the error bars represent standard deviations of six parallel measurements).

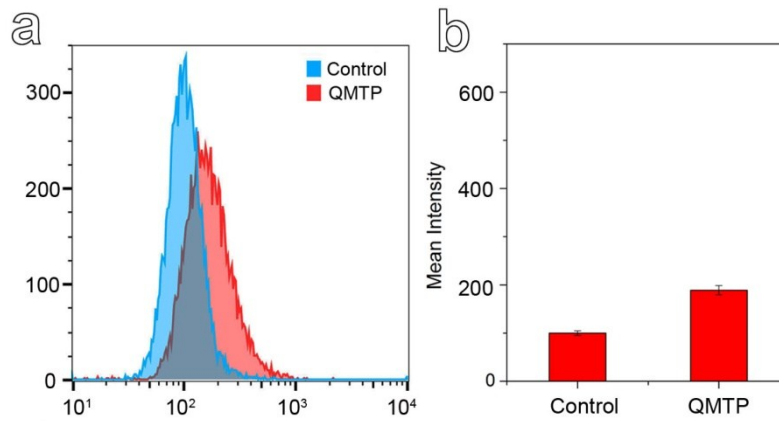


Fig. S24 Flow cytometry analysis of the QMTP incubated in regular medium and ALP inhibitor Na_3VO_4 pretreated medium for 3T3 cells.

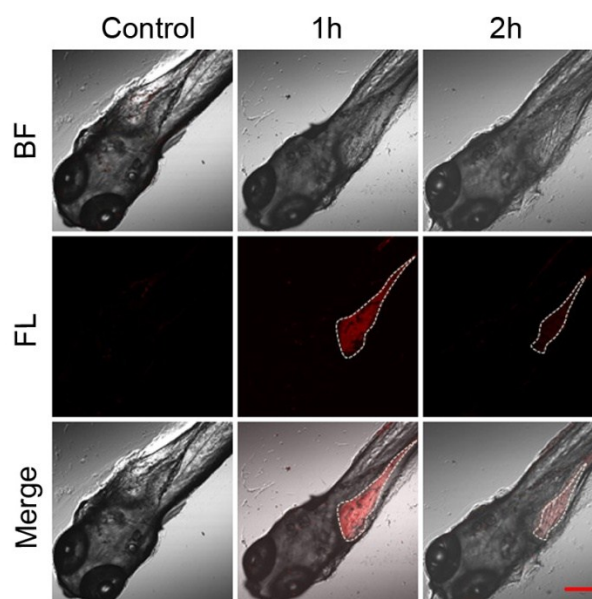


Fig. S25 *In vivo* fluorescence imaging of zebrafish larvae pre-treated with 0.5 mM of APAP posterior to the administration of QMTP probe for 0 h (control), 1 h or 2 h, collected at 600-680 nm and excited at 488 nm. BF: bright field; FL: fluorescence. Scale bar: 200 μm .