

Article

Wasabi (*Eutrema japonicum*) Reduces Obesity and Blood Pressure in Diet-Induced Metabolic Syndrome in Rats

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Supplementary Information

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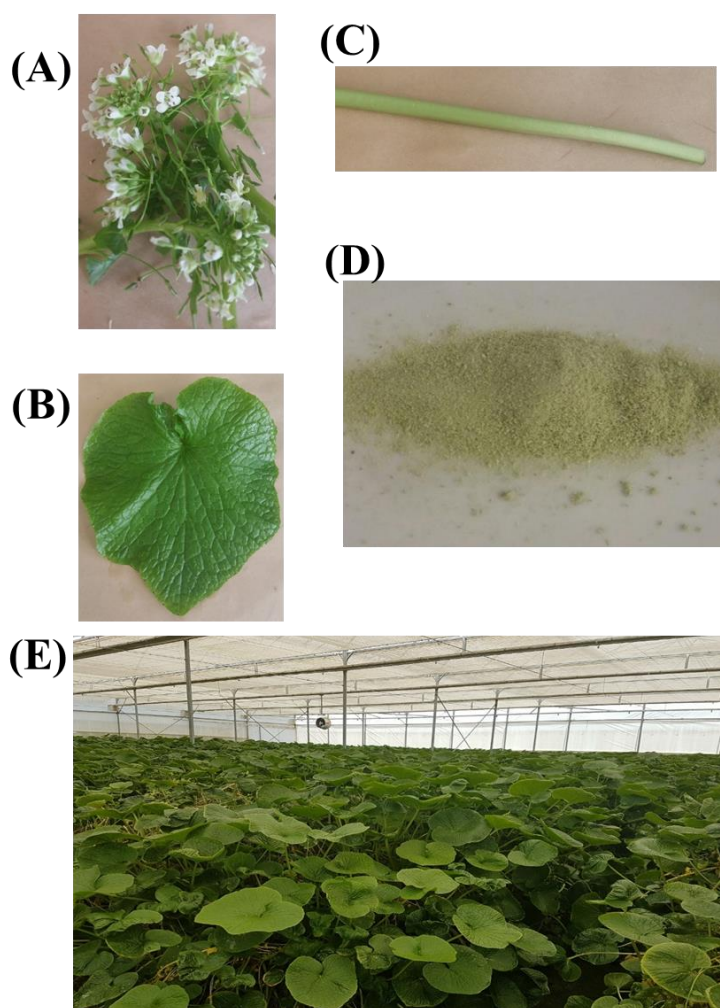


Figure S1. Plant sections of Australian hydroponic wasabi: (A) flower; (B) leaf; (C) stem; (D) powder; (E) Shima Wasabi - Northern Tasmania Farm.

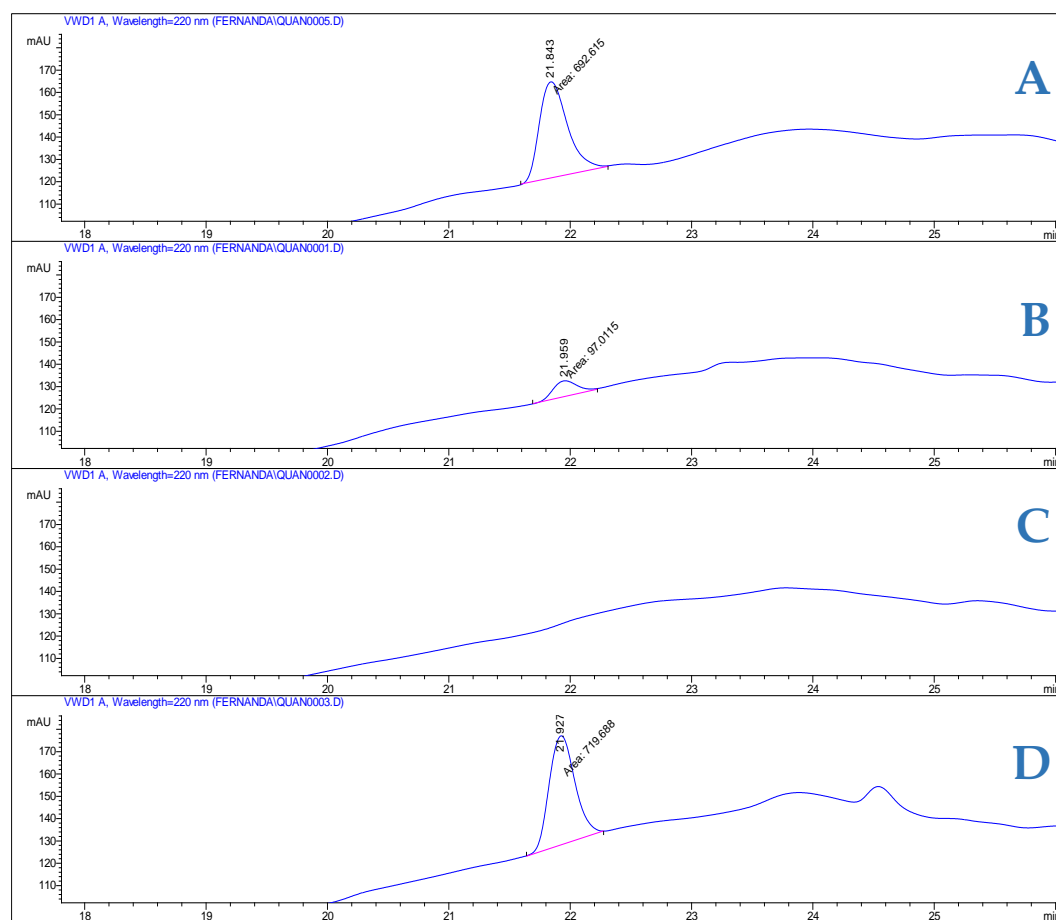


Figure S2. Expanded chromatograms of the analysis of 6-MSITC by ultra-high performance liquid chromatography. (A) Chromatogram of 5 mg/mL standard 6-MSITC, (B) Secondary ether extracted material, (C) Residual material after double ether extraction and (D) Primary 6-MSITC ether extraction.

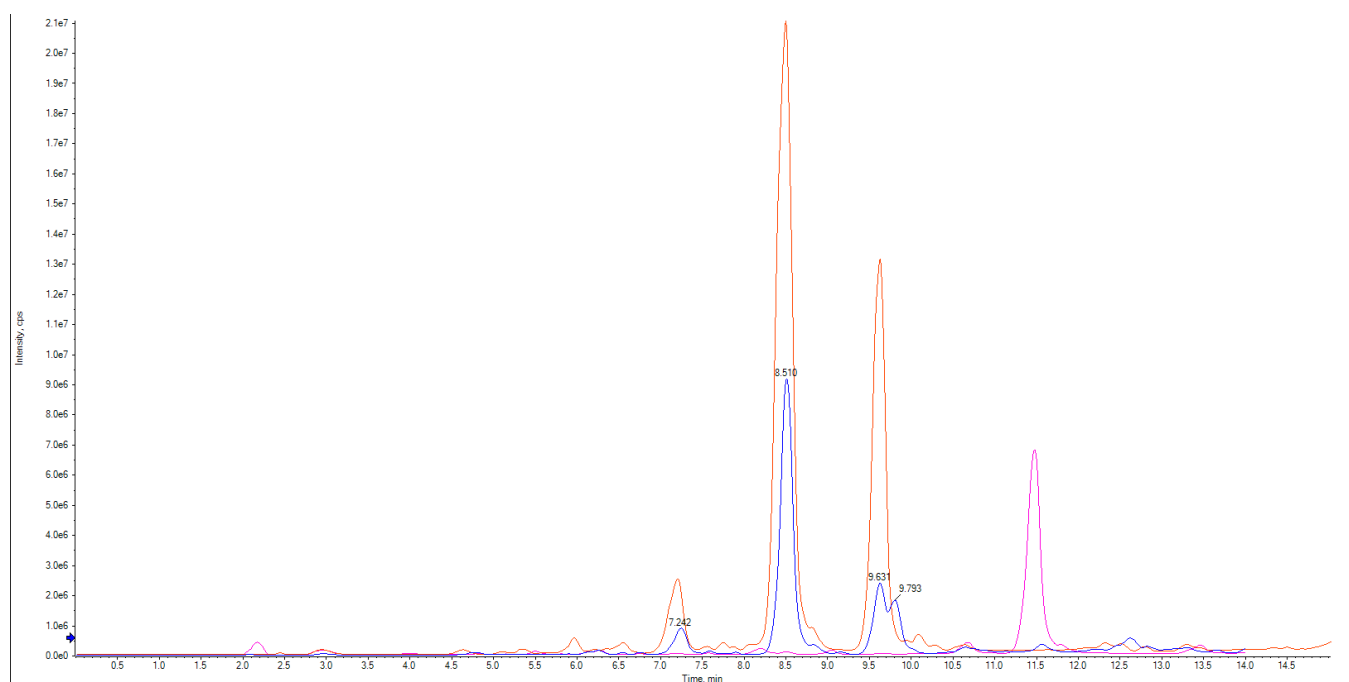


Figure S3. uHPLC MS comparison of synthetic 6-MSITC (orange line) and that extracted (blue line) from *E. japonicum*. The pink line shows the fraction containing only residual material from wasabi after the extraction, showing no detectable 6-MSITC.

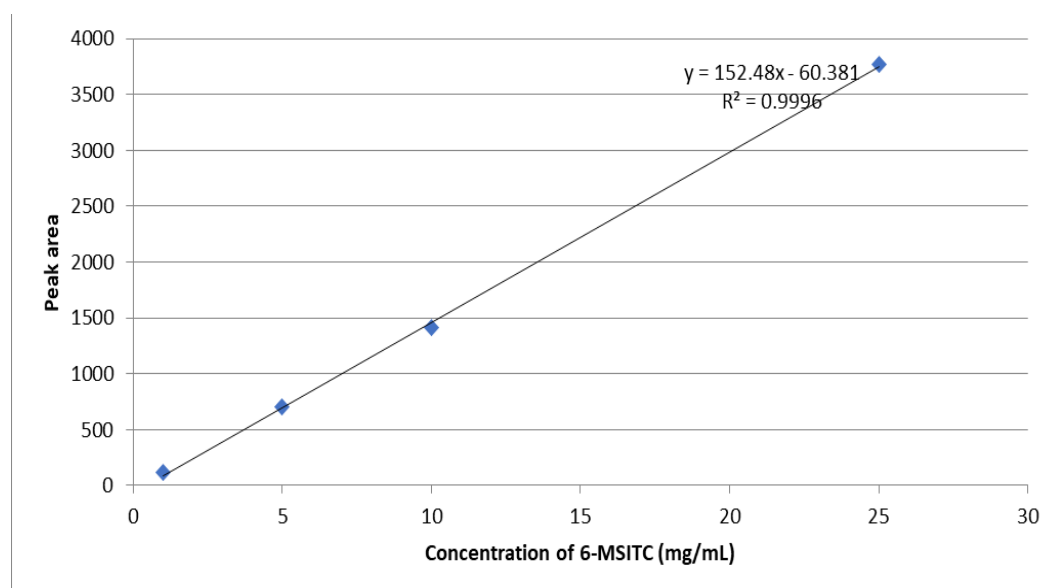


Figure S4. Standard curve of 6-MSITC. Results presented by plotting peak areas into a standard curve ($r^2 > 0.99$).

Table S1. 6-MSITC concentration in hydroponic wasabi (*E. japonicum*) rhizome and stem blend powder.

Sample name	Concentration 6-MSITC (mg/mL)
Primary ether extracted material	5.26
Secondary ether extracted material	1.85
Residual material after double ether extraction	None detected

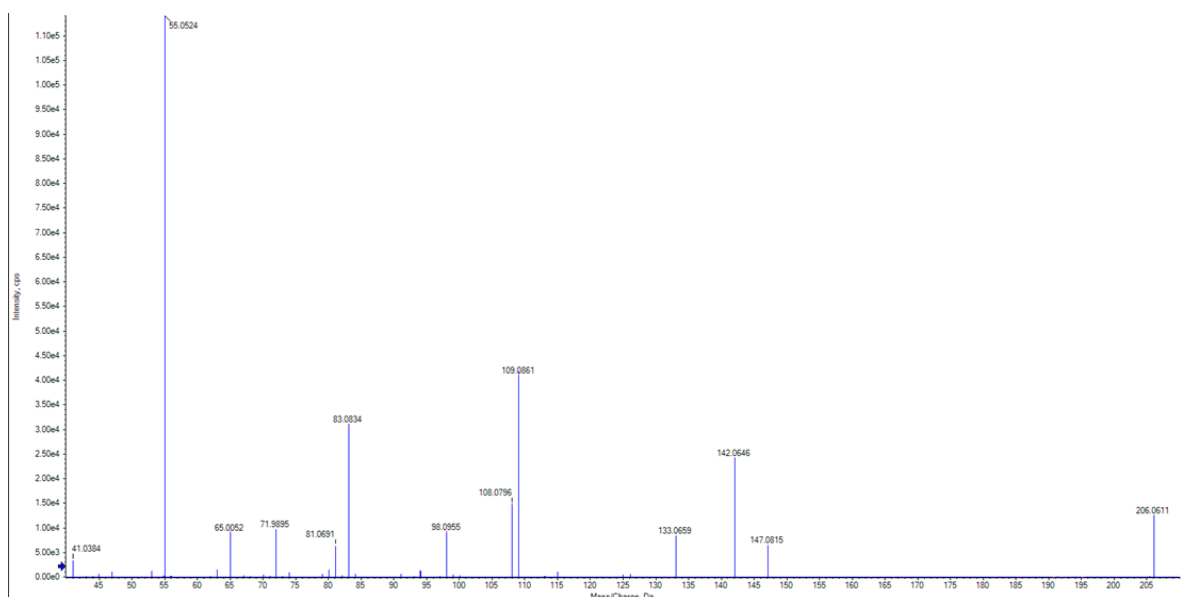
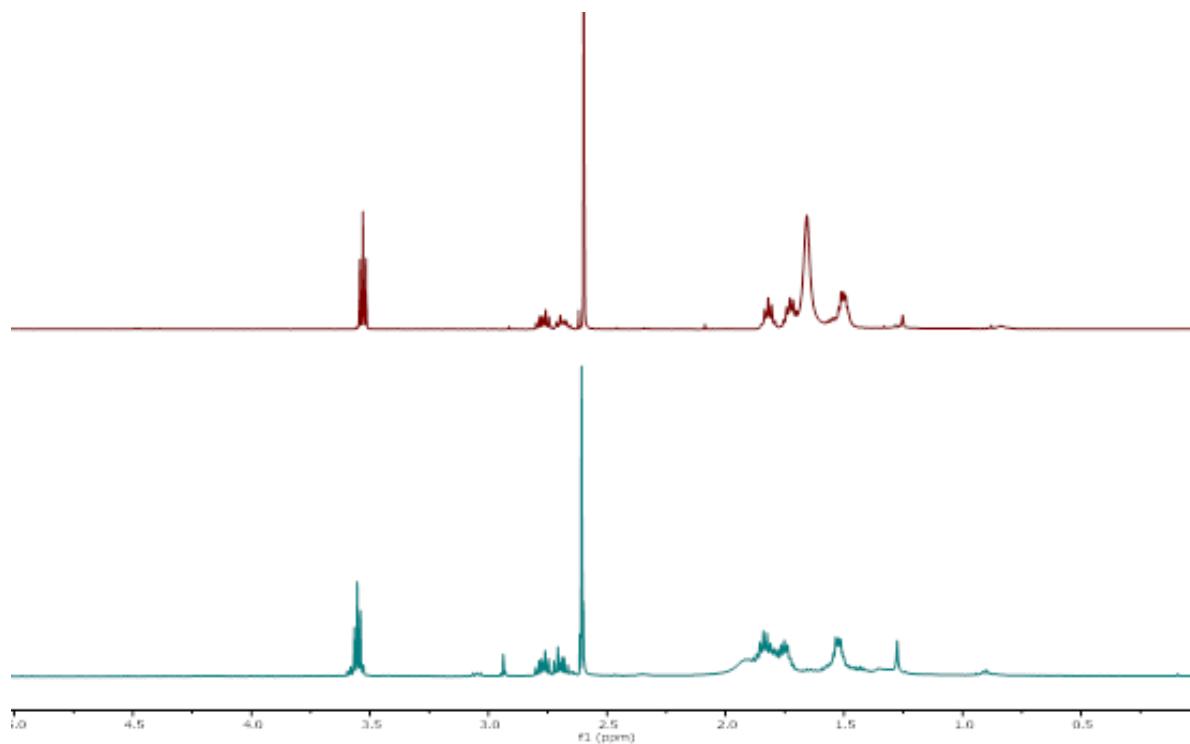


Figure S5. MS/MS spectra of *Eutrema japonicum* rhizome sample derived from *n*-hexane/diethyl ether extraction.

Table S2. Peak assignment identified the fragmentation pattern of 6-MSITC.

Formula	Observed (<i>m/z</i>)	Calculated (<i>m/z</i>)
CH ₃ SO-(CH ₂) ₆ -NCS (M+H)	206.0611	206.0673
CH ₃ SO-(CH ₂) ₅ -CH ₂ ⁺	147.0815	147.0838
SCN-(CH ₂) ₅ -CH ₂ ⁺	142.0646	142.0685
CH ₃ SO-(CH ₂) ₄ -(CH ₂) ⁺	133.0659	133.0683
CN-(CH ₂) ₄ -(CH)=(CH) ⁺	108.0796	108.0808
NCS-(CH ₂) ⁺	71.9895	71.9902

**Figure S6.** ¹H NMR comparison for authentic 6-MSITC (Top) and isolated 6-MSITC (bottom) from *E. japonicum* recorded in CDCl₃.

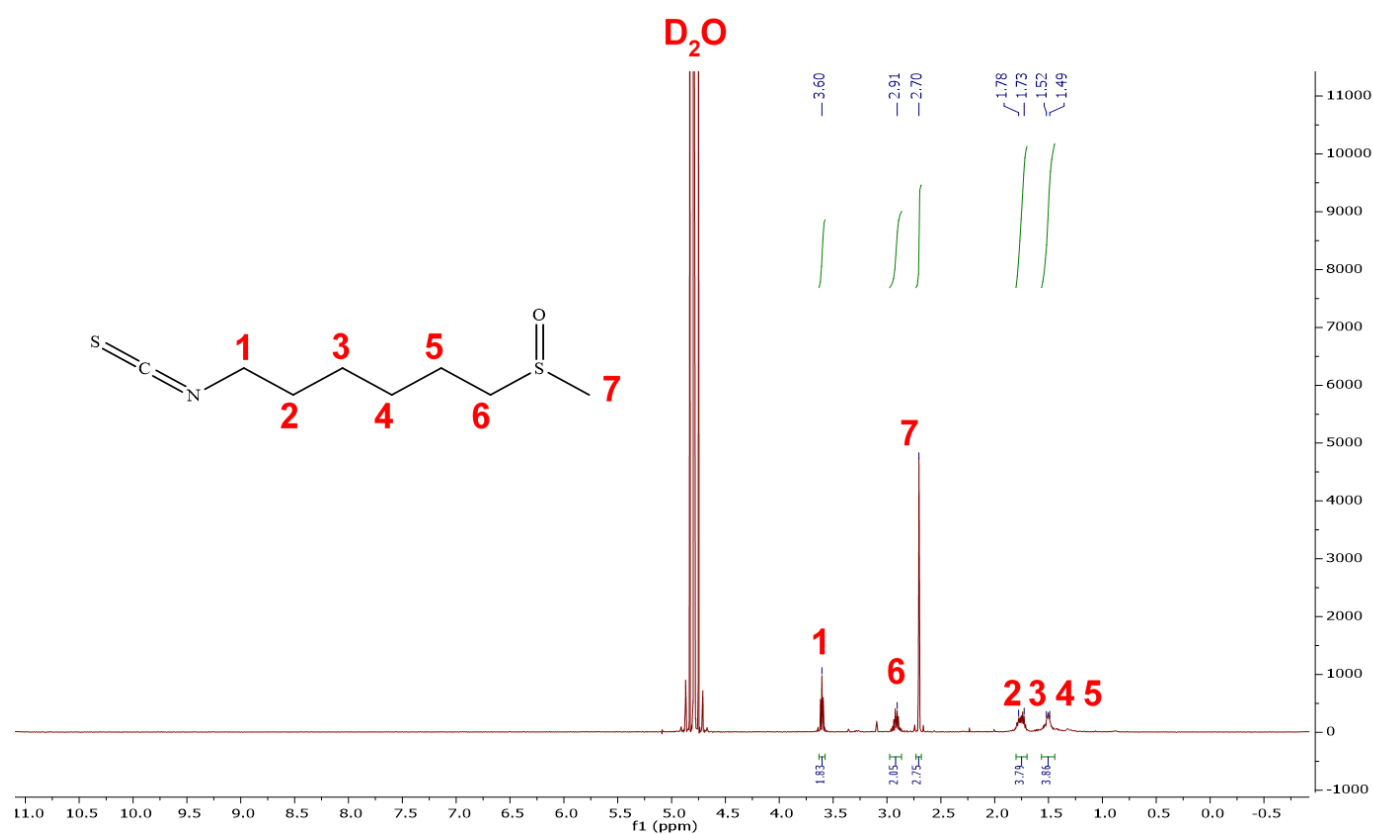


Figure S7. The ¹H NMR spectra of 6-MSITC extracted from wasabi rhizome and stems.

Table S3. Tabulated ¹H NMR data for 6-MSITC in D₂O at 500 MHz.

Position	δ ¹ H (ppm), multiplicity
1	3.60, t
2	1.80, m
3	1.71, m
4	1.55, m
5	1.47, m
6	2.95, m
7	2.88, s

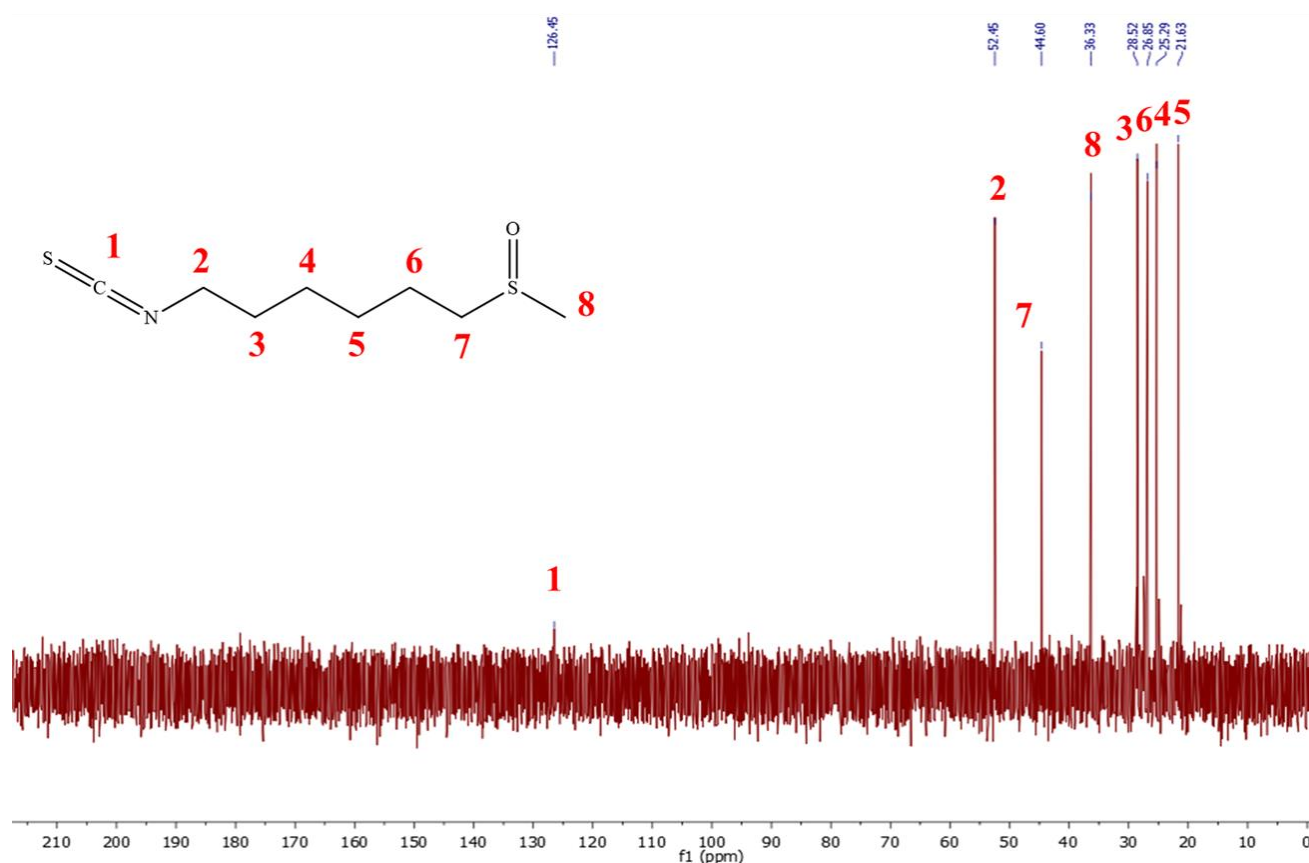


Figure S8. ^{13}C NMR of the isolated 6-MSITC recorded in D_2O at 125 MHz.

Table S4. ^{13}C NMR data for 6-MSITC in D_2O at 125 MHz.

Position	$\delta^{13}\text{C}$ (ppm), type
1	126.5, $\text{CH}_2\text{-N}$
2	52.5, CH_2
3	28.5, CH_2
4	25.3, CH_2
5	21.6, CH_2
6	26.9, CH_2
7	44.6, CH_2
8	36.3, $\text{CH}_3\text{-SO-}$