Supporting Information

A novel electrochemical conducting polymer sensor for the rapid, selective and sensitive detection of biothiols

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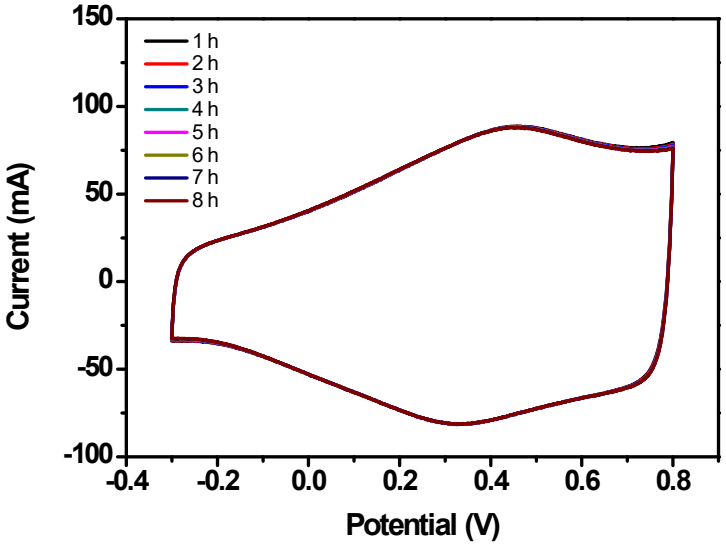

Figure S1. Cyclic voltammogram of poly(EDOT-thioacetate) in PBS buffer over 8h.

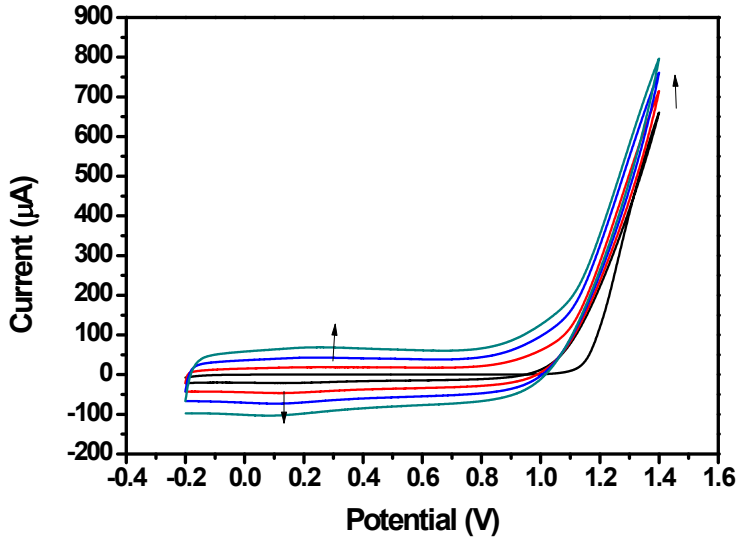

Figure S2. Potentiodynamic copolymerisation of 5 mM EDOT-thioacetate and 50 mM EDOT acetonitrile, containing 100 mM $LiClO_4$.

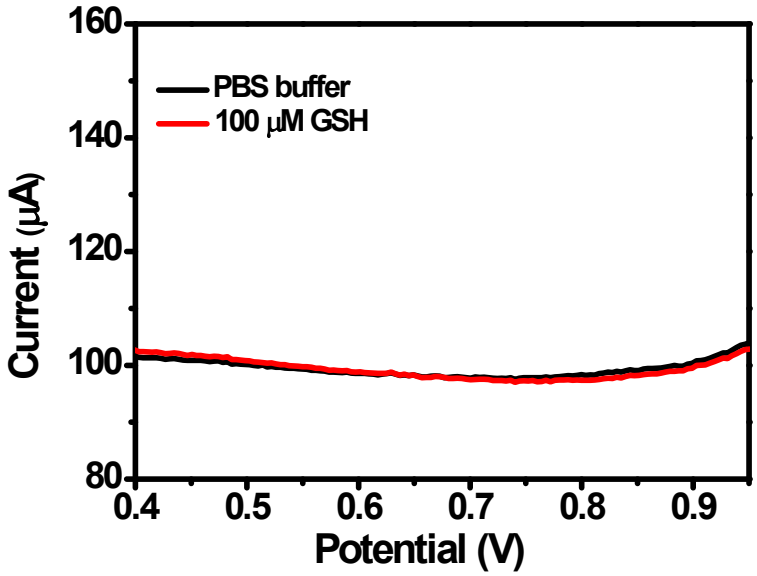

Figure S3. DPV trace of PEDOT-modified Au electrode in PBS solution with and without 100 μM GSH.

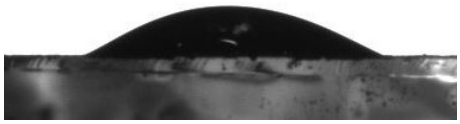

Figure S4. A side view of a water droplet on poly(EDOT-thioacetate-*co*-EDOT) showing hydrophilic surface (contact angle: 29.7°).

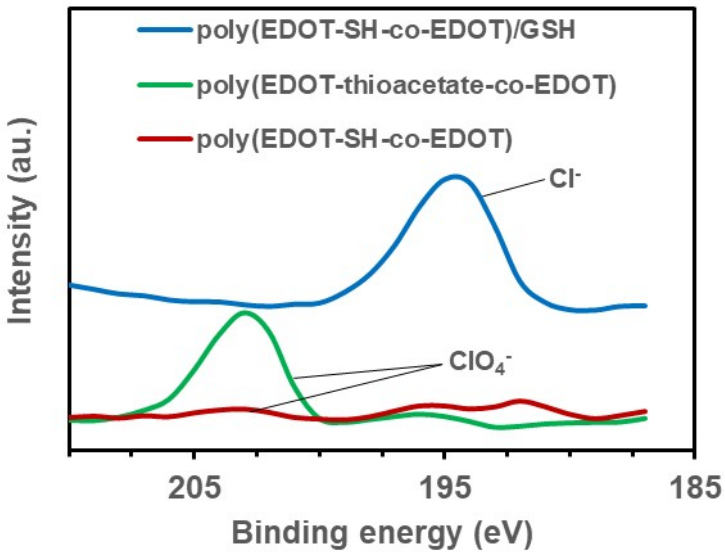

Figure S5. The zoomed XPS survey spectra showing the Cl2p peak changes during reduction/oxidation steps.

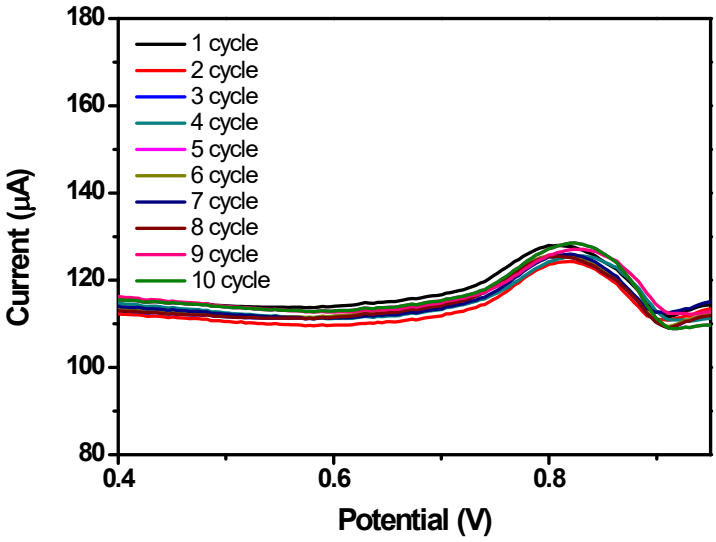

Figure S6. DPV traces of poly(EDOT-SH-*co*-EDOT) in PBS solution containing 100 μM GSH for 10 cycles.

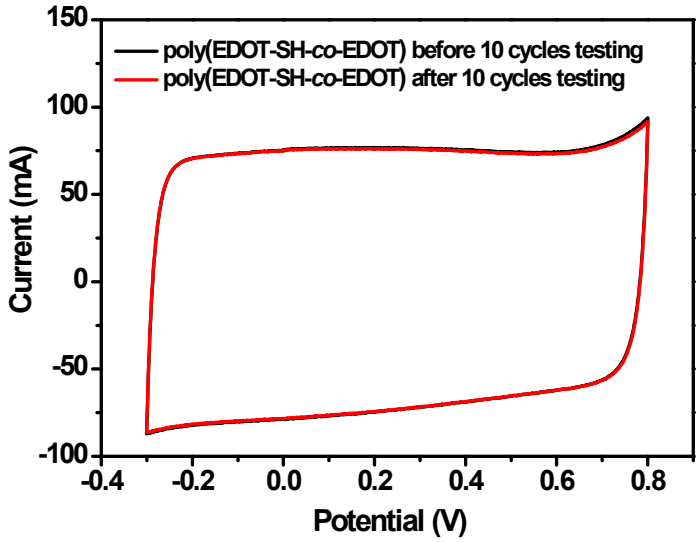

Figure S7. CV scans of poly(EDOT-SH-*co*-EDOT) in PBS buffer before and after 10 re-usability tests.

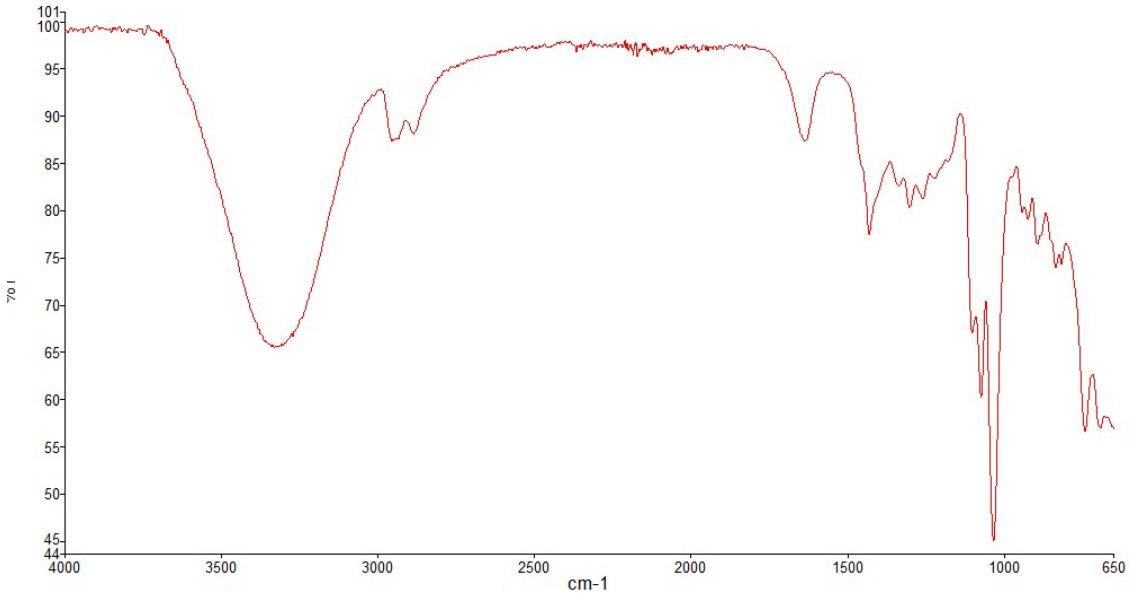

Figure S8. FTIR spectrum of 3-chloro-1,2-propanediol.

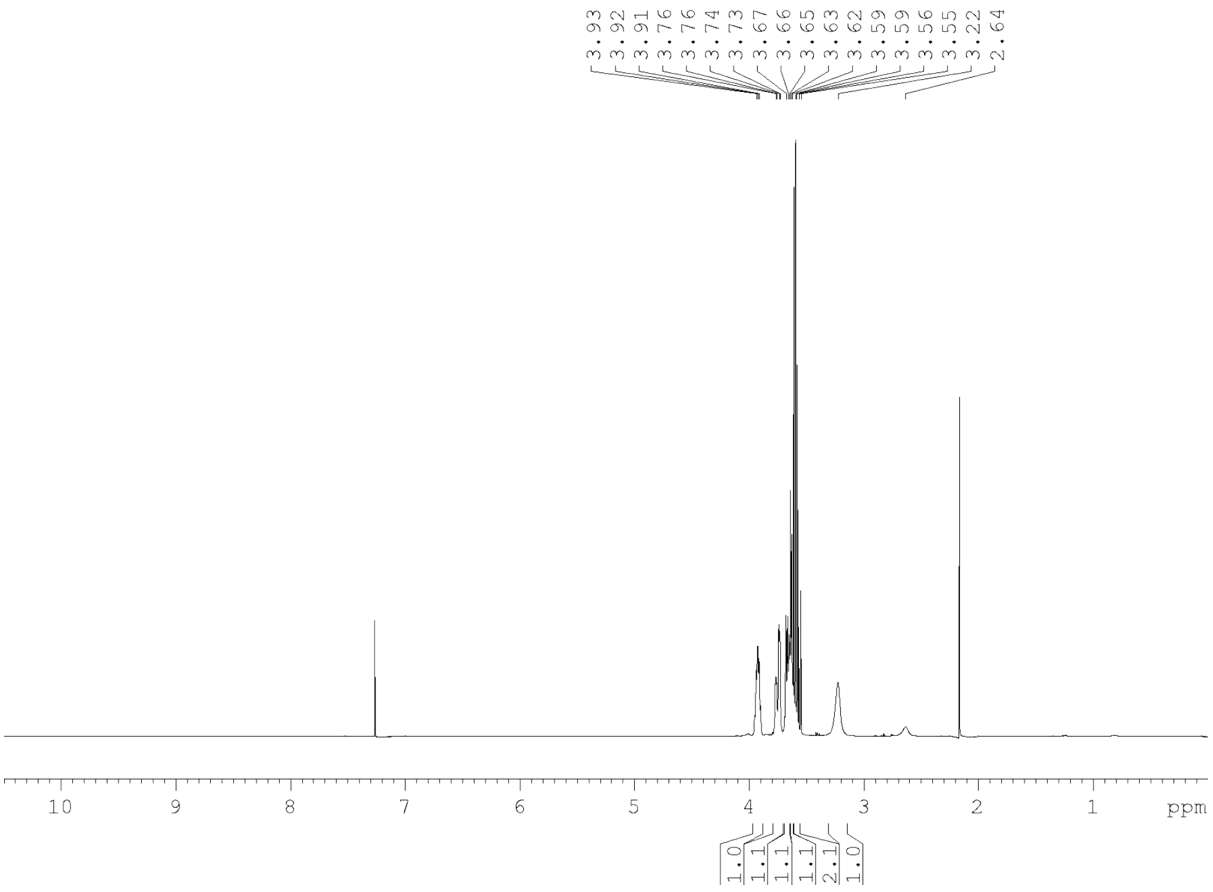

Figure S9. ^{1}H NMR spectrum of 3-chloro-1,2-propanediol (400 MHz; $CDCl_3$).

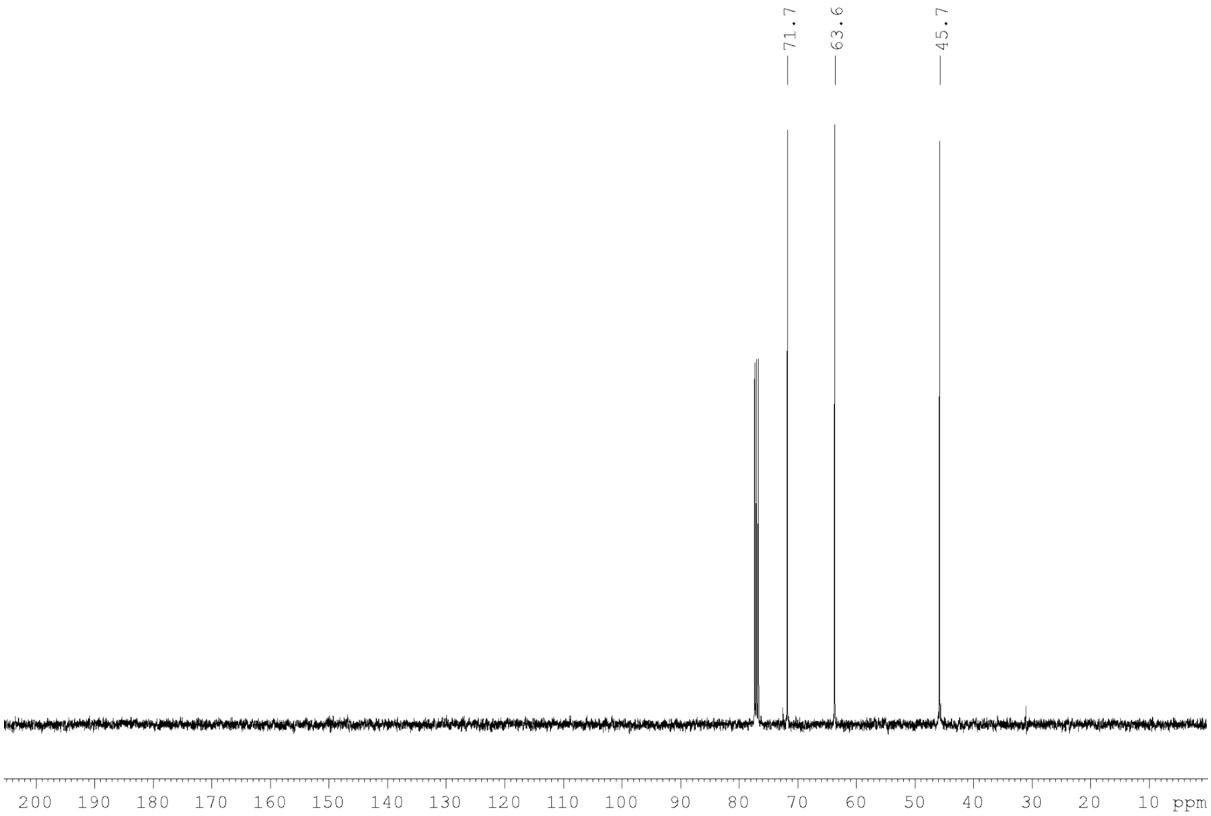

Figure S10. ^{13}C NMR spectrum of 3-chloro-1,2-propanediol (100 MHz; $CDCl_3$).

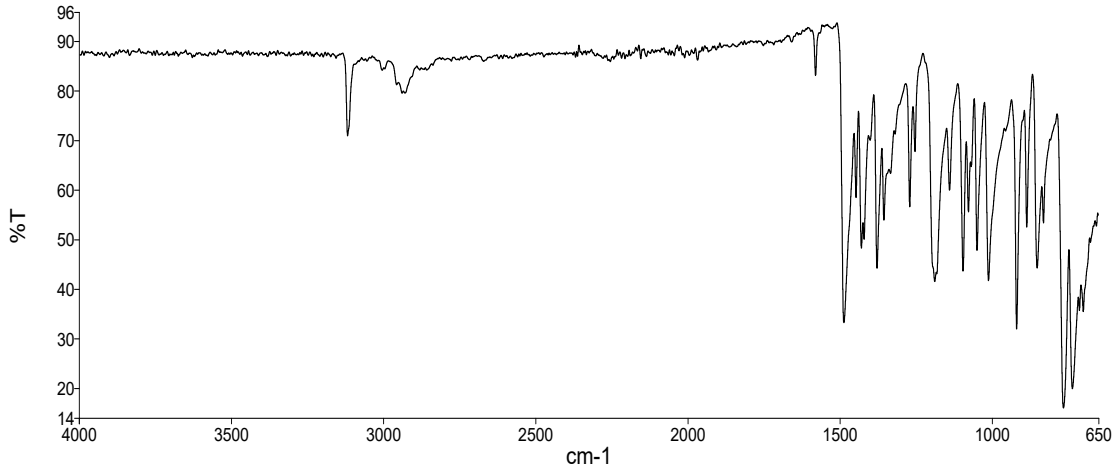

Figure S11. FTIR spectrum of 2-chloromethyl-2,3-dihydrothieno[3,4-*b*]-1,4-dioxine.

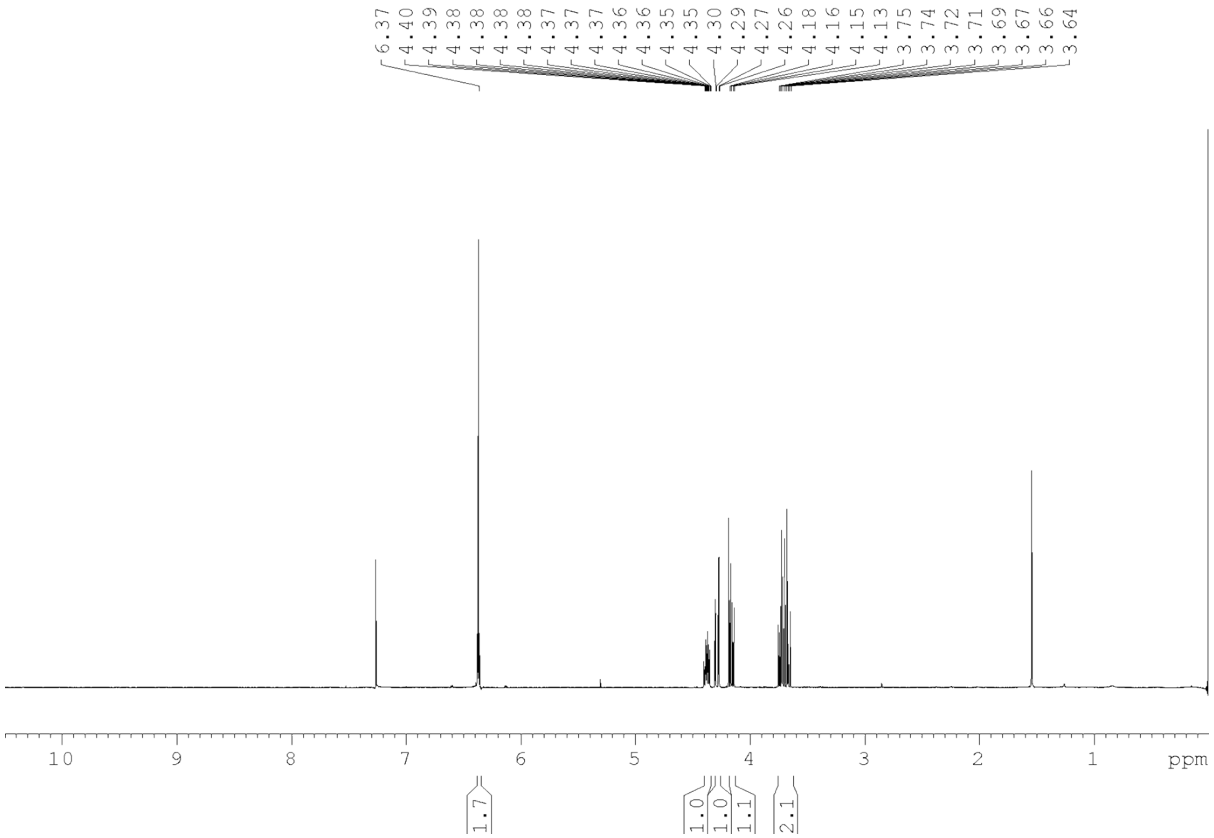

Figure S12. ^{1}H NMR spectrum of 2-chloromethyl-2,3-dihydrothieno[3,4-*b*]-1,4-dioxine (400 MHz; $CDCl_3$).

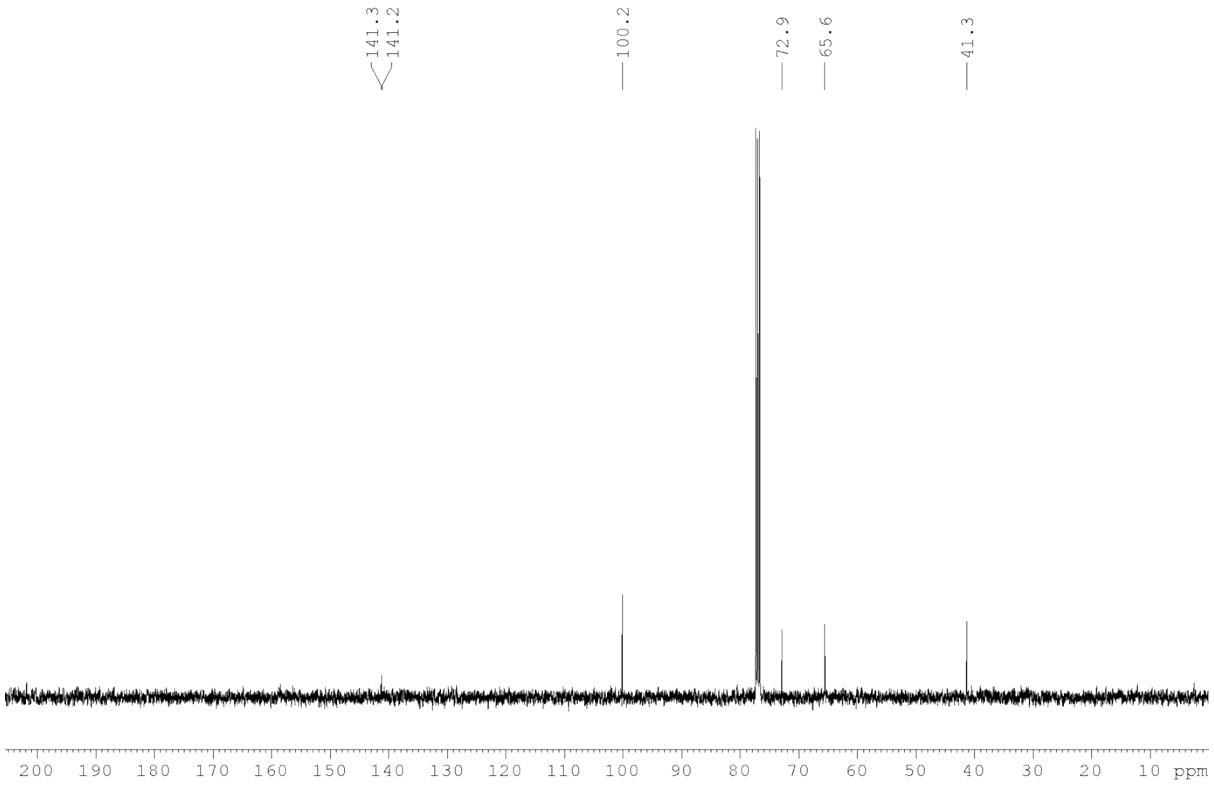

Figure S13. ^{13}C NMR spectrum of 2-chloromethyl-2,3-dihydrothieno[3,4-*b*]-1,4-dioxine (100 MHz; $CDCl_3$).

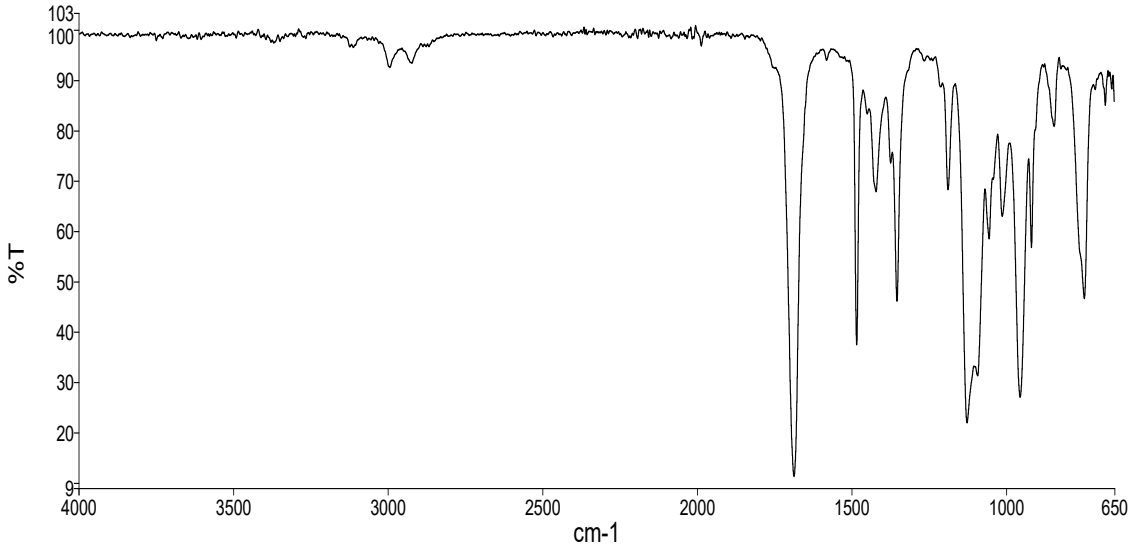

Figure S14. FTIR spectrum of *S*-((2,3-dihydrothieno[3,4-*b*][1,4]dioxin-2-yl)methyl) ethanethioate (EDOT-thioacetate).

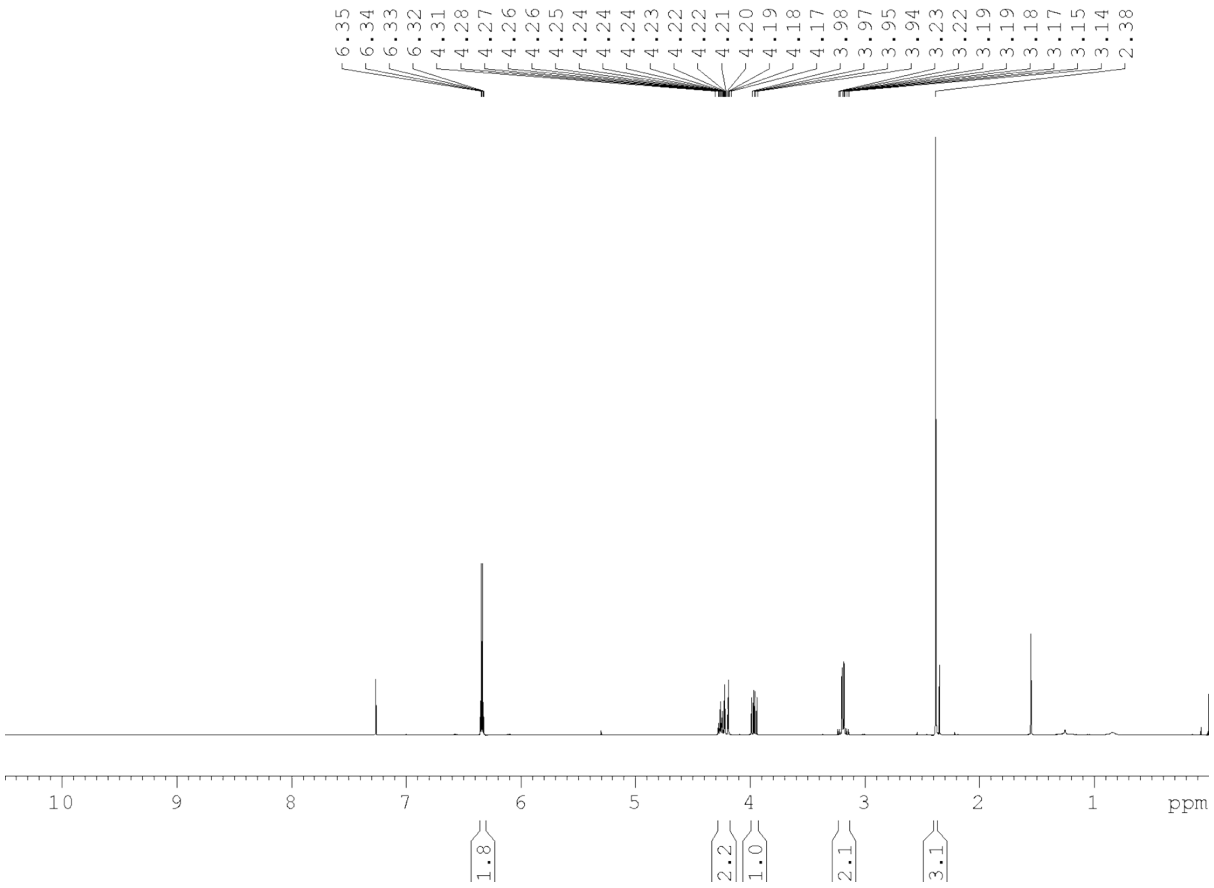

Figure S15. ^{1}H NMR spectrum of *S*-((2,3-dihydrothieno[3,4-*b*][1,4]dioxin-2-yl)methyl) ethanethioate (EDOT-thioacetate) (400 MHz; $CDCl_3$).

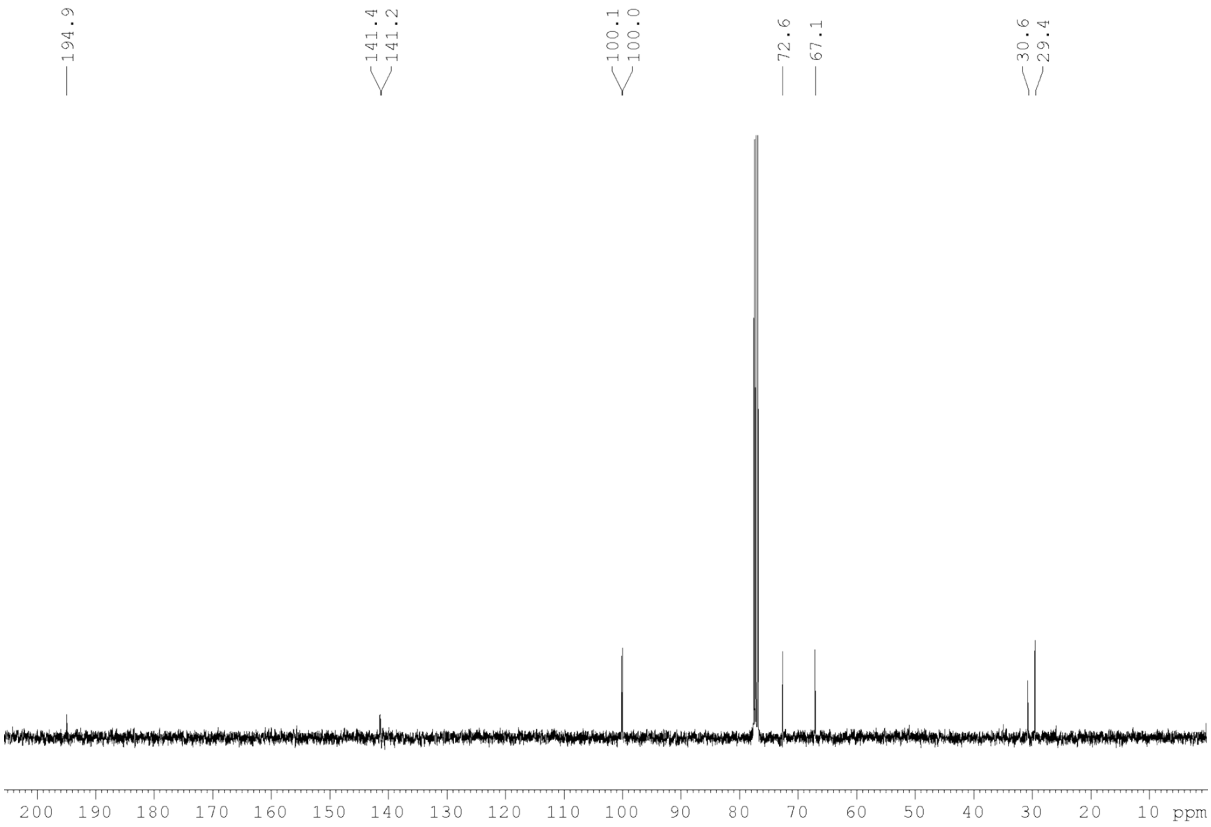

Figure S16. ^{13}C NMR spectrum of *S*-((2,3-dihydrothieno[3,4-*b*][1,4]dioxin-2-yl)methyl) ethanethioate (EDOT-thioacetate) (100 MHz; $CDCl_3$).