

## Supporting information

# Discovery of a Novel Non-Narcotic Analgesic Derived from the CL-20 Explosive: Synthesis, Pharmacology and Target Identification of Thiowurtzine, a Potent Inhibitor of the Opioid Receptors and the Ion Channels

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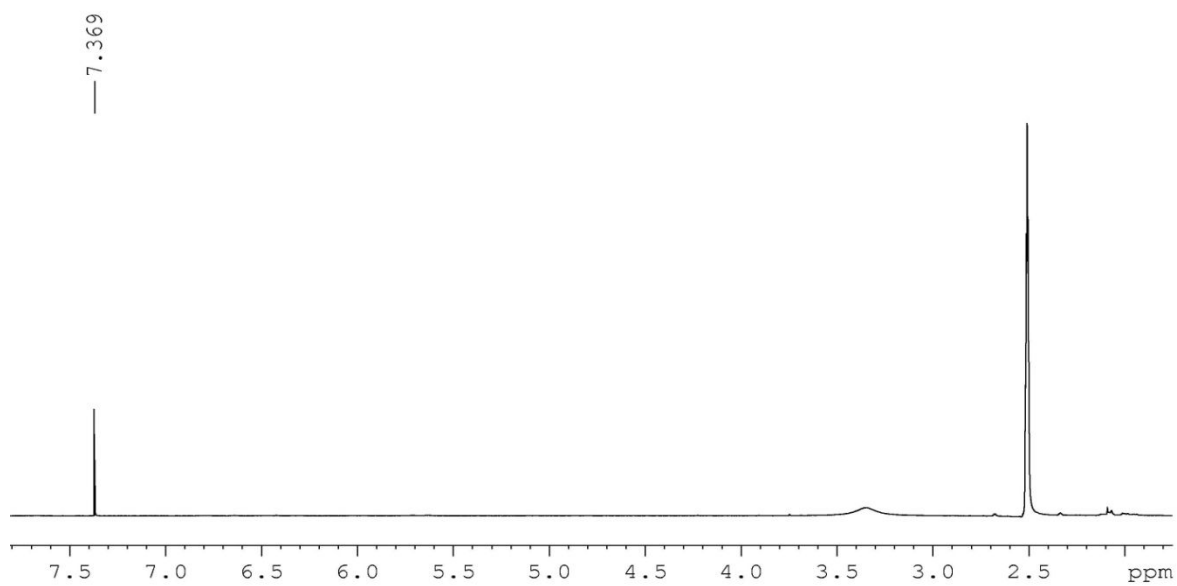
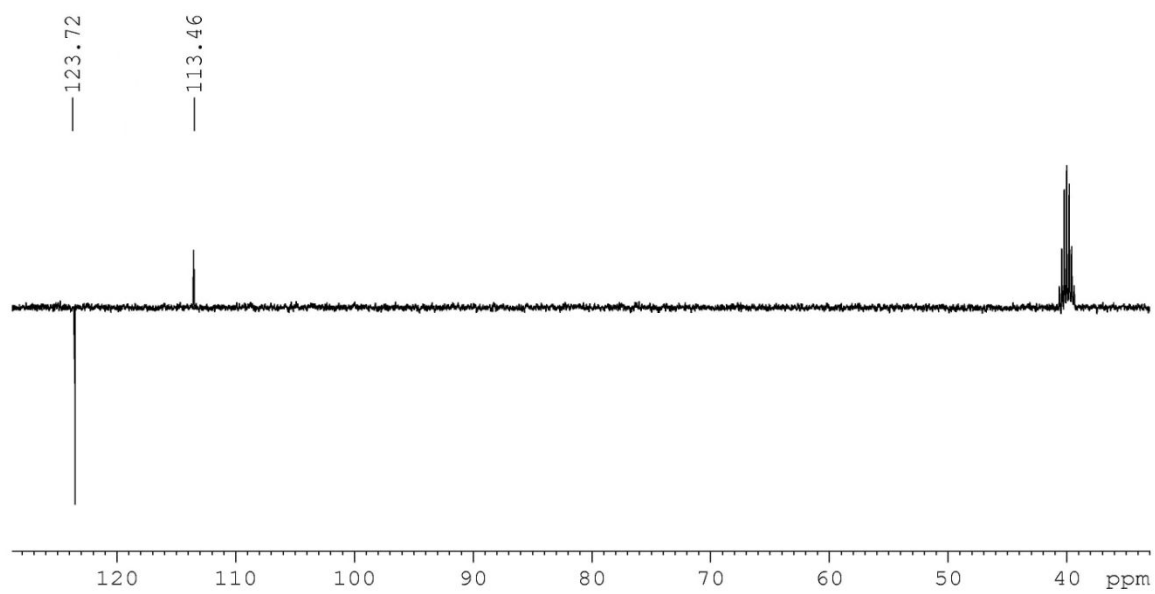
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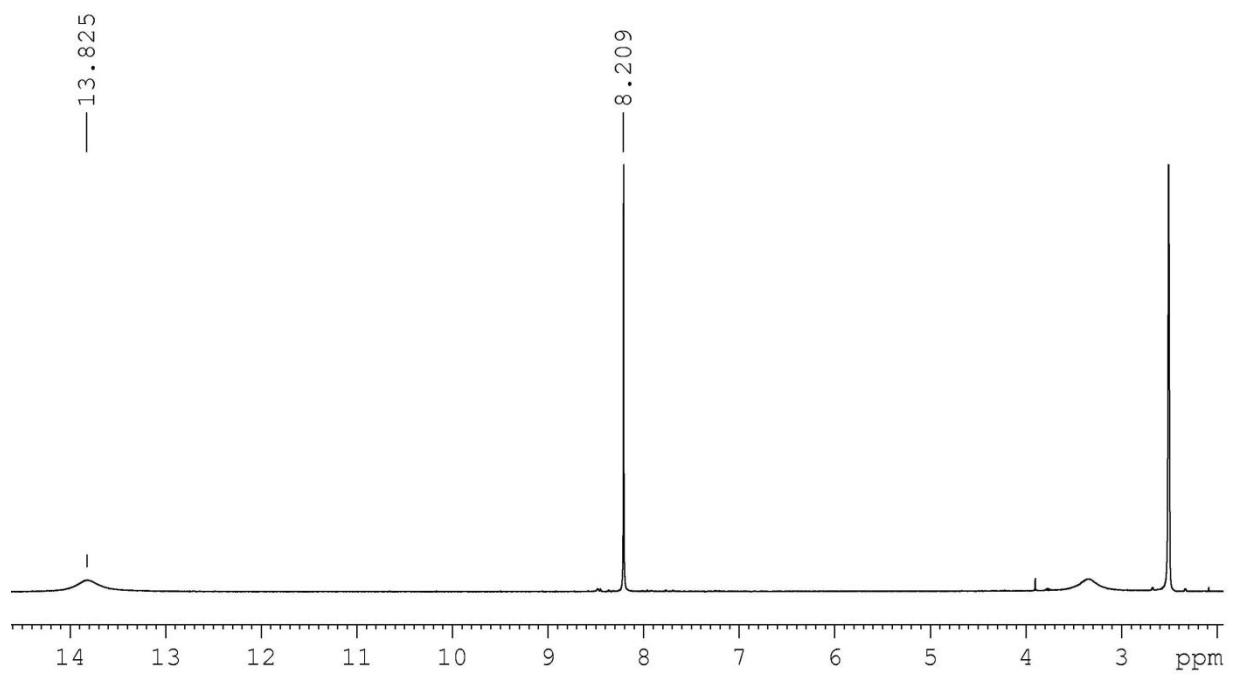
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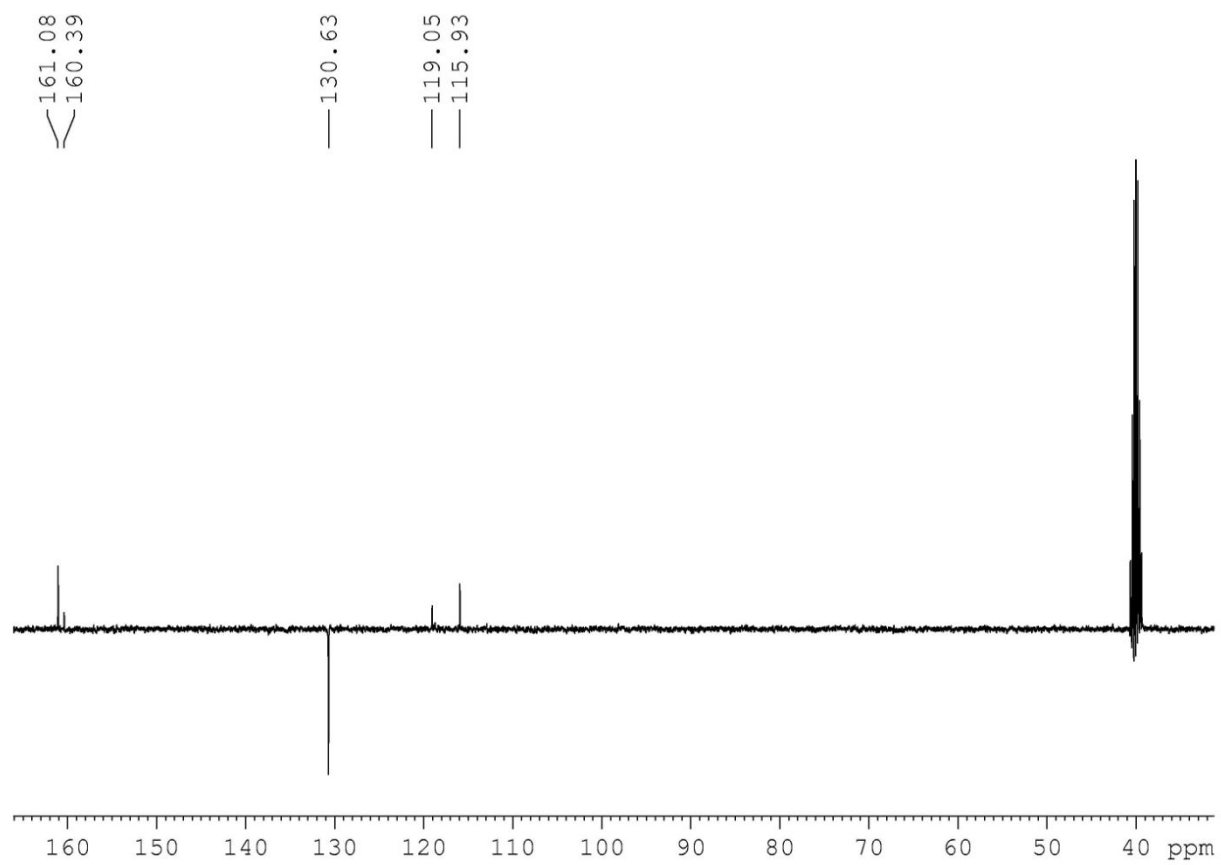
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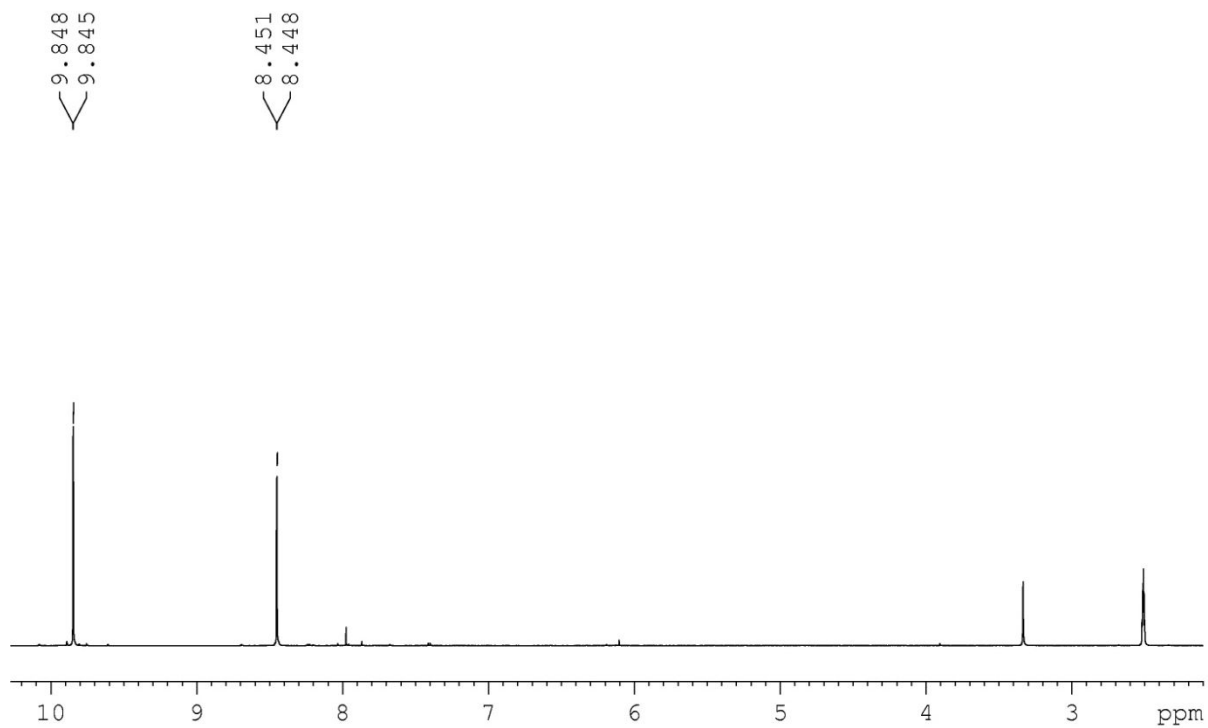
 $^1\text{H}$  NMR spectrum of dibromothiophene (VIII) in  $\text{DMSO-}d_6$  $^{13}\text{C}$  NMR spectrum of dibromothiophene (VIII) in  $\text{DMSO-}d_6$



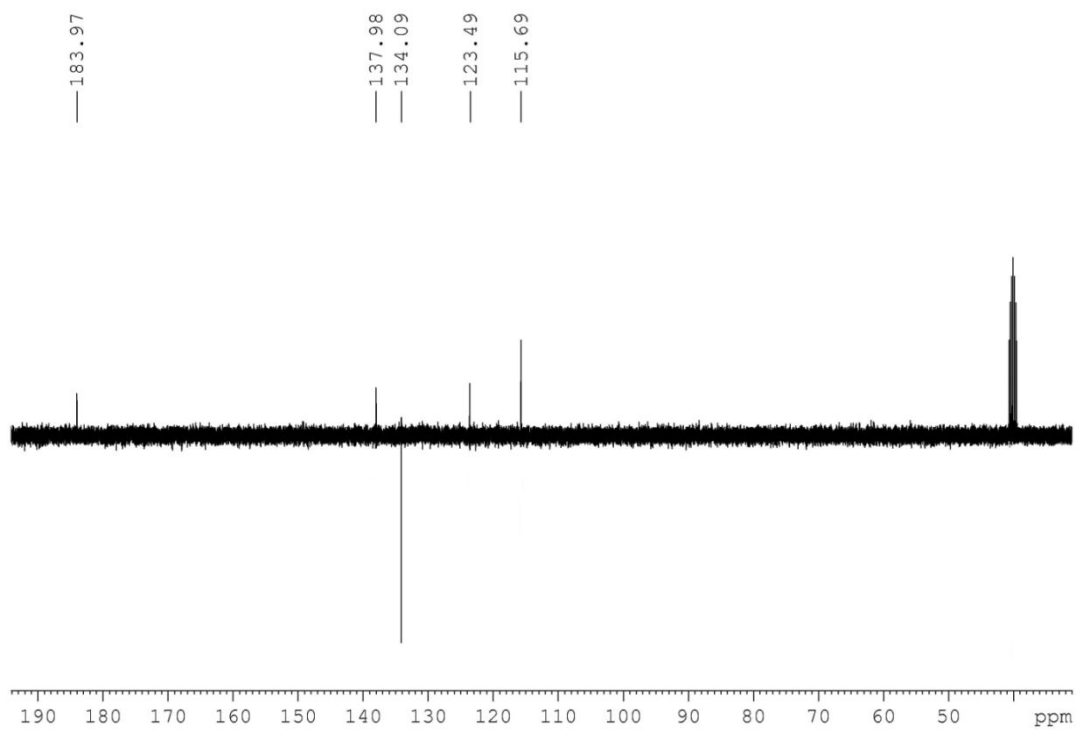
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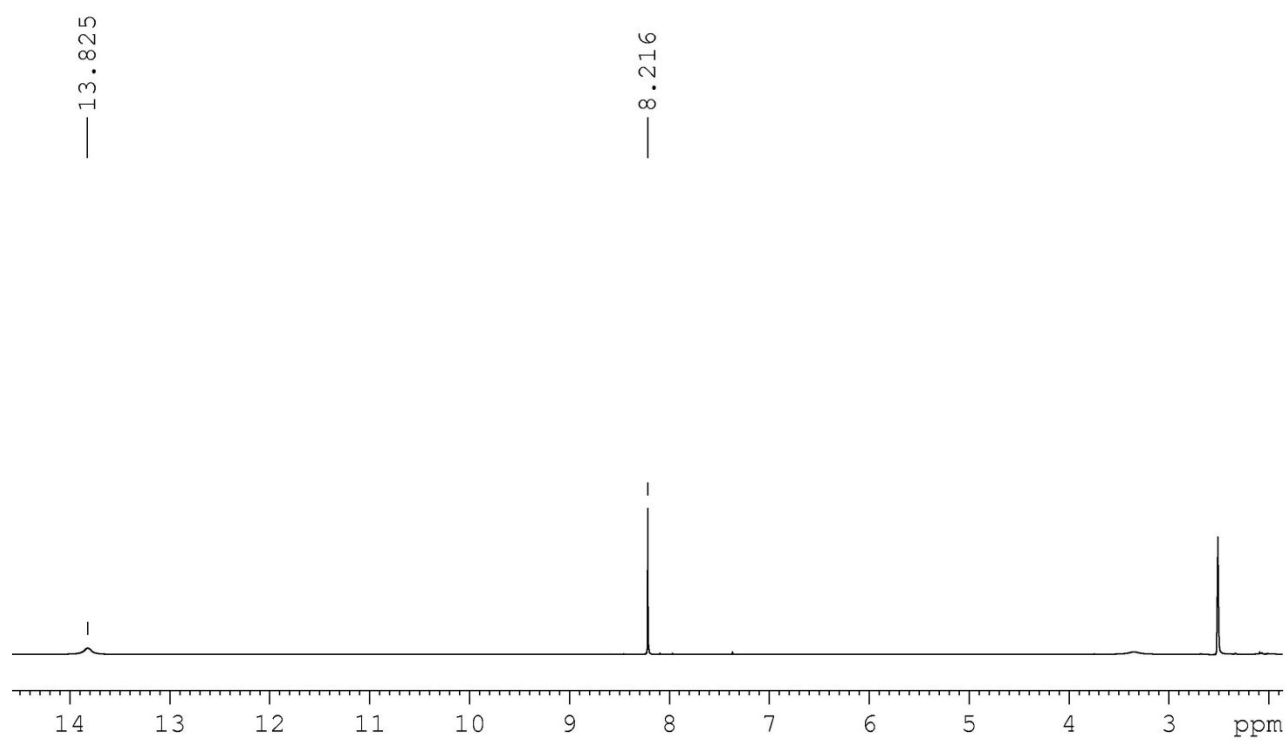
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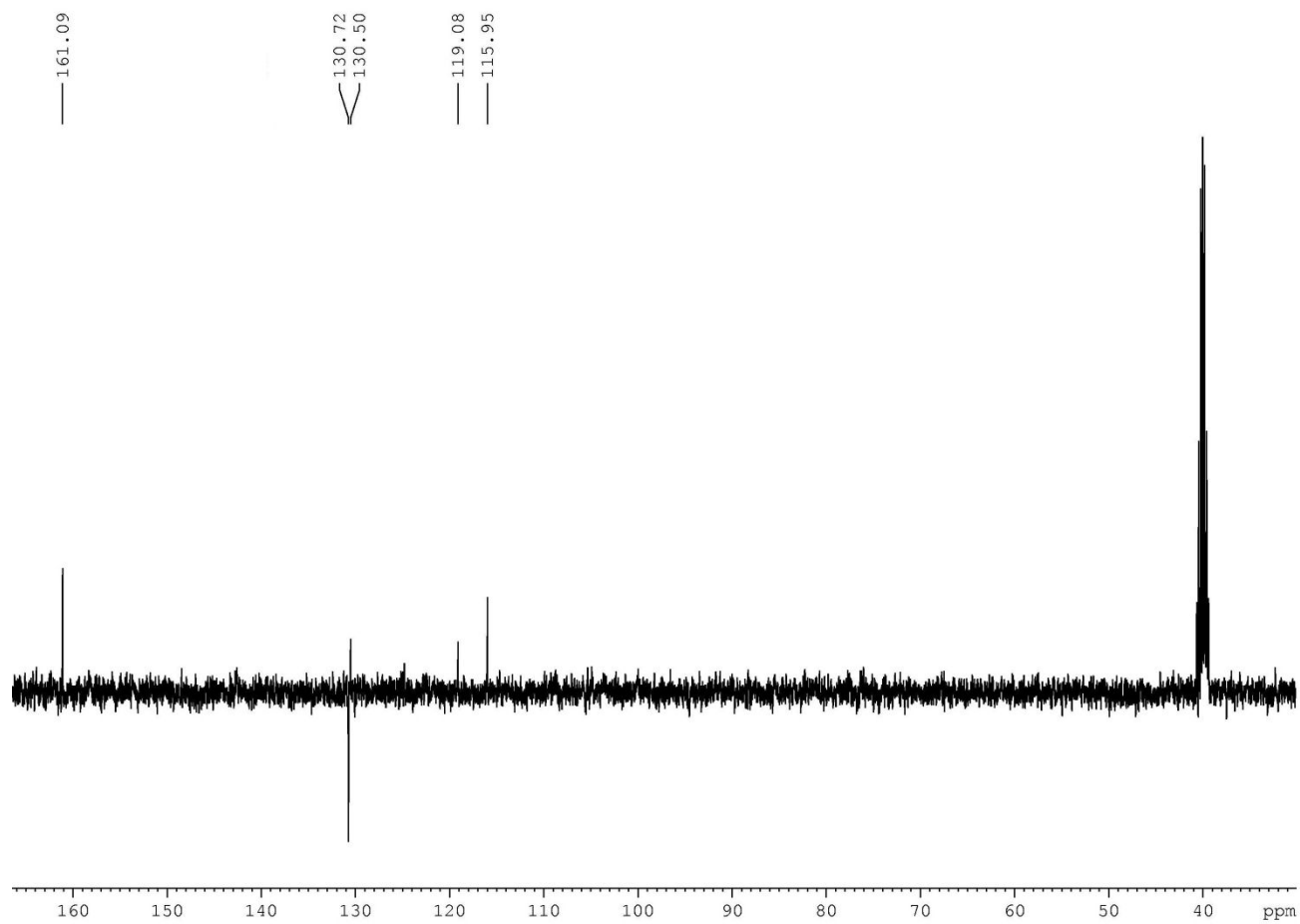
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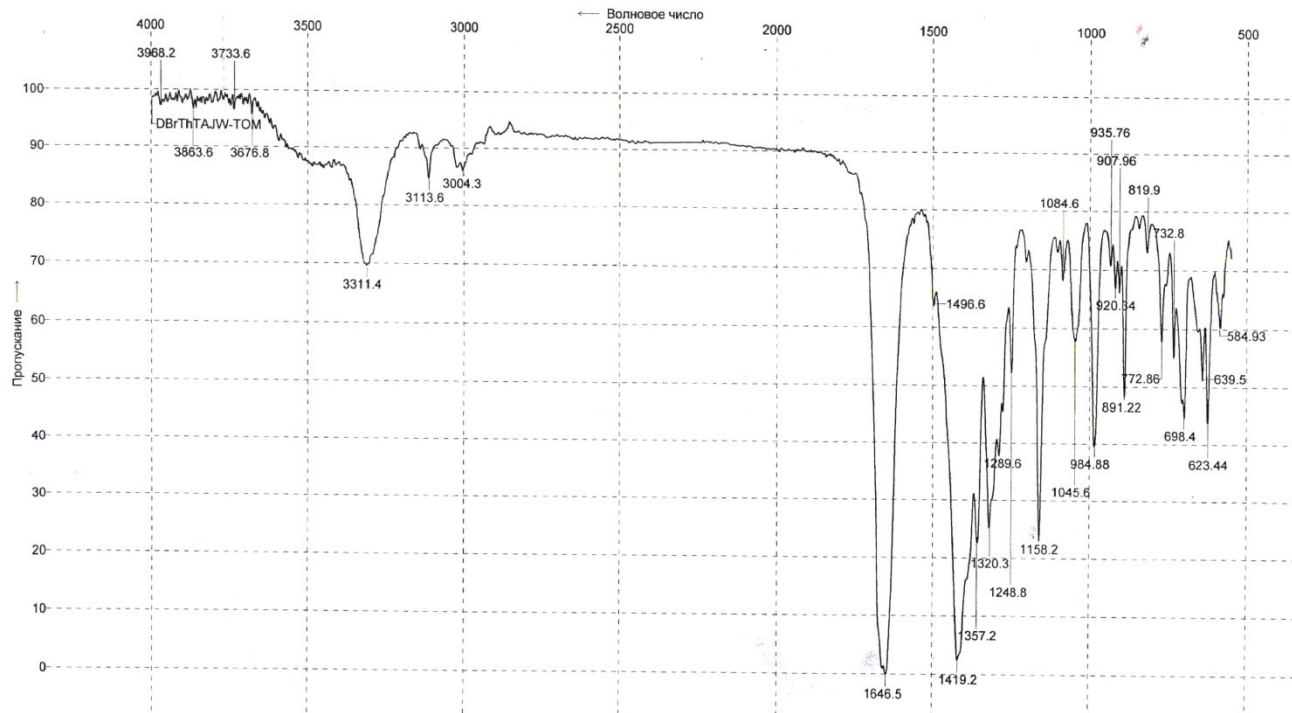
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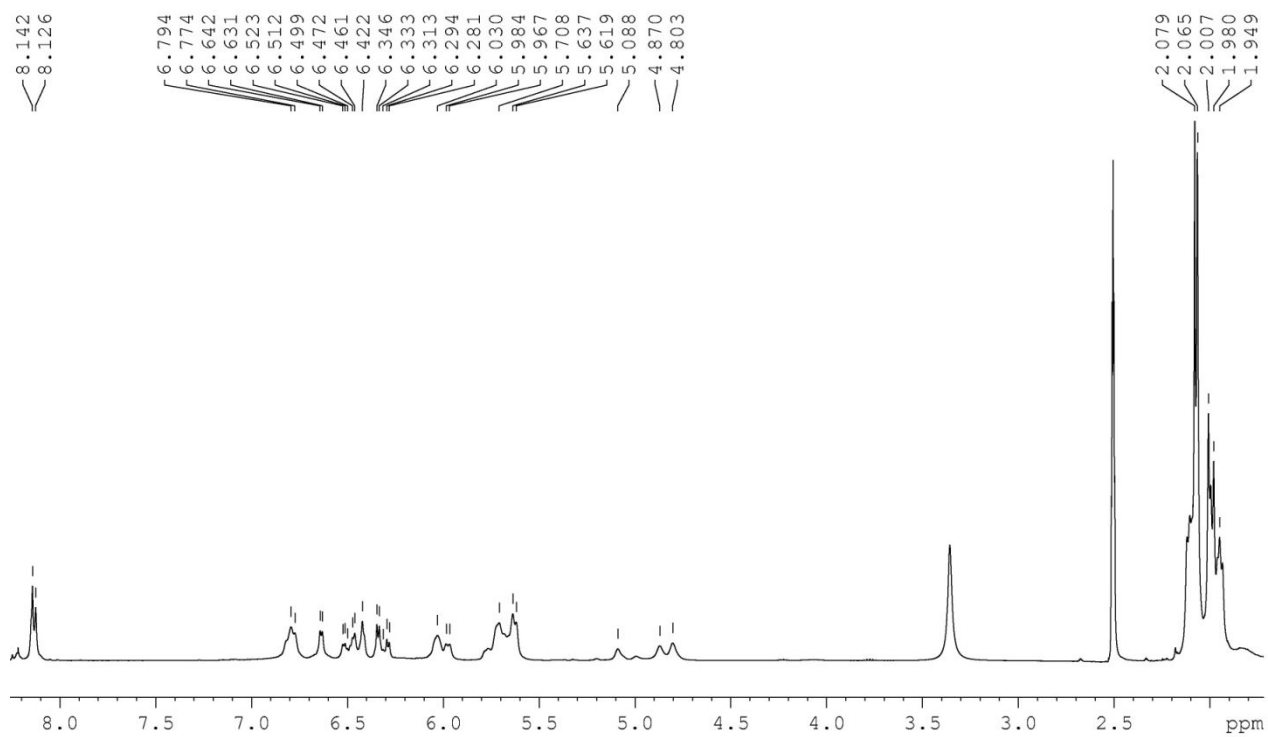
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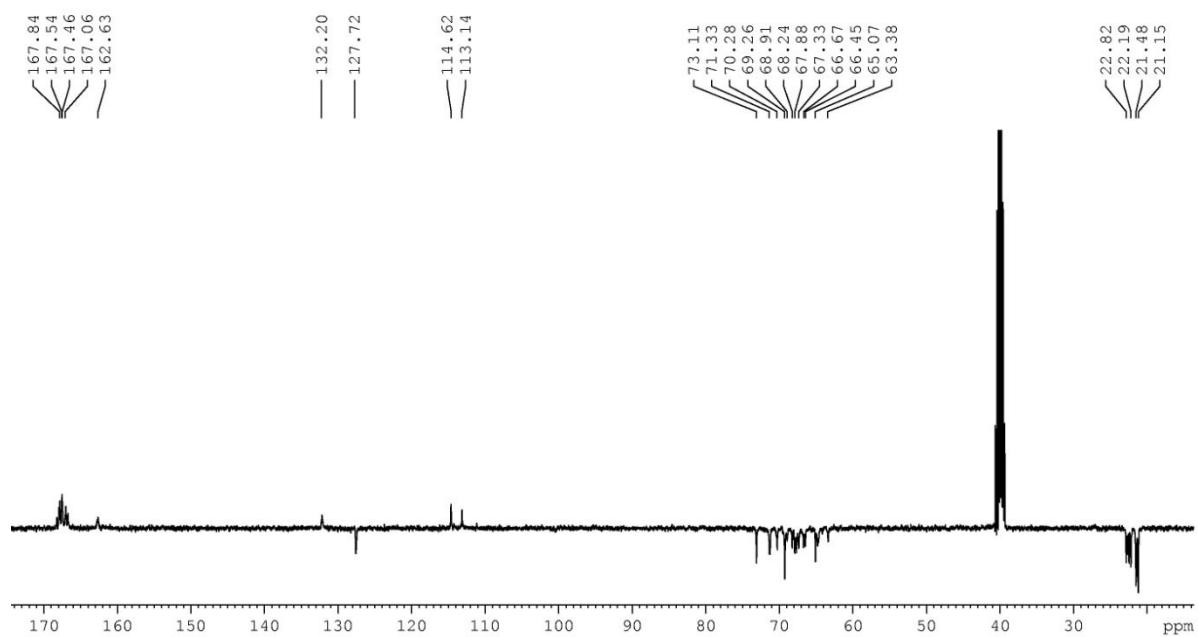


IR spectrum of thiowurtzine (I)



<sup>1</sup>H NMR spectrum of thiowurtzine (I) in DMSO-*d*<sub>6</sub>





$^{13}\text{C}$  NMR spectrum of thioiwurtzine (**I**) in  $\text{DMSO}-d_6$

