

## **Supporting information**

# **Efficient Regioselective Synthesis of Novel Condensed Sulfur-Nitrogen Heterocyclic Compounds Based on Annulation Reactions of 2-Quinolinesulfenyl Halides with Alkenes and Cycloalkenes**

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Russian Federation; [v.a.potapov@mail.ru](mailto:v.a.potapov@mail.ru)

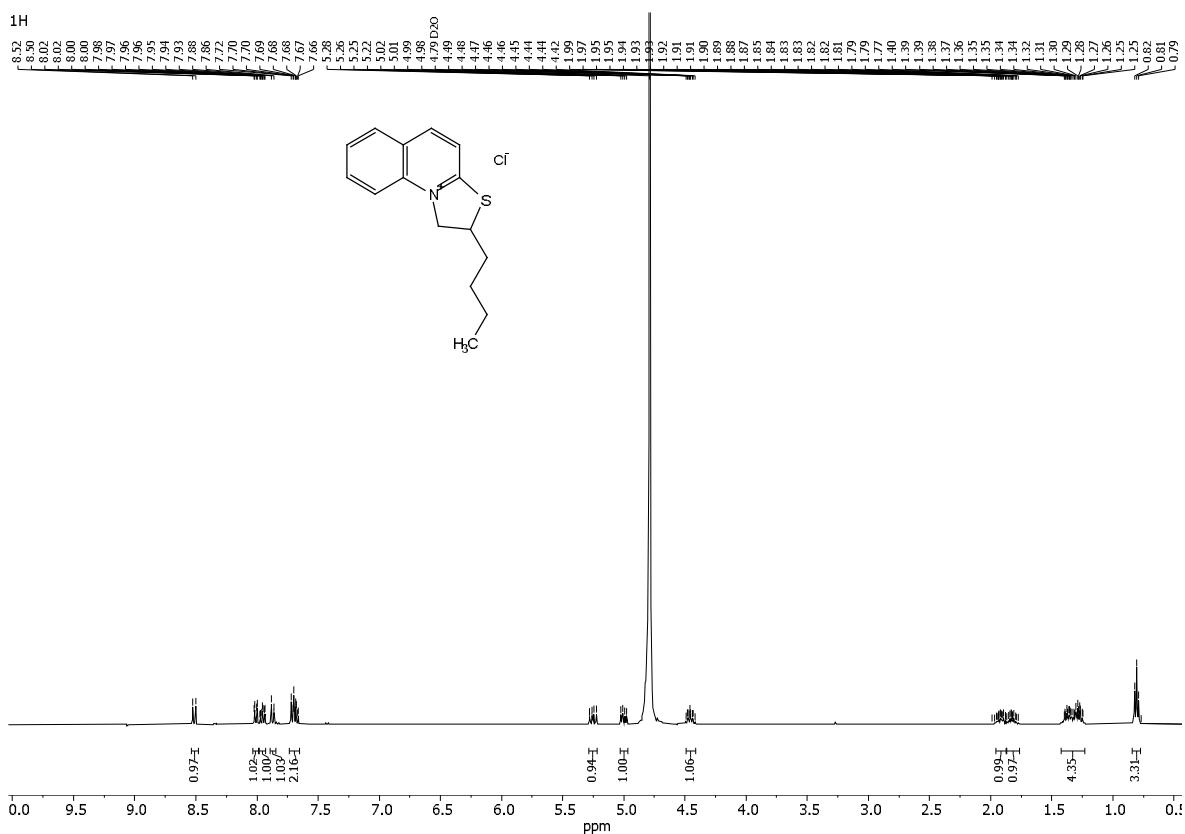
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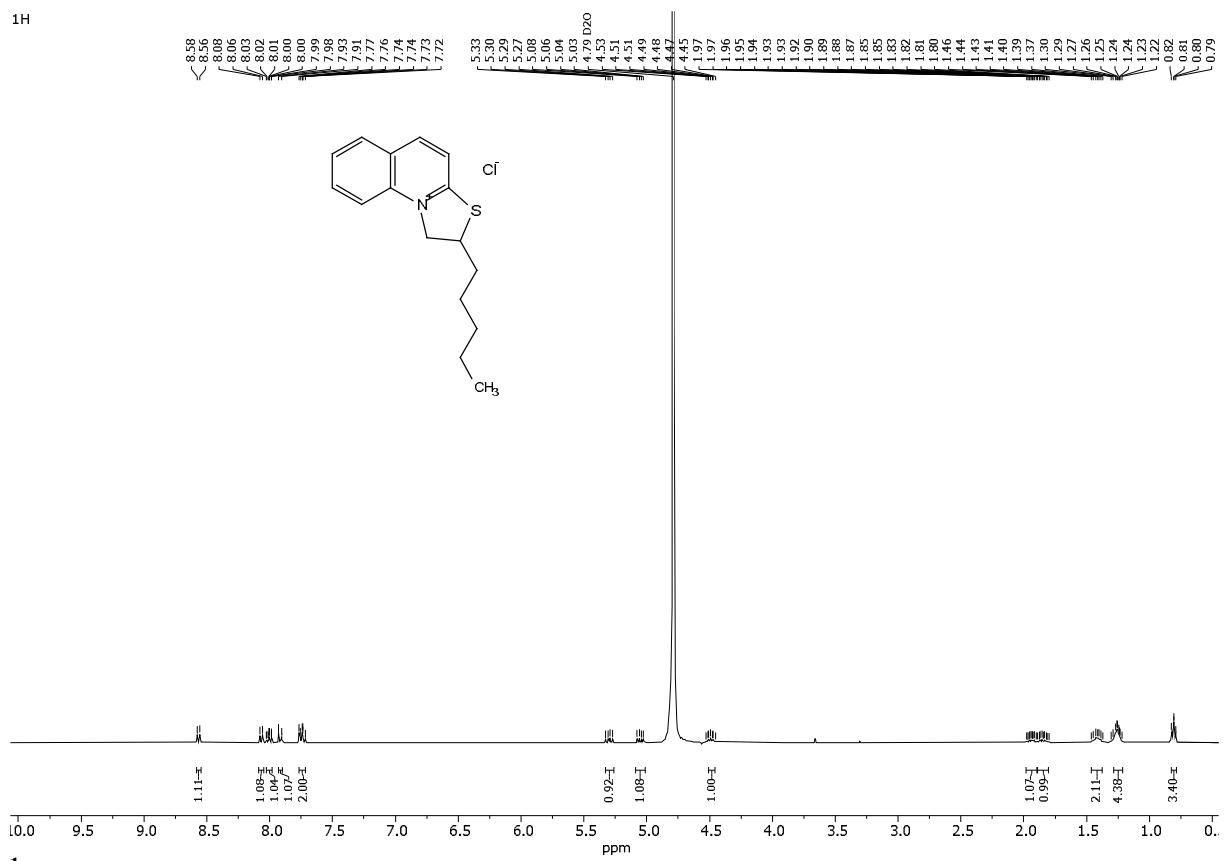
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## **Experimental (General Information)**

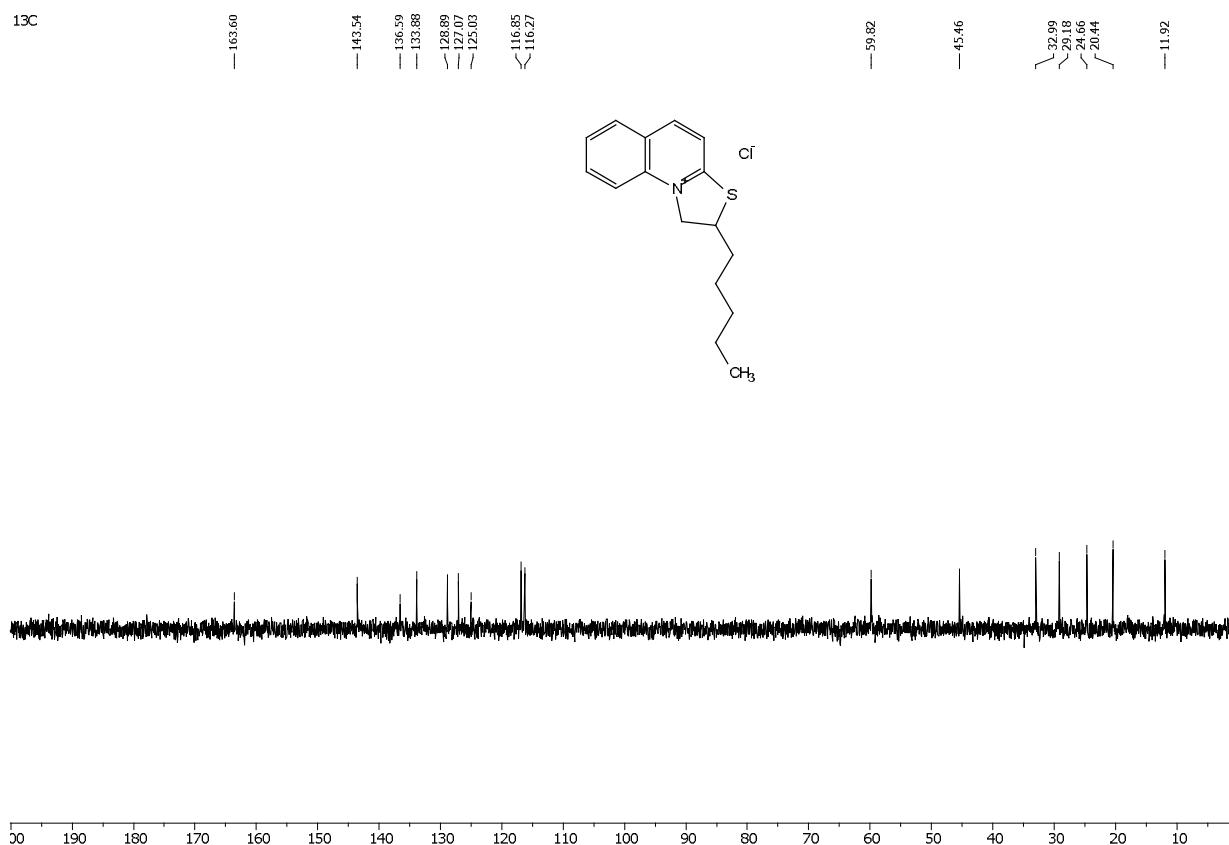
<sup>1</sup>H (400.1 MHz) and <sup>13</sup>C (100.6 MHz) NMR spectra were recorded on a Bruker DPX-400 spectrometer (Bruker BioSpin GmbH, Rheinstetten, Germany) in 2-5% solution in D<sub>2</sub>O. <sup>1</sup>H and <sup>13</sup>C chemical shifts ( $\delta$ ) are reported in parts per million (ppm), relative to tetramethylsilane (external) or to the residual solvent peaks of D<sub>2</sub>O ( $\delta$  = 4.79), acetone-*d*<sub>6</sub> ( $\delta$  = 2.05 and 29.84 ppm) and DMSO-*d*<sub>6</sub> ( $\delta$  = 2.50 and 39.52 ppm for <sup>1</sup>H and <sup>13</sup>C NMR, respectively). Elemental analysis was performed on a Thermo Scientific FLASH 2000 Organic Elemental Analyzer (Thermo Fisher Scientific Inc., Milan, Italy). Melting points were determined on a Kofler Hot-Stage Microscope PolyTherm A apparatus (Wagner & Munz GmbH, München, Germany). Absolute solvents were used in the reactions.

## Examples of $^1\text{H}$ and $^{13}\text{C}$ NMR spectra



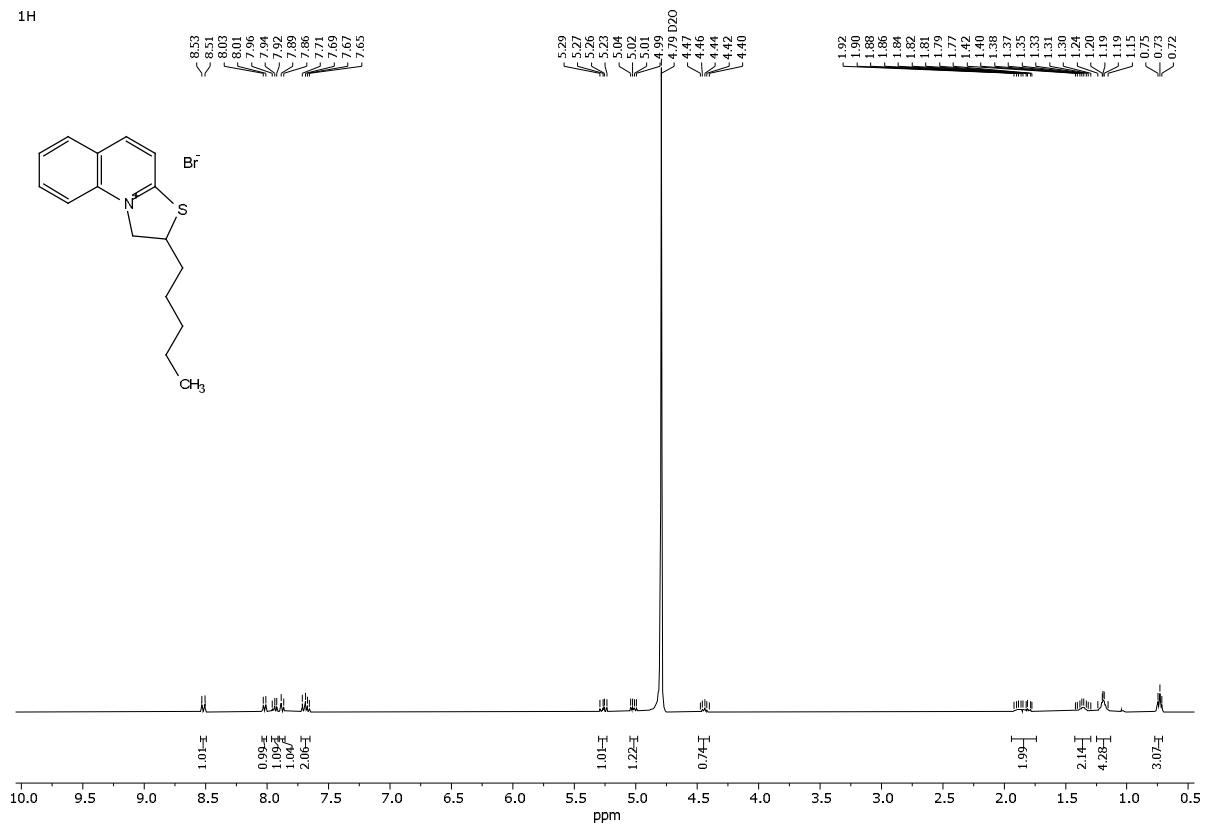


<sup>1</sup>H-NMR ( $D_2O$ ) spectrum of 2-pentyl-1,2-dihydro[1,3]thiazolo[3,2-*a*]quinolin-10-ium chloride (5)

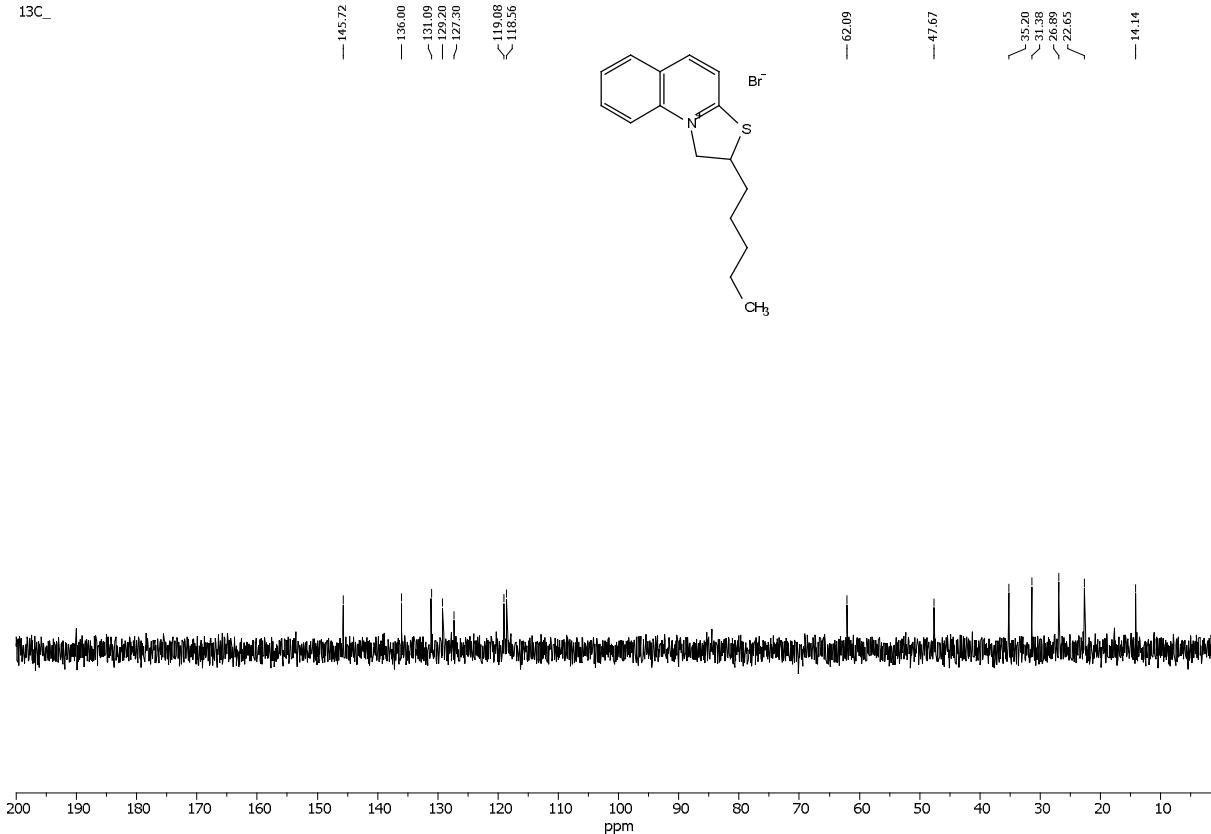


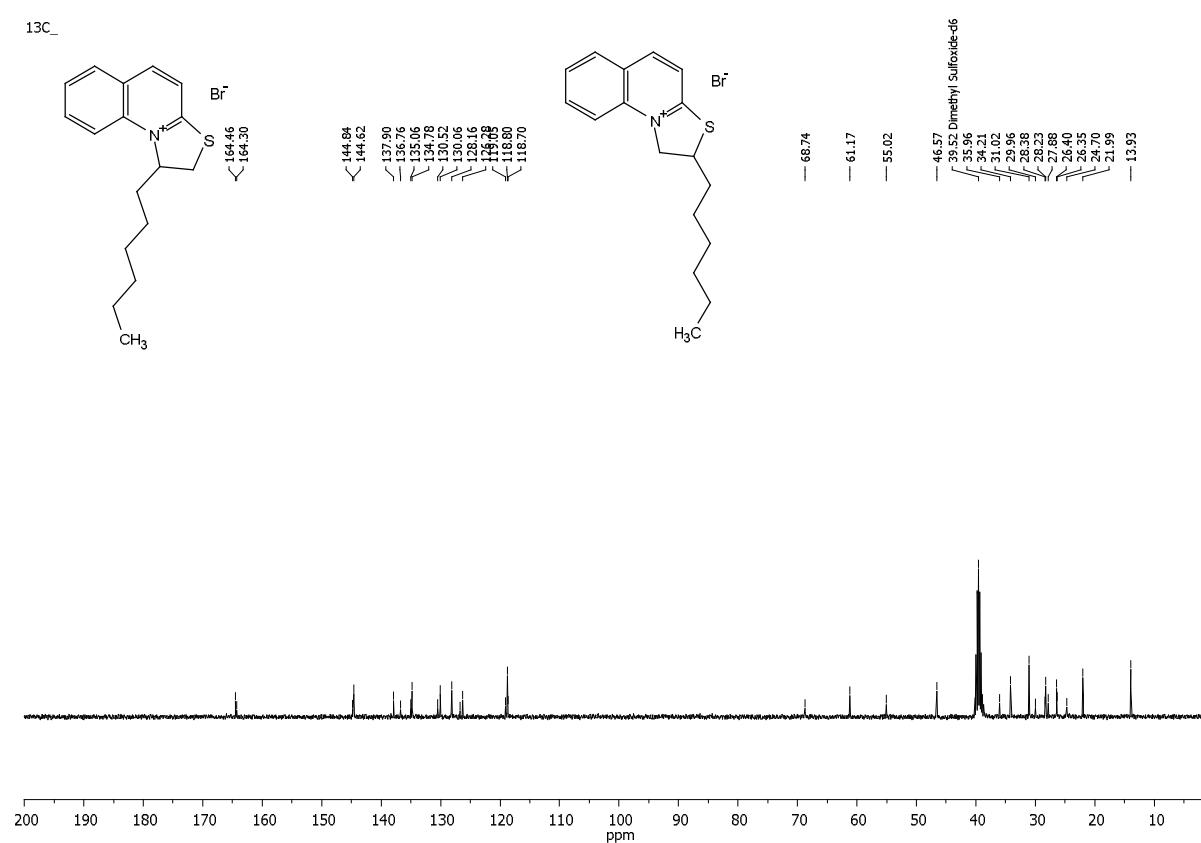
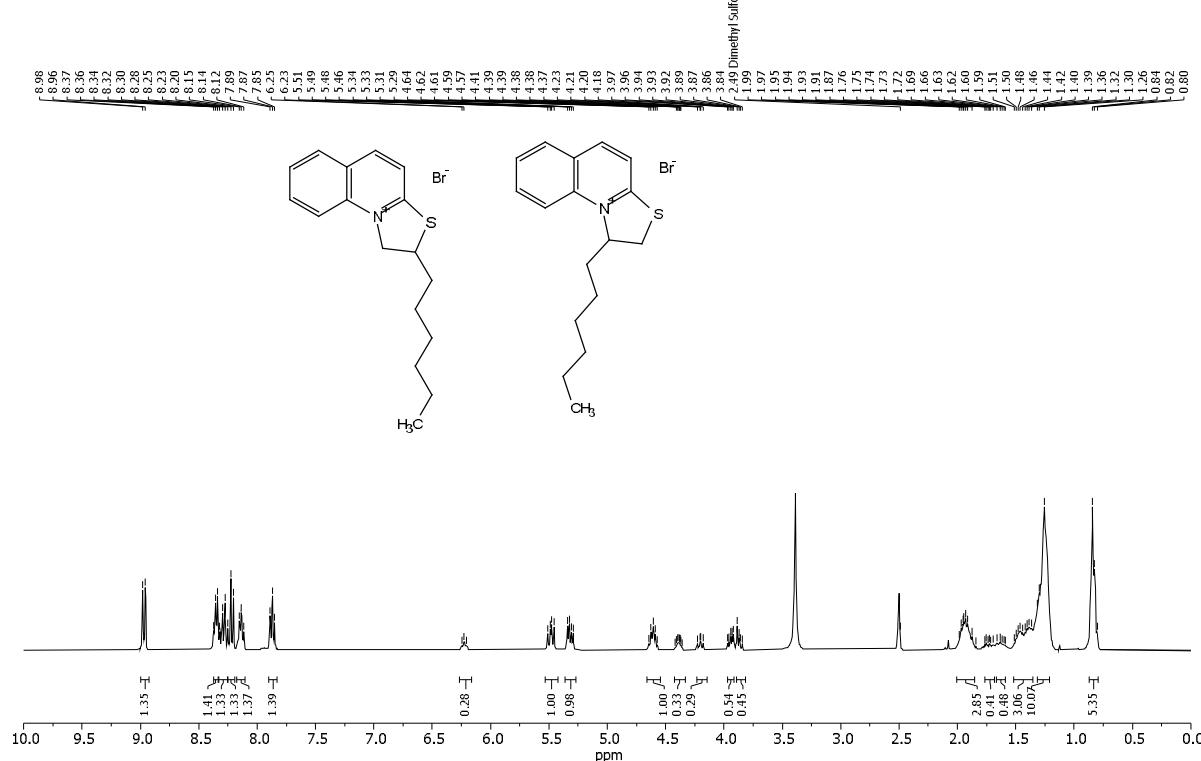
<sup>13</sup>C-NMR ( $D_2O$ ) spectrum of 2-pentyl-1,2-dihydro[1,3]thiazolo[3,2-a]quinolin-10-ium chloride (5)

<sup>1</sup>H

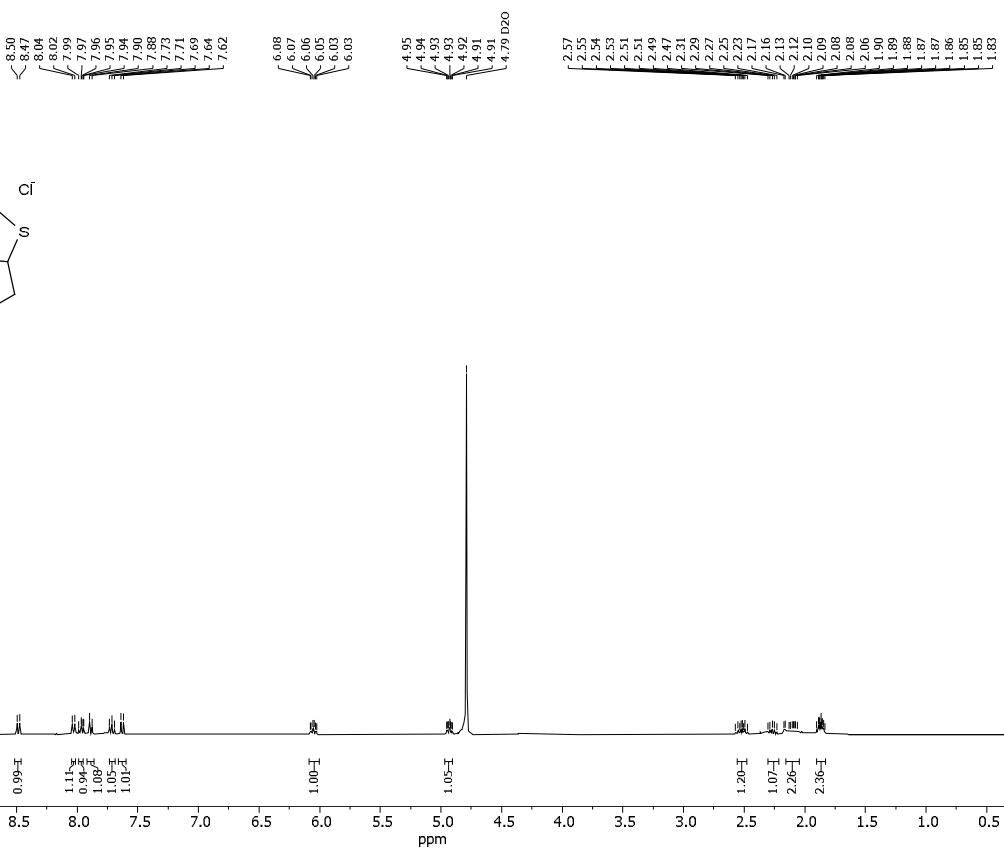


<sup>13</sup>C\_

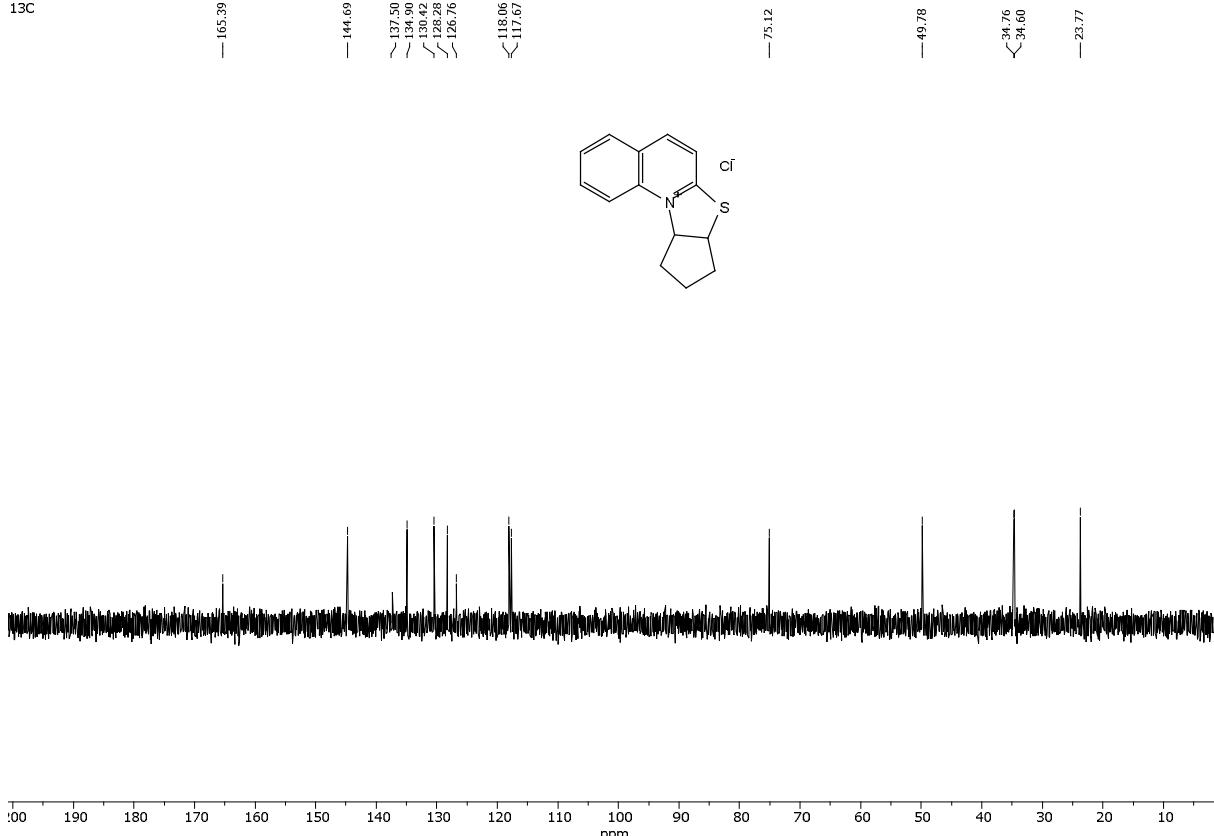


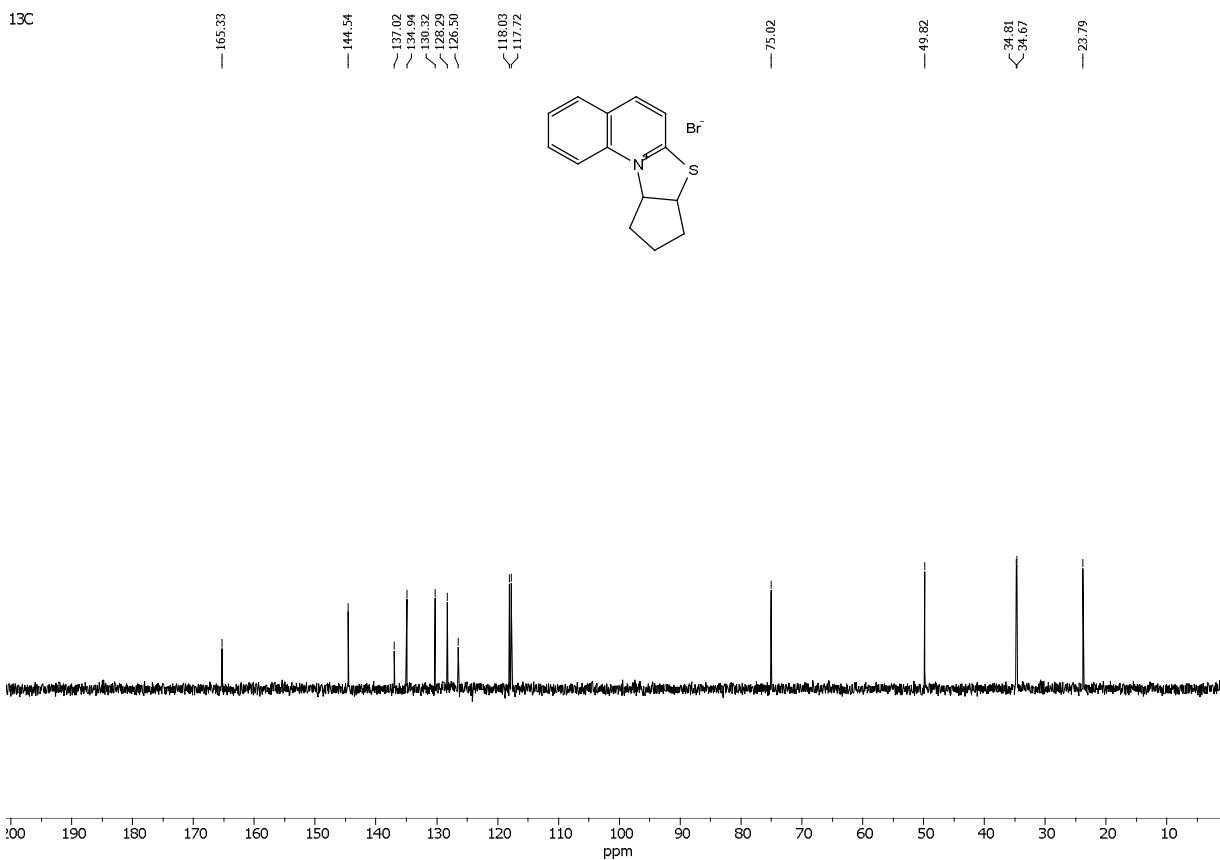
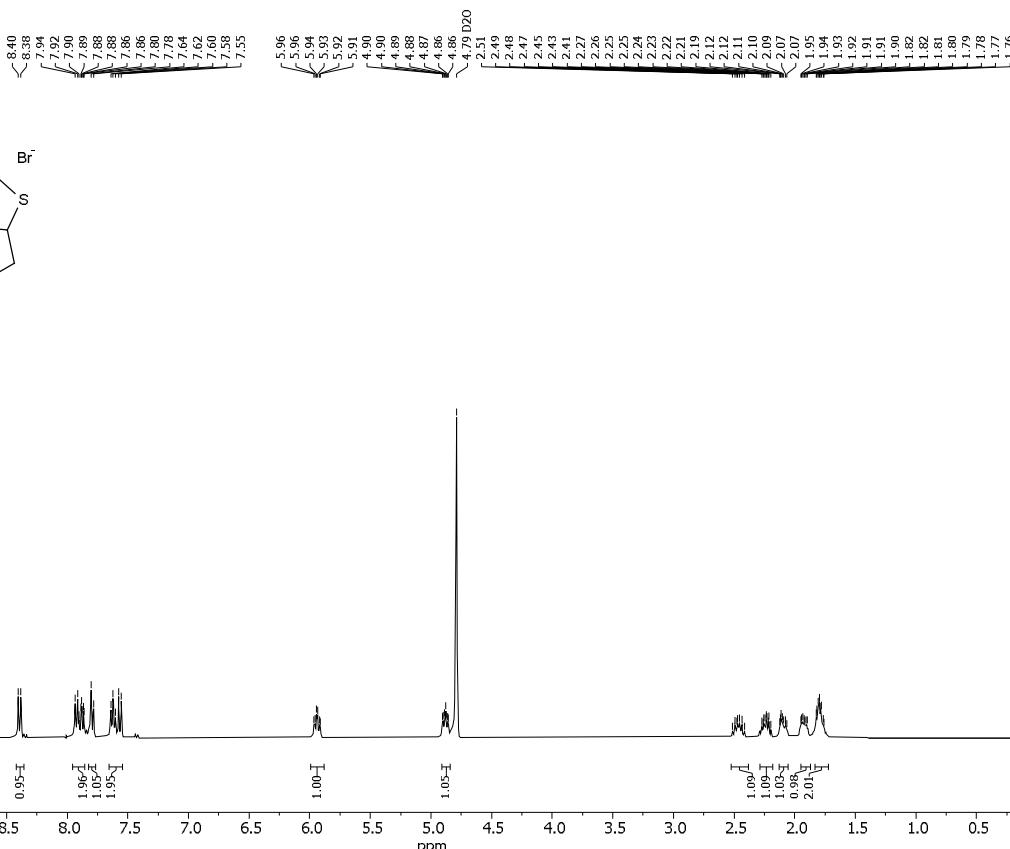


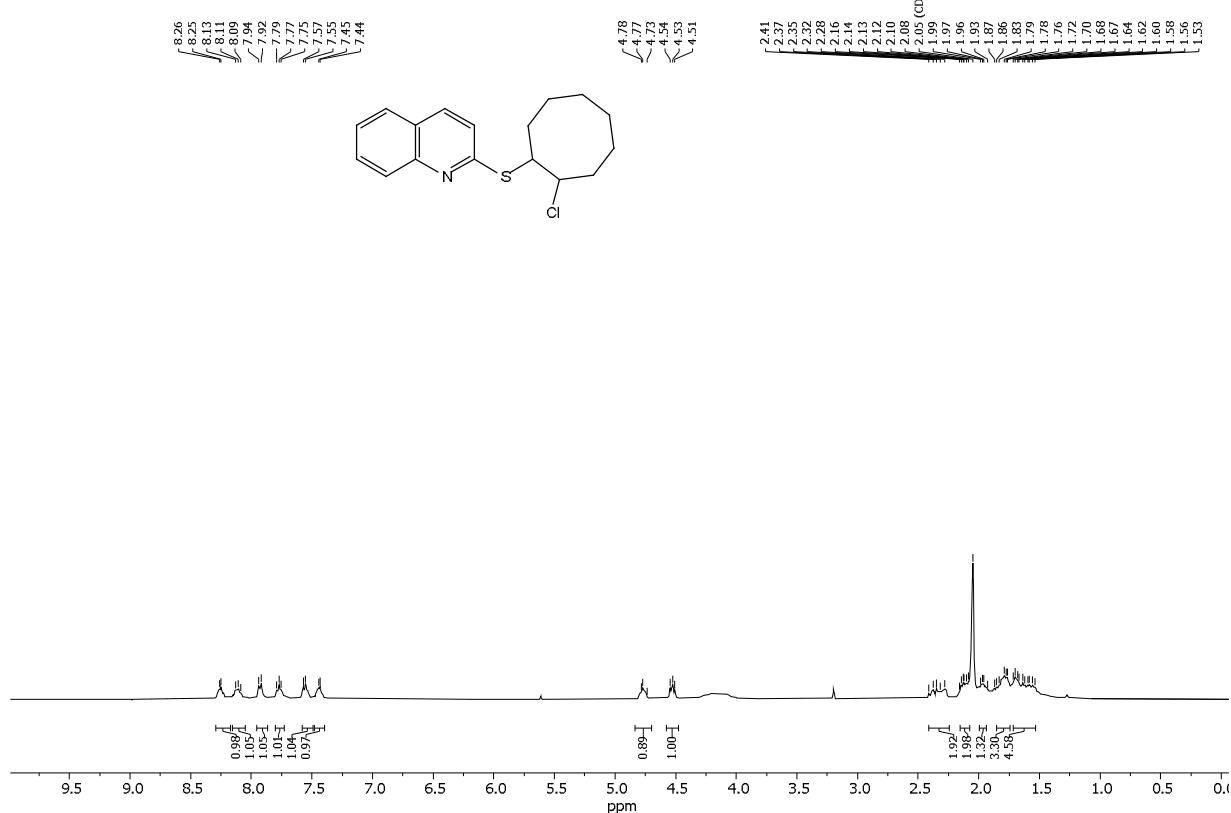
1H



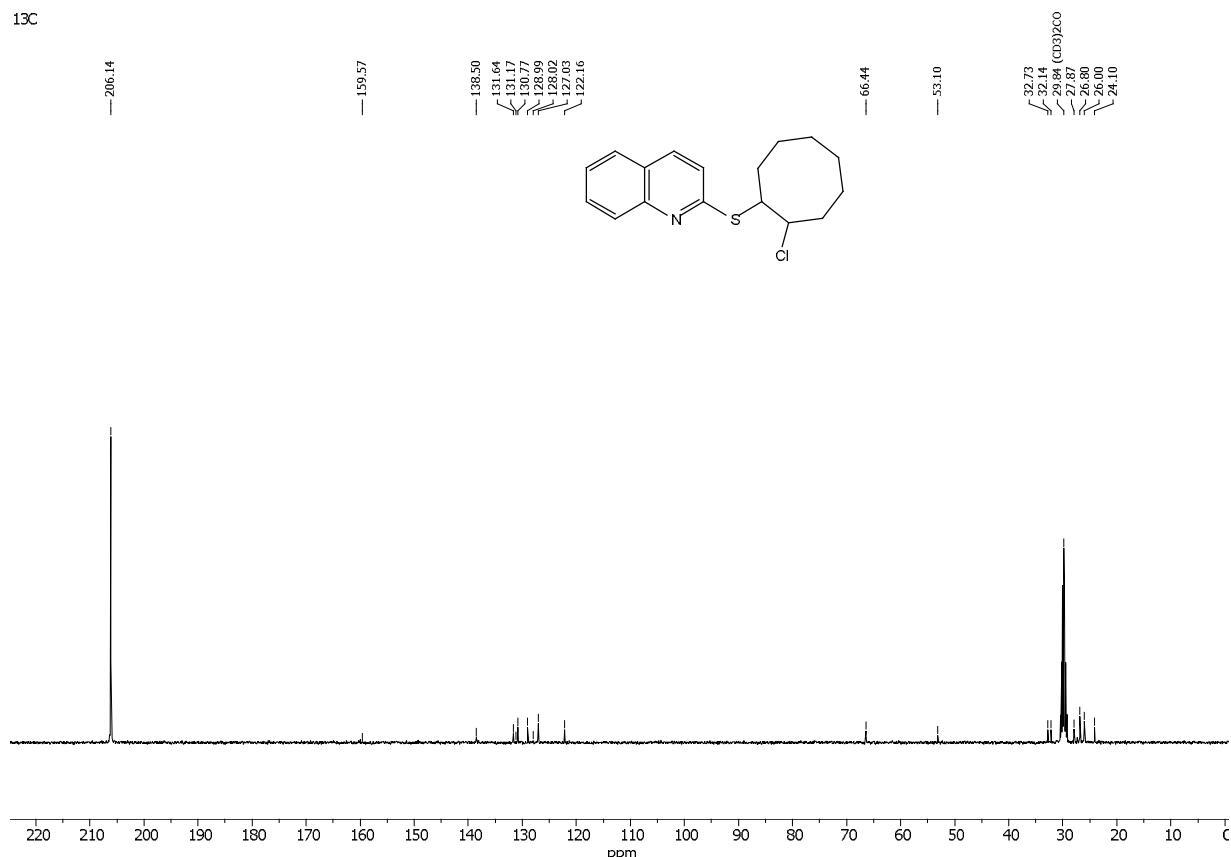
13C



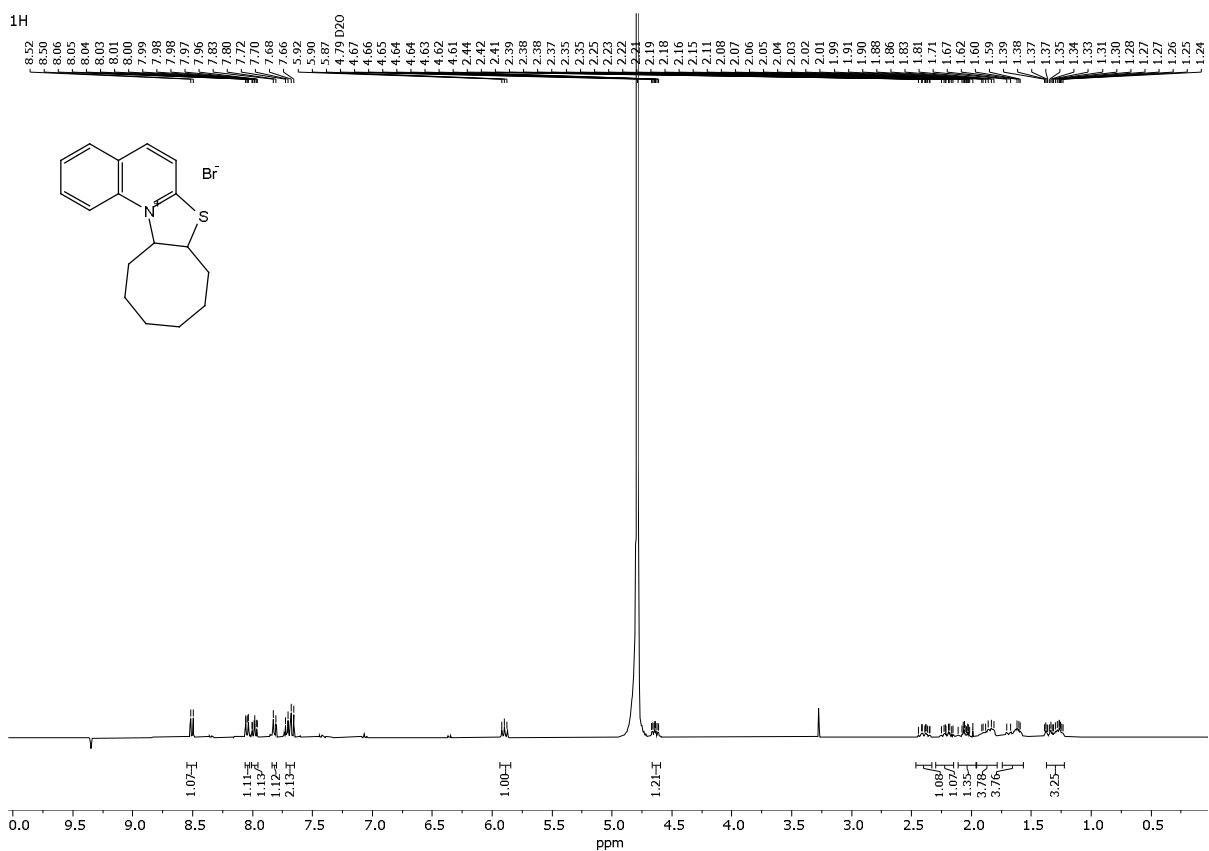




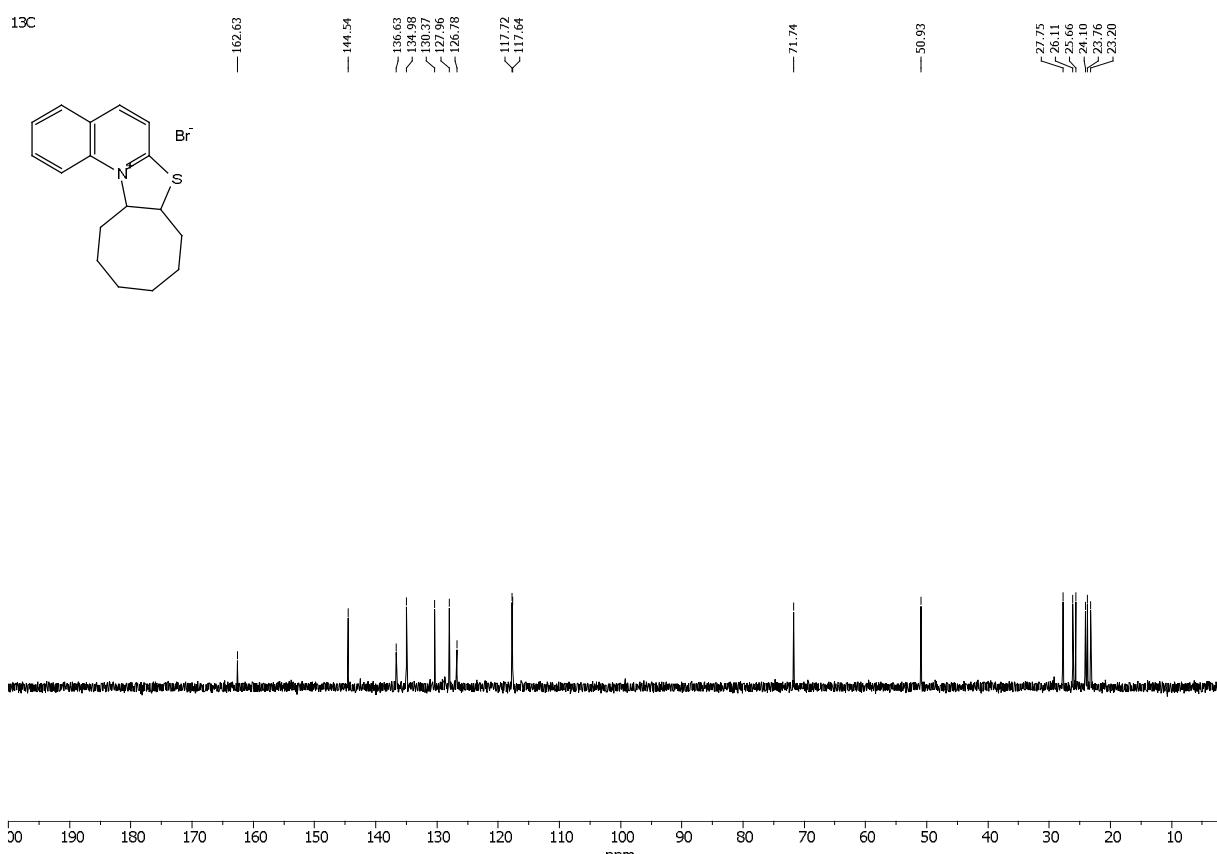
<sup>1</sup>H-NMR (acetone-*d*<sub>6</sub>) spectrum of 2-[2-chlorocyclooctyl]sulfanyl]quinoline (14)



<sup>13</sup>C-NMR (acetone-*d*<sub>6</sub>) spectrum of 2-[2-chlorocyclooctyl]sulfanyl]quinoline (14)

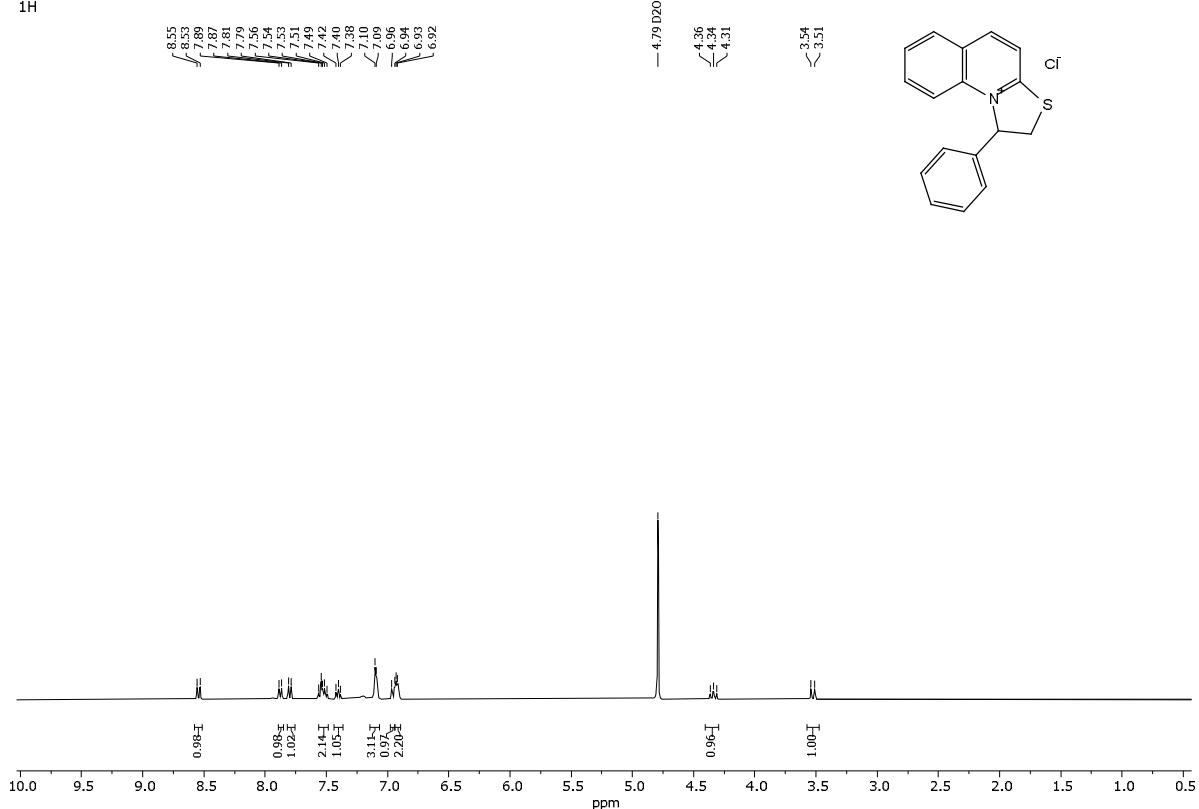


<sup>1</sup>H-NMR ( $D_2O$ ) spectrum of 7a,8,9,10,11,12,13,13a-Octahydrocycloocta[4,5][1,3]thiazolo[3,2-*a*]quinolin-14-ium bromide (15)



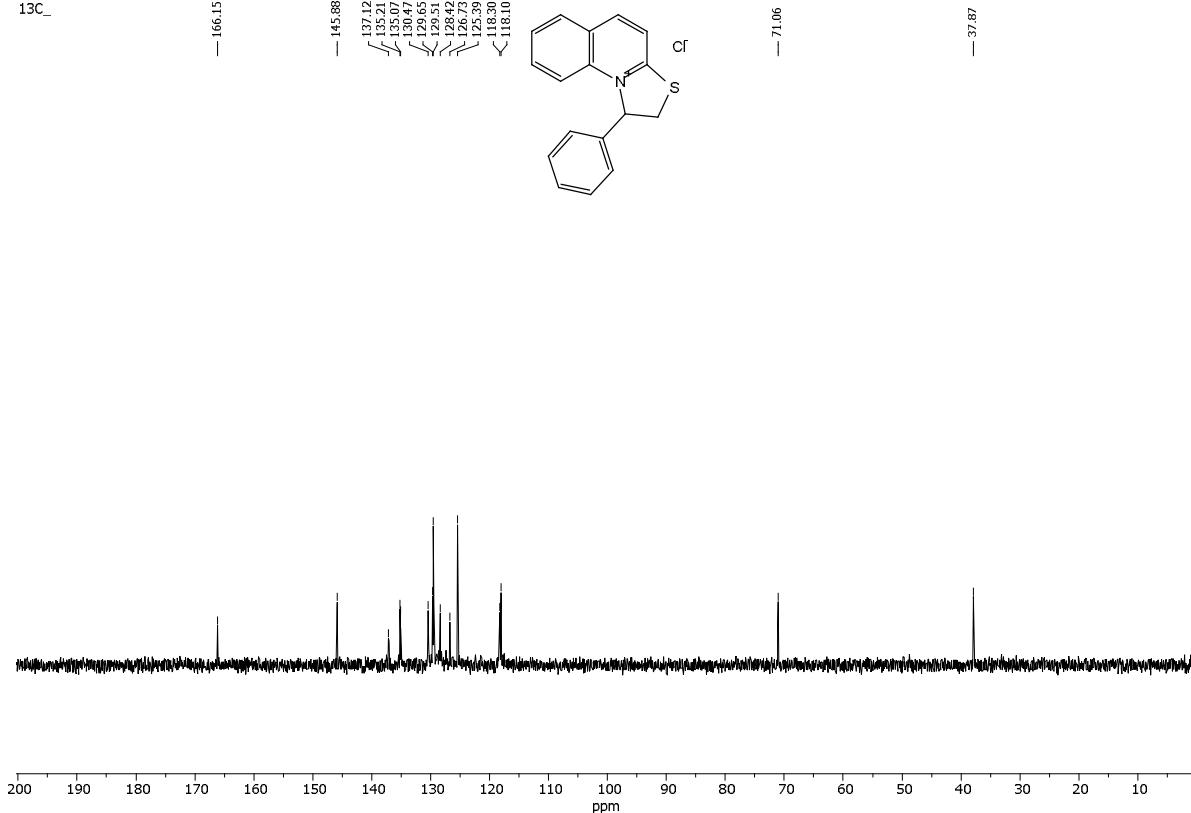
<sup>13</sup>C-NMR ( $D_2O$ ) spectrum of 7a,8,9,10,11,12,13,13a-Octahydrocycloocta[4,5][1,3]thiazolo[3,2-*a*]quinolin-14-ium bromide (15)

<sup>1</sup>H



<sup>1</sup>H-NMR (D<sub>2</sub>O) spectrum of 1-phenyl-1,2-dihydro[1,3]thiazolo[3,2-a]quinolin-10-i um chloride (16)

<sup>13</sup>C-



<sup>13</sup>C-NMR (D<sub>2</sub>O) spectrum of 1-phenyl-1,2-dihydro[1,3]thiazolo[3,2-a]quinolin-10-i um chloride (16)

