

**Supporting Information for**

**Integrated Syntheses of 3,4-Carbazoquinone Alkaloids**

***N*-Me-Carbazoquinocin A-B & D-F**

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**Compound S1**

S3

**Copy of  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of all new compounds.**

S4-38

#### 4-(2,9-Dimethyl-9H-carbazol-1-yl)butan-1-ol (S<sub>1</sub>)

Under N<sub>2</sub> atmosphere, a flame dried round bottom flask was charged with the solution of ethyl 4-(2,9-dimethyl-9H-carbazol-1-yl) butanoate (62 mg, 0.1919 mmol, 1.0 equiv.) in anhydrous THF (5 ml) was added LAH (15 mg, 0.3839 mmol, 2.0 equiv.), at 0 °C portion wise and stirred for 3 h at room temperature until the TLC showed complete consumption of the ester. After completion, a saturated NH<sub>4</sub>Cl solution (6 mL) was added to quench the reaction at 0 °C. ethyl acetate (5 mL) and water (5 mL) were added. After separation of the layers the residual compound from aqueous layer was extracted with EtOAc (3 x 5 mL). The combined organic layers were dried over anhydrous Na<sub>2</sub>SO<sub>4</sub>, filtered, and concentrated *in-vacuo*. Purification of crude product via a silica gel column chromatography (Hexanes/EA) provided the corresponding ethyl 4-(2,9-dimethyl-9H-carbazol-1-yl) butan-1-ol (S<sub>1</sub>) (50 mg, 0.18 mmol, 93% yield) as a white colour oil.

**<sup>1</sup>H NMR** (400 MHz, CDCl<sub>3</sub>): δ 7.96 (d, *J* = 7.7 Hz, 1H), 7.77 (d, *J* = 7.8 Hz, 1H), 7.41–7.33 (m, 1H), 7.26 (d, *J* = 8.3 Hz, 1H), 7.15 (t, *J* = 7.4 Hz, 1H), 6.99 (d, *J* = 7.8 Hz, 1H), 3.90 (s, 3H), 3.58 (t, *J* = 5.9 Hz, 2H), 3.01 (t, *J* = 7.6 Hz, 2H), 2.44 (s, 3H), 1.83 (s, 1H) and 1.71–1.55 (m, 4H) ppm.

**<sup>13</sup>C[<sup>1</sup>H] NMR** (100 MHz, CDCl<sub>3</sub>): δ 142.1, 139.8, 134.4, 125.2, 123.7, 123.0, 122.7, 122.4, 119.5, 118.9, 117.6, 108.6, 62.5, 32.7, 32.4, 27.9, 27.7, 20.2 ppm.

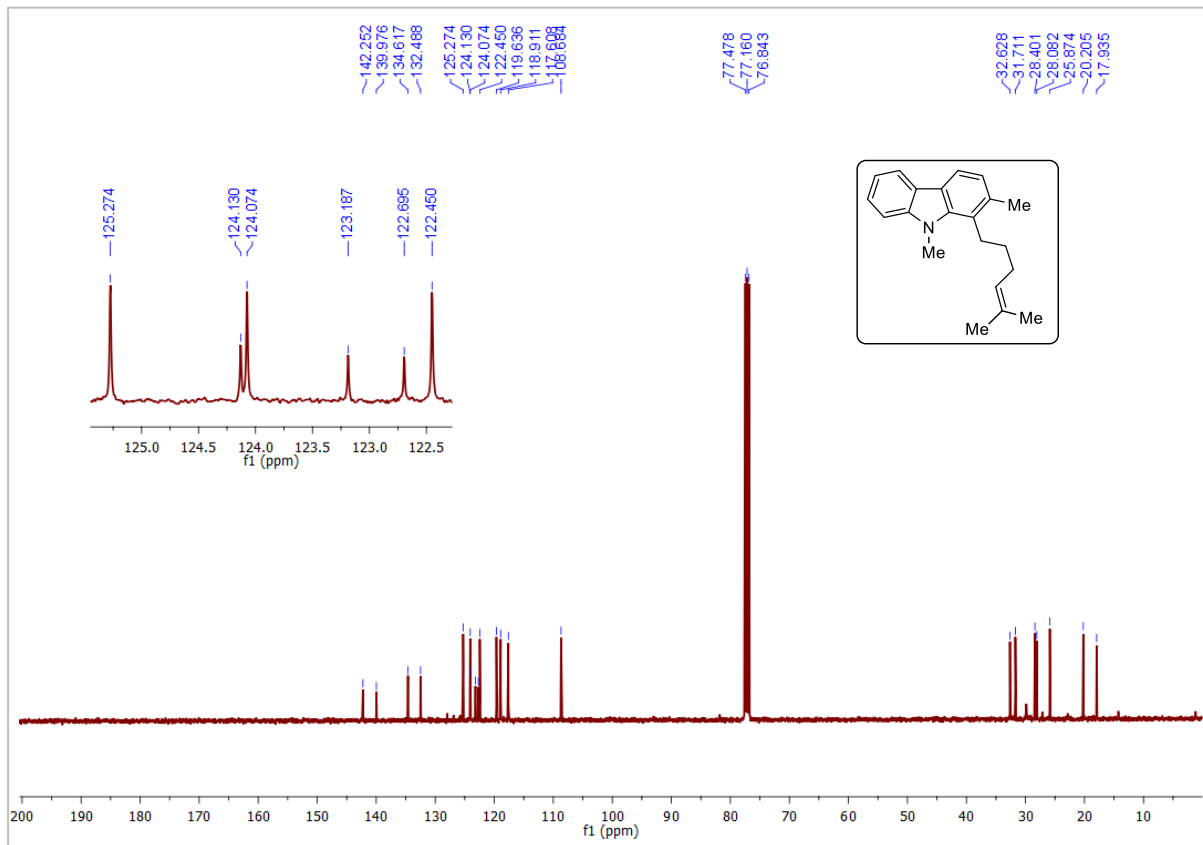
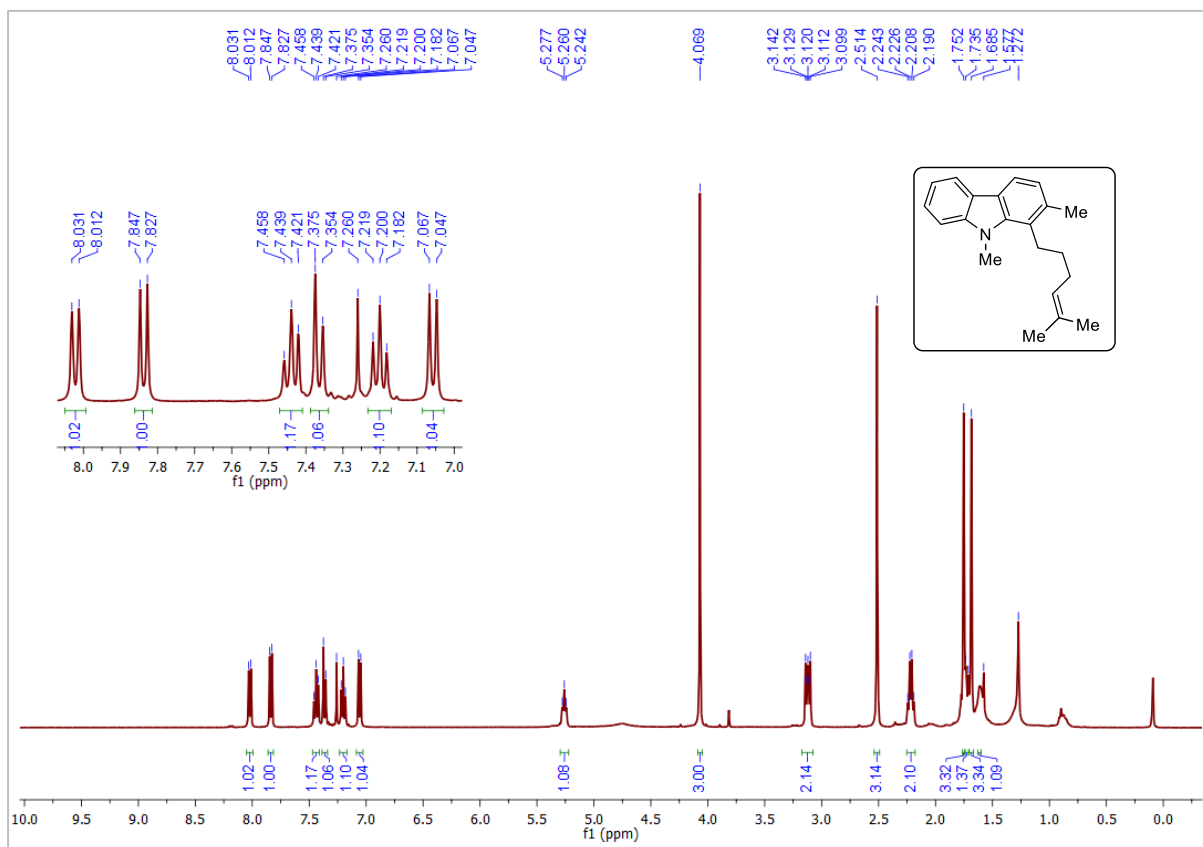
**IR (ATR):** 3560, 3341, 2944, 1738, 1580, 1453, 1218, 1199, 1153, 1127, 1026, 925, 827 and 749 cm<sup>-1</sup>.

**HRMS (ESI) m/z:** [M+H]<sup>+</sup> Calcd. for C<sub>18</sub>H<sub>22</sub>NO 268.1696; found 268.1720.

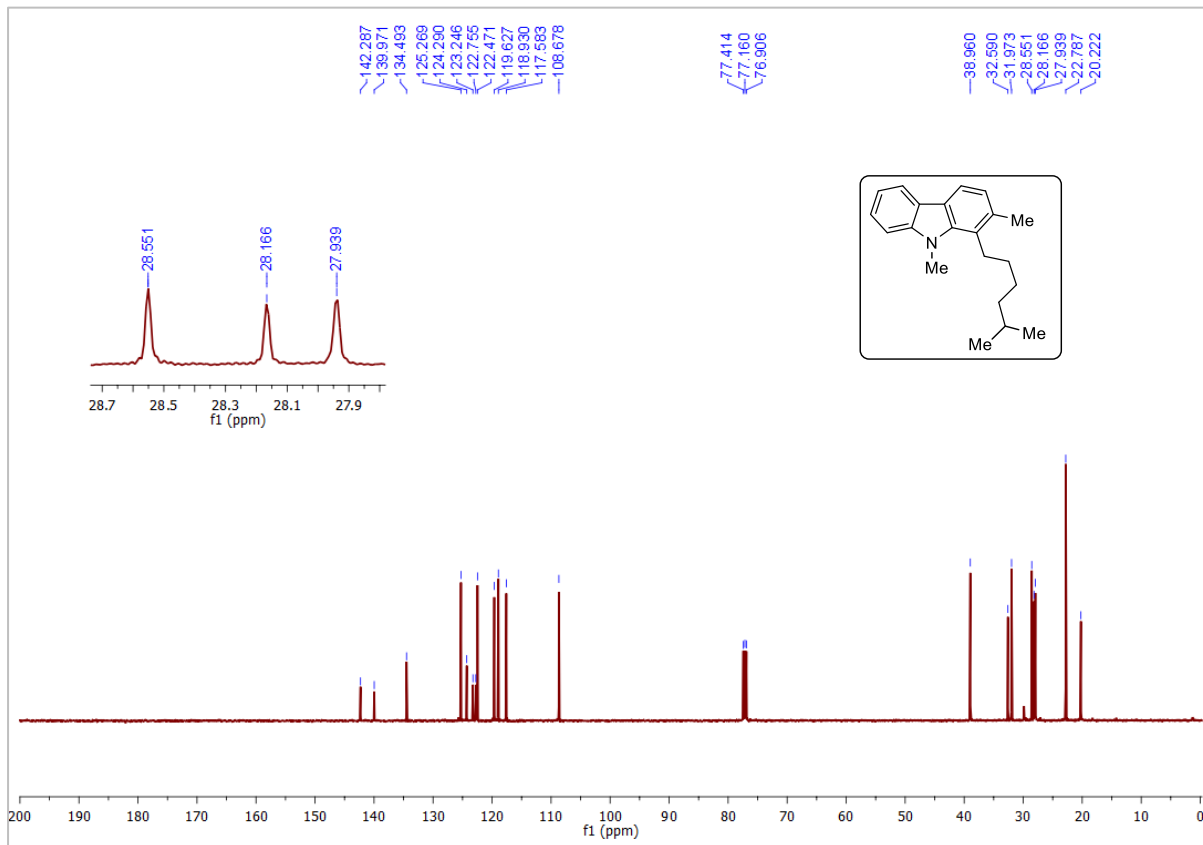
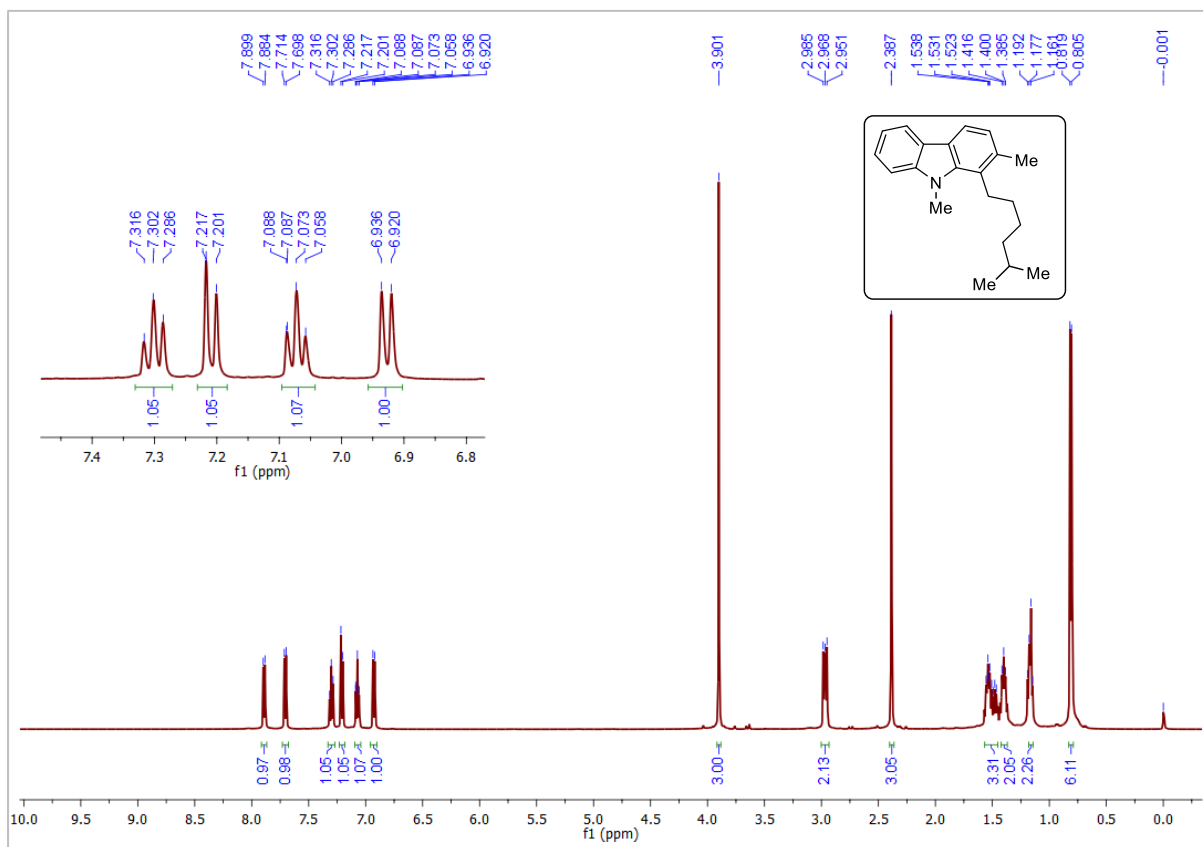
**TLC:** R<sub>f</sub> = R<sub>f</sub> = 0.2 (9:1, Hex/EtOAc).

**Copy of  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of all new compounds**

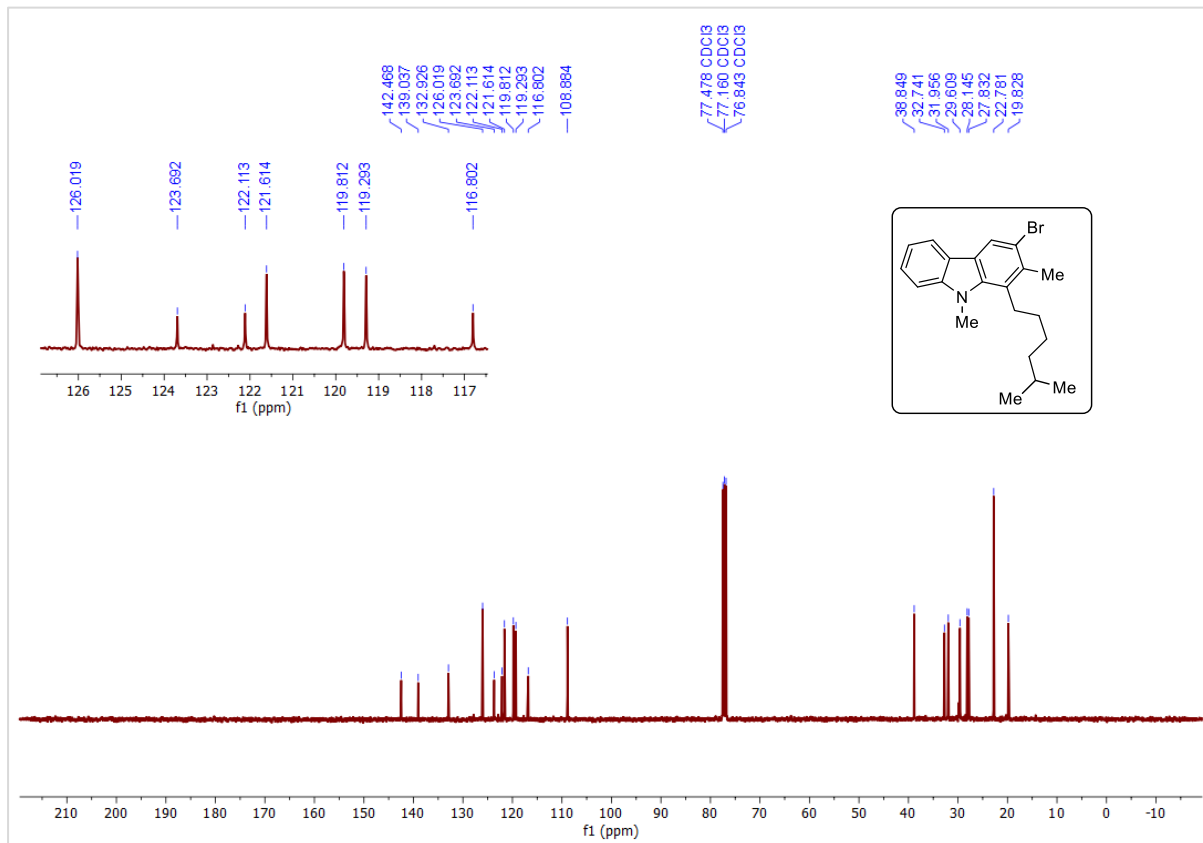
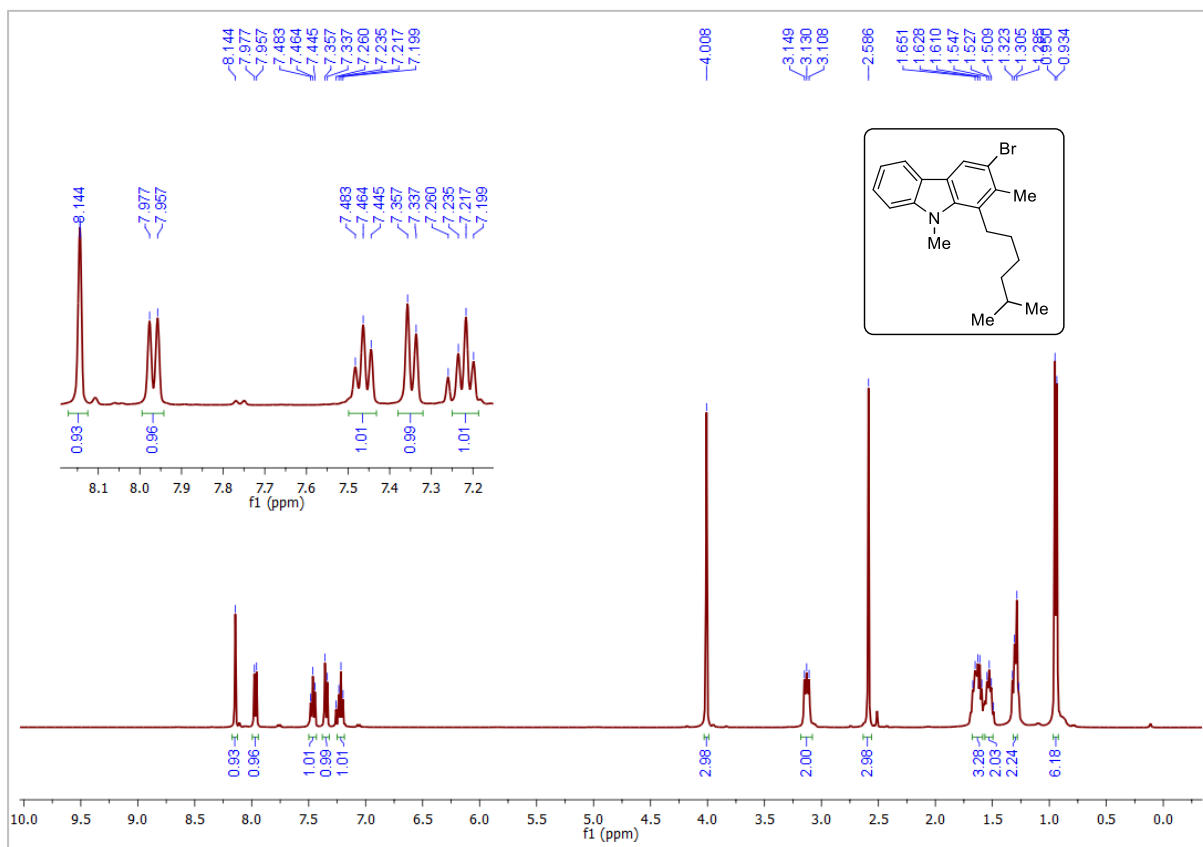
$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (**11a**)



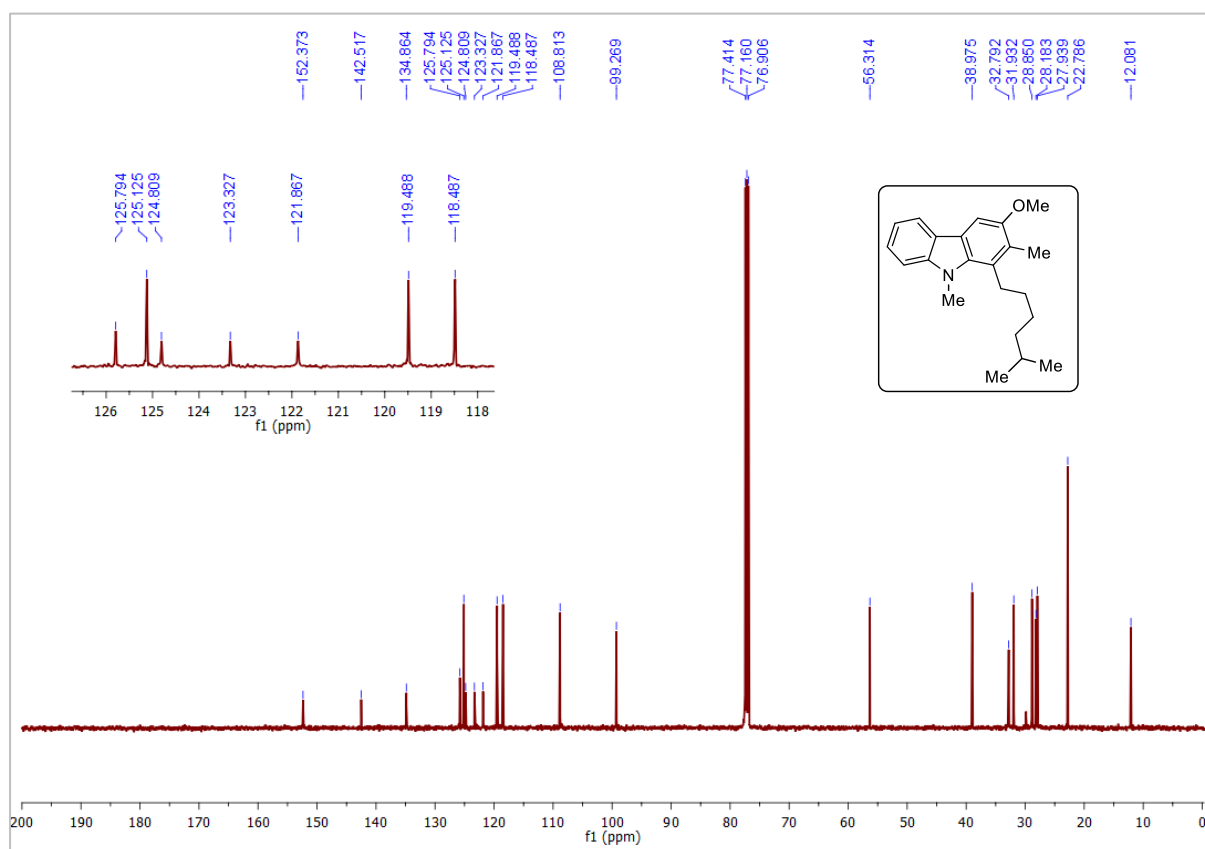
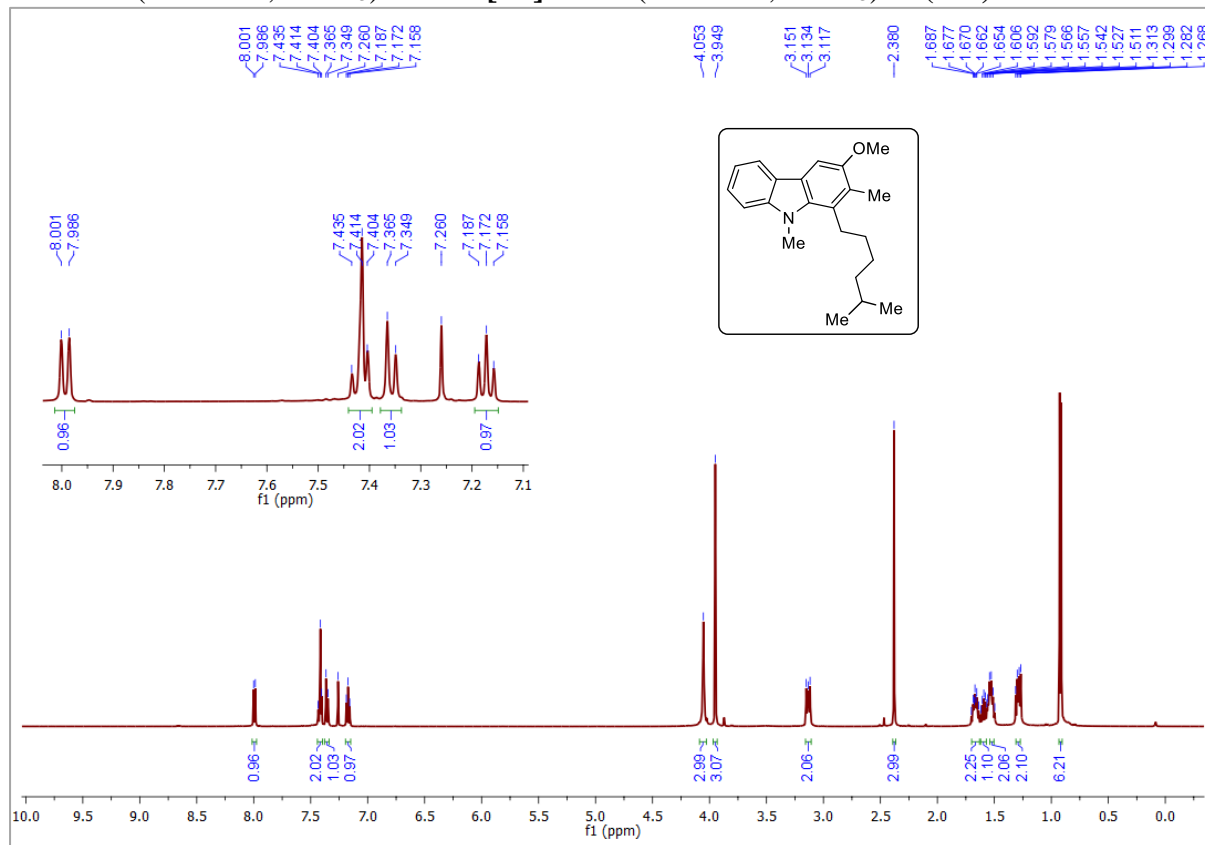
$^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (125 MHz,  $\text{CDCl}_3$ ) of (12a)



$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (**13a**)

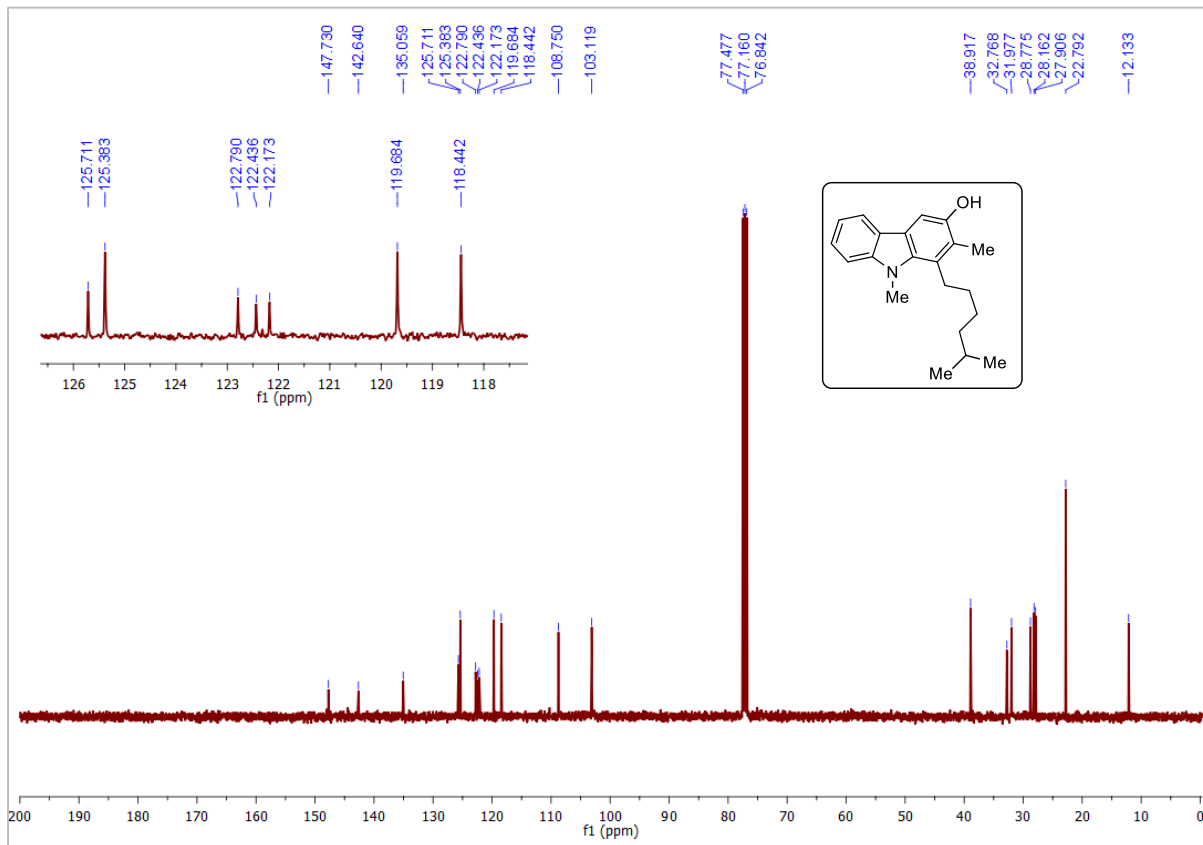
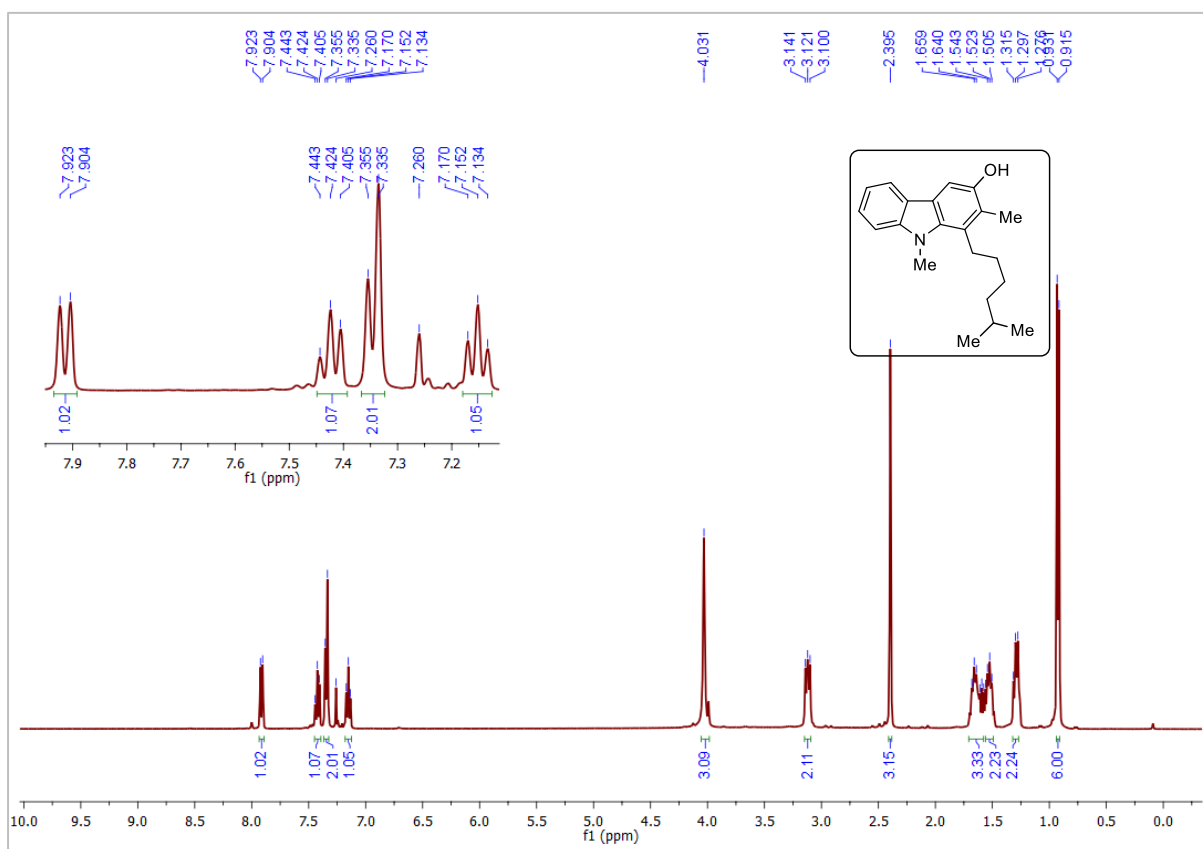


$^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (125 MHz,  $\text{CDCl}_3$ ) of **(14a)**

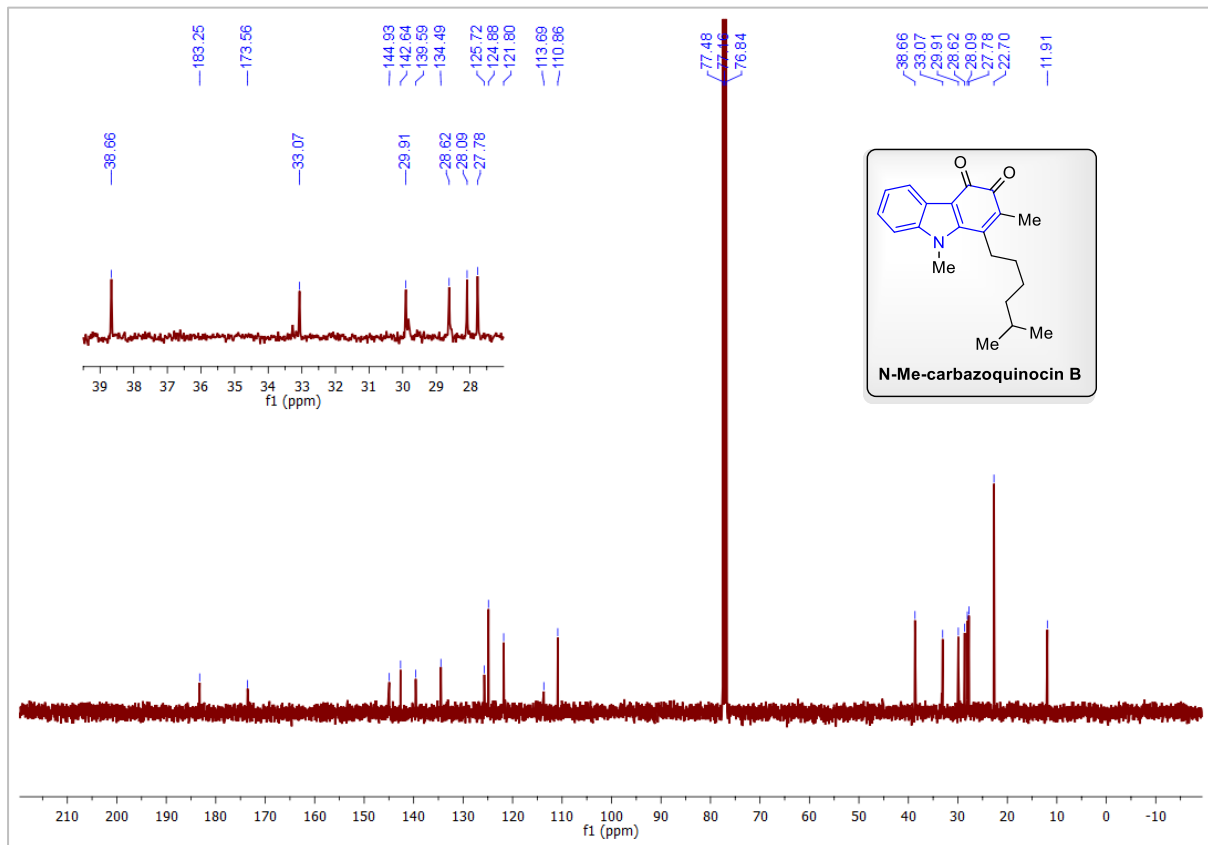
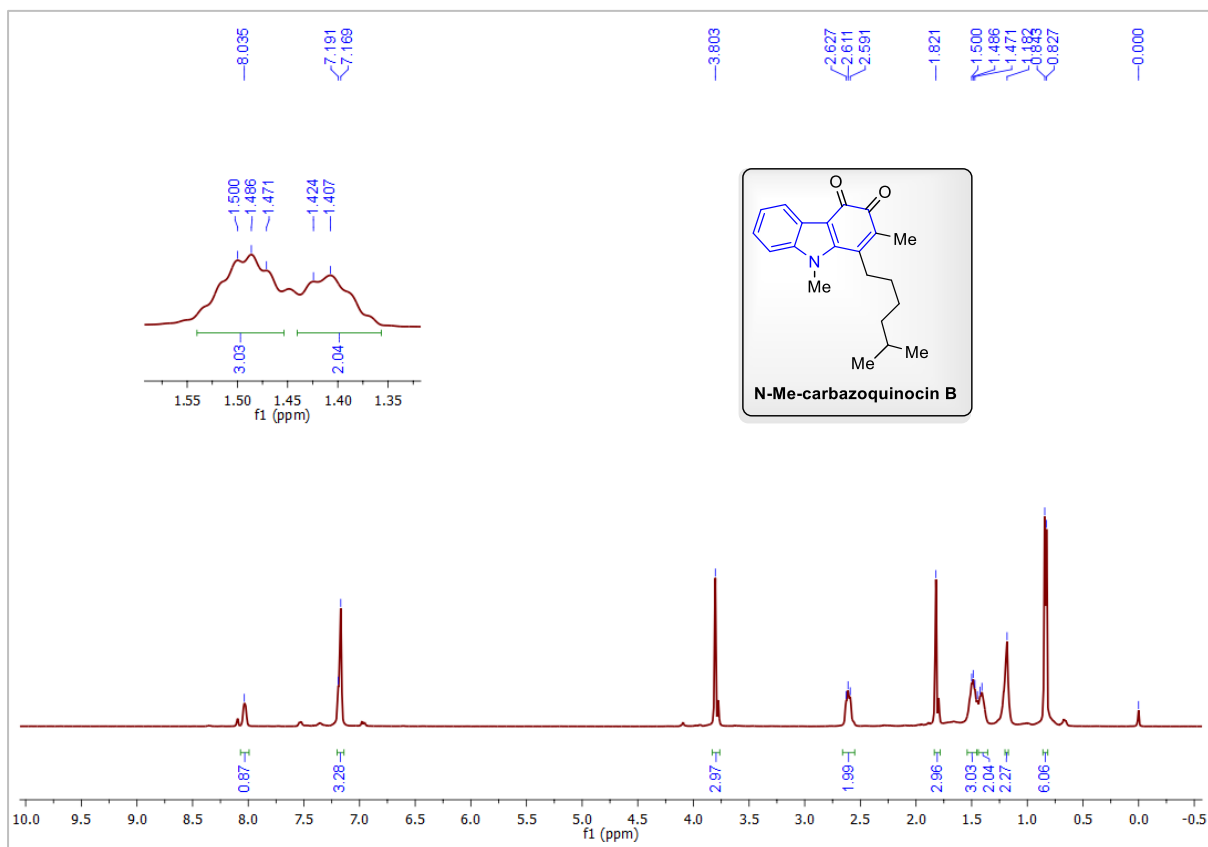




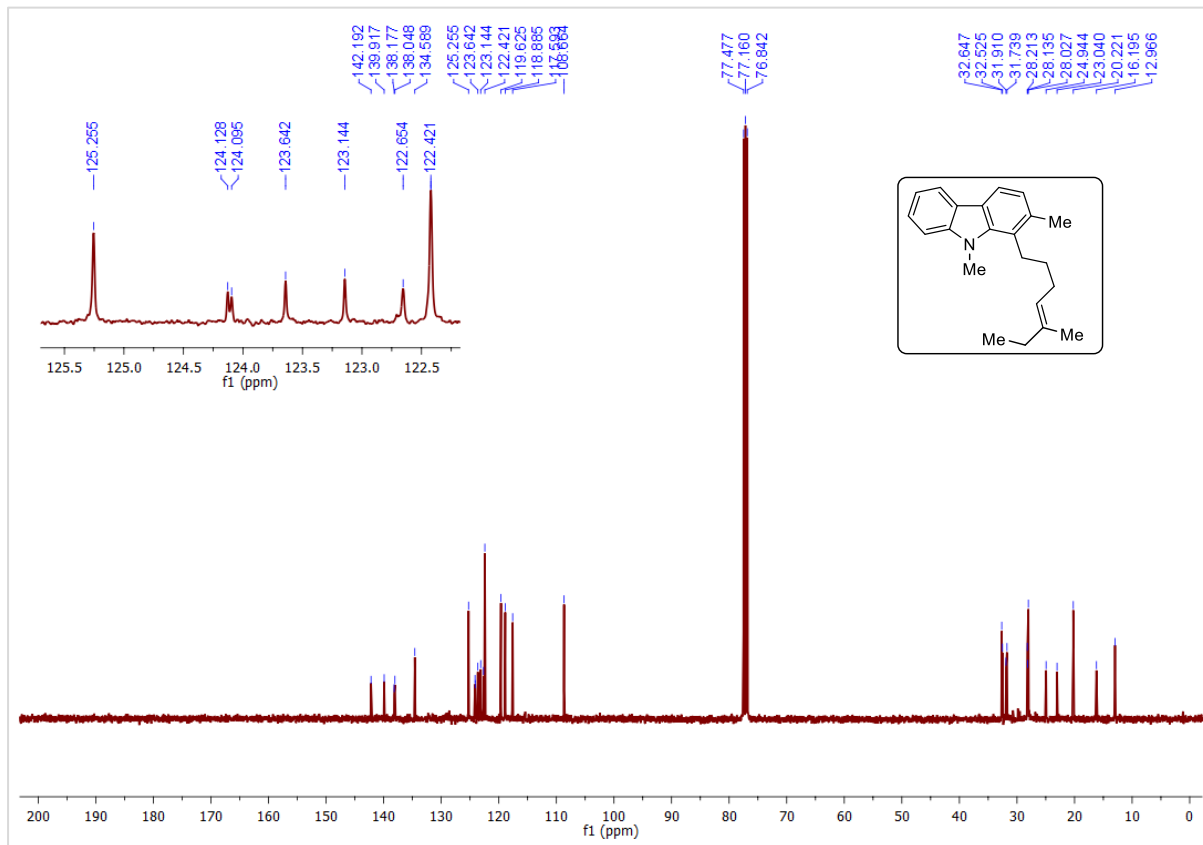
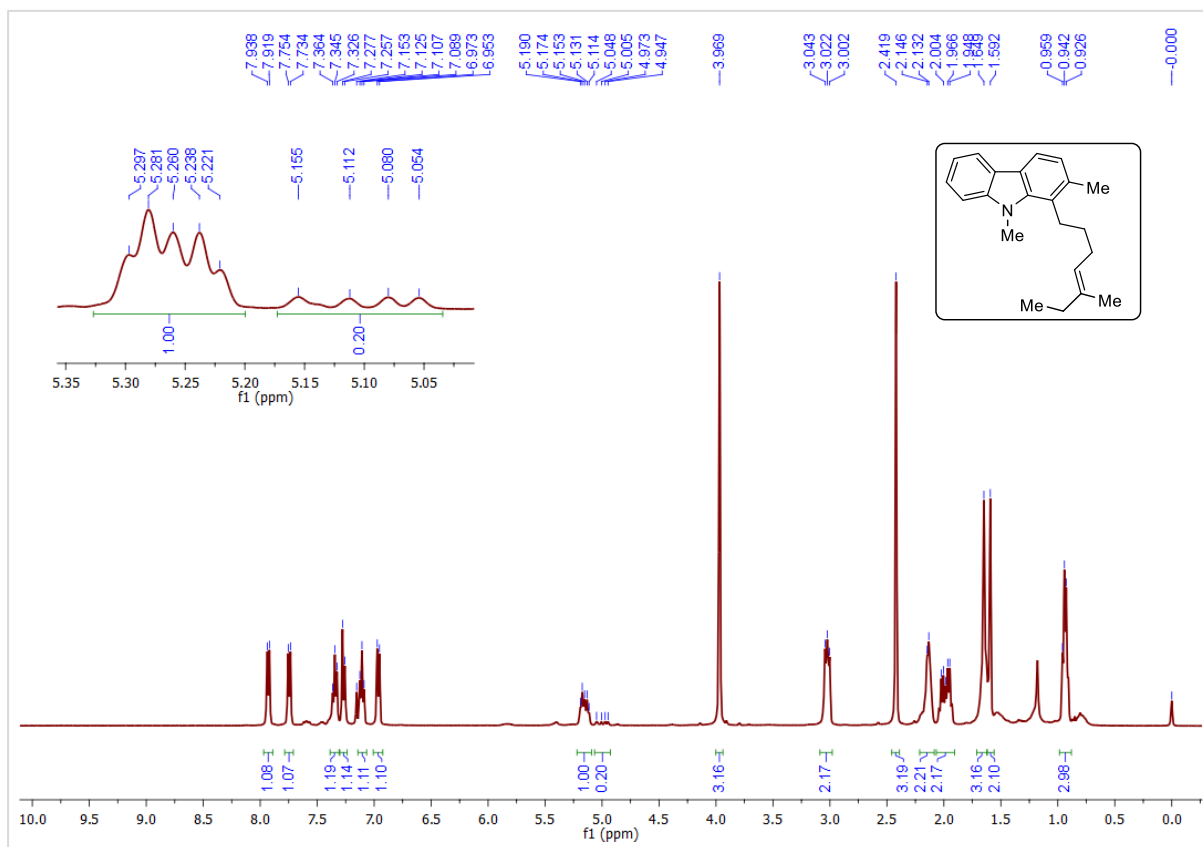
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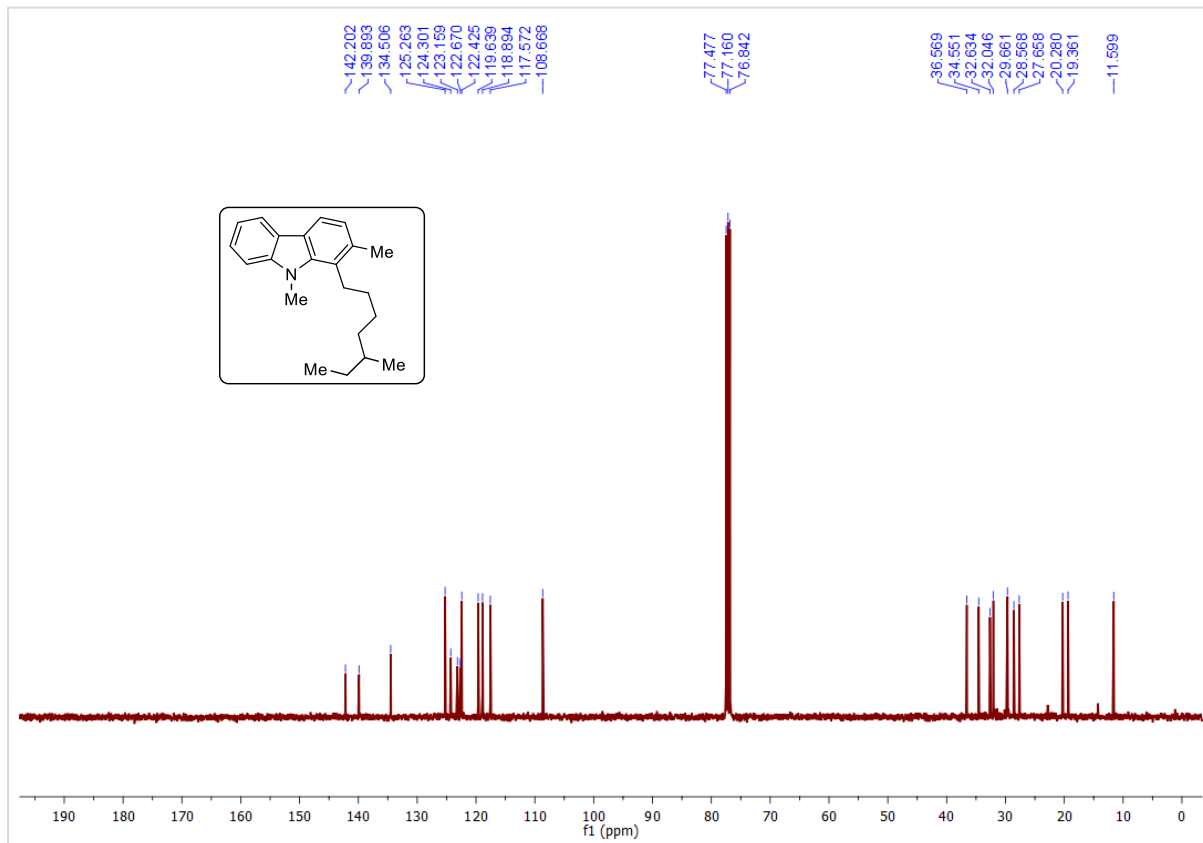
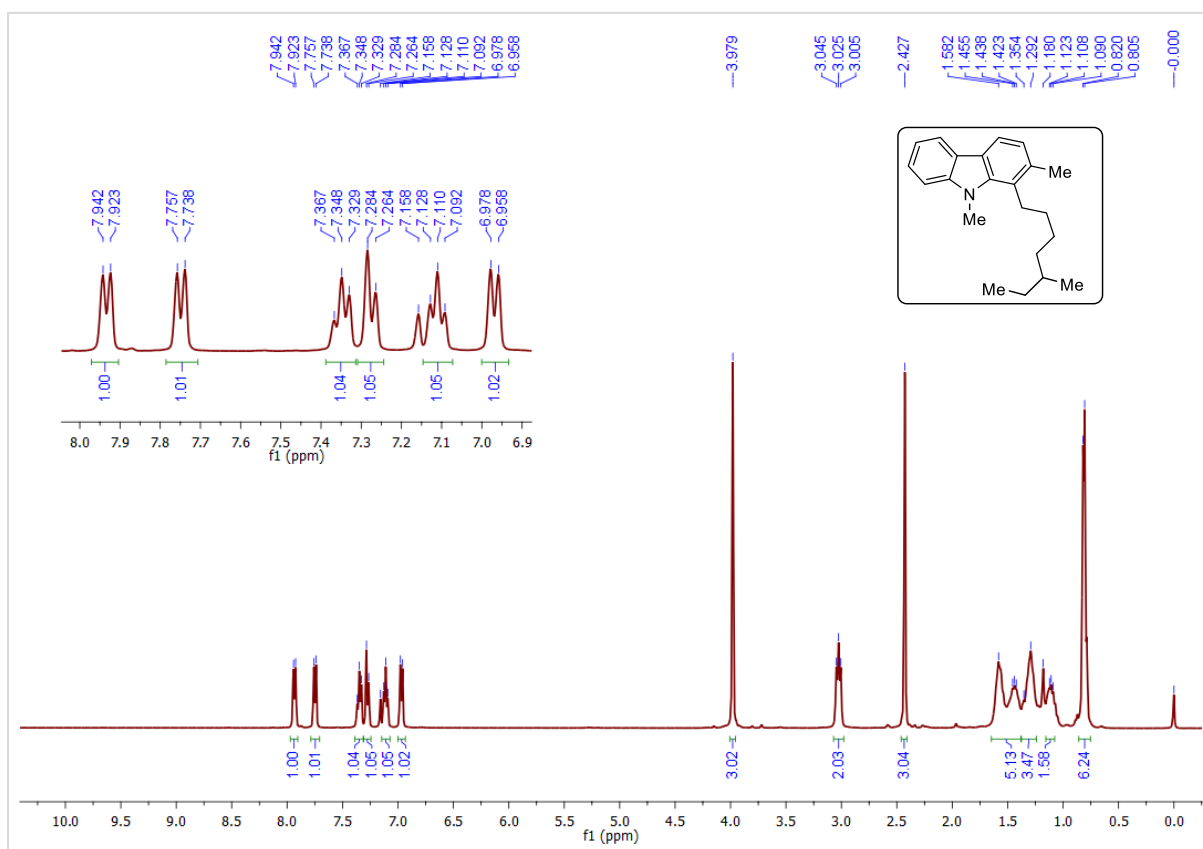
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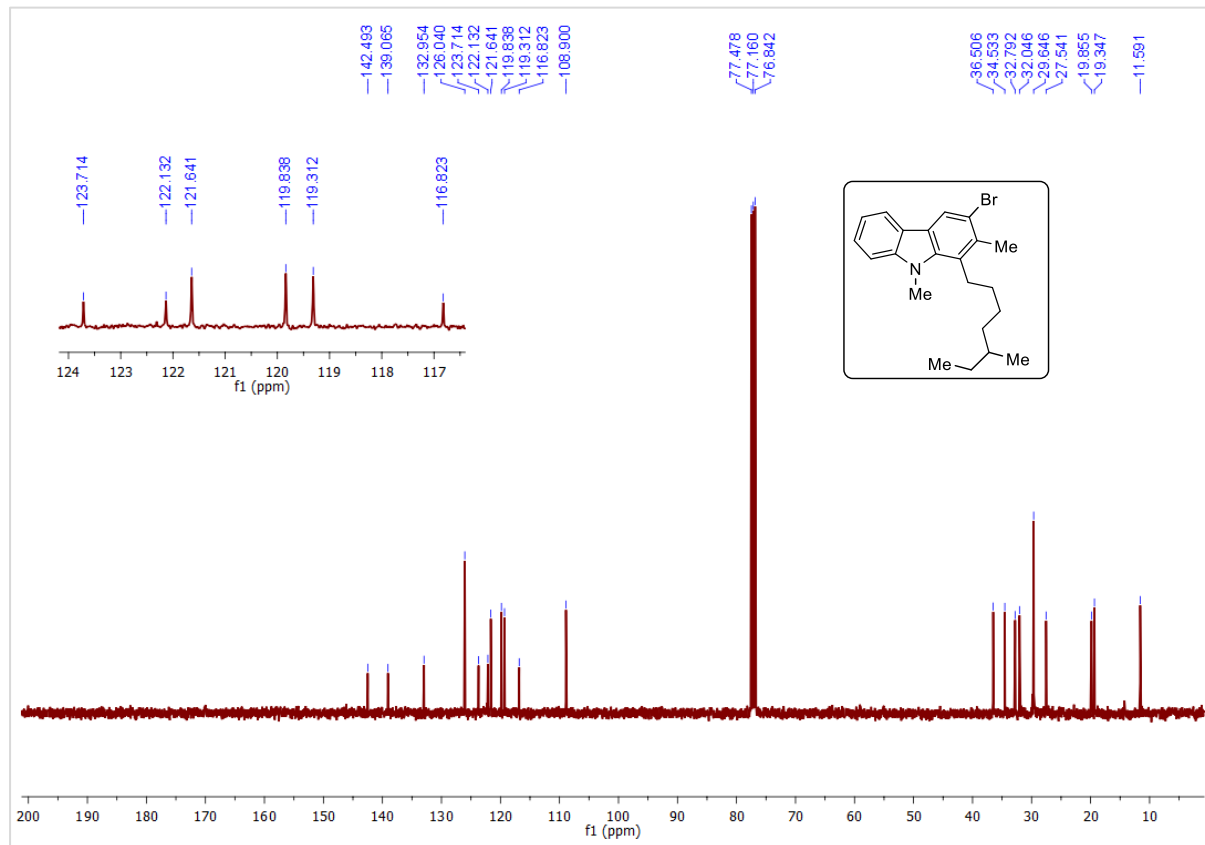
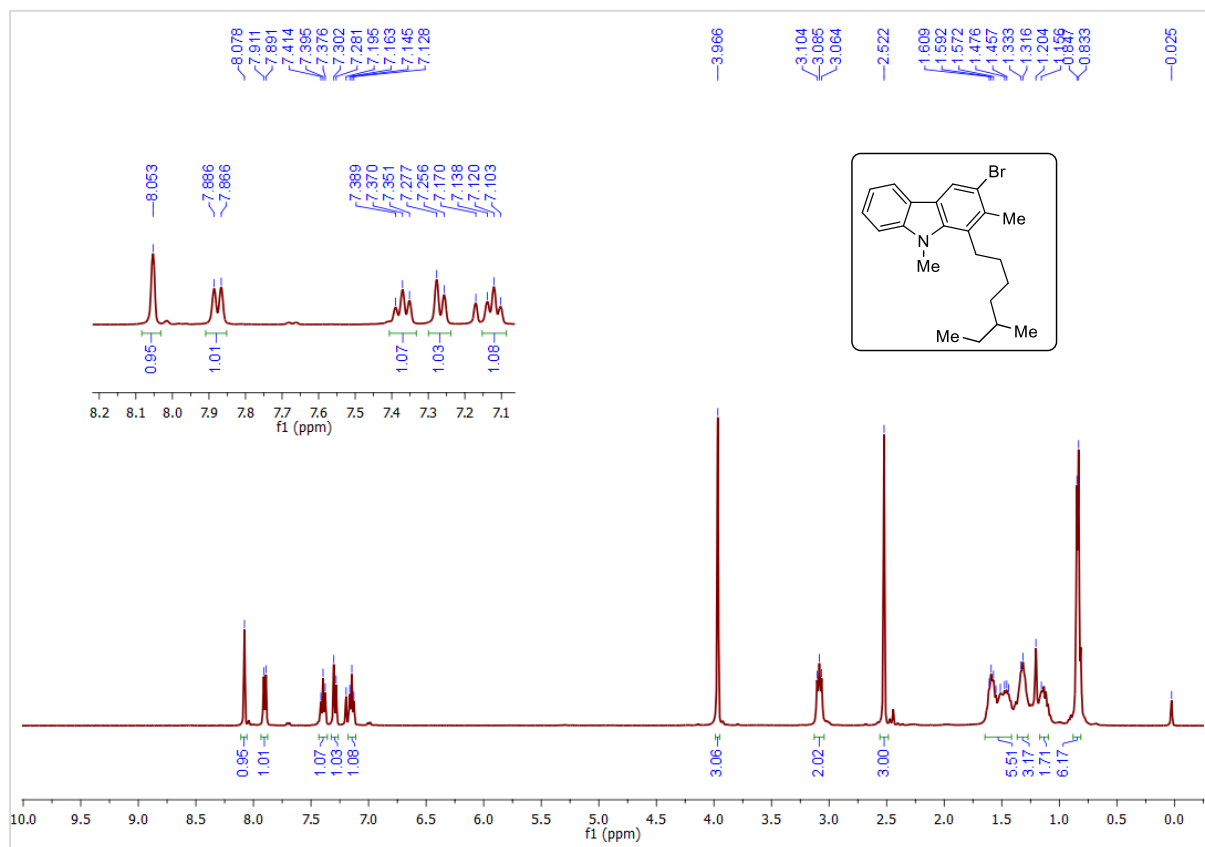
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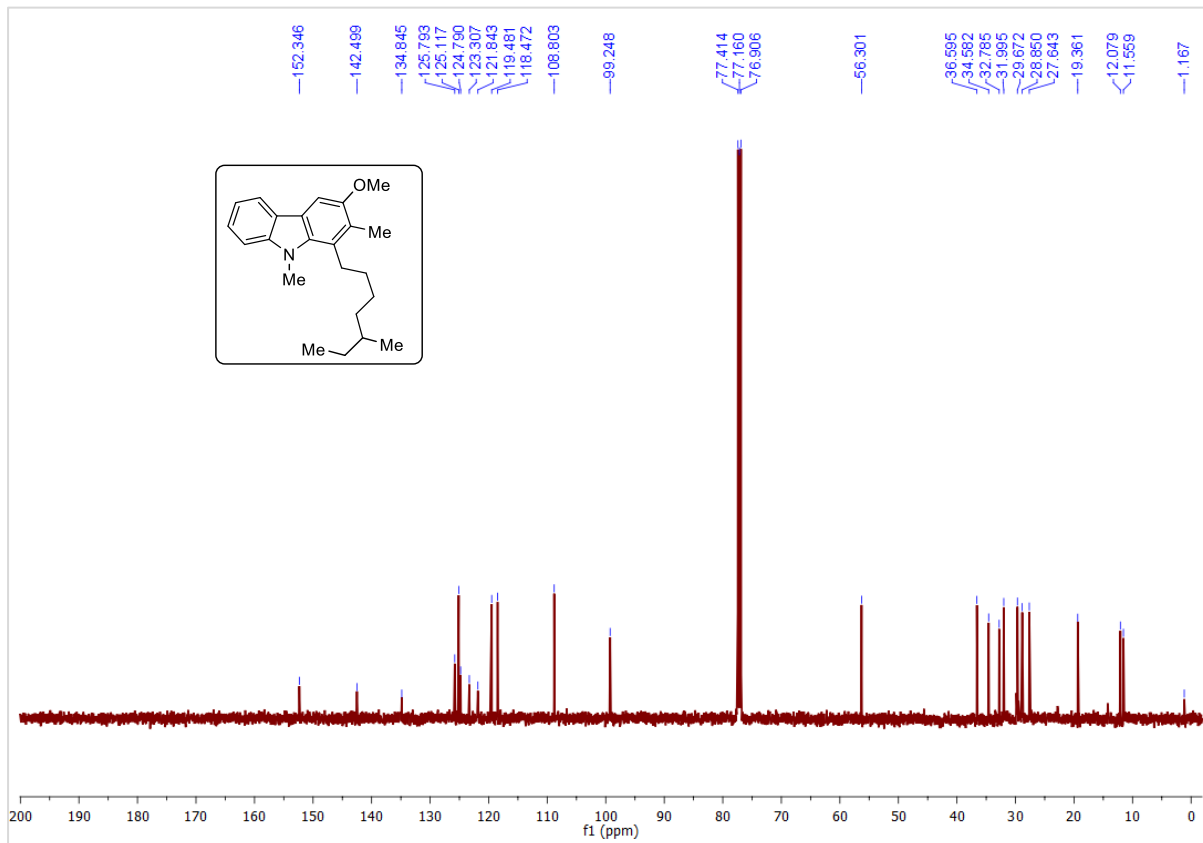
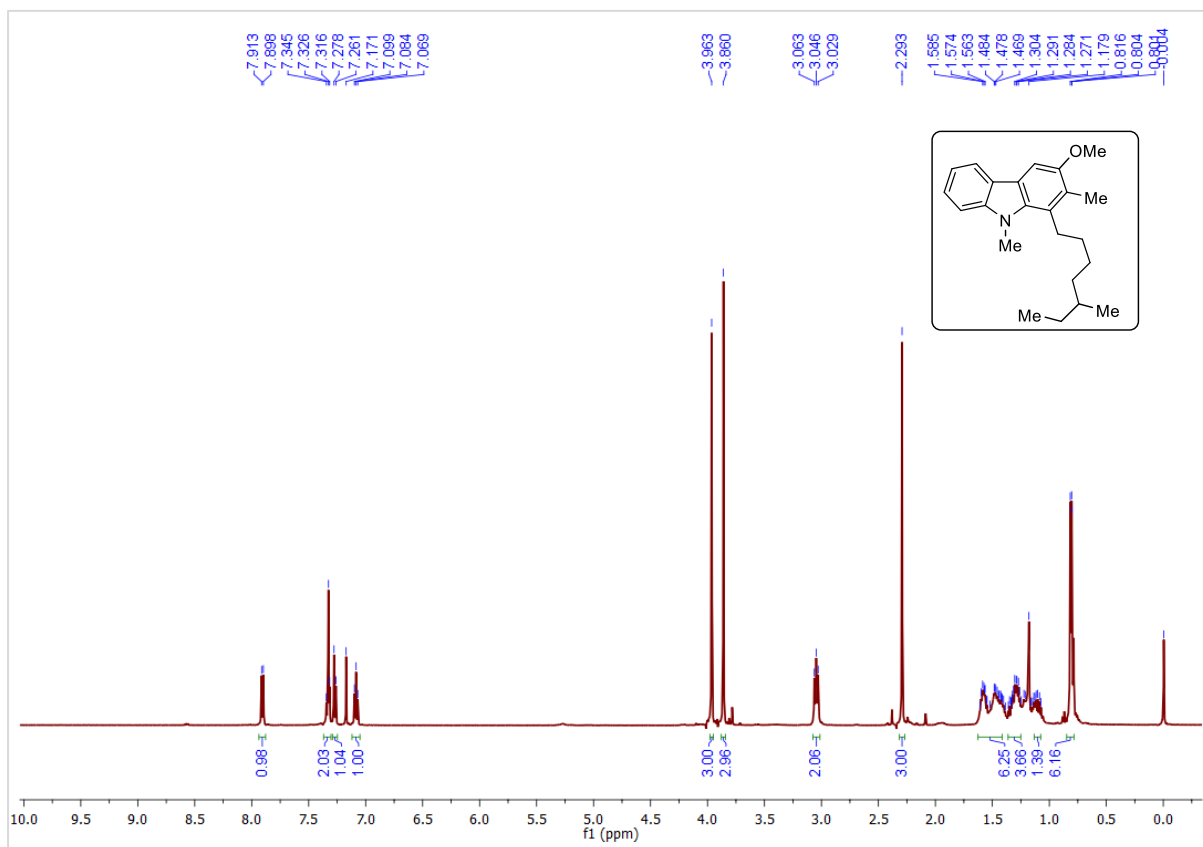
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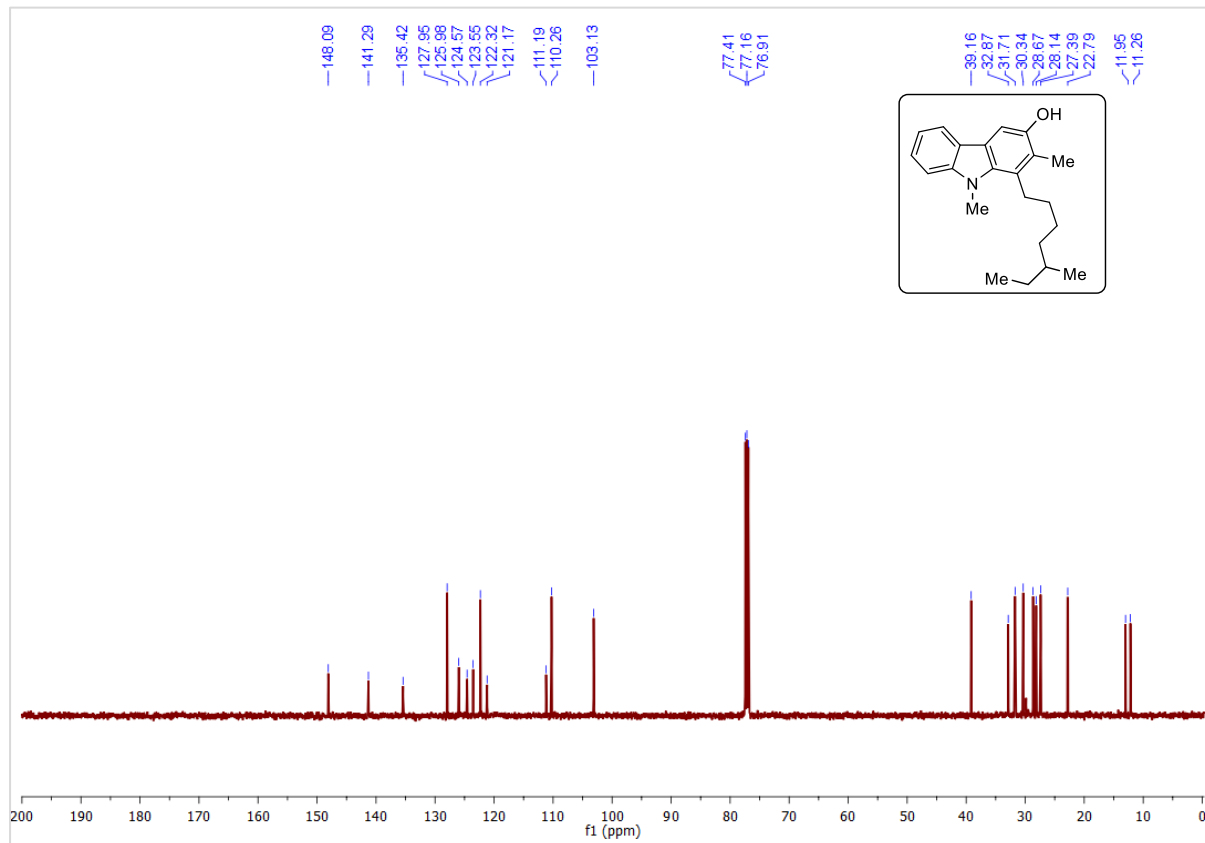
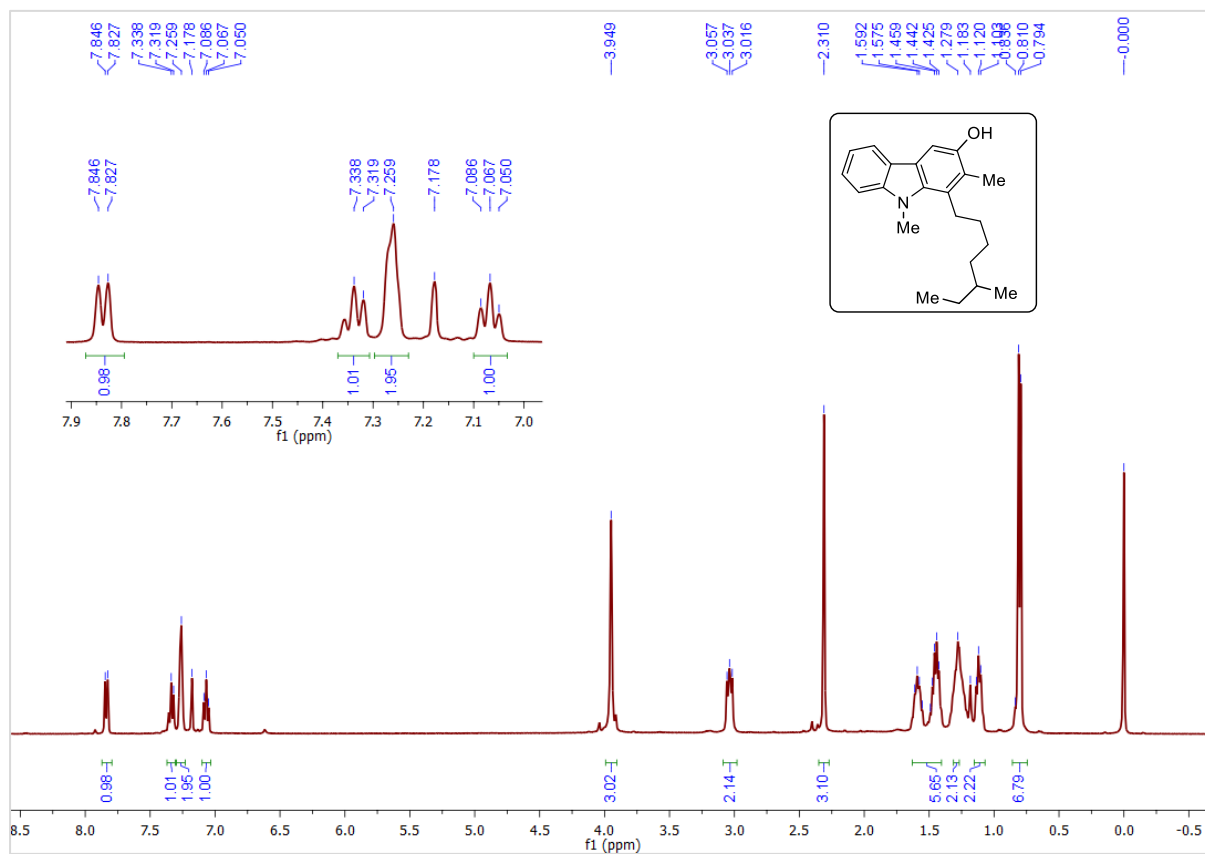
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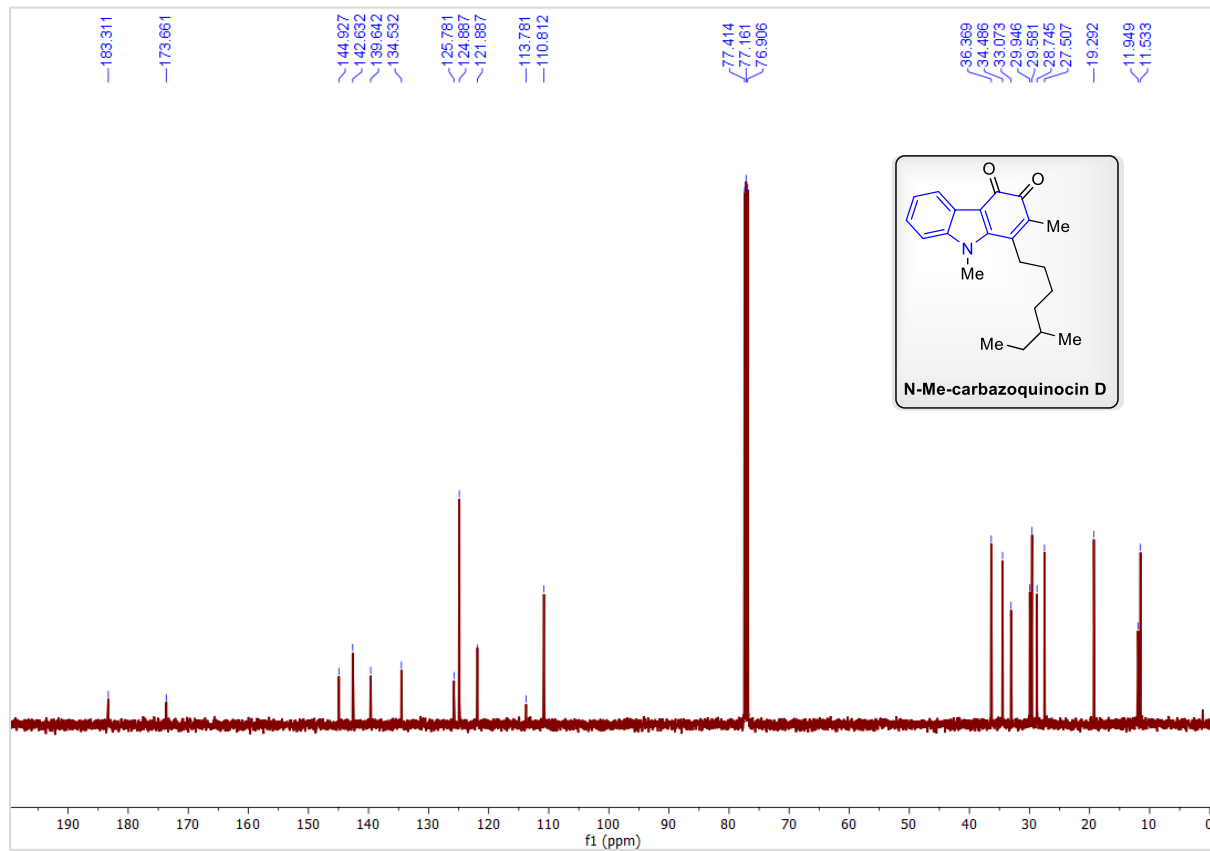
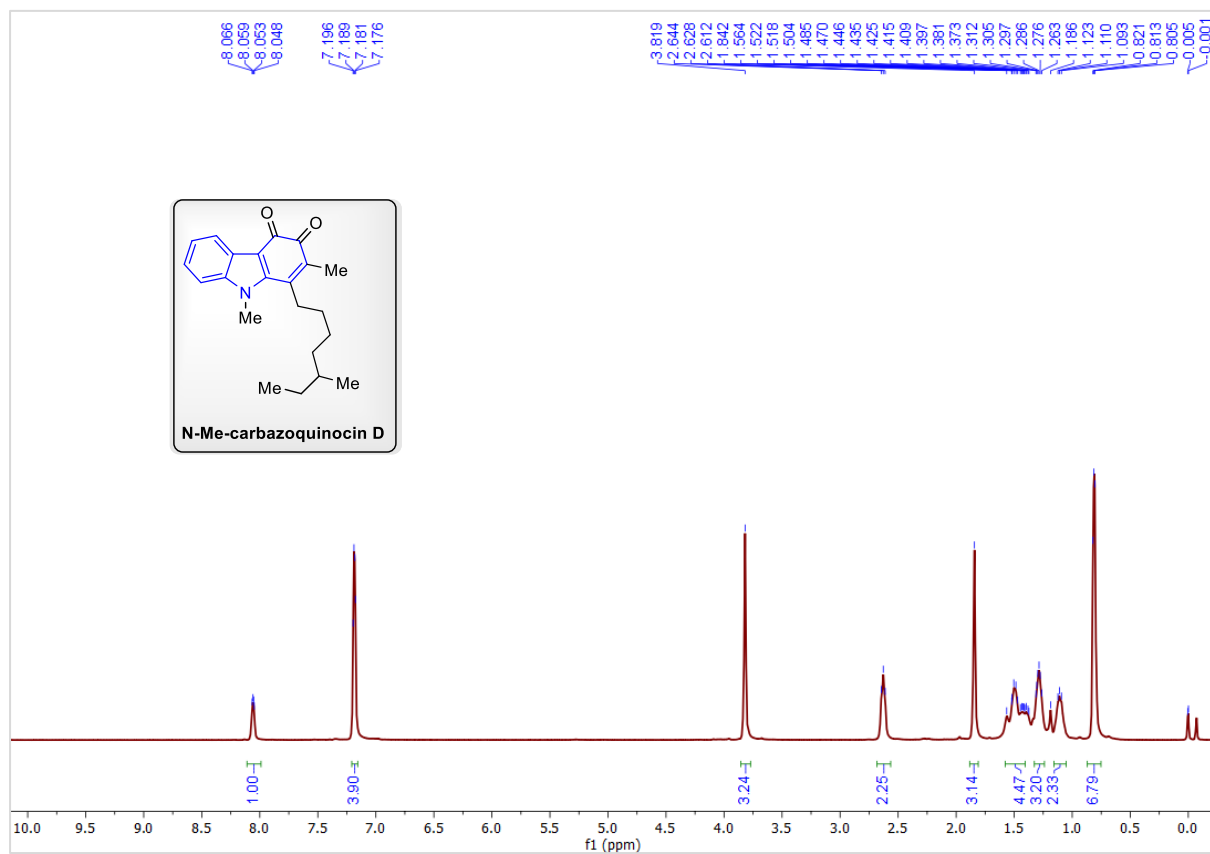
$^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$  [ $^1\text{H}$ ] NMR (125 MHz,  $\text{CDCl}_3$ ) of (**14b**)



$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (**15b**)

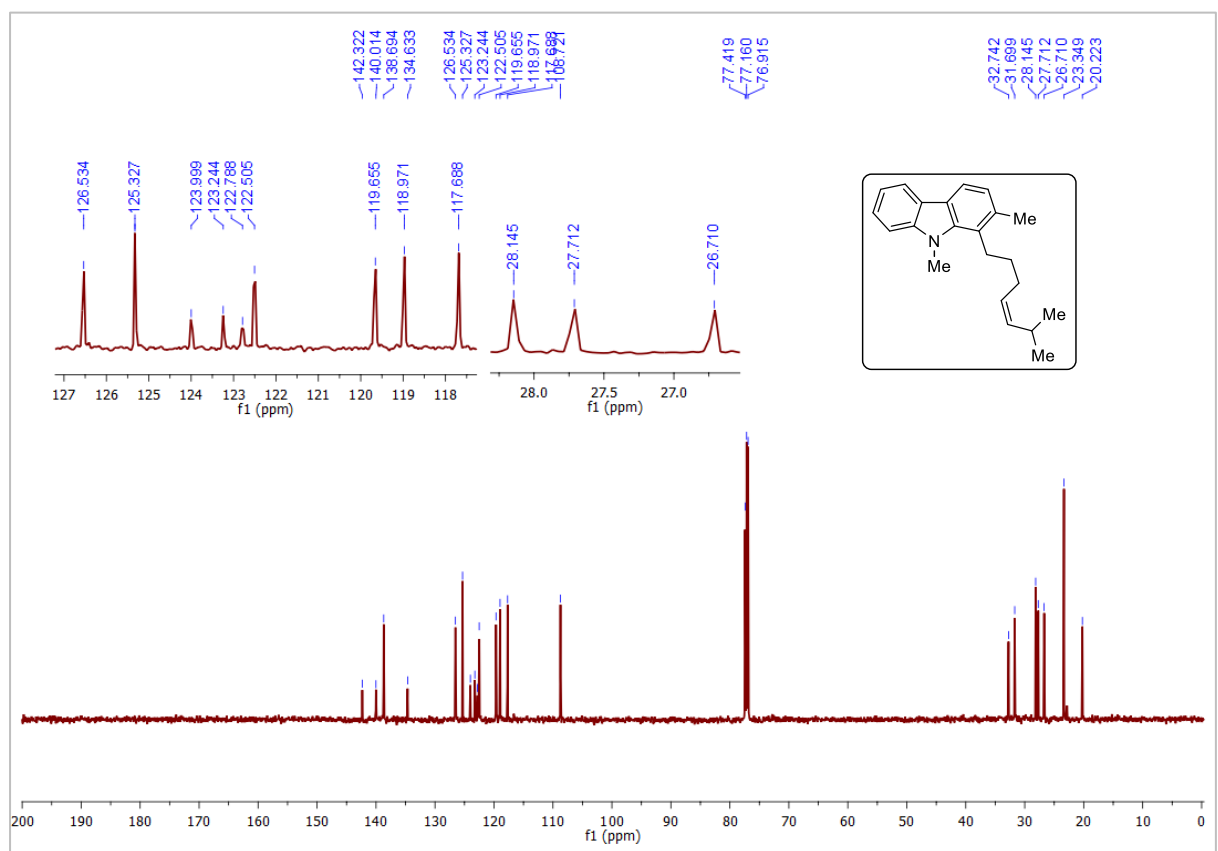
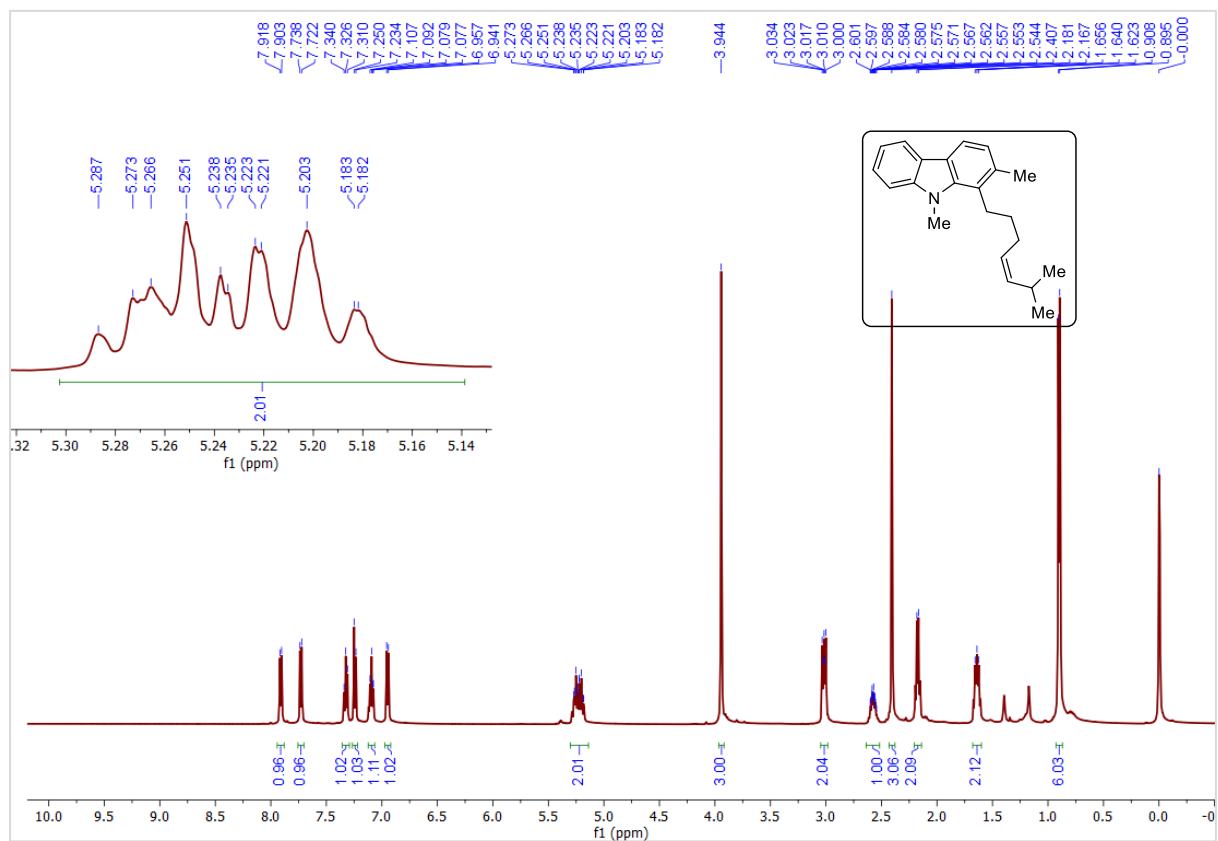


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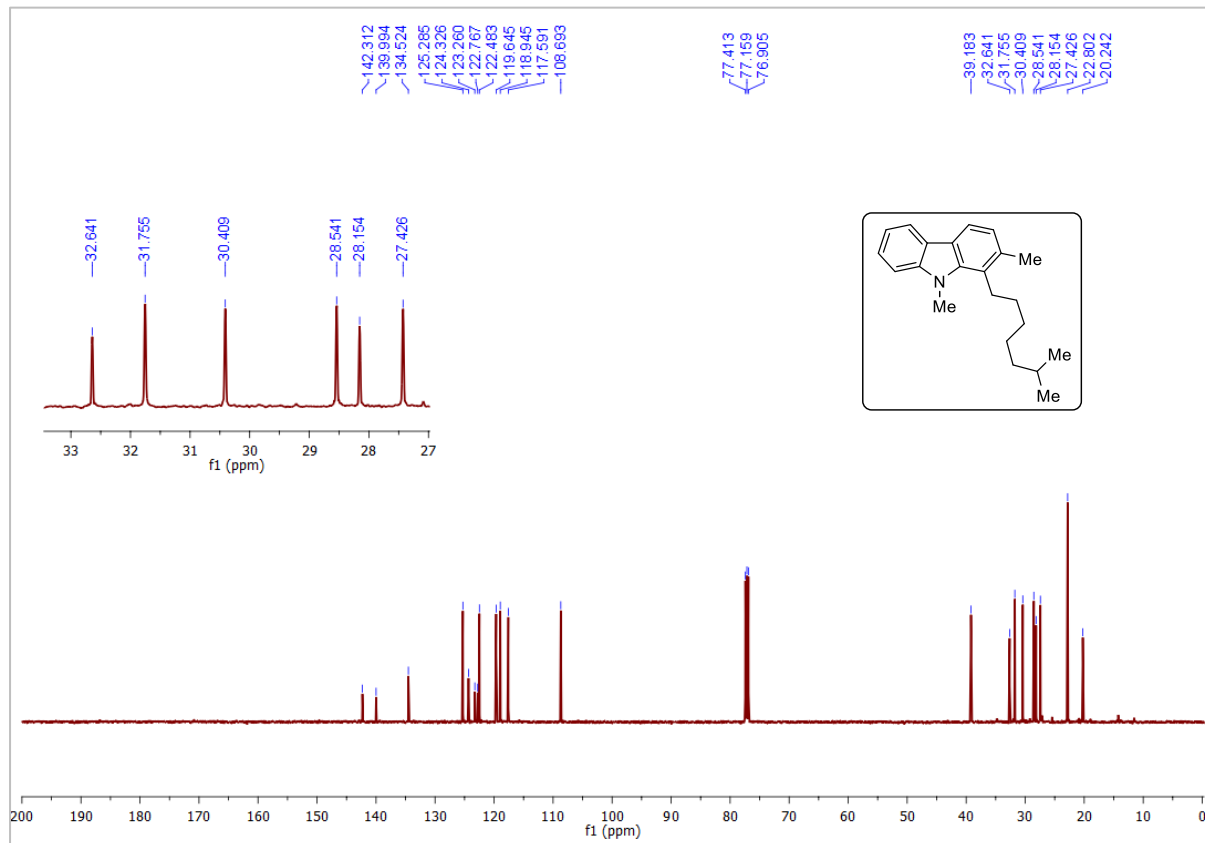
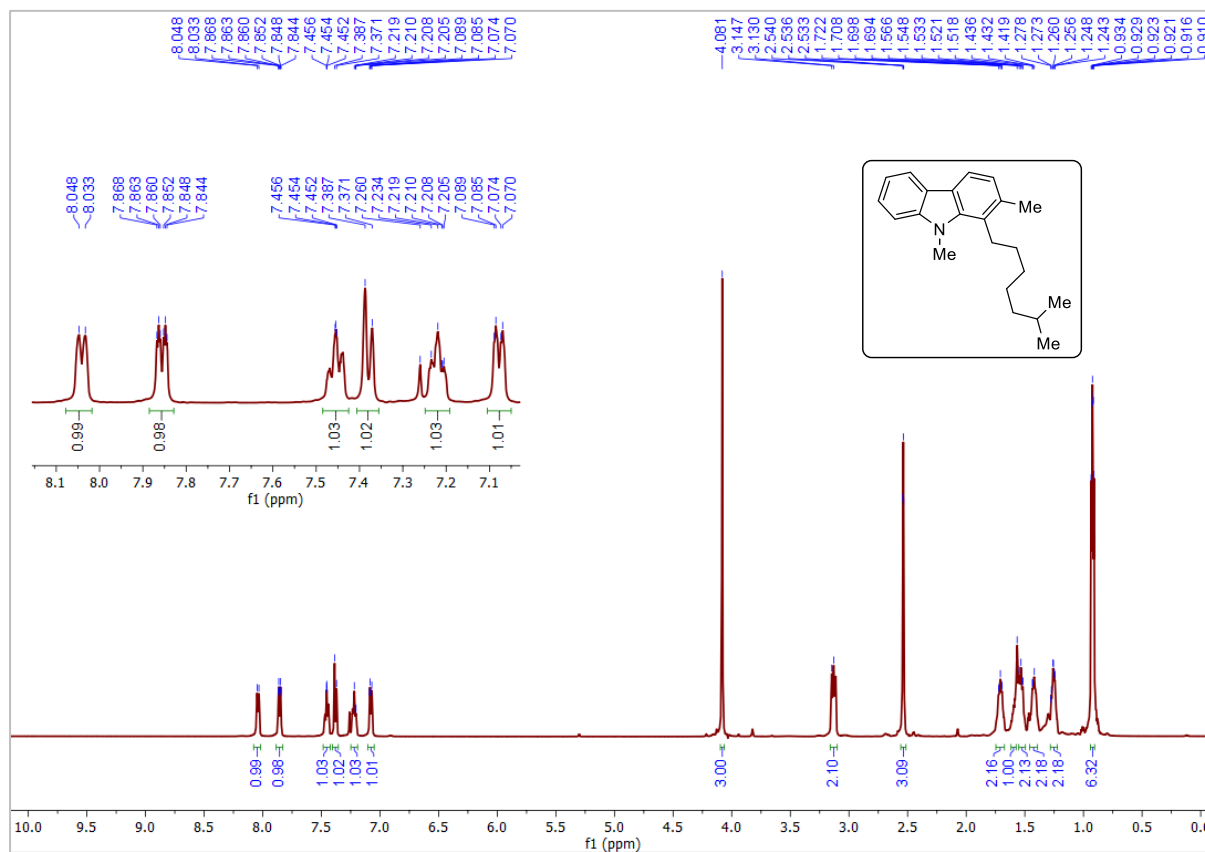




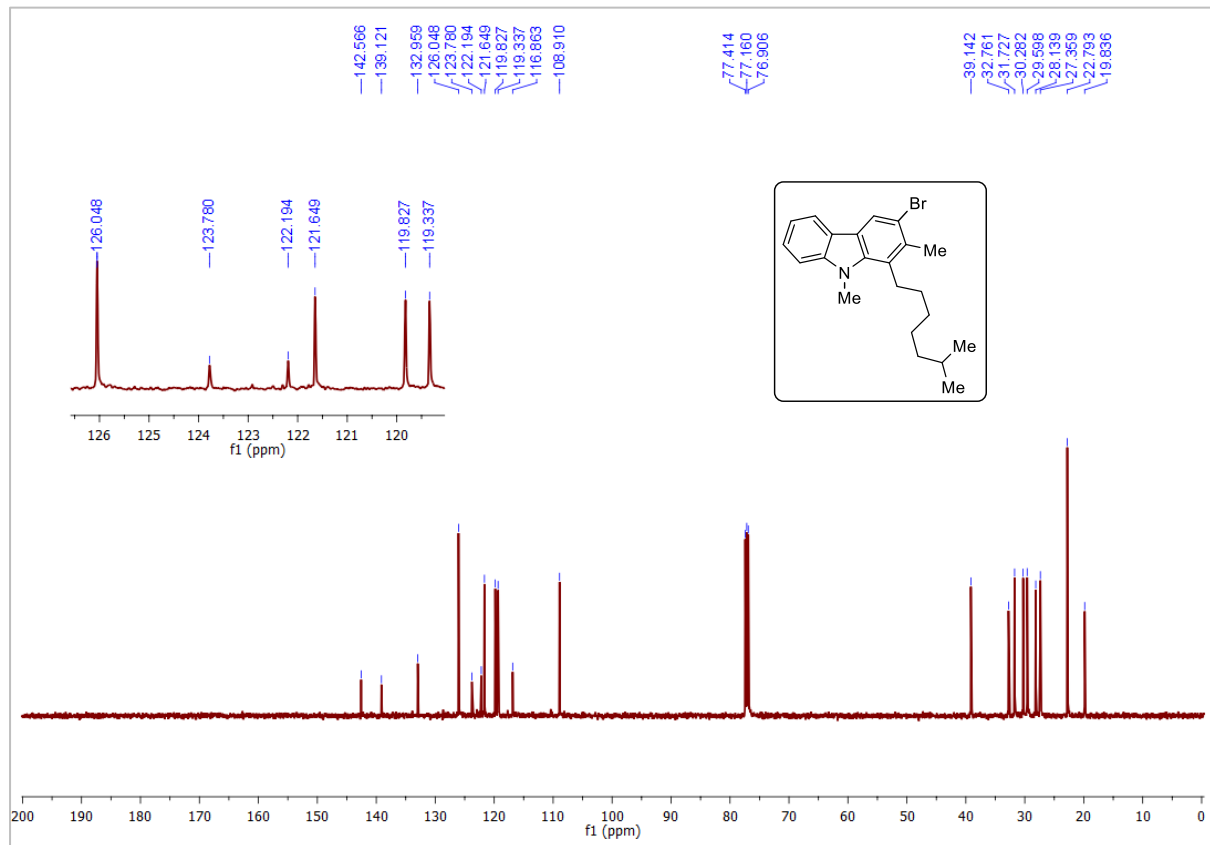
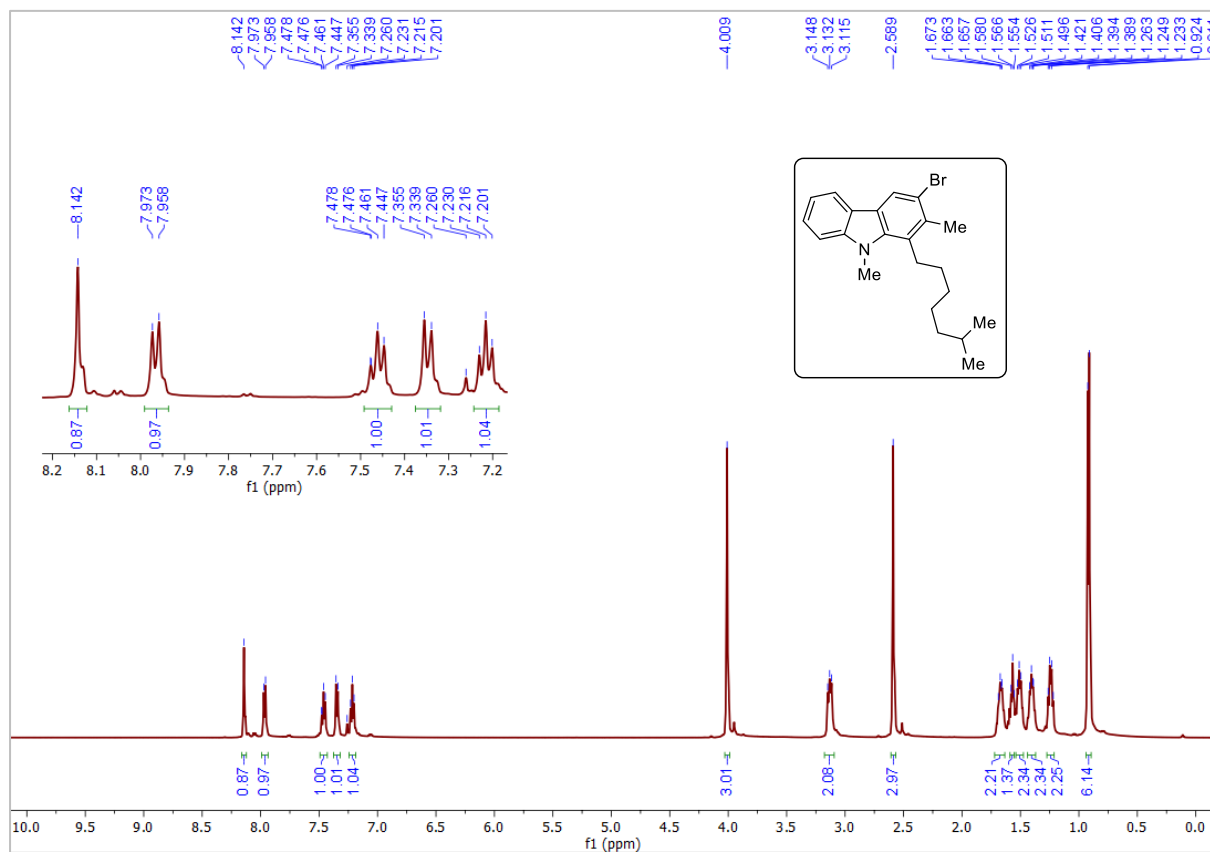
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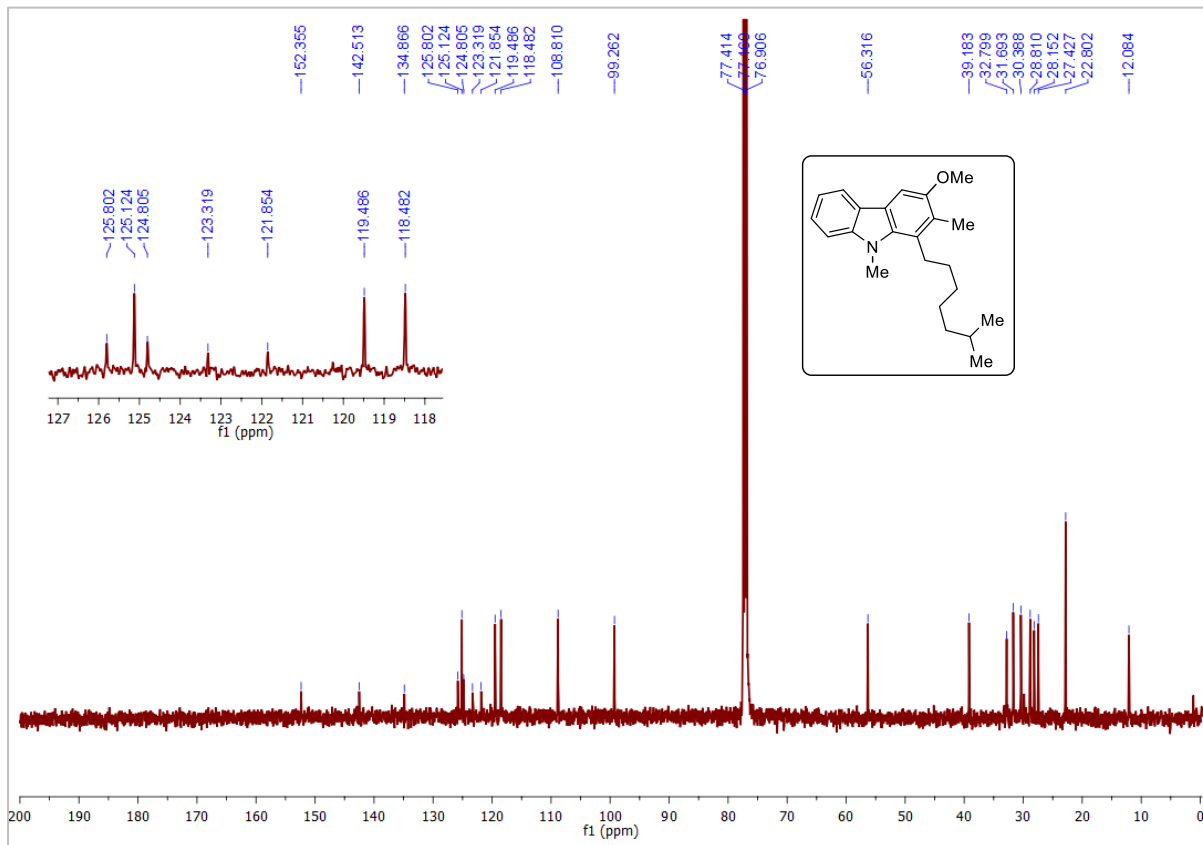
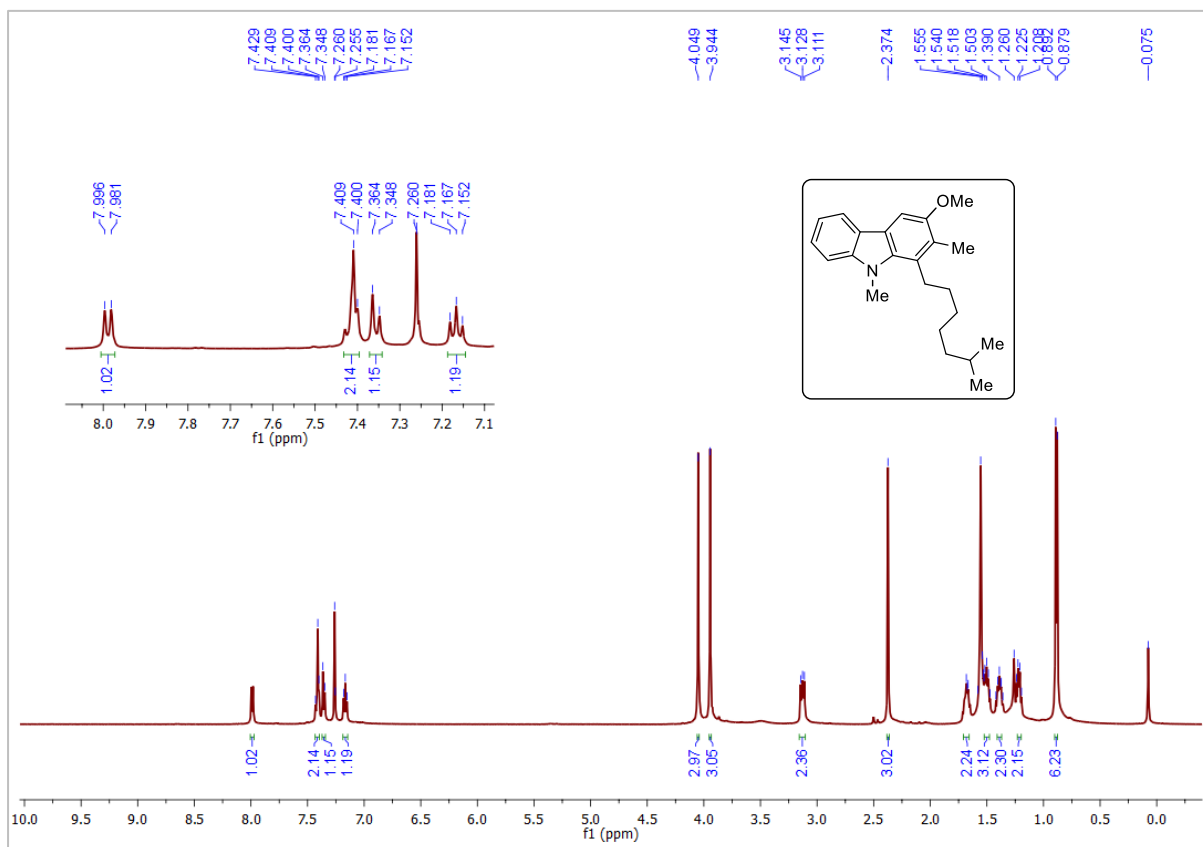
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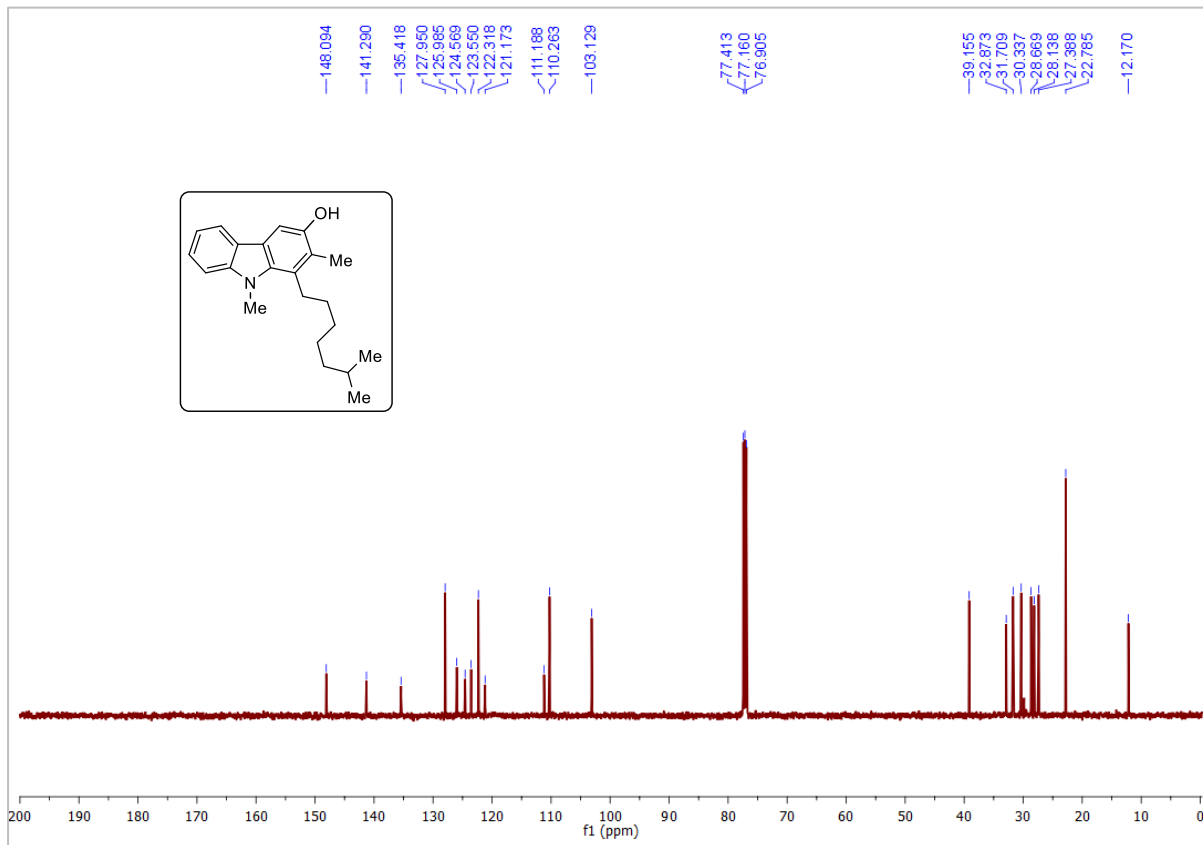
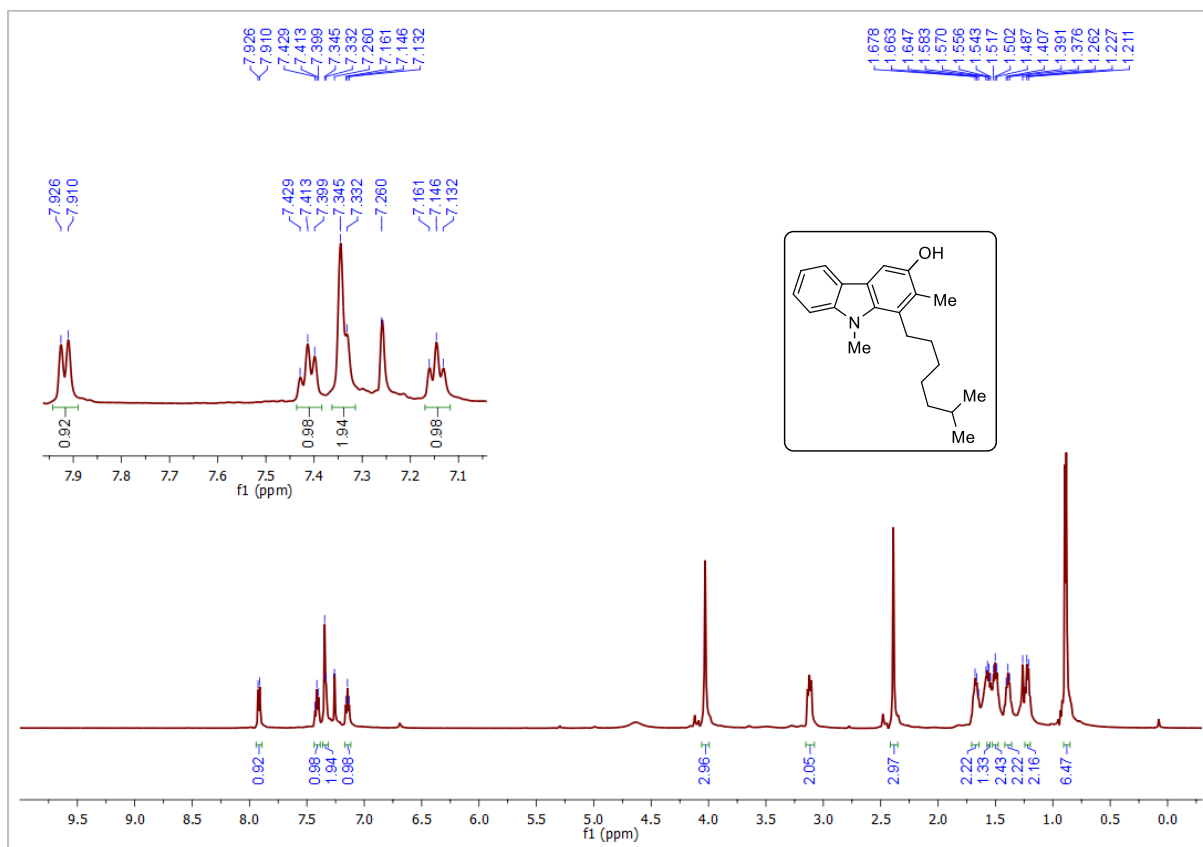
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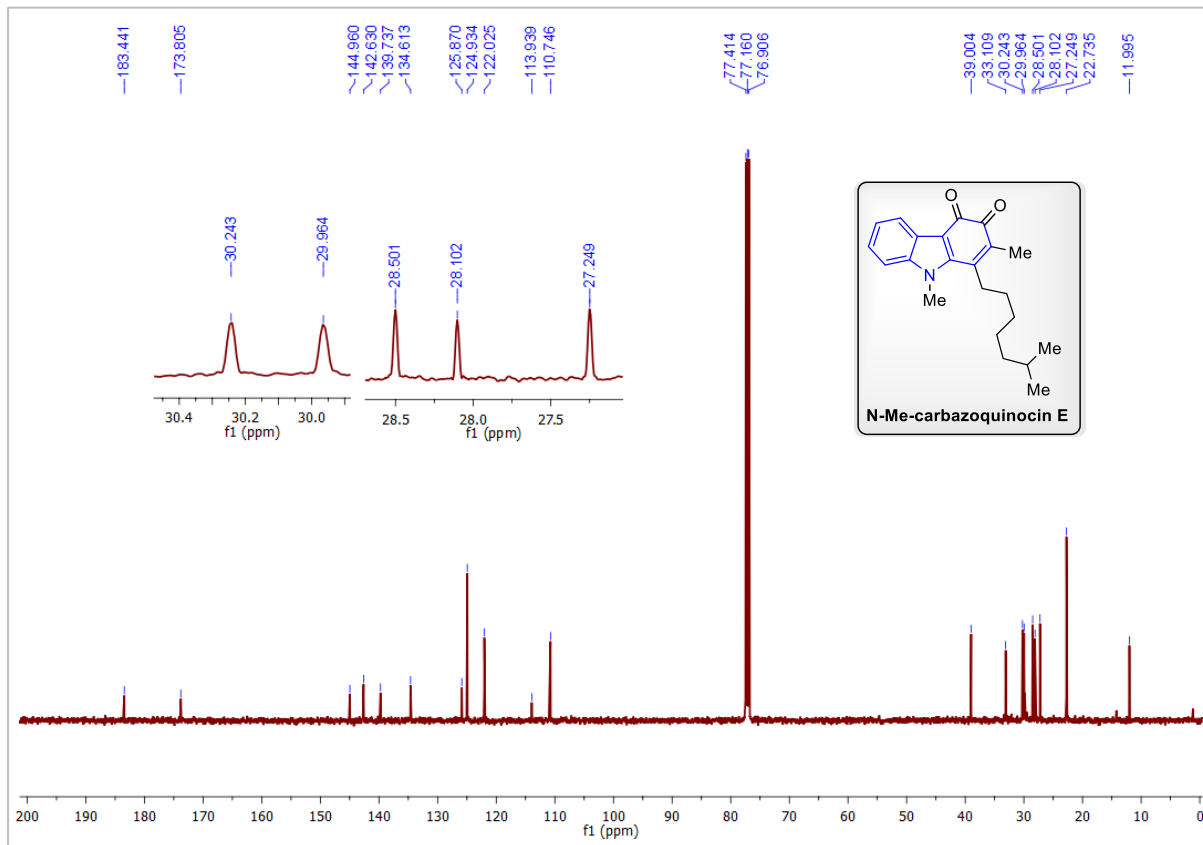
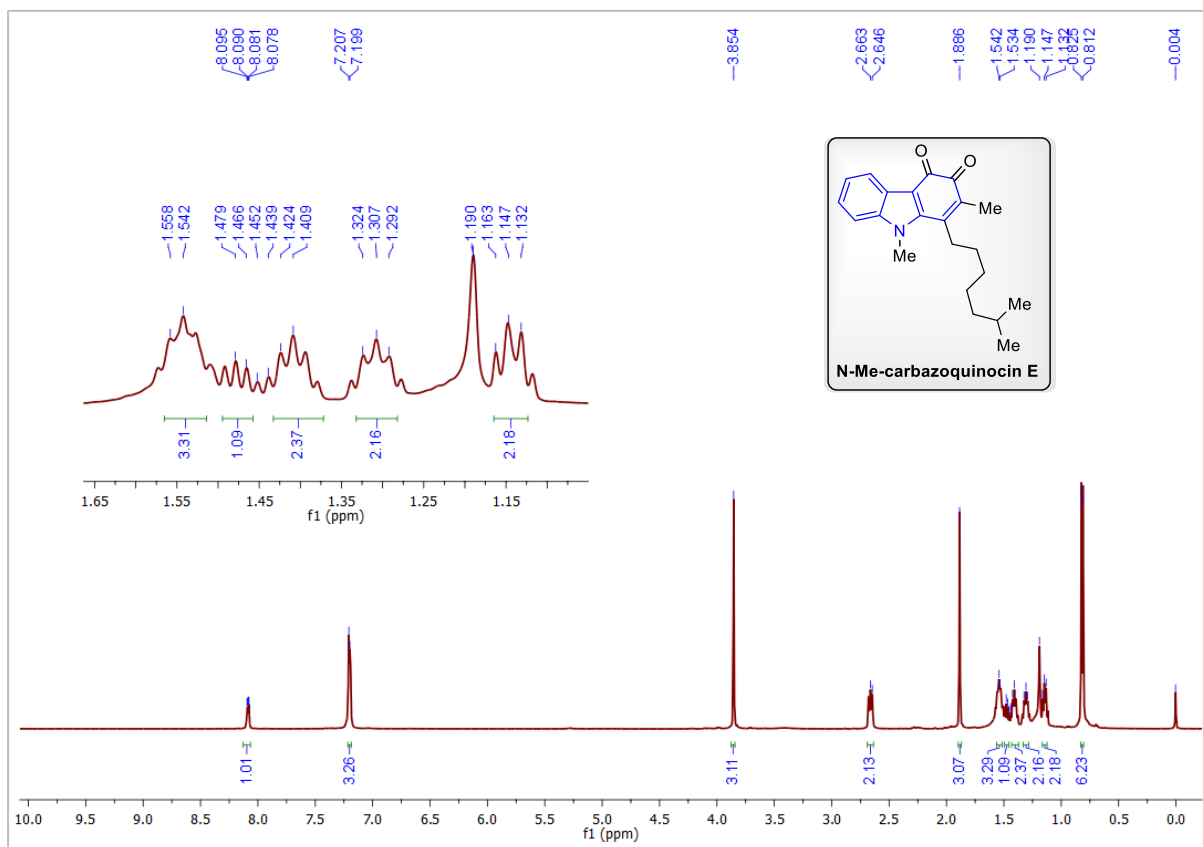
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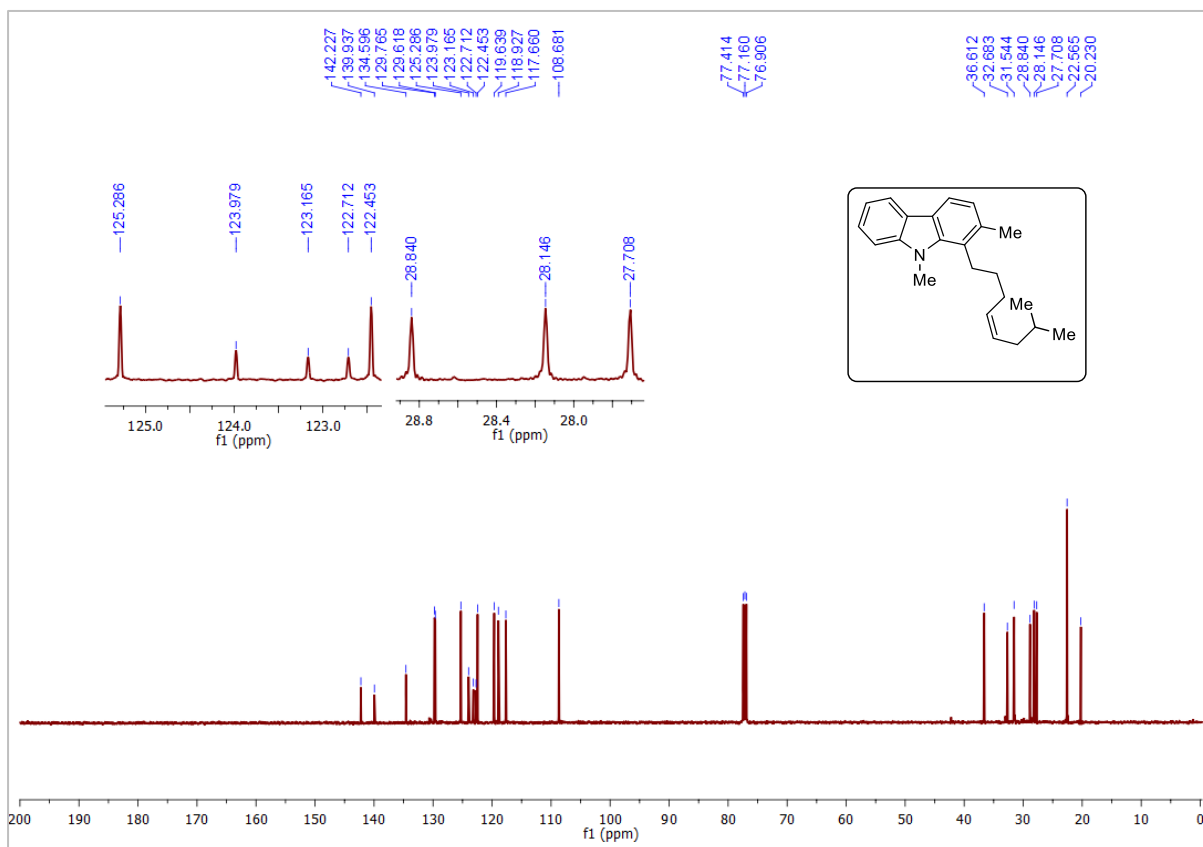
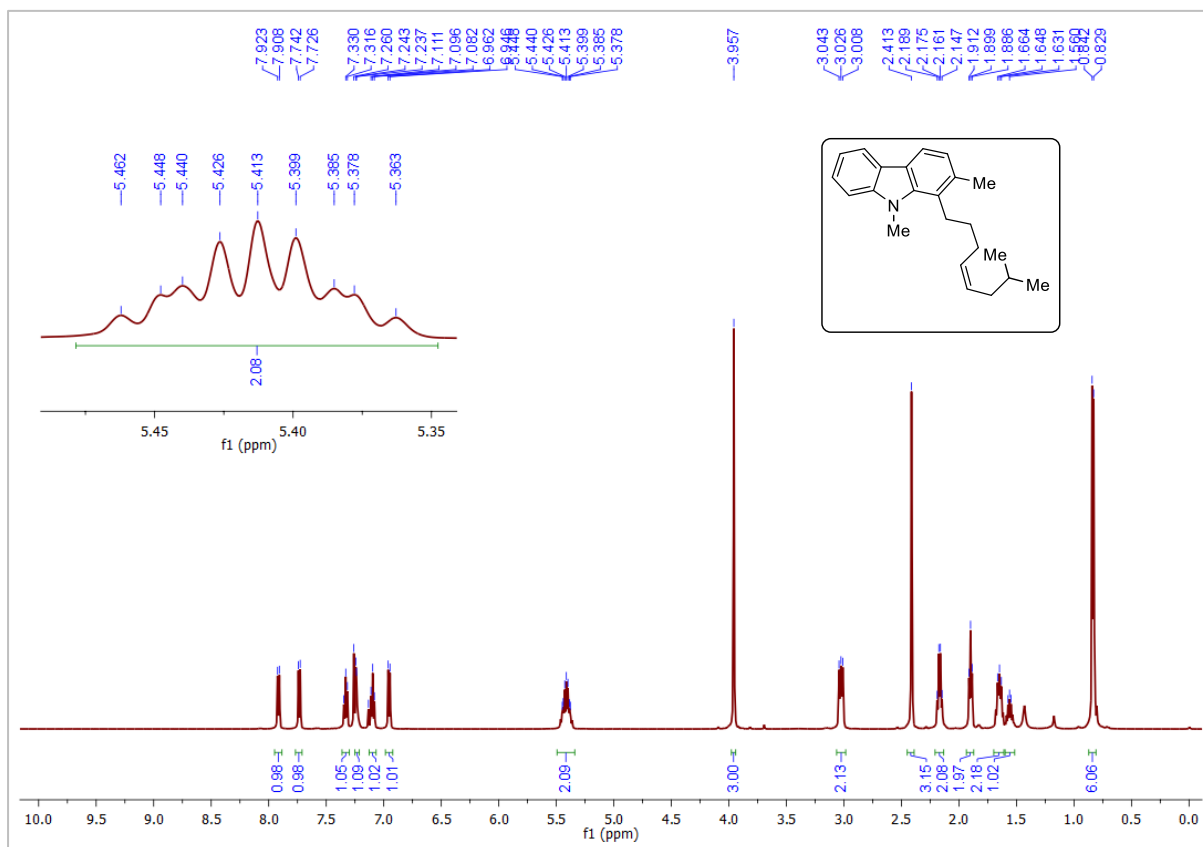
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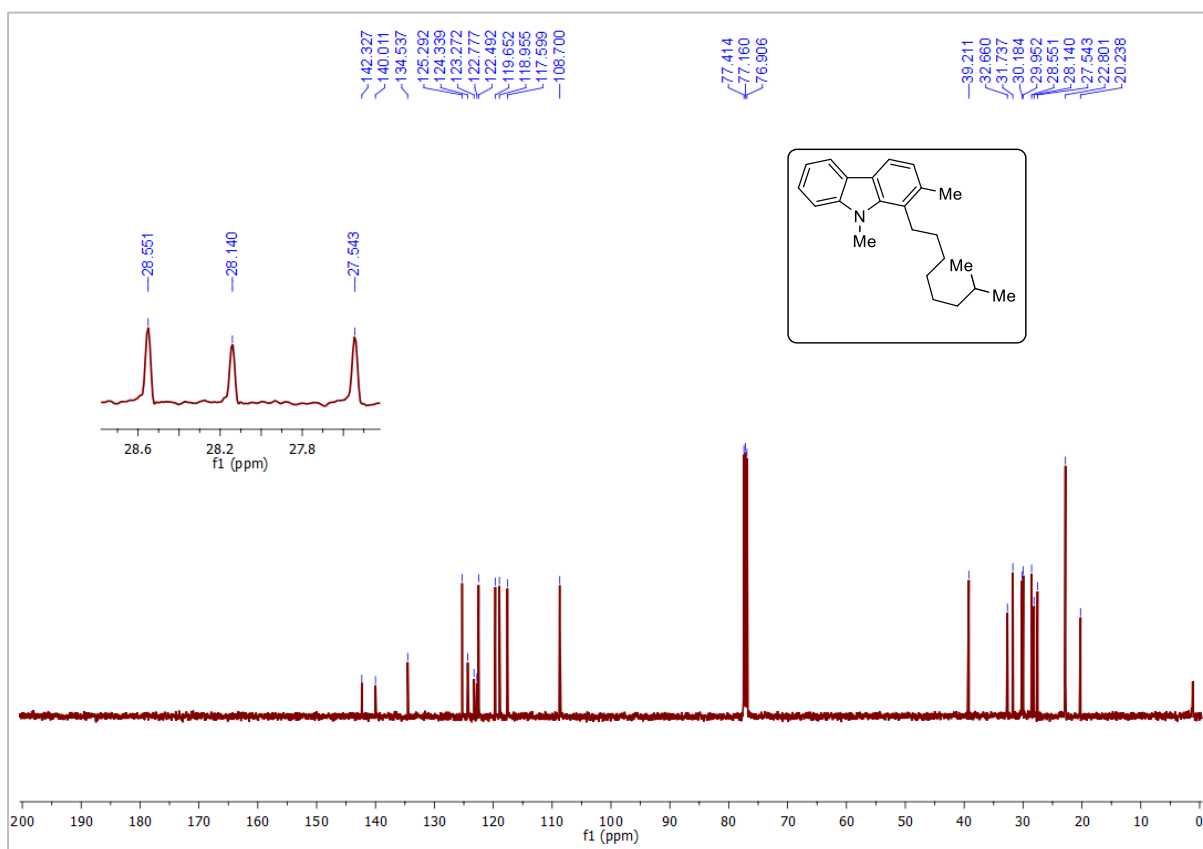
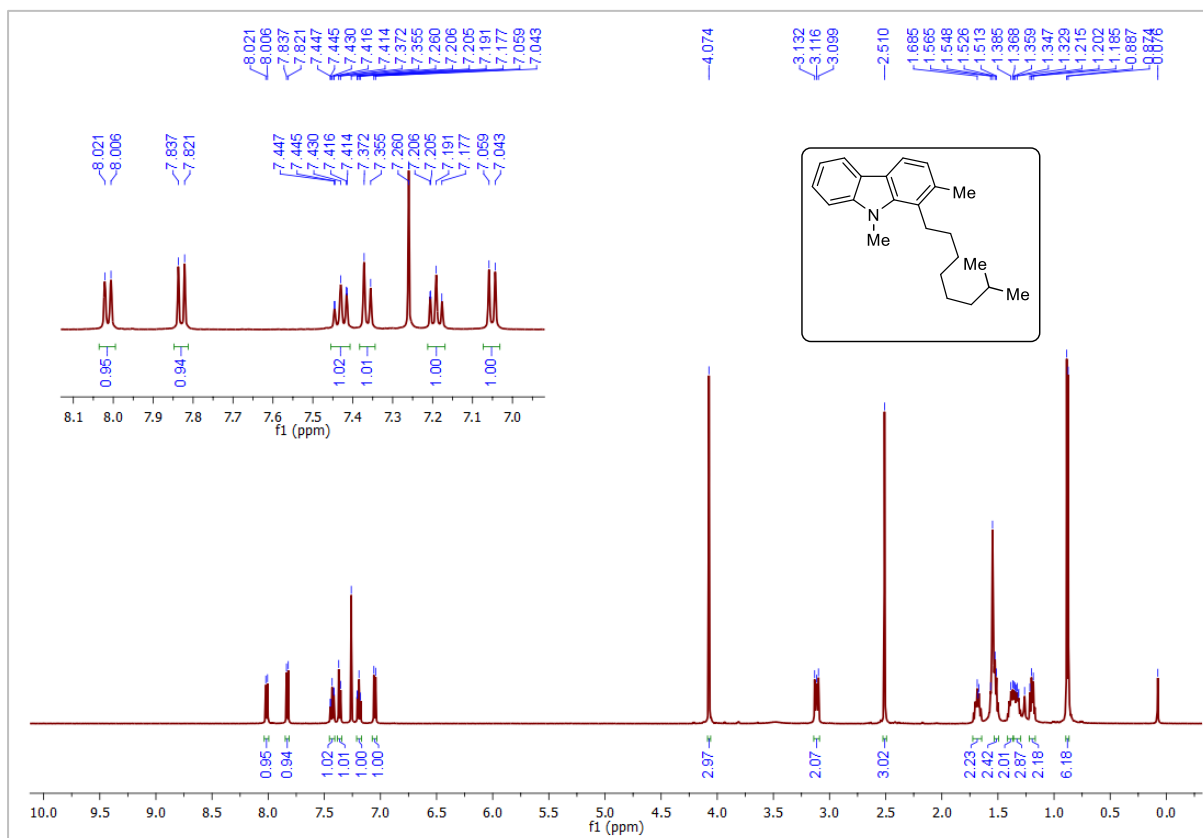
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$^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (125 MHz,  $\text{CDCl}_3$ ) of (**11d**)

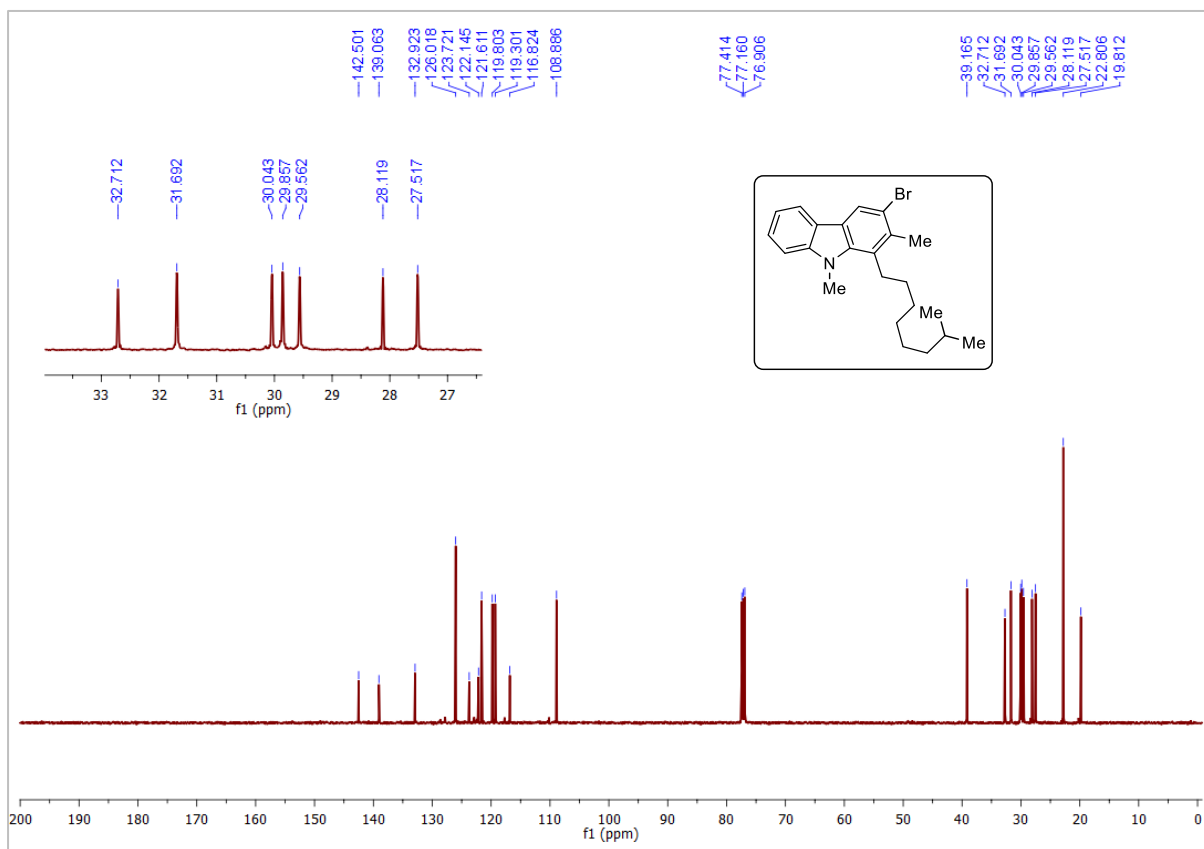
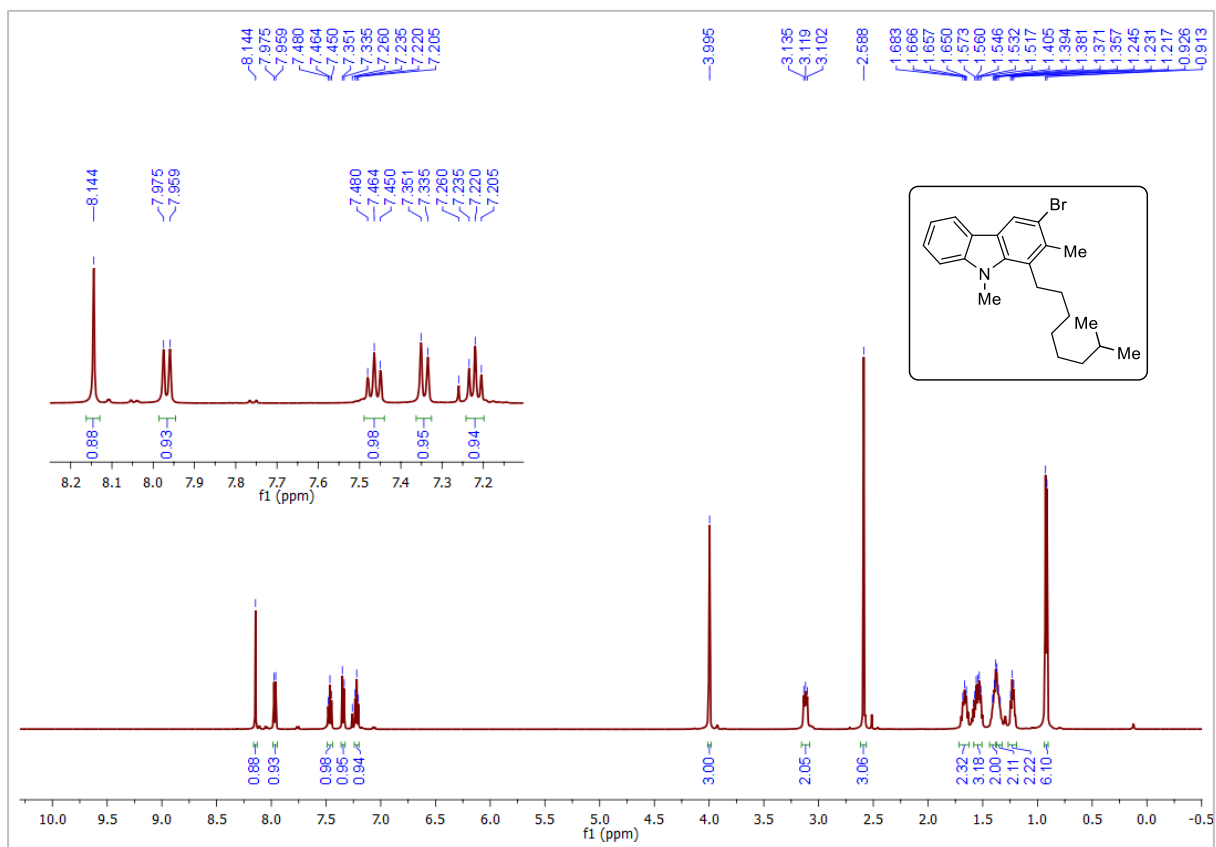


$^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (125 MHz,  $\text{CDCl}_3$ ) of (**12d**)

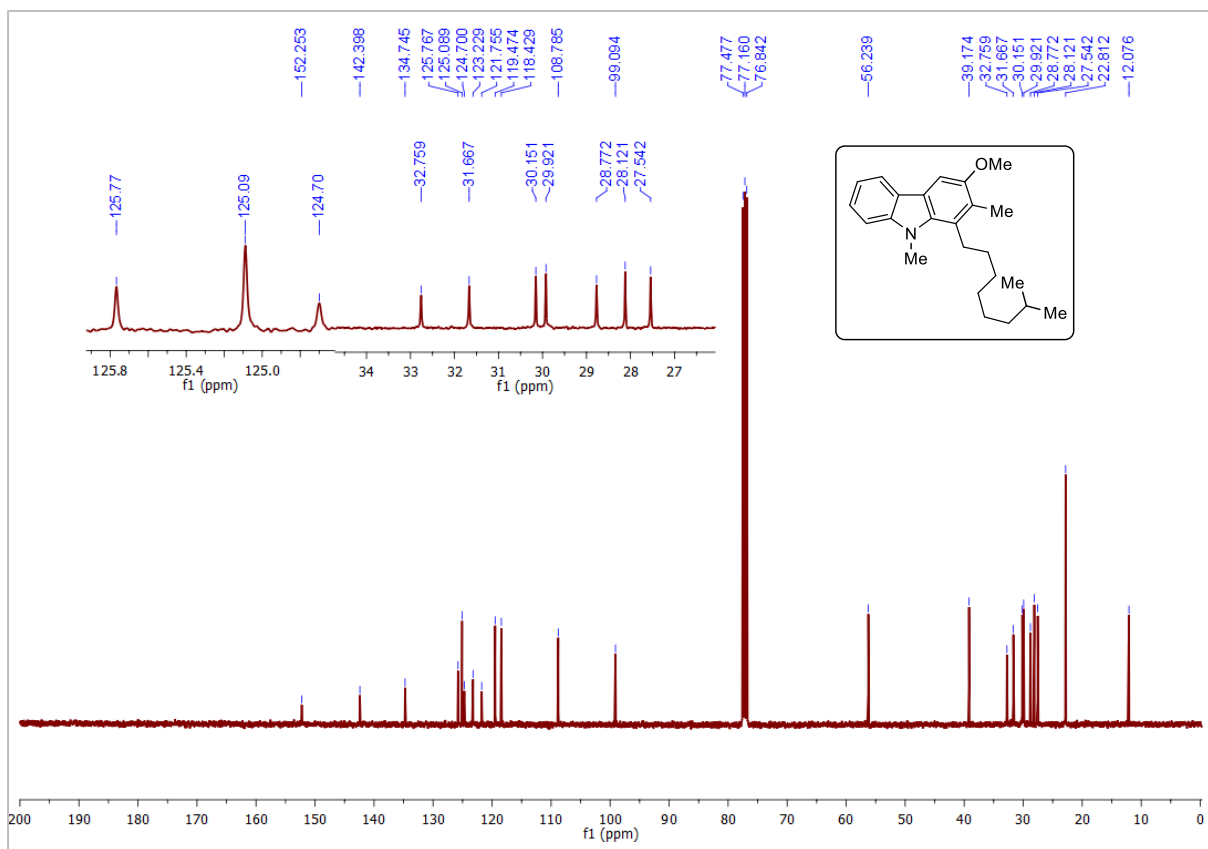
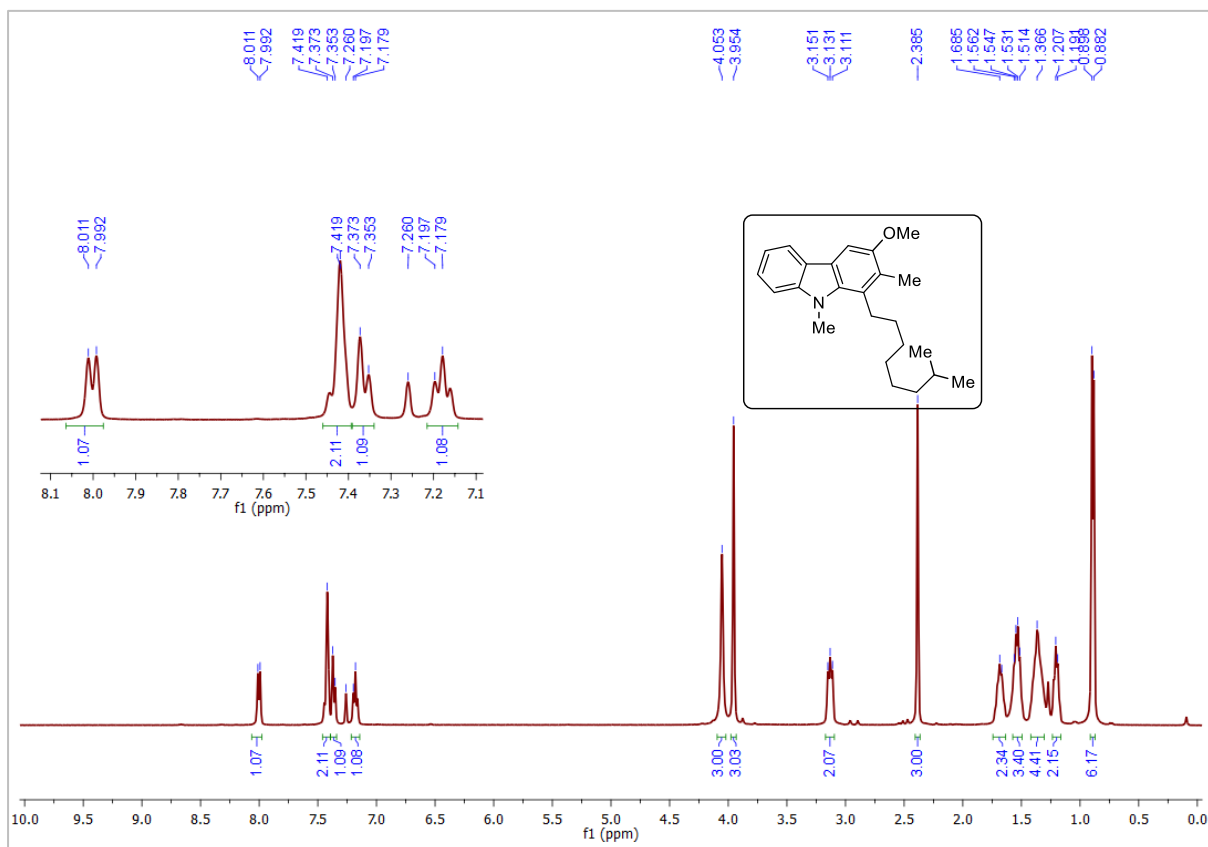




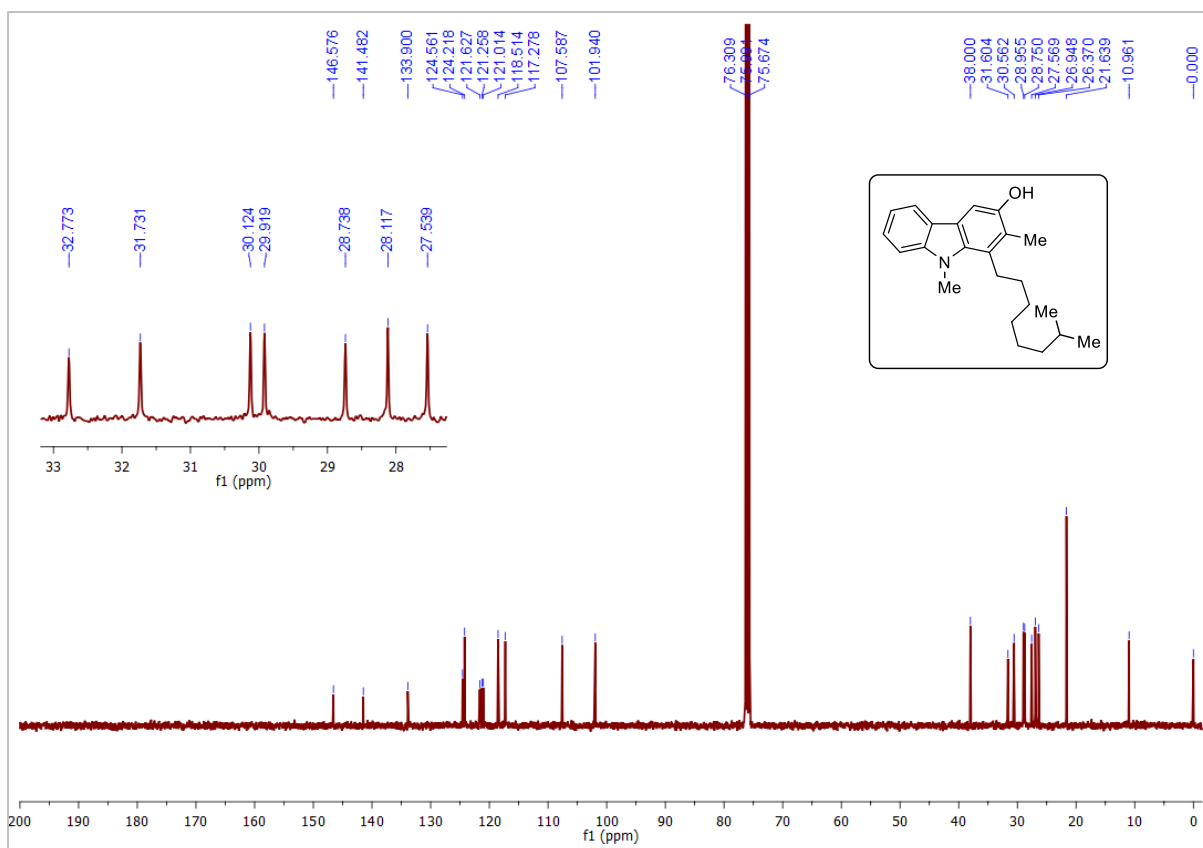
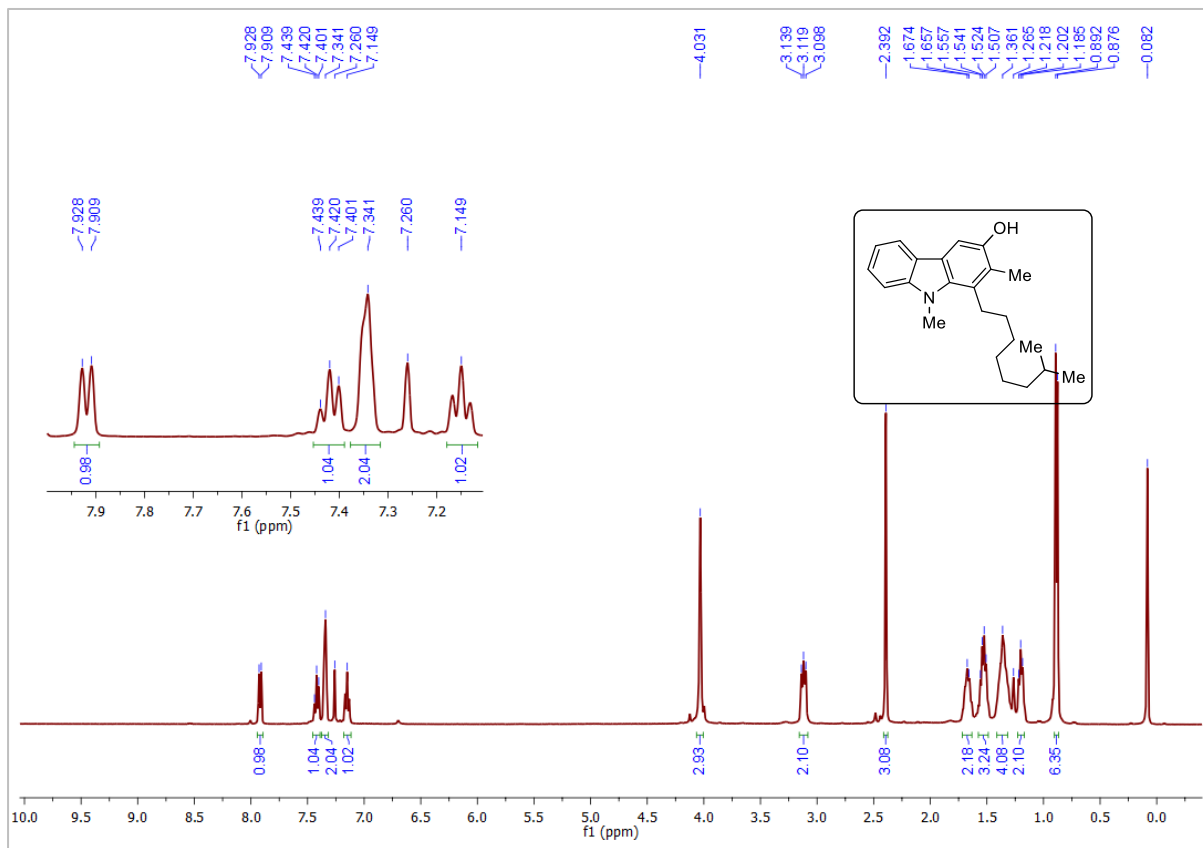
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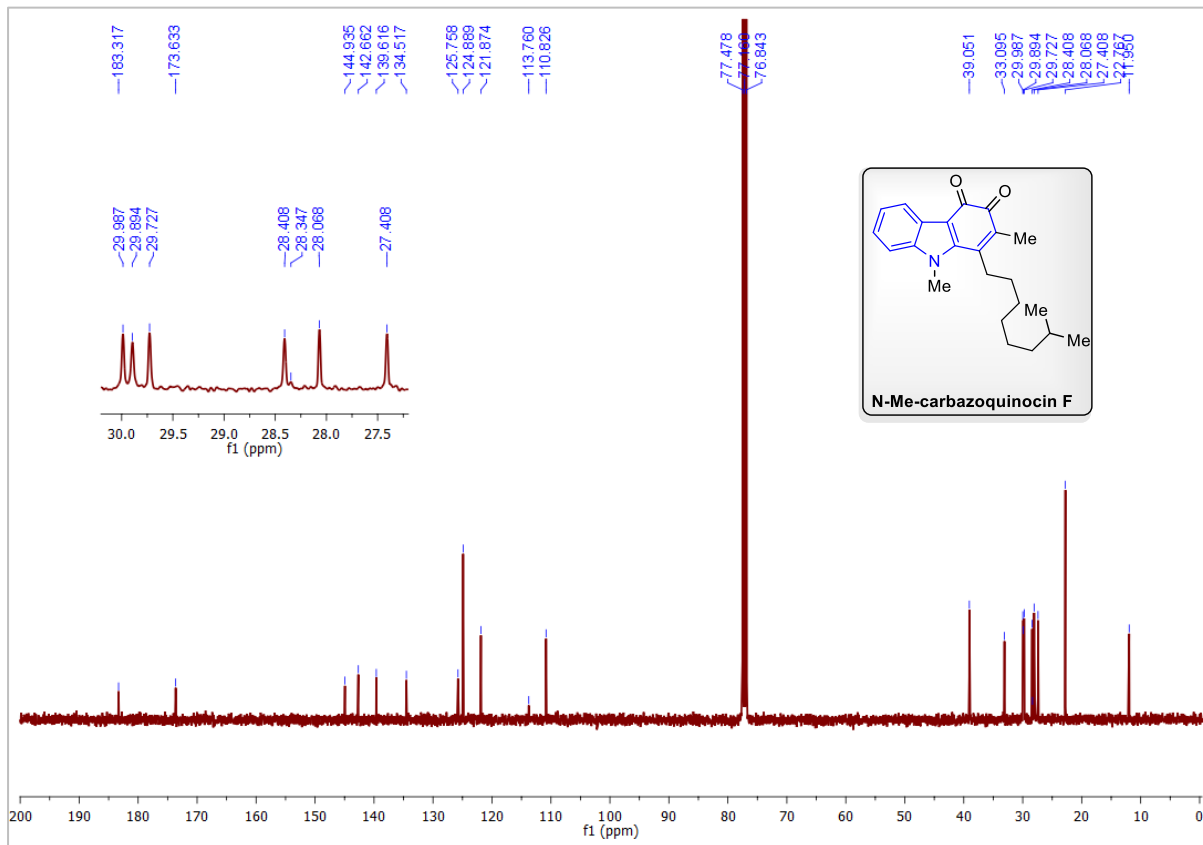
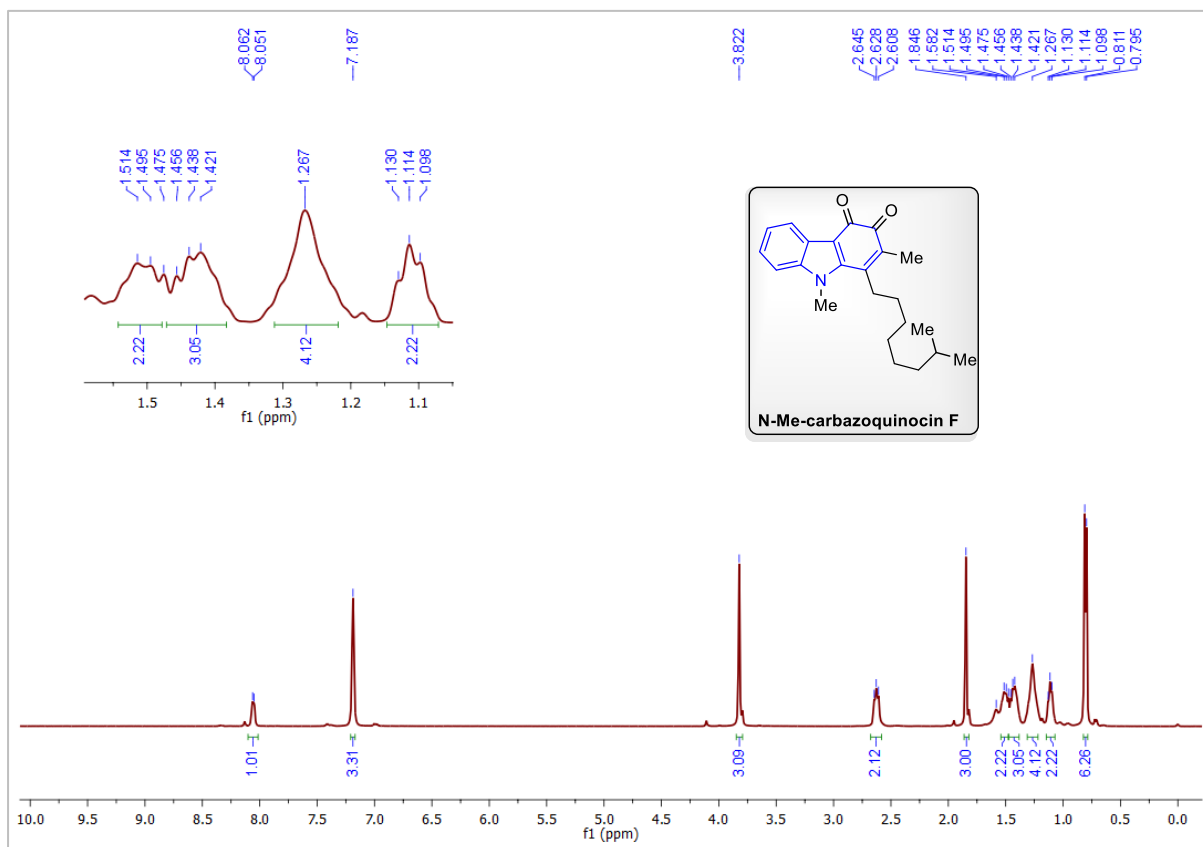
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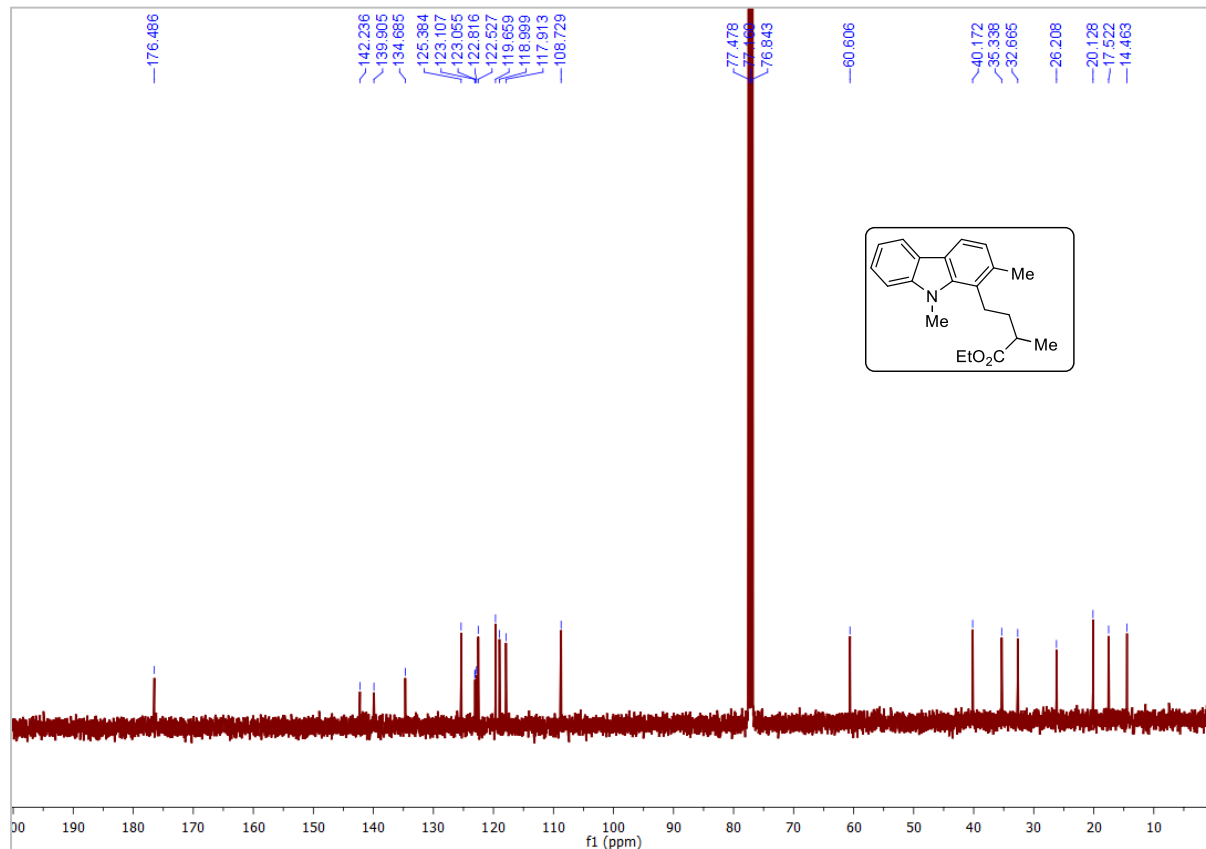
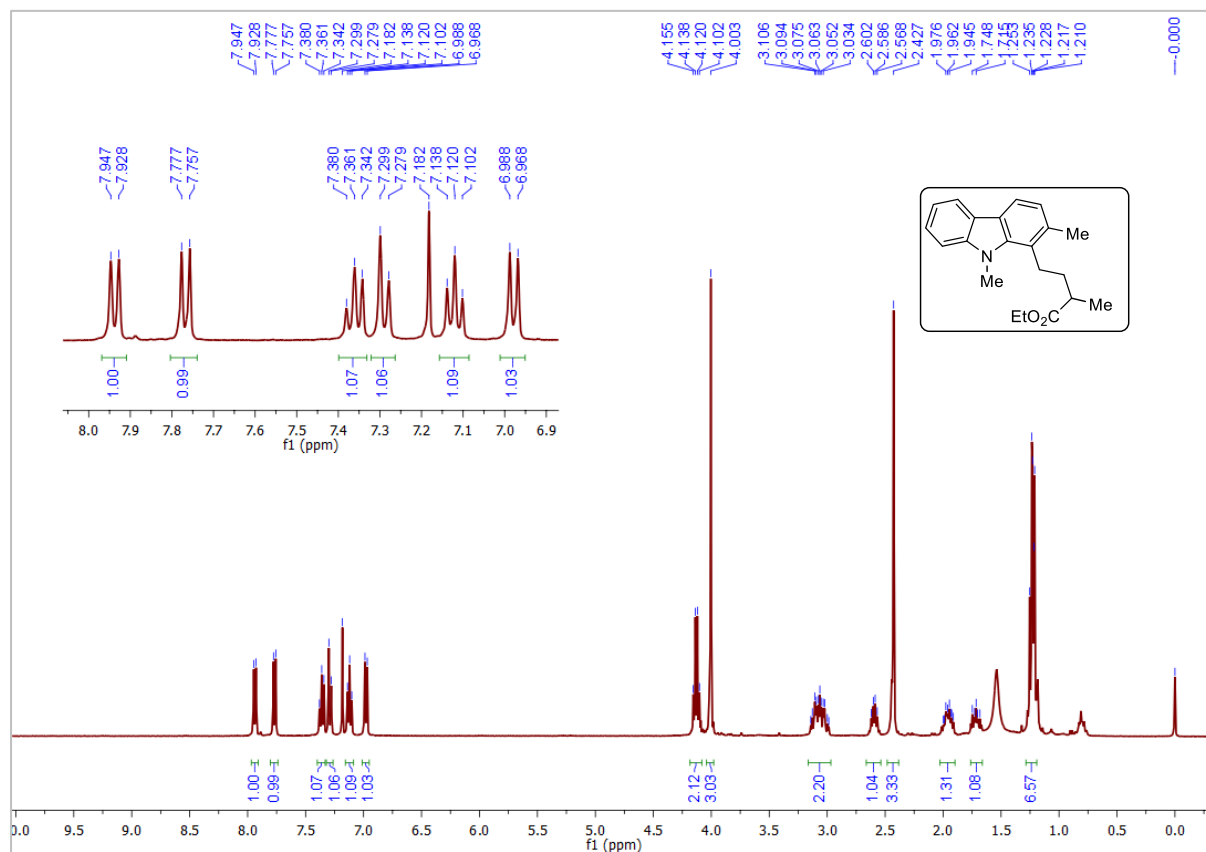
**$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (**15d**)**



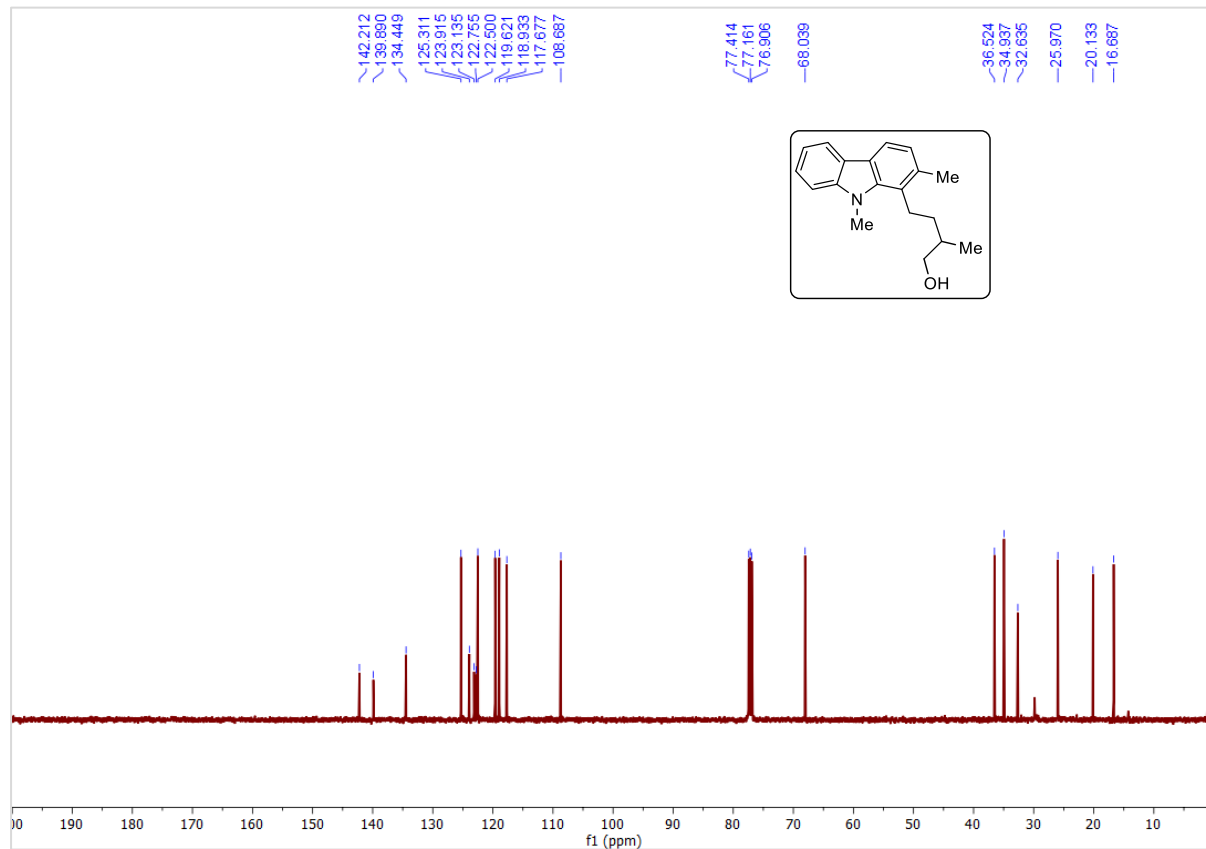
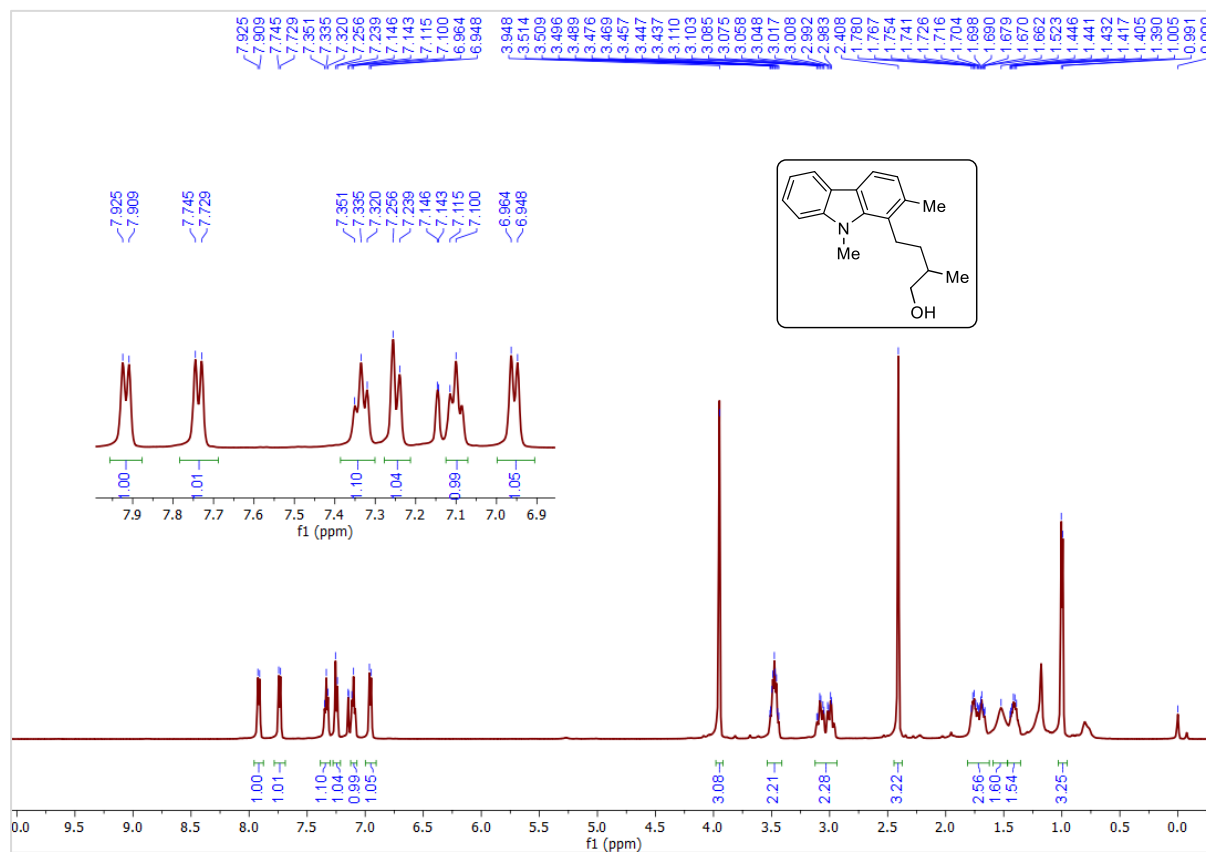
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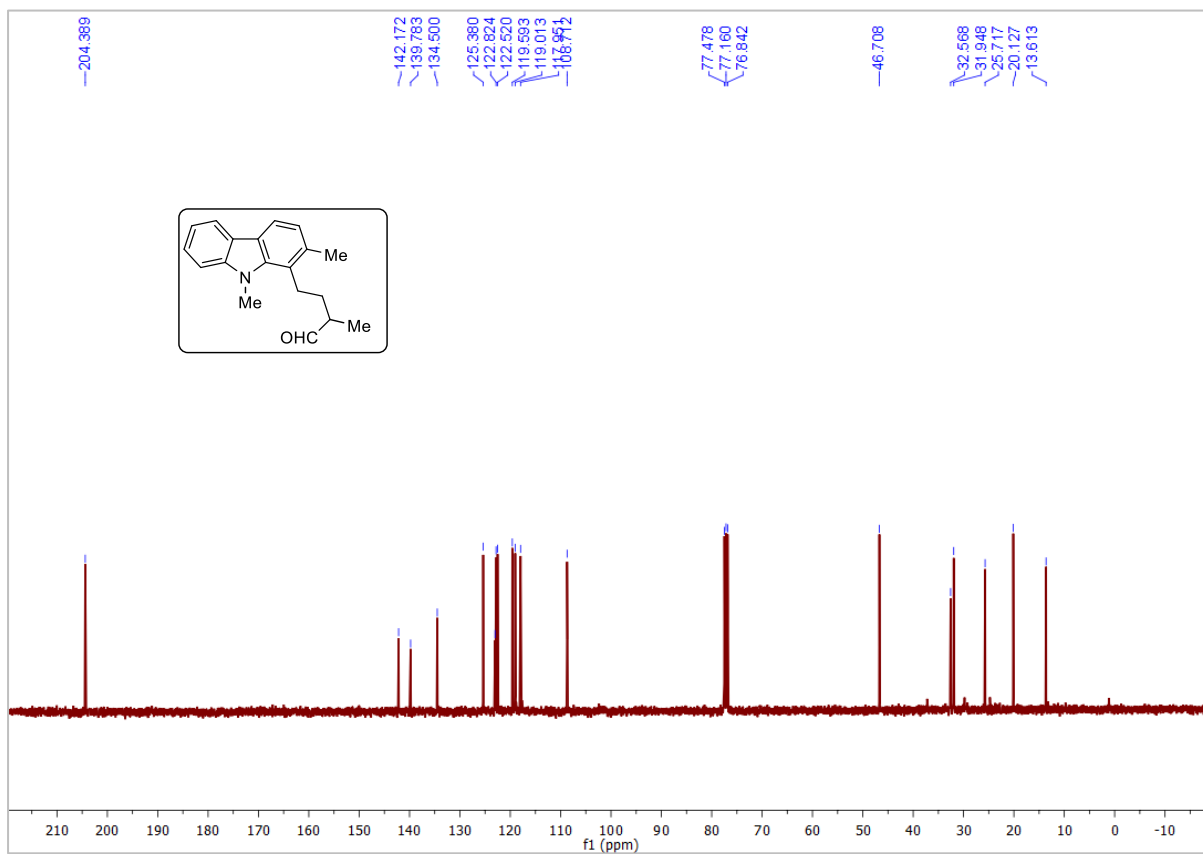
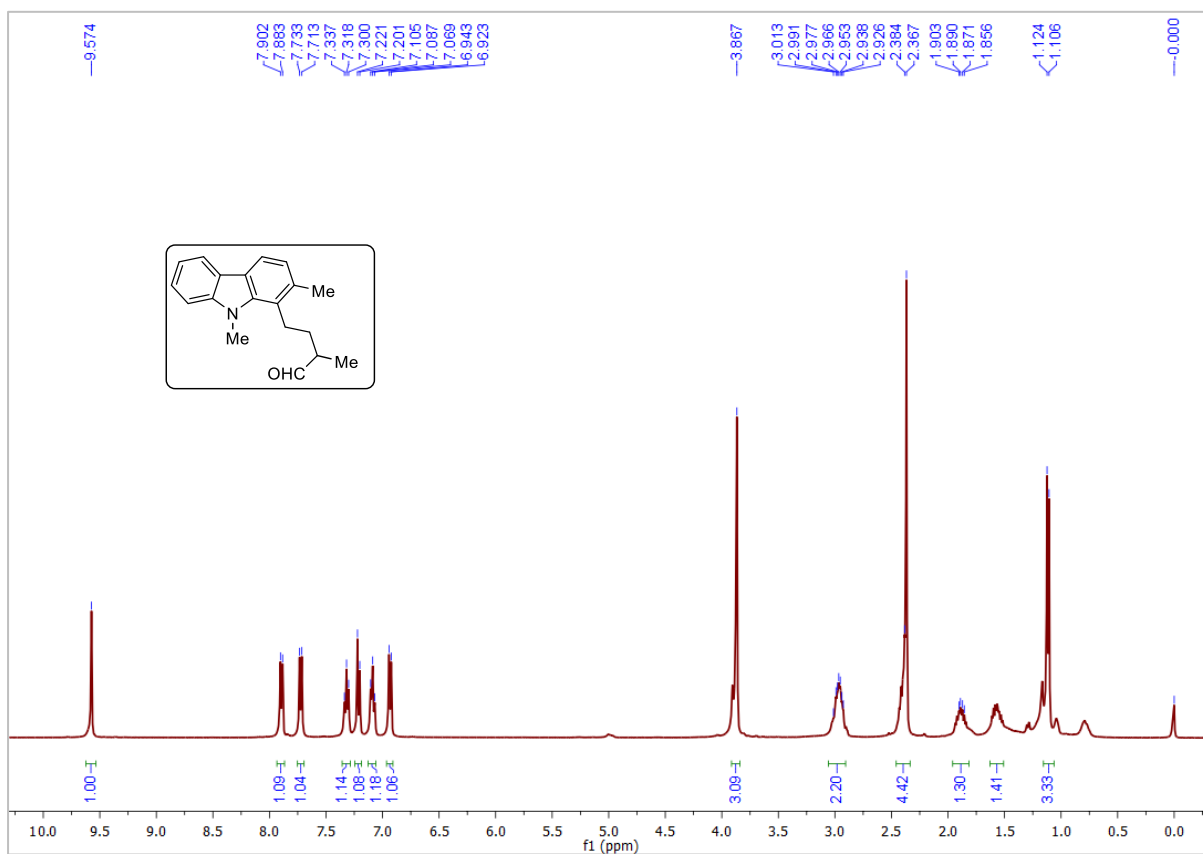
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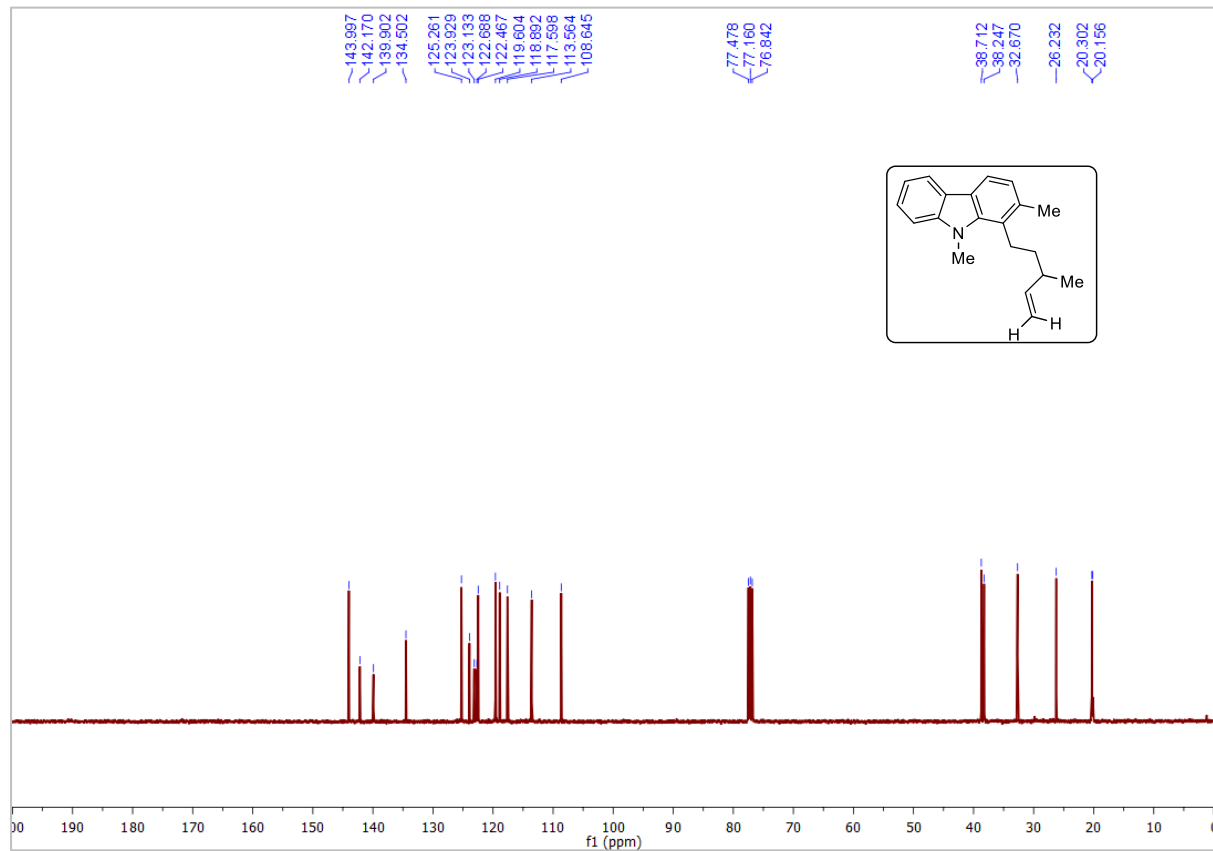
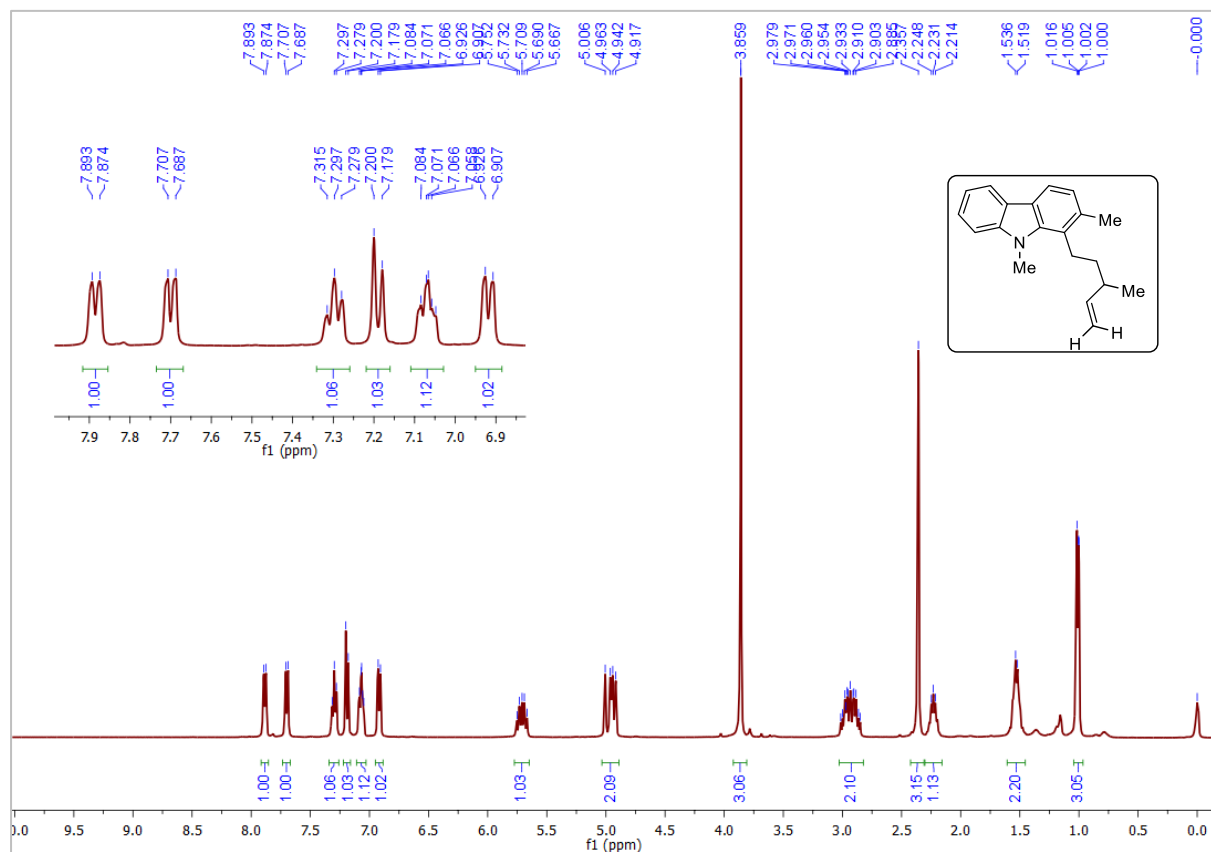
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$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (19)

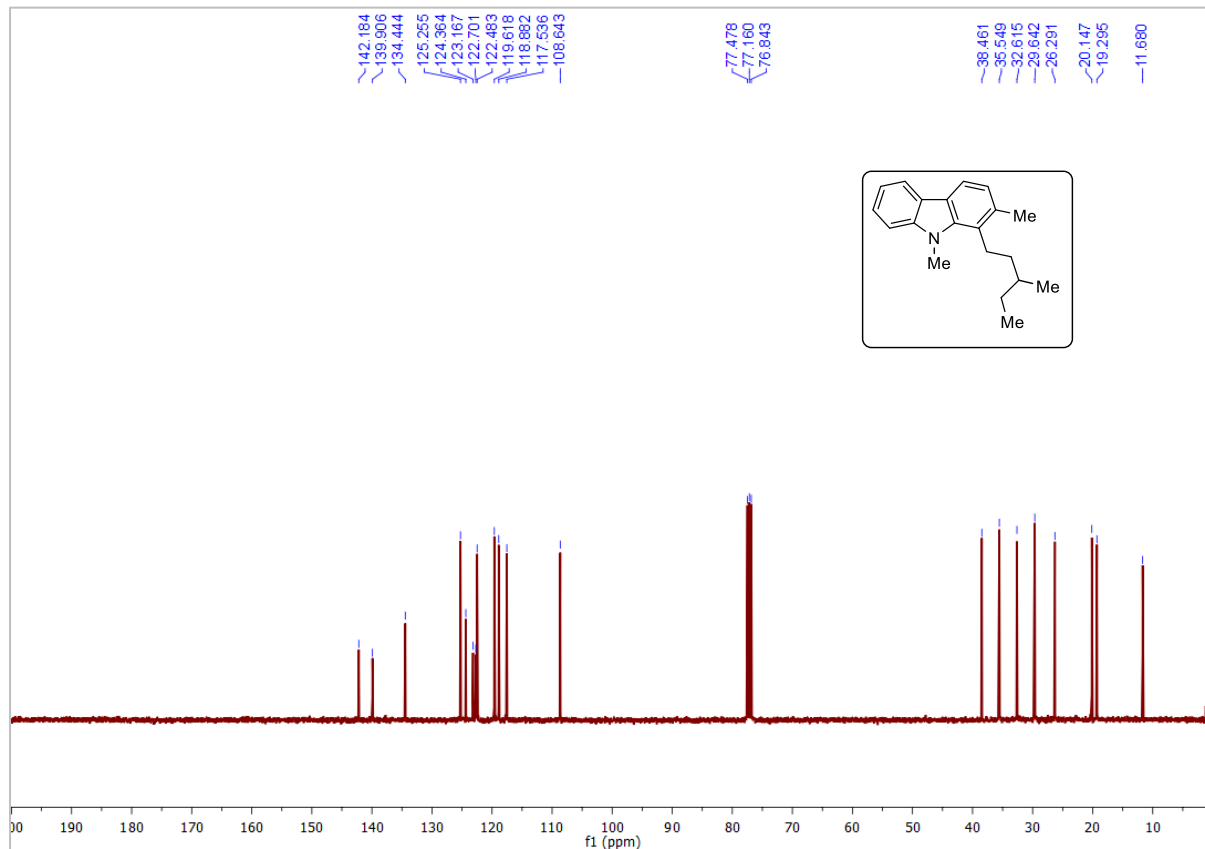
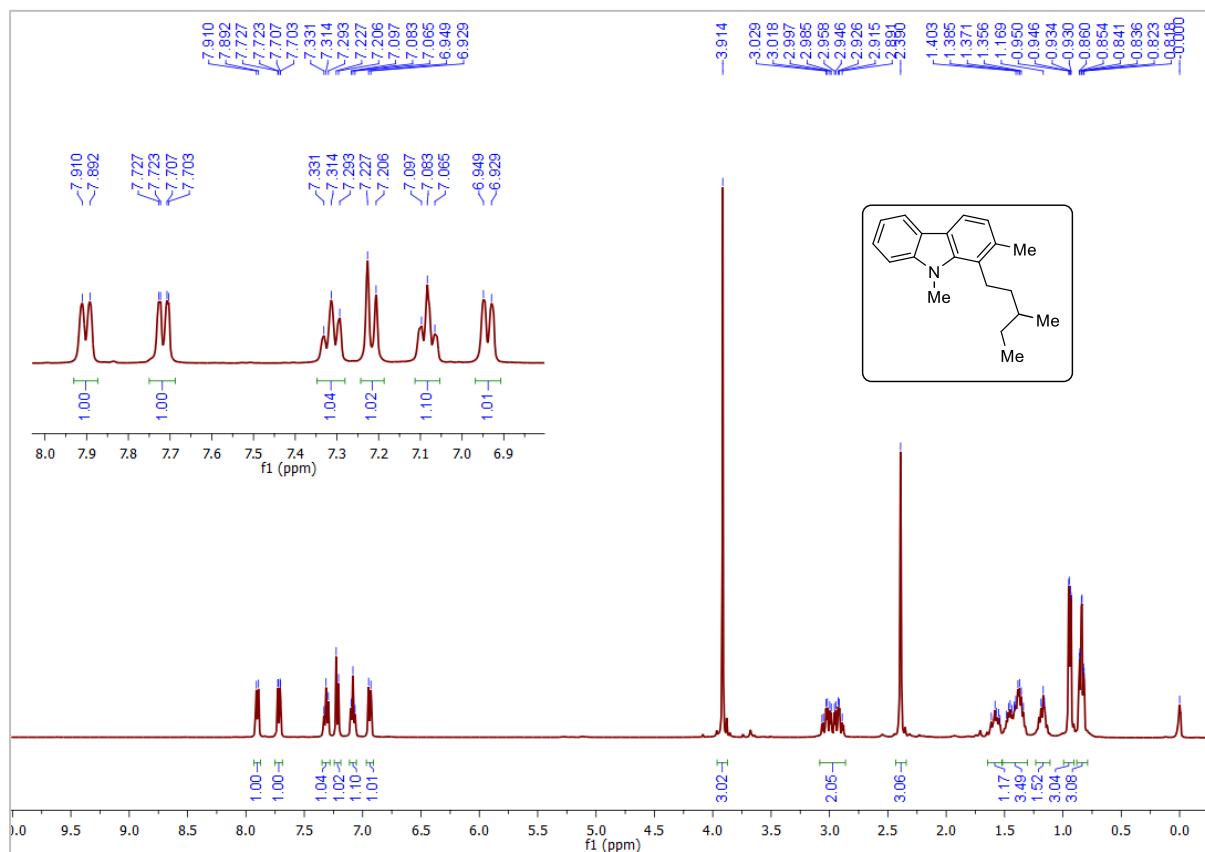


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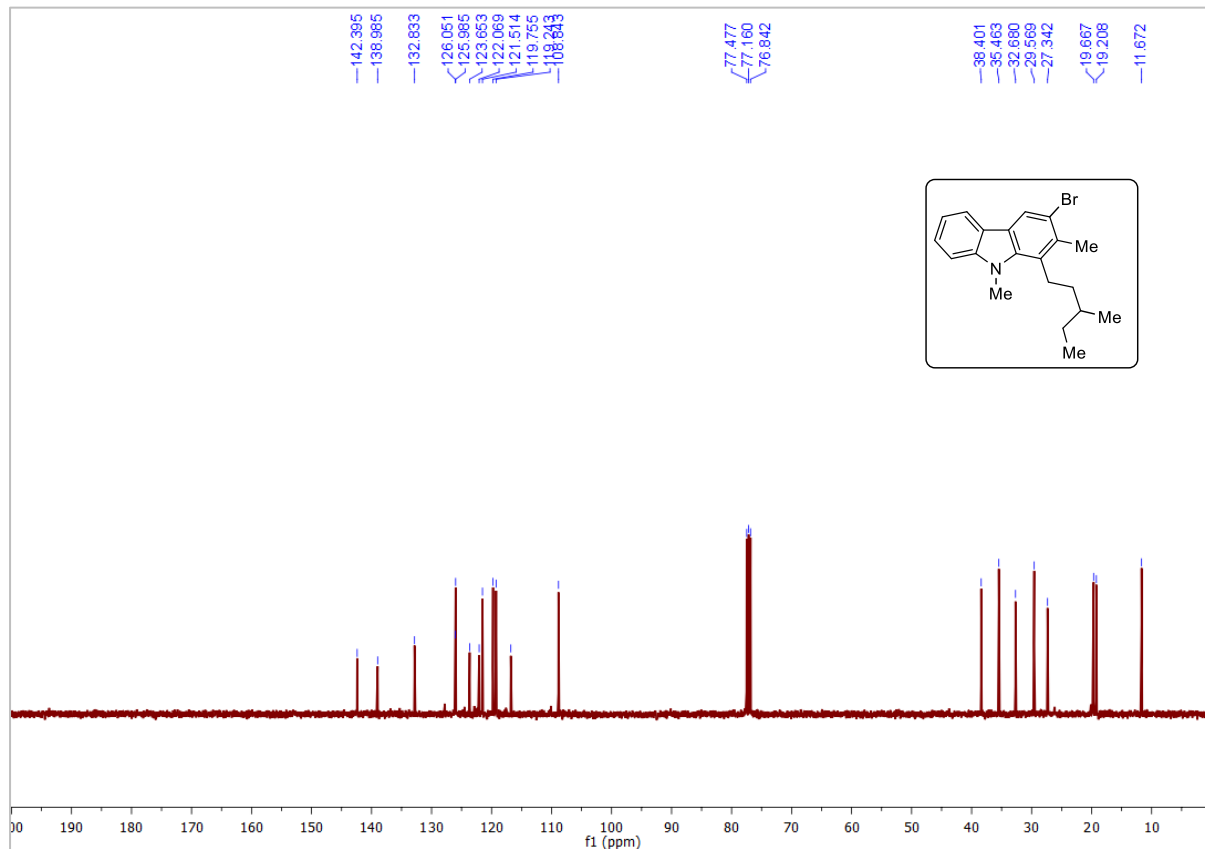
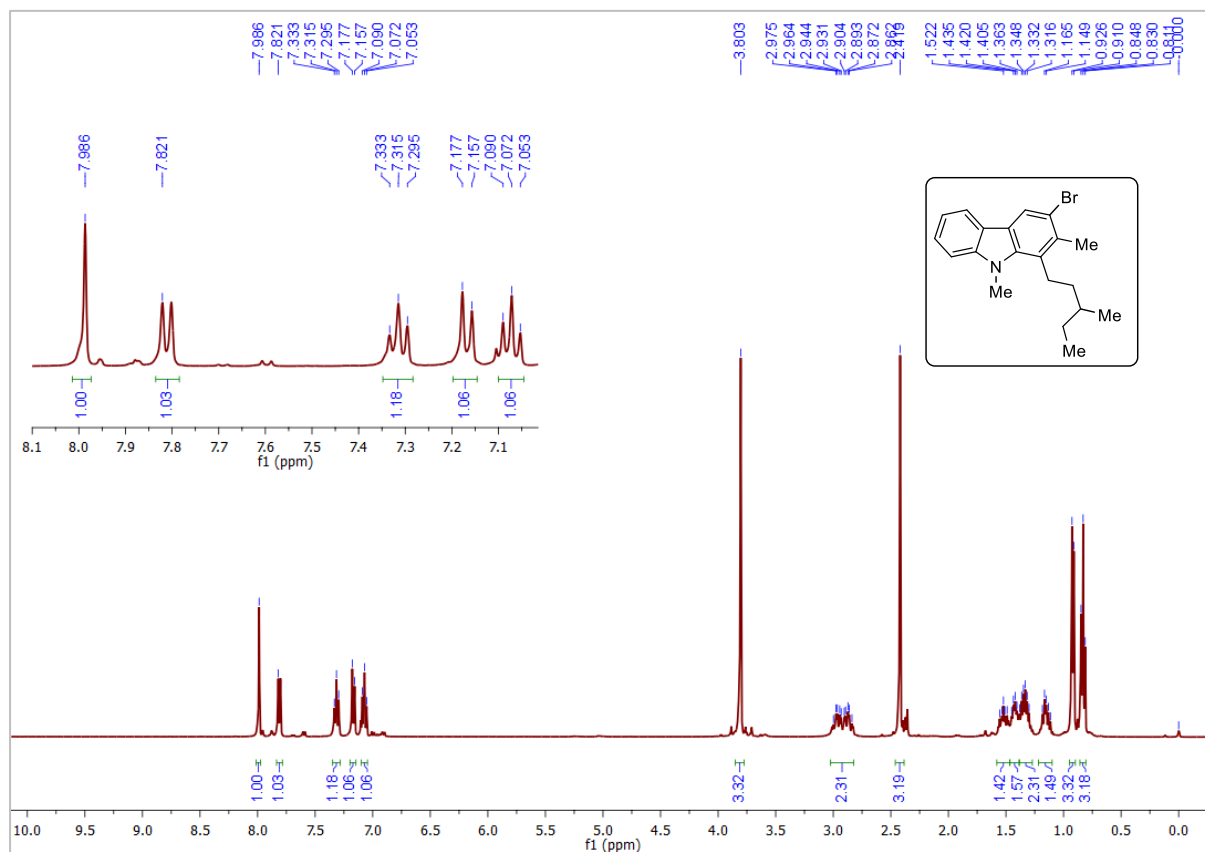




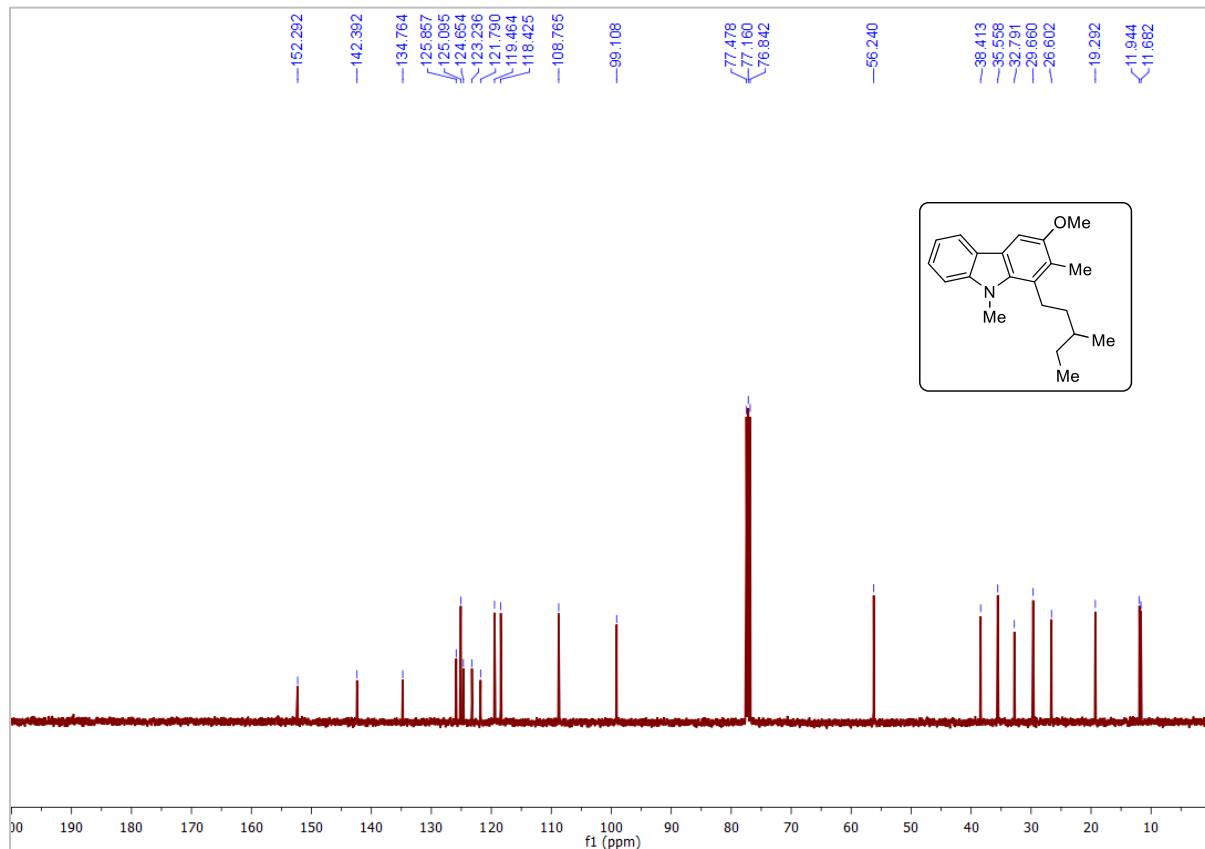
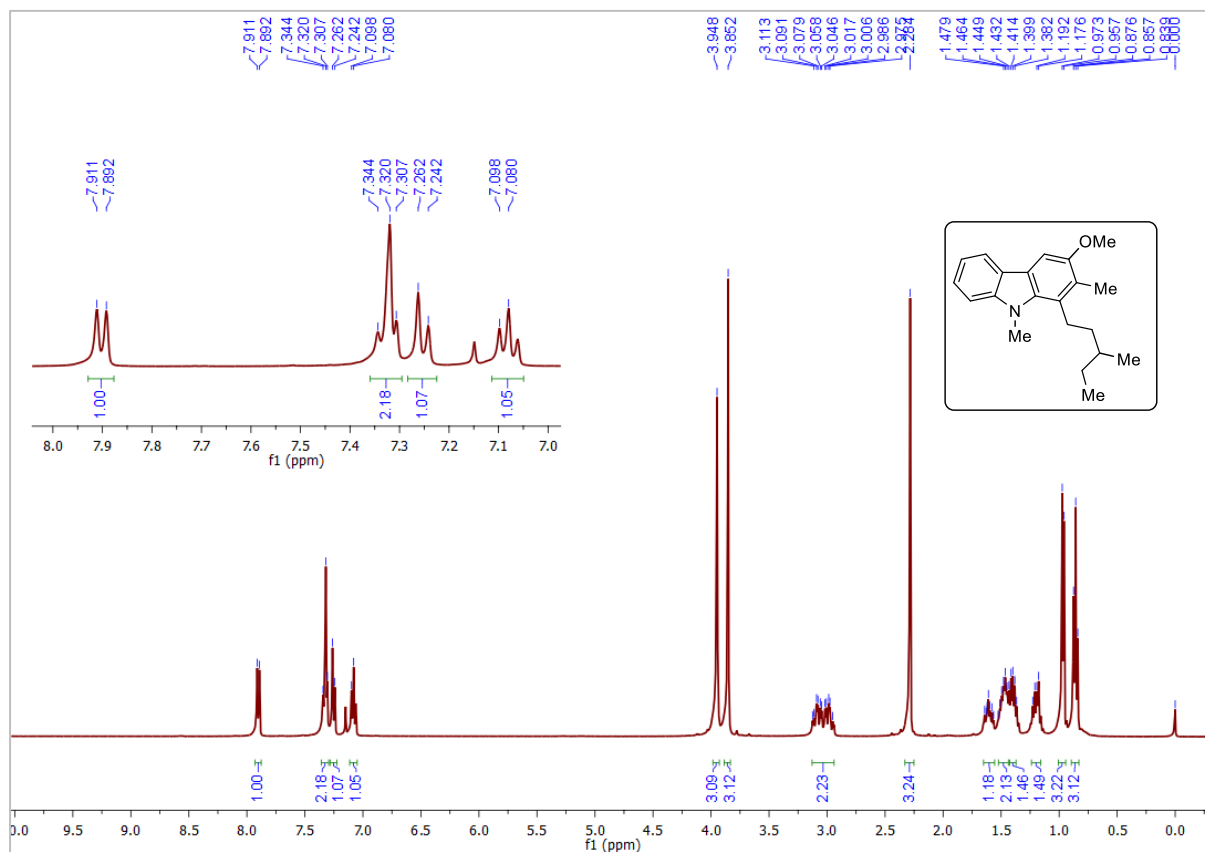
$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$  [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (21)



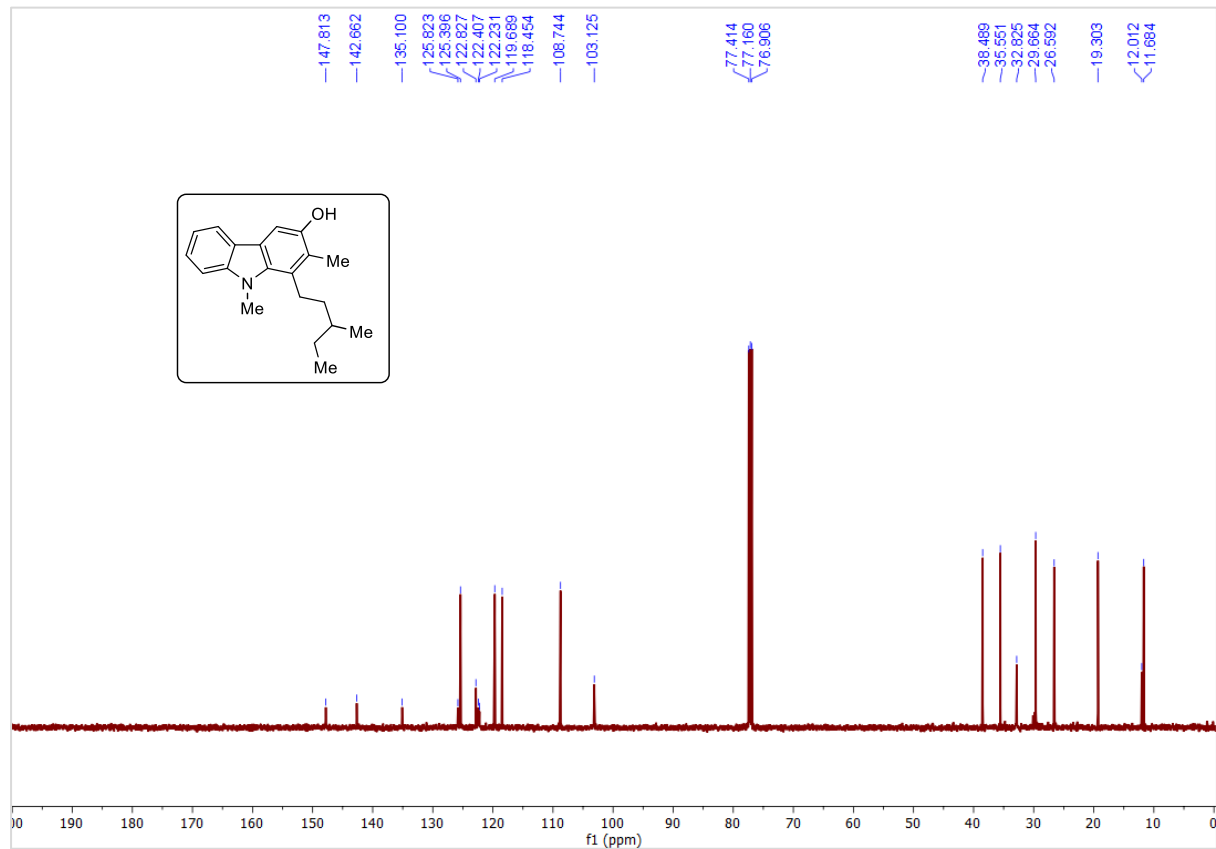
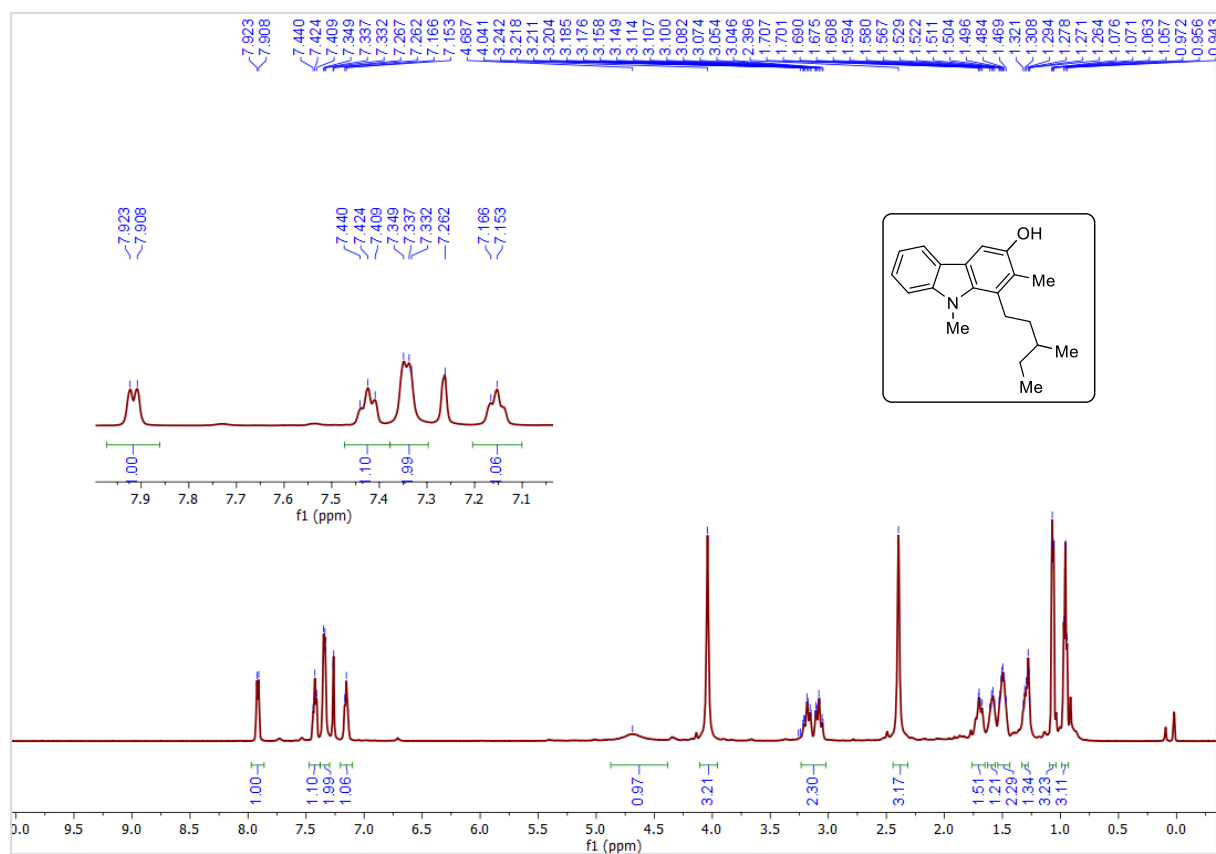
$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (22)



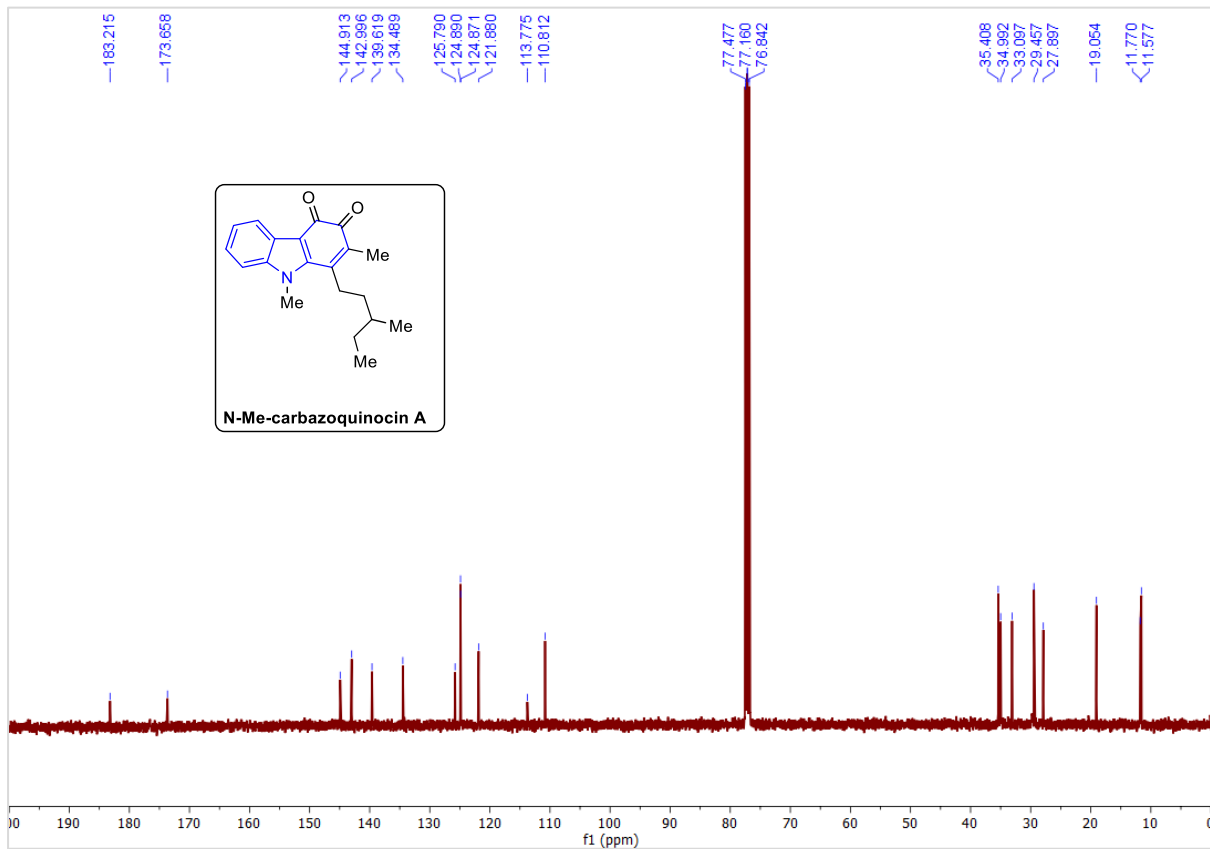
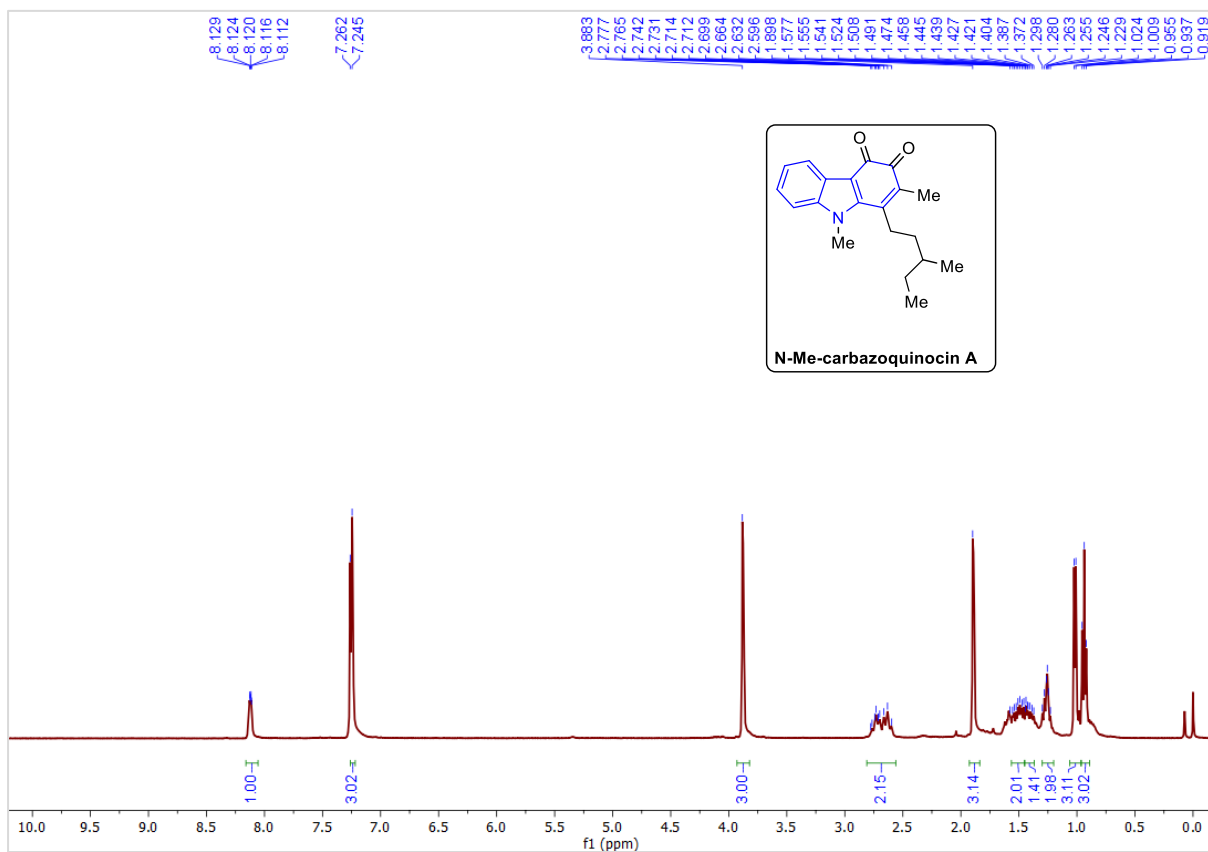
$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$  [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (**23**)



$^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$  [ $^1\text{H}$ ] NMR (125 MHz,  $\text{CDCl}_3$ ) of (24)



$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (7)



$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) and  $^{13}\text{C}$ [ $^1\text{H}$ ] NMR (100 MHz,  $\text{CDCl}_3$ ) of (**S1**)

