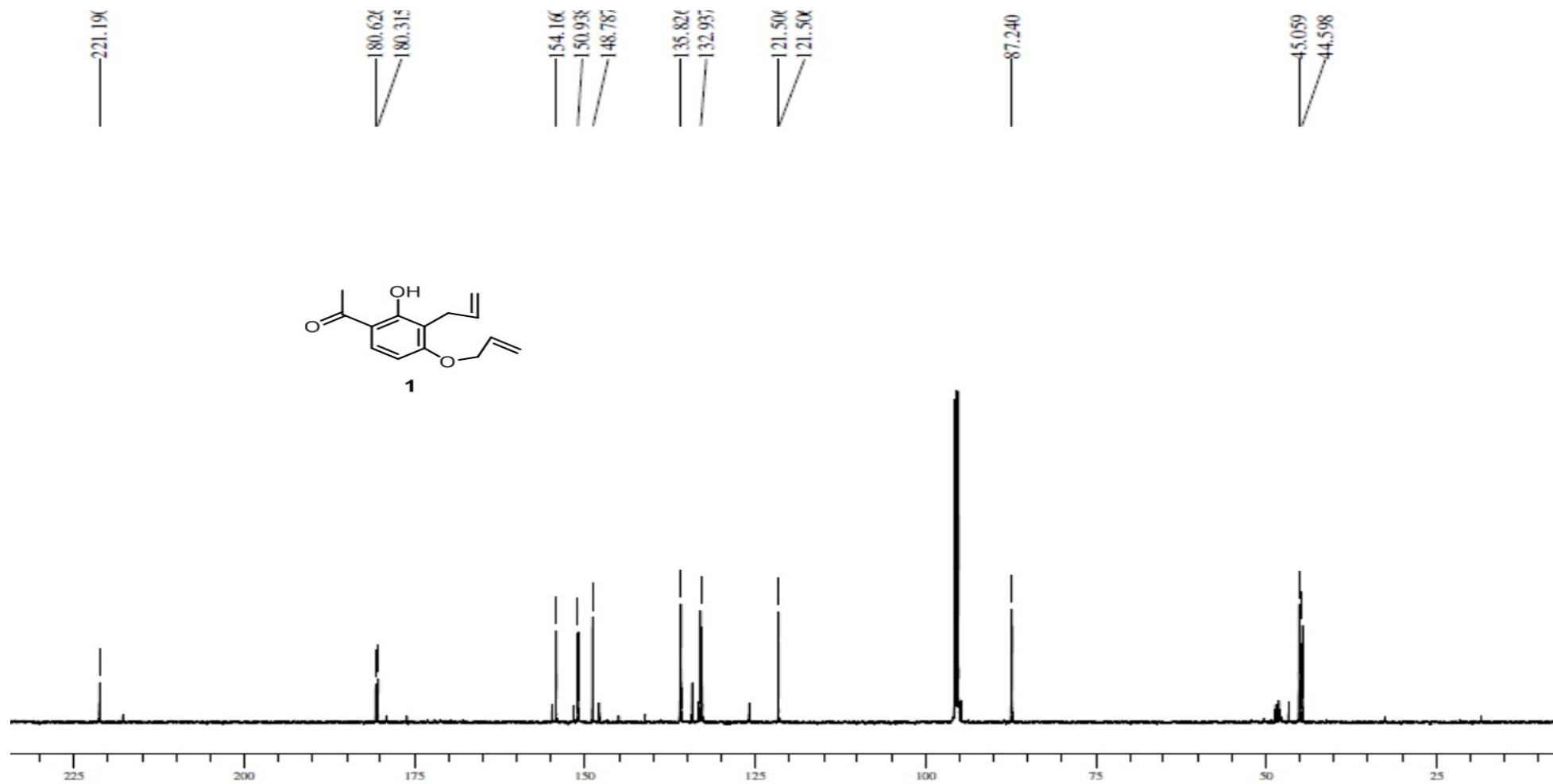
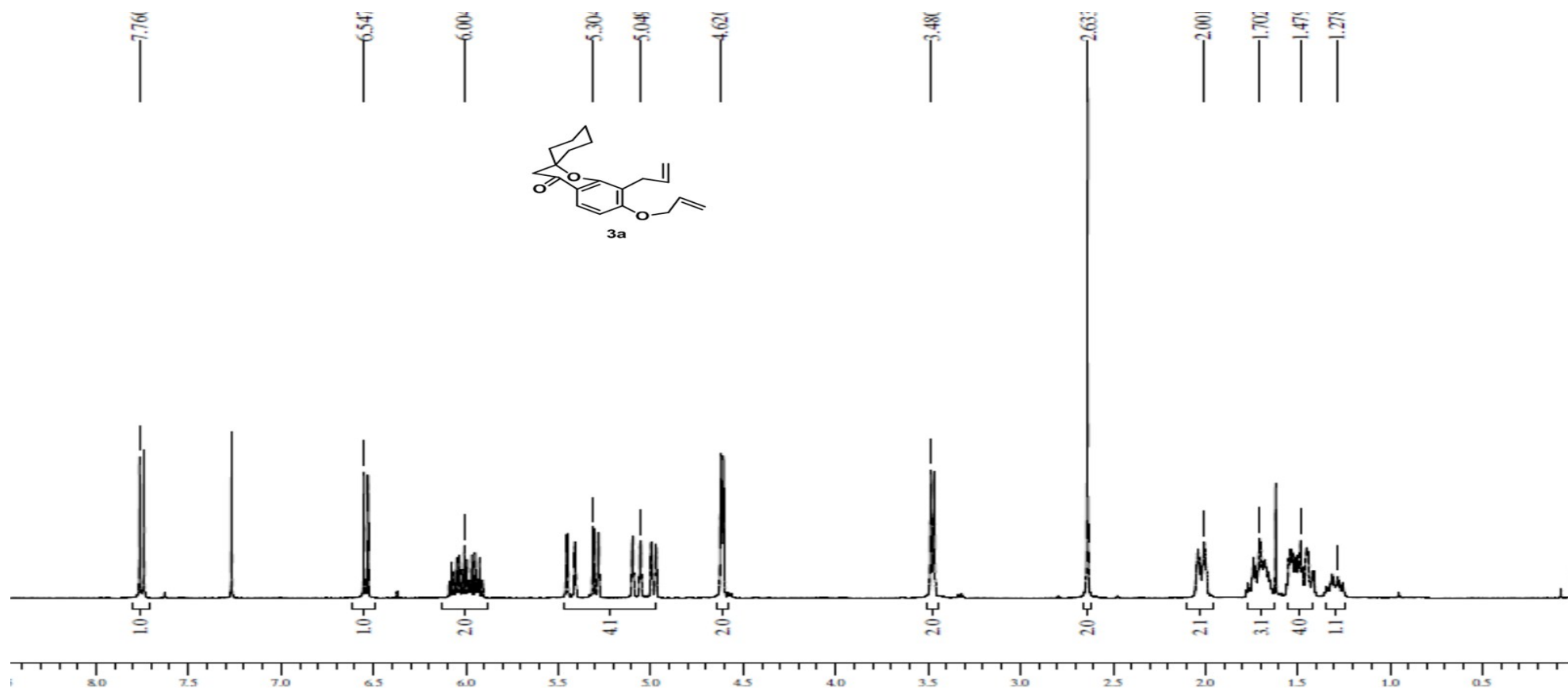


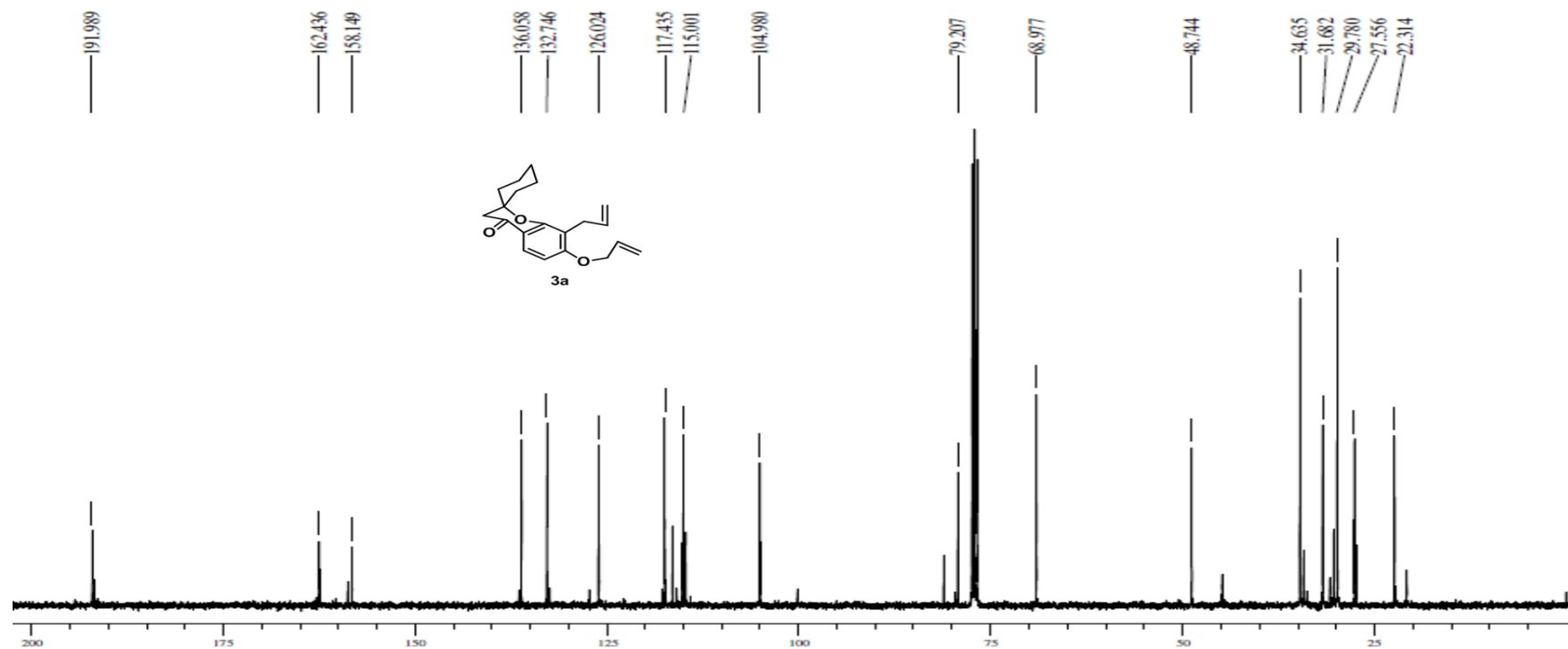
<sup>1</sup>HNMR (CDCl<sub>3</sub>, 500MHz):  $\delta$  12.77 (s, 1H), 7.61 (d, <sup>3</sup>J = 9.0 Hz, 1H), 6.44 (d, <sup>3</sup>J = 9.0 Hz, 1H), 6.02 (ddt, J = 15.8, 10.5, 5.0 Hz, 1H), 5.96 (ddt, J = 17.8, 10.5, 4.8 Hz, 1H), 5.29 (dq, <sup>3</sup>J = 10.6, <sup>2,4</sup>J = 1.5 Hz, 1H), 5.03 (dq, <sup>3</sup>J = 17.0, <sup>2,4</sup>J = 1.6 Hz, 1H), 4.96 (dq, <sup>3</sup>J = 9.9, <sup>2,4</sup>J = 1.5 Hz, 1H), 4.62 (\*4.59, dt, J = 5.0, 1.5 Hz, 2H), 3.45 (dt, J = 6.2, 1.5 Hz, 2H), 2.56(\*2.59, s, 3H).



$^{13}\text{C}$  (125MHz,  $\text{CDCl}_3$ ) :  $\delta$  221.1, 180.6, 180.3, 154.1, 150.9, 148.7, 135.8, 132.9, 121.5, 87.2, 45.0, 44.5.

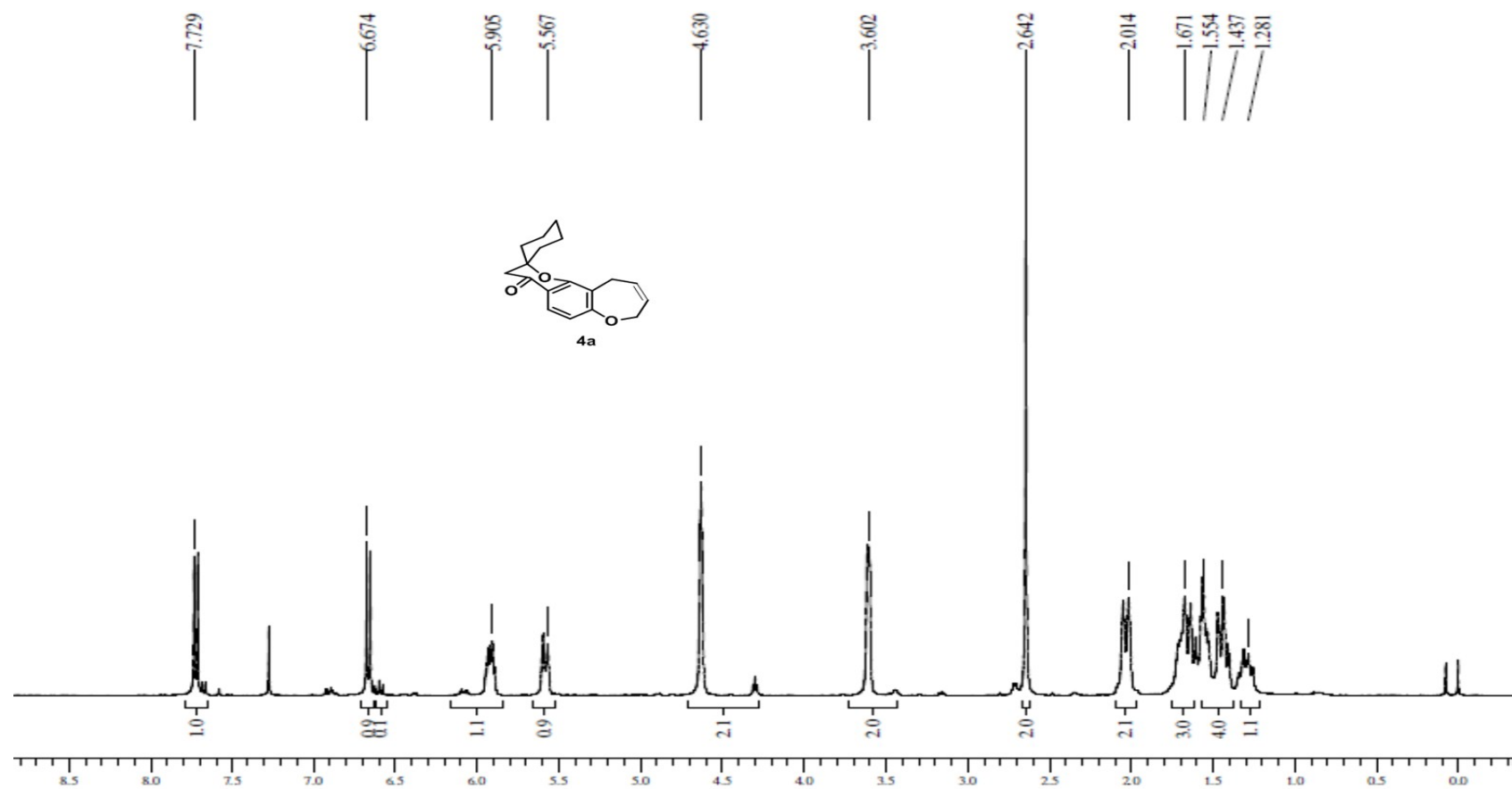


$^1\text{H NMR}$  ( $\text{CDCl}_3/500\text{MHz}$ ):  $\delta$  7.74 (d,  $^3J = 8.7$  Hz, 1H), 6.53 (d,  $^3J = 8.7$  Hz, 1H), 6.03 (ddt,  $J = 17.7, 10.3, 4.8$  Hz, 1H), 5.95 (ddt,  $J = 14.2, 12.8, 6.4$  Hz, 1H), 5.42 (dq,  $^3J = 17.2, ^2J = 1.6$  Hz, 1H), 5.28 (dq,  $^3J = 10.6, ^2J = 1.2$  Hz, 1H), 5.07 (dq,  $^3J = 17.0, ^2J = 1.6$  Hz, 1H), 4.97 (dq,  $^3J = 9.9, ^2J = 1.3$  Hz, 1H), 4.60 (dt,  $J = 4.8, 1.6$  Hz, 2H), 3.45 (dt,  $J = 6.4, 1.3$  Hz, 2H), 2.60 (s, 2H), 2.09-2.04 (m, 2H), 1.72-1.64 (m, 4H), 1.53-1.41 (m, 4H).

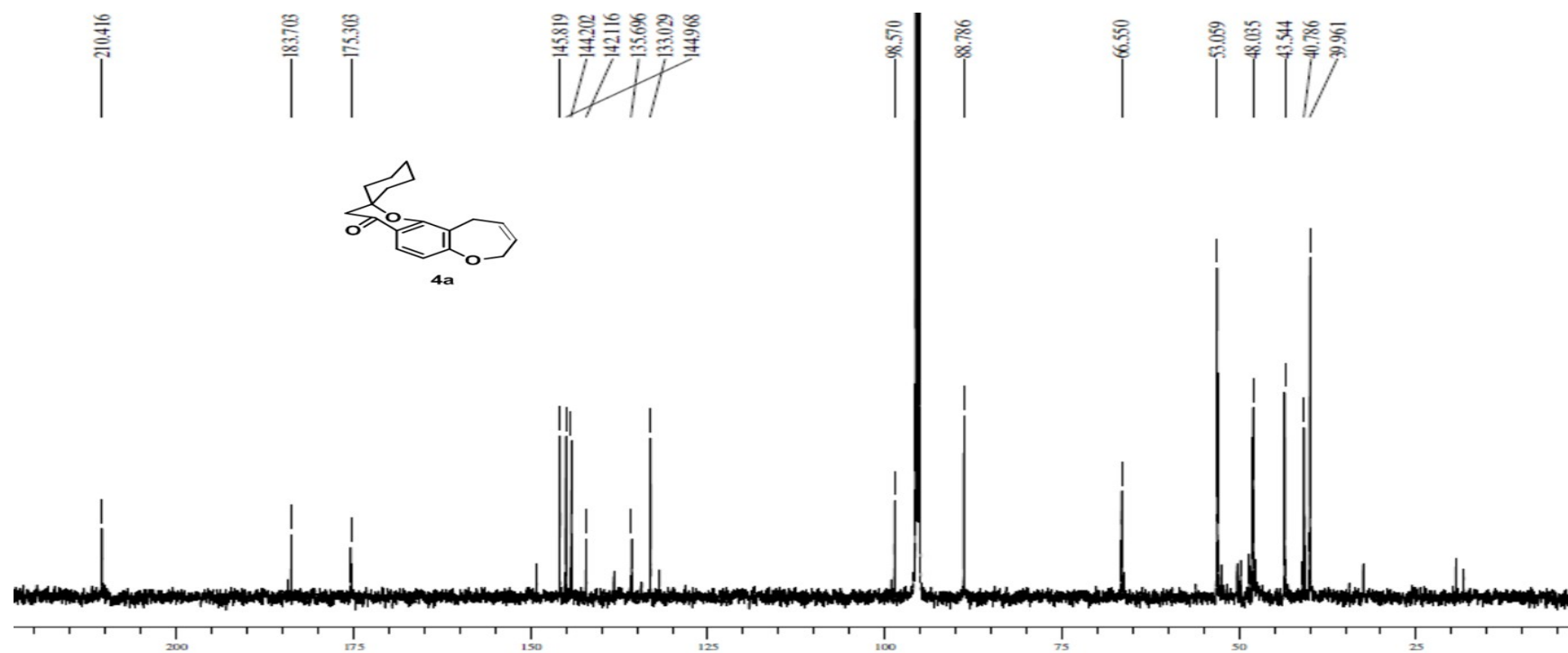


<sup>13</sup>C (125 MHz, CDCl<sub>3</sub>) : δ 210.2, 180.7, 176.5, 154.3, 151.0, 144.3, 135.7, 134.7, 133.4, 133.1, 123.3, 98.2, 87.3, 66.5, 53.2, 48.0, 45.8, 43.5, 39.9.

MS (EI) LRMS: m/z 312, 269, 217(100%), 175, 149, 97, 69, 55.



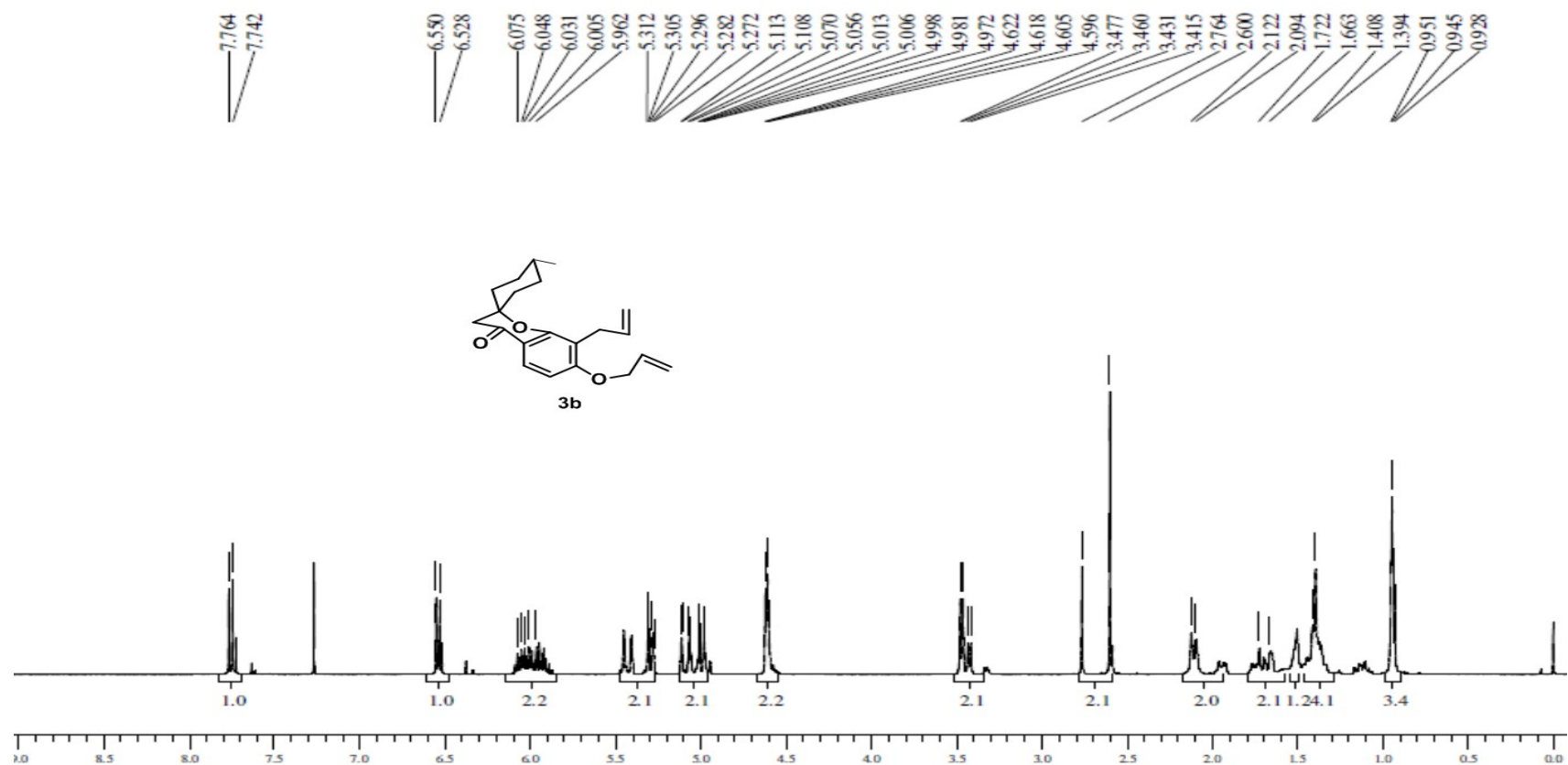
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.72 ( \*7.67, d,  $^3J = 8.5$  Hz, 1H), 6.66 ( \*6.58, d,  $^3J = 8.5$ , 1H), 5.92 { \* 6.08 ( dt,  $J = 12.3, 4.4$  Hz }, pt,  $^3J = 5.5, 2.0$  Hz, 1H), 5.58 ( dhpt,  $J = 11.2, 1.7$  Hz, 1H ), 4.65-4.61 { \* 4.30 ( t,  $J = 4.8$  Hz ), m, 2H }, 3.61-3.59 ( m, 2H ), 2.64 ( s, 2H ), 2.02 ( brd, 2H ), 1.71-1.59 ( m, 4H ), 1.57 – 1.51 ( m, 2H ), 1.47– 1.41 ( m, 2H).



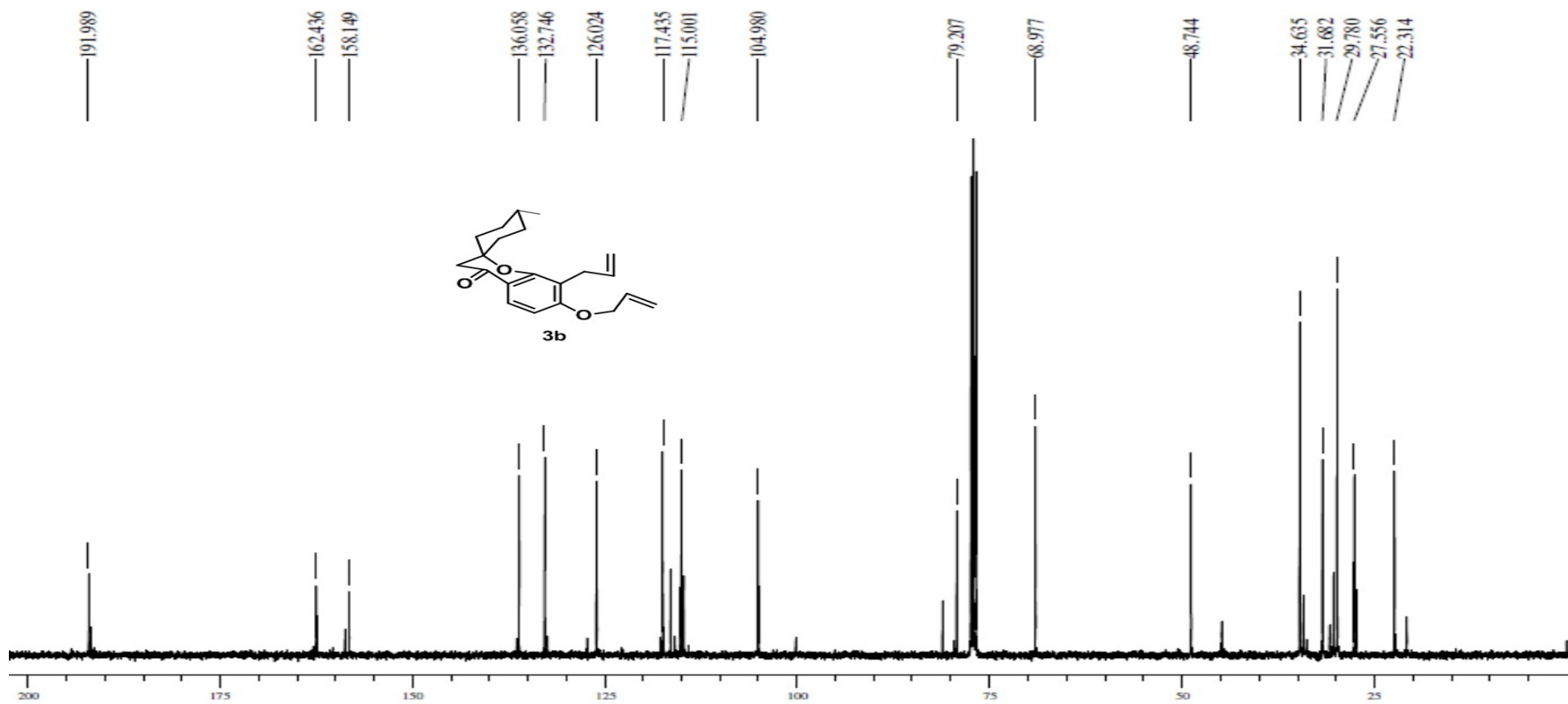
$^{13}\text{C}$  (125 MHz,  $\text{CDCl}_3$ )  $\delta$ : 210.4, 183.7, 175.3, 145.8, 144.9, 144.2, 142.1, 135.6, 133.0, 98.5, 88.7, 66.5, 53.0, 48.0, 43.5, 40.7, 39.9.

MS (EI) LRMS:  $m/z$  284, 241, 189(100%);

HRMS (EI):  $m/z$  calcd for  $\text{C}_{19}\text{H}_{24}\text{O}_2$  is 284.1776; found: 284.1775.



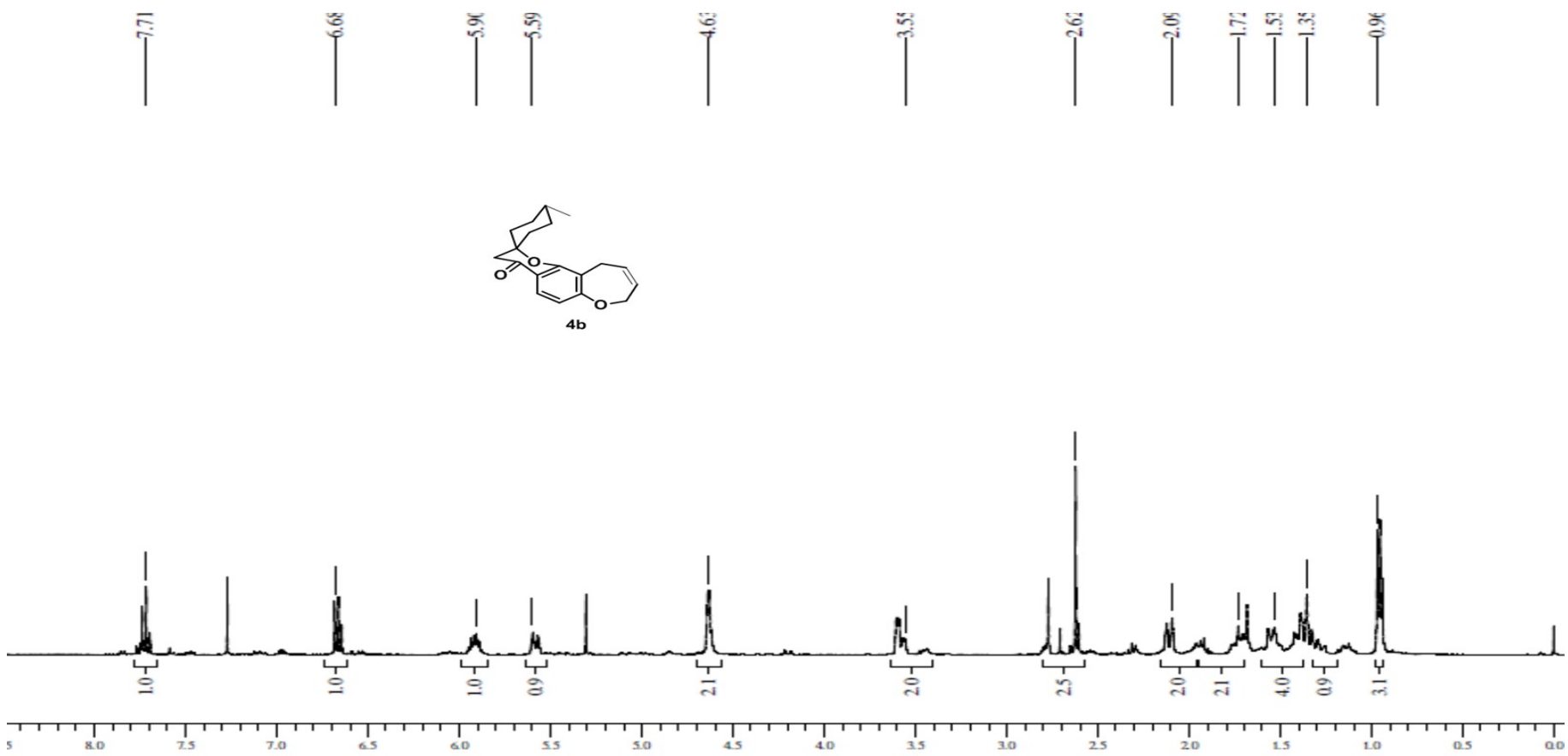
<sup>1</sup>H NMR (CDCl<sub>3</sub>/400MHz):  $\delta$  7.75 (d, <sup>3</sup>J = 8.7 Hz, 1H), 6.53 (d, <sup>3</sup>J = 8.7 Hz, 1H), 6.04 (ddt, J = 17.7, 10.3, 4.8 Hz, 1H), 5.94 (ddt, J = 14.2, 12.8, 6.4 Hz, 1H), 5.42 (dq, <sup>3</sup>J = 17.2, <sup>2,4</sup>J = 1.6 Hz, 1H), 5.29 (dq, <sup>3</sup>J = 10.6, <sup>2,4</sup>J = 1.2 Hz, 1H), 5.09 (dq, <sup>3</sup>J = 17.0, <sup>2,4</sup>J = 1.6 Hz, 1H), 5.08-4.94 (m, 1H), 4.61 (dt, J = 4.8, 1.6 Hz, 2H), 3.46 (\* 3.42, dt, J = 6.4, 1.3 Hz, 2H), 2.60 (\* 2.76, s, 2H), 2.12-1.91 (m, 2H), 1.76-1.61 (m, 2H), 1.54-1.32 (m, 5H), 0.95-0.92 (m, 3H).



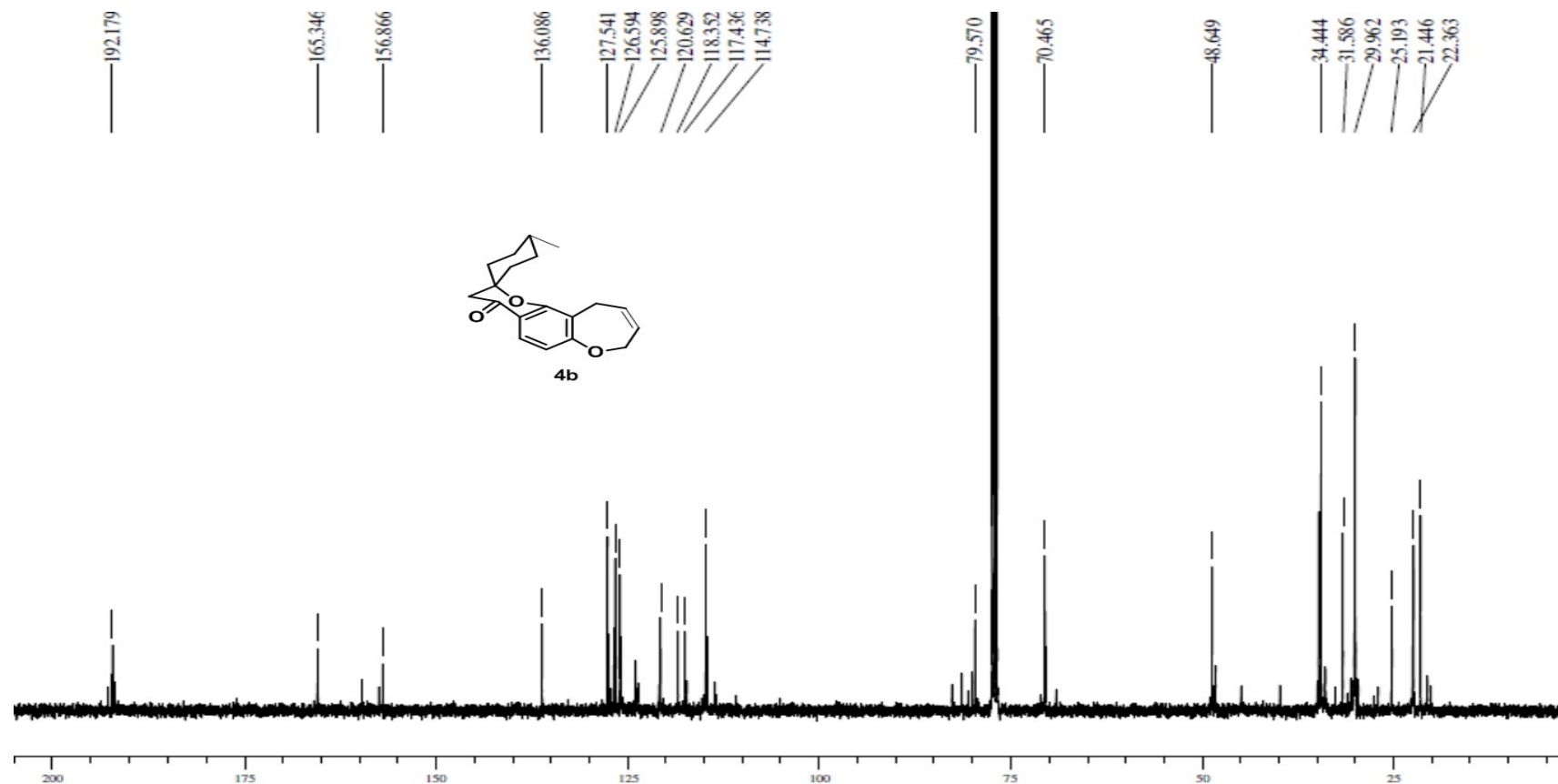
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ )  $\delta$  191.9, 162.4, 158.1, 136.0, 132.7, 126.0, 117.4, 116.4, 115.0, 114.6, 115.1, 105.0, 104.9, 81.0, 79.2, 68.9, 48.7, 34.6, 31.6, 29.7, 27.5, 22.3.

MS (EI) LRMS:  $m/z$  326, 269, 217, 175, 97, 69, 57, 44(100%).





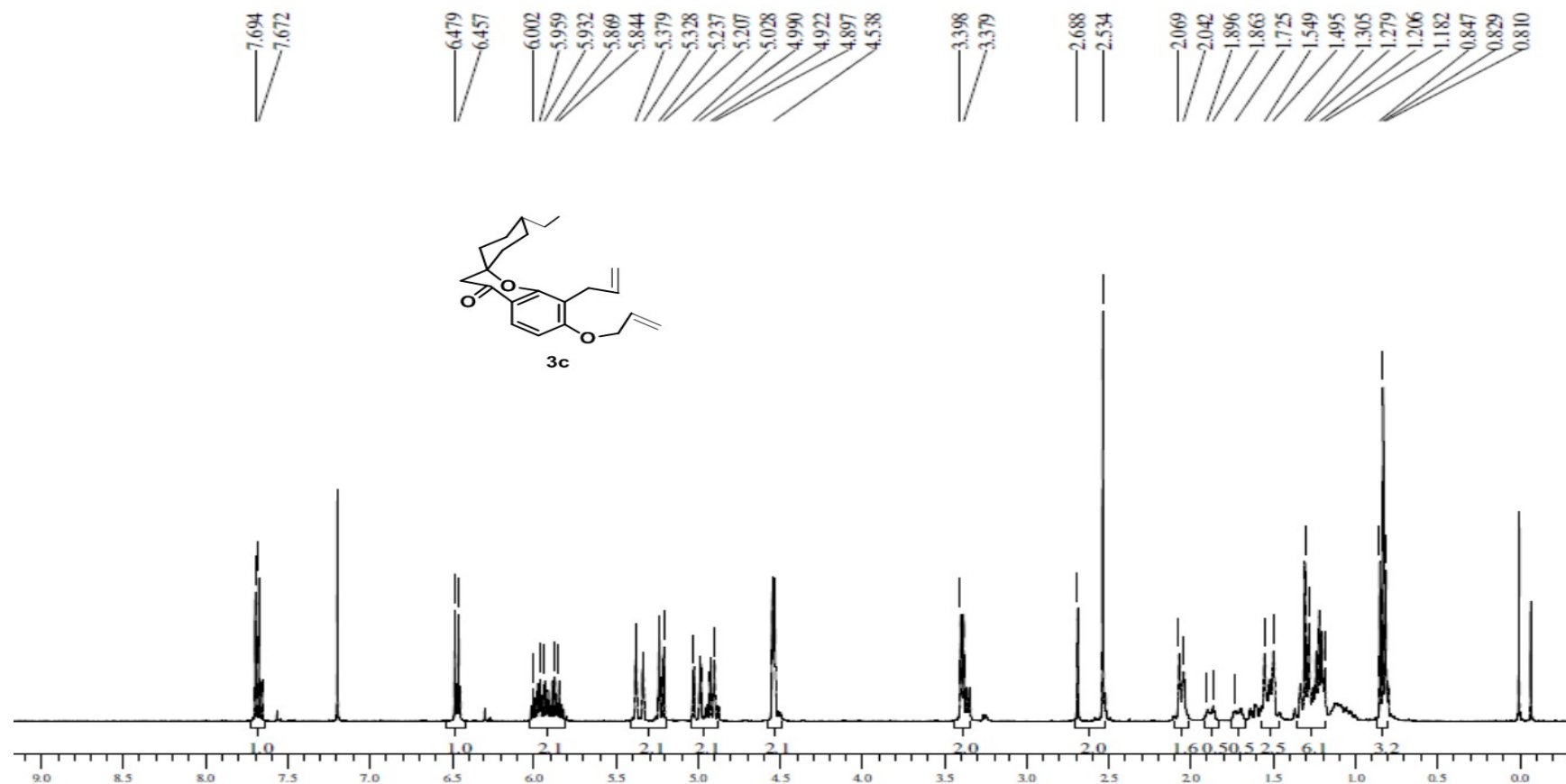
$^1\text{H}$ NMR ( $\text{CDCl}_3$ /400MHz):  $\delta$  7.72 (d,  $^3J = 8.5$  Hz, 1H), 6.67 (d,  $^3J = 8.5$ , 1H), 5.90 (pt,  $^3J = 5.7$  2.0 Hz, 1H), 5.58 (dhpt,  $J = 11.2$ , 1.7 Hz, 1H), 4.64-4.61 (m, 2H), 3.60 – 3.55 (m, 2H), 2.62 (\*2.77, s, 2H), 2.05 (m, 2H), 1.74 – 1.66 (m, 2H), 1.59 – 1.35 (m, 4H), 1.28-1.12 (m, 1H), 0.97 (m, 3H).



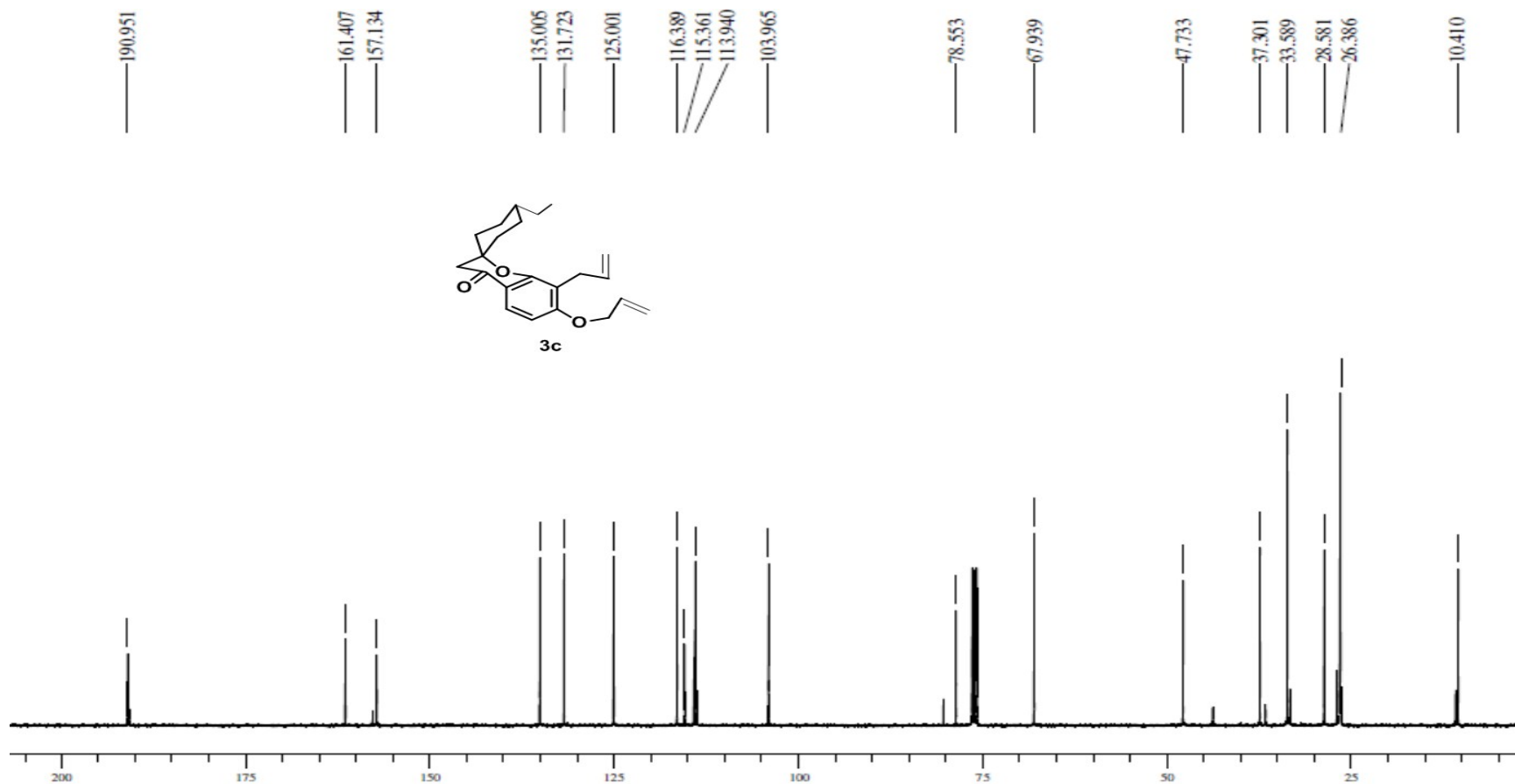
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ )  $\delta$  192.1, 165.3, 156.8, 136.0, 127.5, 126.5, 125.9, 123.8, 120.6, 118.3, 117.4, 114.6, 79.5, 70.4, 48.6, 34.7, 31.5, 29.9, 25.1, 21.4, 22.4, 22.3.

MS (EI) LRMS:  $m/z$  298, 255, 205, 203(100%), 189, 131, 69, 41;

HRMS (EI):  $m/z$  calcd for  $\text{C}_{19}\text{H}_{22}\text{O}_3$  is 298.1568; found: 298.1550.

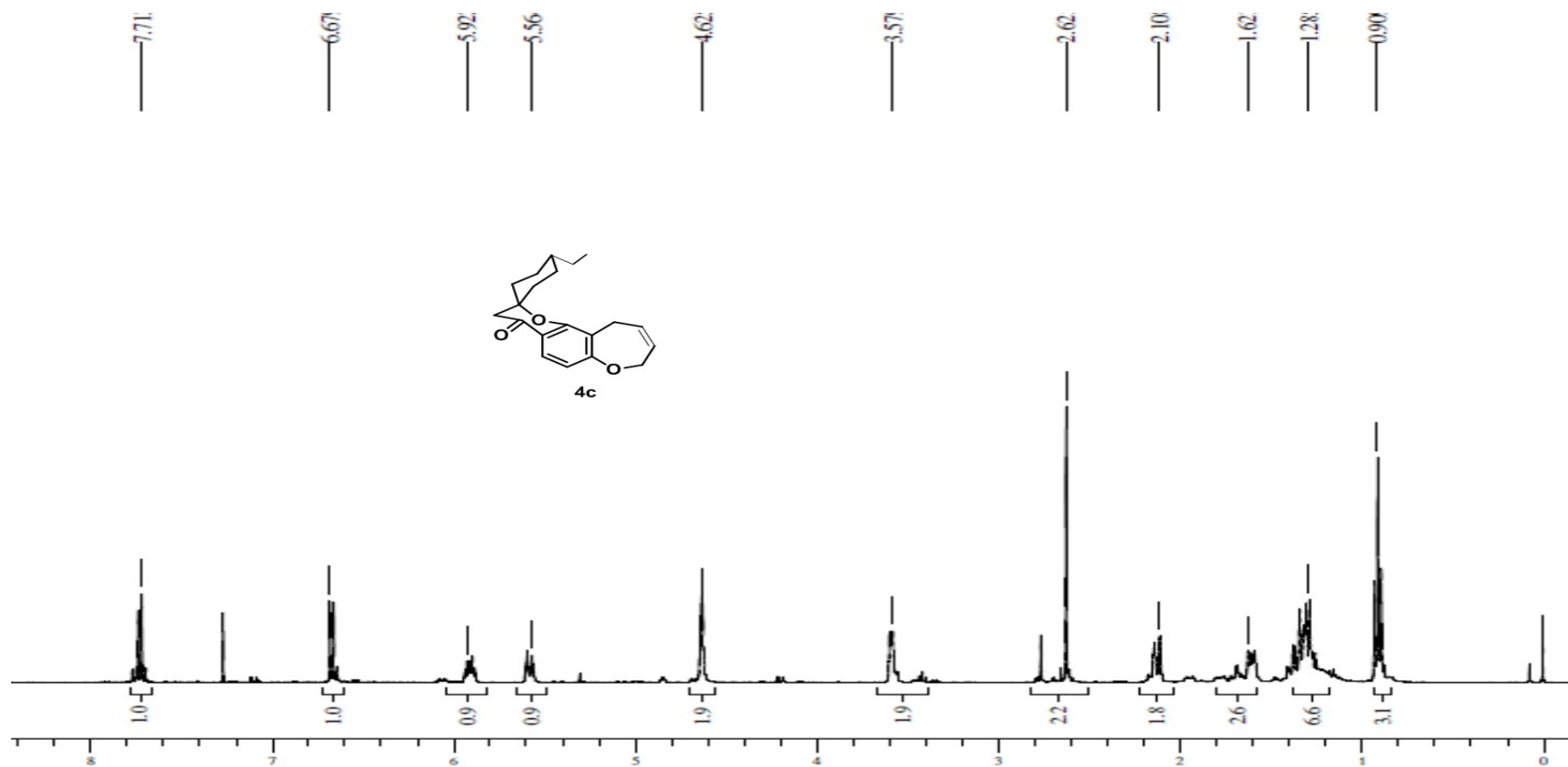


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.68 (d,  $^3J = 8.7$  Hz, 1H), 6.46 (d,  $^3J = 8.7$  Hz, 1H), 5.95 (ddt,  $J = 17.7, 10.3, 4.8$  Hz, 1H), 5.86 (ddt,  $J = 14.2, 12.8, 6.4$  Hz, 1H), 5.35 (dq,  $^3J = 17.2, ^2J = 1.6$  Hz, 1H), 5.21 (dq,  $^3J = 10.6, ^2J = 1.2$  Hz, 1H), 5.00 (dq,  $^3J = 17.0, ^2J = 1.6$  Hz, 1H), 4.94-4.87 (m, 1H), 4.52 (dt,  $J = 4.8, 1.6$  Hz, 2H), 3.38 (\* 3.35, dt,  $J = 6.4, 1.3$  Hz, 2H), 2.53 (\* 2.68, s, 2H), 2.08-2.02 (\* 1.91-1.85 (m), m, 2H), 1.75-1.59 (m, 1H), 1.56-1.47 (m, 2H), 1.36-1.18 (m, 6H), 0.82 (t, 3H).

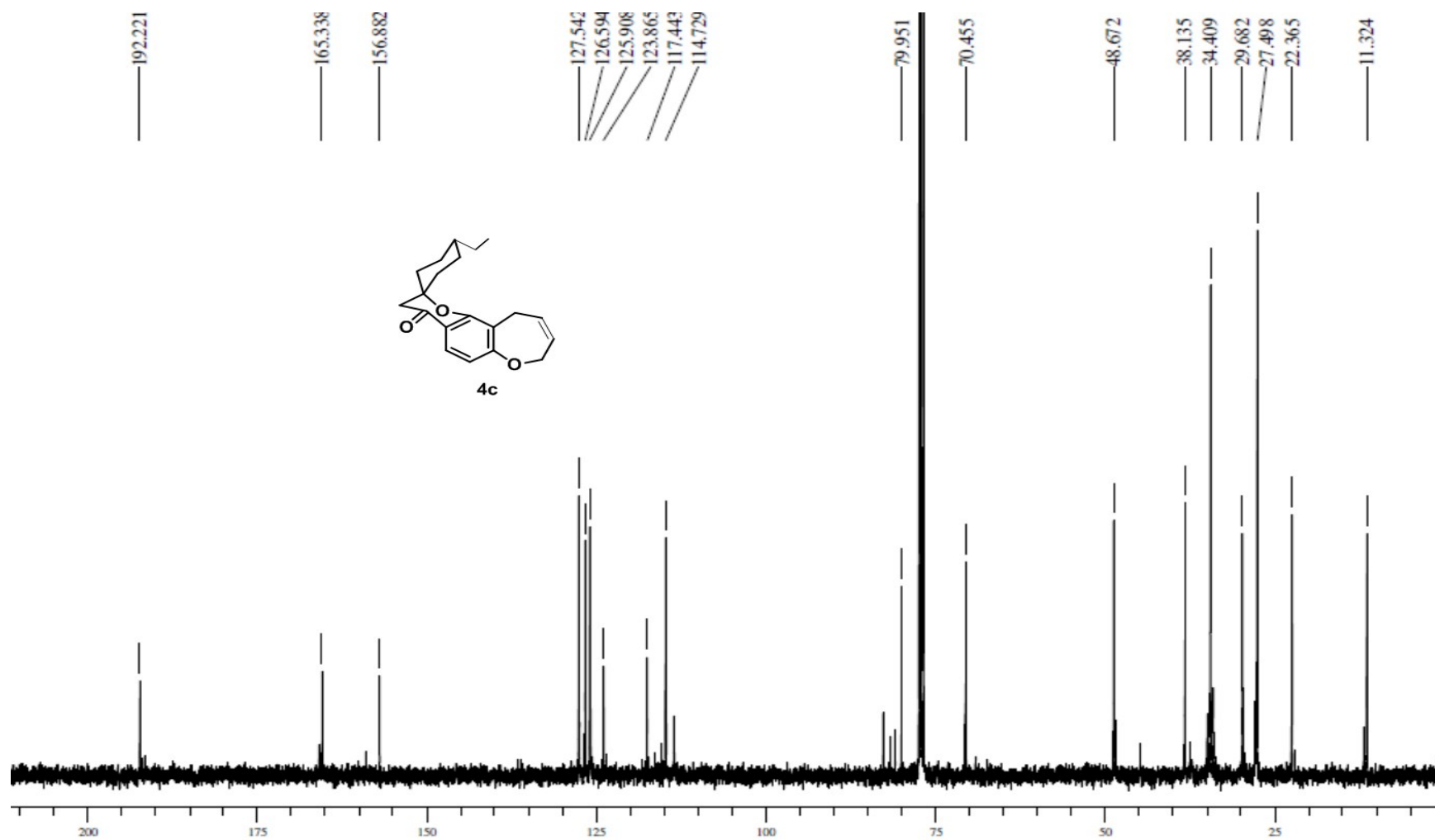


<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) δ 190.9, 161.4, 157.1, 135.0, 131.7, 125.0, 116.3, 115.3, 114.1, 113.9, 103.9, 78.5, 67.9, 47.7, 37.3, 33.5, 28.5, 26.5, 26.3, 10.4.

MS (EI) LRMS: m/z 340, 299, 269, 217, 175, 149, 97, 69, 57, 41(100%).



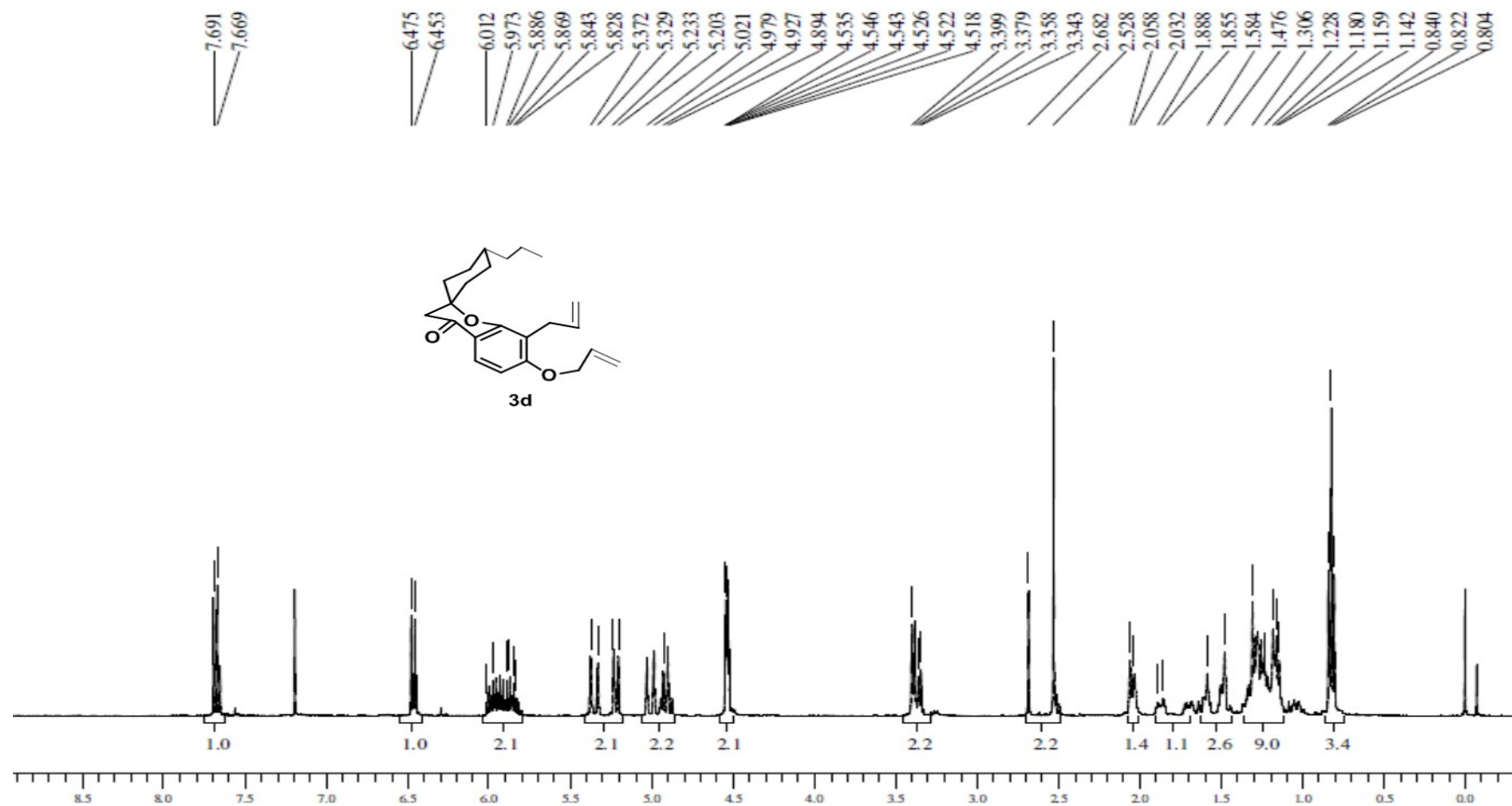
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.72 (d,  $^3J = 8.5$  Hz, 1H), 6.66 (d,  $^3J = 8.5$  Hz, 1H), 5.90 { \* 6.05 (dd,  $J = 12.2, 4.5$  Hz ), pt,  $^3J = 5.7, 2.0$  Hz, 1H}, 5.58 (dhpt,  $J = 11.2, 1.7$  Hz, 1H), 4.63-4.62 (\* 4.85- 4.82, m, 2H), 3.59 – 3.57 (m, 2H), 2.62 (\* 2.76, s, 2H), 2.16- 2.10 (m, 2H), 1.62– 1.56 (m, 2H), 1.40 – 1.19 (m, 7H), 0.90 (t, 3H).



$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ )  $\delta$  192.2, 165.3, 156.8, 127.5, 126.5, 125.9, 123.8, 117.4, 114.7, 79.9, 70.4, 48.6, 38.1, 34.4, 29.6, 27.4, 22.3, 11.3.

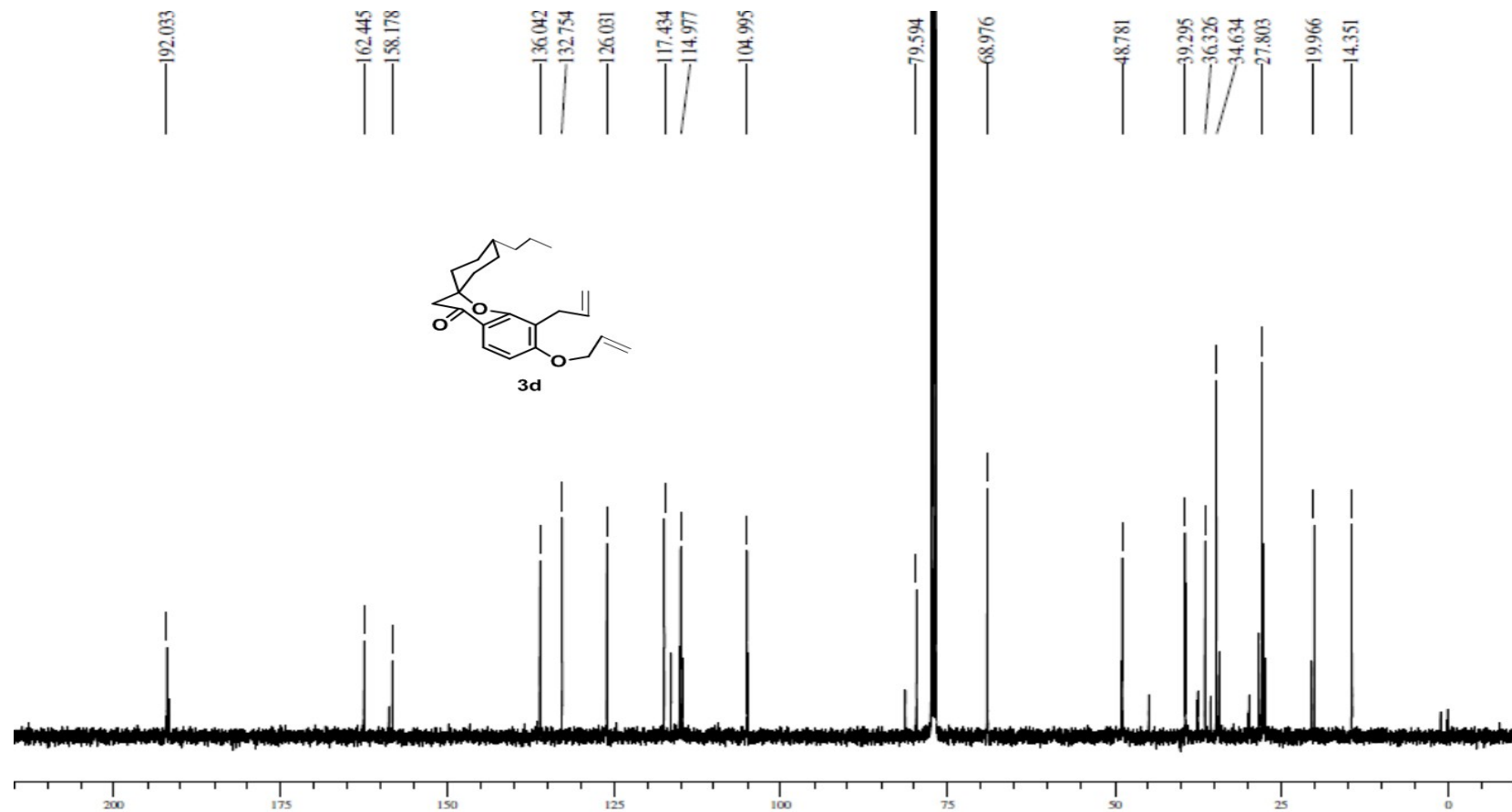
MS (EI) LRMS:  $m/z$  312, 242, 241, 190, 189(100%), 160, 77, 41;

HRMS (EI):  $m/z$  calcd for  $C_{20}H_{24}O_3$  is 312.1725; found: 312.1695.



$^1H$ NMR ( $CDCl_3/400MHz$ ):  $\delta$  7.68 (d,  $^3J = 8.7$  Hz, 1H), 6.46 (d,  $^3J = 8.7$  Hz, 1H), 5.97 (ddt,  $J = 17.7, 10.3, 4.8$  Hz, 1H), 5.86 (ddt,  $J = 14.2, 12.8, 6.4$  Hz, 1H), 5.34 (dq,  $^3J = 17.2, ^2J = 1.6$  Hz, 1H), 5.21 (dq,  $^3J = 10.6, ^2J = 1.2$  Hz, 1H), 5.00 (dq,  $^3J = 17.0, ^2J = 1.6$  Hz, 1H), 4.94-4.86 (m, 1H), 4.53 (dt,

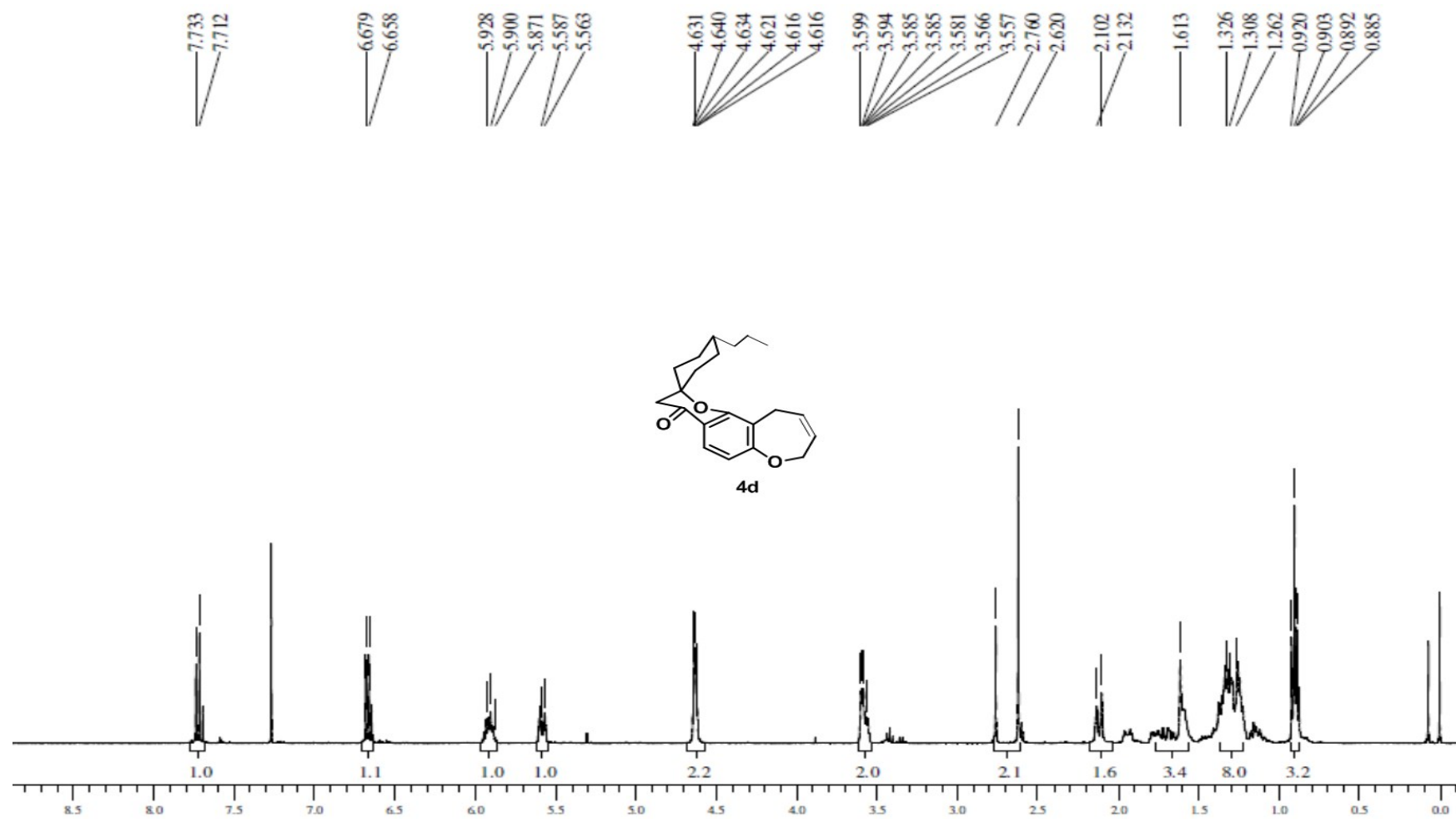
$J=4.8, 1.6$  Hz, 2H), 3.38 (\* 3.35, dt,  $J=6.4, 1.3$  Hz, 2H), 2.52 (\* 2.68, s, 2H), 2.08-2.01 (\*1.89-1.84 (m), m, 2H) ,1.73-1.47 (m, 2H), 1.36-1.10 ( m, 9H), 0.82 ( td, 3H ).



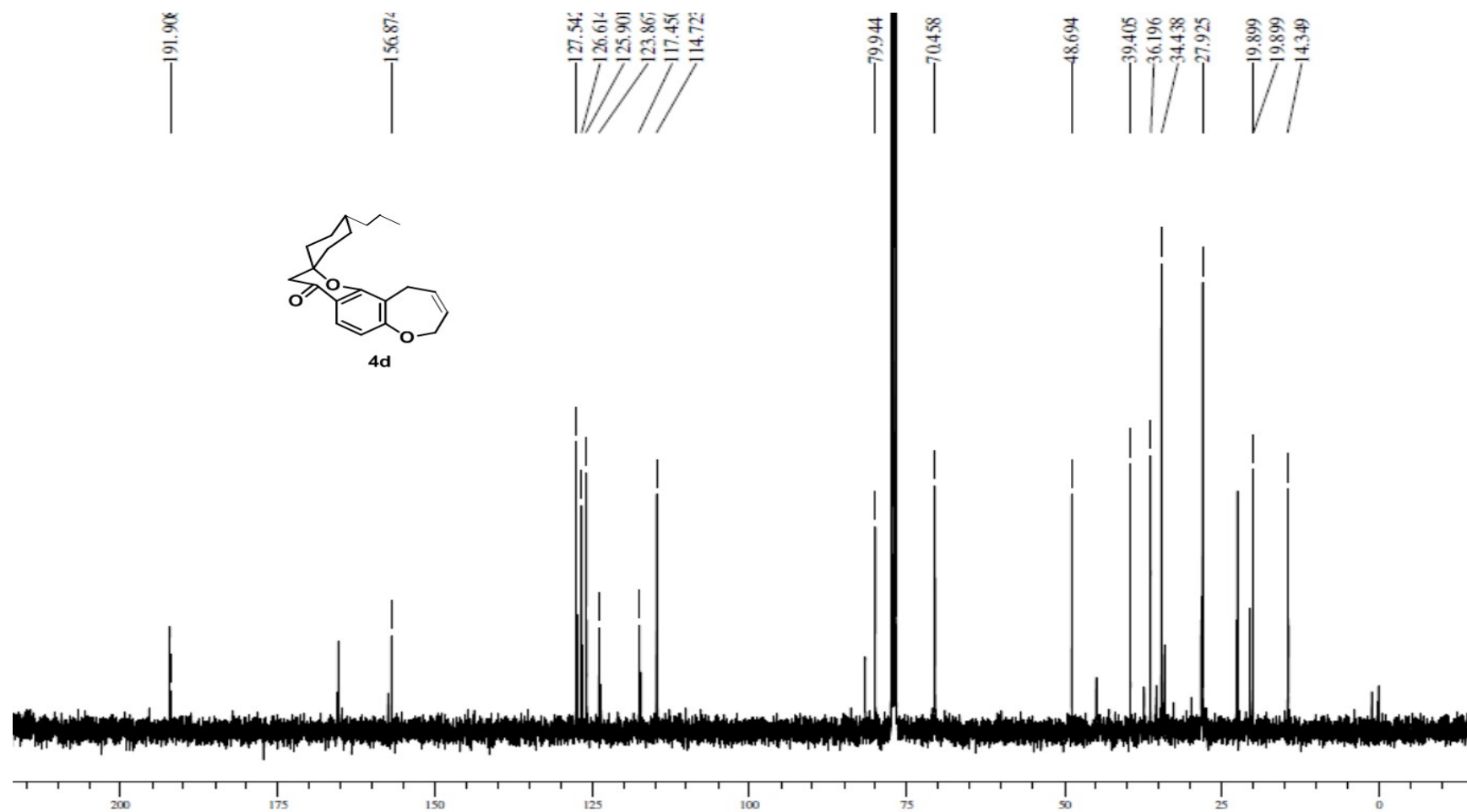
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ):  $\delta$  192.0, 162.4, 158.1, 136.0, 132.7, 126.0, 117.4, 116.3, 114.9, 104.9, 79.5, 68.9, 48.7, 39.2, 36.3, 34.6, 28.2, 27.8, 27.5, 27.3, 19.9, 14.3.

MS (EI) LRMS:  $m/z$  354, 269, 217(100%), 175, 149, 91, 41(90%).





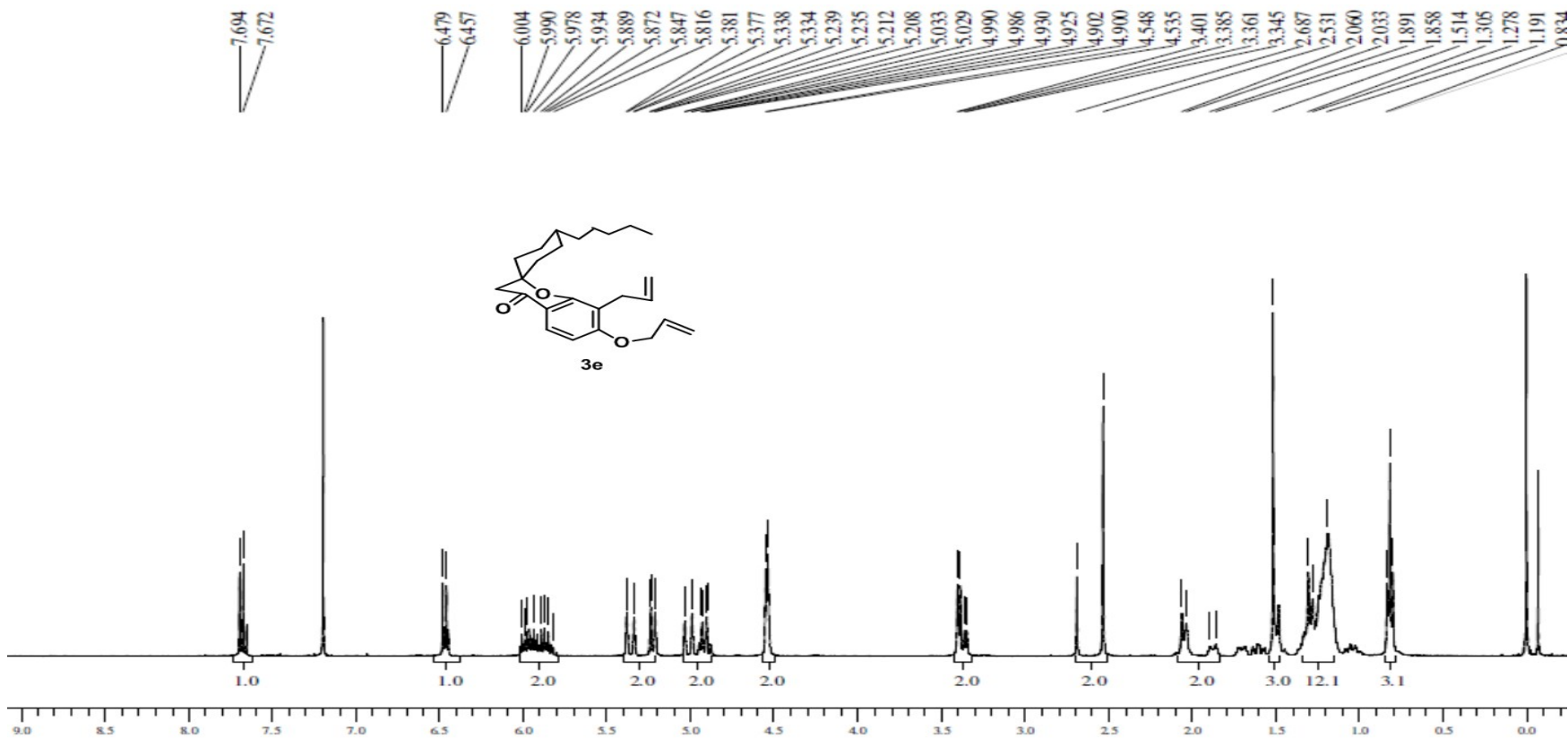
<sup>1</sup>HNMR (CDCl<sub>3</sub>/400MHz):  $\delta$  7.72 (d, <sup>3</sup>J = 8.5 Hz, 1H), 6.66 (d, <sup>3</sup>J = 8.5, 1H), 5.91 (pt, <sup>3</sup>J = 5.7 2.0 Hz, 1H), 5.58 (dhpt, J = 11.2, 1.7 Hz, 1H), 4.64-4.61 (m, 2H), 3.60 – 3.55 (m, 2H), 2.62 (\*2.76, s, 2H), 2.10 (brd, 2H), 1.62–1.57(m, 3H), 1.37-1.22 (m, 8H), 0.90 (m, 3H).



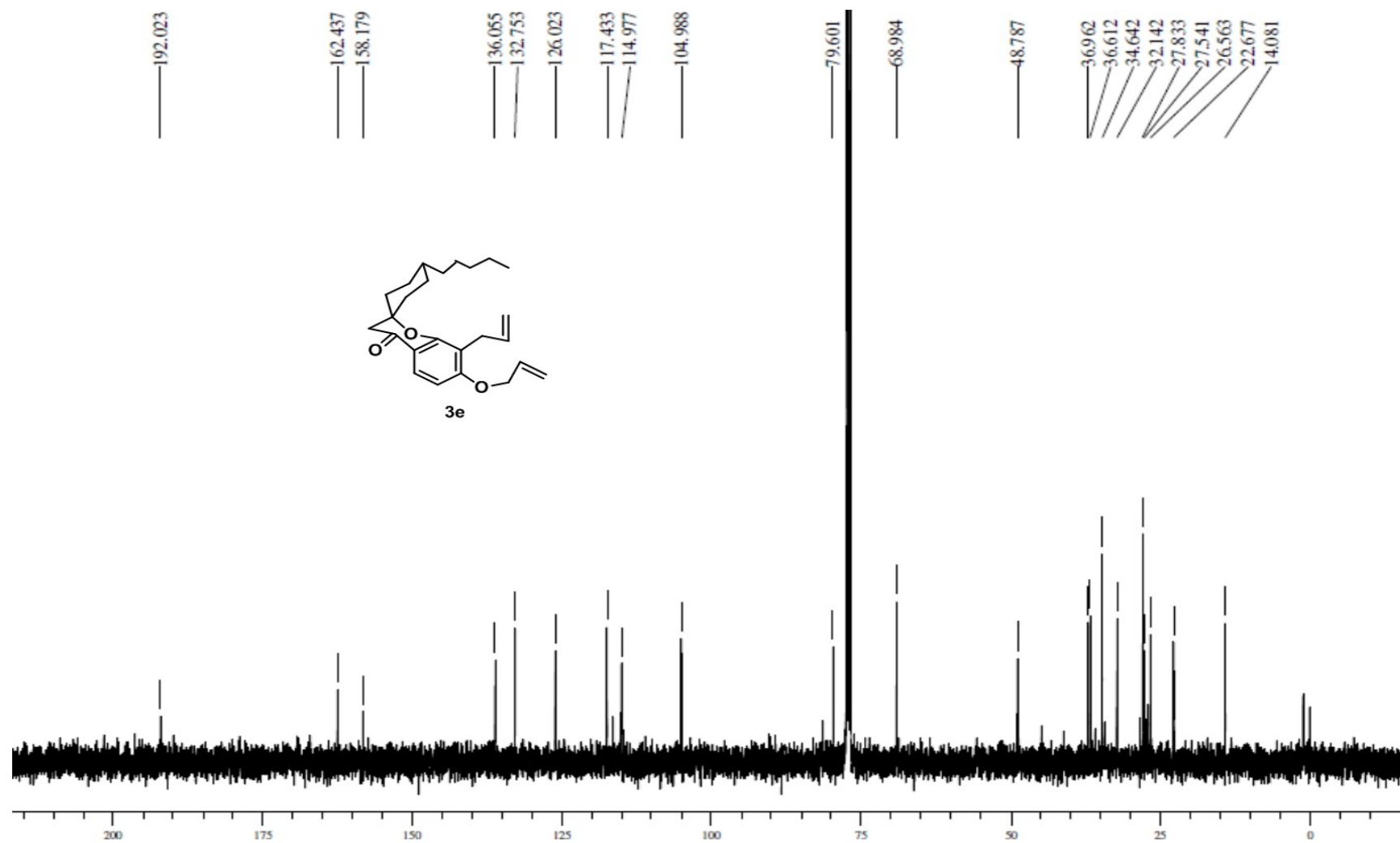
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) δ 192.1, 165.3, 156.8, 127.5, 126.6, 125.9, 123.8, 117.4, 114.7, 79.9, 70.4, 48.6, 39.4, 36.1, 34.4, 27.9, 22.3, 20.3, 19.9, 14.3.

MS (EI) LRMS: m/z 326, 255, 241(99%), 190, 189(100%), 149, 69, 57, 55, 43, 41;

HRMS (EI): m/z calcd for C<sub>21</sub>H<sub>26</sub>O<sub>3</sub> is 326.1881; found: 326.1863.

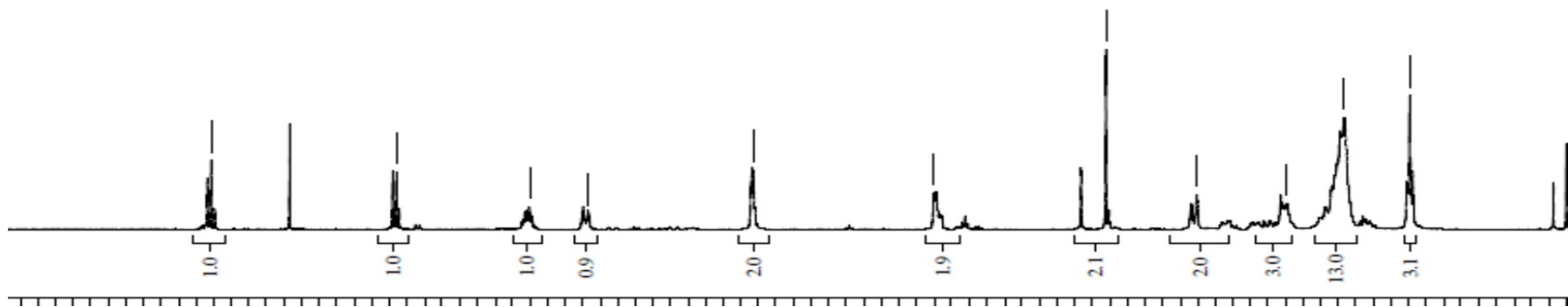
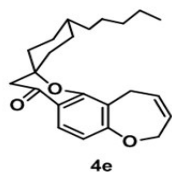


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.68 (d,  $^3J = 8.7$  Hz, 1H), 6.46 (d,  $^3J = 8.7$  Hz, 1H), 5.97 (ddt,  $J = 17.7, 10.3, 4.8$  Hz, 1H), 5.87 (ddt,  $J = 14.2, 12.8, 6.4$  Hz, 1H), 5.35 (dq,  $^3J = 17.2, ^2J = 1.6$  Hz, 1H), 5.21 (dq,  $^3J = 10.6, ^2J = 1.2$  Hz, 1H), 5.00 (dq,  $^3J = 17.0, ^2J = 1.6$  Hz, 1H), 4.94-4.86 (m, 1H), 4.54 (dt,  $J = 4.8, 1.6$  Hz, 2H), 3.39 (\* 3.35, dt,  $J = 6.4, 1.3$  Hz, 2H), 2.53 (\* 2.68, s, 2H), 2.08-2.01 (\* 1.89-1.84, m, 2H), 1.73-1.56 (m, 2H), 1.37-1.10 (m, 13H), 0.81 (td, 3H).

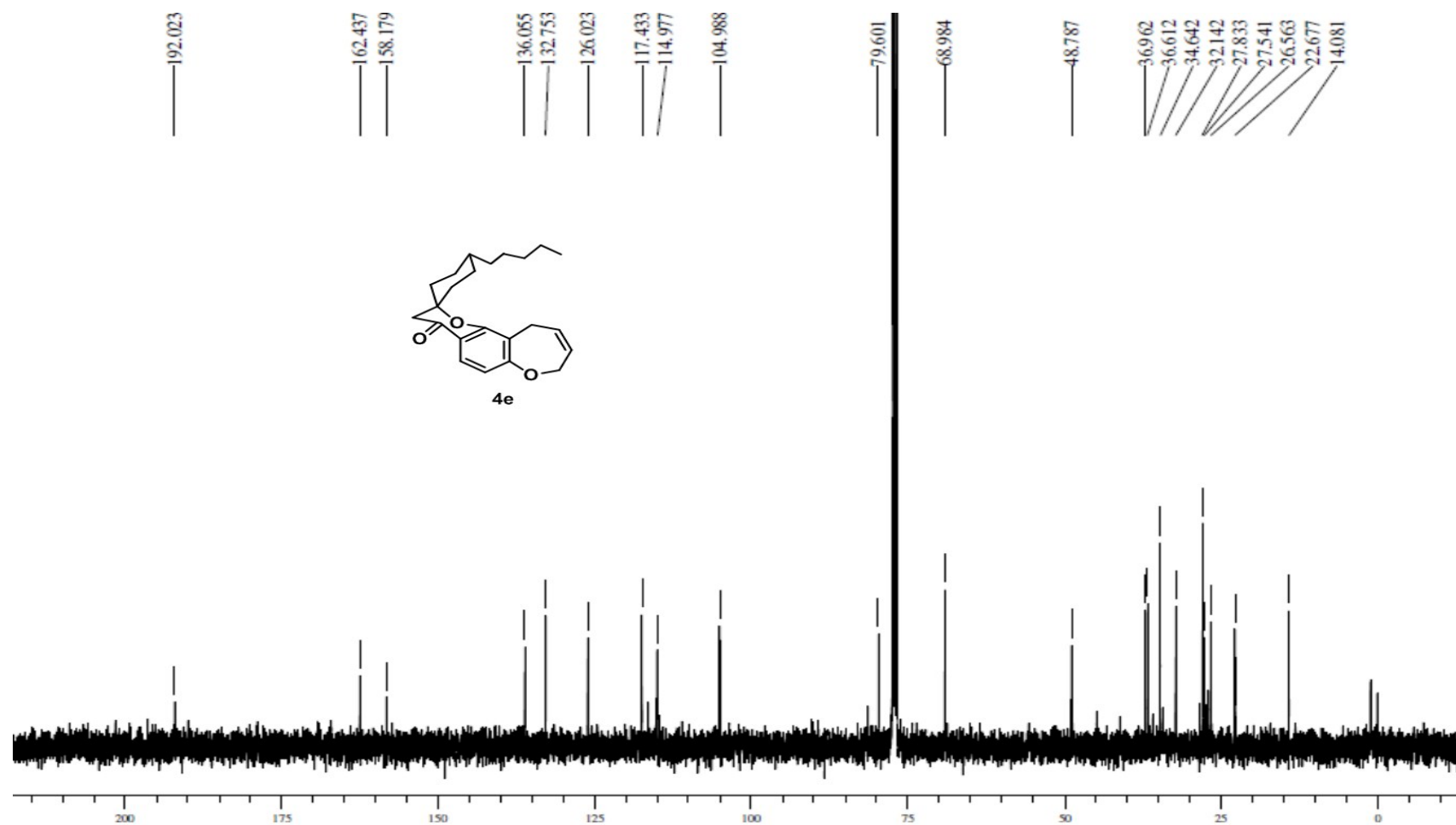


<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) :  $\delta$  192.0, 162.4, 158.1, 136.0, 132.7, 126.0, 117.4, 114.9, 104.9, 79.6, 68.9, 48.7, 36.9, 36.6, 34.6, 32.1, 27.8, 27.5, 26.5, 22.6, 14.0.

MS (EI) LRMS: m/z 382, 341, 269, 217(100%), 175, 149, 43, 41(100%).



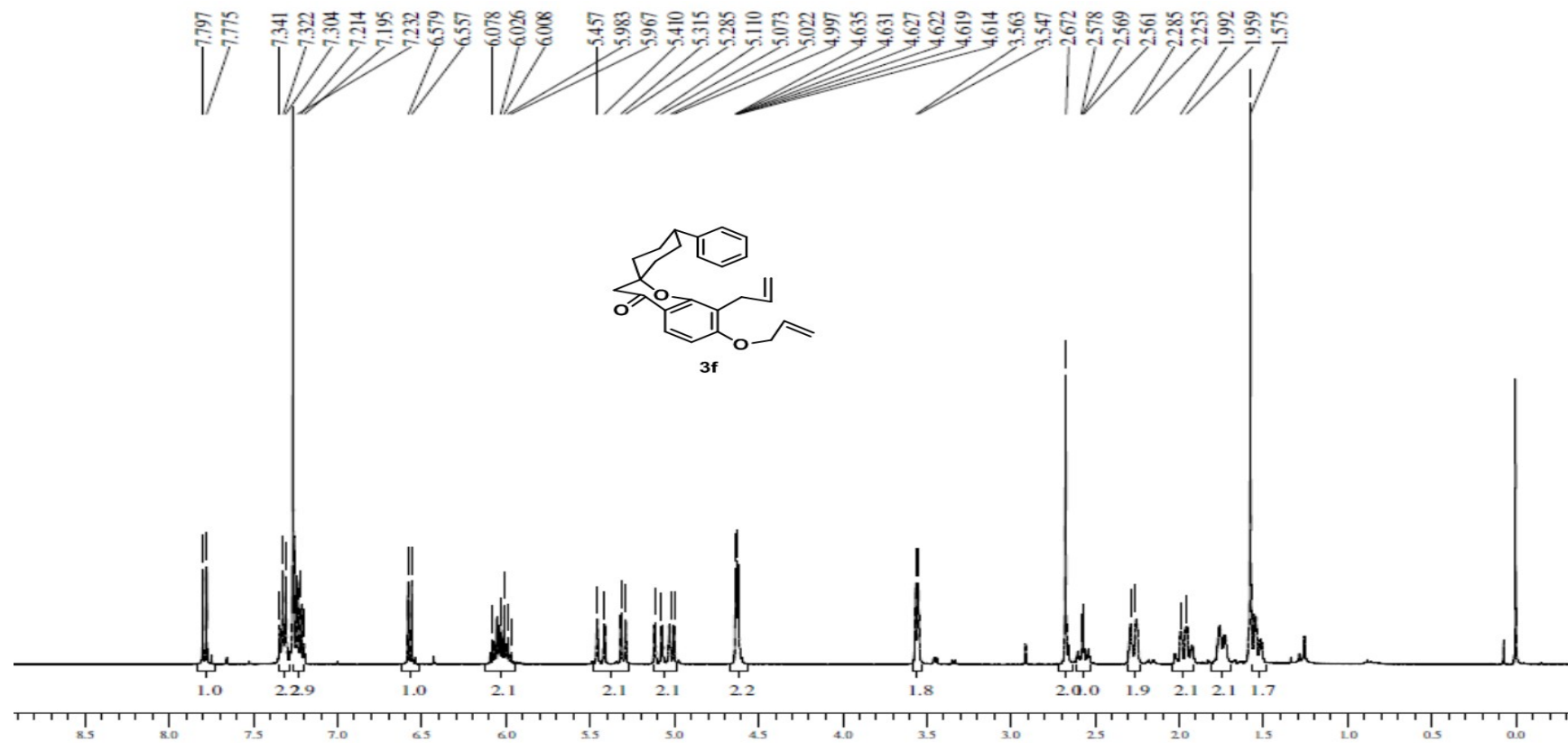
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.72 (d,  $^3J = 8.5$  Hz, 1H), 6.58 (d,  $^3J = 8.5$ , 1H), 5.94 (pt,  $^3J = 5.7$  2.0 Hz, 1H), 5.58 (dhpt,  $J = 11.2, 1.7$  Hz, 1H), 4.64-4.61 (m, 2H), 3.60–3.55 (m, 2H), 2.61 (\*2.76, s, 2H), 2.10 (brd, 2H), 1.62–1.58 (m, 2H), 1.36- 1.22 (m, 13H), 0.89 (m, 3H).



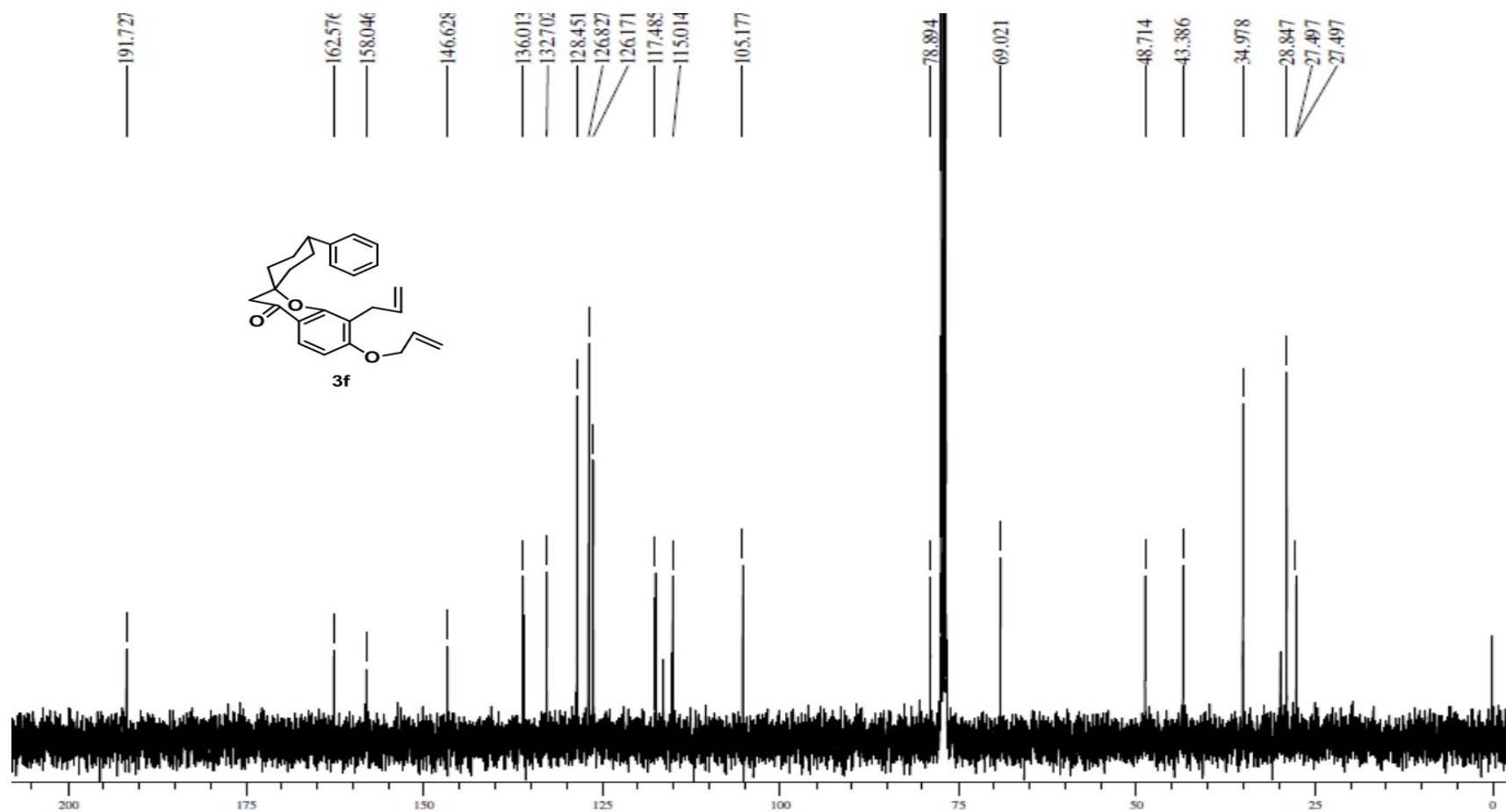
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ )  $\delta$  192.1, 165.3, 156.8, 127.5, 126.6, 125.9, 123.8, 117.4, 114.7, 79.9, 70.4, 48.6, 37.0, 36.4, 34.4, 32.1, 27.9, 26.5, 22.3, 14.0.

MS (EI) LRMS:  $m/z$  354, 283, 241(100%), 231, 190, 189(100%), 69, 55, 41;

HRMS (EI):  $m/z$  calcd for  $\text{C}_{23}\text{H}_{30}\text{O}_3$  is 354.2194; found: 354.2200.



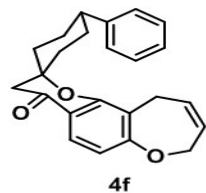
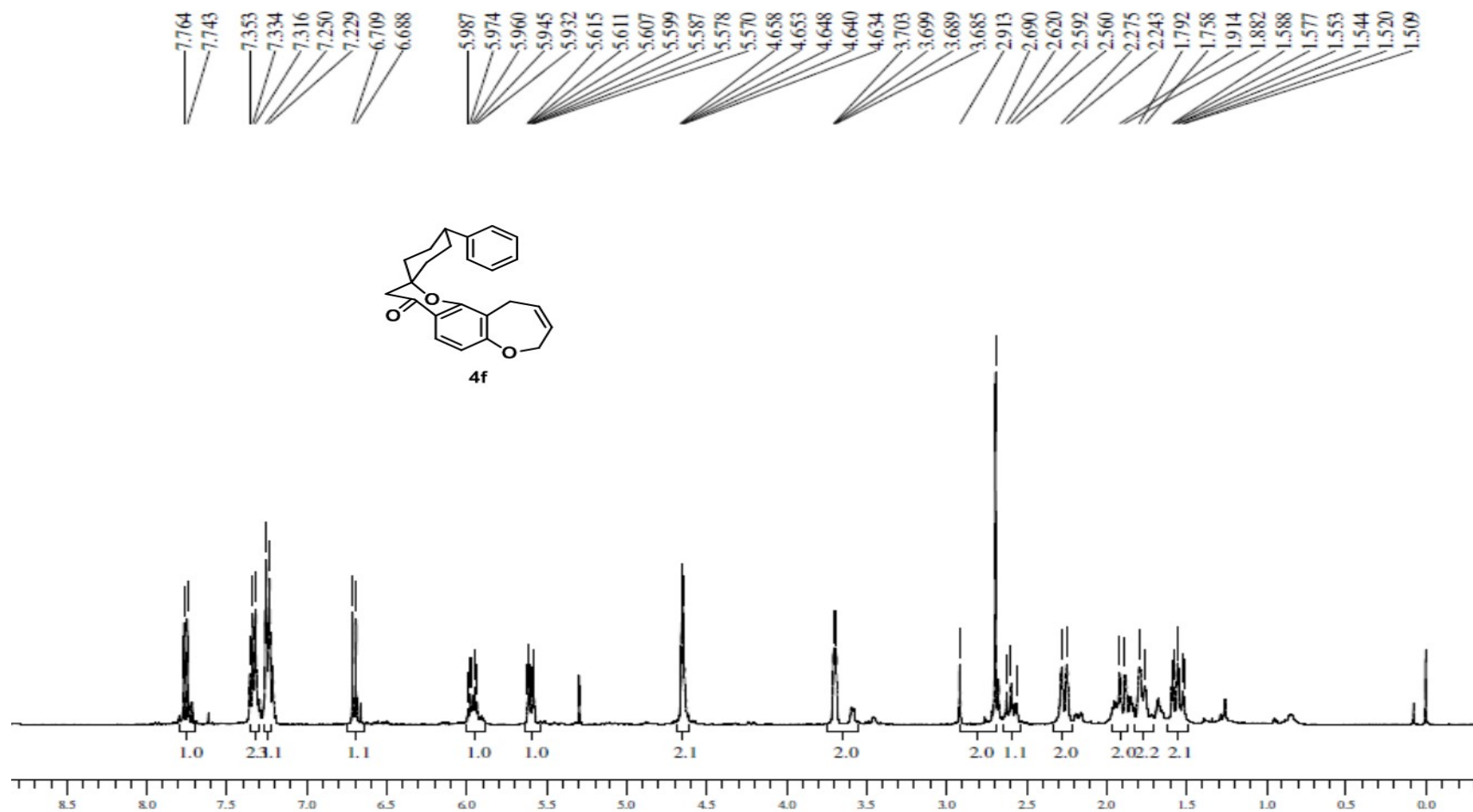
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.78 (d,  $^3J = 8.7$  Hz, 1H), 7.34-7.21 (m, 5H), 6.56 (d,  $^3J = 8.7$  Hz, 1H), 6.09 - 5.96 (m, 2H), 5.43 (dq,  $^3J = 17.2$ ,  $^2,4J = 1.6$  Hz, 1H), 5.30 (dq,  $^3J = 10.6$ ,  $^2,4J = 1.2$  Hz, 1H), 5.09 (dq,  $^3J = 17.0$ ,  $^2,4J = 1.6$  Hz, 1H), 5.01 (dq,  $^3J = 9.9$ ,  $^2,4J = 1.3$  Hz, 1H), (m, 1H), 4.62 (dt,  $J = 5.0, 1.5$  Hz, 2H), 3.55 (dt,  $J = 6.2, 1.5$  Hz, 2H), 2.67 (\* 2.91, s, 2H), 2.57 (tt, 1H), 2.31-2.13 (m, 2H), 1.97 (qd, 2H), 1.78-1.72 (m, 2H), 1.52 (dd, 2H).



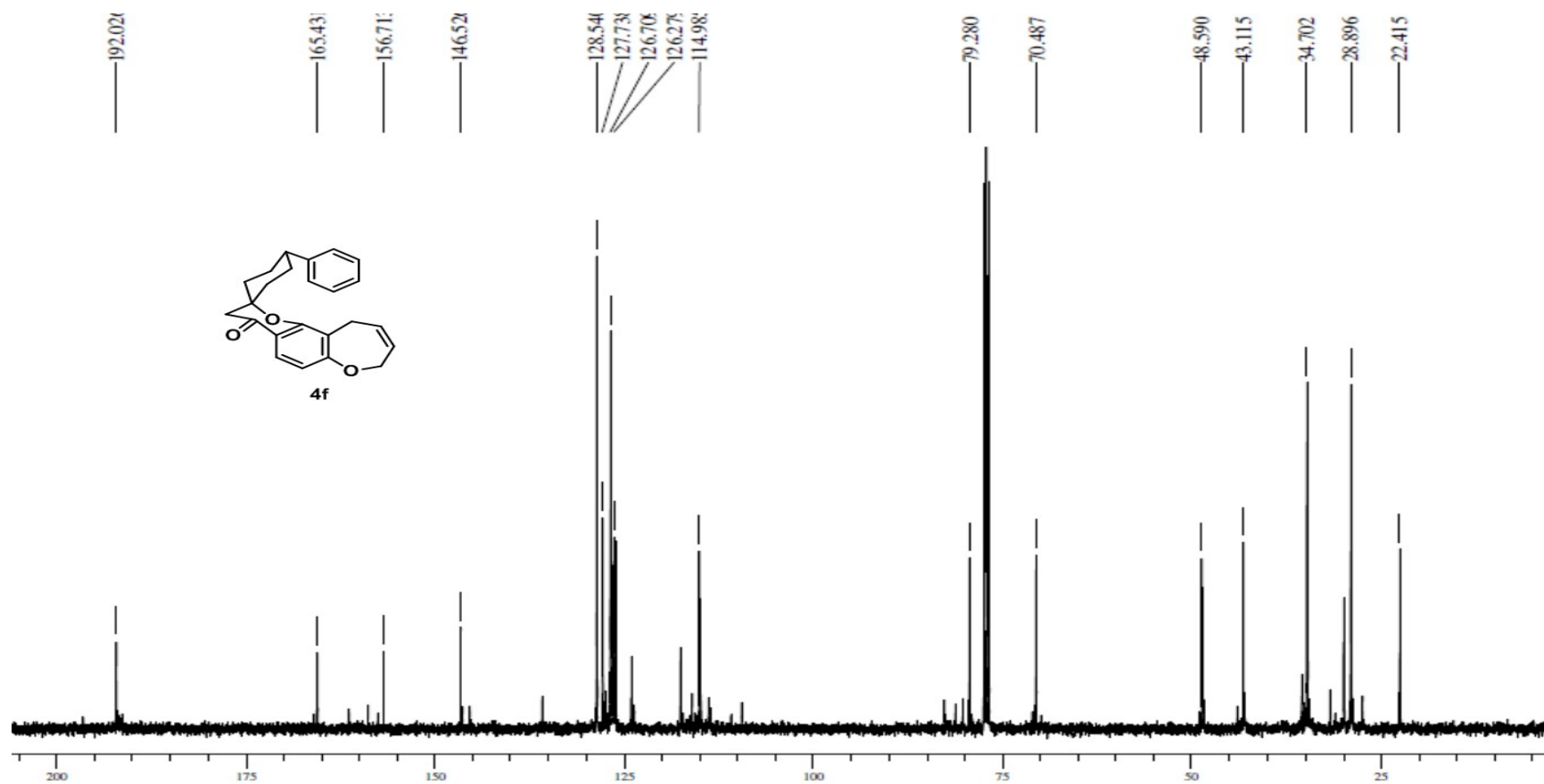
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>): δ 191.7, 162.5, 158.0, 146.6, 136.0, 132.7, 128.4, 126.8, 126.1, 117.4, 116.3, 115.0, 105.1, 78.8, 69.0, 48.7, 43.3, 34.9, 28.8, 27.4.

MS (EI) LRMS: m/z 388, 360 (98%), 241(100%), 189, 91, 77.





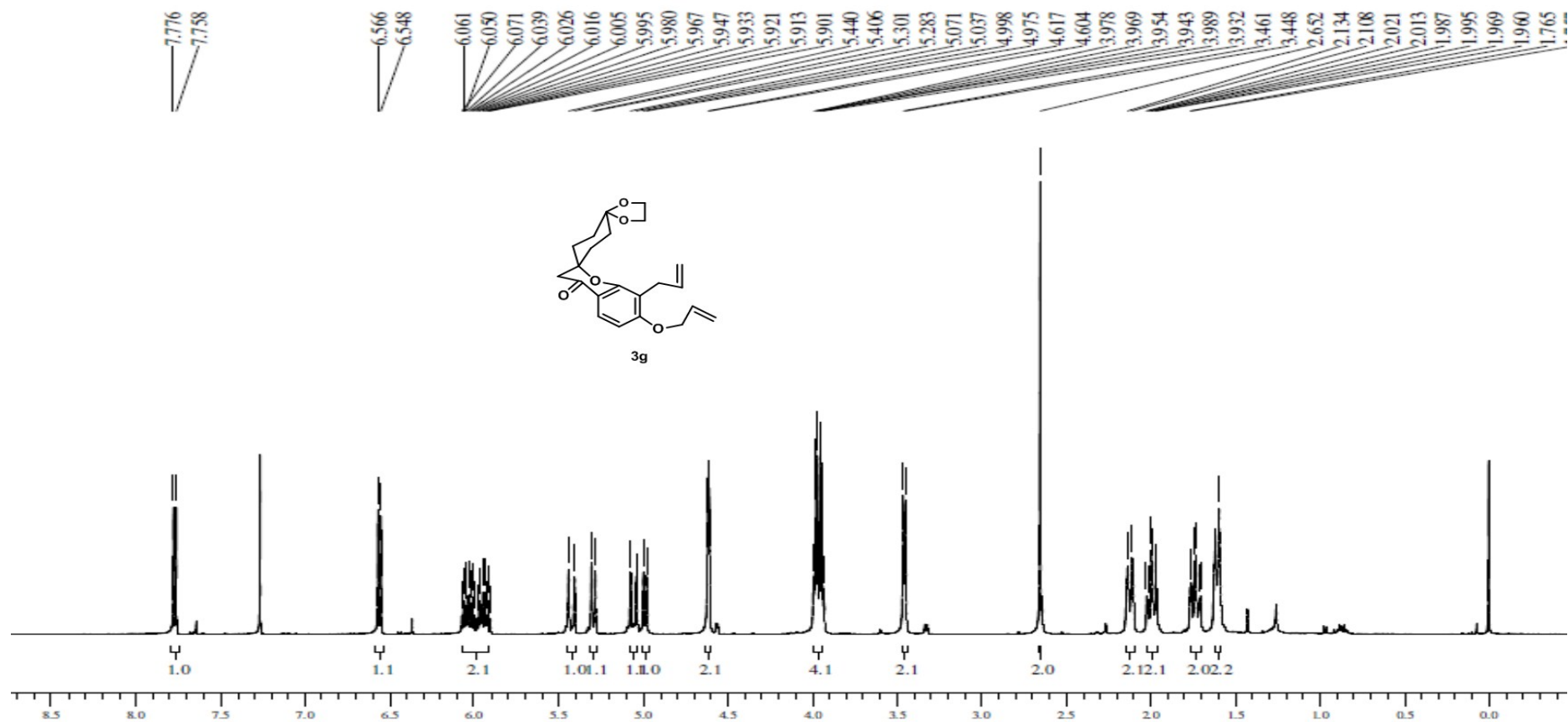
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.75 (d,  $^3J = 8.5$  Hz, 1H), 7.35- 7.29 (m, 2H), 7.24- 7.20 (m, 3H), 6.69 (d,  $^3J = 8.5$ , 1H), 5.96 (\*6.13 (dd,  $J = 12.2$ , 4.5 Hz), pt,  $^3J = 5.7$  2.0 Hz, 1H), 5.58 (dhpt,  $J = 11.2$ , 1.7 Hz, 1H), 4.65-4.62 (m, 2H), 3.70 – 3.68 (\* 3.59- 3.56 (m), 2H), 2.69 (\*2.91, s, 2H), 2.59 (tt,  $J = 12.5$ , 11.2, 4.0 Hz, 1H), 2.24 (brd, 2H), 1.98 – 1.84 (m, 2H), 1.82 – 1.71 (m, 2H), 1.54 (td, 2H).



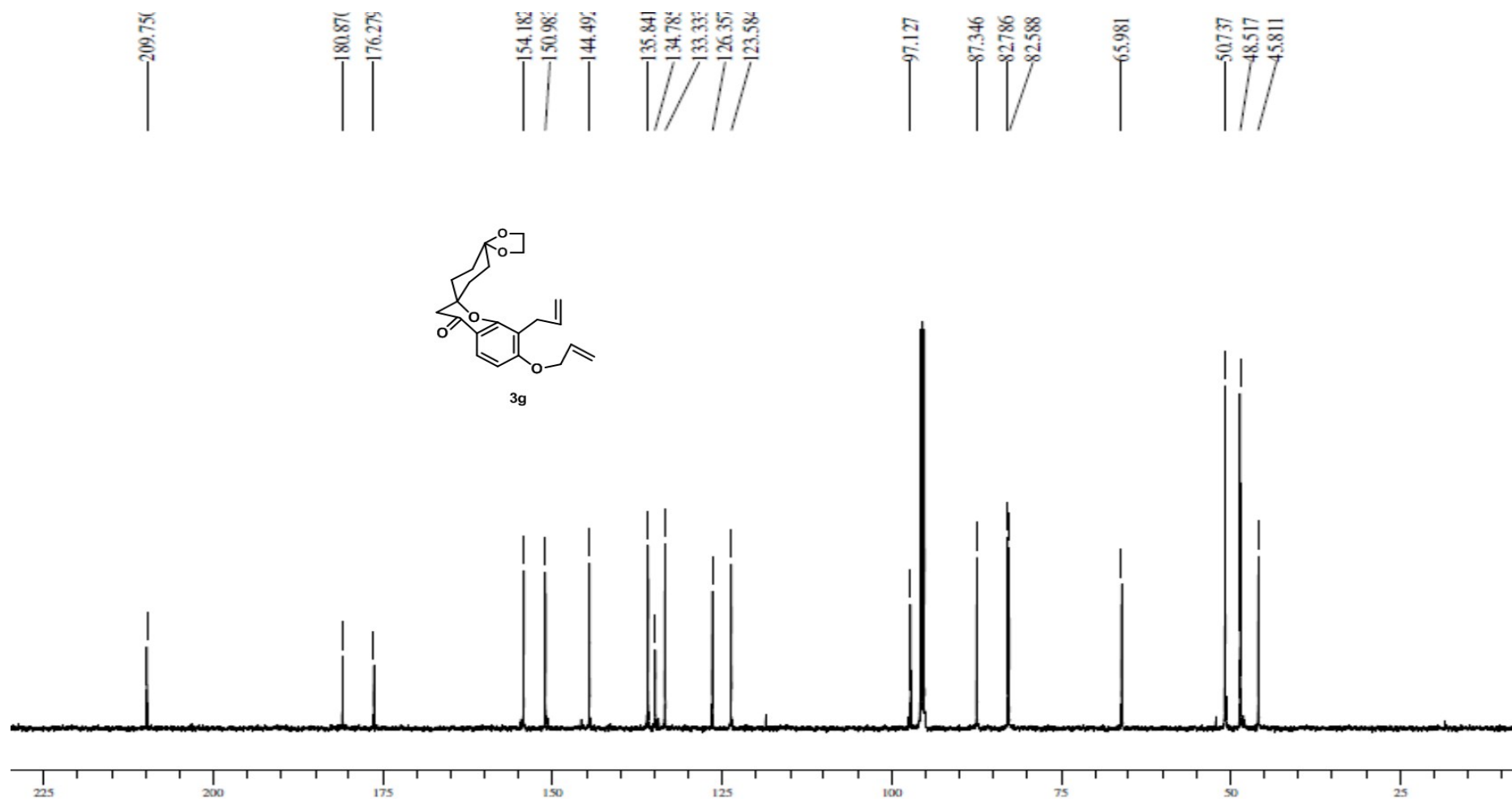
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ )  $\delta$  : 192.0, 165.4, 156.7, 146.5, 128.5, 127.7, 126.7, 126.0, 114.9, 79.2, 70.4, 48.5, 43.1, 34.7, 29.8, 28.8, 22.4.

MS (EI) LRMS:  $m/z$  360, 286, 241, 229, 189, 177, 149, 91, 86, 84, 69, 57, 49, 41;

HRMS (EI):  $m/z$  calcd for  $\text{C}_{24}\text{H}_{24}\text{O}_3$  is 360.1725; found: 360.1700.

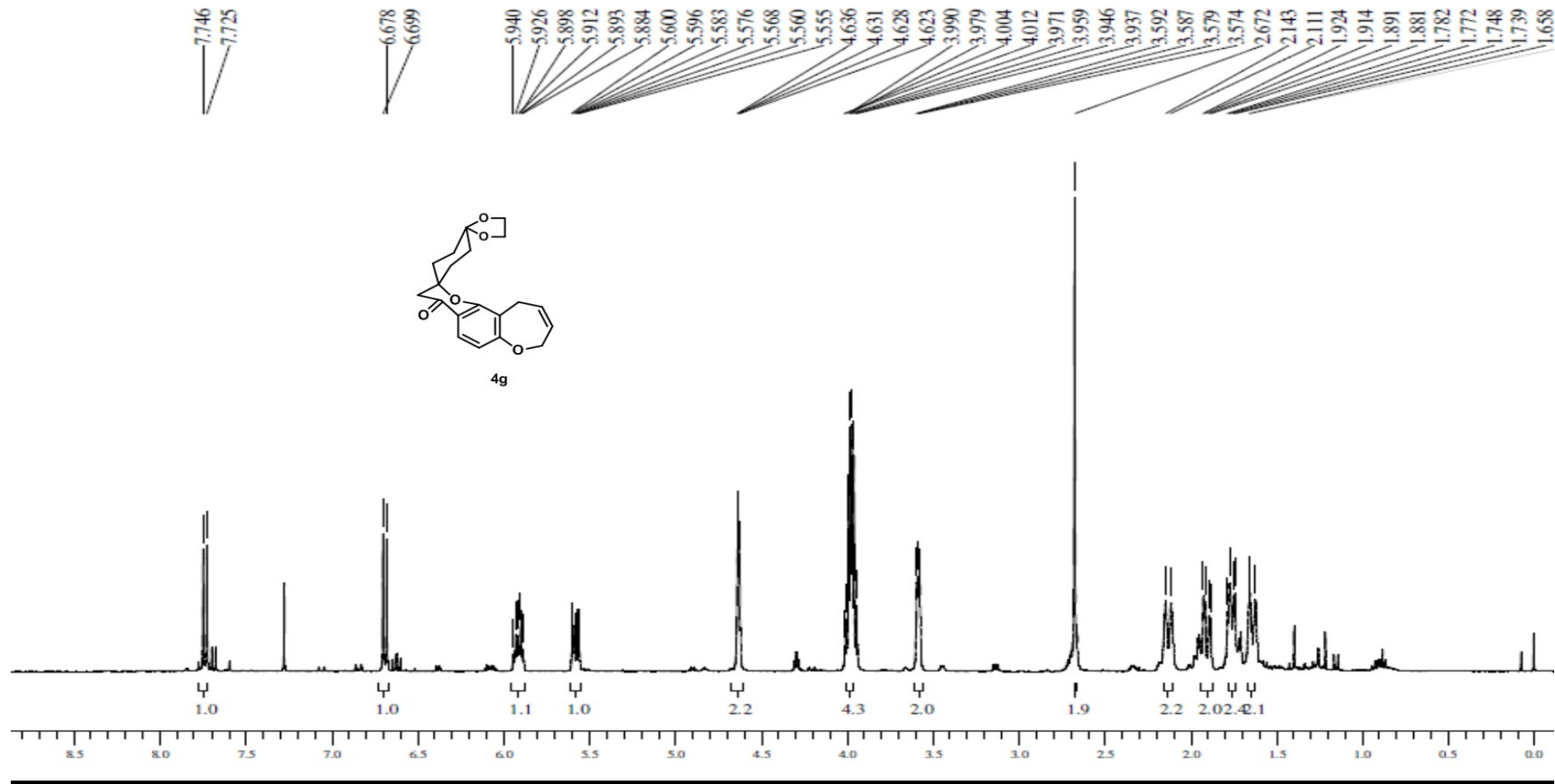


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.73(d,  $^3J = 8.5$  Hz, 1H), 6.68 (d,  $^3J = 8.5$ , 1H), 5.91 (pt,  $^3J = 5.7$  2.0 Hz, 1H), 5.58 (dhpt,  $J = 11.2$ , 1.7 Hz, 1H), 4.64-4.61 (m, 2H), 4.01 - 3.93 (m, 4H), 3.59 – 3.57 (m, 2H), 2.67 (s, 2H), 2.14 – 2.09 (m, 2H), 1.91 (td, 2H), 1.78 – 1.71 (m, 2H), 1.64 (brd, 2H).

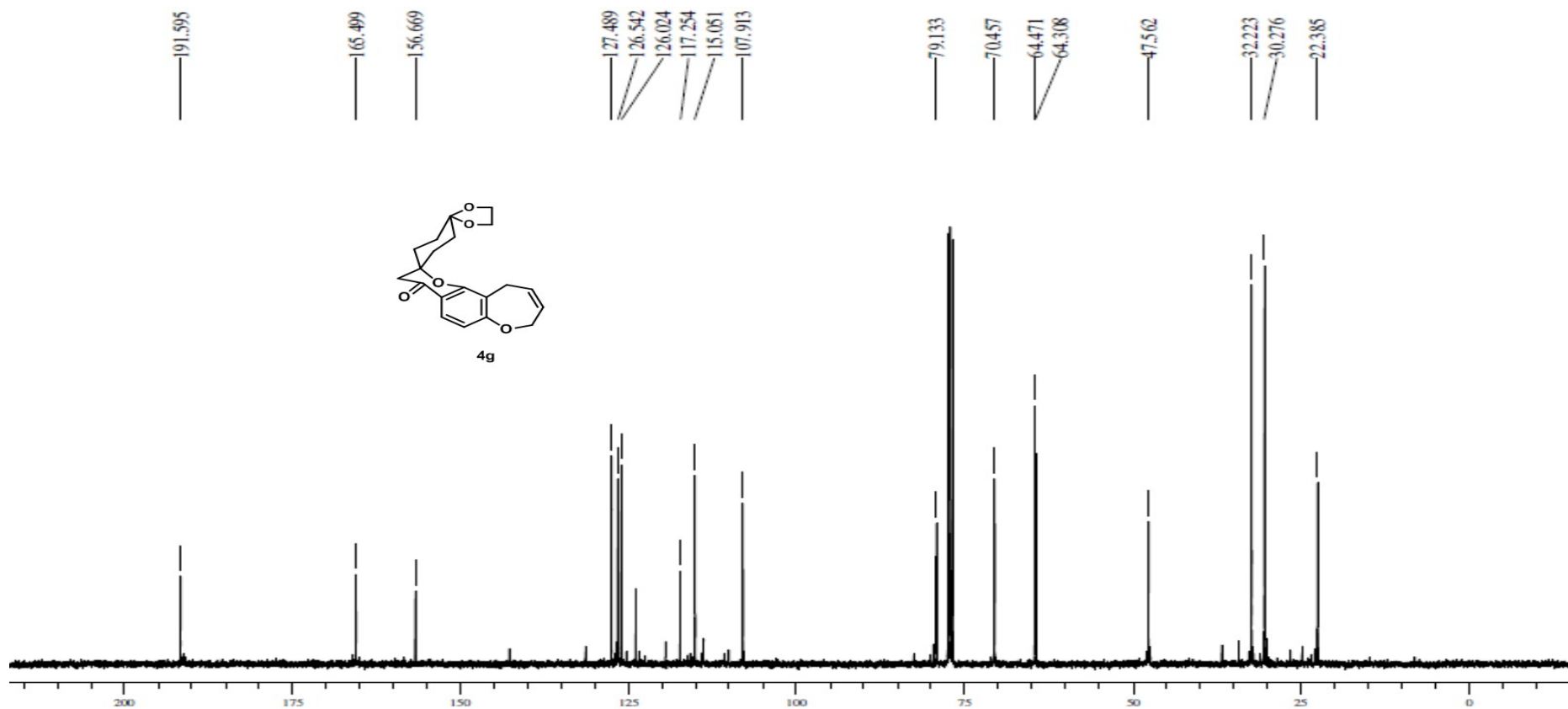


<sup>13</sup>C (125 MHz, CDCl<sub>3</sub>) : δ 209.7, 180.8, 176.2, 154.1, 150.9, 144.4, 135.8, 133.3, 126.3, 123.5, 97.1, 87.3, 82.7, 82.5, 65.9, 50.7, 48.5, 45.8.

MS (EI) LRMS: m/z 330, 231, 177, 99(100%), 86.



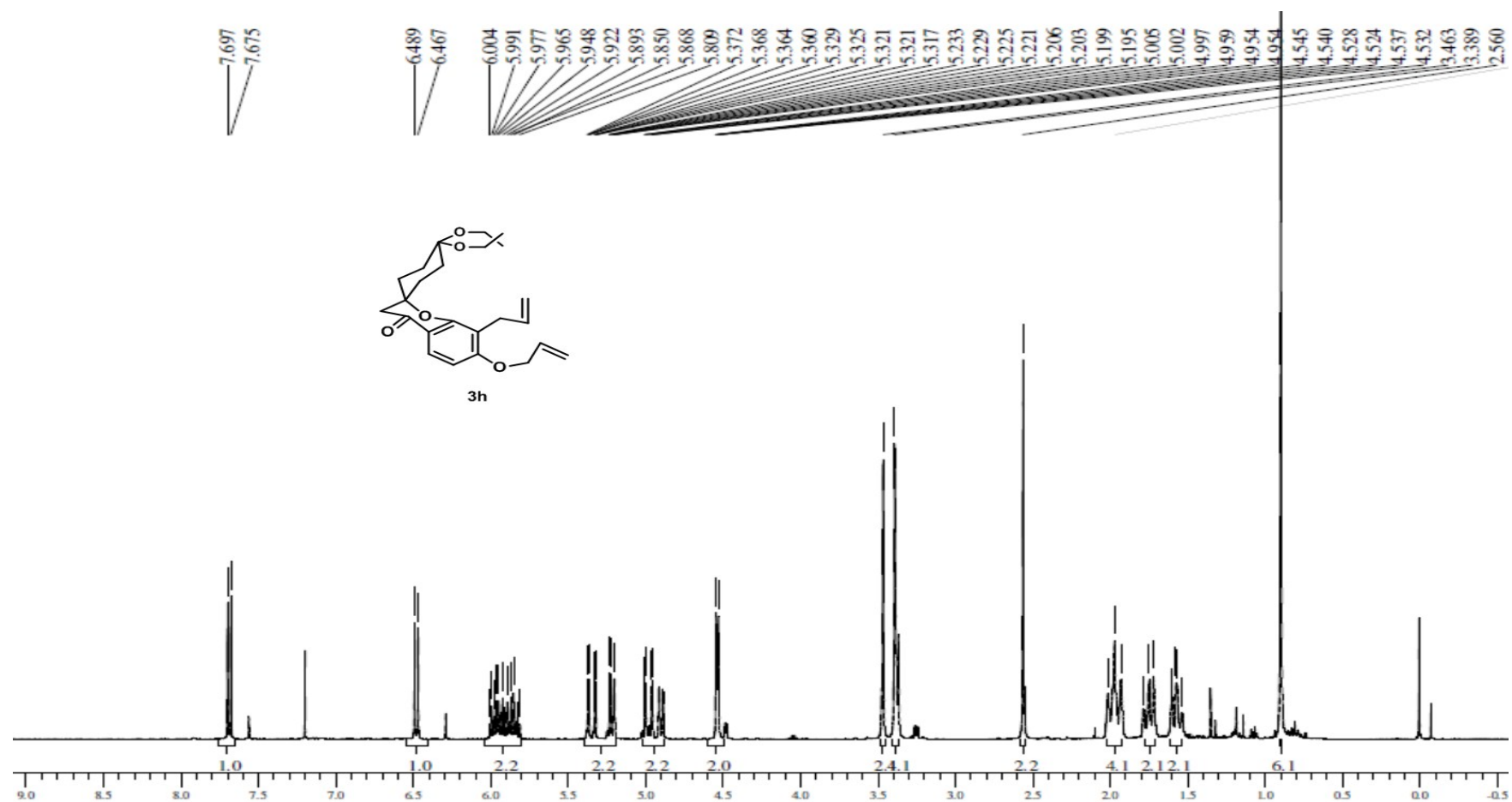
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.73(d,  $^3J = 8.5$  Hz, 1H), 6.68 (d,  $^3J = 8.5$ , 1H), 5.91 (pt,  $^3J = 5.7$  2.0 Hz, 1H), 5.58 (dhpt,  $J = 11.2$ , 1.7 Hz, 1H), 4.64-4.61 (m, 2H), 4.01 - 3.93 (m, 4H), 3.59 – 3.57 (m, 2H), 2.67 (s, 2H), 2.14 – 2.09 (m, 2H), 1.91 (td, 2H), 1.78 – 1.71 (m, 2H), 1.64 (brd, 2H).



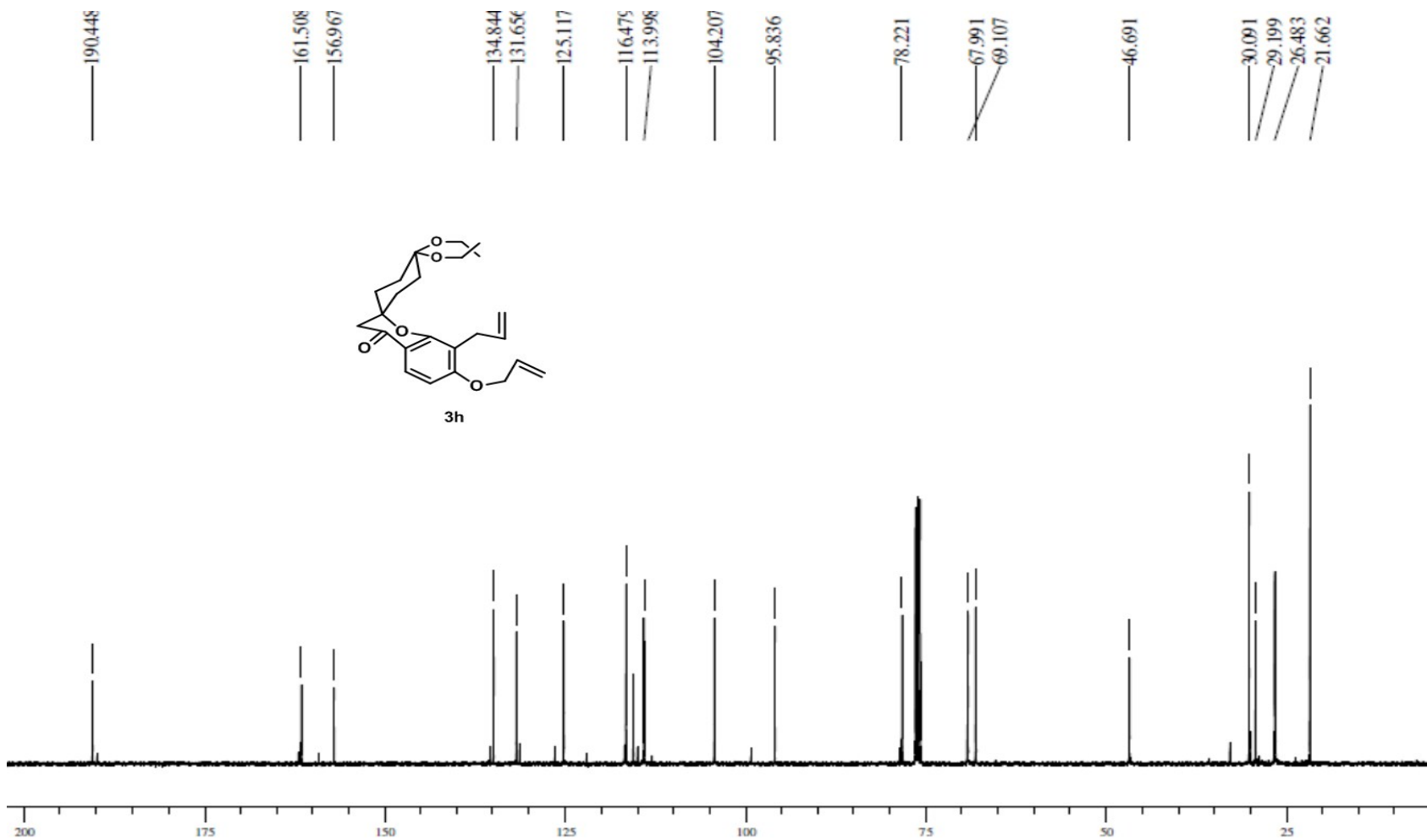
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ) :  $\delta$  191.5, 156.6, 127.4, 126.5, 126.0, 123.8, 117.2, 115.0, 107.9, 79.1, 70.4, 64.4, 64.3, 47.5, 32.2, 30.2, 22.3.

MS (EI) LRMS:  $m/z$  342, 269, 217, 189(100%), 175, 99, 86, 84;

HRMS (EI):  $m/z$  calcd for  $\text{C}_{20}\text{H}_{22}\text{O}_5$  is 342.1467; found: 342.1462.



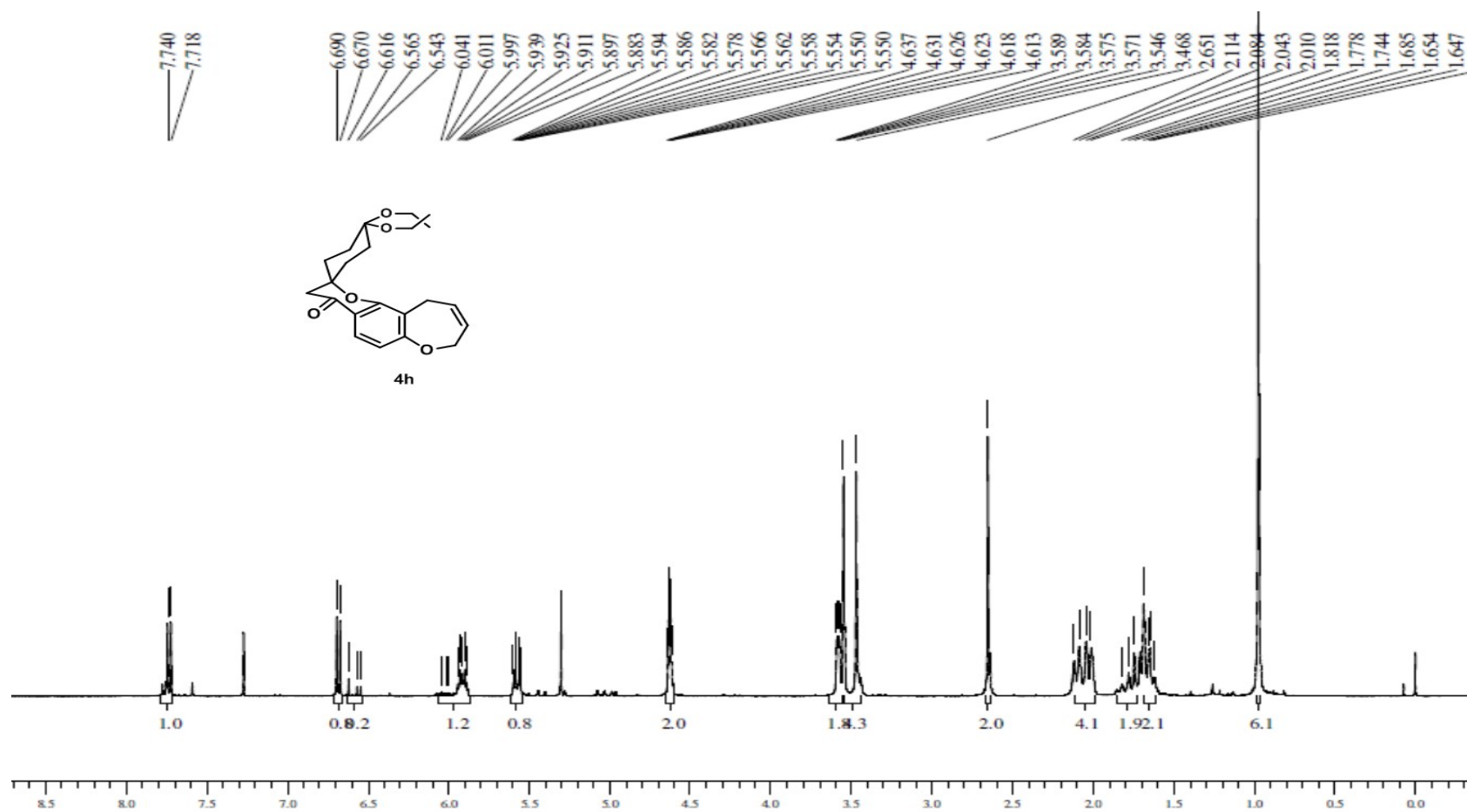
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.68 (d,  $^3J = 8.7$  Hz, 1H), 6.47 (d,  $^3J = 8.7$  Hz, 1H), 5.95 (ddt,  $J = 17.2, 10.3, 4.8$  Hz, 1H), 5.85 (ddt,  $J = 14.2, 12.8, 6.4$  Hz, 1H), 5.34 (dq,  $^3J = 17.2, ^2J = 1.6$  Hz, 1H), 5.21 (dq,  $^3J = 10.3, ^2J = 1.2$  Hz, 1H), 4.97 (dq,  $^3J = 17.0, ^2J = 1.6$  Hz, 1H), 4.90 (dq,  $^3J = 9.9, ^2J = 1.3$  Hz, 1H), 4.53 (dt,  $J = 4.8, 1.6$  Hz, 2H), 3.46 (s, 2H), 3.38 (s, 4H), 2.56 (s, 2H), 1.96 (t, 4H), 1.78-1.71 (m, 2H), 1.56 (td, 2H), 0.89 (s, 6H).



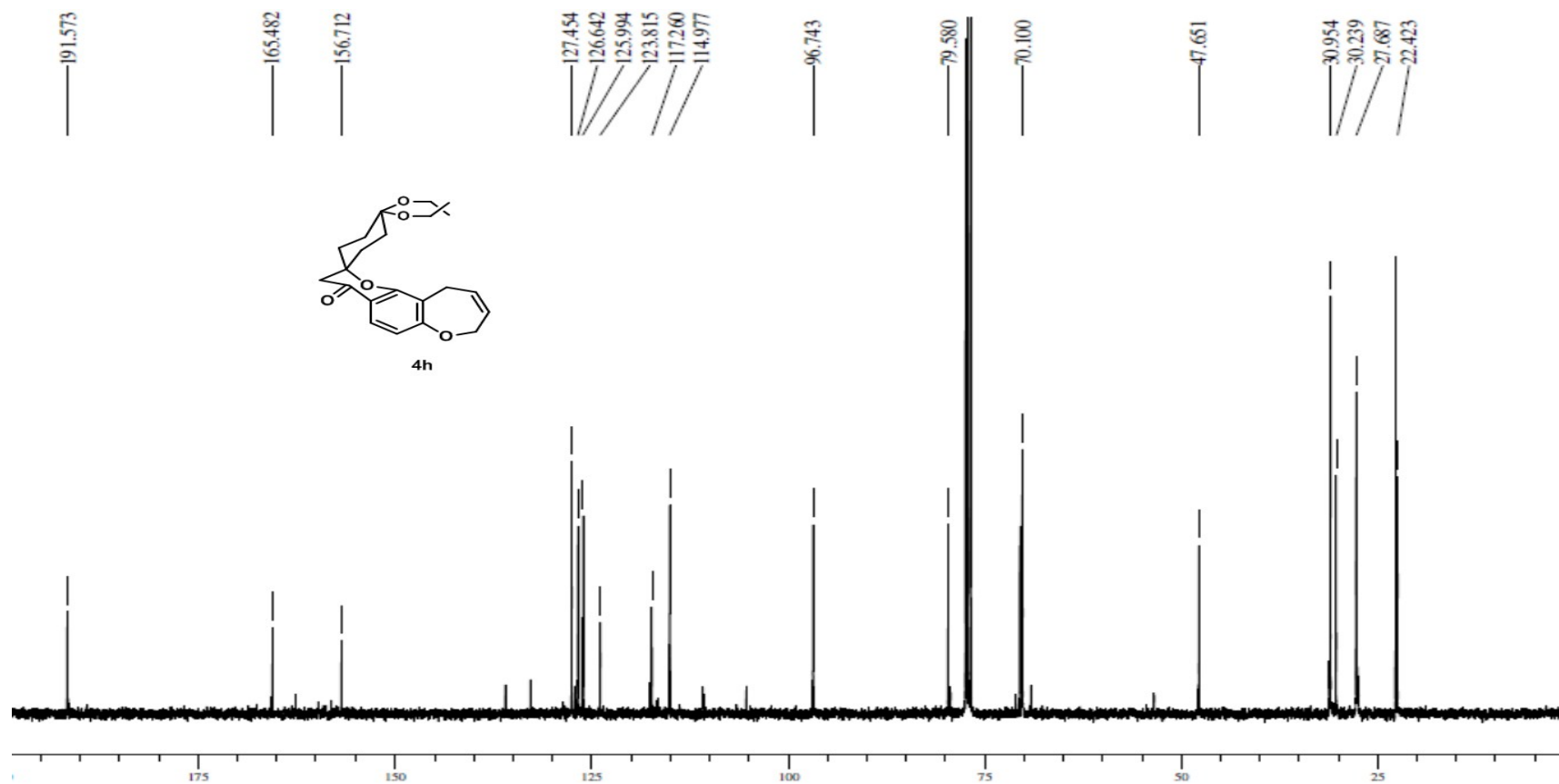
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>): δ 190.4, 161.5, 156.9, 134.8, 131.6, 125.1, 116.4, 115.4, 113.9, 104.2, 95.8, 78.2, 69.1, 69.0, 67.9, 46.6, 30.0, 29.1, 26.4, 21.6.

MS (EI) LRMS: m/z 412, 217, 141(100%), 128, 69.





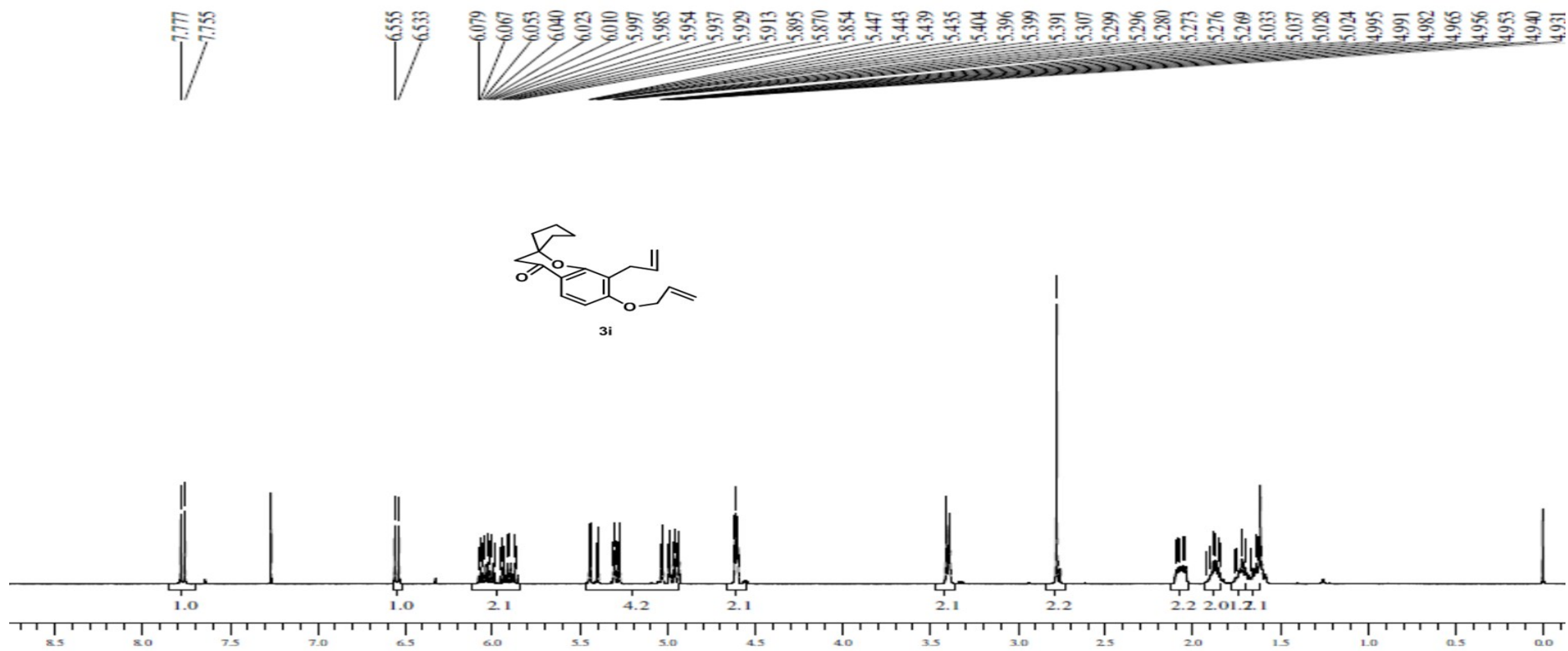
$^1\text{H NMR}$  ( $\text{CDCl}_3$ /400MHz):  $\delta$  7.73 (d,  $^3J = 8.5$  Hz, 1H), 6.68 (d,  $^3J = 8.5$ , 1H), 5.91 (pt,  $^3J = 5.7$  2.0 Hz, 1H), 5.56 (dhpt,  $J = 11.2, 1.7$  Hz, 1H), 4.64-4.61 (m, 2H), 3.58 – 3.57 (m, 2H), 3.54 (s, 2H), 3.46 (s, 2H), 2.65 (s, 2H), 2.11 - 1.99 (m, 4H), 1.77 – 1.70 (m, 2H), 1.66- 1.61 (m, 2H), 0.97 (s, 6H).



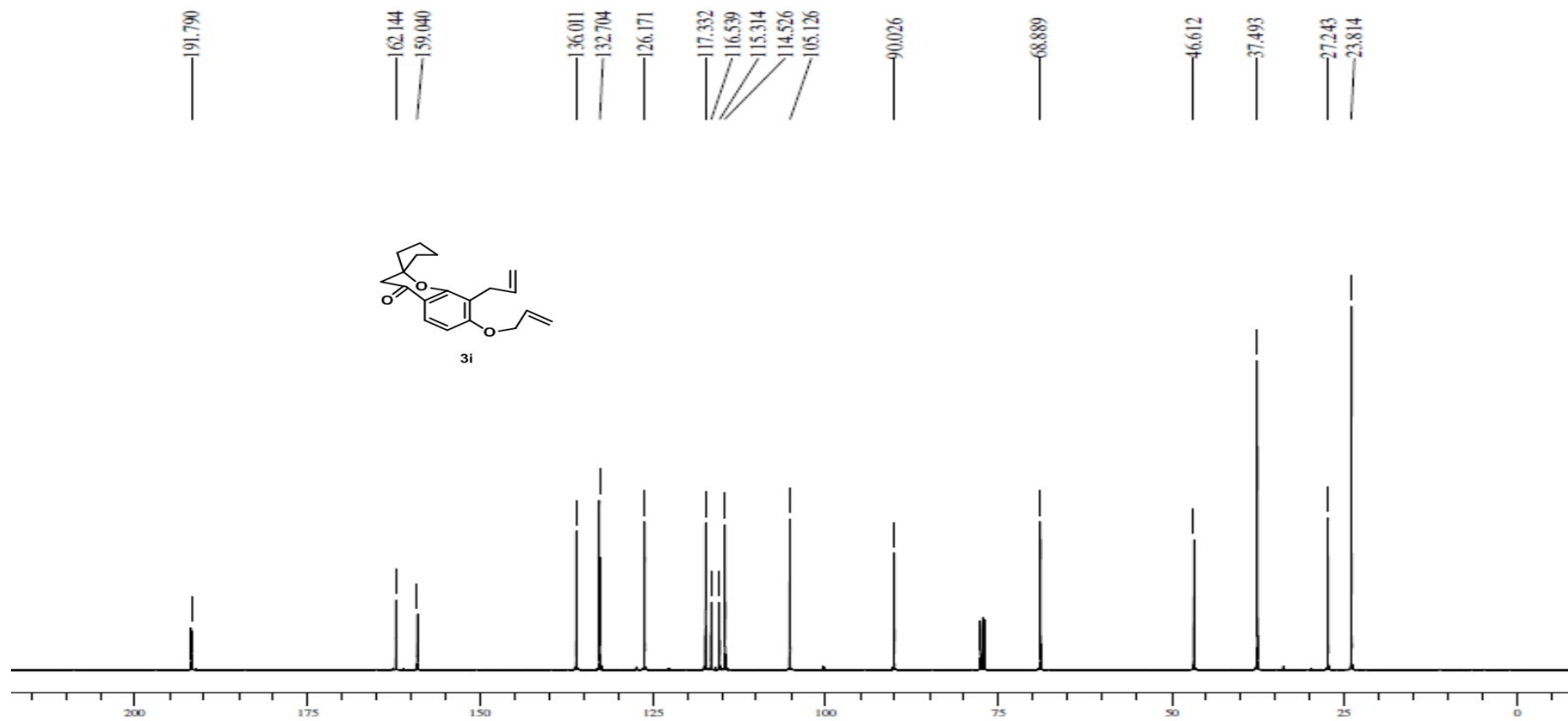
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ):  $\delta$  191.5, 165.4, 156.7, 127.4, 126.6, 125.9, 123.8, 117.2, 114.9, 96.7, 79.5, 70.1, 47.6, 30.9, 30.2, 27.6, 22.4.

MS (EI) LRMS:  $m/z$  384, 298, 189, 141(100%), 128, 84, 69;

HRMS (EI):  $m/z$  calcd for  $\text{C}_{23}\text{H}_{28}\text{O}_5$  is 384.1936; found: 384.1933.

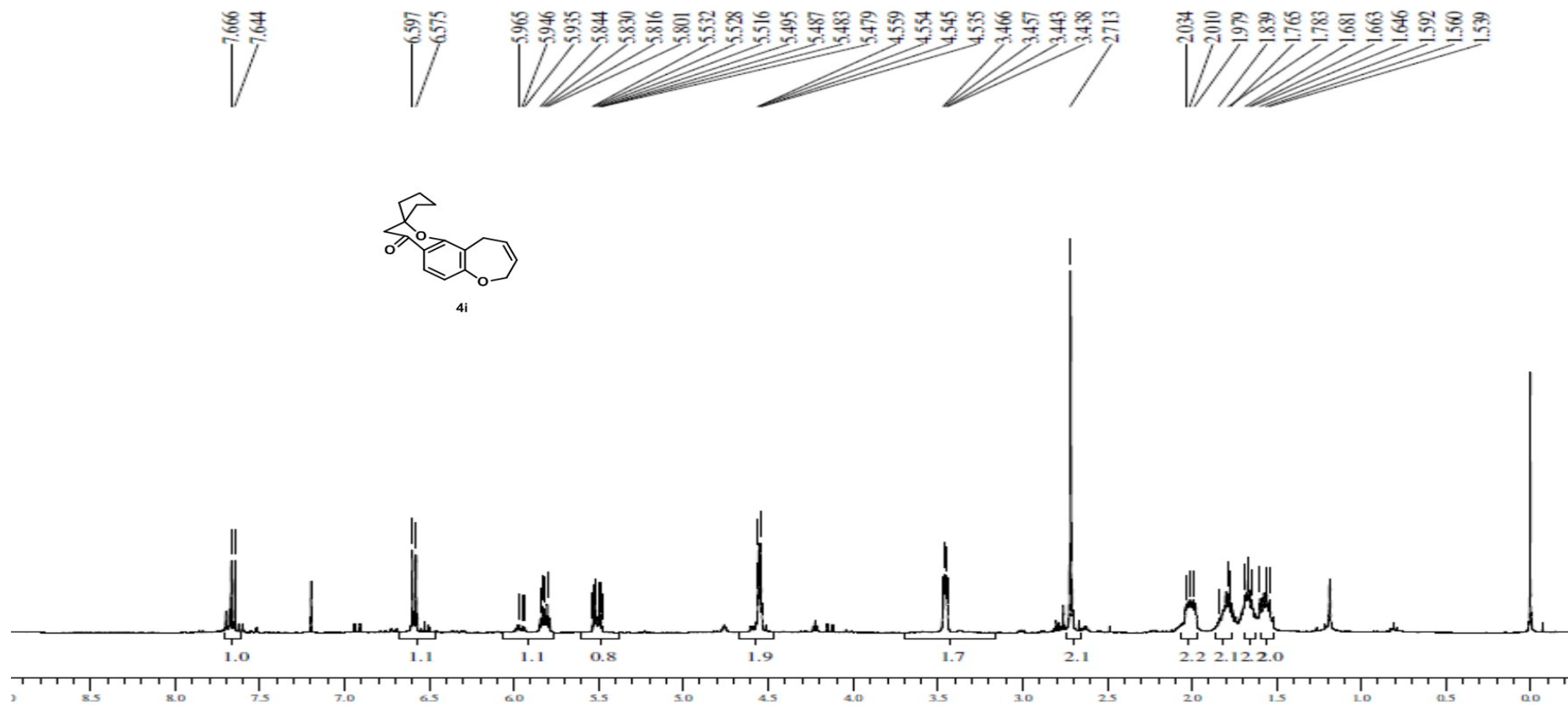


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.76 (d,  $^3J = 8.7$  Hz, 1H), 6.54 (d,  $^3J = 8.7$  Hz, 1H), 6.03 (ddt,  $J = 17.7, 10.3, 4.8$  Hz, 1H), 5.90 (ddt,  $J = 14.2, 12.8, 6.4$  Hz, 1H), 5.42 (dq,  $^3J = 17.2, ^2J = 1.6$  Hz, 1H), 5.29 (dq,  $^3J = 10.6, ^2J = 1.2$  Hz, 1H), 5.01 (dq,  $^3J = 17.0, ^2J = 1.6$  Hz, 1H), 4.94 (dq,  $^3J = 9.9, ^2J = 1.3$  Hz, 1H), 4.60 (dt,  $J = 4.8, 1.6$  Hz, 2H), 3.39 (dt,  $J = 6.4, 1.3$  Hz, 2H), 2.77 (s, 2H), 2.09-2.03 (m, 2H), 1.91-1.83 (m, 2H), 1.76-1.67 (m, 2H), 1.65-1.58 (m, 2H).

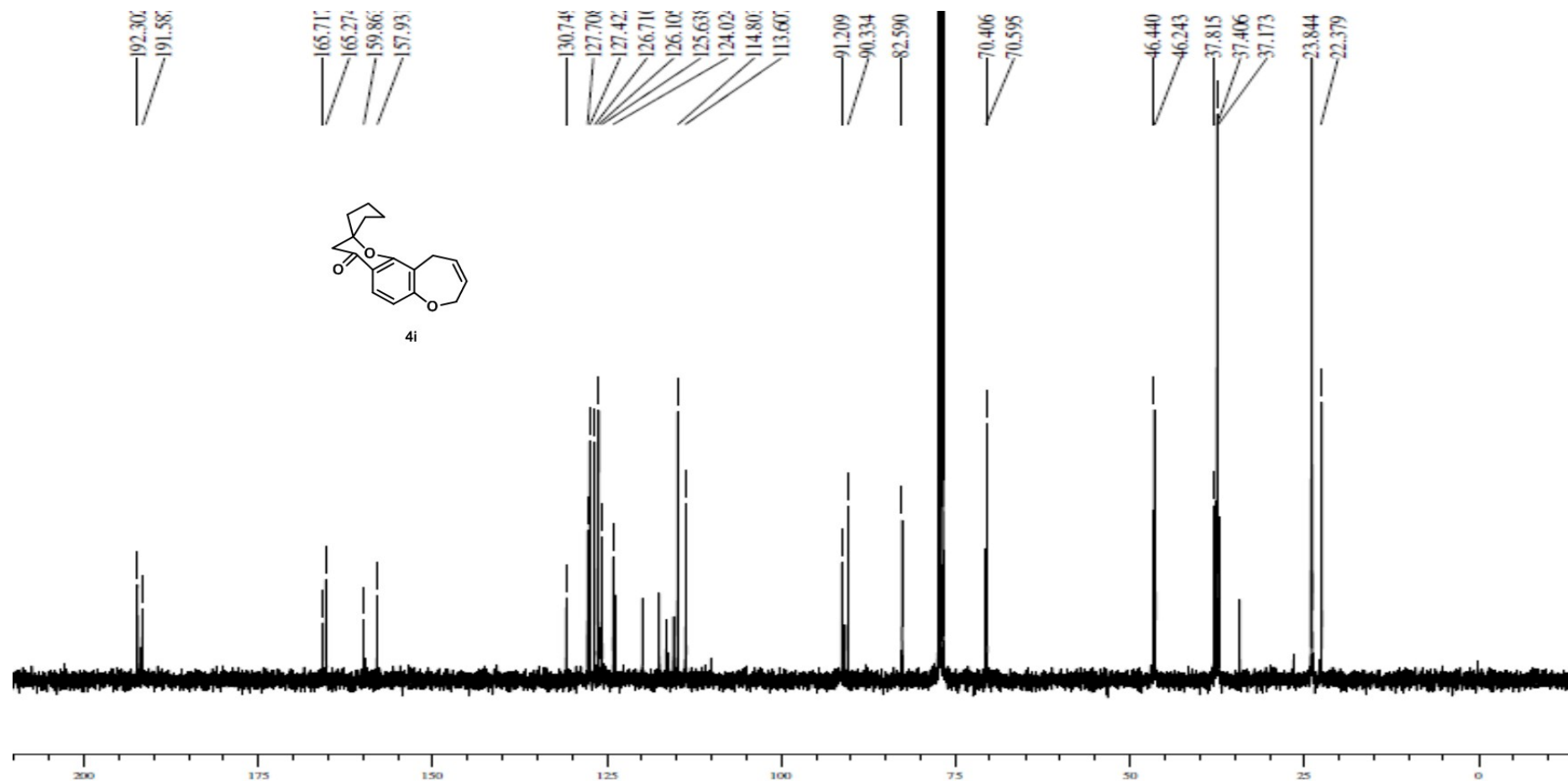


<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>): δ 191.7, 162.1, 159.0, 136.0, 132.7, 126.1, 117.3, 116.5, 115.3, 114.5, 105.1, 90.0, 68.8, 46.6, 37.4, 27.2, 23.8.

MS (EI) LRMS: m/z 298, 269, 217(100%), 175, 149, 91, 69.



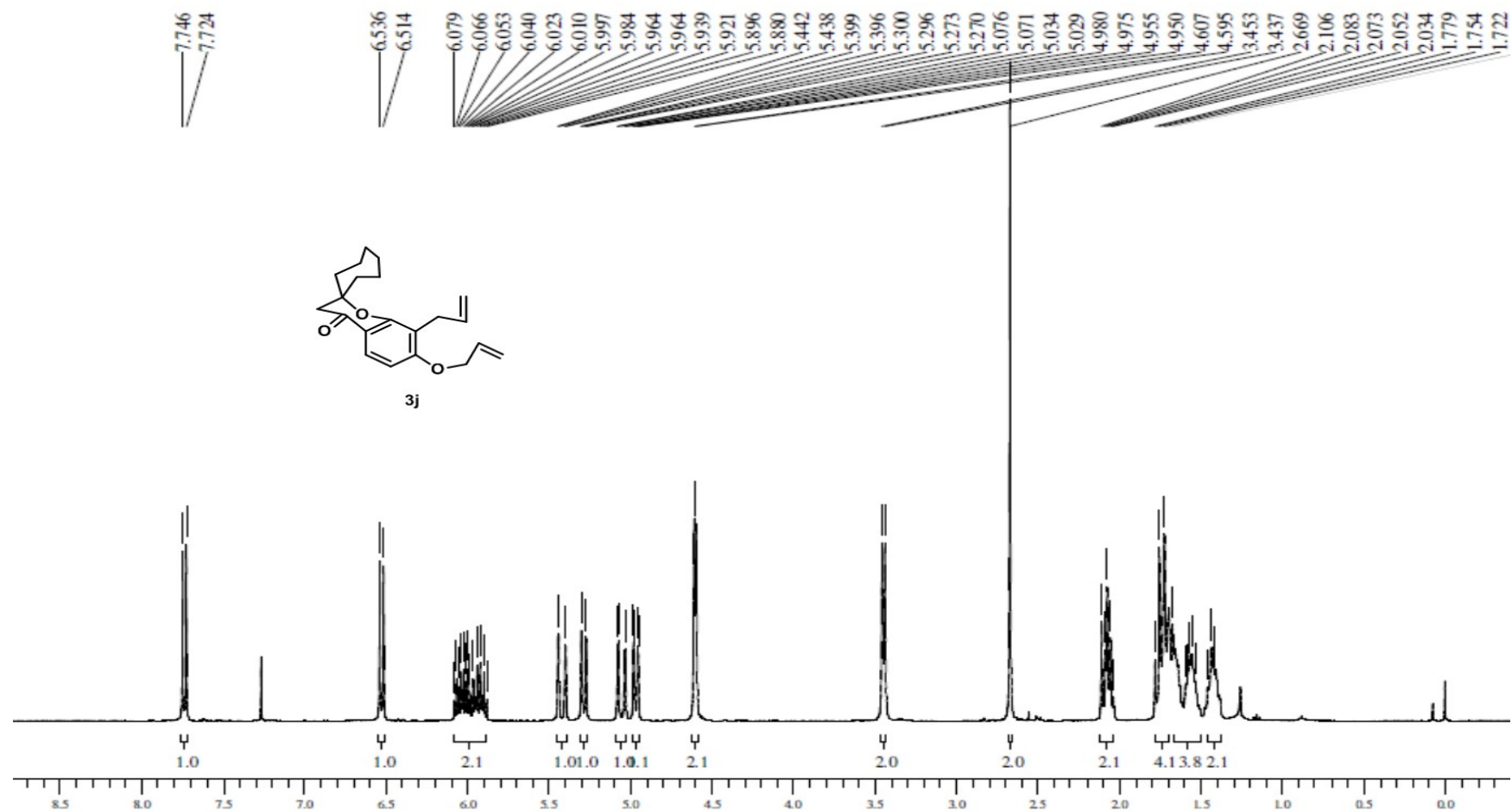
<sup>1</sup>HNMR (CDCl<sub>3</sub>/400MHz): δ 7.65 ( \*7.68, d, <sup>3</sup>J = 8.5 Hz, 1H), 6.58 ( \*d, <sup>3</sup>J = 8.5, 1H), 5.81 { \*5.95 ( dt, J = 12.2, 3.7 Hz ), pt, <sup>3</sup>J = 5.5, 2.0 Hz, 1H}, 5.50 { \*4.77 – 4.74 ( m ), dhpt, J = 11.2, 1.7 Hz, 1H }, 4.56 - 4.52 { \*4.21 ( t, J = 4.7 Hz ), m, 2H }, 3.46 - 3.43 { \*4.12 ( dd, J = 12.5, 1.7 Hz ), m, 2H }, 2.71 ( s, 2H), 2.03-1.97 ( m, 2H ), 1.83-1.73 ( m, 2H), 1.71 - 1.63 ( m, 2H ), 1.60 – 1.51 ( m, 2H ).



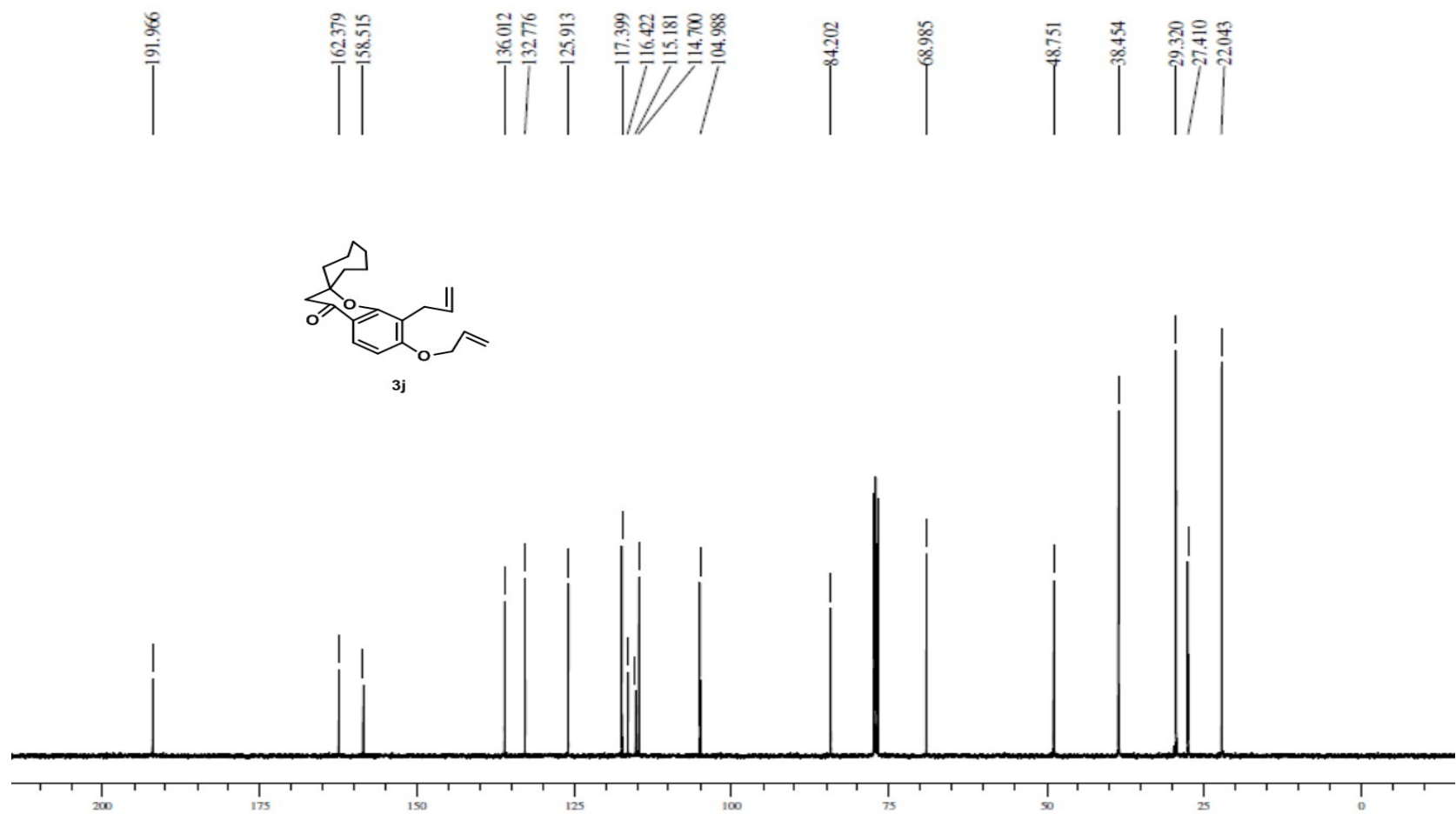
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) δ : 192.3 (\*191.5), 165.7(\* 165.2), 159.8, 157.9, 130.7, 127.7(\* 127.4), 126.7(\* 126.1), 125.6, 124.0, 114.8, 113.6, 91.2 (\* 90.3), 82.5, 70.4 (\*70.5), 46.4 (\* 46.2), 37.8, 37.4, 37.1, 23.8, 22.3.

MS (EI) LRMS: m/z 270, 241, 189(100%);

HRMS (EI): m/z calcd for C<sub>17</sub>H<sub>18</sub>O<sub>3</sub> is 270.1255; found: 270.1250.



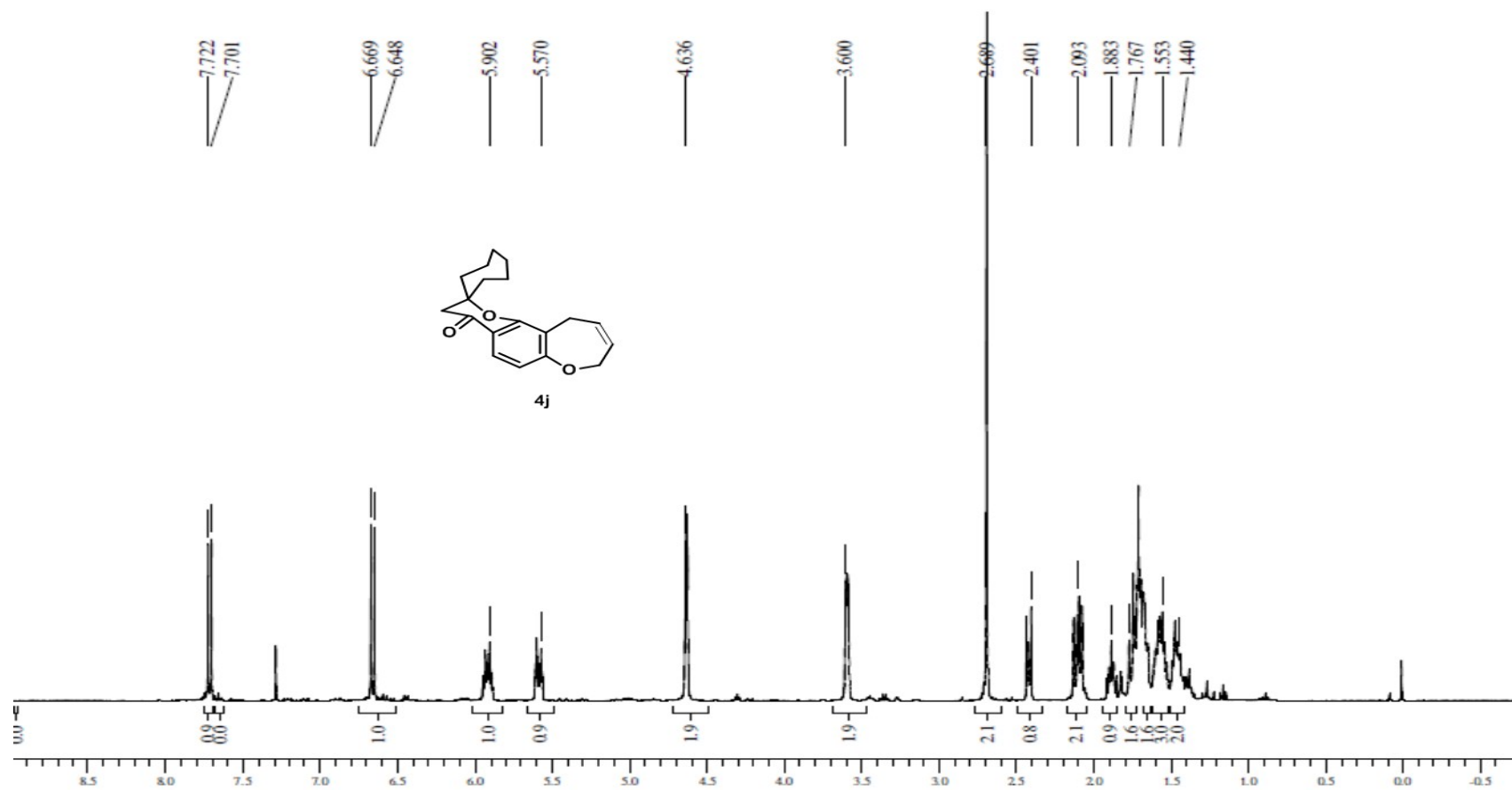
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.73 (d,  $^3J = 8.7$  Hz, 1H), 6.52 (d,  $^3J = 8.7$  Hz, 1H), 6.03 (ddt,  $J = 17.7, 10.3, 4.8$  Hz, 1H), 5.93 (ddt,  $J = 14.2, 12.8, 6.4$  Hz, 1H), 5.41 (dq,  $^3J = 17.2, ^2J = 1.6$  Hz, 1H), 5.28 (dq,  $^3J = 10.6, ^2J = 1.2$  Hz, 1H), 5.05 (dq,  $^3J = 17.0, ^2J = 1.6$  Hz, 1H), 4.96 (dq,  $^3J = 9.9, ^2J = 1.3$  Hz, 1H), 4.59 (dt,  $J = 4.8, 1.6$  Hz, 2H), 3.44 (dt,  $J = 6.4, 1.3$  Hz, 2H), 2.66 (s, 2H), 2.13-2.03 (m, 2H), 1.77-1.63 (m, 4H), 1.59-1.51 (m, 4H), 1.47-1.38 (m, 2H).



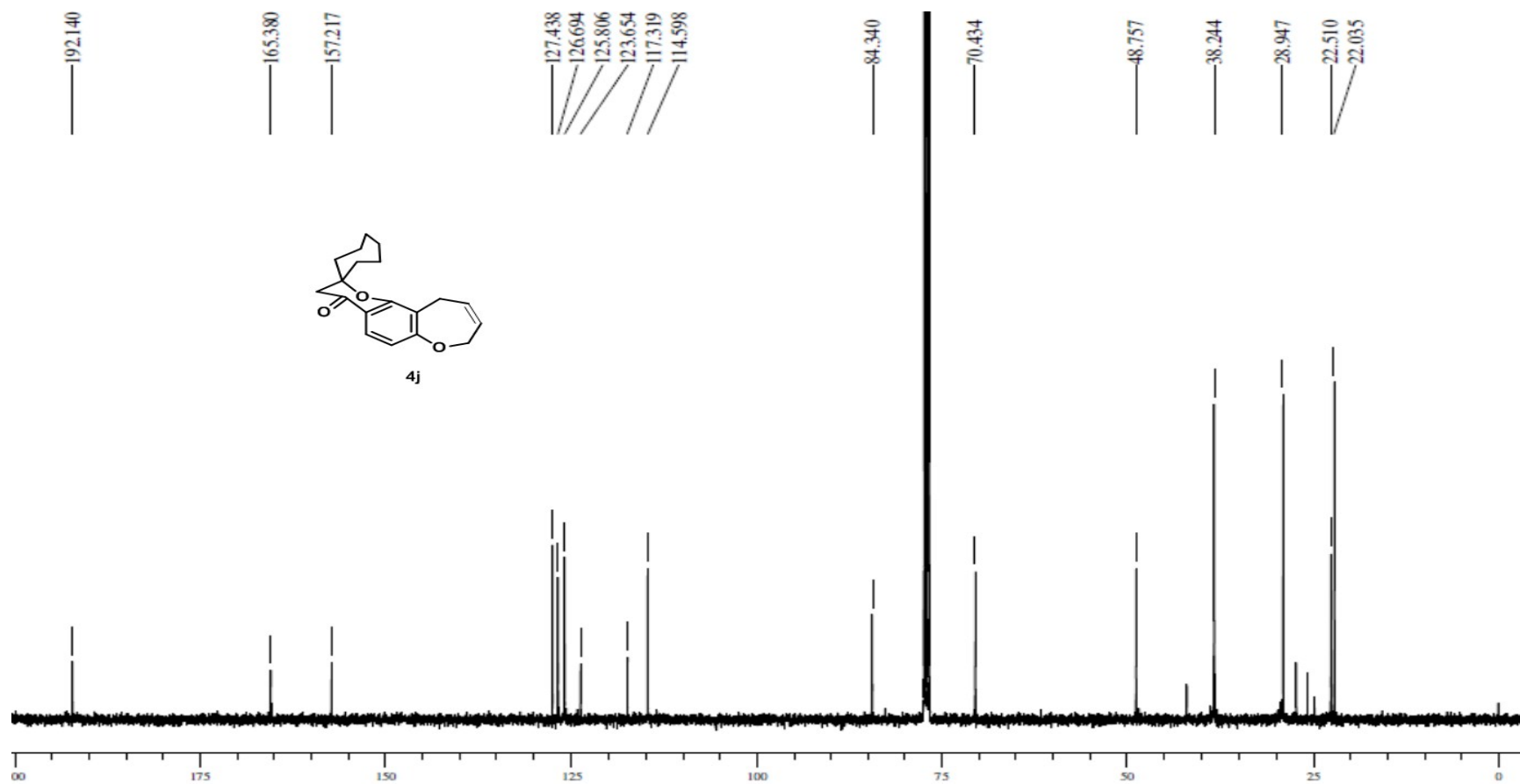
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) : $\delta$  191.9, 162.3, 158.5, 136.0, 132.7, 125.9, 117.3, 116.4, 115.1, 114.7, 104.9, 84.2, 68.9, 48.7, 38.4, 29.3, 27.4, 22.0.

MS (EI) LRMS: m/z 326, 269, 217(100%), 175, 149, 91, 55.





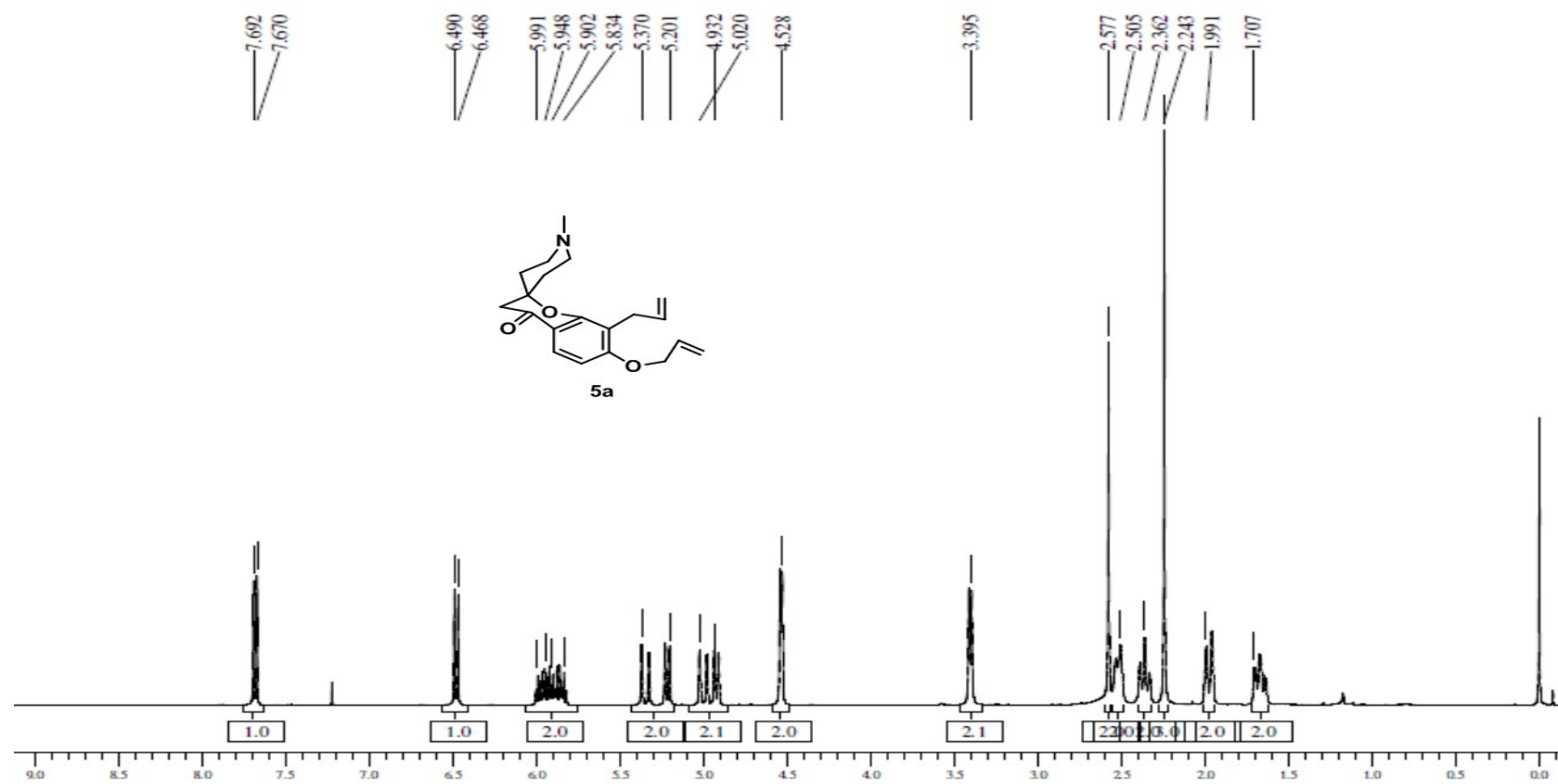
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  7.71 (d,  $^3J = 8.5$  Hz, 1H), 6.65 (d,  $^3J = 8.5$  Hz, 1H), 5.91 (pt,  $^3J = 5.5, 2.0$  Hz, 1H), 5.58 (dhpt,  $J = 11.2, 1.7$  Hz, 1H), 4.64-4.61 (m, 2H), 3.60-3.58 (m, 2H), 2.68 (s, 2H), 2.43 - 2.40 (m, 1H), 2.12 - 2.07 (m, 2H), 1.91 - 1.85 (m, 1H), 1.76 - 1.63 (m, 3H), 1.61 - 1.52 (m, 3H), 1.49- 1.40 (m, 2H).



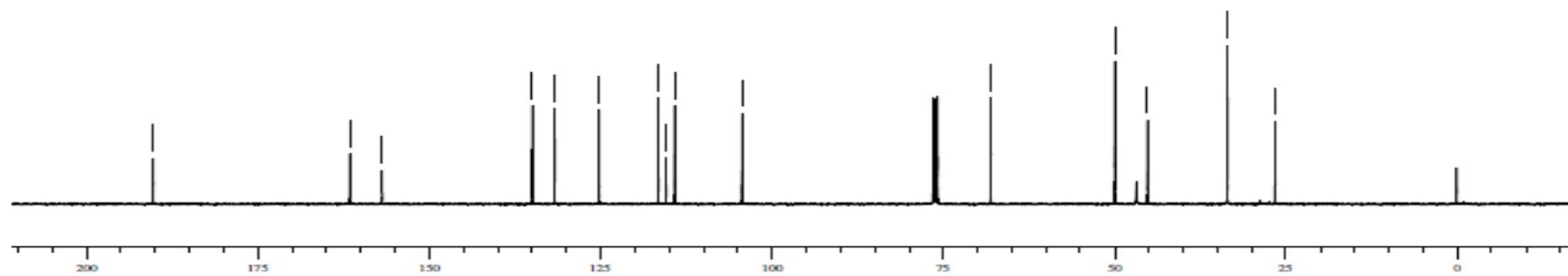
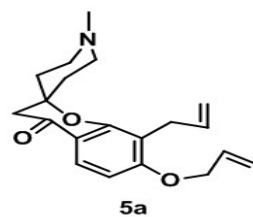
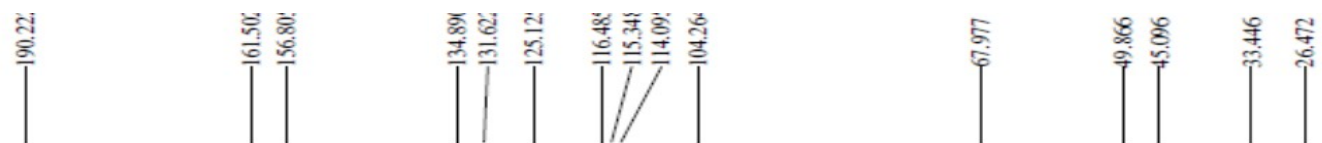
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ) : $\delta$  192.1, 165.3, 157.2, 127.4, 126.6, 125.8, 123.6, 117.3, 114.5, 84.3, 70.4, 48.7, 38.2, 28.9, 22.5, 22.0.

MS (EI) LRMS:  $m/z$  298, 255, 241, 189(100%), 134, 98, 84, 55.

HRMS (EI):  $m/z$  calcd for  $\text{C}_{19}\text{H}_{22}\text{O}_3$  is 298.1568; found: 298.1558.

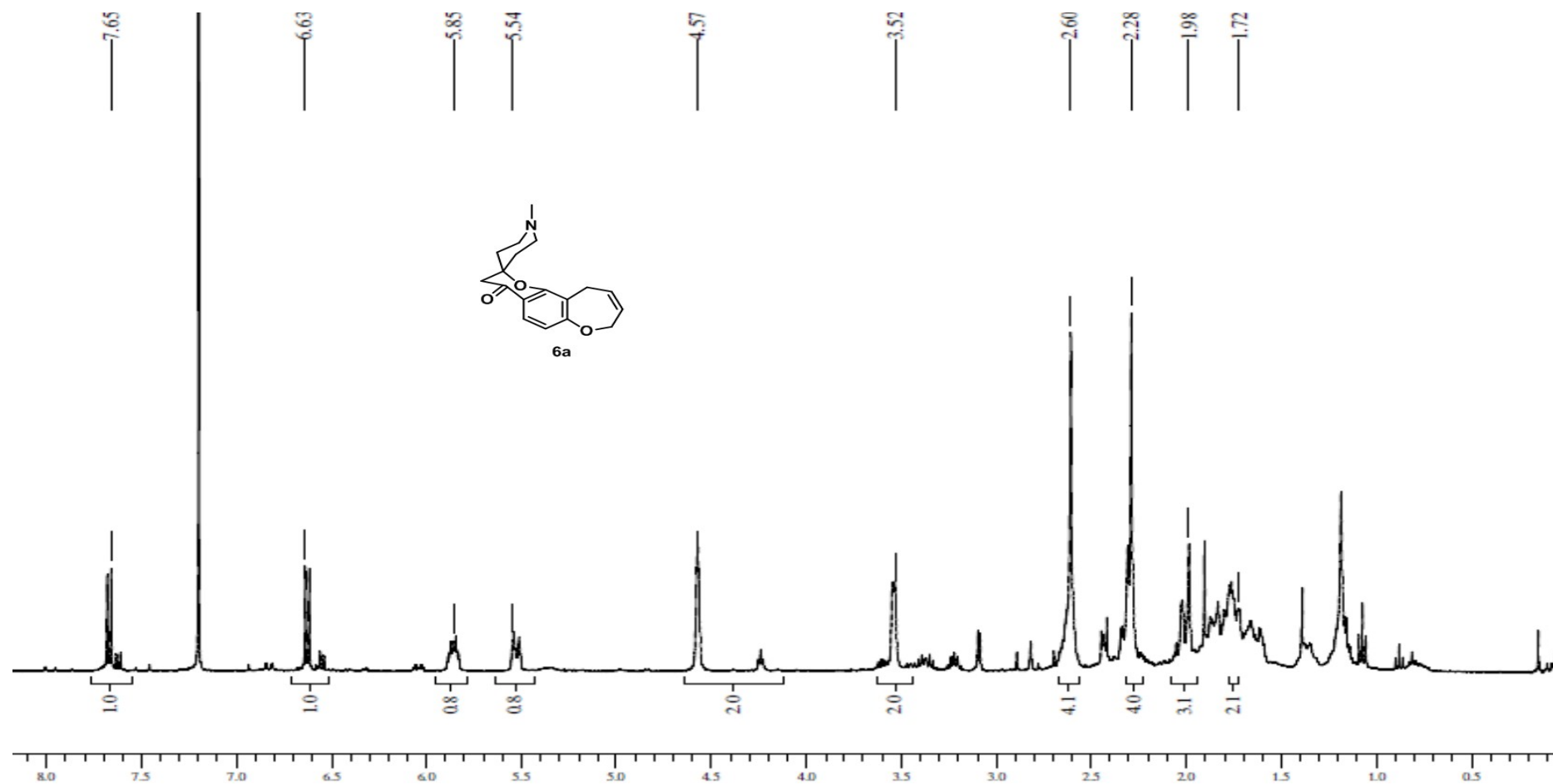


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.69$  (d,  $^3J = 8.7$  Hz, 1H),  $6.48$  (d,  $^3J = 8.7$  Hz, 1H),  $5.99$  (ddt,  $J = 14.3, 10.3, 5.0$  Hz, 1H),  $5.90$  (ddt,  $J = 21.0, 9.3, 3.0$  Hz, 1H),  $5.37$  (dq,  $^3J = 17.0, ^2J = 1.7$  Hz, 1H),  $5.20$  (dq,  $^3J = 10.7, ^2J = 1.2$  Hz, 1H),  $5.02$  (dq,  $^3J = 17.0, ^2J = 1.5$  Hz, 1H),  $4.93$  (dq,  $^3J = 10.0, ^2J = 1.2$  Hz, 1H),  $4.52$  (dt,  $J = 5.0, 1.5$  Hz, 2H),  $3.39$  (dt,  $J = 6.2, 1.5$  Hz, 2H),  $2.57$  (s, 2H),  $2.50$  (td, 2H),  $2.36$  (td, 2H),  $2.24$  (s, 3H),  $1.99$  (brd, 2H),  $1.78$ - $1.71$  (m, 2H).

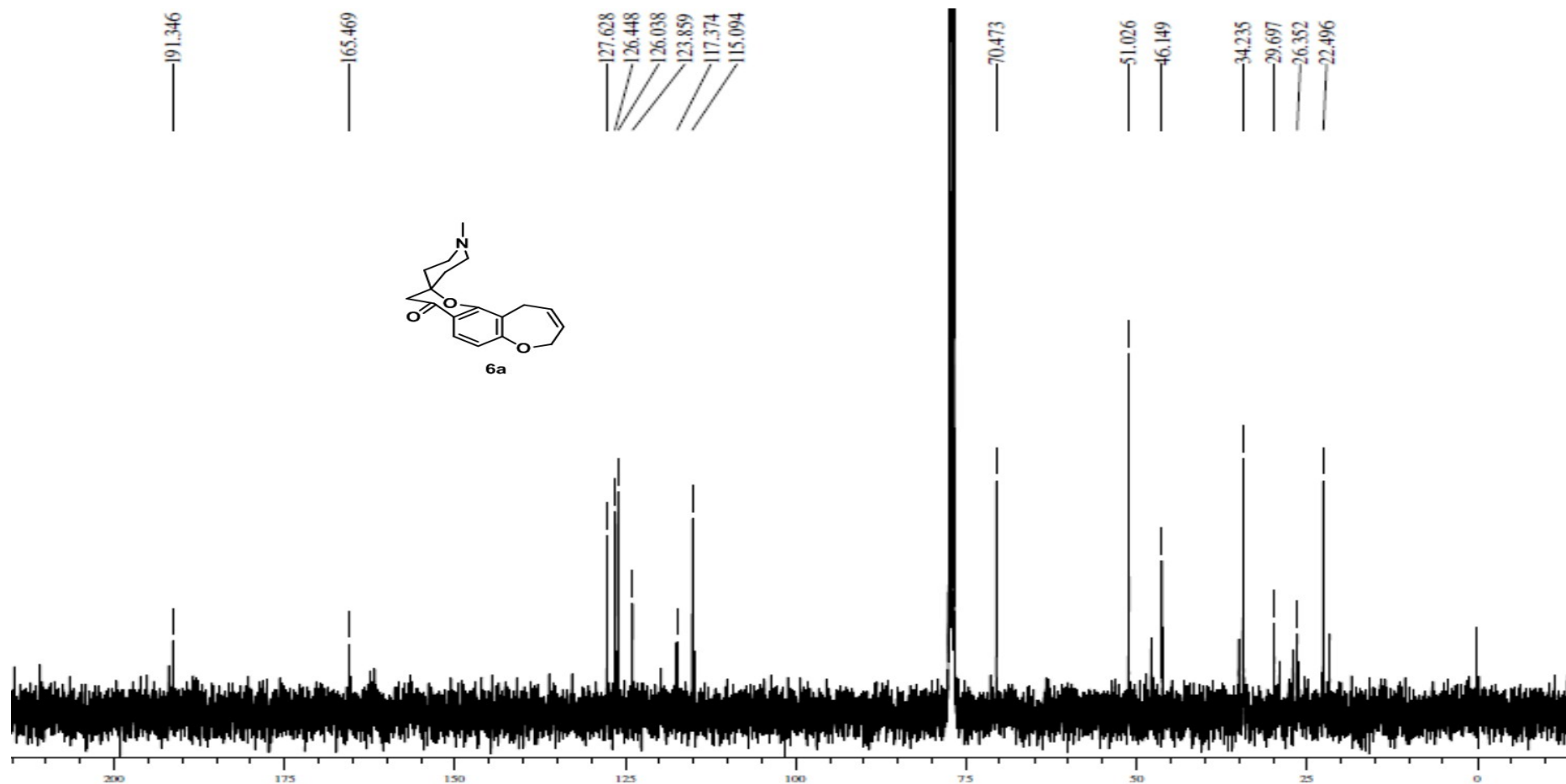


$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ) 190.2, 161.5, 156.8, 134.8, 131.6, 125.1, 116.4, 115.3, 114.0, 104.2, 67.9, 49.8, 45.0, 33.4, 26.4.

MS (EI) LRMS:  $m/z$  327, 326, 175, 110, 109, 96, 70(100%).



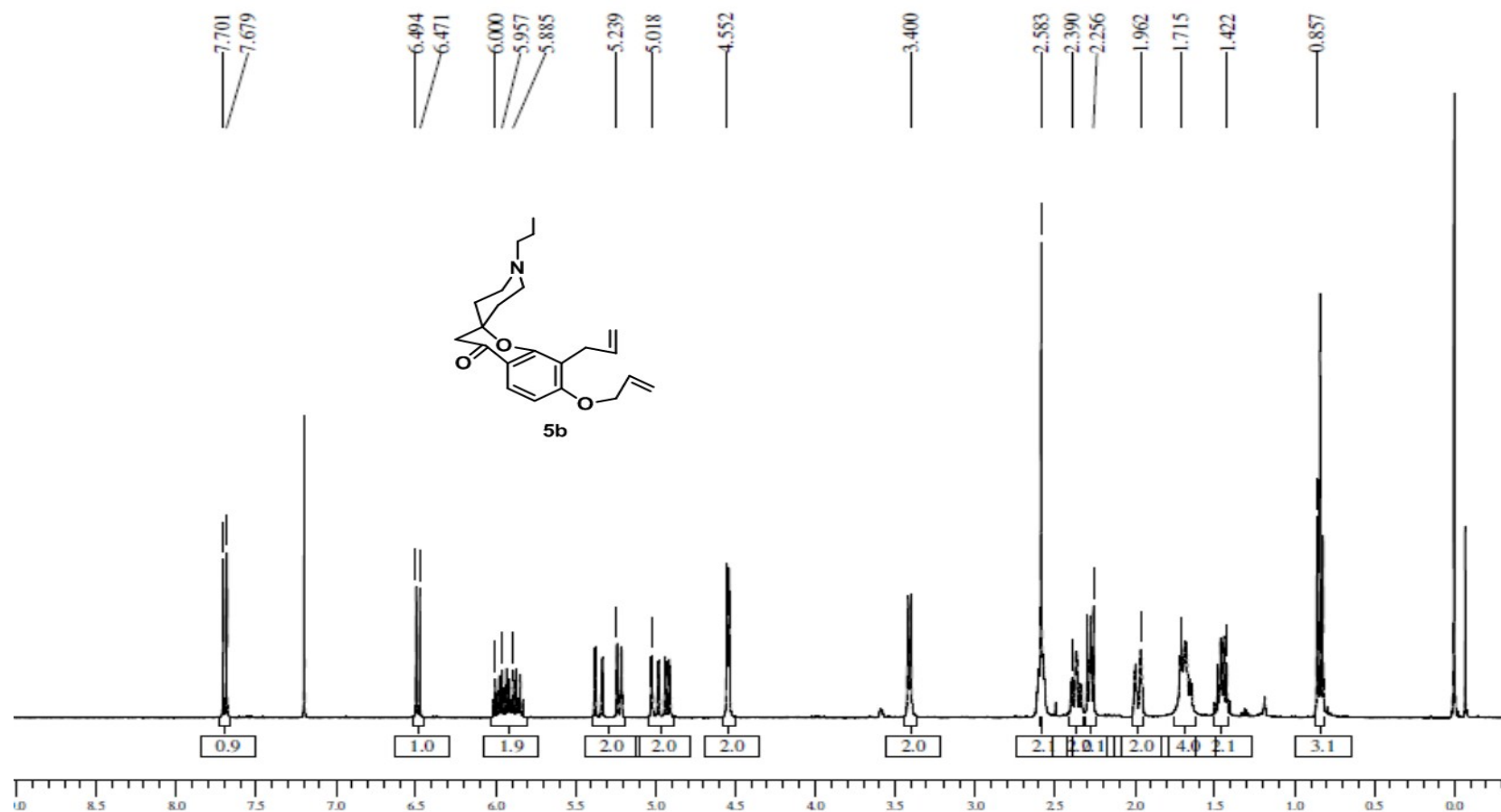
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.73$  (\*7.69, d,  $^3J=8.5$  Hz, 1H), 6.70 (\*6.62, d,  $^3J=8.5$  Hz, 1H), 5.92{ pt,  $^3J=5.5$ , 2.2 Hz, \*6.10 ( dt,  $^3J=12.0$ , 4.5 Hz ), \*6.39 ( dt,  $J=7.2$ , 1.7 Hz, 1H } , 5.59 { dhpt,  $^3J=11.2$ , 1.7 Hz, \*4.90 ( dt,  $J=7.5$ , 4.5 Hz ), \*5.05 - 5.02 ( m ), 1H }, 4.65 - 4.62 { m, \*4.30, ( t,  $^3J=4.7$  Hz ), 2H }, 3.61-3.59 ( m, \*3.29- 3.27 ( m ), \*3.17-3.14 ( m ), 2H }, 2.68 ( s, 4H ), 2.38 ( s, 4H ), 2.10 - 1.98 ( m, 3H ), 1.75 - 1.79 ( m, 2H ).



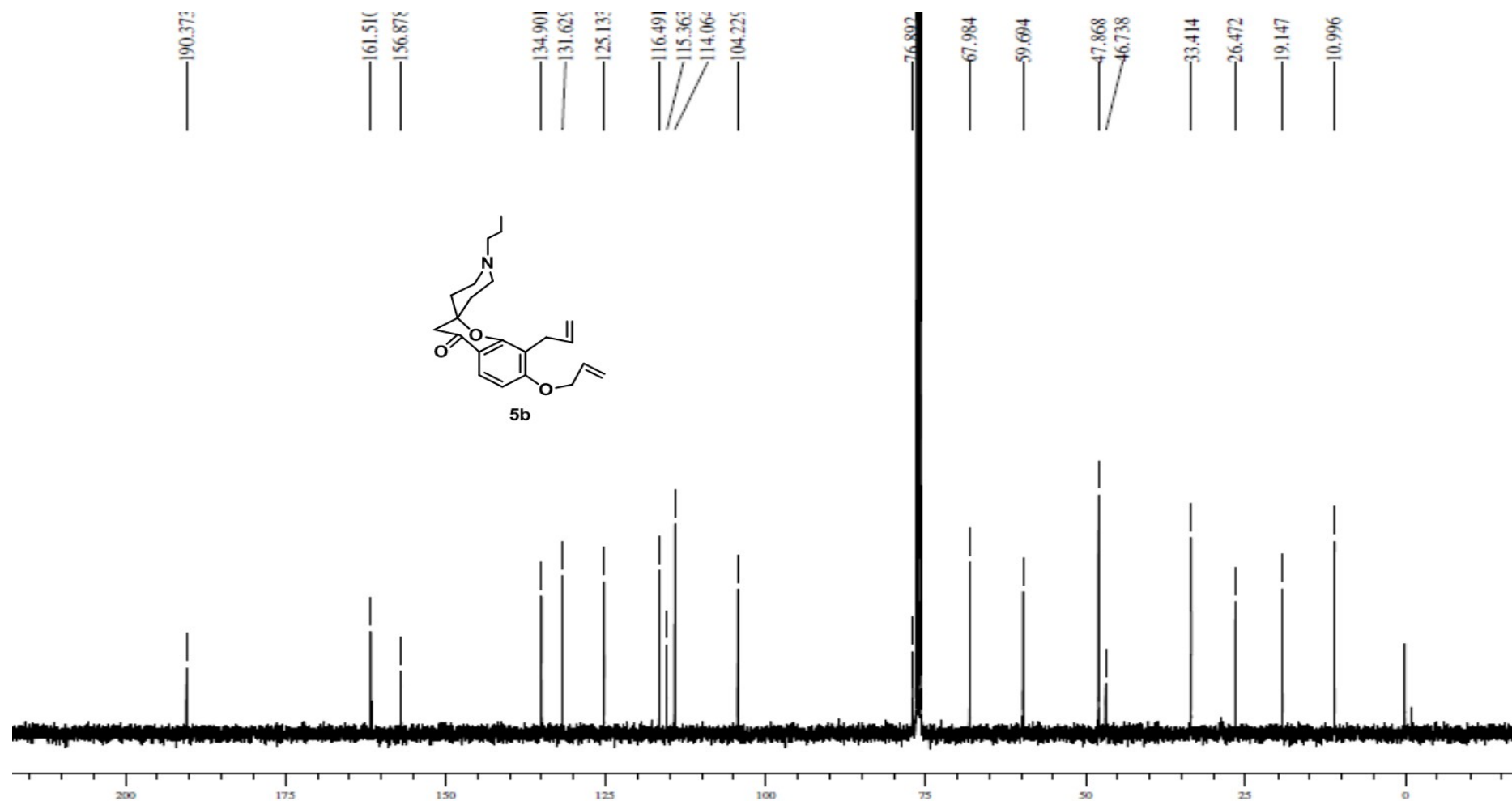
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ): 191.3, 165.4, 127.6, 126.4, 126.0, 123.8, 117.37, 115.0, 70.4, 51.0, 46.1, 34.2, 29.6, 26.3, 22.4.

MS (EI) LRMS:  $m/z$  299, 110, 96, 81, 70, 69(100%), 57, 55.

HRMS (EI):  $m/z$  calcd for  $\text{C}_{18}\text{H}_{21}\text{NO}_3$  is 299.1521; found: 299.1519.



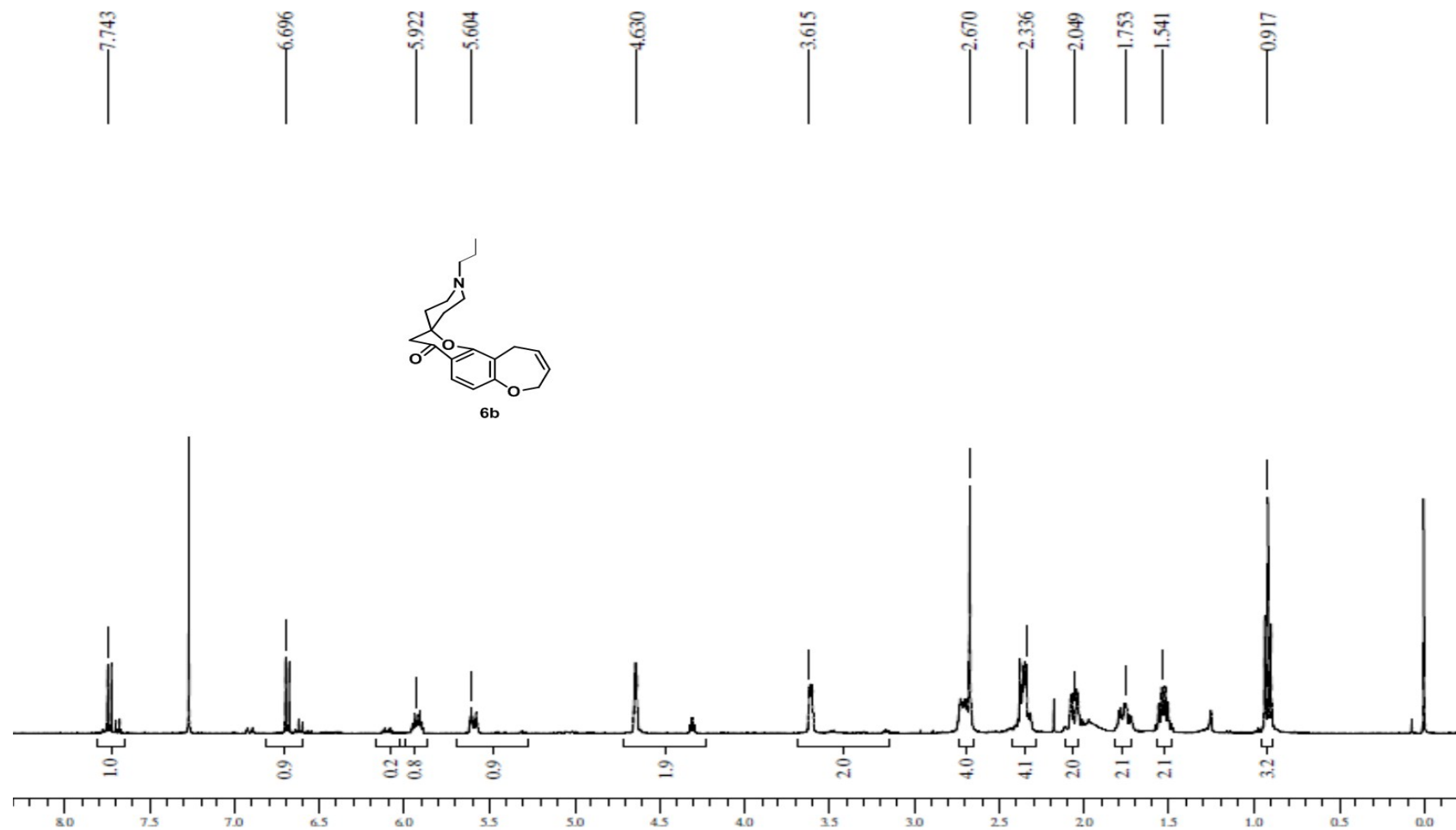
<sup>1</sup>H NMR (CDCl<sub>3</sub>/400MHz):  $\delta$  = 7.69 (d, <sup>3</sup>J = 8.7 Hz, 1H), 6.48 (d, <sup>3</sup>J = 8.7 Hz, 1H), 6.03 (ddt, J = 14.3, 10.3, 5.0 Hz, 1H), 5.94 (ddt, J = 21.0, 9.3, 3.0 Hz, 1H), 5.42 (dq, <sup>3</sup>J = 17.0, <sup>2,4</sup>J = 1.7 Hz, 1H), 5.29 (dq, <sup>3</sup>J = 10.7, <sup>2,4</sup>J = 1.2 Hz, 1H), 5.06 (dq, <sup>3</sup>J = 17.0, <sup>2,4</sup>J = 1.5 Hz, 1H), 4.99 (dq, <sup>3</sup>J = 10.0, <sup>2,4</sup>J = 1.2 Hz, 1H), 4.60 (dt, J = 5.0, 1.5 Hz, 2H), 3.47 (dt, J = 6.2, 1.5 Hz, 2H), 2.58 (s, 2H), 2.39 (td, J = 6.2, 1.5 Hz, 2H), 2.25 (\*t, d, 2H), 1.96 (brd, 2H), 1.78-1.71 (m, 4H), 1.42 (sxt, 2H), 0.85 (t, 3H).



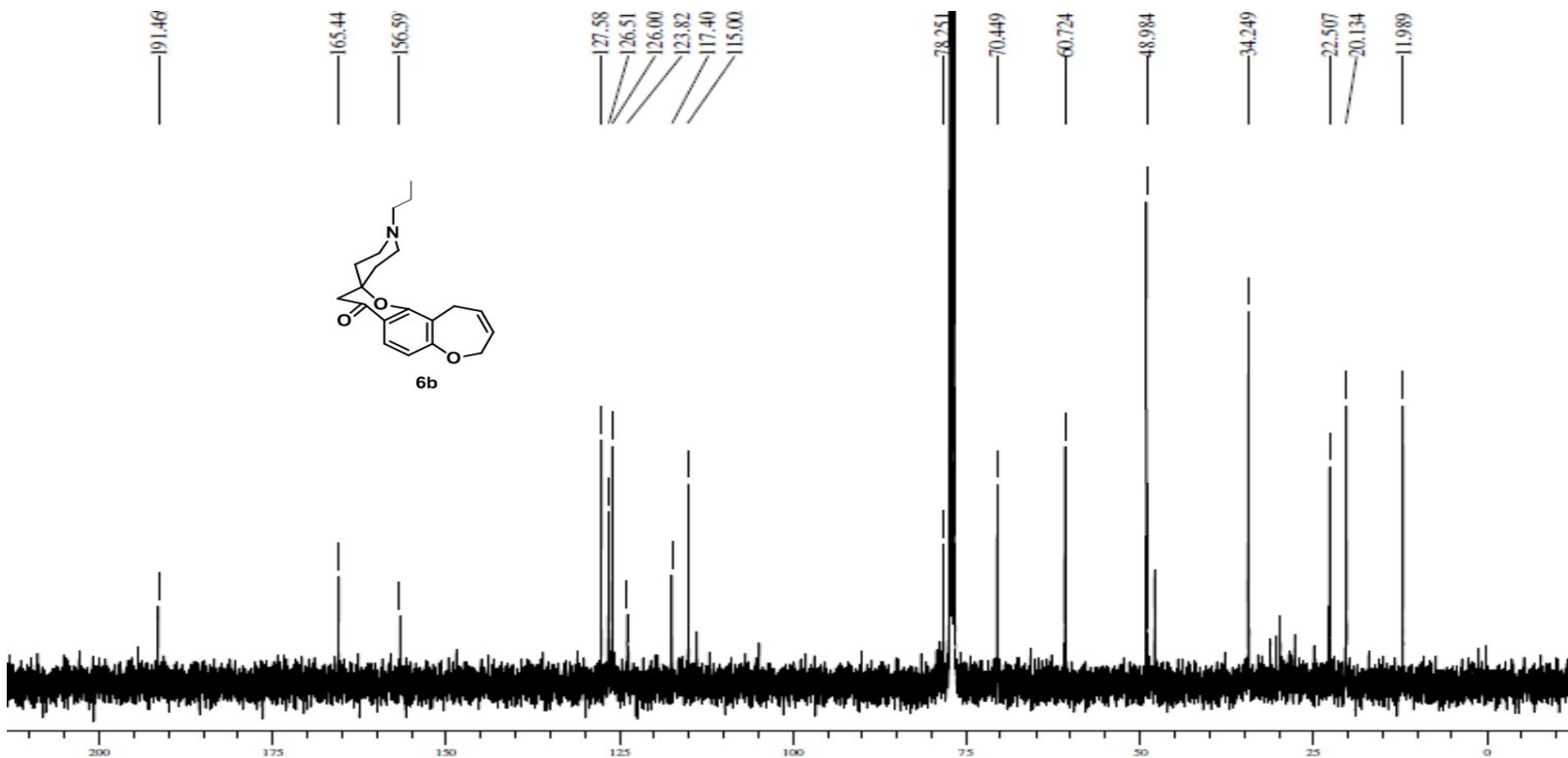
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ )  $\delta$  190.3, 161.5, 156.8, 134.9, 131.6, 125.1, 116.4, 114.0, 104.2, 76.8, 67.9, 59.6, 47.8, 33.4, 26.4, 19.1, 10.9.

MS (EI) LRMS:  $m/z$  355, 326(100%), 110, 98, 70.





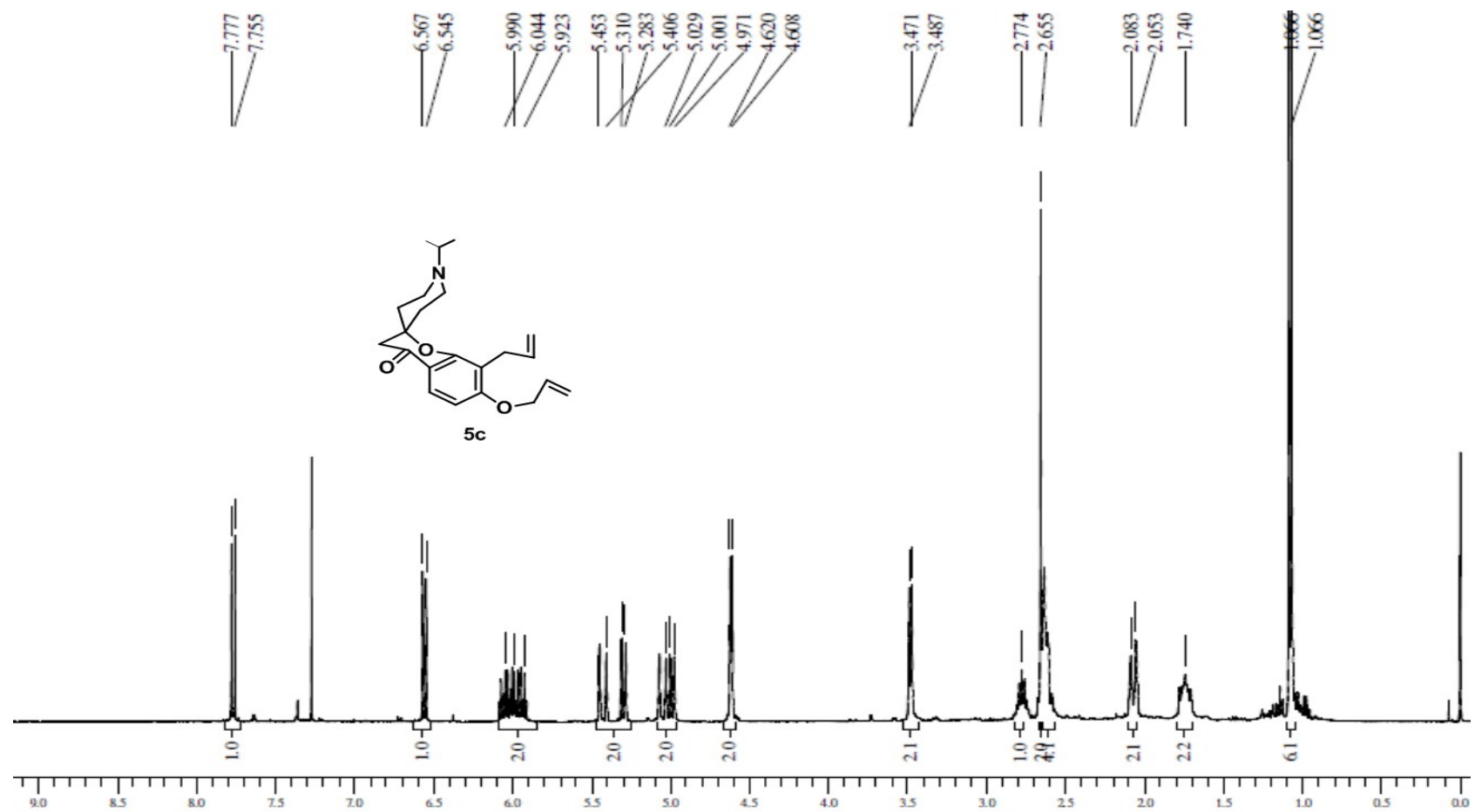
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.73$  (\*7.68, d,  $^3J = 8.5$  Hz, 1H), 6.68 (\*6.60, d,  $^3J = 8.5$  Hz, 1H), 5.92 { pt,  $^3J = 5.5, 2.0$  Hz, \*6.09 (dt,  $^3J = 12.0, 4.5$  Hz), 1H }, 5.58 { dhpt,  $^3J = 11.2, 1.7$  Hz, \*5.45 - 5.39 (m), 1H }, 4.66 - 4.61 { m, \*4.30 (t,  $^3J = 4.7$  Hz), 2H }, 3.61-3.59 (m, 2H), 2.72 - 2.69 (m, 2H), 2.67 (s, 2H), 2.39 - 2.28 (m, 4H), 2.04 (d, 2H), 1.79 - 1.71 (m, 2H), 1.54 (sxt,  $J = 7.5$ , 2H), 0.91 (t, 3H).



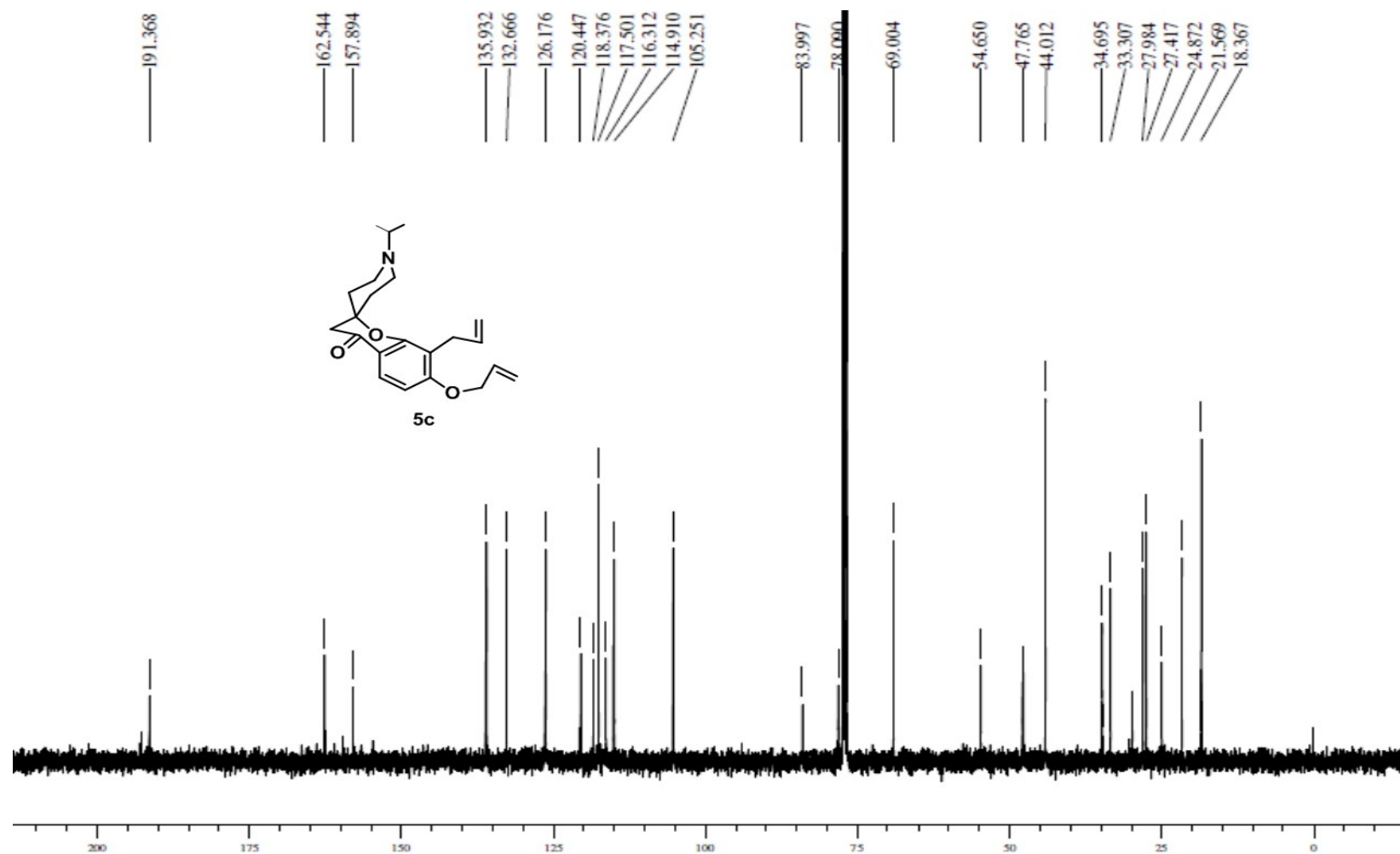
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ): 191.4, 165.4, 156.5, 127.5, 126.5, 126.0, 123.8, 117.4, 115.0, 78.2, 70.4, 60.7, 48.9, 34.2, 22.5, 20.1, 11.9.

MS (EI) LRMS:  $m/z$  327, 299, 198(100%), 187, 110, 70.

HRMS (EI):  $m/z$  calcd for  $\text{C}_{20}\text{H}_{25}\text{NO}_3$  is 327.1834; found: 327.1814.

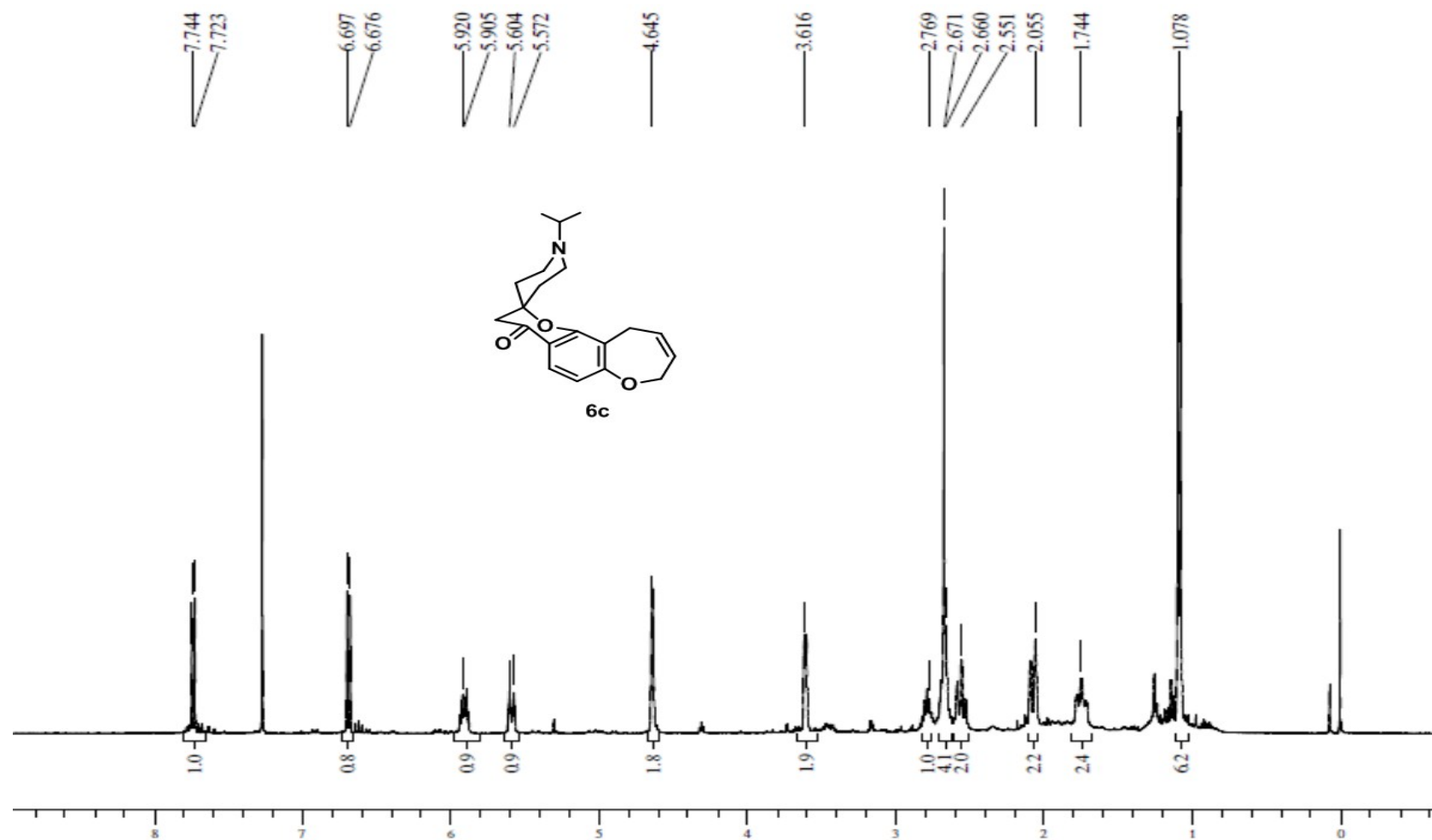


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  = 7.76 (d,  $^3J=8.7$  Hz, 1H), 6.55 (d,  $^3J=8.7$  Hz, 1H), 6.03 (ddt,  $J = 12.8, 10.3, 5.0$  Hz, 1H), 5.94 (ddt,  $J = 16.3, 10.0, 3.7$  Hz, 1H), 5.42 (dq,  $^3J = 17.0, ^{2,4}J = 1.7$  Hz, 1H), 5.29 (dq,  $^3J = 10.7, ^{2,4}J = 1.5$  Hz, 1H), 5.06 (dq,  $^3J = 17.0, ^{2,4}J = 1.5$  Hz, 1H), 4.99 (dq,  $^3J = 10.0, ^{2,4}J = 1.2$  Hz, 1H), 4.60 (dt,  $J = 5.0, 1.5$  Hz, 2H), 3.47 (dt,  $J = 6.2, 1.5$  Hz, 2H), 2.77 (hpt, 1H), 2.65 (s, 2H), 2.64-2.56 (m, 4H), 2.06 (brd, 2H), 1.77-1.70 (m, 2H), 1.07 (d, 6H).

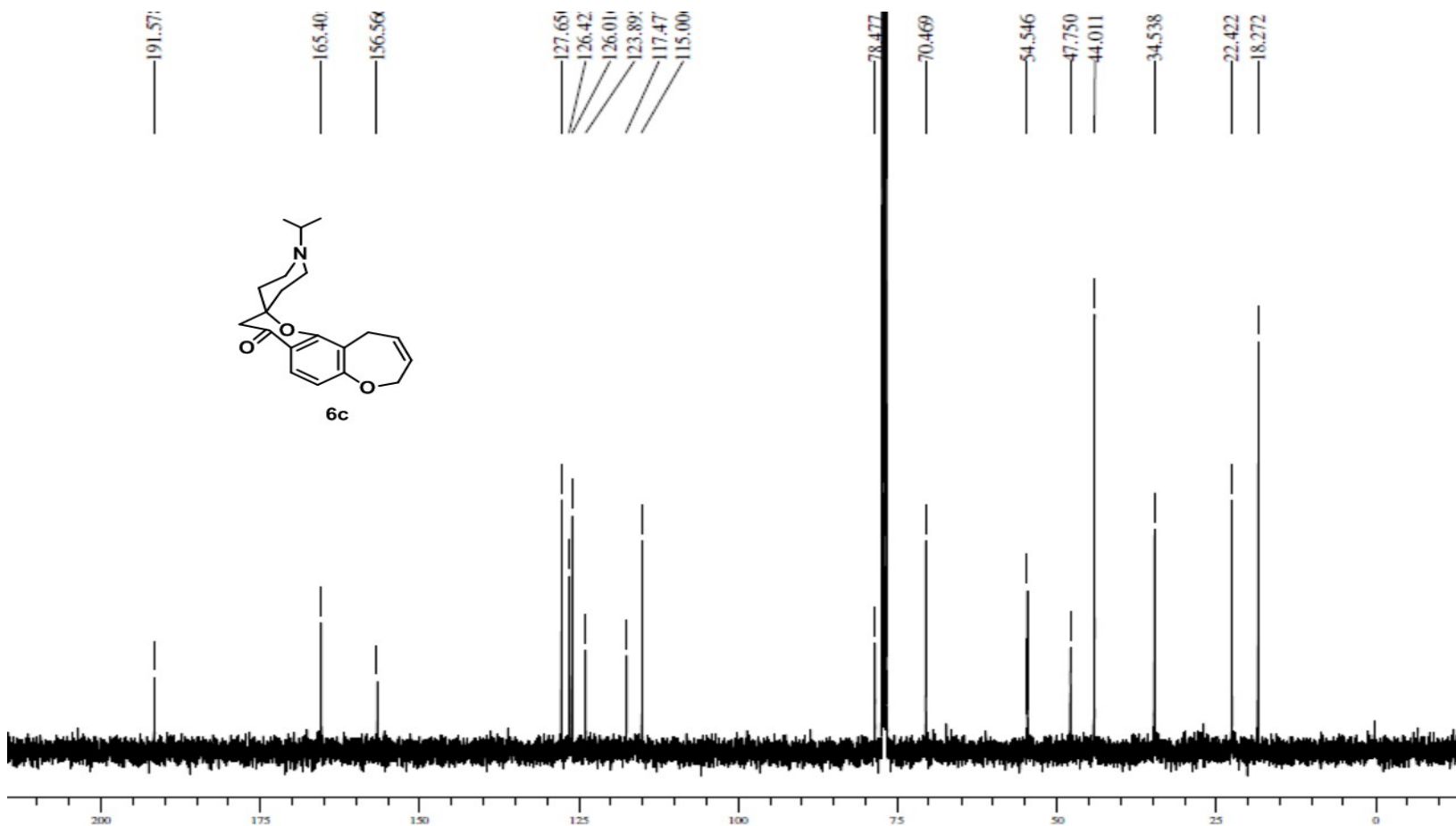


<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) 191.3, 162.5, 157.8, 135.9, 132.6, 126.1, 120.4, 118.3, 117.5, 116.3, 114.9, 105.2, 83.9, 78.0, 69.0, 54.6, 47.7, 44.0, 34.6, 33.3, 27.9, 27.4, 24.8, 21.5, 18.3.

MS (EI) LRMS: m/z 355, 340(100%), 284, 124, 56, 41.



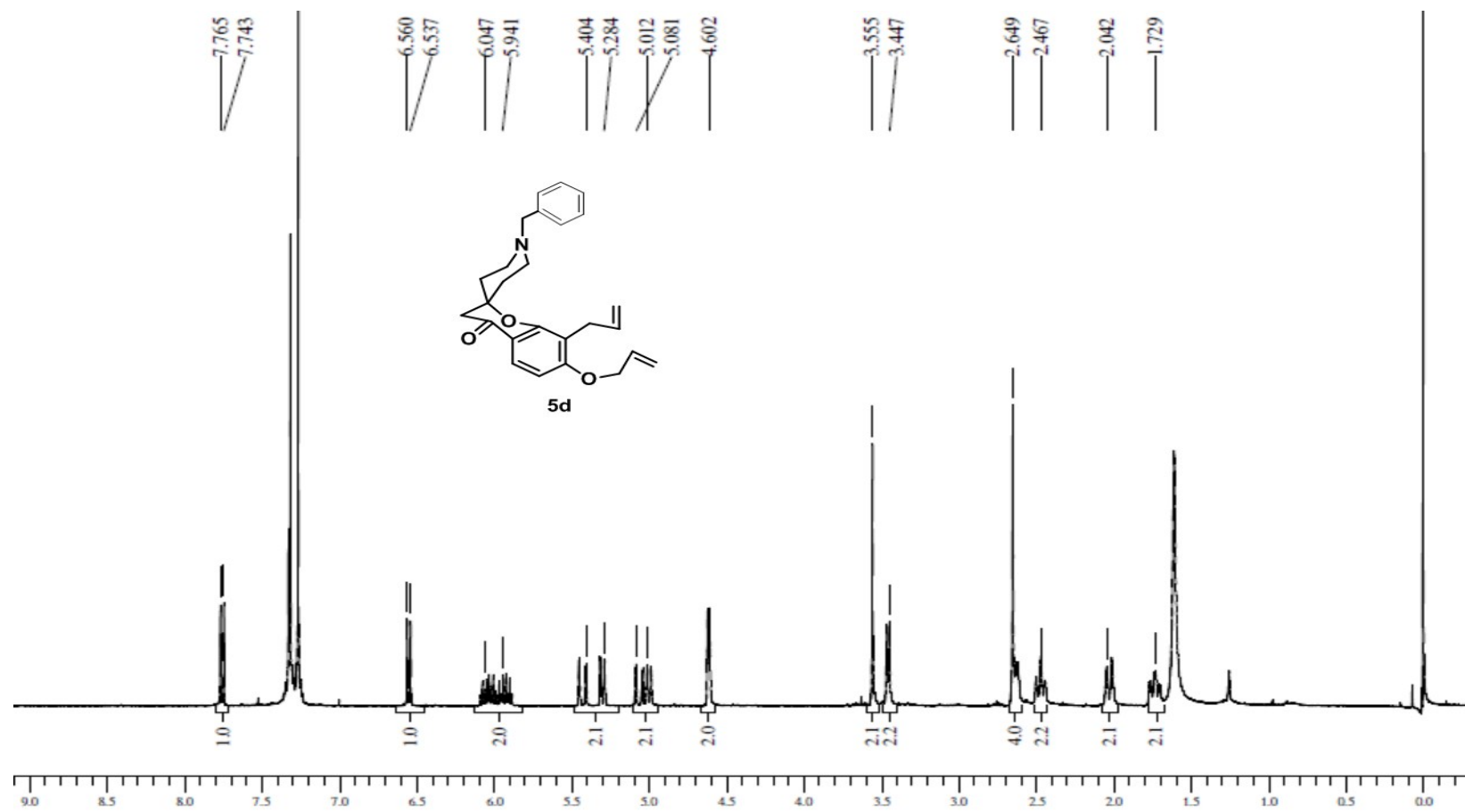
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.73$  ( \*7.68, d,  $^3J = 8.5$  Hz, 1H), 6.68 ( \*6.62, d,  $^3J = 8.5$  Hz, 1H), 5.91 { pt,  $J = 5.7, 2.0$  Hz, \*6.09 ( dt,  $^3J = 12.2, 4.5$  Hz ), 1H}, 5.58 ( dhpt,  $^3J = 11.2, 1.7$  Hz, 1H ), 4.64 - 4.62 { m, \*4.30 (t,  $^3J = 5.0$  Hz ), 2H }, 3.63-3.59 (m, 2H), 2.76 ( hpt, 1H ), 2.70-2.68 (m, 1H ), 2.66 ( s, 2H), 2.66-2.63 (m, 1H ), 2.55 (td, 2H ), 2.05 ( brd, 2H ), 1.80-1.74 (m, 2H ), 1.07 (d, 6H) .



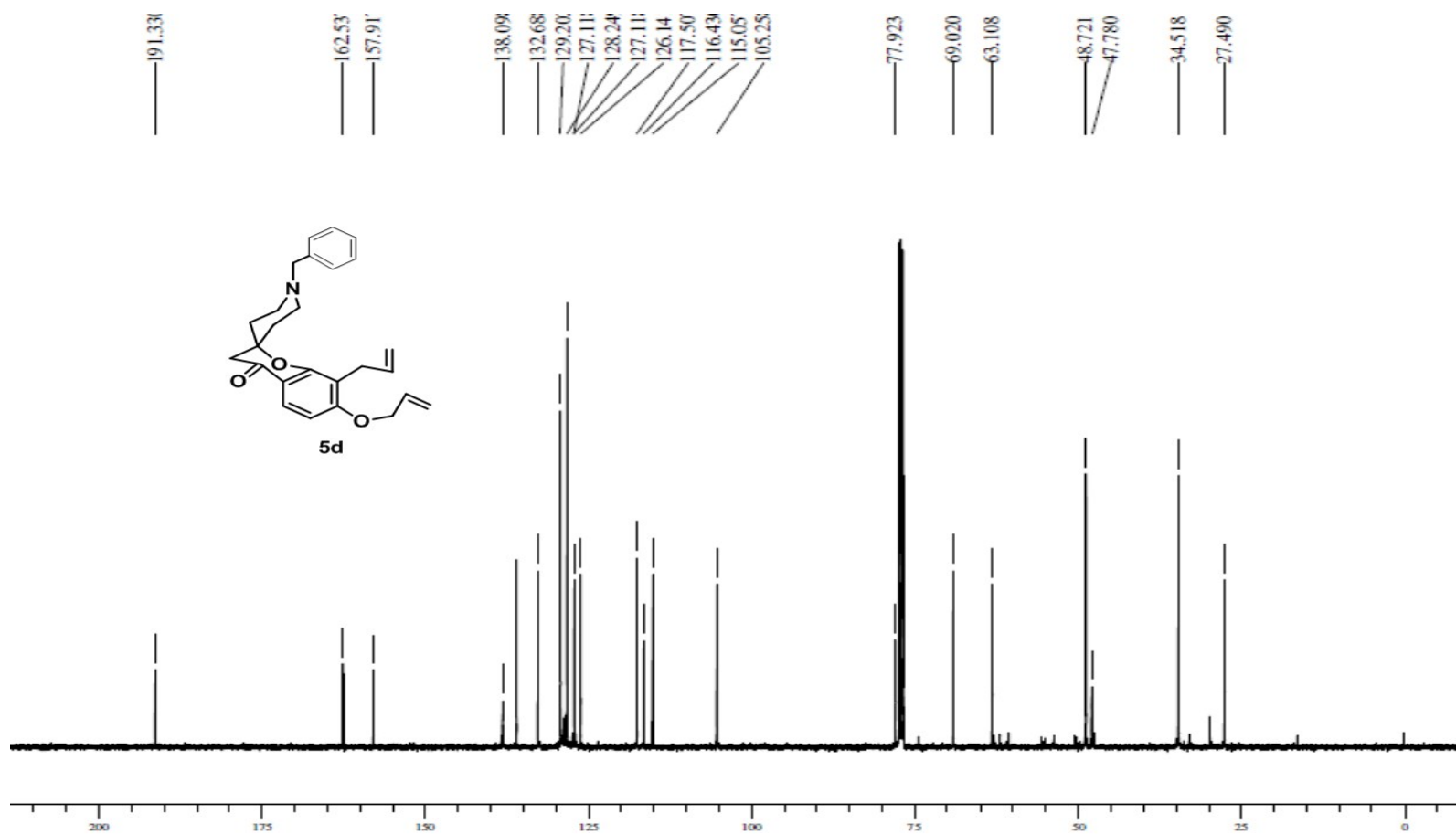
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ):  $\delta$  191.5, 165.4, 156.5, 127.6, 126.4, 126.0, 123.8, 117.4, 115.0, 78.4, 70.4, 54.5, 47.7, 44.0, 34.5, 22.4, 18.2.

MS (EI) LRMS:  $m/z$  327, 313, 236, 98, 83, 71, 69, 57, 44(100%).

HRMS (EI):  $m/z$  calcd for  $\text{C}_{20}\text{H}_{25}\text{NO}_3$  is 327.1834; found: 327.1810.



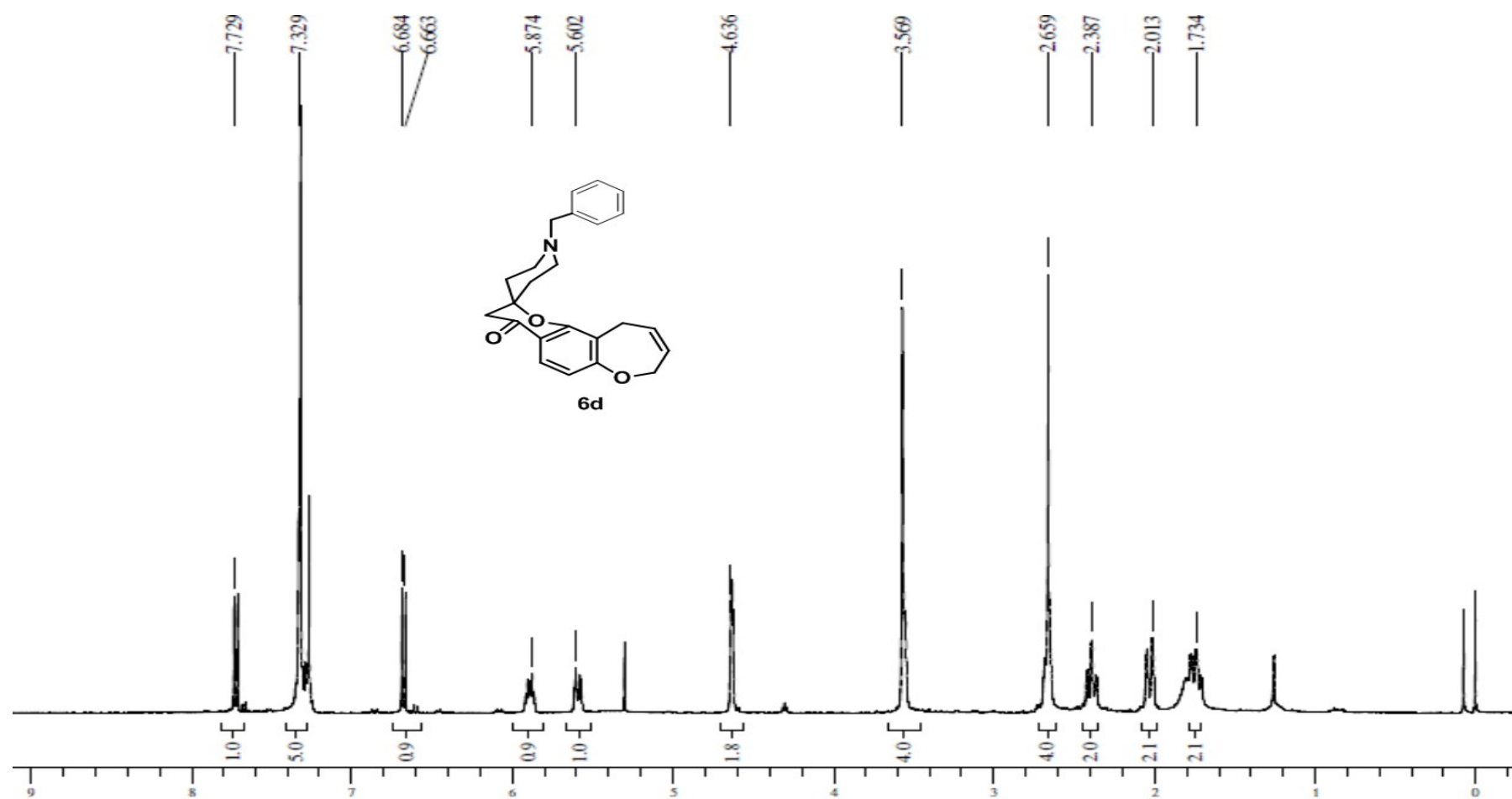
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  = 7.75 (d,  $^3J=8.7$  Hz, 1H), 7.31 (s, 5H), 6.54 (d,  $^3J=8.7$  Hz, 1H), 6.04 (ddt,  $J = 17.1, 10.5, 5.0$  Hz, 1H), 5.94 (ddt,  $J = 14.7, 12.7, 6.2$  Hz, 1H), 5.40 (dq,  $^3J = 17.3, ^2J = 1.5$  Hz, 1H), 5.28 (dq,  $^3J = 10.0, ^2J = 1.2$  Hz, 1H), 5.08 (dq,  $^3J = 17.3, ^2J = 1.5$  Hz, 1H), 5.01 (dq,  $^3J = 10.0, ^2J = 1.2$  Hz, 1H), 4.60 (dt,  $J = 4.7, 1.7$  Hz, 2H), 3.55 (s, 2H), 3.44 (d, 2H), 2.64 (s, 2H), 2.63-2.60 (m, 2H), 2.46 (t, 2H), 2.04 (d, 2H), 1.76-1.70 (m, 2H).



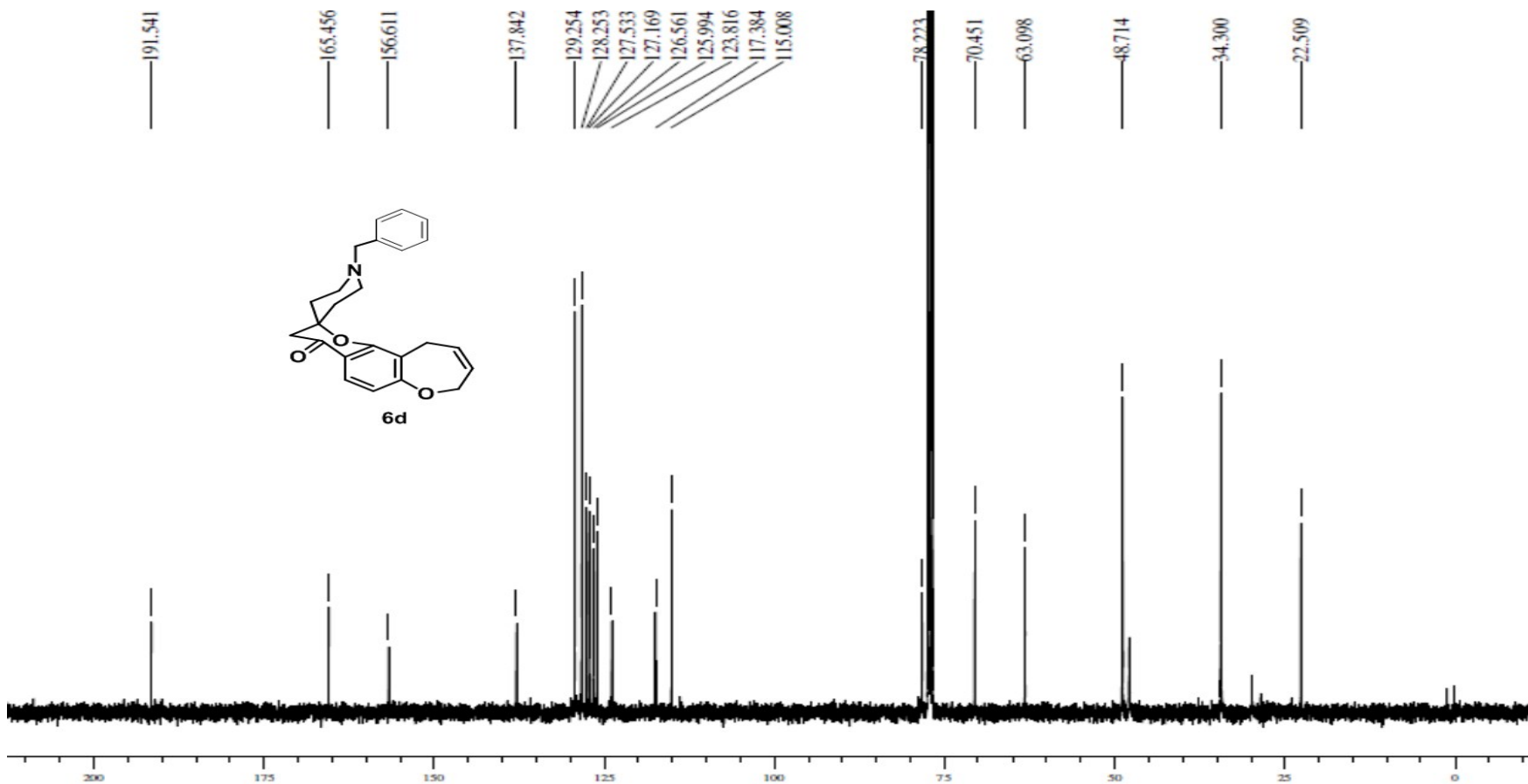
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) 191.3, 162.5, 157.9, 132.6, 129.2, 127.1, 128.2, 127.1, 126.1, 138.0, 117.5, 116.4, 115.0, 105.2, 77.9, 69.0, 63.1, 48.7, 47.7, 34.5, 27.4.

MS (EI) LRMS: m/z 403, 402, 185, 146, 91(100%), 69.





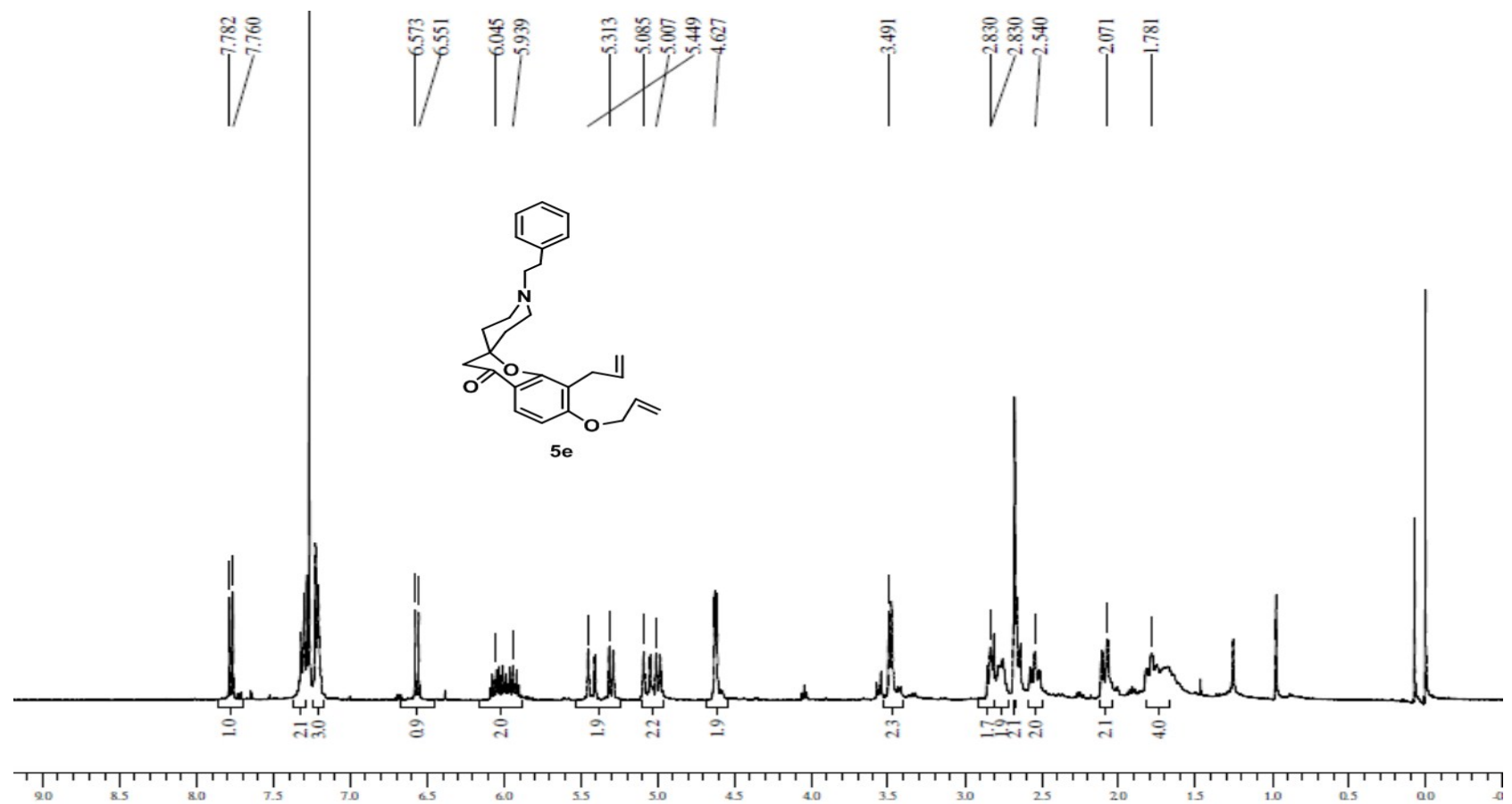
<sup>1</sup>H NMR (CDCl<sub>3</sub>/400MHz): δ = 7.72 (d, <sup>3</sup>J = 8.7 Hz, 1H), 7.32 (s, 5H), 6.67 (d, <sup>3</sup>J = 8.7 Hz, 1H), 5.87 (pt, J = 5.5, 2.0 Hz, 1H), 5.60 (dhpt, J = 11.2, 1.7 Hz, 1H), 4.64 – 4.61 (m, 2H), 3.56 (s, 4H), 2.65 (s, 4H), 2.38 (td, J = 11.5 Hz, 2H), 2.03 (brd, 2H), 1.80-1.68 (m, 2H).



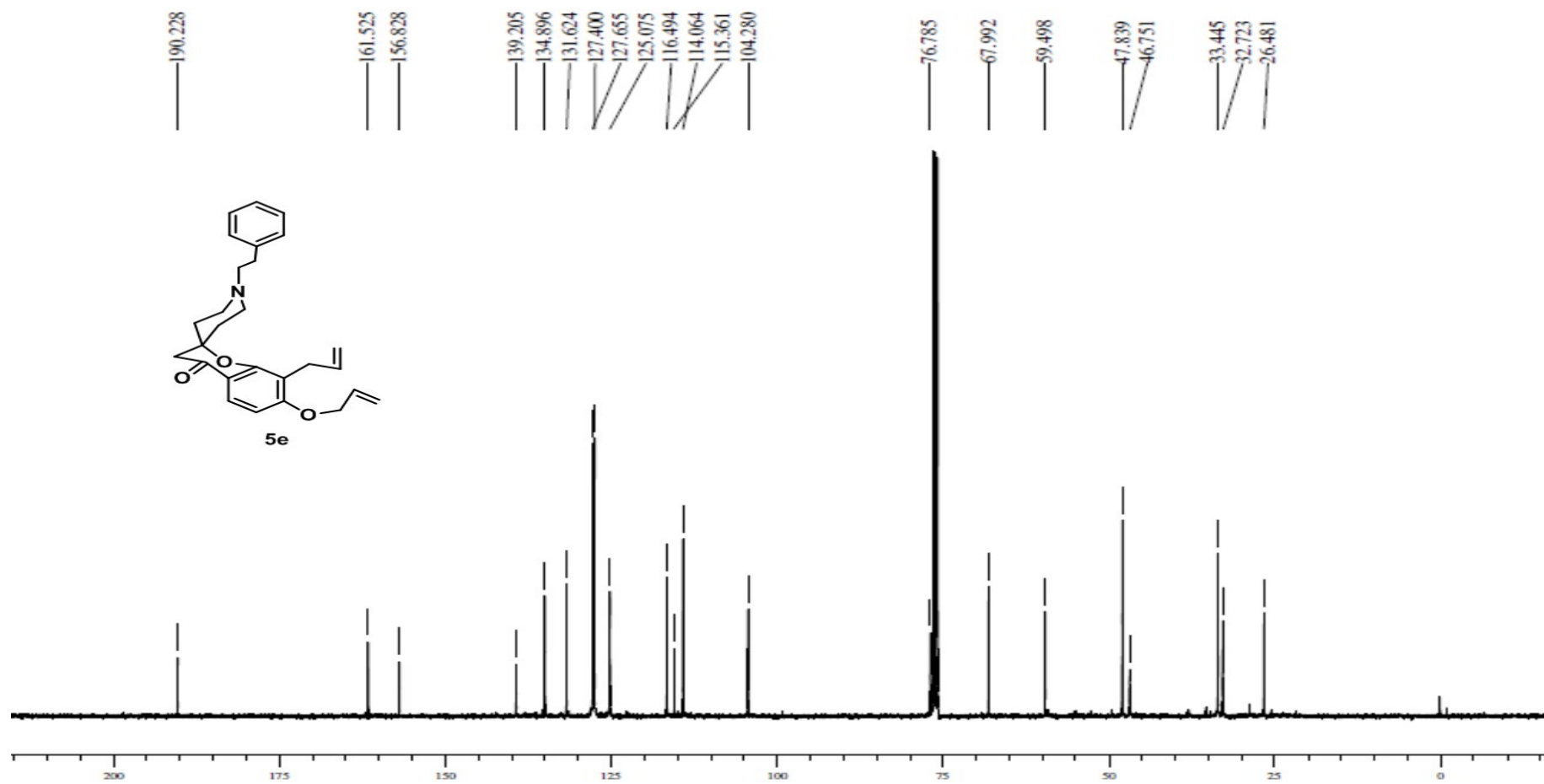
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>): 191.5, 165.4, 156.6, 137.8, 129.2, 128.2, 127.5, 127.1, 126.5, 125.9, 123.8, 117.3, 115.0, 78.2, 70.4, 63.1, 48.7, 34.3, 22.5.

MS (EI) LRMS: m/z 375, 189, 97, 91(100%), 71, 69, 57.

HRMS (EI): m/z calcd for C<sub>24</sub>H<sub>25</sub>NO<sub>3</sub> is 375.1834; found: 375.1813

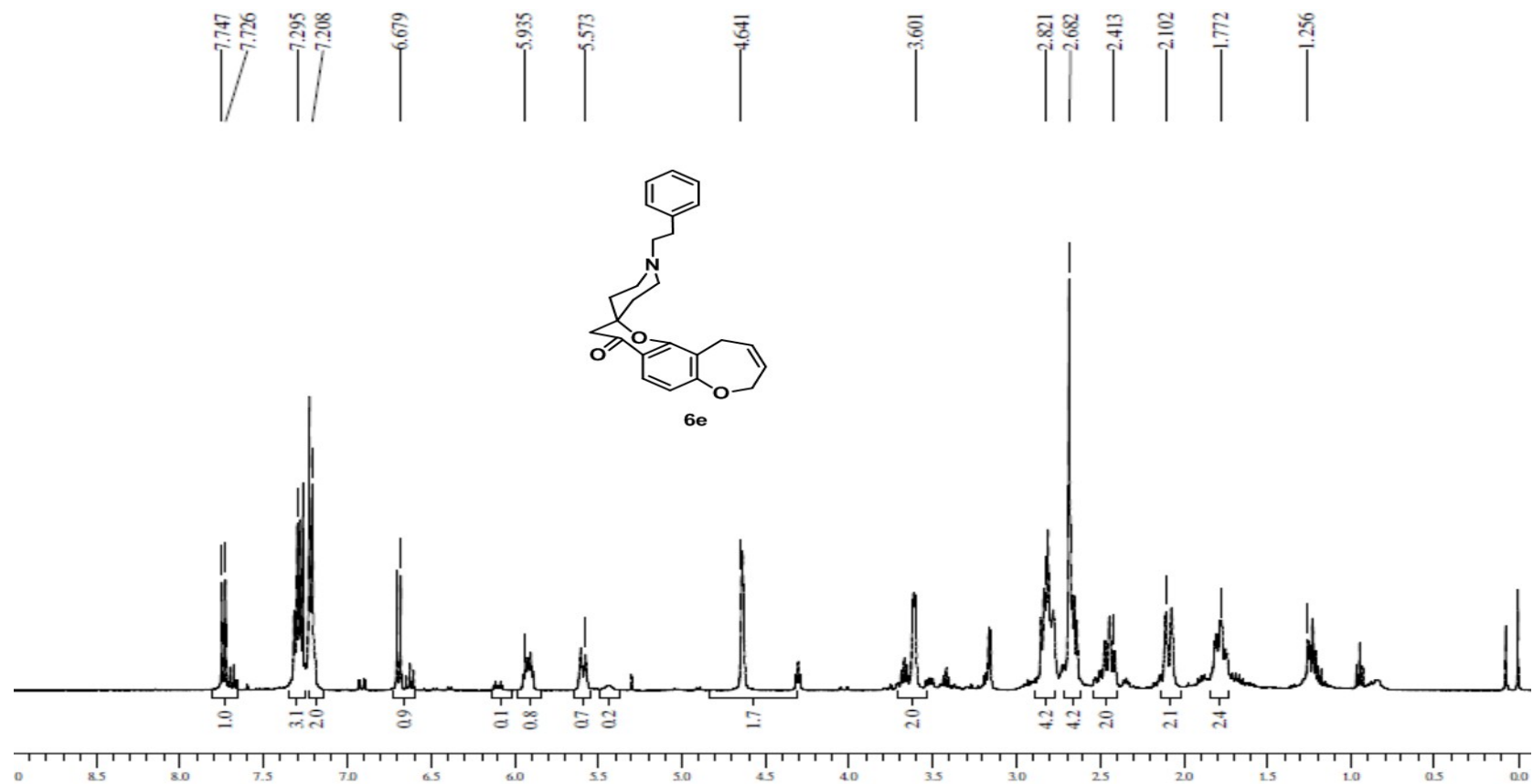


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  = 7.78 (d,  $^3J=8.7$  Hz, 1H), 7.40 (s, 5H), 6.56 (d,  $^3J=8.7$  Hz, 1H), 6.03 (ddt,  $J = 14.1, 10.5, 5.0$  Hz, 1H), 5.97 (ddt,  $J = 16.3, 9.2, 3.0$  Hz, 1H), 5.42 (dq,  $^3J=17.0, ^2J=1.7$  Hz, 1H), 5.31 (dq,  $^3J=10.7, ^2J=1.2$  Hz, 1H), 5.06 (dq,  $^3J=17.0, ^2J=1.5$  Hz, 1H), 5.00 (dq,  $^3J=10.0, ^2J=1.2$  Hz, 1H), 4.62 (dt,  $J=5.0, 1.5$  Hz, 2H), 3.49 (dt,  $J=6.2, 1.5$  Hz, 2H), 2.84-2.75 (m, 4H), 2.67 (s, 2H), 2.54 (t, 2H), 2.07 (d, 2H), 1.81-1.63 (m, 4H).

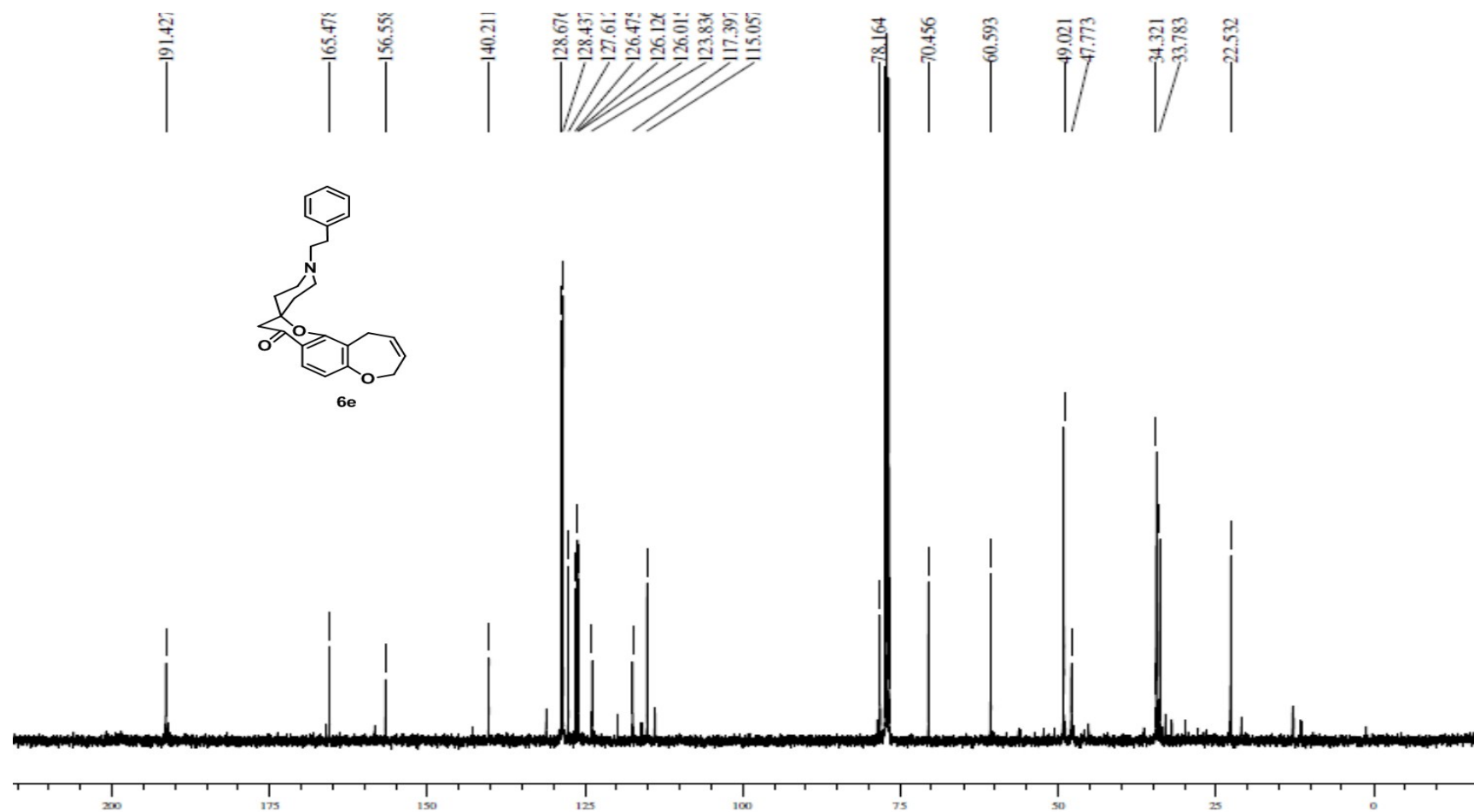


<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) 190.2, 161.5, 156.8, 139.2, 134.8, 131.6, 127.4, 127.6, 125.0, 116.4, 114.0, 115.3, 104.2, 76.7, 67.9, 59.4, 47.8, 46.7, 33.4, 32.7, 26.4.

MS (EI) LRMS: m/z 417, 327, 326(100%), 110.



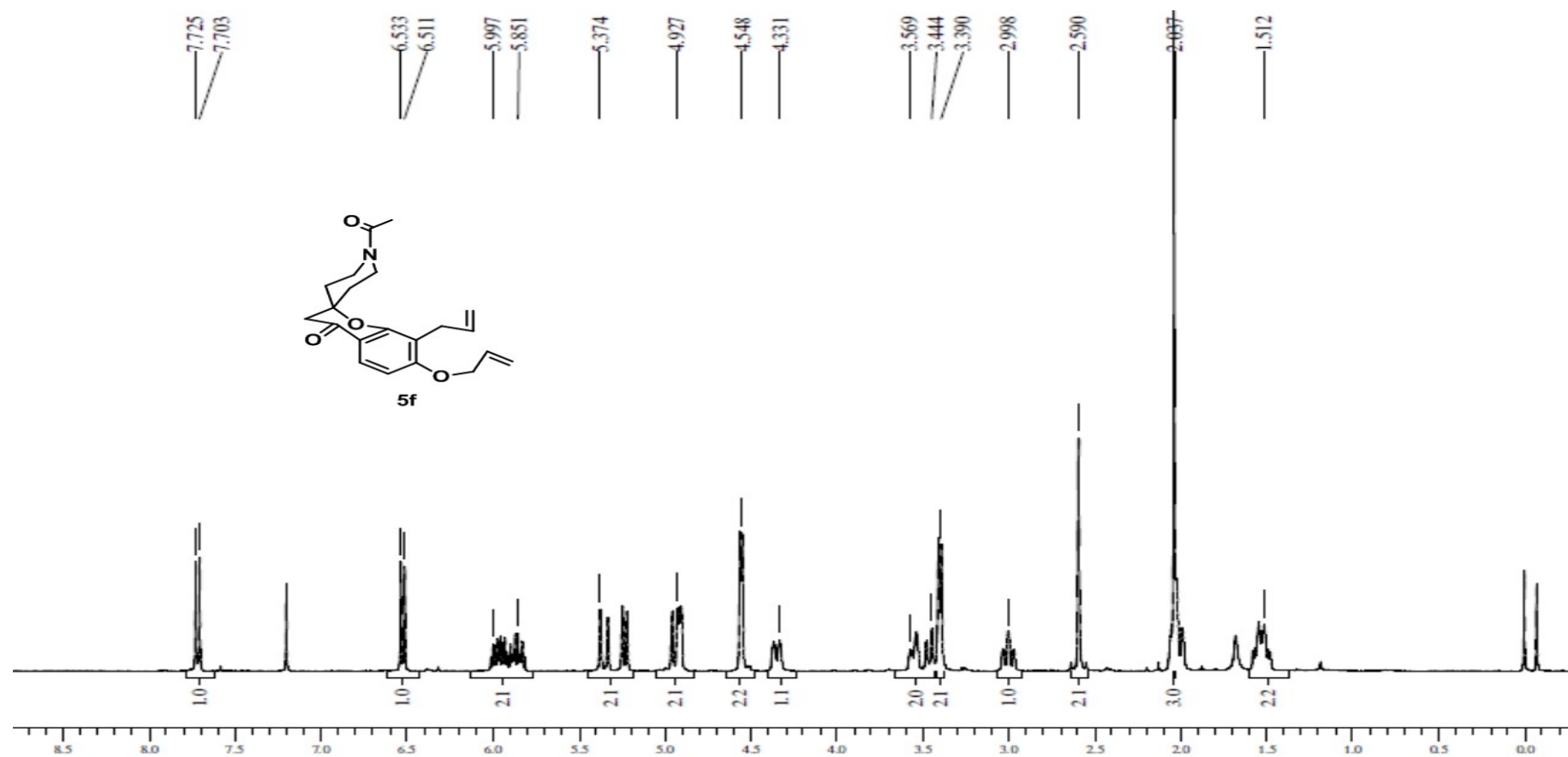
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  = 7.73( \*7.68, d,  $^3J=8.5$  Hz, 1H), 7.31-7.26 ( m, 3H), 7.24-7.19 ( m, 2H ), 6.67 ( \*6.61, d,  $^3J= 8.7$  Hz, 1H), 5.93{ pt,  $^3J= 5.5$ , 2.0 Hz, \*6.38 (dt,  $^3J= 7.2$ , 1.5 Hz), 1H }, 5.57 { dhpt,  $J= 11.2$ , 1.5 Hz, \*5.43 ( brs ), 1H}, 4.64 - 4.62 { m,\*4.30,( t,  $^3J= 4.7$  Hz ), 2H }, 3.61-3.60 { m, 2H, \*3.66( t,  $J= 7.0$  Hz, 2H ) }, 2.85-2.77 ( m, 4H ), 2.68 ( s, 2H) 2.66 -2.63 ( m, 2H ), 2.52-2.40 ( m, 2 H ), 2.10 ( brd, 2H ), 1.81-1.73 ( m, 2H ).



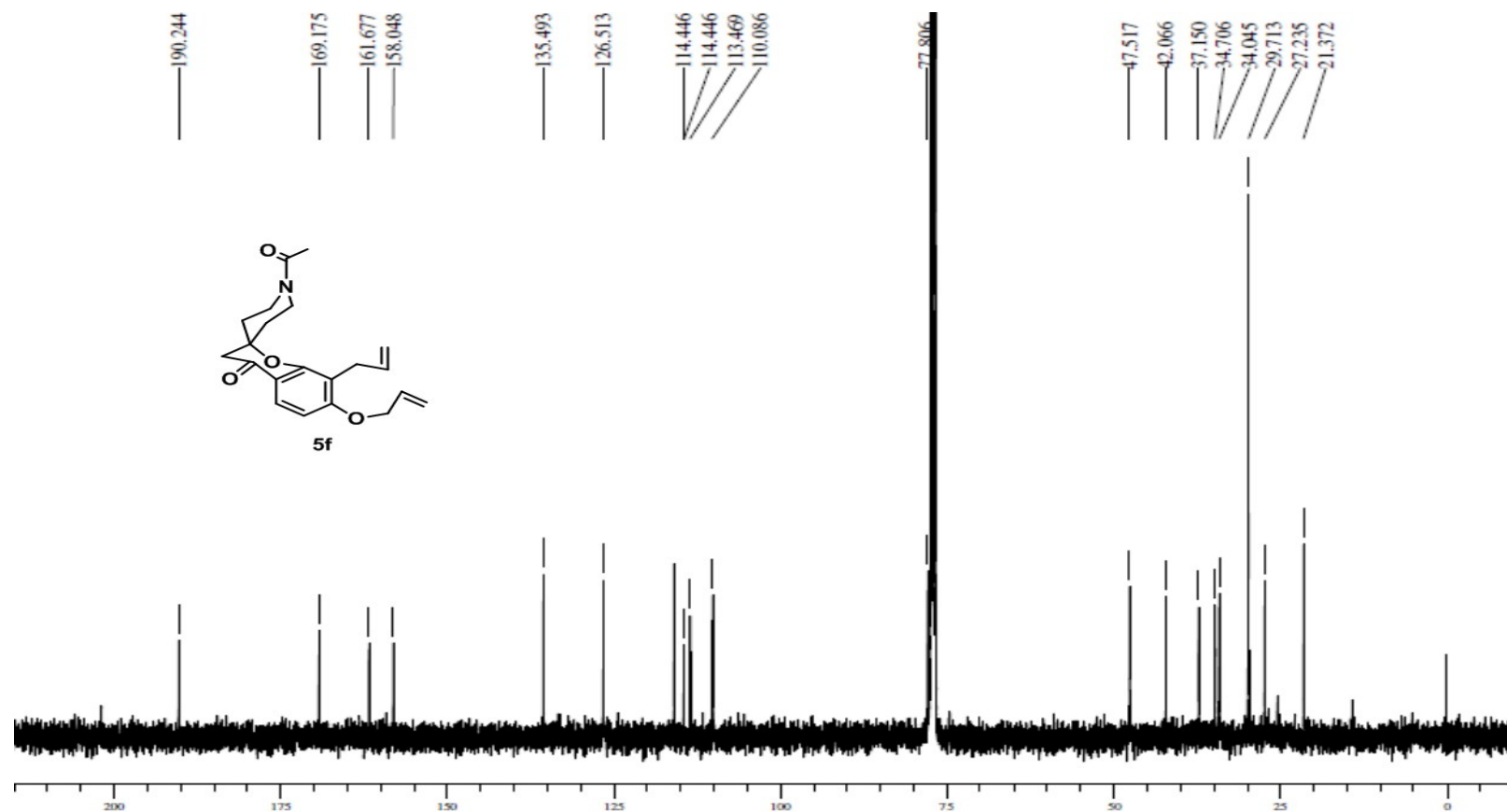
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>): 191.4, 165.4, 156.5, 140.2, 131.0, 128.6, 128.4, 127.6, 126.4, 126.1, 126.0, 123.8, 119.7, 117.3, 115.0, 78.1, 70.4, 60.5, 49.0, 34.3, 33.7, 22.5.

MS (EI) LRMS: m/z 389, 360, 359(100%), 298, 110, 105, 91, 83, 71.

HRMS (EI): m/z calcd for C<sub>25</sub>H<sub>27</sub>NO<sub>3</sub> is 389.1990; found: 389.1989.



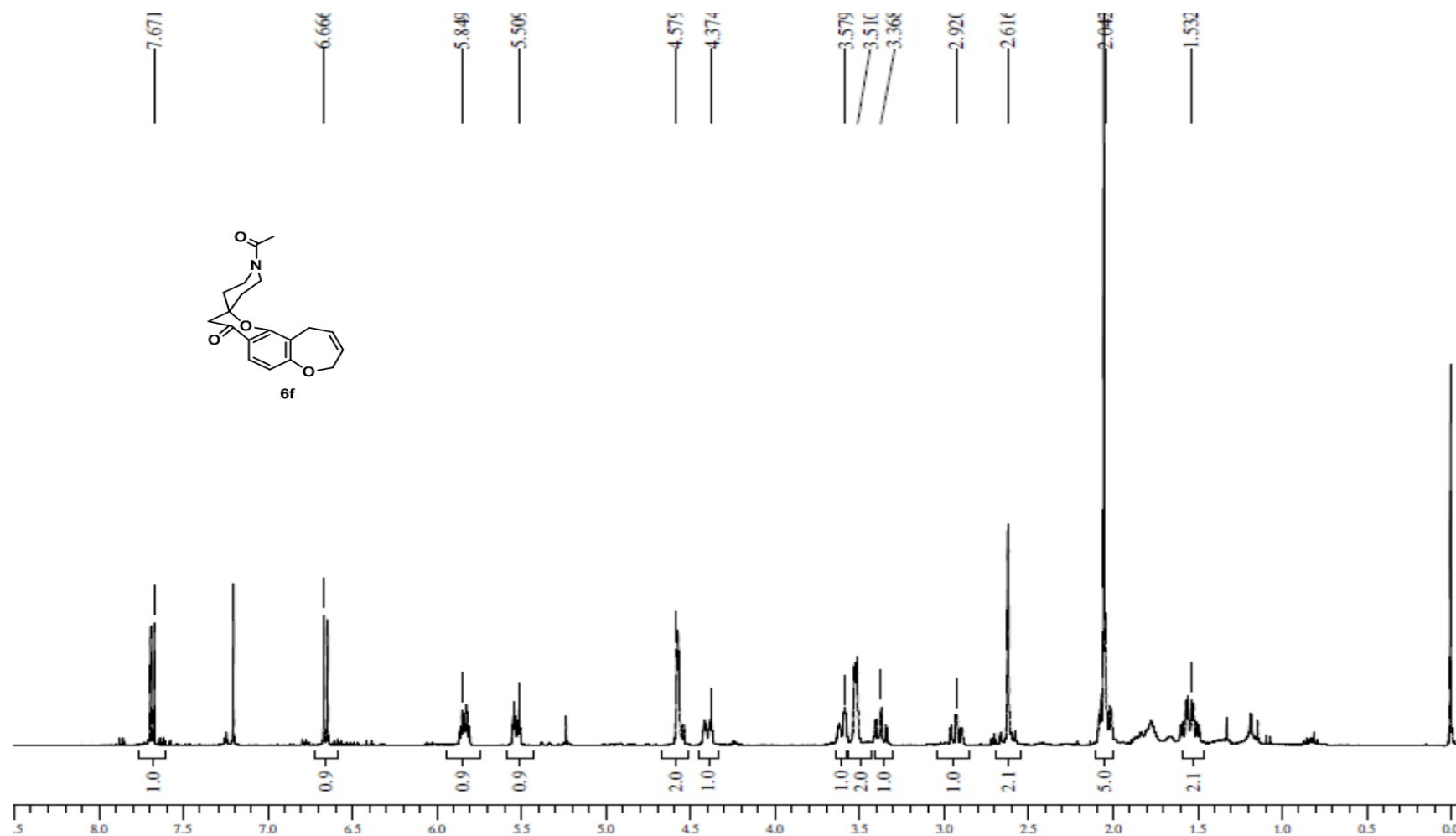
<sup>1</sup>H NMR (CDCl<sub>3</sub>/400MHz):  $\delta$  = 7.71 (d, <sup>3</sup>J = 8.7 Hz, 1H), 6.52 (d, <sup>3</sup>J = 8.7 Hz, 1H), 5.99 (ddt, J = 17.1, 10.5, 5.0 Hz, 1H), 5.85 (ddt, J = 14.7, 12.7, 6.2 Hz, 1H), 5.37 (dd, J = 17.0 Hz, 1H), 5.23 (dd, J = 10.5 Hz, 1H), 4.95-4.90 (m, 2H), 4.54 (d, 2H), 4.33 (brd, 1H), 3.60-3.52 (m, 1H), 3.44 (d, 1H), 3.39 (d, 2H), 2.99 (t, 1H), 2.59 (s, 2H), 2.03 (s, 3H), 1.57-1.47 (m, 2H).



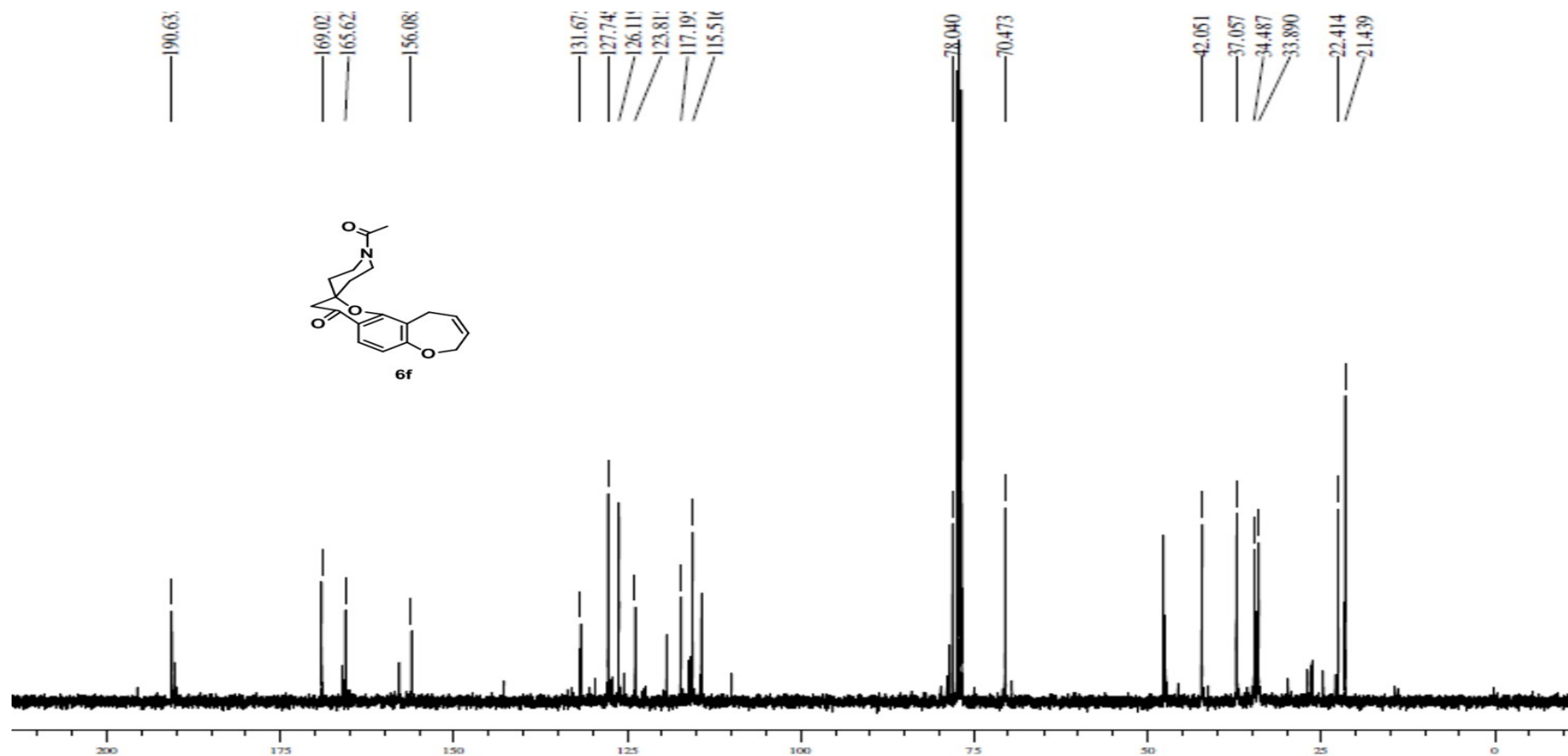
<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) 190.2,169.1, 161.6, 158.0, 135.4, 126.5, 114.4, 114.4, 113.4, 110.0, 77.8, 47.5, 42.0, 37.1,34.7, 34.0, 29.7, 27.2, 21.3.

MS (EI) LRMS: m/z 355, 217, 175, 81, 69(100%).





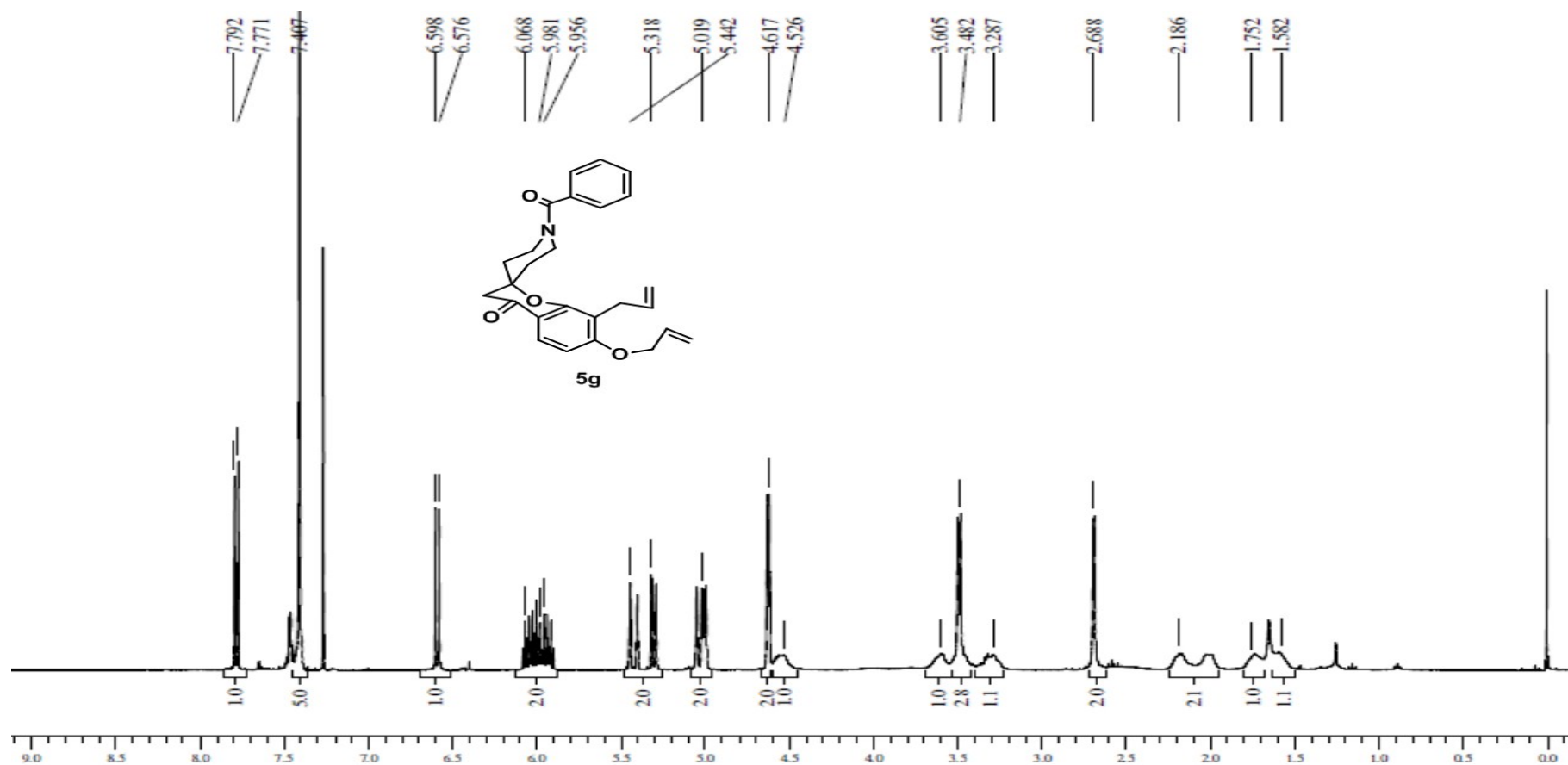
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  = 7.68 (\* 7.60, d,  $^3J=8.5$  Hz, 1H), 6.65 (\*6.57, d,  $^3J=8.7$  Hz, 1H), 5.82 { pt,  $^3J=5.7$ , 2.0 Hz, \* 6.04, (dt,  $J=12.0$ , 4.2 Hz), 1H }, 5.51 { dhpt,  $J=11.2$ , 1.5 Hz, \*5.38-5.33 ( m ), 1H }, 4.58 - 4.55 ( m, 2H ), 4.37 ( dp,  $J=13.5$ , 2.0 Hz, 1H ), 3.61 ( dp,  $J=13.5$ , 2.0 Hz, 1H ), 3.52 – 3.51 ( m, 2H ), 3.36 ( td, 1H ), 2.92 ( td, 1H ), 2.61 ( s, 2H ), 2.04 ( s, 5H ), 1.54 ( qd, 2H).



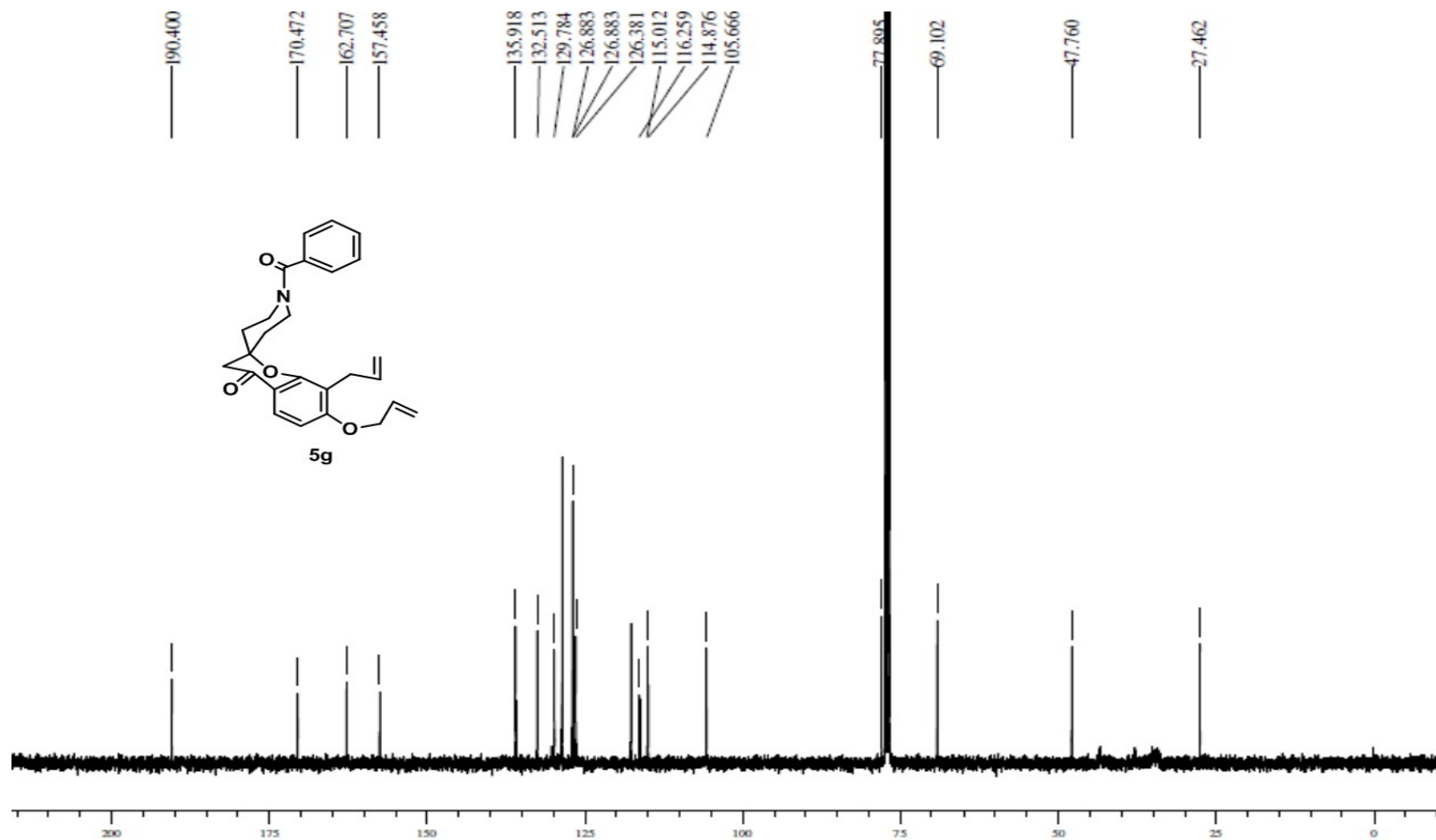
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ):  $\delta$  190.6, 169.0, 165.6, 156.0, 131.6, 127.7, 126.1, 123.8, 117.1, 115.5, 114.2, 78.0, 70.4, 47.6, 42.0, 37.0, 34.4, 33.8, 22.4, 21.4.

MS (EI) LRMS:  $m/z$  327, 312, 214, 189(100%), 160, 96, 91, 82, 55.

HRMS (EI):  $m/z$  calcd for  $\text{C}_{20}\text{H}_{25}\text{NO}_3$  is 327.1834: found: 327.1831.

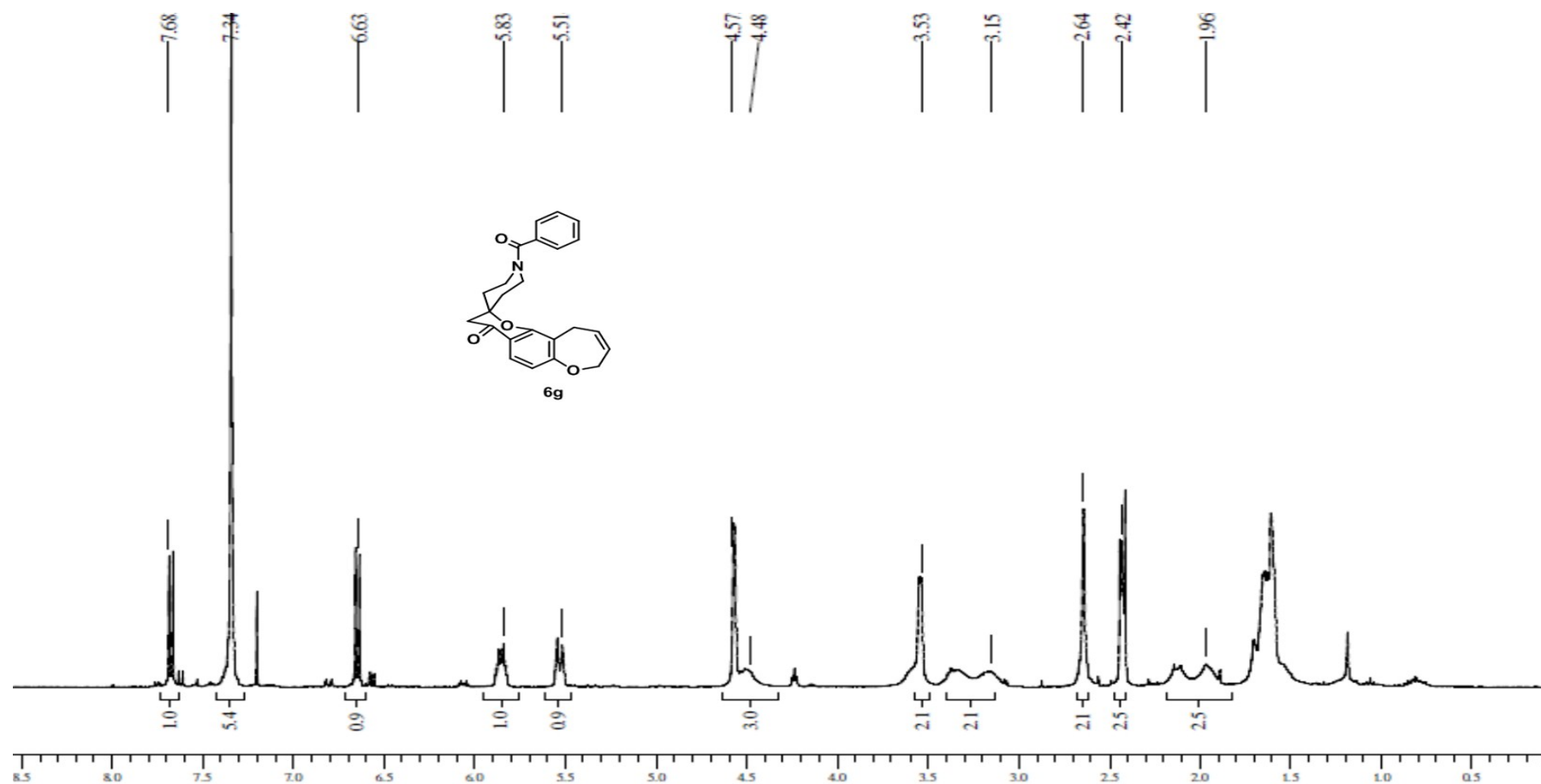


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.78$  (d,  $^3J = 8.7$  Hz, 1H), 7.40 (s, 5H), 6.58 (d,  $^3J = 8.7$  Hz, 1H), 6.06 (ddt,  $J = 17.1, 10.5, 5.0$  Hz, 1H), 5.95 (ddt,  $J = 15.7, 10.0, 3.7$  Hz, 1H), 5.44 (dq,  $^3J = 17.3, ^{2,4}J = 1.5$  Hz, 1H), 5.31 (dq,  $^3J = 10.5, ^{2,4}J = 1.5$  Hz, 1H), 5.05-4.99 (m, 2H), 4.61 (dt,  $J = 5.0, 1.5$  Hz, 2H), 4.52 (brs, 1H), 3.60 (brs, 1H), 3.48 (dt,  $J = 6.2, 1.5$  Hz, 3H), 3.28 (brs, 1H), 2.68 (s, 2H), 2.18 (brd, 2H), 1.80-1.67 (m, 1H), 1.61-1.39 (m, 1H).

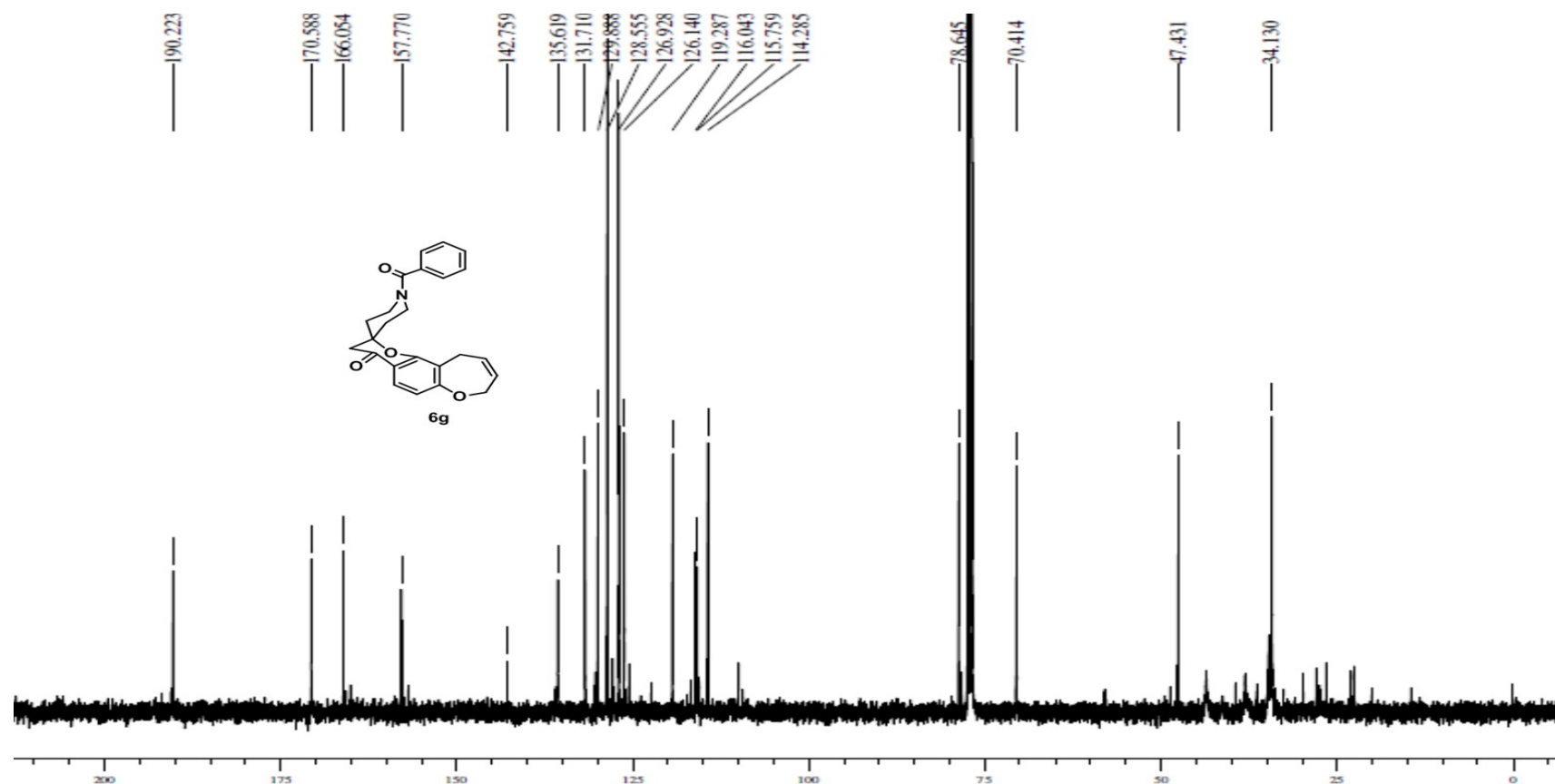


<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>) 190.3, 170.4, 162.7, 157.4, 135.9, 132.5, 129.7, 126.8, 126.8, 126.3, 115.0, 116.2, 114.8, 105.6, 77.8, 69.1, 47.7, 27.4.

MS (EI) LRMS: m/z 417, 376, 217, 175, 105(100%), 77.



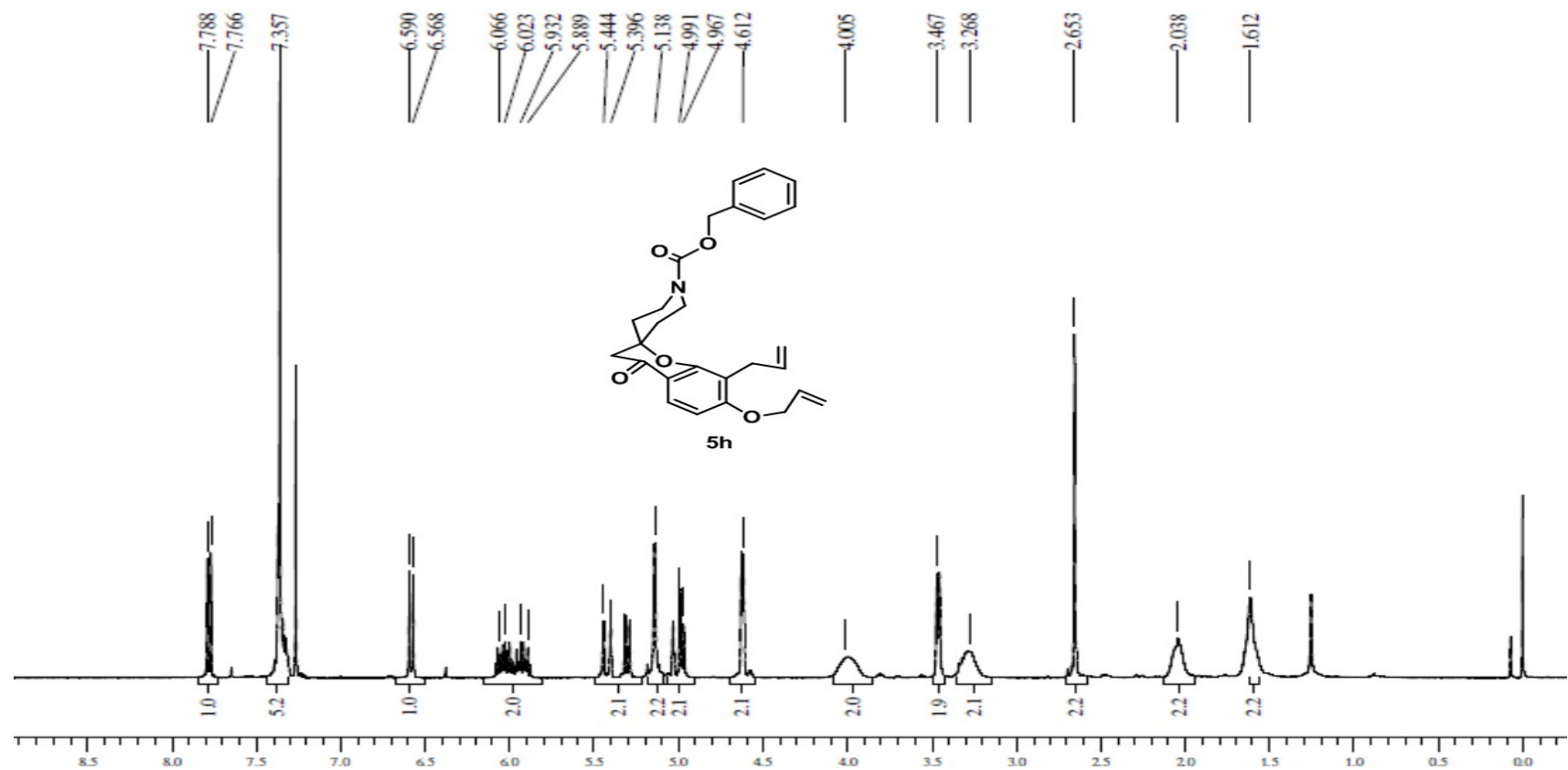
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  = 7.69 ( \*7.73, d,  $^3J$  = 8.7 Hz, 1H), 7.34 ( s, 5H ), 6.63 { dt,  $J$  = 12.2, 1.7 Hz }, 6.64 ( \*6.71, d,  $^3J$  = 8.7 Hz, 1H ), 6.19 { dt,  $J$  = 12.2, 4.5 Hz, \*5.92 ( pt,  $J$  = 5.5, 2.0 Hz ), 1H }, 5.59 ( t,  $J$  = 4.7 Hz, 2H ), 4.57 ( s, 2H ), 4.48 ( brs, 1H), 3.53 ( s, 2H), 3.22 ( brd, 2H ), 2.65 ( s, 2H) 1.86-1.73 ( m, 2H ), 2.01—1.85 ( m, 1H).



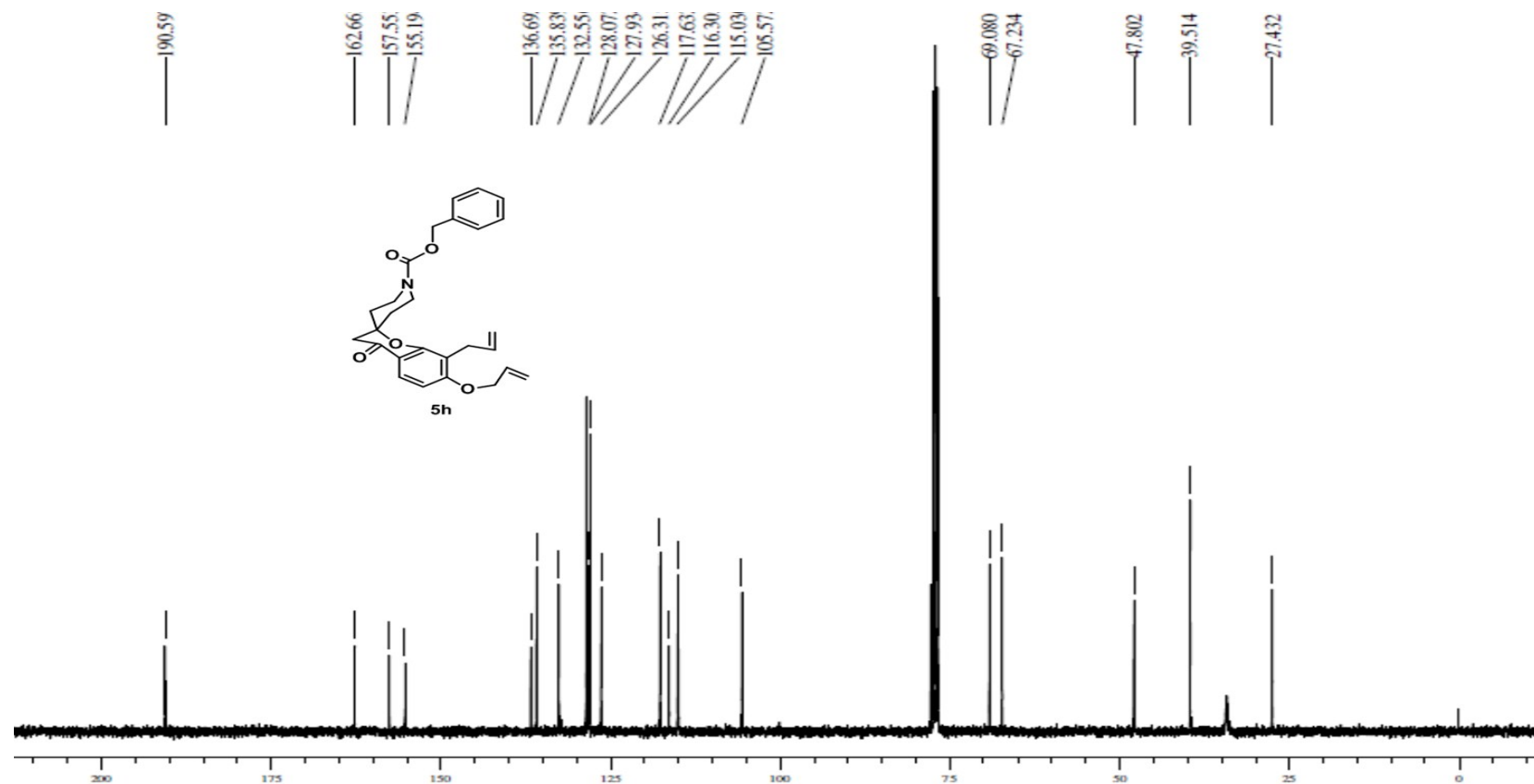
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ): 190.2, 170.5, 166.0, 157.7, 142.7, 135.6, 131.7, 129.8, 128.5, 126.9, 126.1, 119.2, 116.0, 115.7, 114.2, 78.6, 70.4, 47.4, 34.1.

MS (EI) LRMS:  $m/z$  389, 229, 177, 149, 105 (100%).

HRMS (EI):  $m/z$  calcd for  $\text{C}_{24}\text{H}_{23}\text{NO}_4$ ; found: 389.1600.



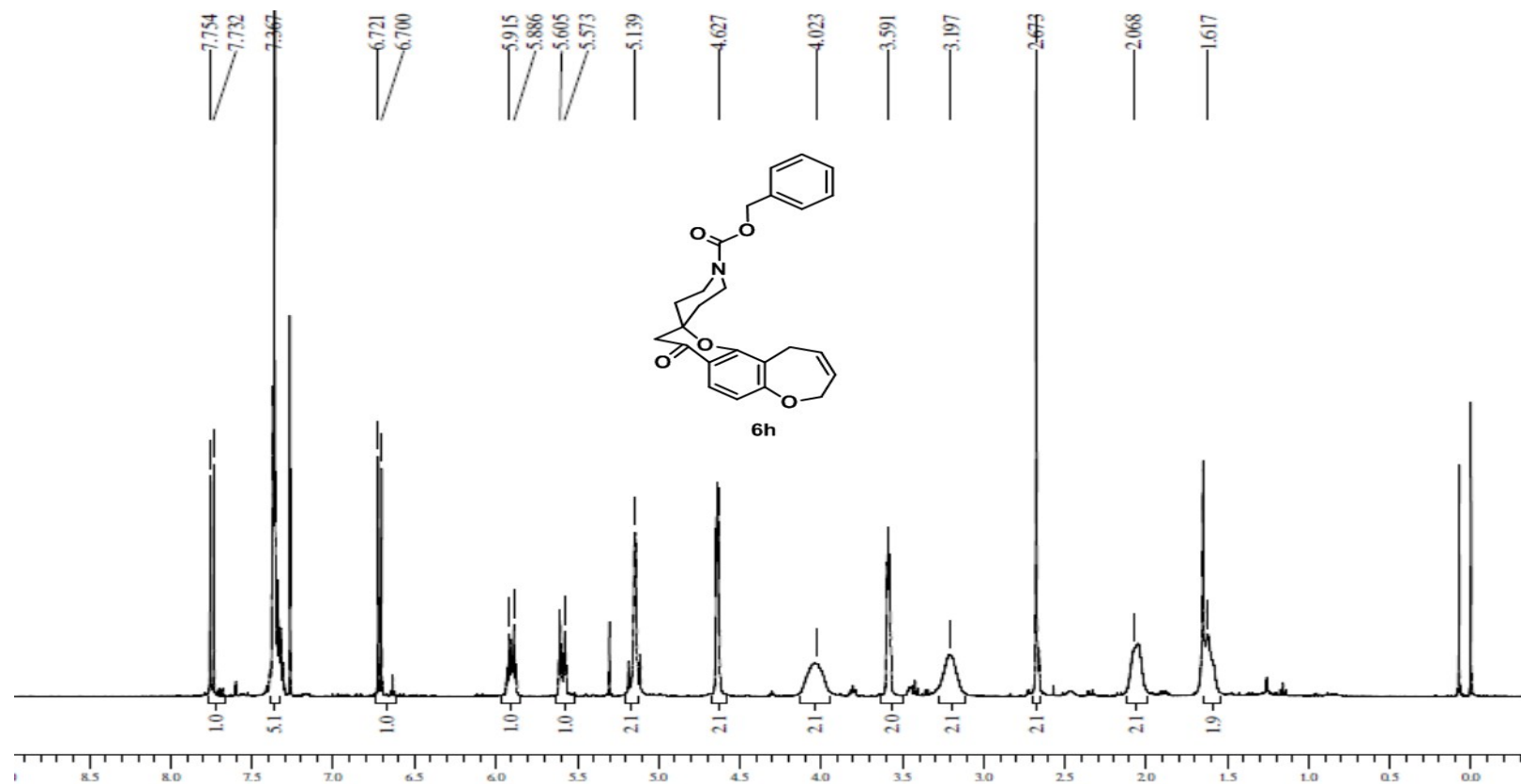
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.77$  (d,  $^3J=8.7$  Hz, 1H),  $7.35$  (s, 5H),  $6.58$  (d,  $^3J=8.7$  Hz, 1H),  $6.02$  (ddt,  $J = 17.1, 10.5, 5.0$  Hz, 1H),  $5.91$  (ddt,  $J = 14.7, 12.7, 6.2$  Hz, 1H),  $5.44$  (dq,  $^3J = 17.3, ^2,4J = 1.5$  Hz, 1H),  $5.39$  (dq,  $^3J = 10.5, ^2,4J = 1.2$  Hz, 1H),  $5.13$  (s, 2H),  $4.99 - 4.96$  (m, 2H),  $4.61$  (dt,  $J = 5.0, 1.5$  Hz, 2H),  $4.00$  (brs, 2H),  $3.46$  (d, 2H),  $3.26$  (brs, 2H),  $2.65$  (s, 2H),  $2.03$  (brs, 2H),  $1.61$  (brs, 2H).



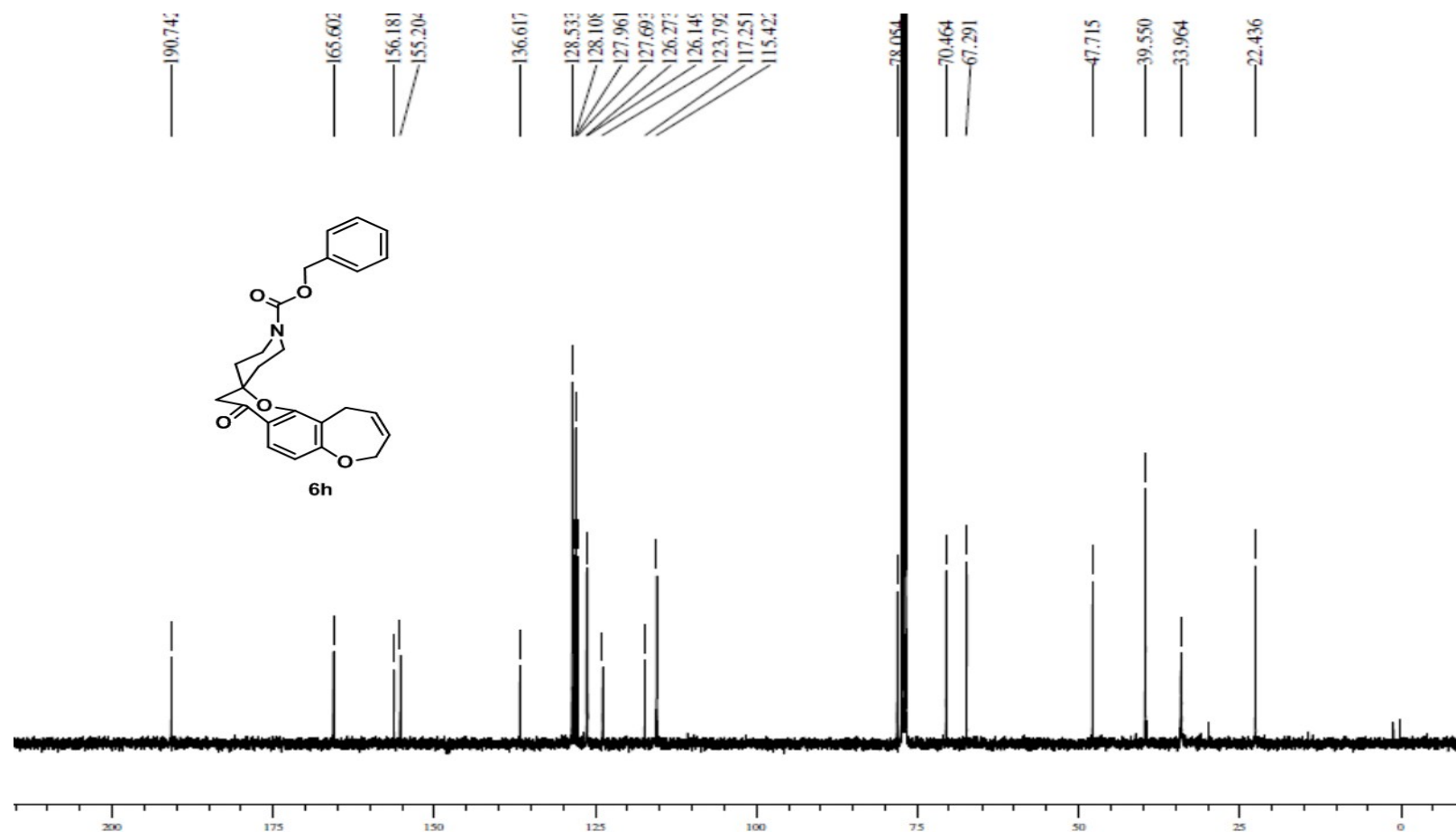
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ) 190.6, 162.6, 157.5, 155.2, 136.6, 135.8, 132.5, 128.5, 127.9, 126.3; 117.6, 116.3, 115.0, 105.5, 69.0, 67.2, 47.8, 39.5, 29.7, 27.4.

MS (EI) LRMS:  $m/z$  447, 357, 356, 312, 217, 215, 175, 92, 91(100%), 44, 41.





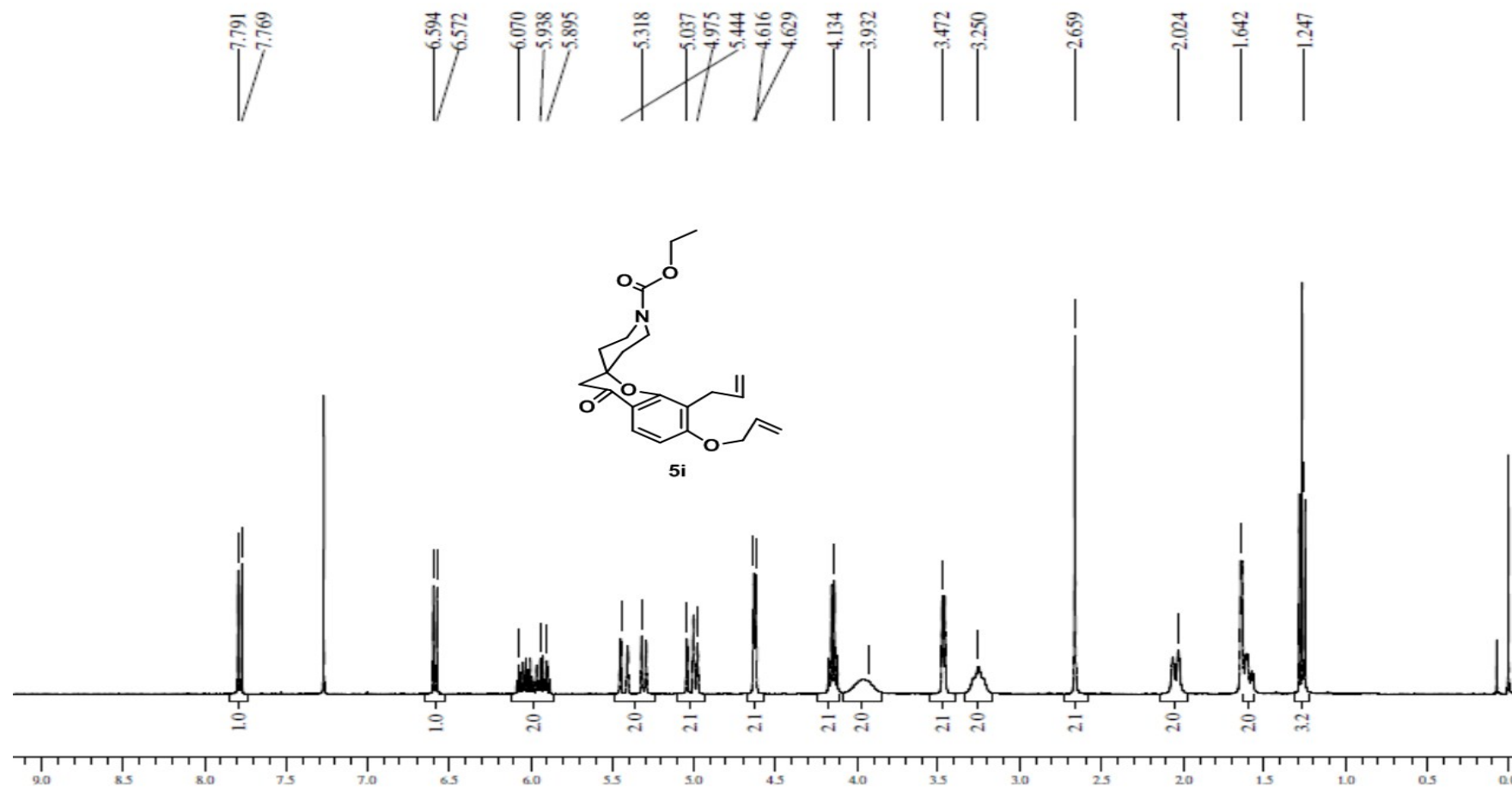
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta$  = 7.74 (d,  $^3J=8.5$  Hz, 1H), 7.37-7.35 (m, 5H), 6.71 (d,  $^3J=8.7$  Hz, 1H), 5.91 (pt,  $^3J=5.5$ , 2.0 Hz, 1H), 5.58 (dhpt,  $J=11.2$ , 1.7 Hz, 1H), 5.13 (s, 2H), 4.64-4.62 (m, 2H), 4.02 (brs, 2H), 3.59 (m, 2H), 3.19 (brs, 2H), 2.67 (s, 2H), 2.06 (brs, 2H), 1.64-1.56 (m, 2H).



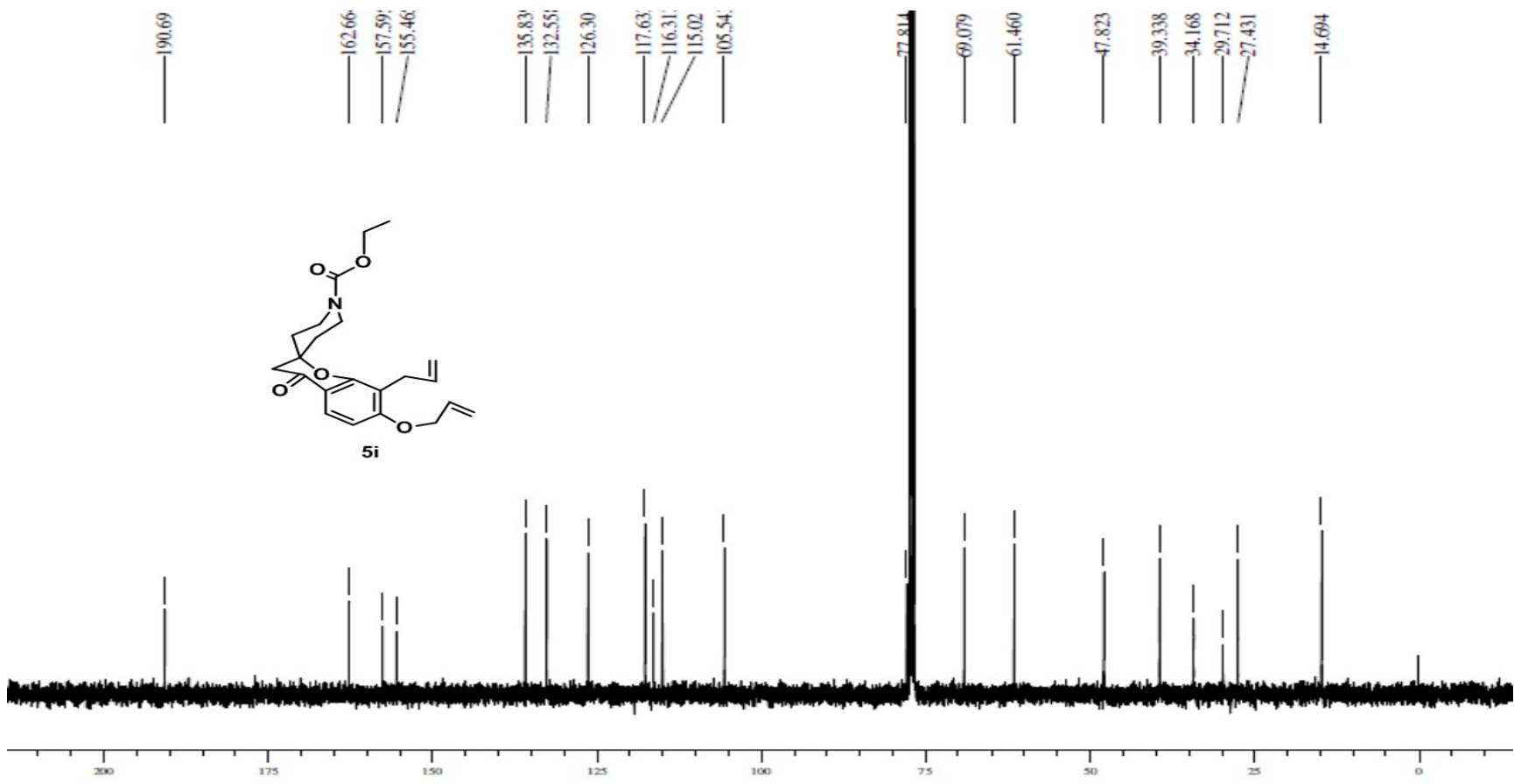
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ):  $\delta$  190.7, 165.6, 156.1, 155.2, 136.6, 128.5, 128.1, 127.9, 127.6, 126.2, 126.1, 123.7, 117.2, 115.4, 78.0, 70.4, 67.2, 47.7, 39.5, 33.9, 22.4.

MS (EI) LRMS:  $m/z$  419, 328(100%), 284, 187, 91.

HRMS (EI):  $m/z$  calcd for  $\text{C}_{25}\text{H}_{25}\text{NO}_5$  is 419.1732; found: 419.1750.

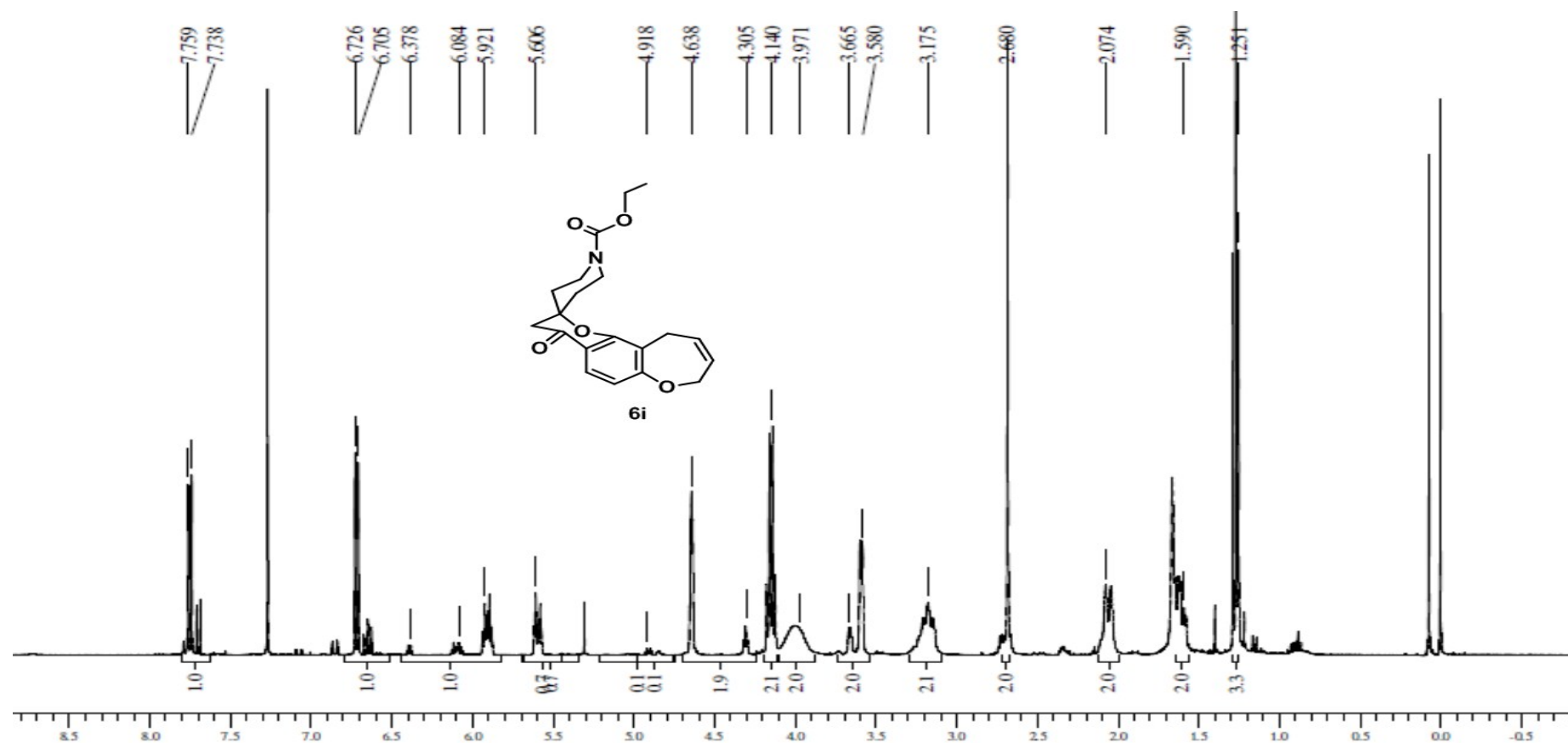


$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.78$  (d,  $^3J=8.7$  Hz, 1H),  $6.58$  (d,  $^3J=8.7$  Hz, 1H),  $6.07$  (ddt,  $J = 17.1, 10.5, 5.0$  Hz, 1H),  $5.93$  (ddt,  $J = 14.7, 12.7, 6.2$  Hz, 1H),  $5.44$  (dq,  $^3J=17.3, ^2,4J=1.5$  Hz, 1H),  $5.31$  (dq,  $^3J=10.5, ^2,4J=1.5$  Hz, 1H),  $5.04$ - $4.97$  (m, 2H),  $4.61$  (dt,  $J = 5.0, 1.5$  Hz, 2H),  $4.13$  (q,  $J = 7.0, 2\text{H}$ )  $3.93$  (brs, 2H),  $3.47$  (dt,  $J = 6.0, 1.2$  Hz, 2H),  $3.25$  (brt, 2H)  $2.65$  (s, 2H),  $2.02$  (d, 2H),  $1.64$ - $1.56$  (m, 2H),  $1.24$  (t,  $J = 7.0, 3\text{H}$ ).

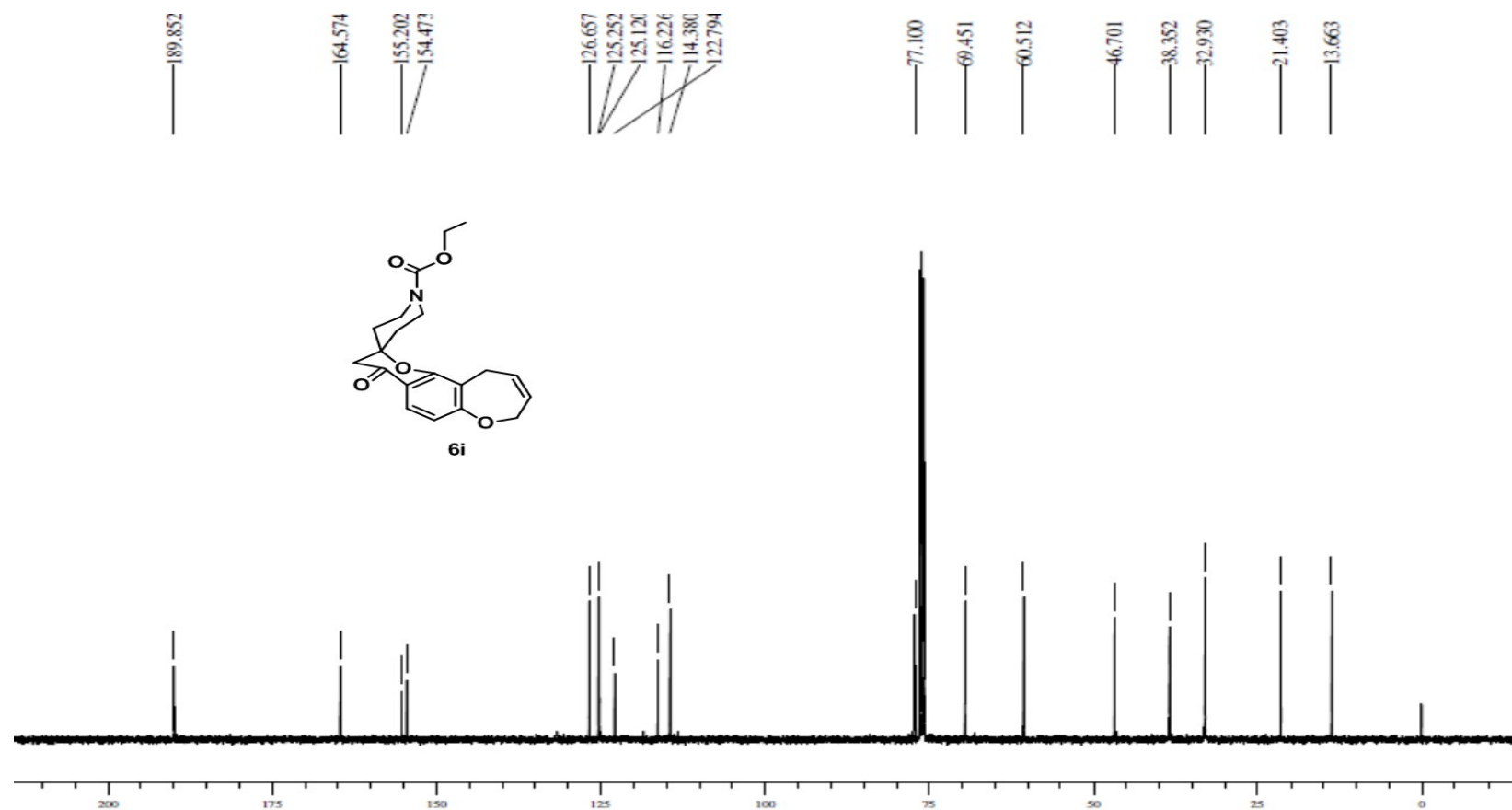


$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ) 190.6, 162.6, 157.5, 155.4, 135.8, 132.5, 126.3, 117.6, 116.3, 115.0, 105.5, 77.8, 69.0, 61.4, 47.8, 39.3, 34.1, 29.7, 27.4, 14.6.

MS (EI) LRMS:  $m/z$  385, 344, 217, 175(100%), 69.



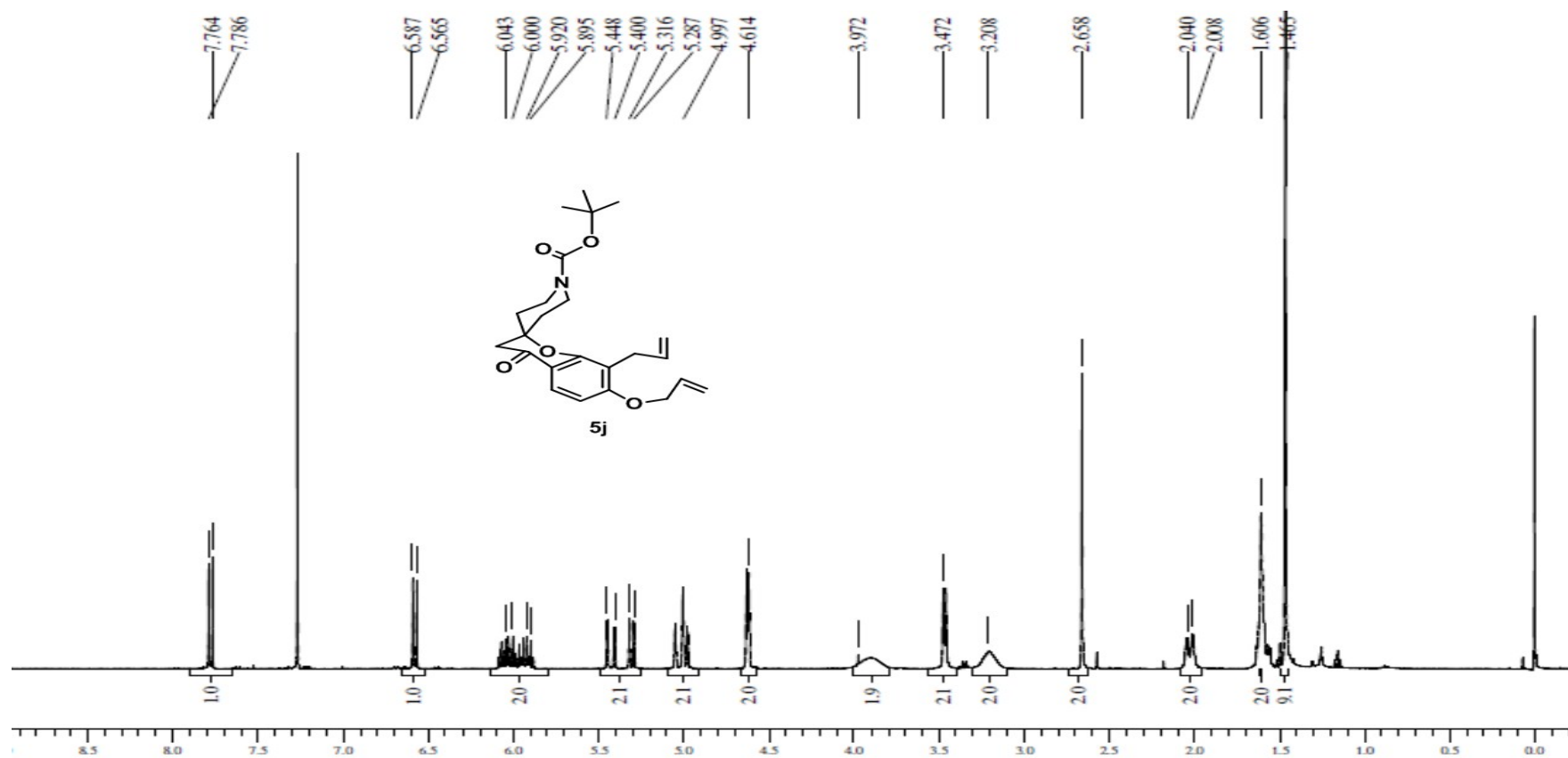
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.74$  (\* 7.69, d,  $^3J = 8.5$  Hz, 1H), 6.71 (\*6.53, d,  $^3J = 8.7$  Hz, 1H), 5.92 { pt,  $^3J = 5.5$ , 2.0 Hz, \* 6.08 (dt,  $J = 12.2$ , 4.5 Hz), \*6.37 ( dt,  $J = 7.2$ , 2.0 Hz ), 1H }, 5.60 { dhpt,  $J = 11.2$ , 1.7 Hz, 1H}, 4.63{ ( dt,  $J = 7.5$ , 4.2 Hz, ), \*4.96-4.83 ( m ), 2H }, 4.14 ( q,  $J = 7.2$  Hz, 2H ), 3.97 ( brs, 2H ), 3.58- 3.50 { m, \*3.68-3.63 (m), 2H }, 3.27-3.10 ( m, 2H ), 2.68 ( s, 2H ), 2.07 ( brd, 2H ), 1.62-1.57 (m, 2H ), 1.25 (t,  $J = 7.2$  Hz, 3H ).



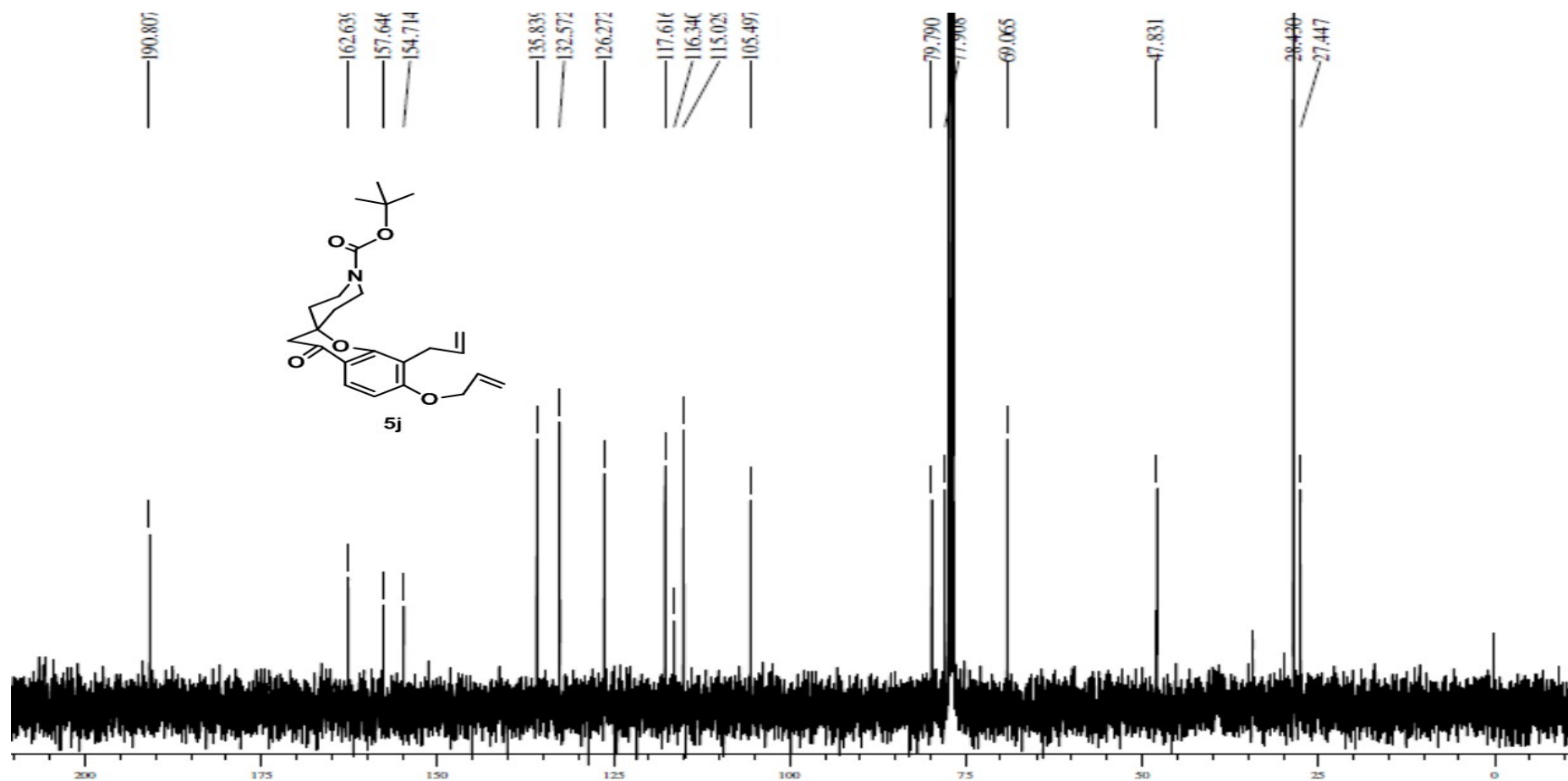
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ):  $\delta$  189.8, 164.5, 155.2, 154.4, 126.6, 125.2, 125.1, 116.2, 114.3, 122.7, 77.1, 69.4, 60.5, 46.7, 38.3, 32.9, 21.4, 13.6.

MS (EI) LRMS:  $m/z$  357, 342, 189 (100%), 160.

HRMS (EI):  $m/z$  calcd for  $\text{C}_{20}\text{H}_{23}\text{NO}_5$  is 357.1576; found 357.1570.



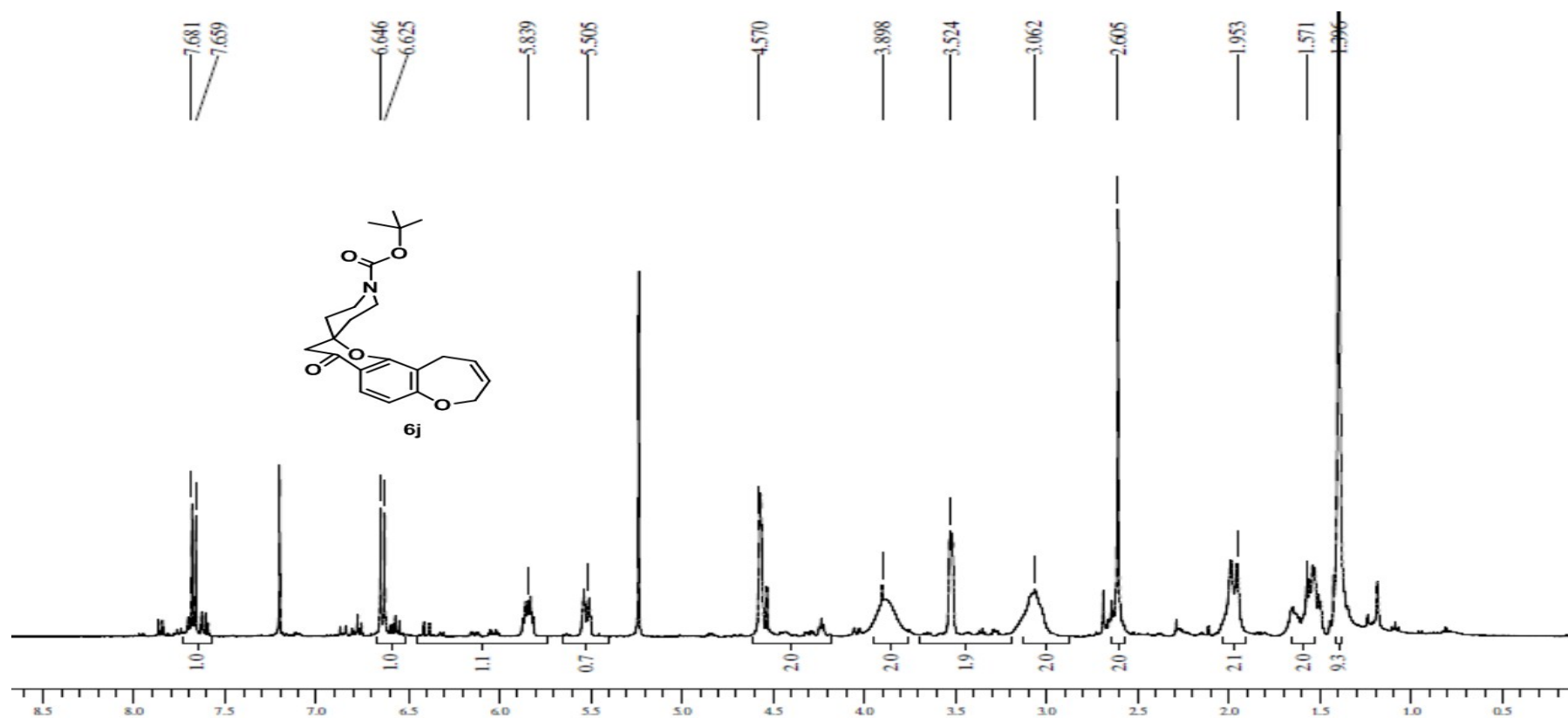
$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.77$  (d,  $^3J=8.7$  Hz, 1H),  $6.57$  (d,  $^3J=8.7$  Hz, 1H),  $6.04$  (ddt,  $J = 17.1, 10.5, 5.0$  Hz, 1H),  $5.92$  (ddt,  $J = 14.7, 12.7, 6.2$  Hz, 1H),  $5.42$  (dq,  $^3J=17.3, ^2J=1.7$  Hz, 1H),  $5.30$  (dq,  $^3J=10.5, ^2J=1.5$  Hz, 1H),  $5.03$ - $4.96$  (m, 2H),  $4.61$  (dt,  $J = 5.0, 1.5$  Hz, 2H),  $3.89$  (brs, 2H),  $3.47$  (dt,  $J = 6.2, 1.5$  Hz, 2H),  $3.20$  (brs, 2H),  $2.65$  (s, 2H),  $2.04$  (d, 2H),  $1.60$  (s, 2H),  $1.46$  (s, 9H).



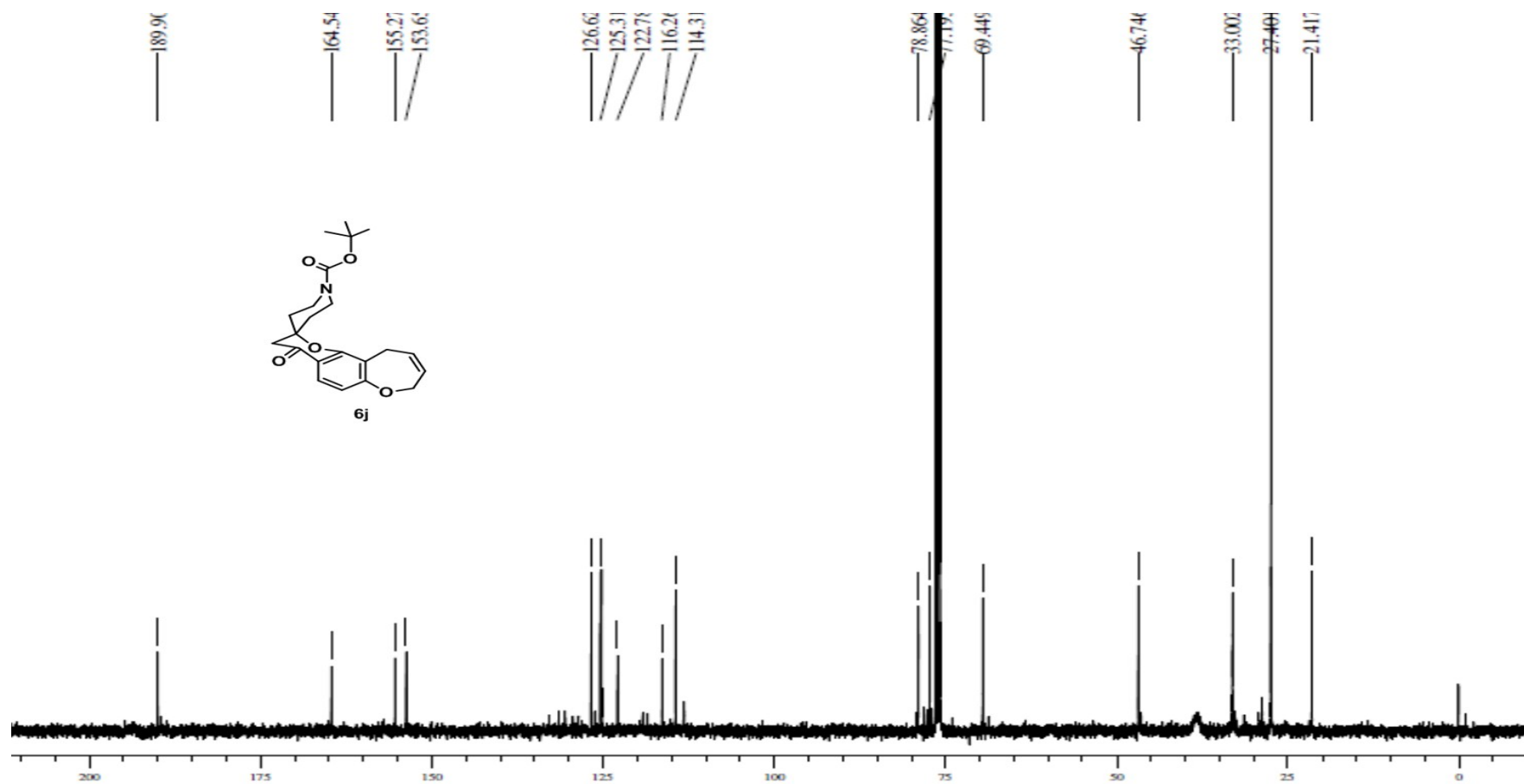
$^{13}\text{C}$  (100 MHz,  $\text{CDCl}_3$ ) 190.8, 162.6, 157.6, 154.7, 135.8, 132.5, 126.2, 117.6, 116.3, 115.0, 105.5, 79.7, 77.9, 69.0, 47.8, 28.4, 27.4.

MS (EI) LRMS:  $m/z$  413, 357, 312, 217, 175, 96, 57(100%).





$^1\text{H NMR}$  ( $\text{CDCl}_3/400\text{MHz}$ ):  $\delta = 7.69$  (\* 7.61, d,  $^3J=8.5$  Hz, 1H), 6.64 (\*6.54, d,  $^3J=8.7$  Hz, 1H), 5.83 { pt,  $^3J=5.7$ , 2.0 Hz, \* 6.04, (dt,  $J=12.0$ , 4.2 Hz), 1H }, 5.50 ( dhpt,  $J=11.2$ , 1.5 Hz, 1H), 4.57-4.55 (m, 2H ), 3.89 ( brs, 2H ), 3.52- 3.50 ( m, 2H ), 3.06 ( brs, 2H ), 2.60 ( s, 2H ), 1.95 ( brd, 2H ), 1.64-1.52 (m, 2H ), 1.39 (s, 9H ).



<sup>13</sup>C (100 MHz, CDCl<sub>3</sub>): δ 189.9, 164.5, 155.2, 153.6, 126.6, 125.3, 125.0, 122.7, 116.2, 114.3, 78.8, 77.1, 69.4, 46.7, 33.0, 27.4, 21.4.

MS (EI) LRMS: m/z 385, 330, 329(100%), 314, 189, 96.

HRMS (EI): m/z calcd for C<sub>22</sub>H<sub>27</sub>NO<sub>5</sub>: 385.1889; found: 385.1900