Supporting Information

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A Scalable Synthesis of 4-Functionalized Isoxazolidines and Pyrazolidines

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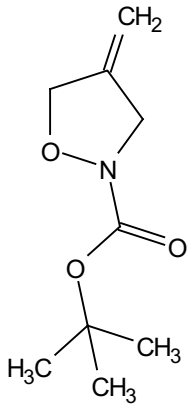
^{1}H NMR (400 MHz, Chloroform-*d*) δ 5.07 (t, *J* = 2.3 Hz, 1H), 5.04 (t, *J* = 2.5 Hz, 1H), 4.36 (s, 2H), 4.14 (s, 2H), 1.46 (s, 9H).



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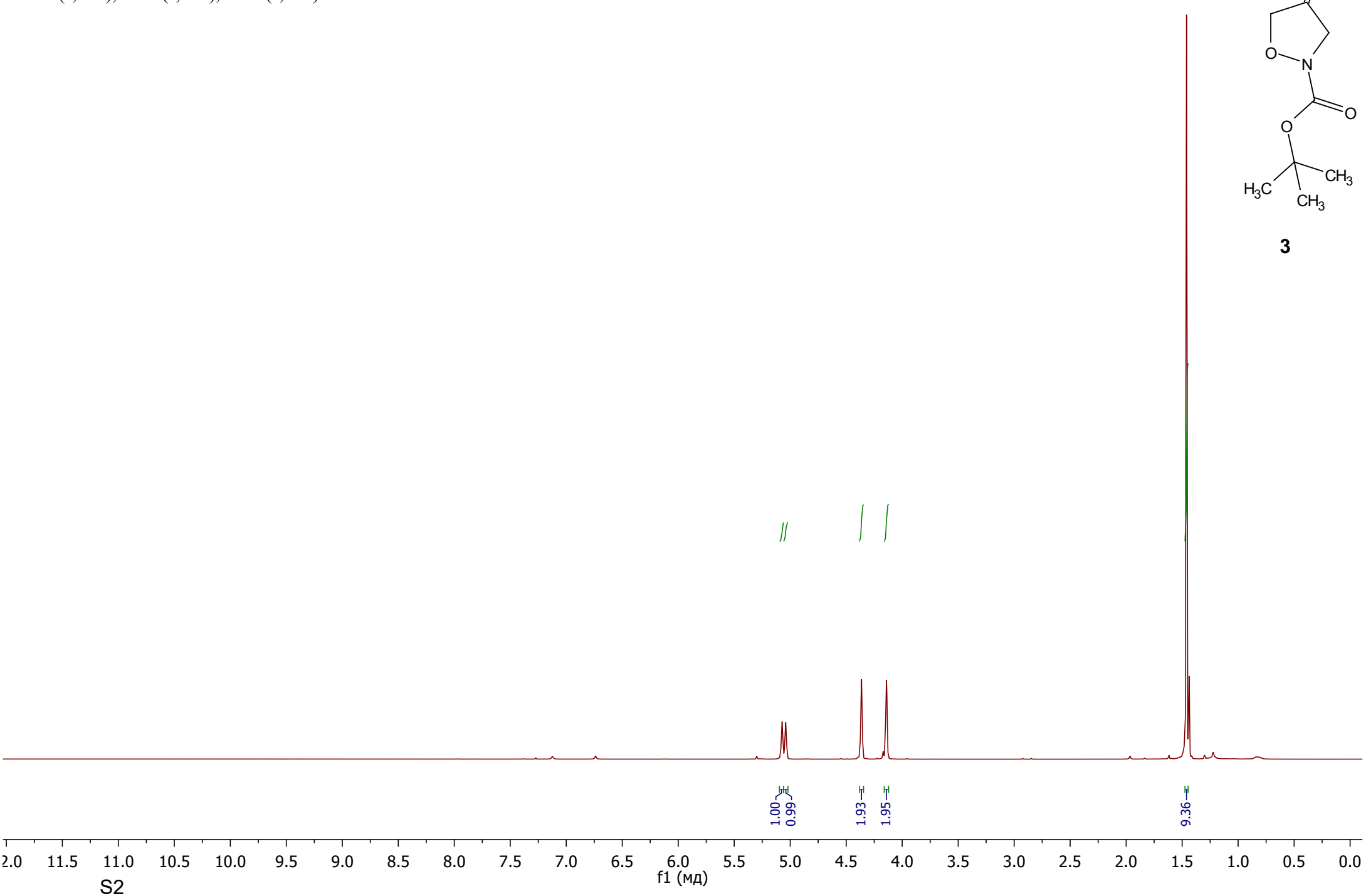
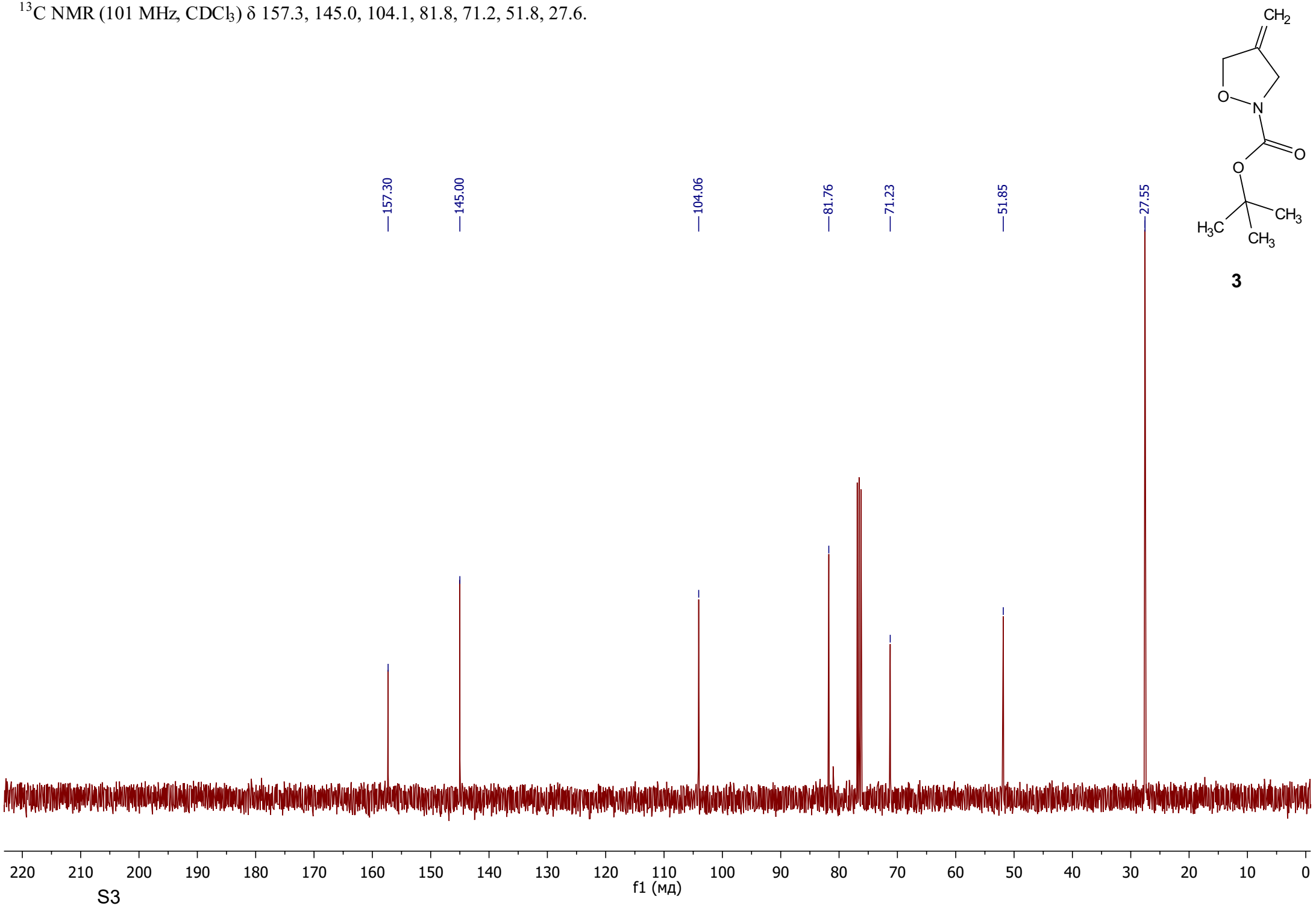
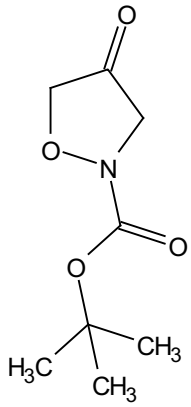


^{13}C NMR (101 MHz, $CDCl_3$) δ 157.3, 145.0, 104.1, 81.8, 71.2, 51.8, 27.6.



^{1}H NMR (500 MHz, Chloroform-*d*) δ 4.08 (s, 2H), 3.97 (s, 2H), 1.52 (s, 9H).



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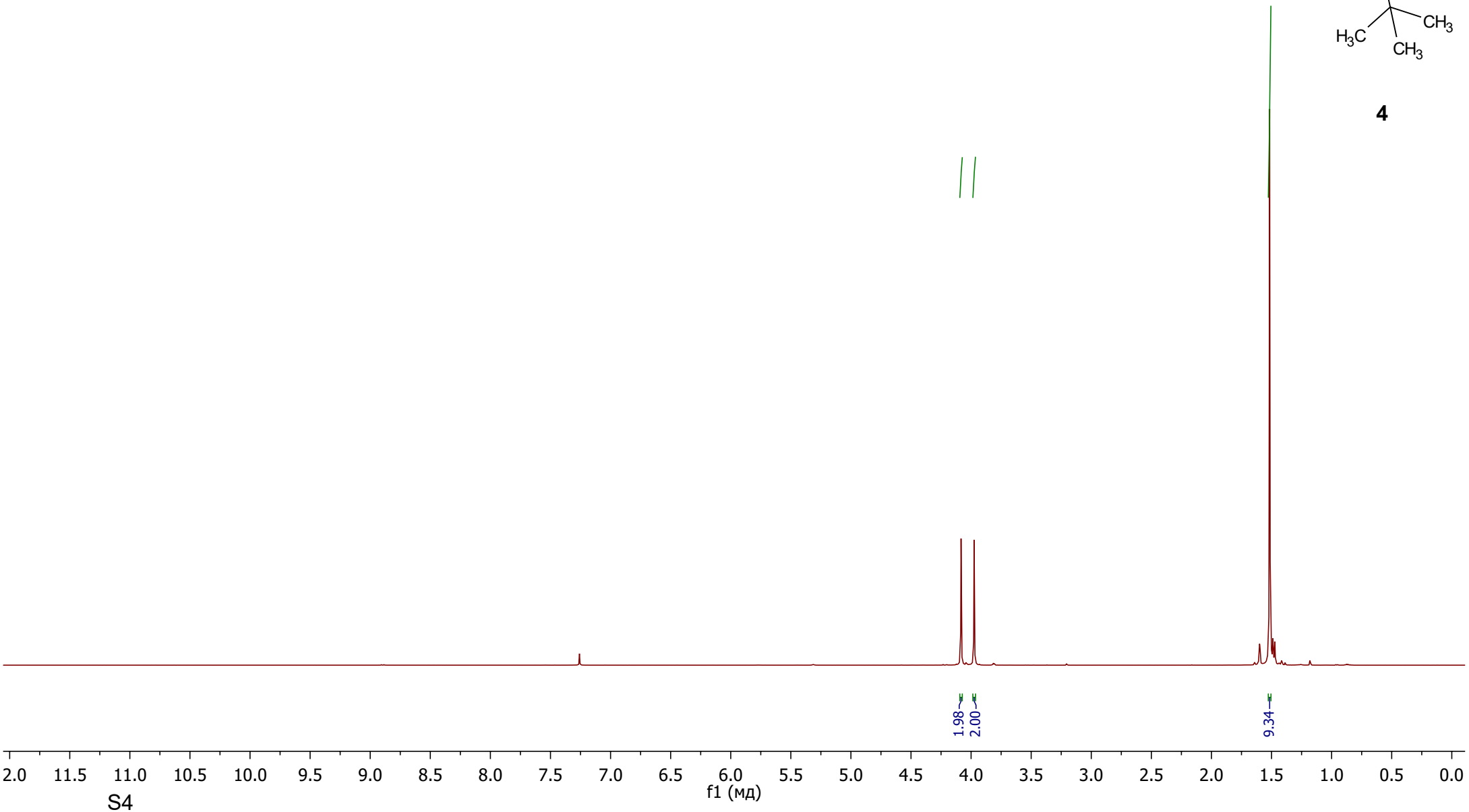
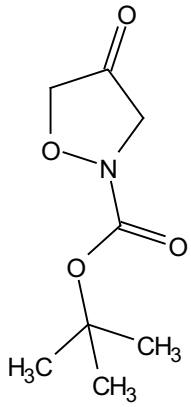


^{13}C NMR (126 MHz, $CDCl_3$) δ 28.1, 53.8, 70.9, 83.6, 156.8, 209.0.



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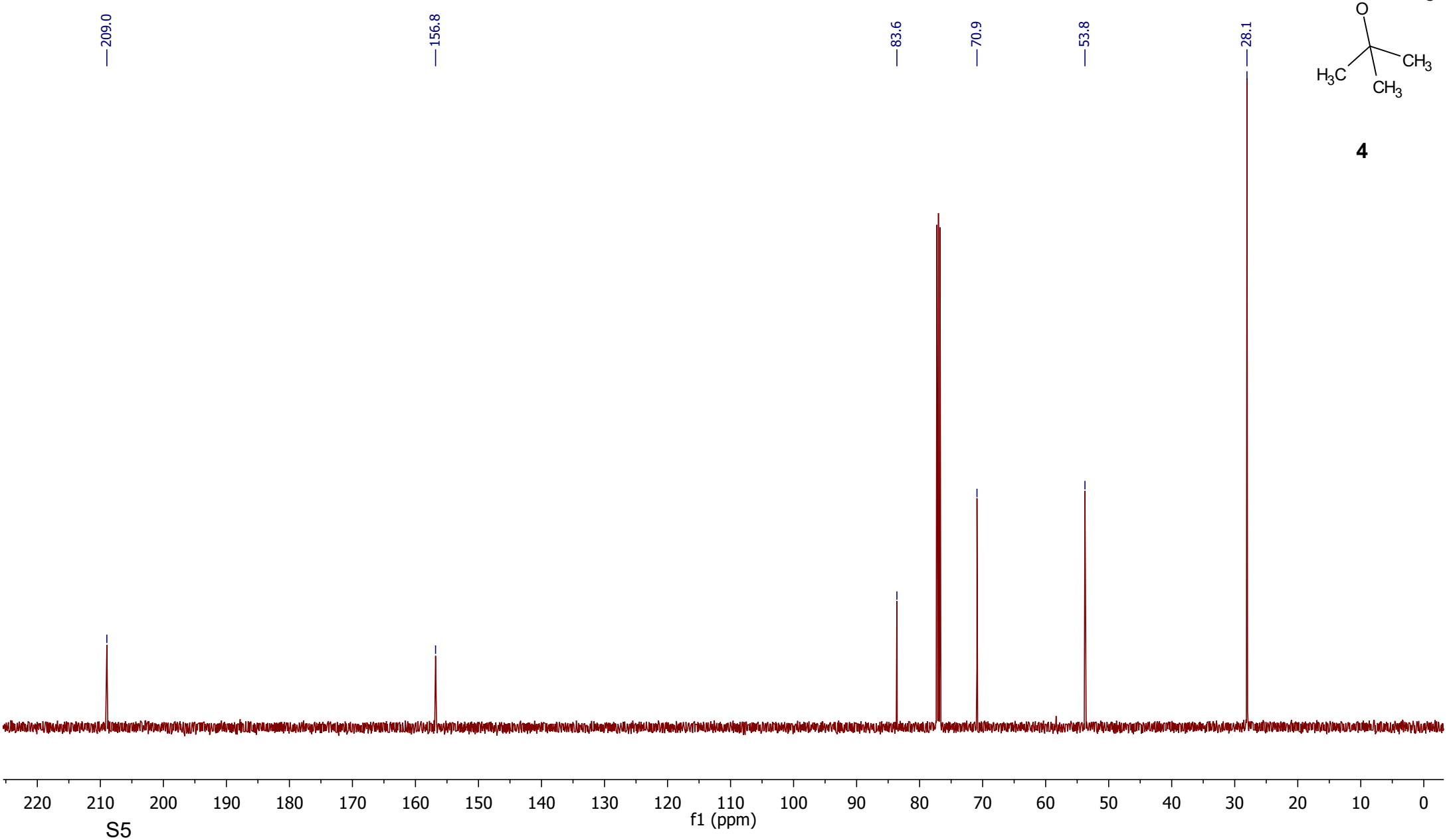
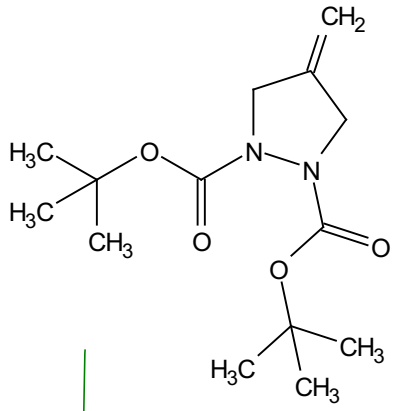


^{1}H NMR (500 MHz, Chloroform-*d*) δ 5.09 – 5.04 (m, 2H), 4.43 (d, *J* = 15.0 Hz, 2H), 3.83 (d, *J* = 16.0 Hz, 2H), 1.47 (s, 18H).



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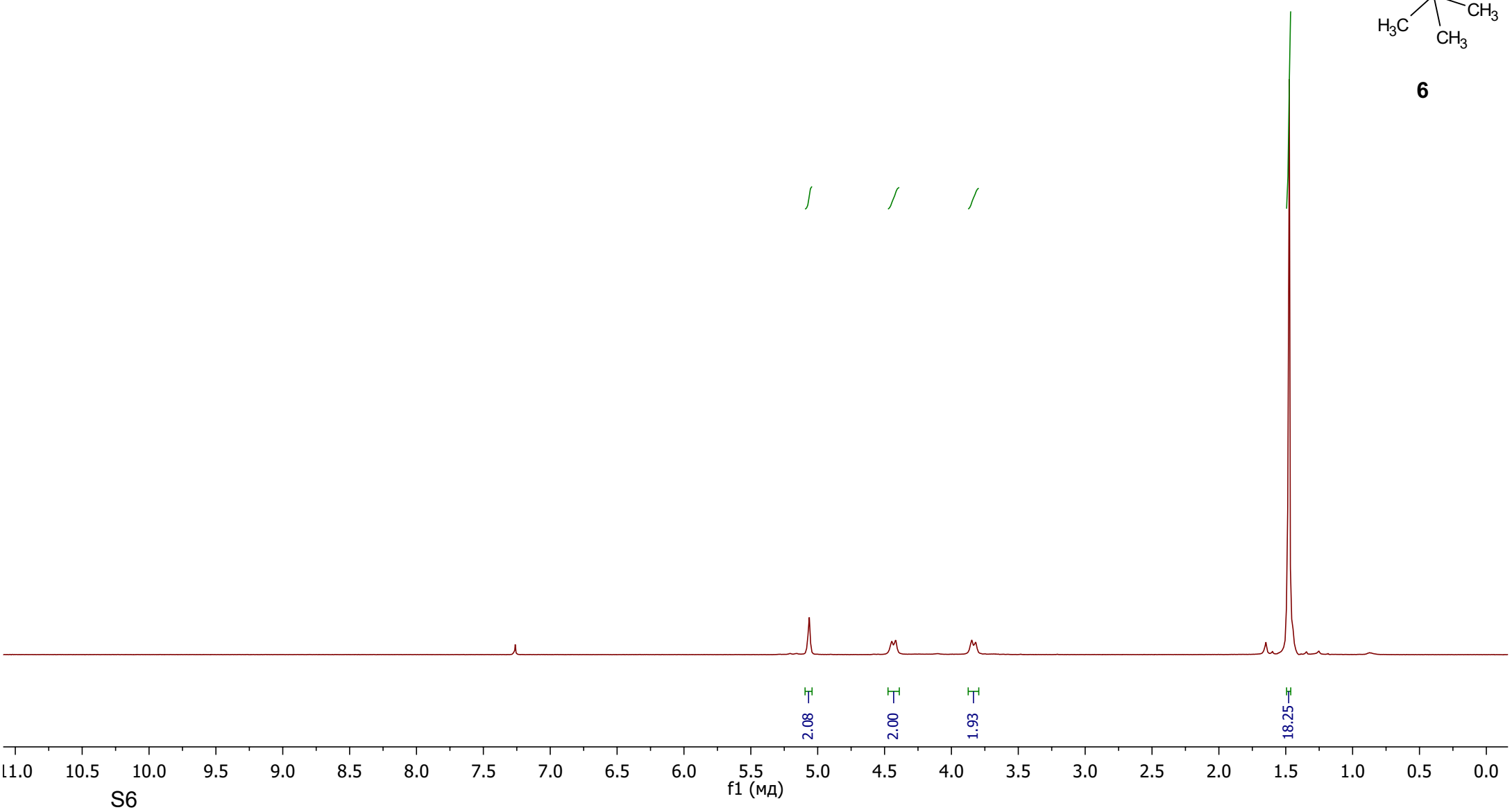
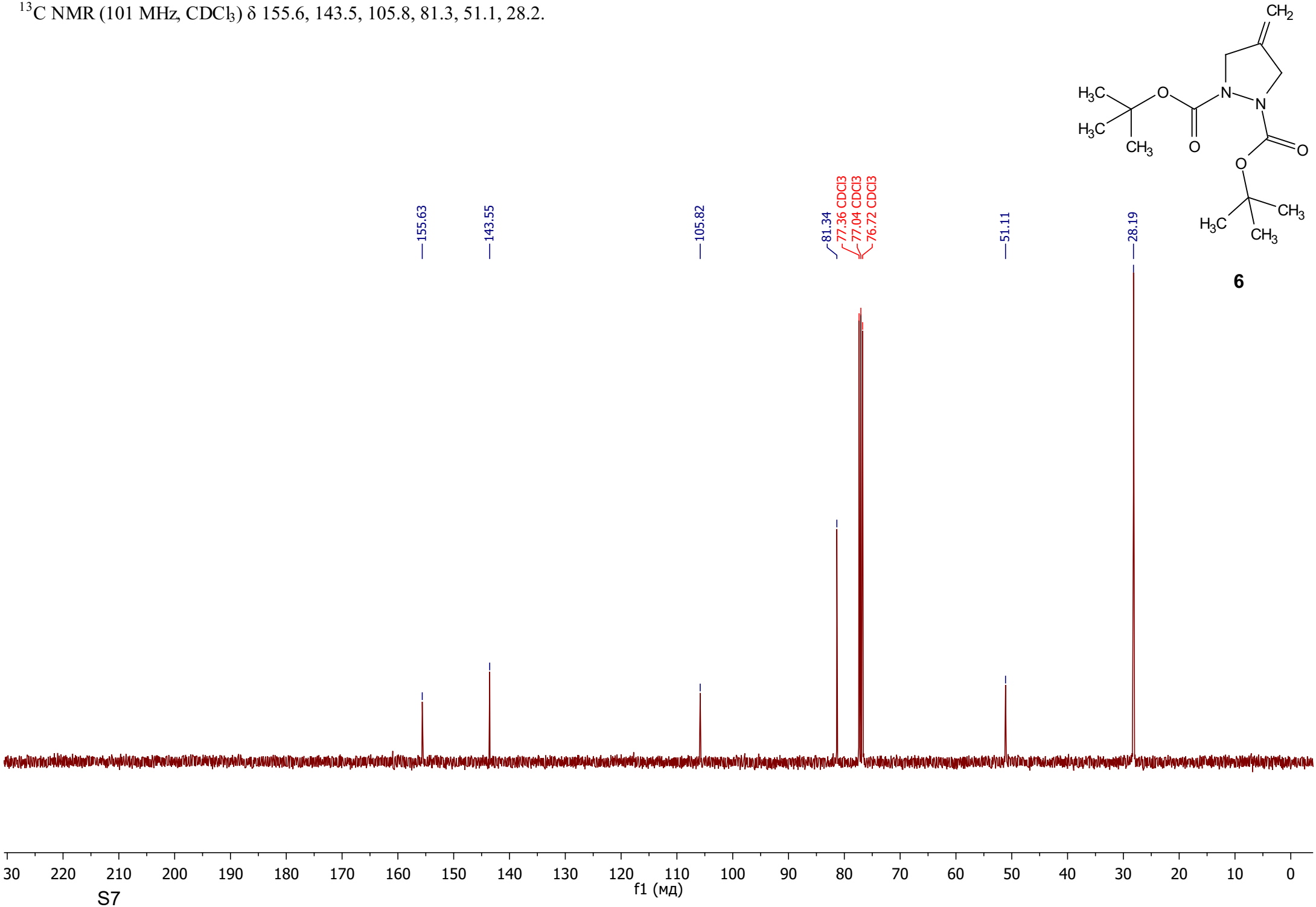
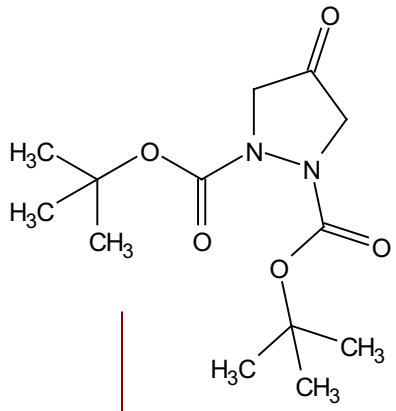


^{13}C NMR (101 MHz, $CDCl_3$) δ 155.6, 143.5, 105.8, 81.3, 51.1, 28.2.



^{1}H NMR (500 MHz, Chloroform-*d*) δ 4.25 (d, *J* = 18.1 Hz, 2H), 3.65 (d, *J* = 18.1 Hz, 2H), 1.49 (s, 18H).



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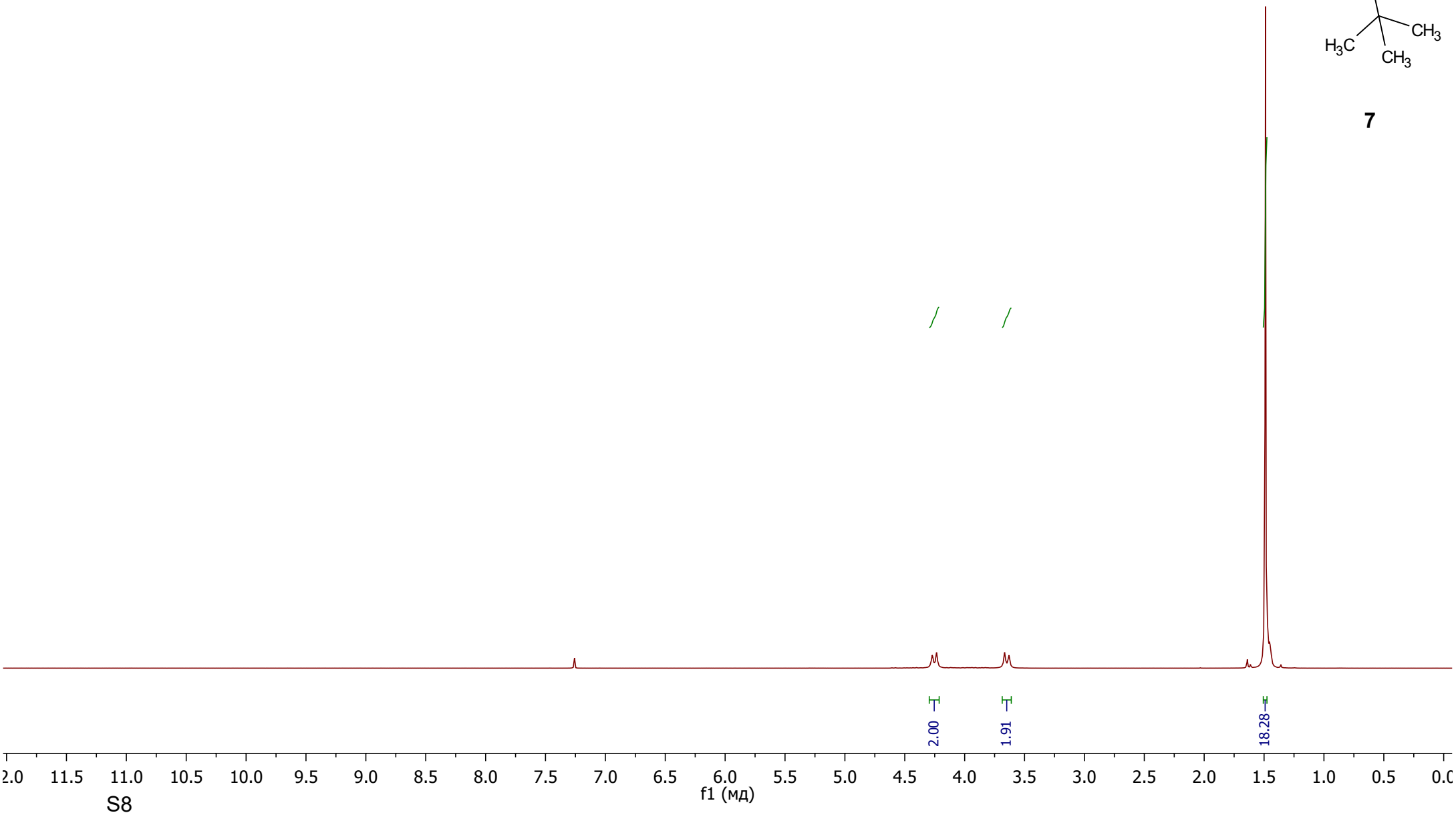
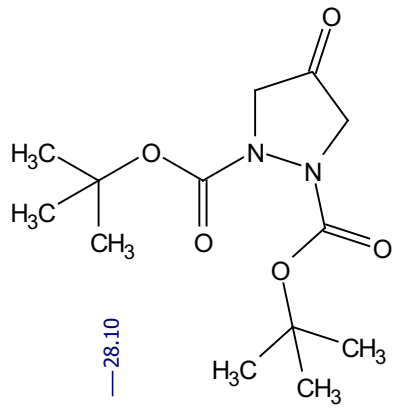


^{13}C NMR (151 MHz, cdcl$_3$) δ 207.9, 155.0, 82.5, 53.2, 28.1.



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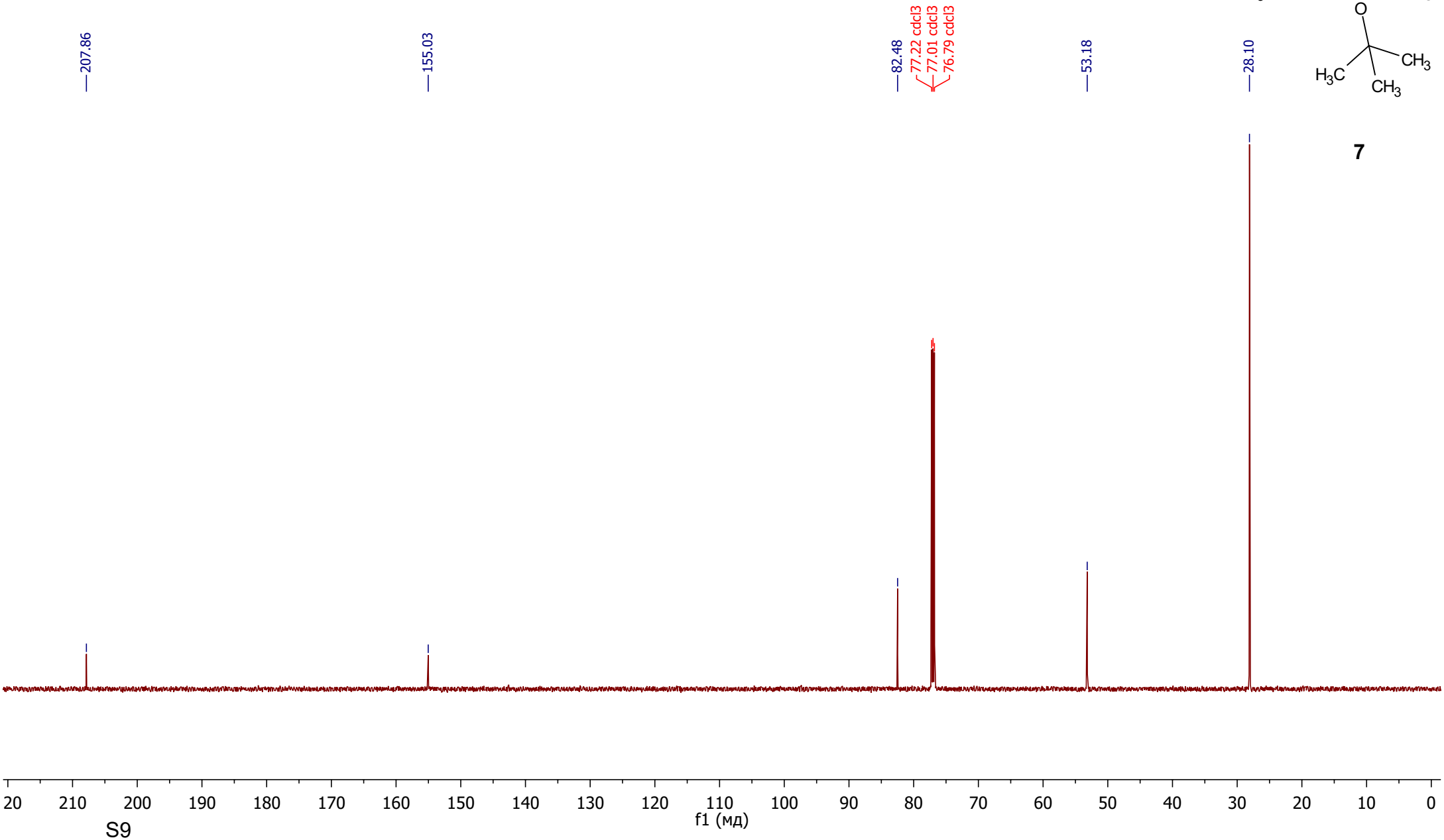
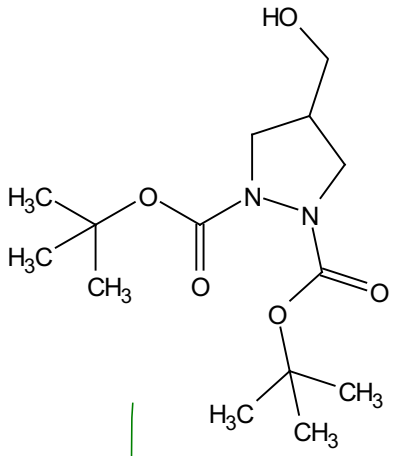


^{1}H NMR (400 MHz, DMSO-d_6) δ 4.82 (t, J = 5.0 Hz, 1H), 3.76 (t, J = 9.5 Hz, 1H), 3.62 (dd, J = 11.0, 3.7 Hz, 1H), 3.27 (t, J = 5.9 Hz, 2H), 3.16 (t, J = 9.5 Hz, 1H), 2.90 (dd, J = 10.2, 5.4 Hz, 1H), 1.39 (s, 18H).



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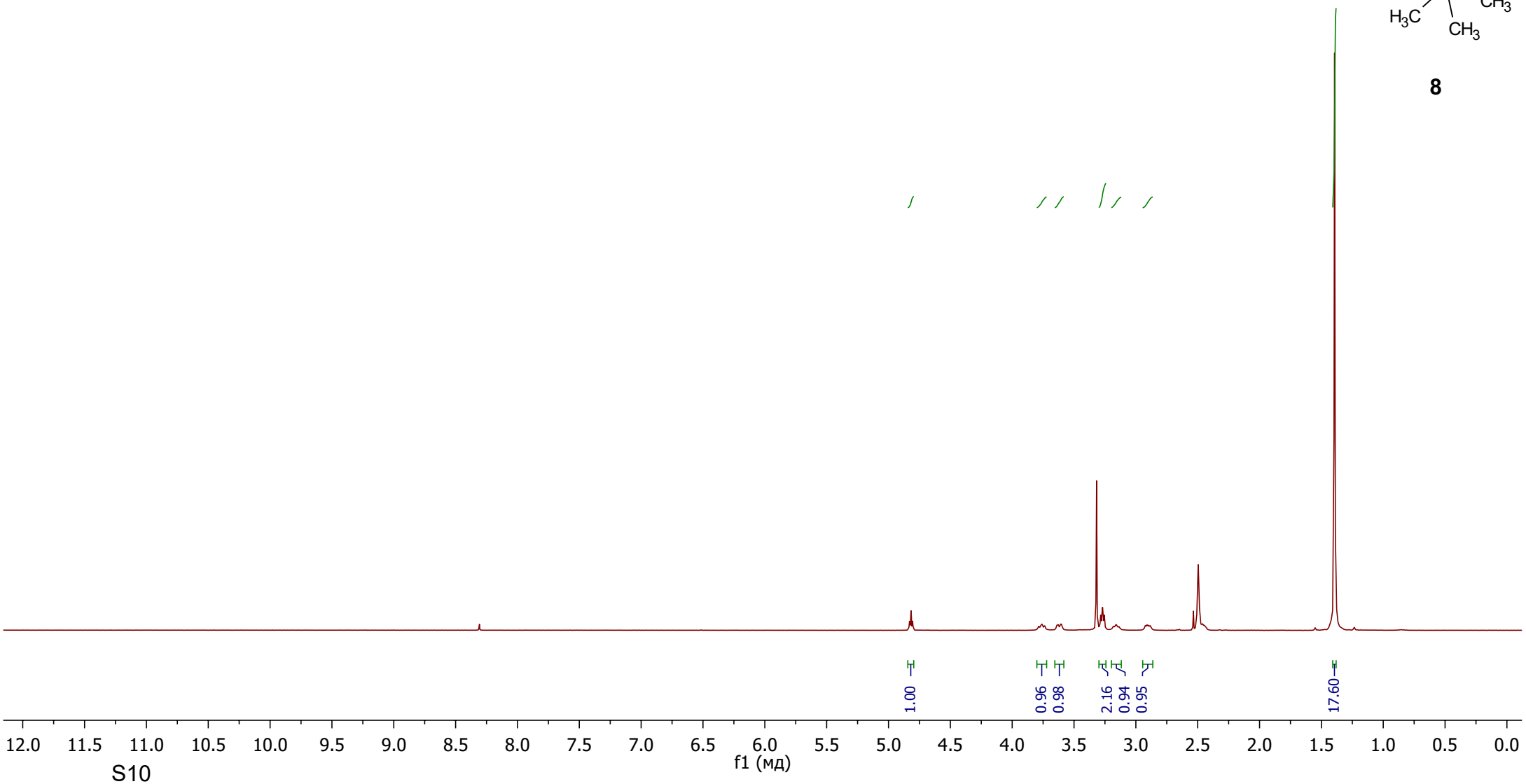
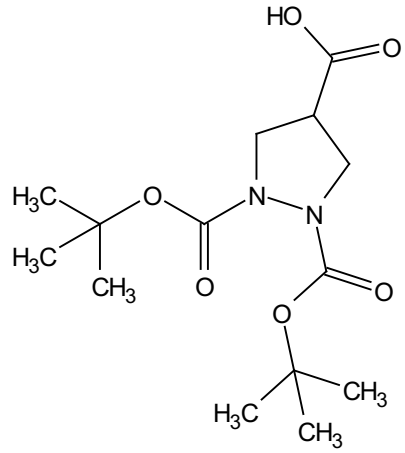


^{1}H NMR (400 MHz, Chloroform-*d*) δ 9.16 (s, 1H), 4.25 (dd, *J* = 11.7, 3.7 Hz, 1H), 4.12 (t, *J* = 10.0 Hz, 1H), 3.98 – 3.89 (m, 1H), 3.53 (dd, *J* = 11.5, 5.9 Hz, 1H), 3.43 (t, *J* = 10.1 Hz, 1H), 3.32 – 3.25 (m, 1H), 1.48 (s, 18H).



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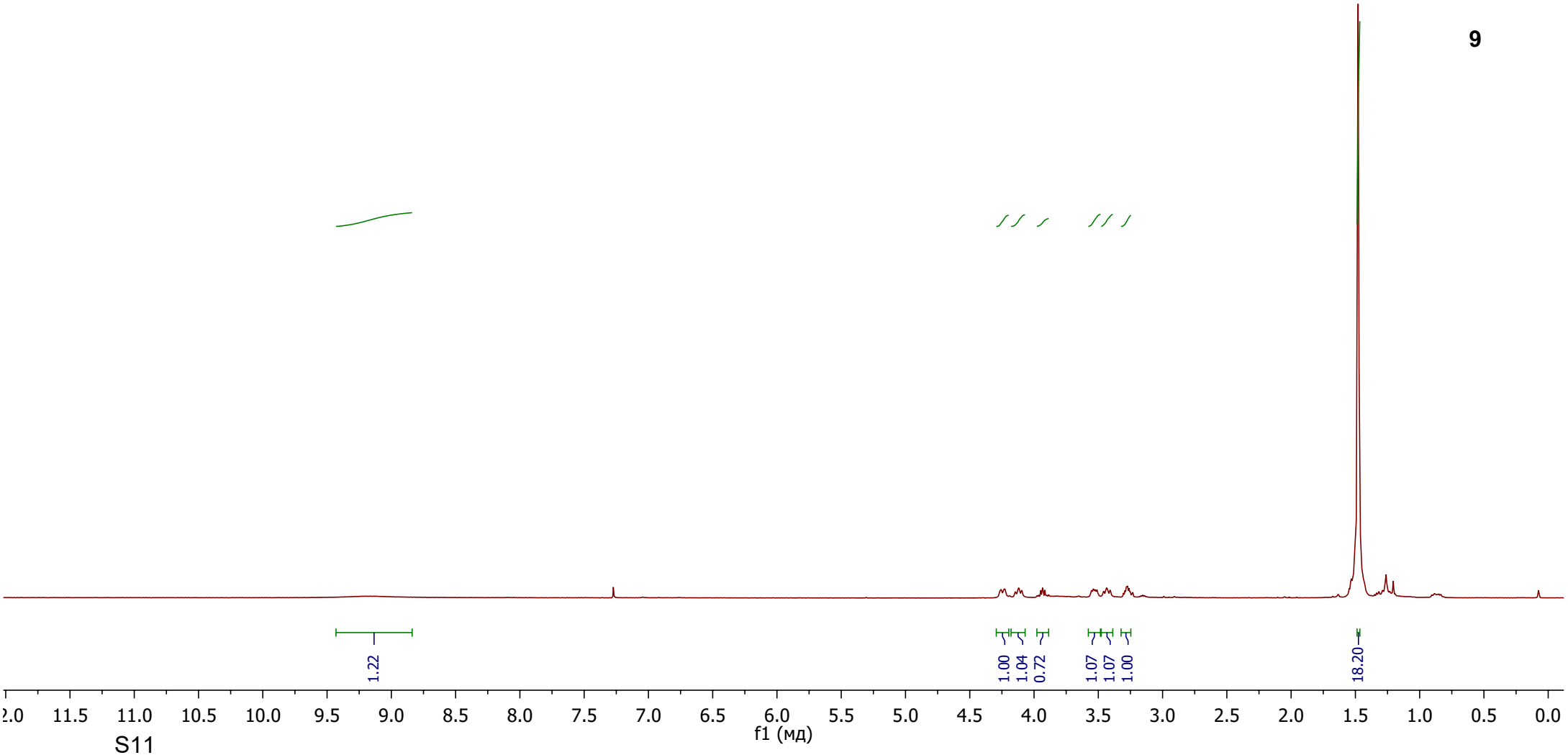
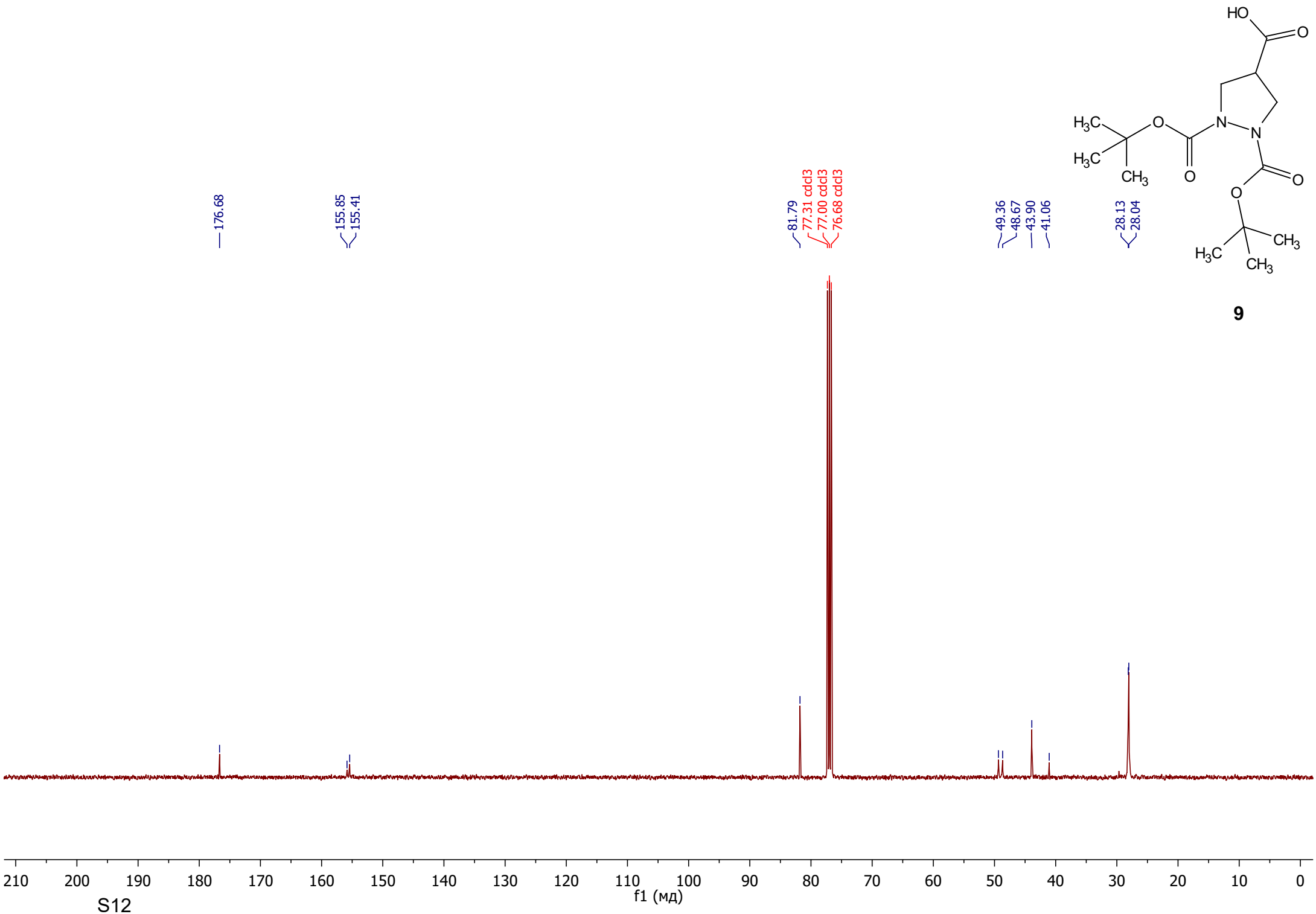
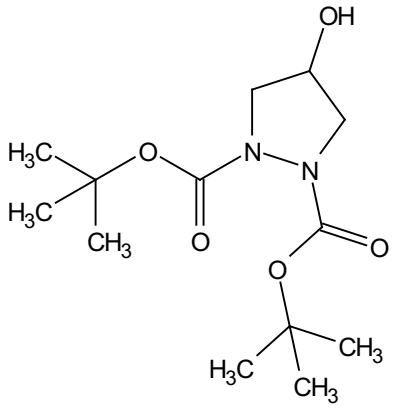



176.68
155.85
155.41
81.79
77.31 cdcl3
77.00 cdcl3
76.68 cdcl3
49.36
48.67
43.90
41.06
28.13
28.04
HO
O
N
N
O
O
O
O
O
H_3C
H_3C
CH_3
H_3C
CH_3
CH_3
9
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (мд)

^{1}H NMR (400 MHz, DMSO-d_6) δ 5.11 (d, J = 2.4 Hz, 1H), 4.38 (s, 1H), 3.76 – 3.63 (m, 2H), 3.04 (t, J = 12.9 Hz, 2H), 1.39 (s, 18H).



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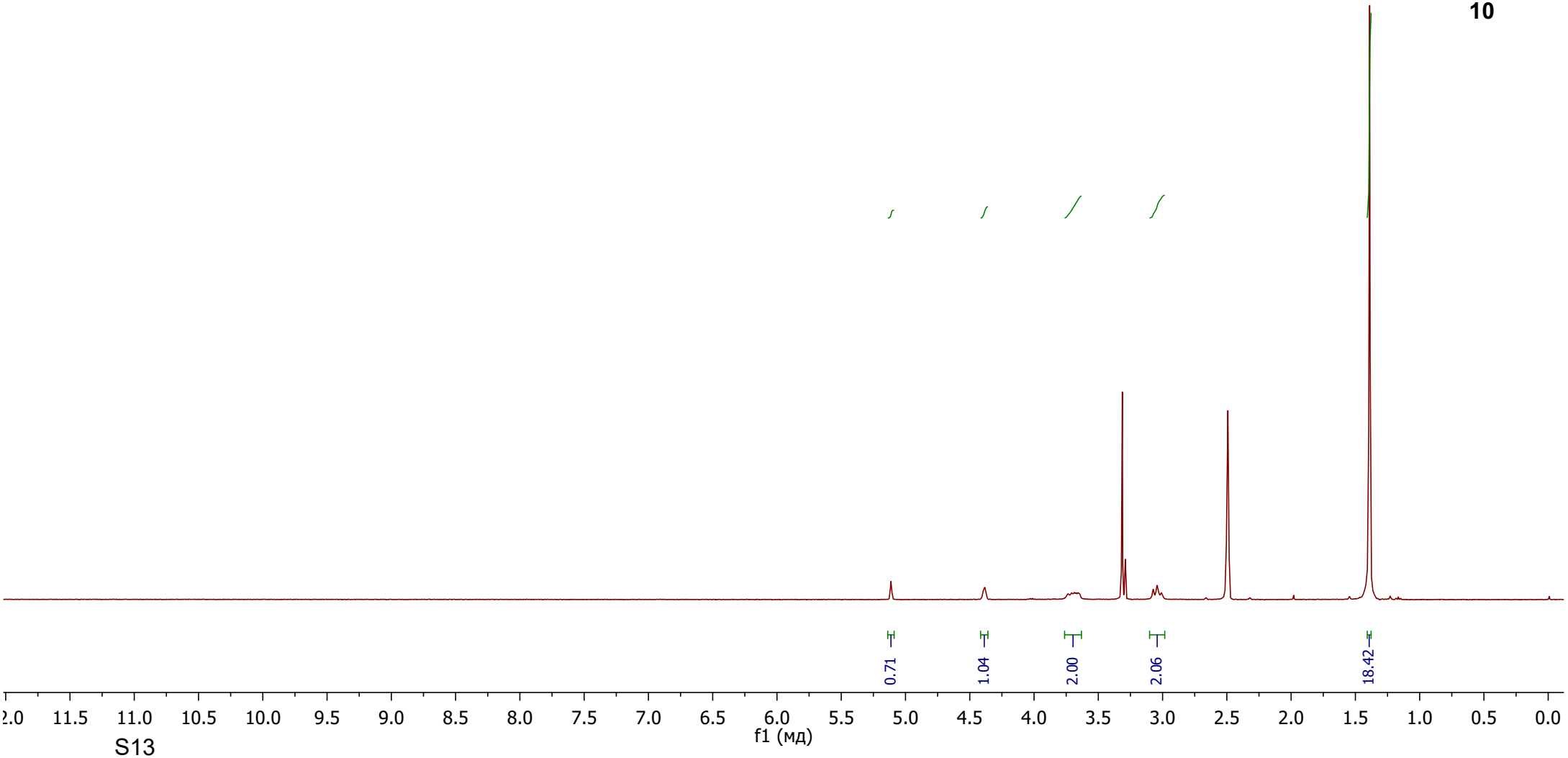

^{13}C NMR (101 MHz, dmso) δ 28.2 and 28.3 (rotamers), 55.2, 70.1, 80.2 and 80.5 (rotamers), 154.9 and 157.0 (rotamers)

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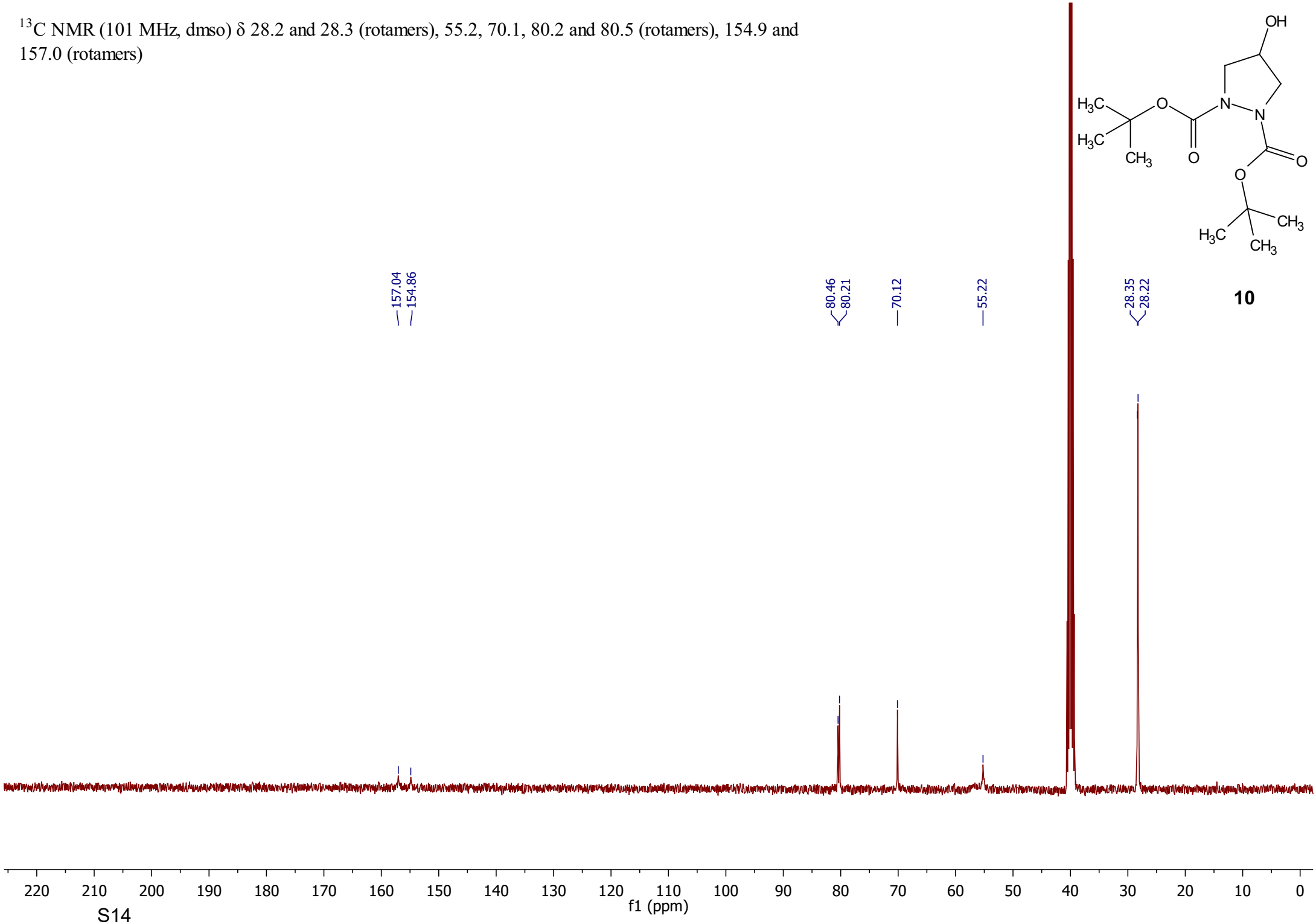
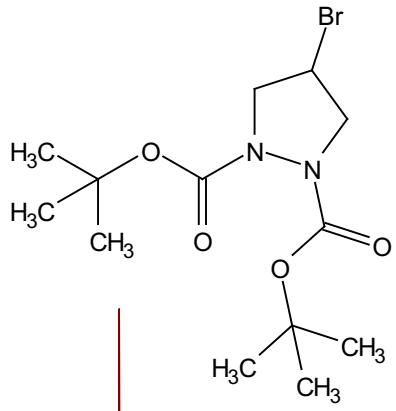


^{1}H NMR (500 MHz, DMSO-d_6) δ 4.87 (t, J = 5.0 Hz, 1H), 4.13 (dd, J = 12.7, 5.8 Hz, 1H), 4.07 (d, J = 13.4 Hz, 1H), 3.59 (d, J = 12.6 Hz, 1H), 3.54 (d, J = 13.4 Hz, 1H), 1.41 and 1.39 (s, 18H, rotamers).



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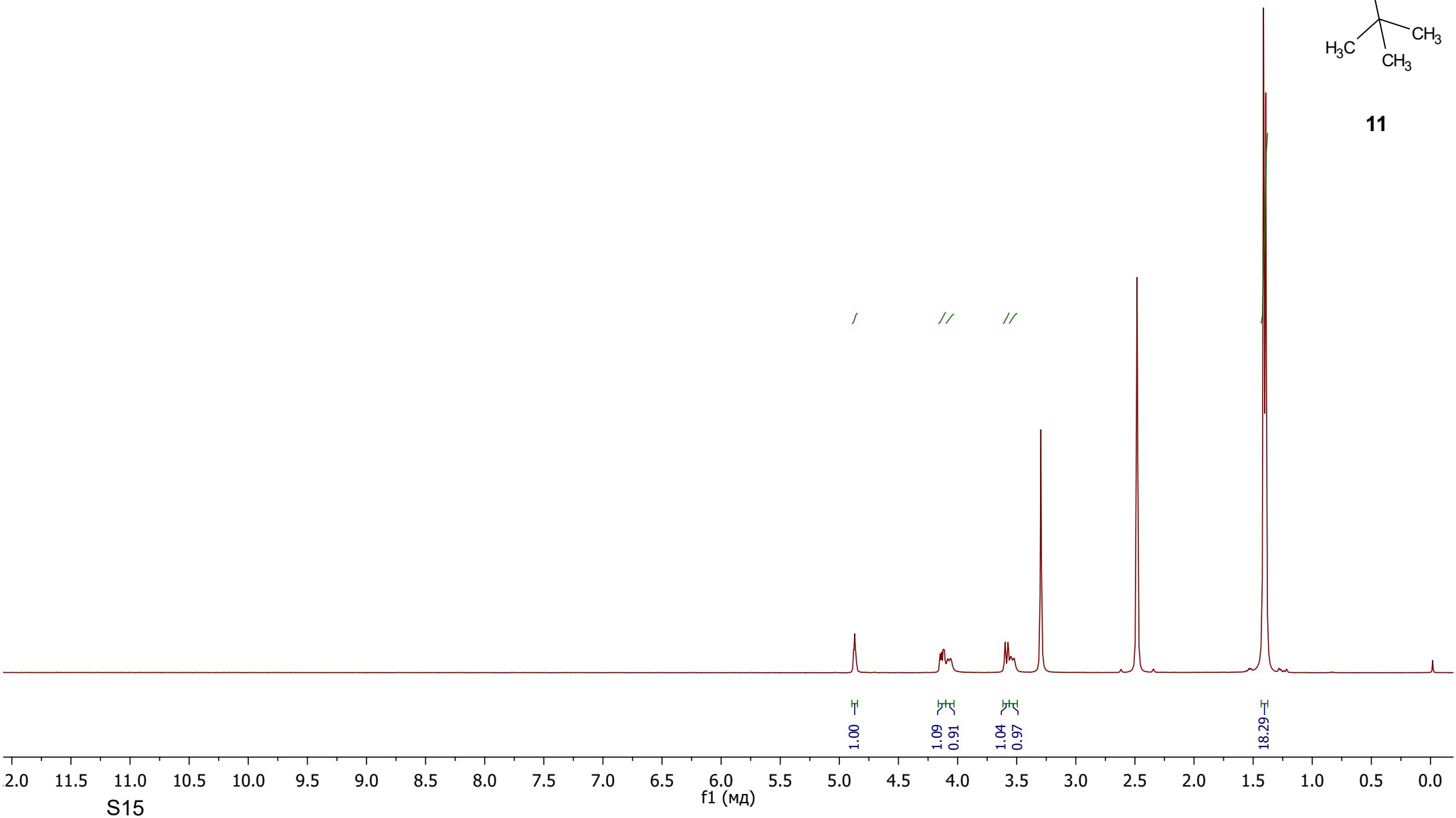
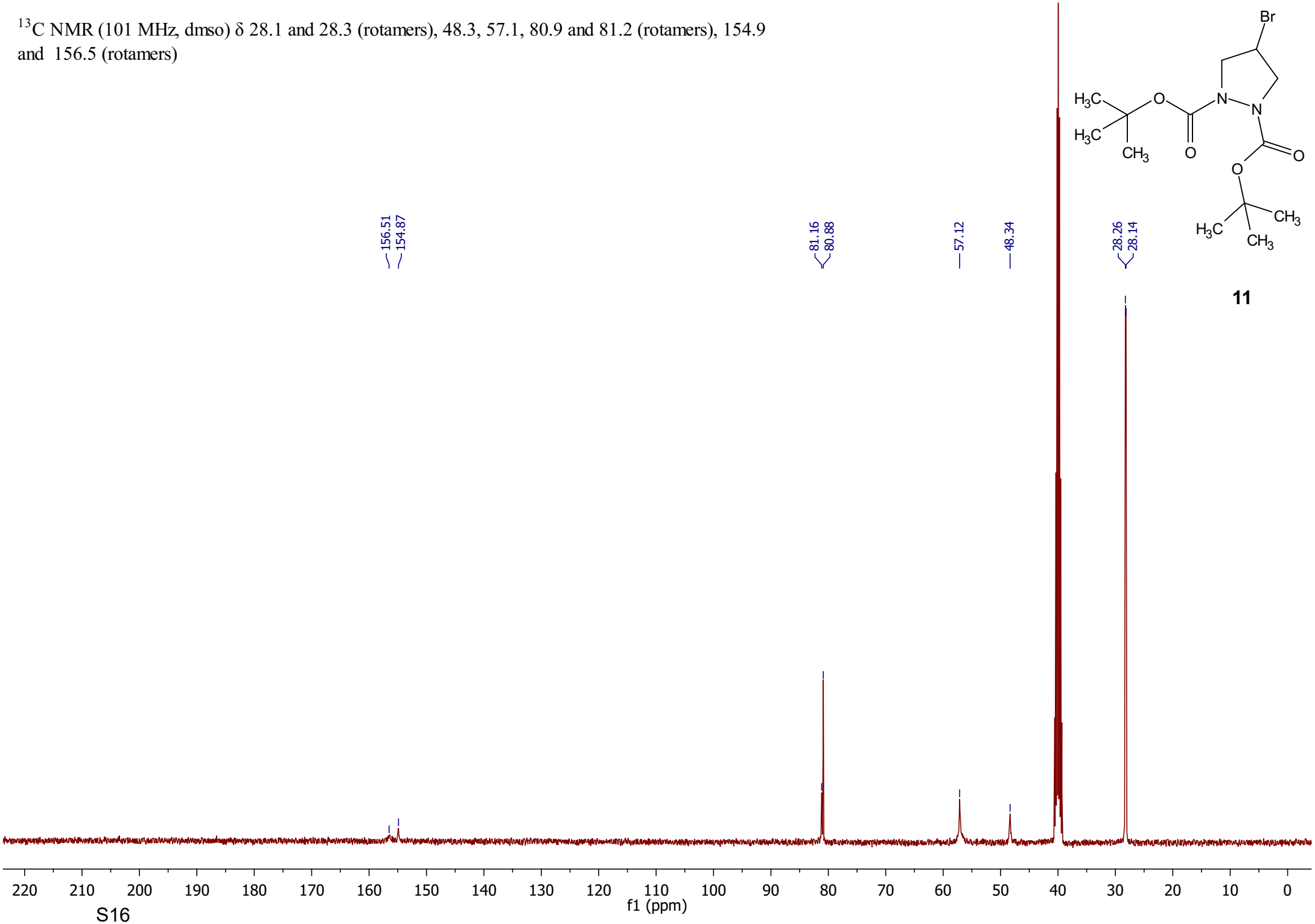
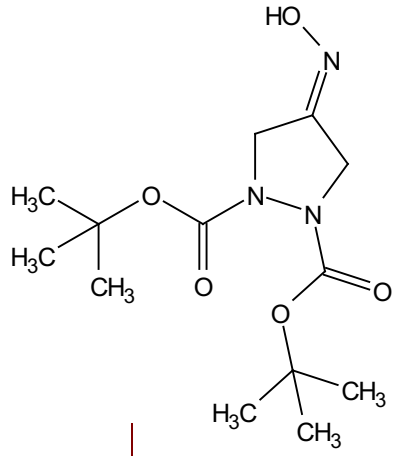


^{13}C NMR (101 MHz, dmso) δ 28.1 and 28.3 (rotamers), 48.3, 57.1, 80.9 and 81.2 (rotamers), 154.9 and 156.5 (rotamers)



^{1}H NMR (400 MHz, DMSO-d_6) δ 11.17 (s, 1H), 4.34 (t, J = 18.4 Hz, 2H), 3.85 (t, J = 16.8 Hz, 2H), 1.38 (s, 18H).



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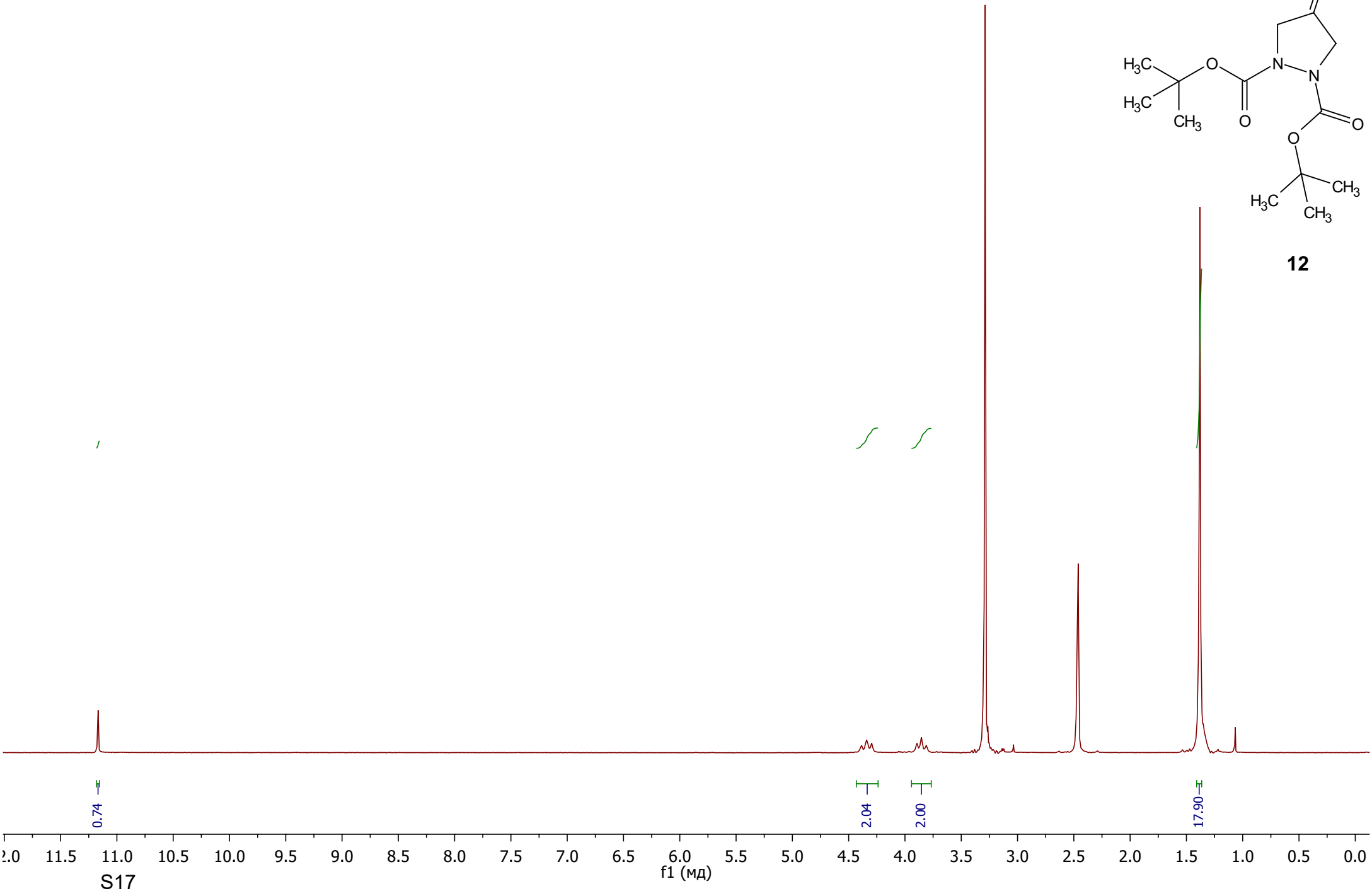
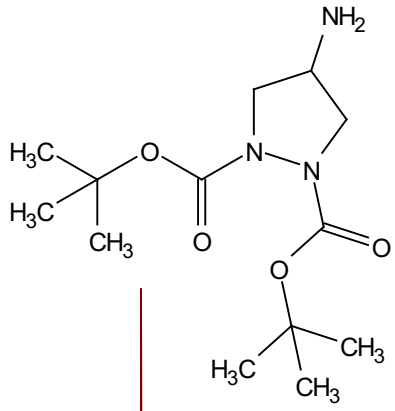


^{1}H NMR (500 MHz, DMSO-d_6) δ 3.64 (dd, J = 10.6, 6.0 Hz, 1H), 3.58 (tq, J = 5.7, 2.6 Hz, 1H), 3.44 (d, J = 11.1 Hz, 1H), 3.08 (dd, J = 11.1, 5.2 Hz, 1H), 2.84 (d, J = 10.5 Hz, 1H), 1.38 (s, 18H).



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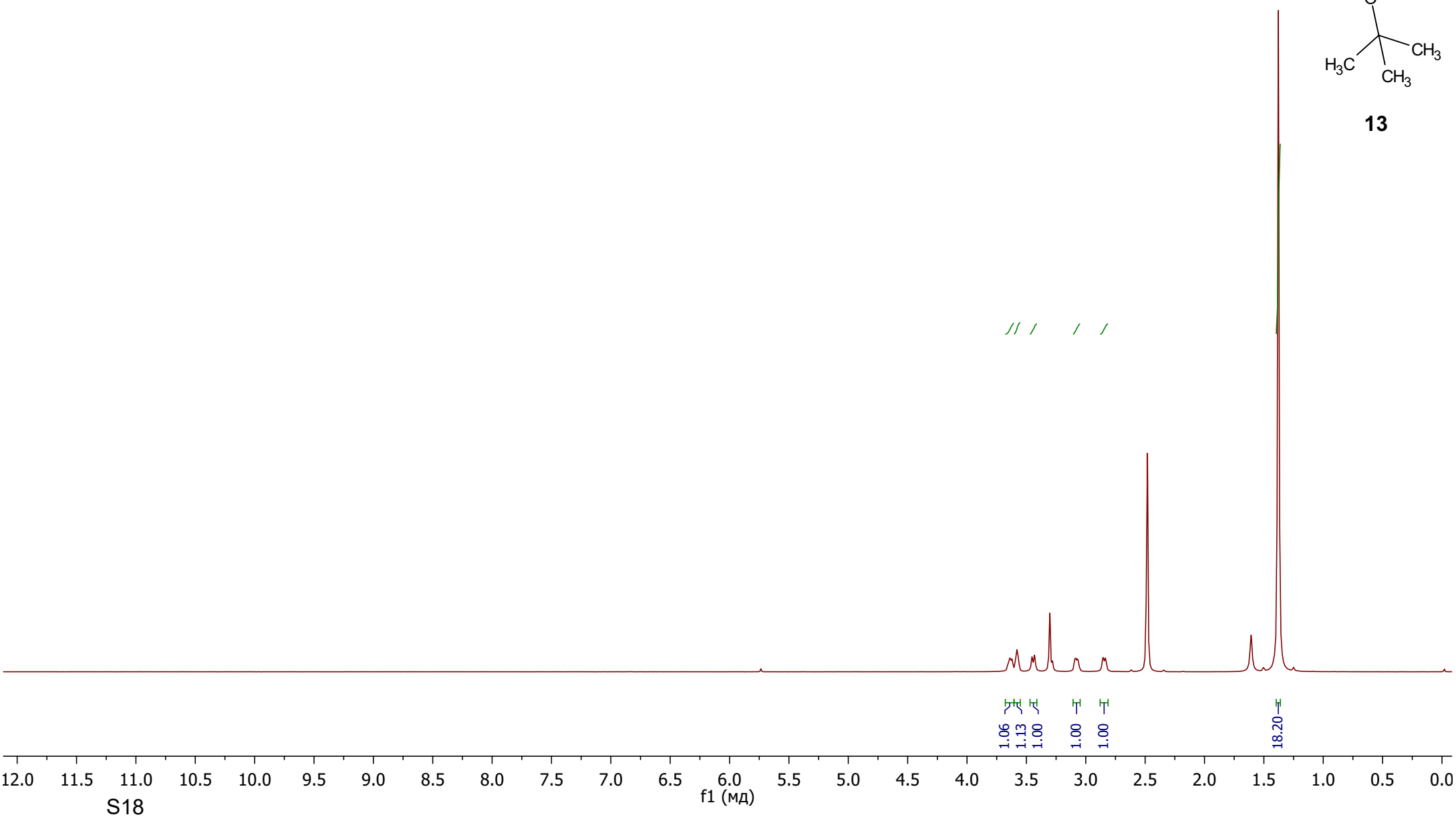
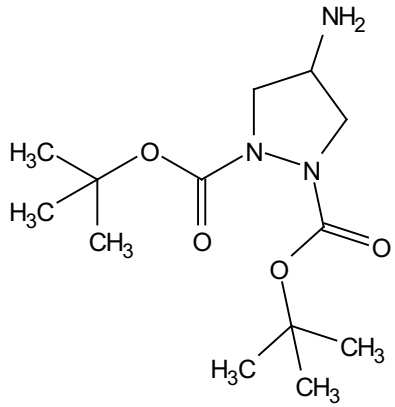


^{13}C NMR (101 MHz, dmso) δ 28.27 and 28.31 (rotamers), 51.8, 54.9 and 55.9 (rotamers), 80.2, 155.1 and 156.7 (rotamers)



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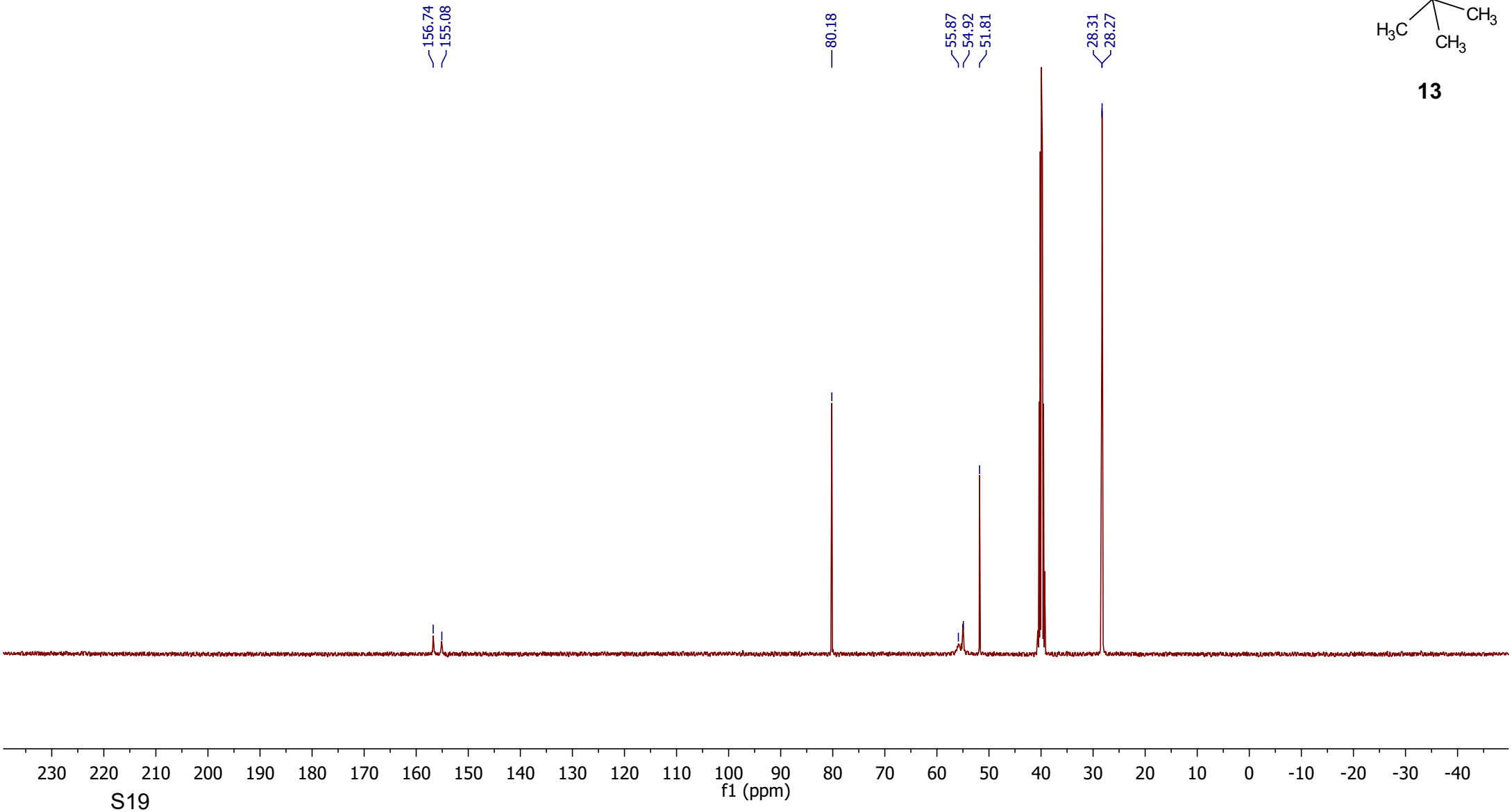
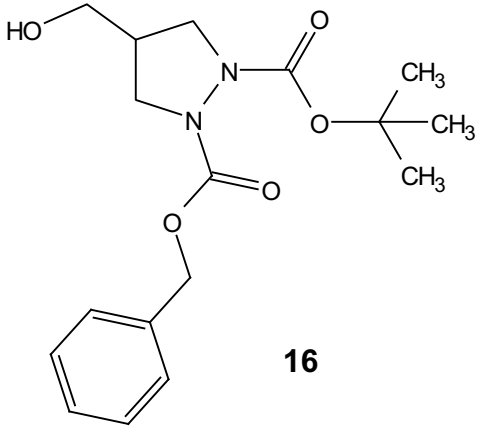


^{1}H NMR (400 MHz, Chloroform-*d*) δ 7.42 – 7.26 (m, 5H), 5.26 (d, *J* = 11.8 Hz, 1H), 5.11 (d, *J* = 12.5 Hz, 1H), 4.05 (d, *J* = 12.4 Hz, 1H), 3.94 – 3.83 (m, 1H), 3.55 (s, 2H), 3.45 – 3.01 (m, 2H), 2.70 – 2.59 (m, 1H), 1.98 (d, *J* = 33.0 Hz, 1H), 1.43 (s, 9H).



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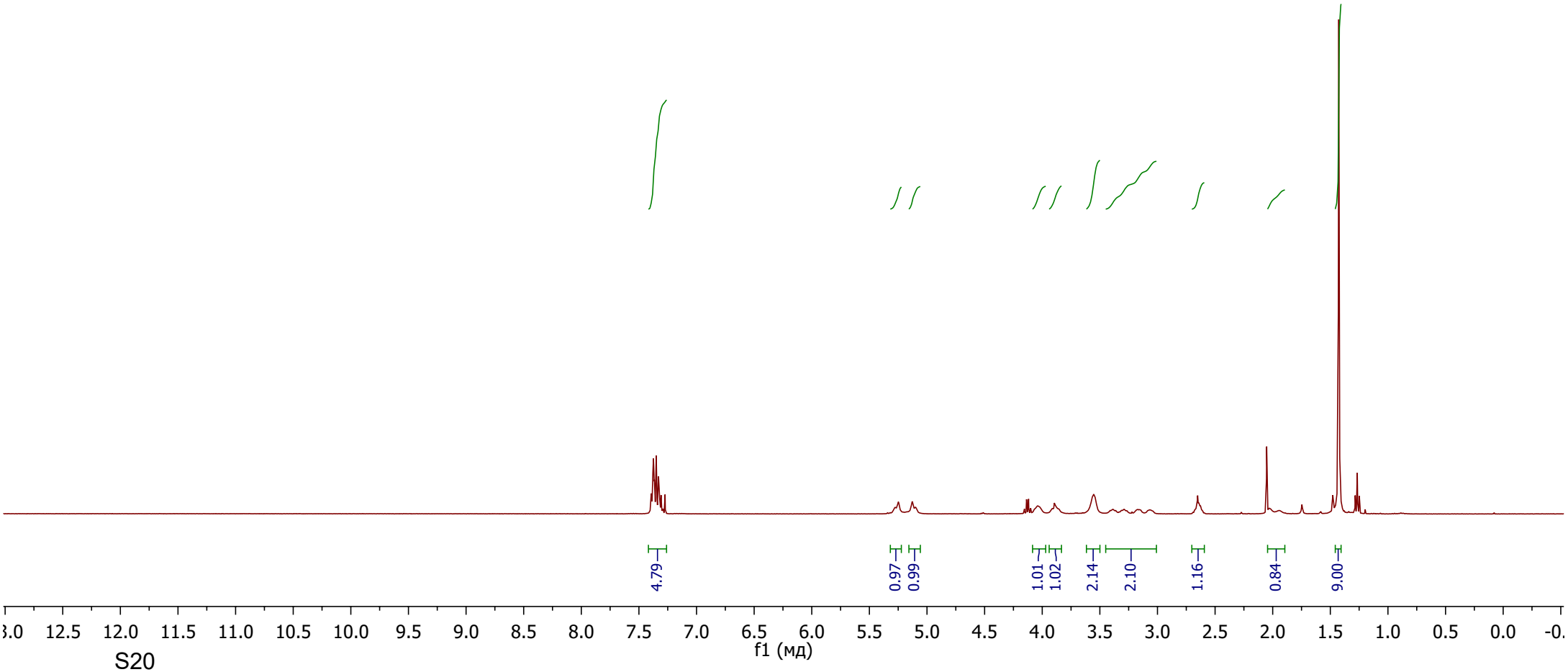
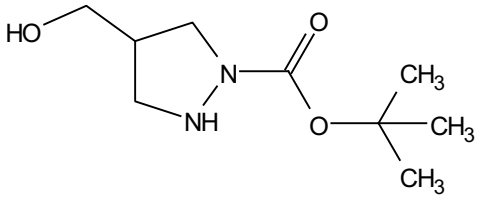


^{1}H NMR (400 MHz, Chloroform-*d*) δ 4.02 (s, 2H), 3.67 – 3.52 (m, 3H), 3.21 (dd, *J* = 10.8, 5.0 Hz, 1H), 3.10 (dd, *J* = 11.6, 6.8 Hz, 1H), 2.99 (dd, *J* = 11.6, 4.9 Hz, 1H), 2.64 – 2.51 (m, 1H), 1.43 (s, 9H).



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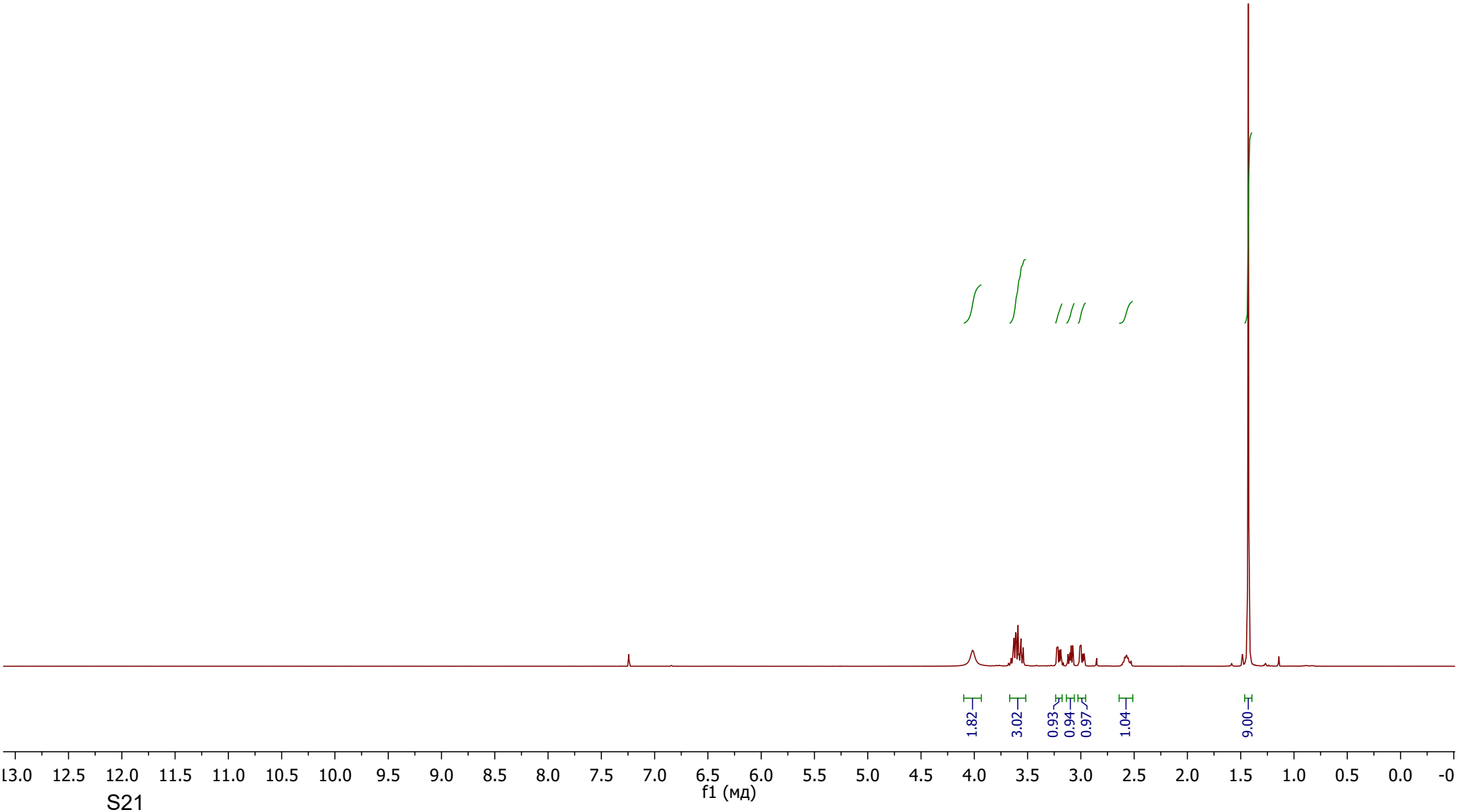
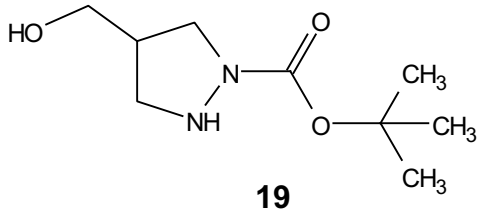


^{13}C NMR (101 MHz, cdcl$_3$) δ 28.4, 42.9, 48.7, 50.3, 63.0, 80.5, 154.9



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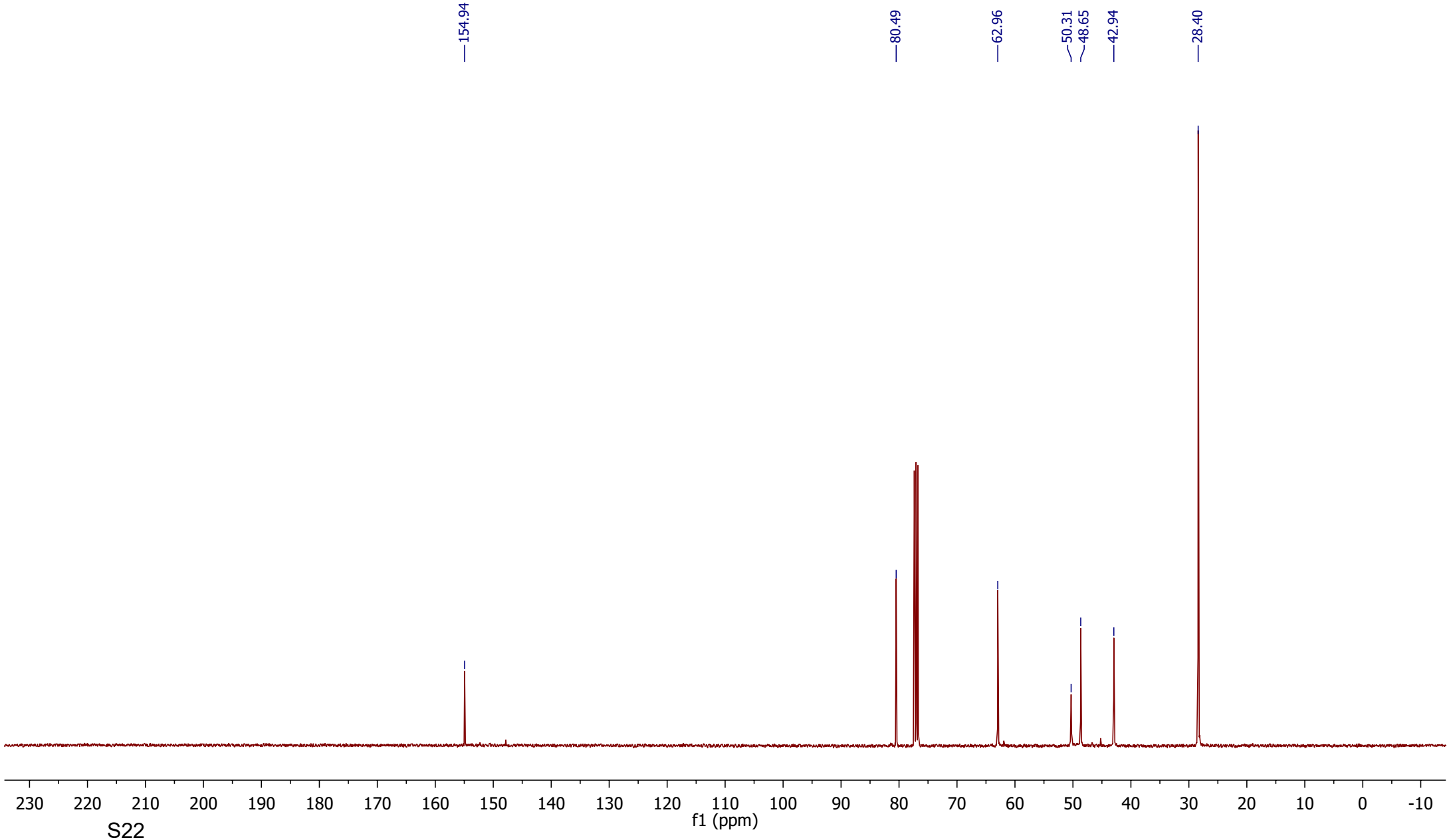
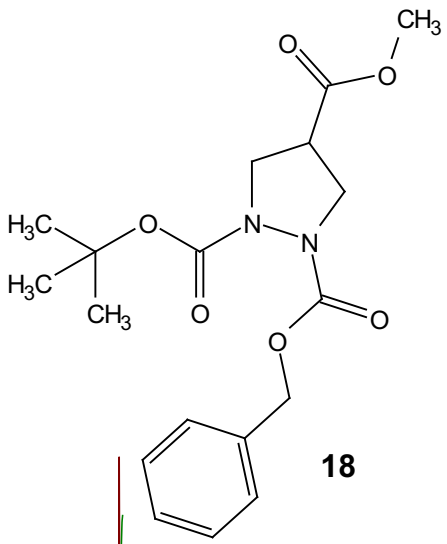


^{1}H NMR (500 MHz, DMSO-d_6) δ 7.40 – 7.28 (m, 5H), 5.32 – 5.07 (m, 2H), 4.28 – 4.09 (m, 2H), 3.75 – 3.64 (m, 3H), 3.63 – 3.36 (m, 2H), 3.30 – 3.20 (m, 1H), 1.43 (s, 9H).



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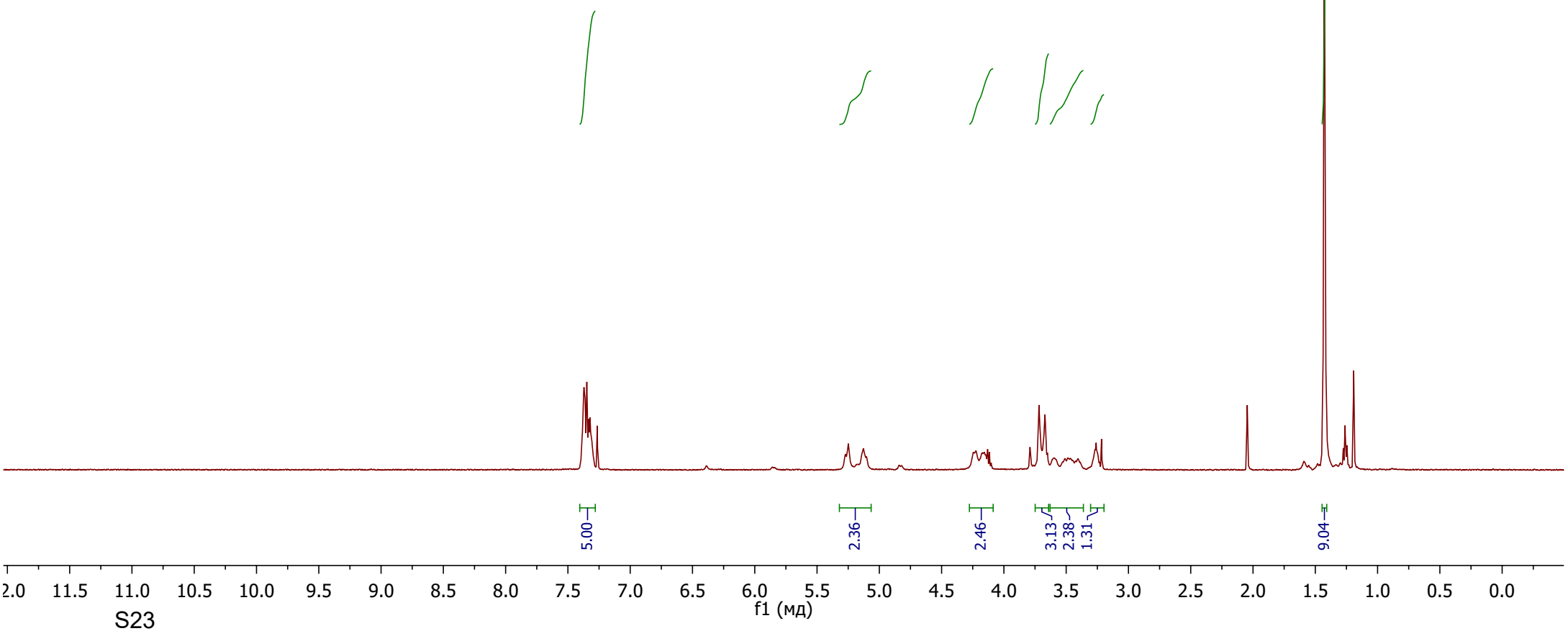
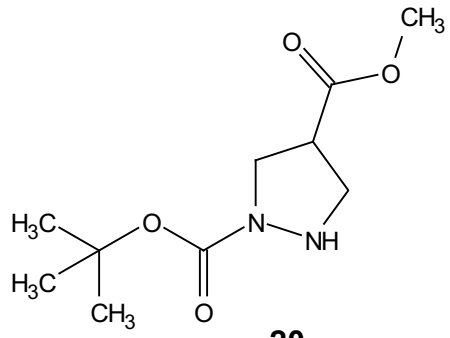


^{1}H NMR (500 MHz, Chloroform-*d*) δ 4.14 (s, 1H), 3.76 (dd, *J* = 11.1, 8.4 Hz, 1H), 3.72 (s, 3H), 3.63 (dd, *J* = 11.1, 4.3 Hz, 1H), 3.31 – 3.21 (m, 2H), 3.14 (dd, *J* = 11.5, 6.5 Hz, 1H), 1.48 (s, 9H).



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