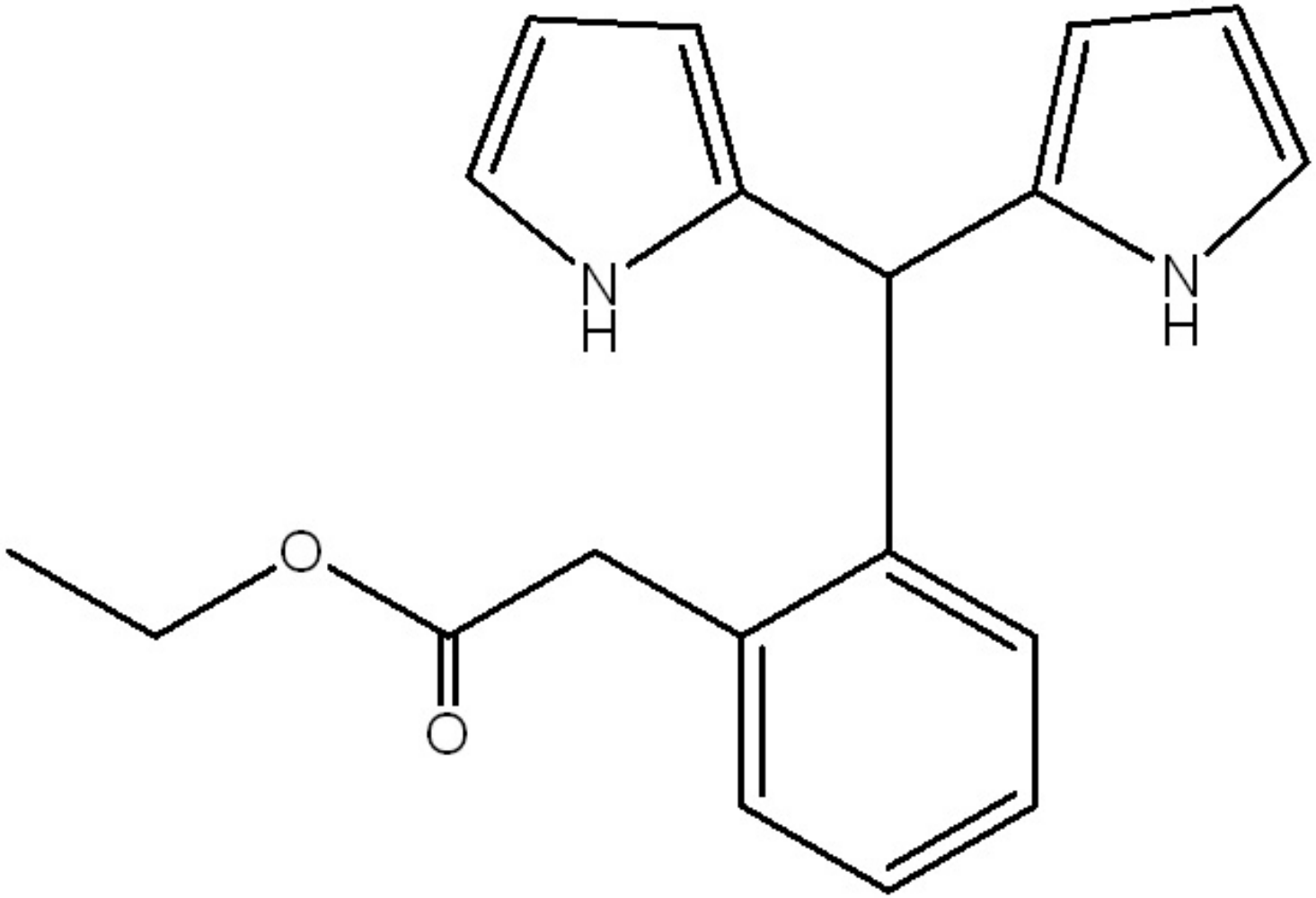
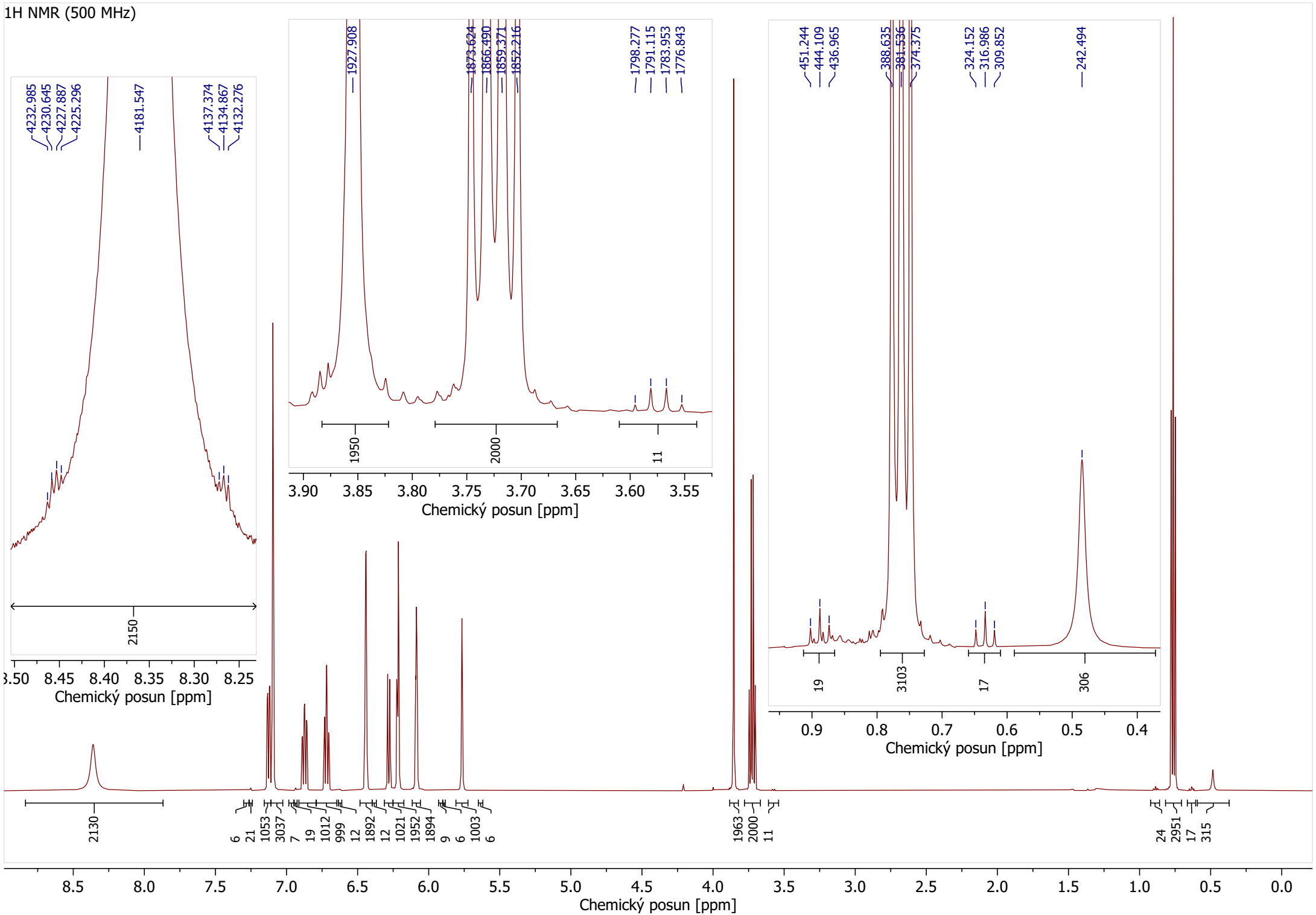
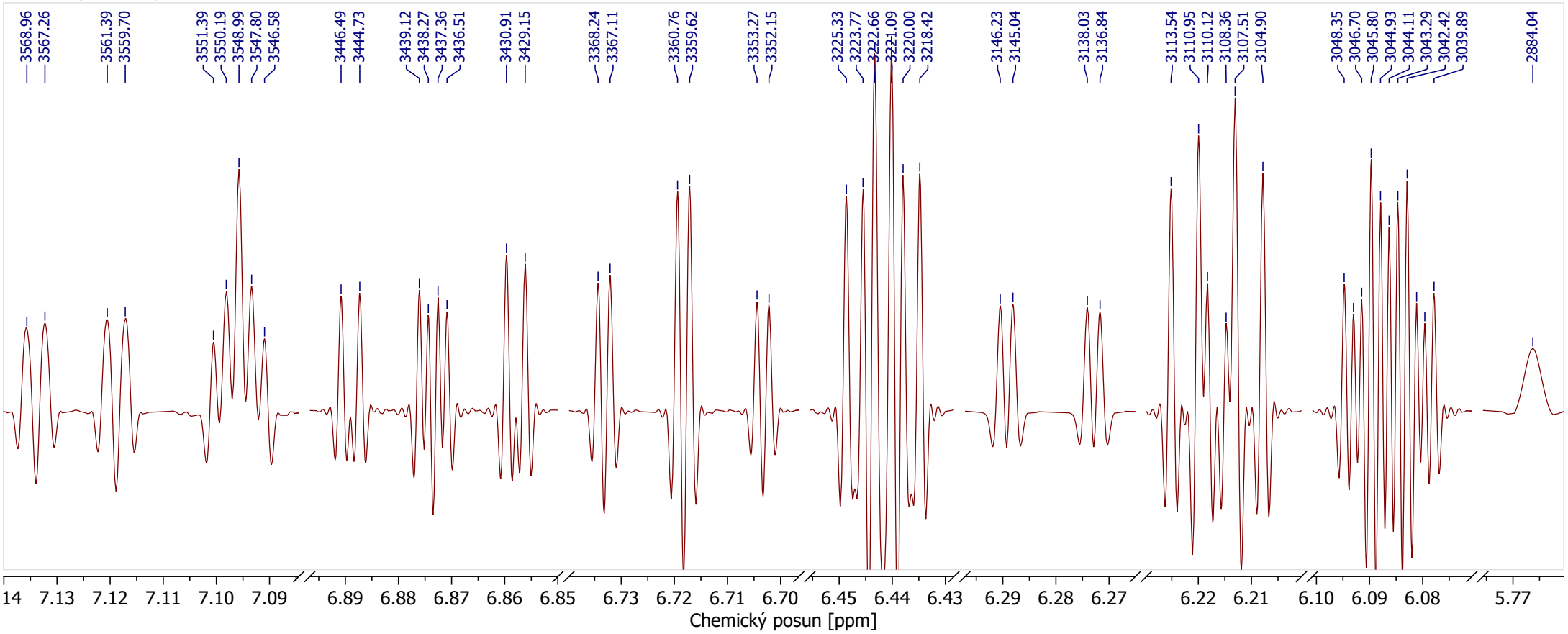
Připiště chemické posuny ^{1}H, ^{13}C a ^{15}N jader k odpovídajícím atomům molekuly. U signálů ^{1}H uveďte jejich multiplicitu a hodnoty interakčních konstant, a uvěďte, kterým interagujícím jádrům náleží. Jméno:_____ Dnešní datum:_____

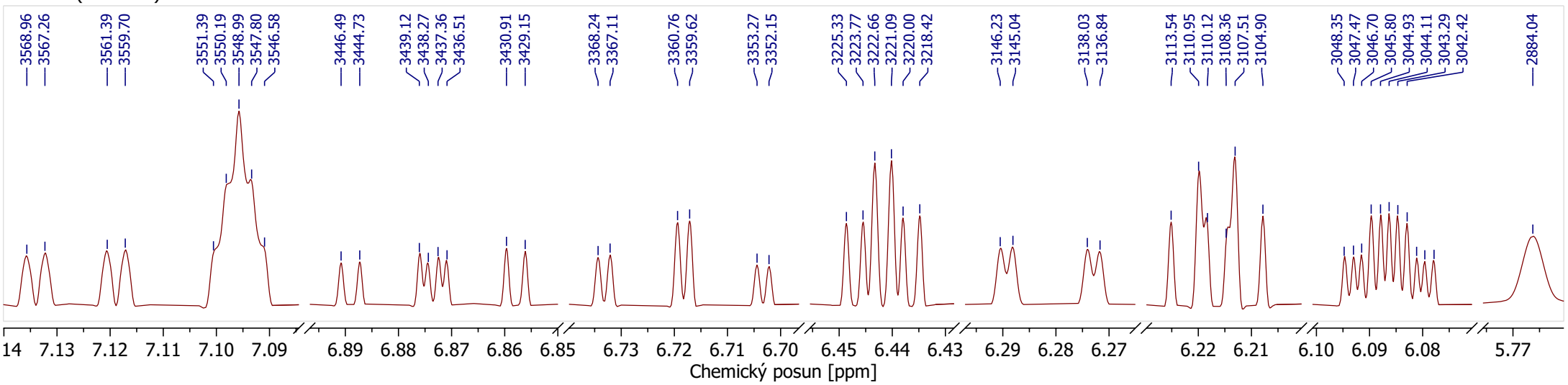


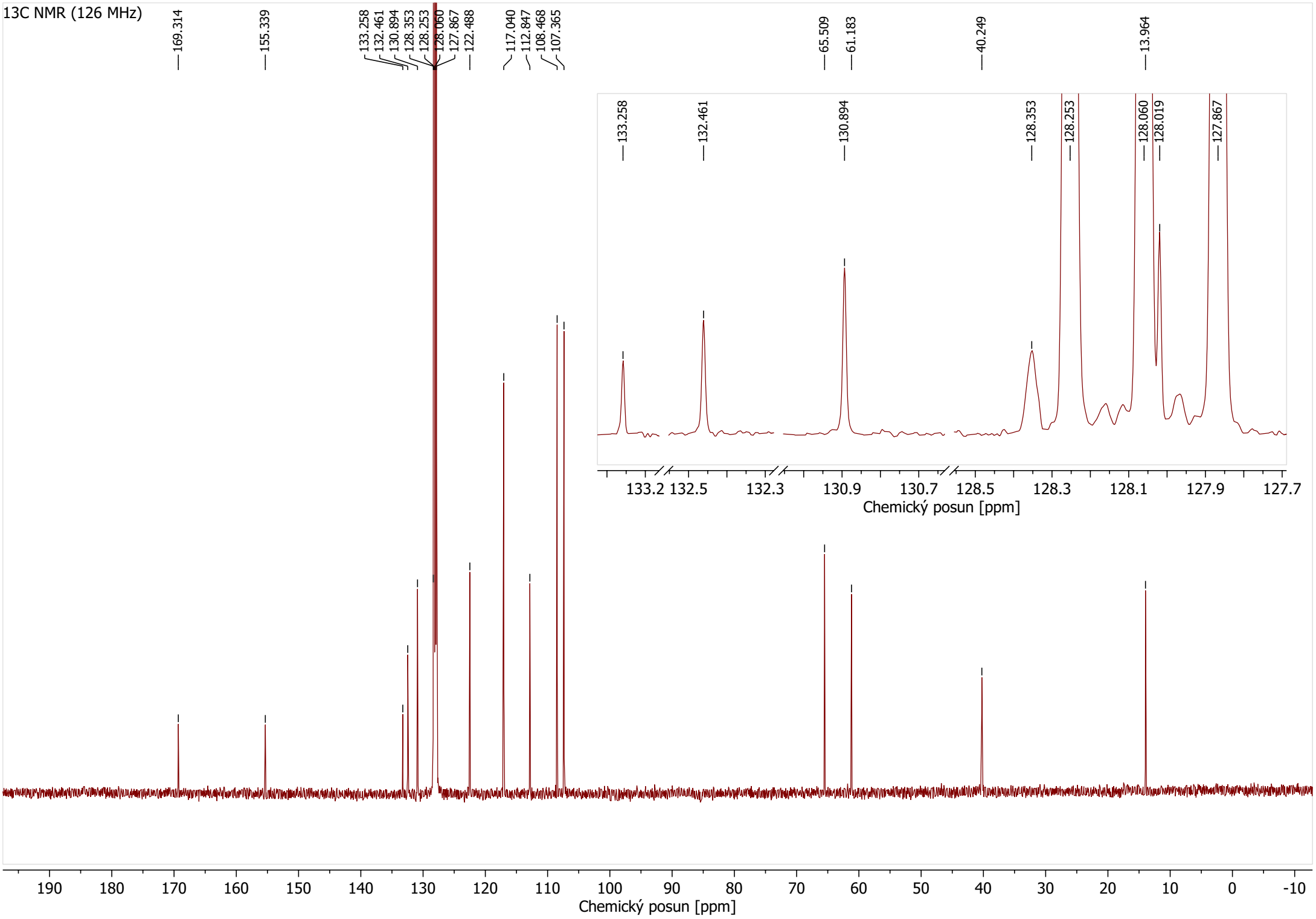

1H NMR (500 MHz)
4232.985
4230.645
4227.887
4225.296
4181.547
4137.374
4134.867
4132.276
2150
Chemický posun [ppm]
1927.908
1873.624
1866.490
1859.371
1852.216
1798.277
1791.115
1783.953
1776.843
1950
2000
11
Chemický posun [ppm]
451.244
444.109
436.965
388.635
381.536
374.375
324.152
316.986
309.852
242.494
19
3103
17
306
Chemický posun [ppm]
2130
6
21
1053
3037
7
19
1012
999
12
1892
12
1021
1952
1894
9
6
1003
6
1963
2000
11
24
2951
17
315
Chemický posun [ppm]

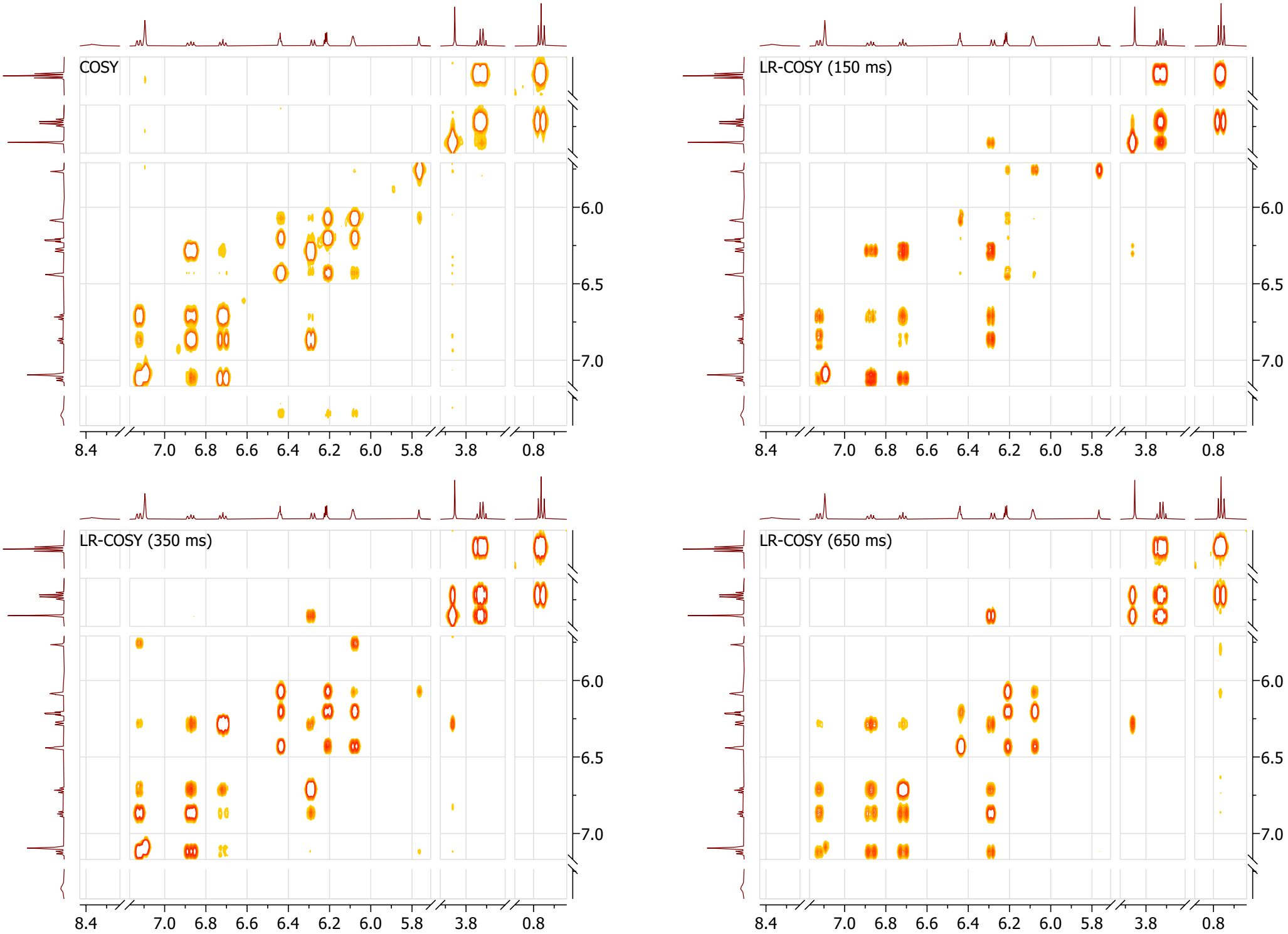
1H NMR (500 MHz)

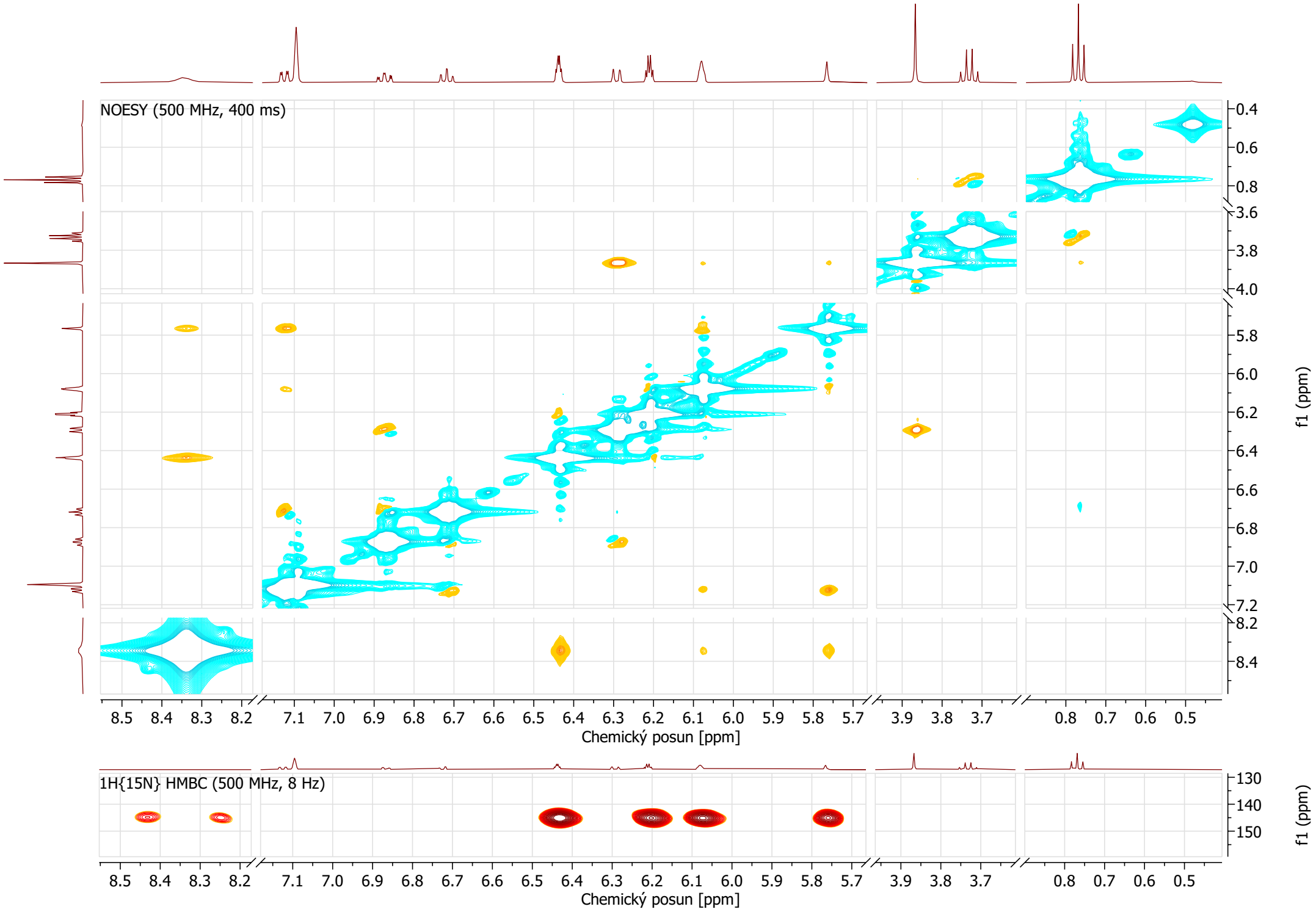


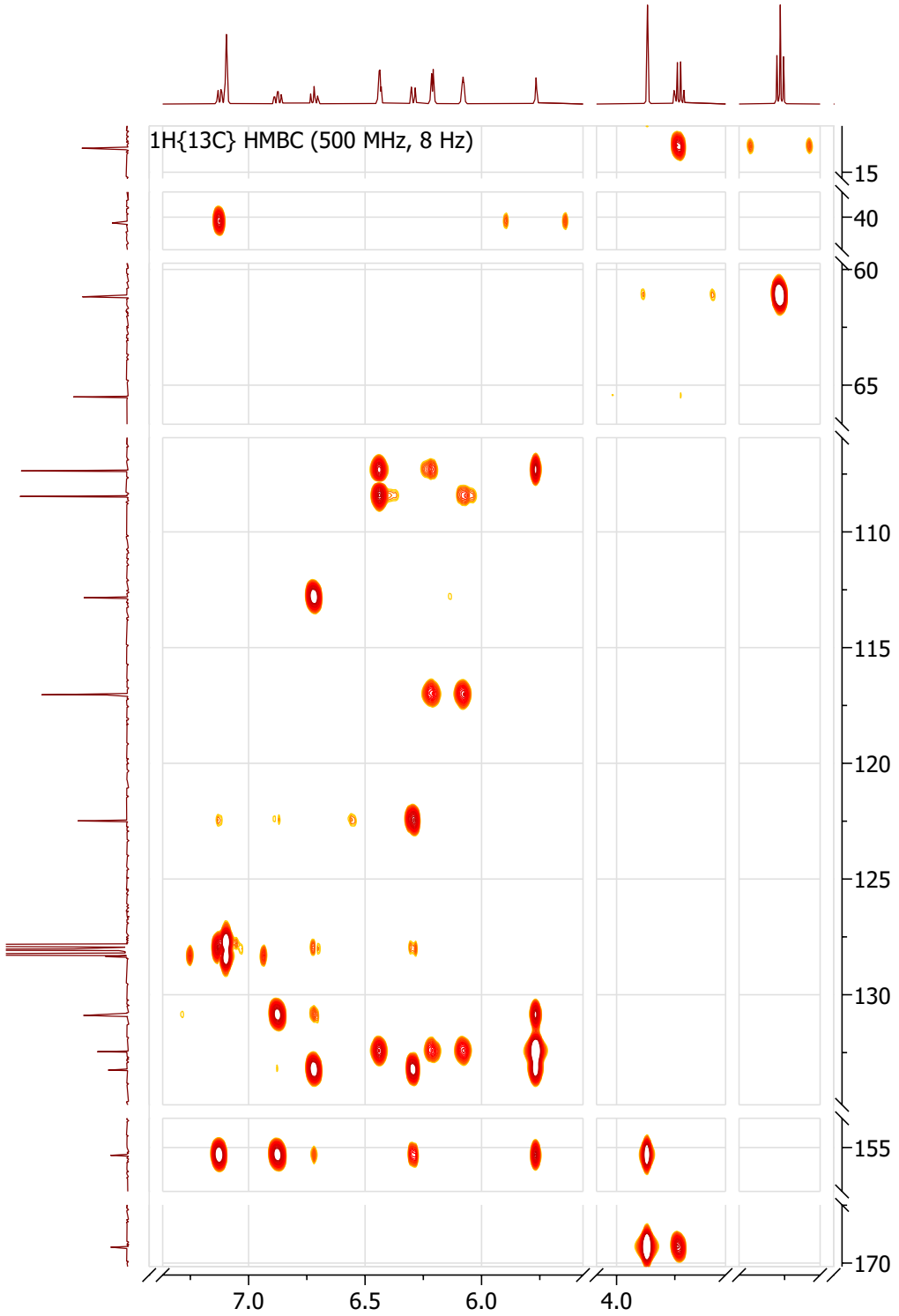
1H NMR (500 MHz)

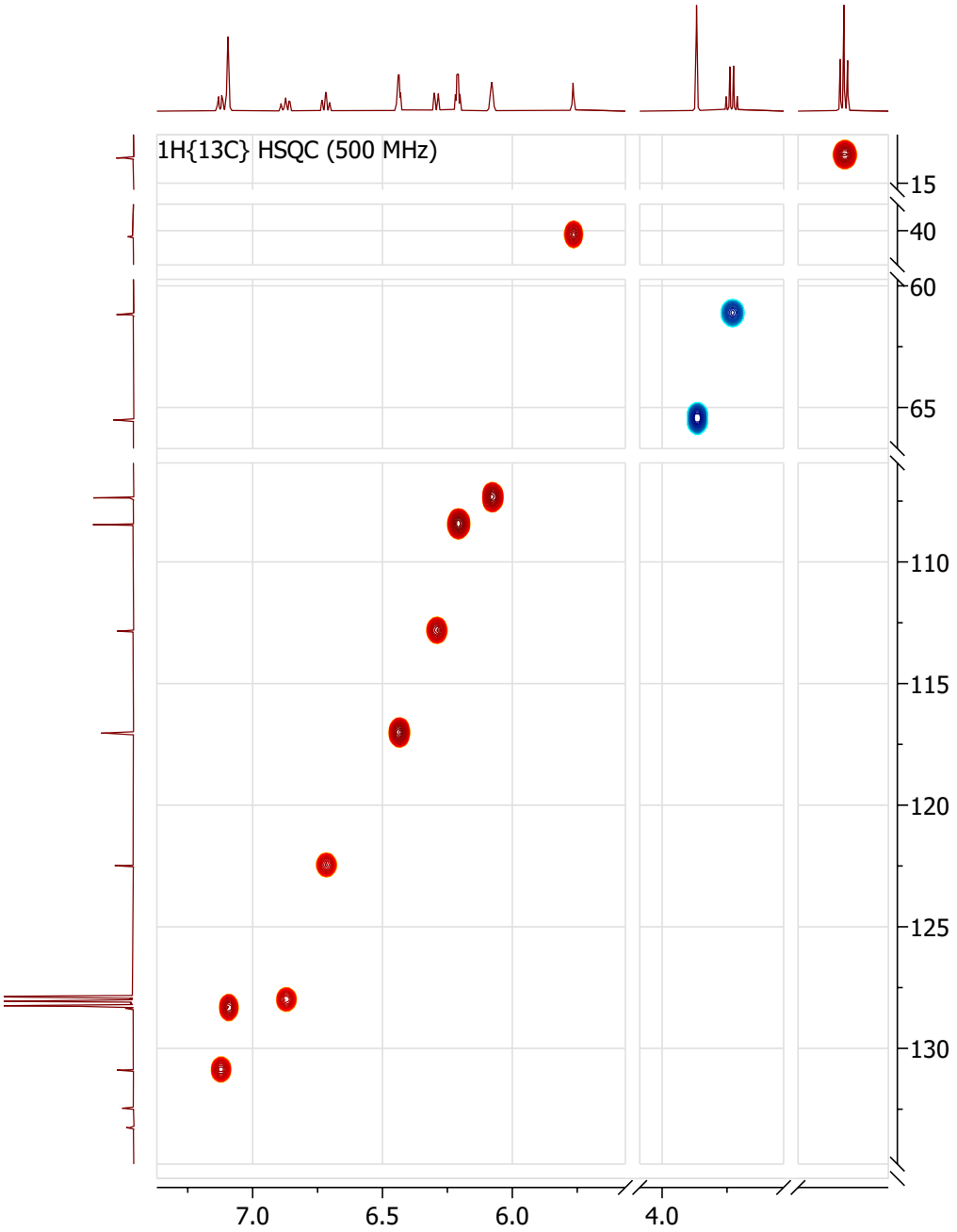



13C NMR (126 MHz)
169.314
155.339
133.258
132.461
130.894
128.353
128.253
128.060
127.867
122.488
117.040
112.847
108.468
107.365
65.509
61.183
40.249
13.964
133.258
132.461
130.894
128.353
128.253
128.060
128.019
127.867
133.2 132.5 132.3 130.9 130.7 128.5 128.3 128.1 127.9 127.7
Chemický posun [ppm]
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
Chemický posun [ppm]

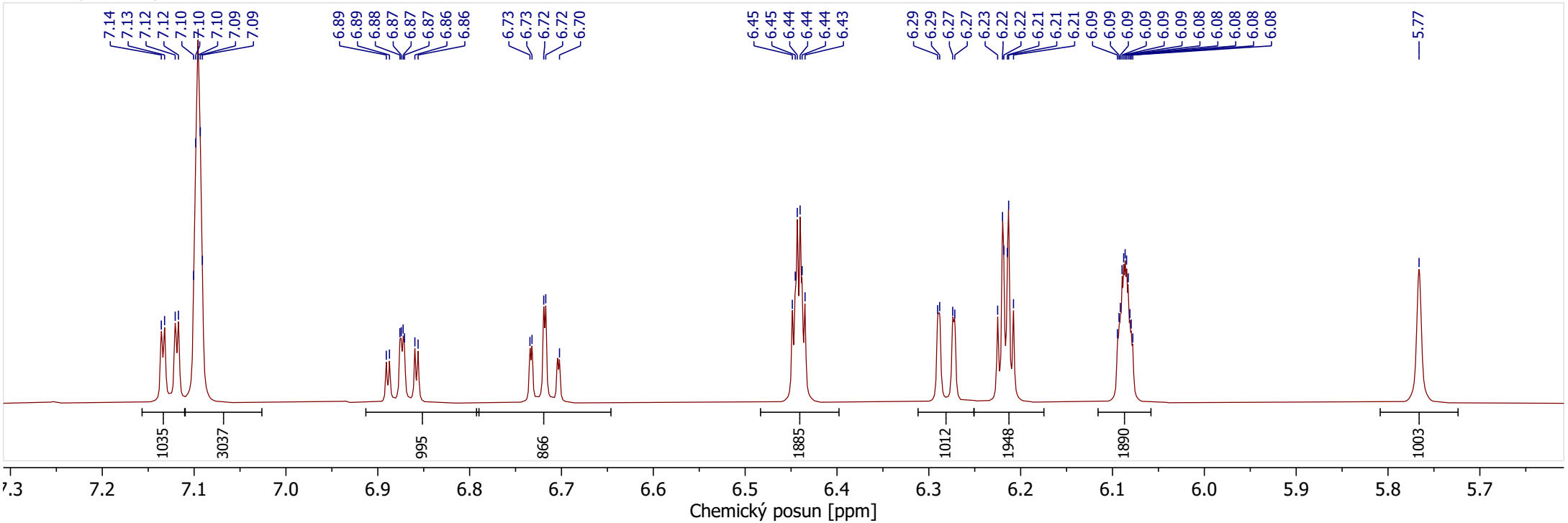

COSY
LR-COSY (150 ms)
LR-COSY (350 ms)
LR-COSY (650 ms)
8.4
7.0
6.8
6.6
6.4
6.2
6.0
5.8
3.8
0.8
6.0
6.5
7.0


NOESY (500 MHz, 400 ms)
1H{15N} HMBC (500 MHz, 8 Hz)
Chemický posun [ppm]
Chemický posun [ppm]
f1 (ppm)
f1 (ppm)

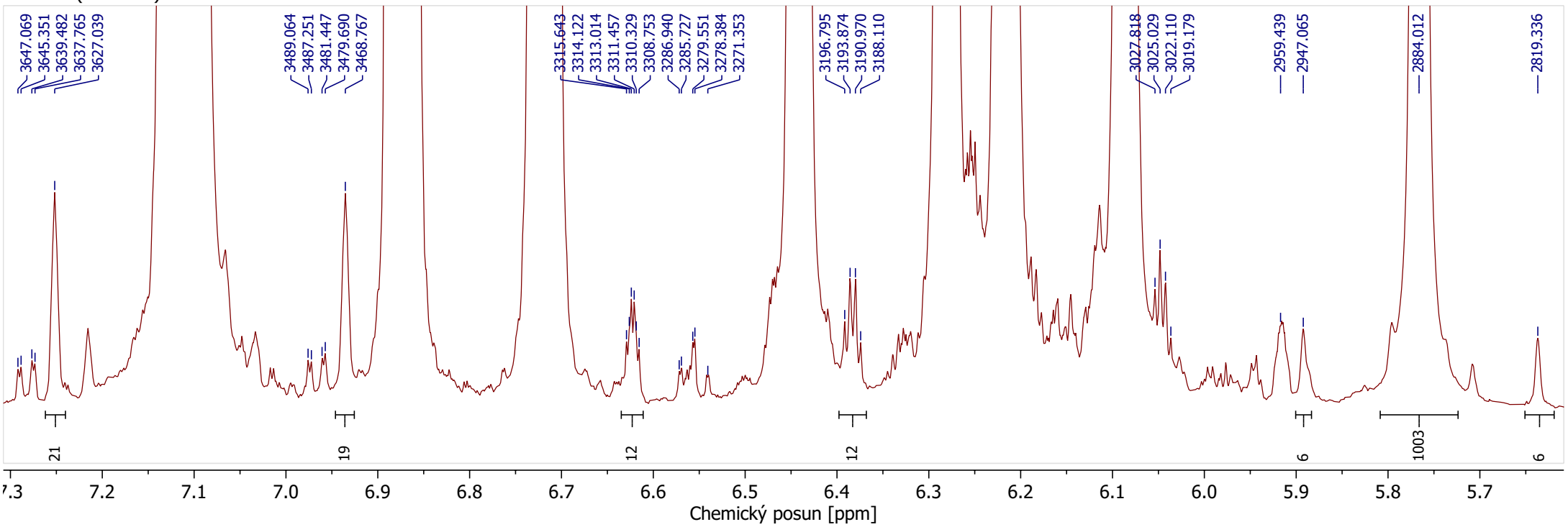

1H{13C} HMBC (500 MHz, 8 Hz)
15
40
60
65
110
115
120
125
130
155
170
7.0
6.5
6.0
4.0


1H{13C} HSQC (500 MHz)
15
40
60
65
110
115
120
125
130
7.0
6.5
6.0
4.0

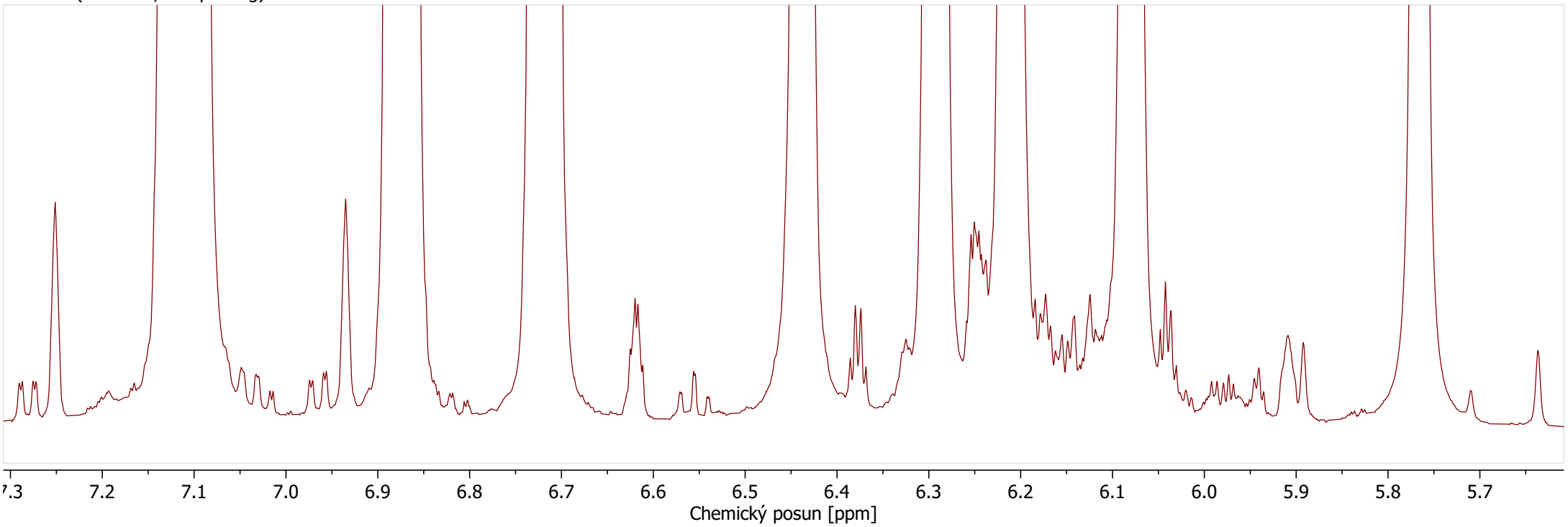
1H NMR (500 MHz)



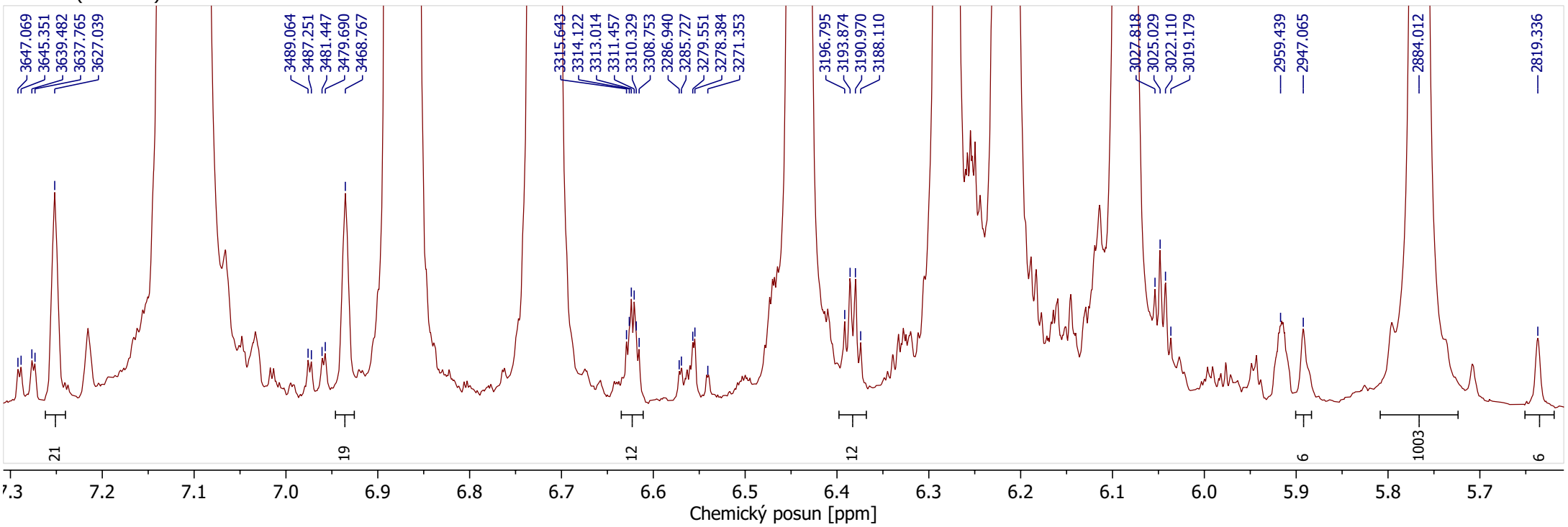
1H NMR (500 MHz)

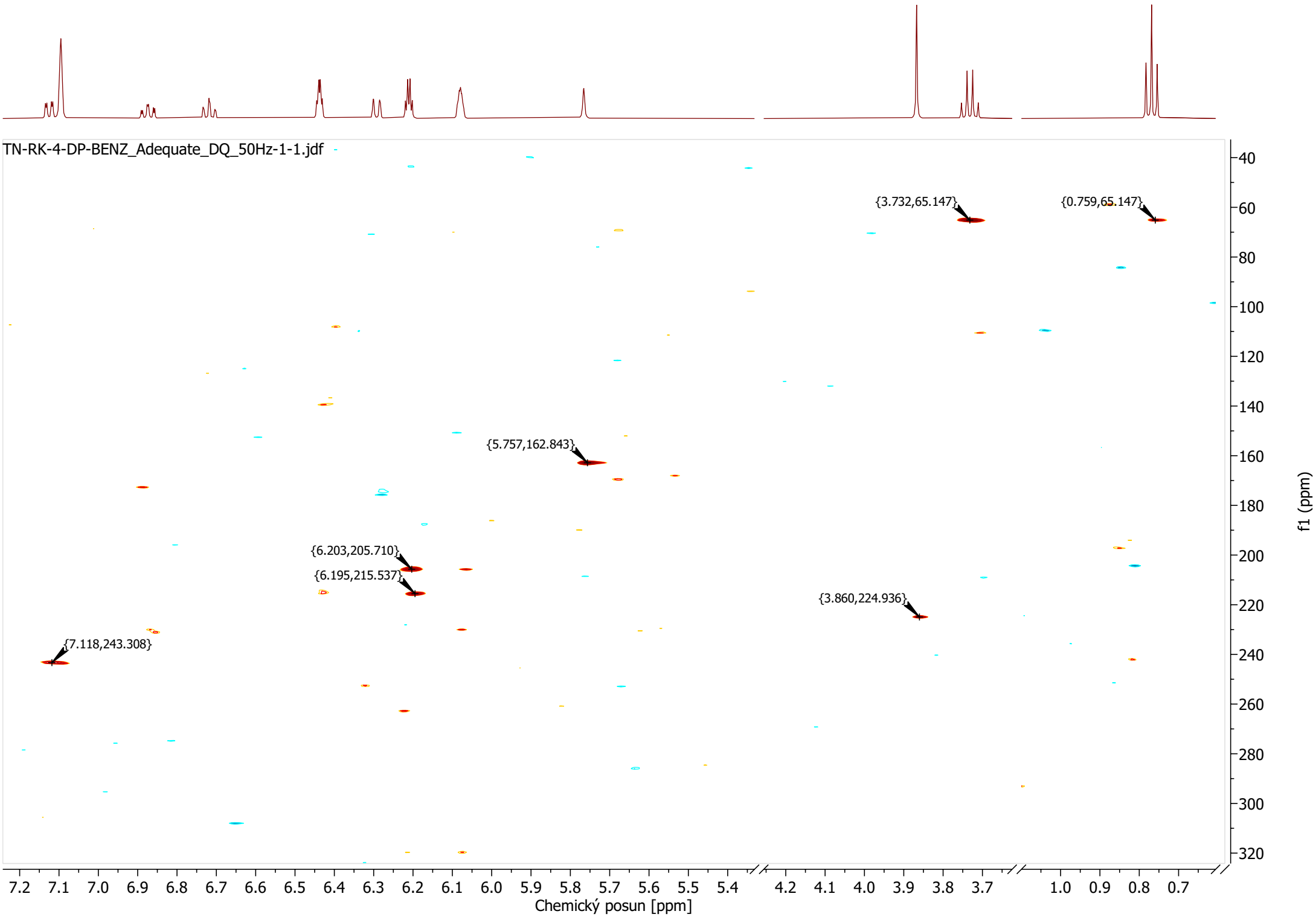


1H NMR (500 MHz, no spinning)

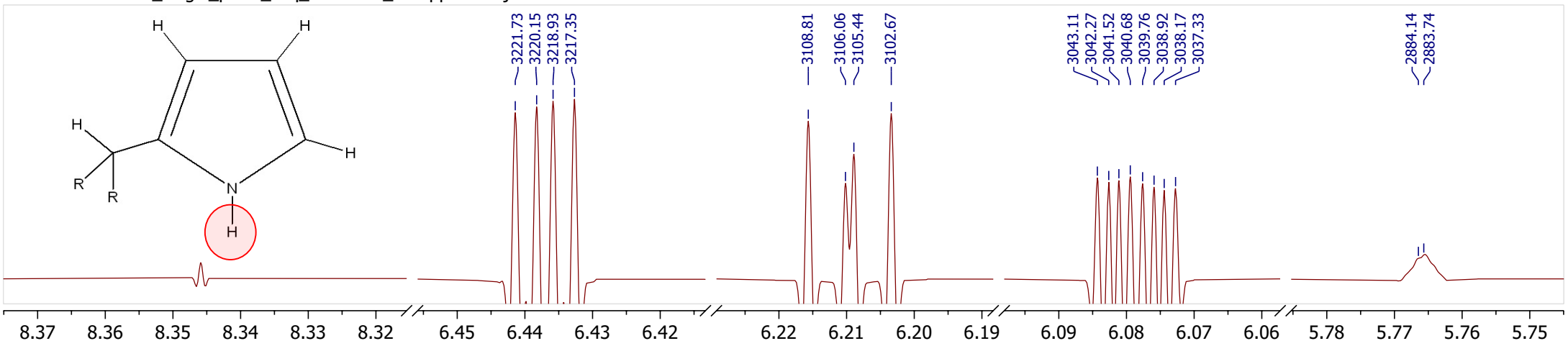


1H NMR (500 MHz)

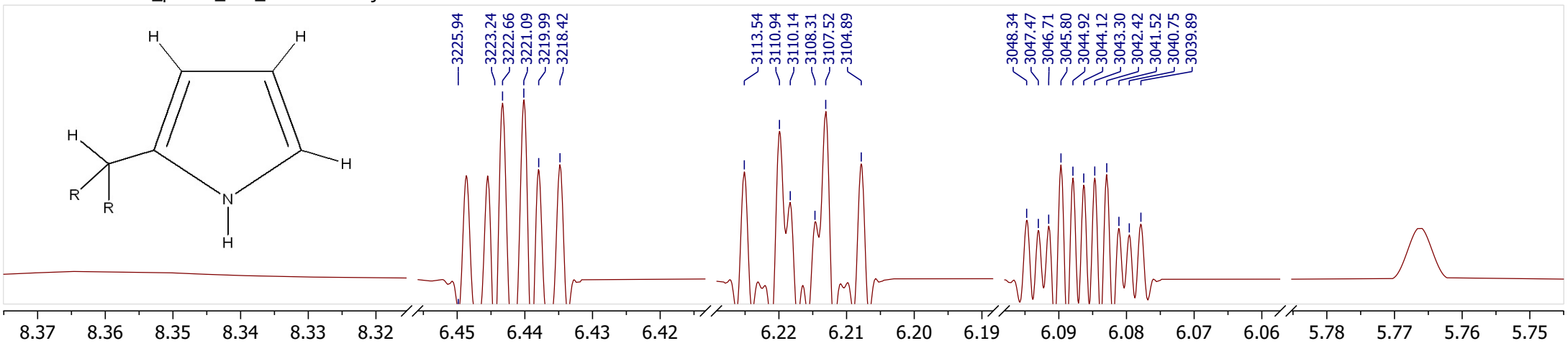



TN-RK-4-DP-BENZ_Adequate_DQ_50Hz-1-1.jdf
{3.732,65.147}
{0.759,65.147}
{5.757,162.843}
{6.203,205.710}
{6.195,215.537}
{3.860,224.936}
{7.118,243.308}
Chemický posun [ppm]
f1 (ppm)

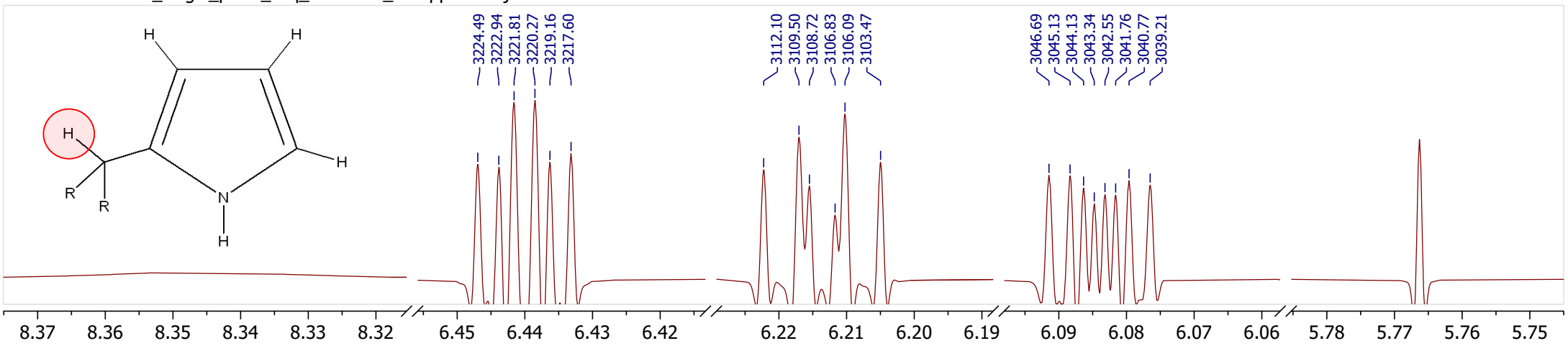
TN-RK-4-DP-BENZ_single_pulse_acq_homodec_8.35ppm-1-1.jdf



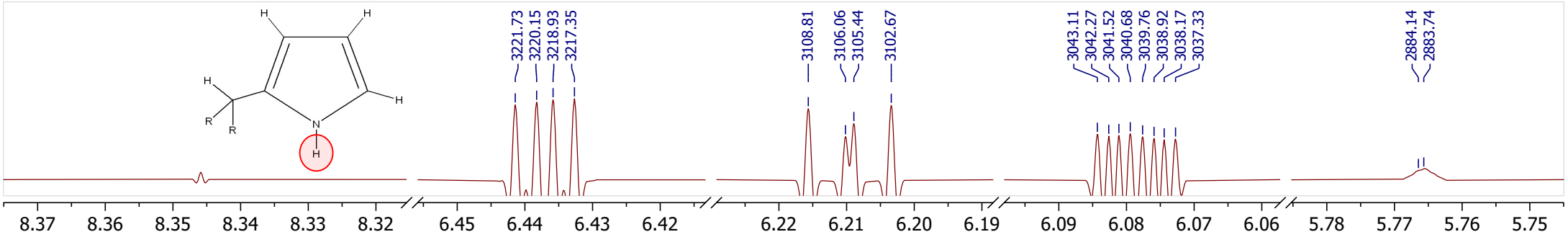
TN-RK-4-DP-BENZ_proton_test_benzene-2-1.jdf



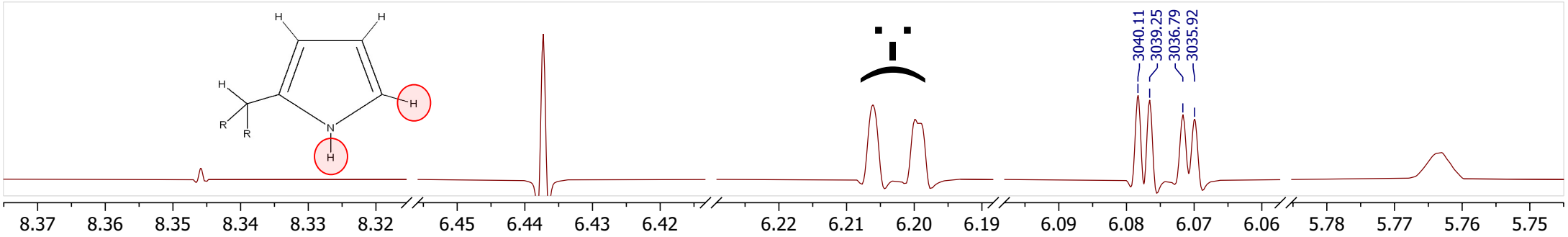
TN-RK-4-DP-BENZ_single_pulse_acq_homodec_5.77ppm-1-1.jdf



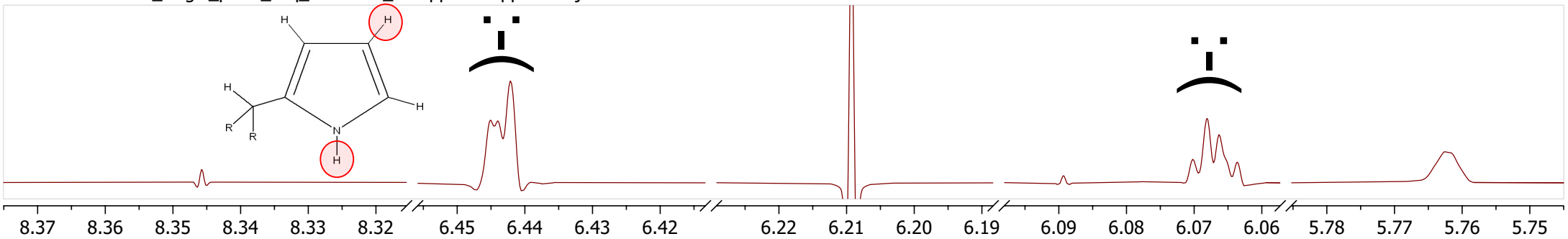
TN-RK-4-DP-BENZ_single_pulse_acq_homodec_8.35ppm-1-1.jdf



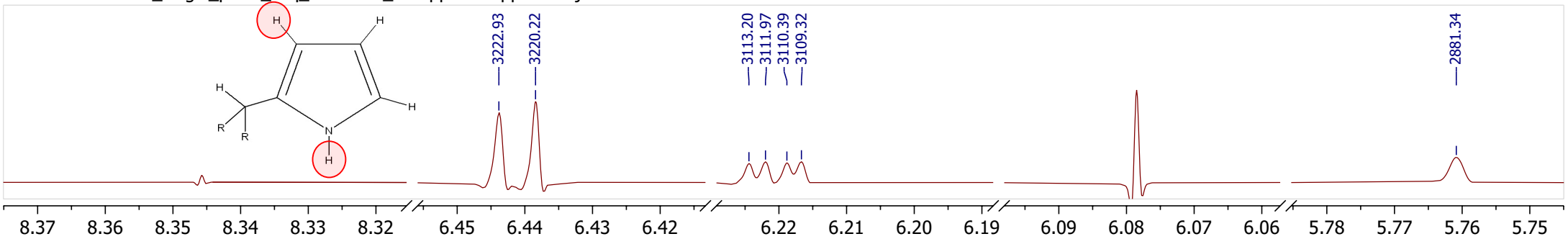
TN-RK-4-DP-BENZ_single_pulse_acq_homodec_8.35ppm6.44ppm-1-1.jdf

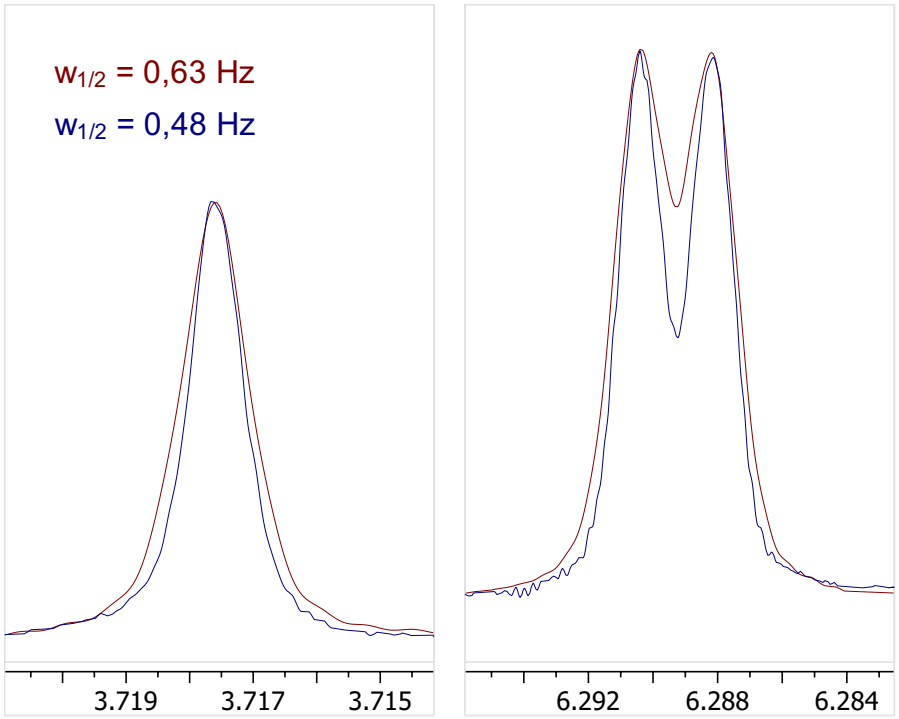


TN-RK-4-DP-BENZ_single_pulse_acq_homodec_8.35ppm6.21ppm-1-1.jdf



TN-RK-4-DP-BENZ_single_pulse_acq_homodec_8.35ppm6.08ppm-1-1.jdf





Selective decoupling on 3,87 ppm (blue) and 5,77 ppm (green)