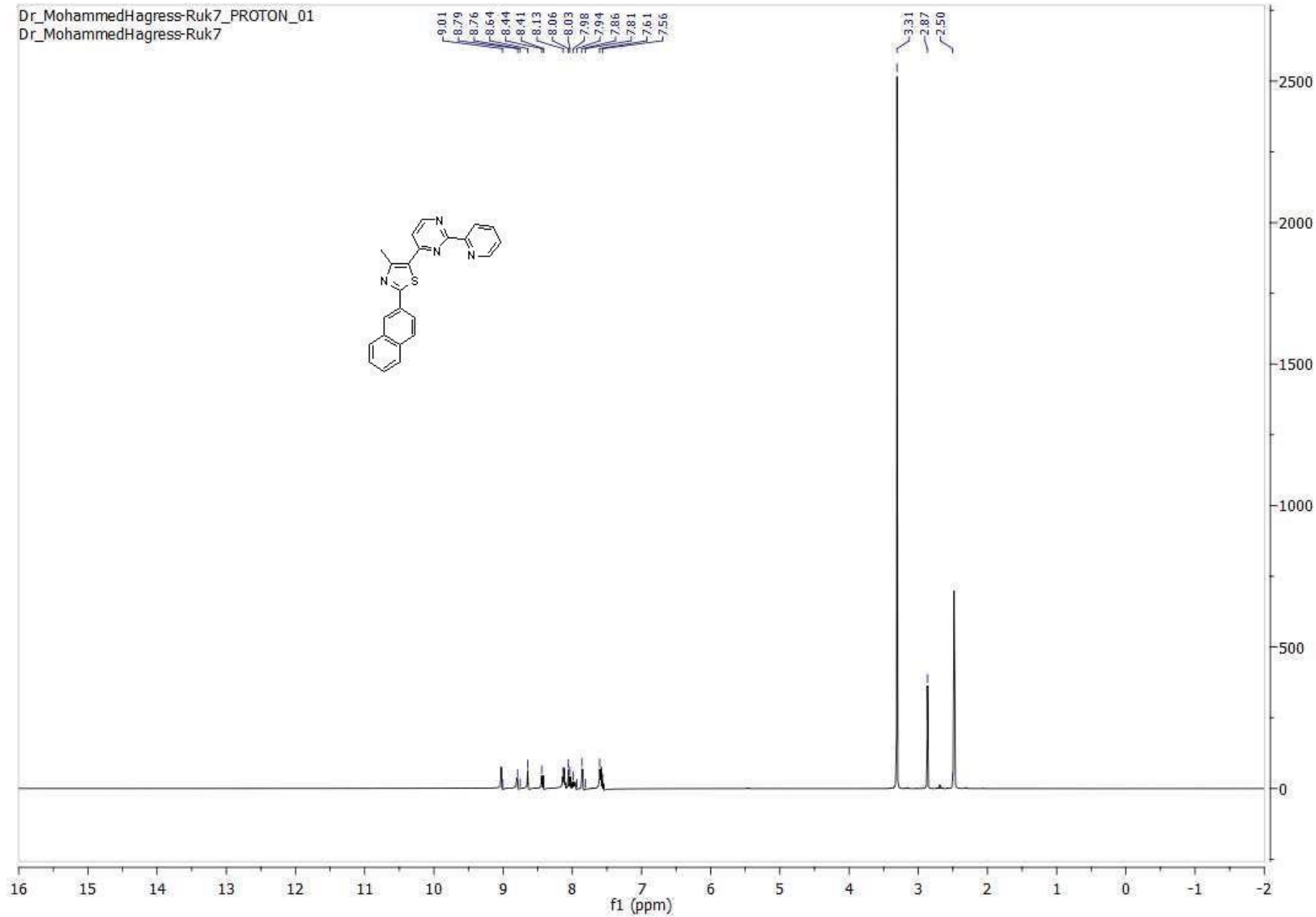
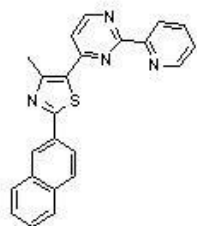


Supporting information

Mahmoud M. Seif El-Din¹, Mohamed Hagra^{2*}, and Abdelrahman S. Mayhoub^{1,2**}

1. University of Science and Technology, Nanoscience Program, Zewail City of Science and Technology, Ahmed Zewail Street, Giza, Egypt.
2. Department of Pharmaceutical Organic Chemistry, College of Pharmacy, Al-Azhar University, Cairo, Egypt.

Dr_MohammedHagress-Ruk7_PROTON_01
Dr_MohammedHagress-Ruk7

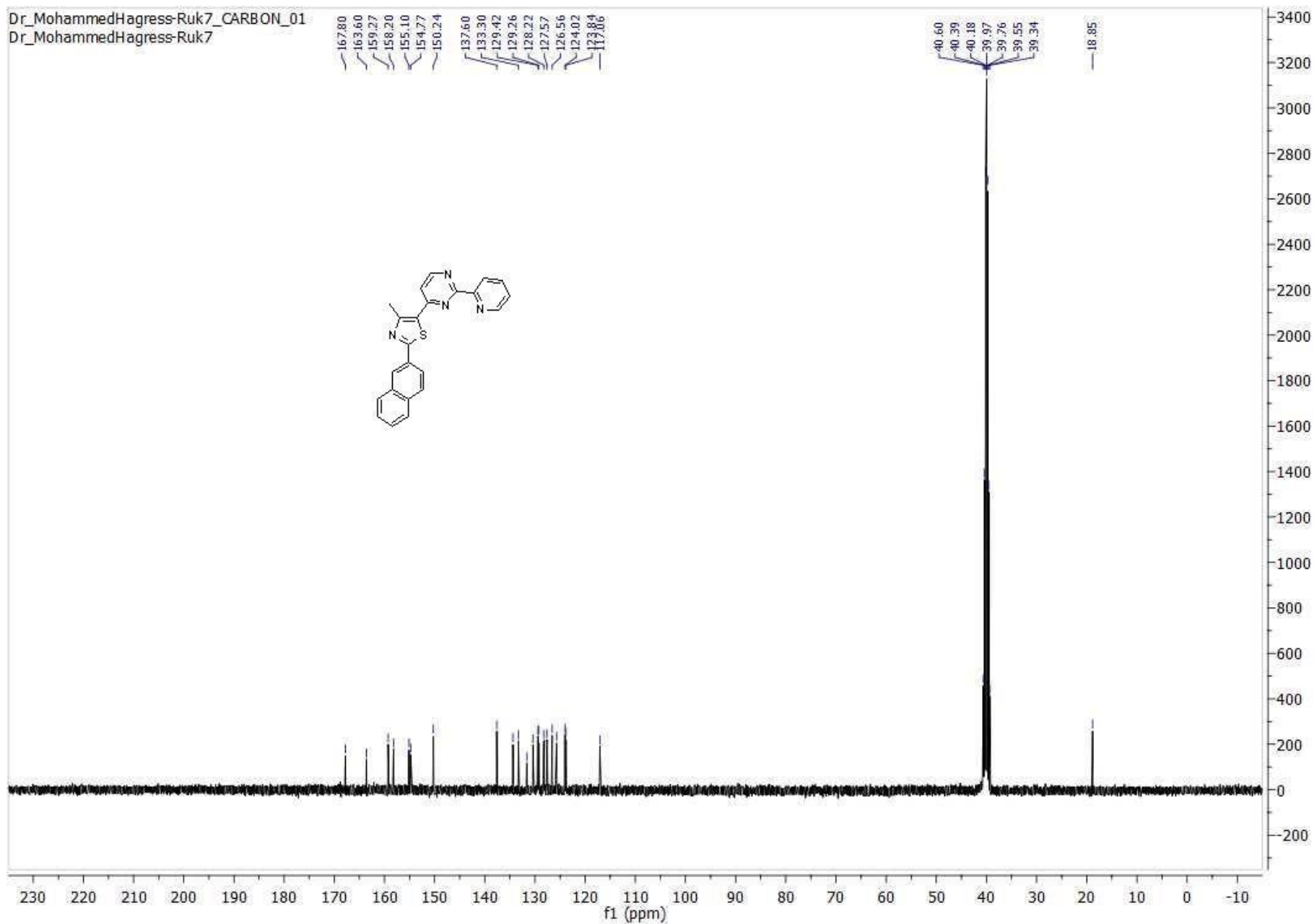
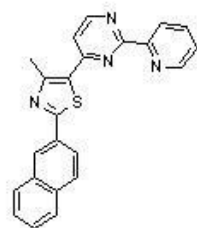


Dr_MohammedHagress-Ruk7_CARBON_01
Dr_MohammedHagress-Ruk7

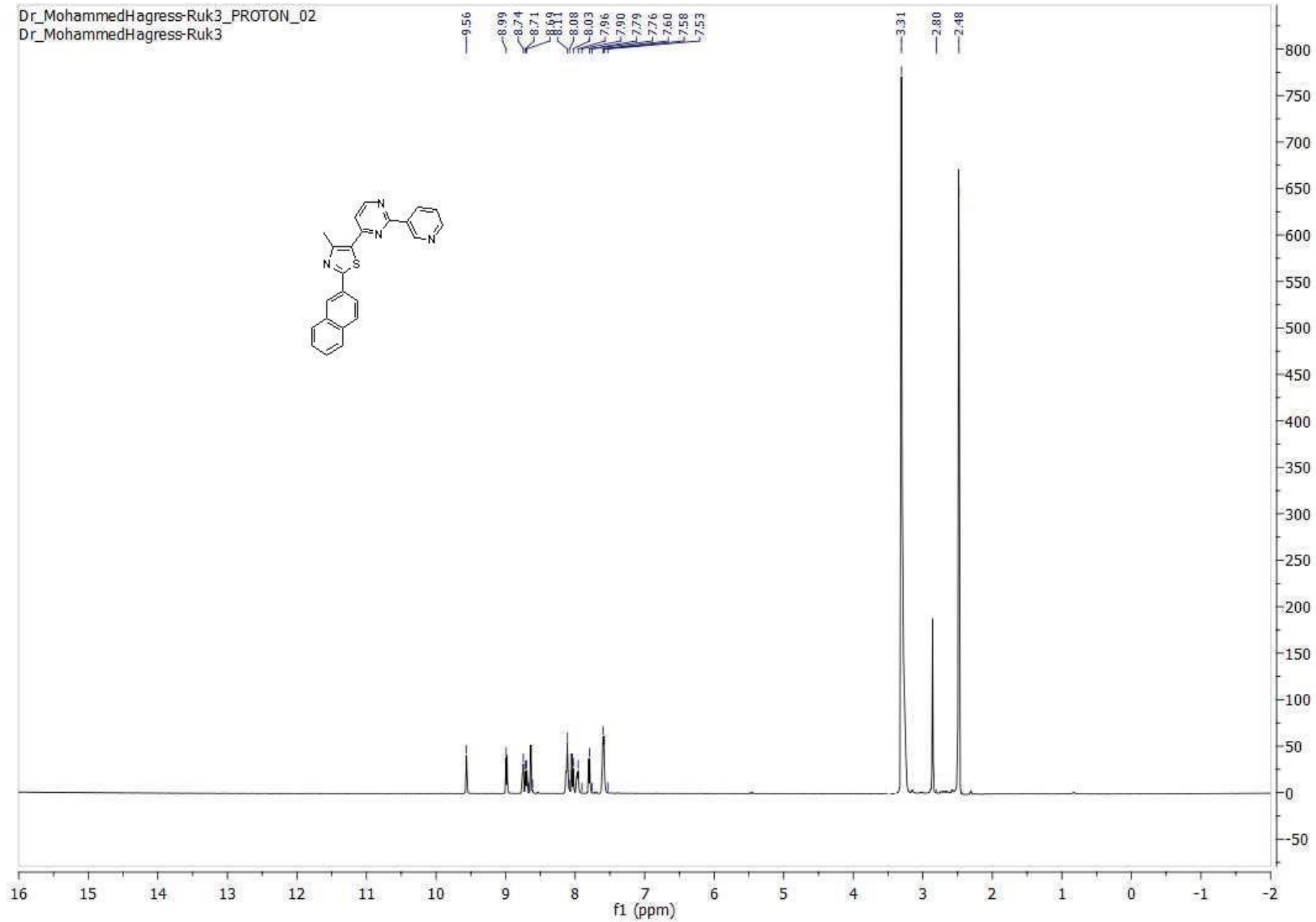
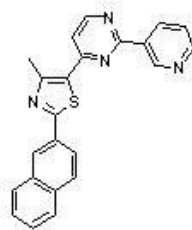
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127.57
126.56
124.02
123.84

40.60
40.39
40.18
39.97
39.76
39.55
39.34

18.85



Dr_MohammedHagress-Ruk3_PROTON_02
Dr_MohammedHagress-Ruk3

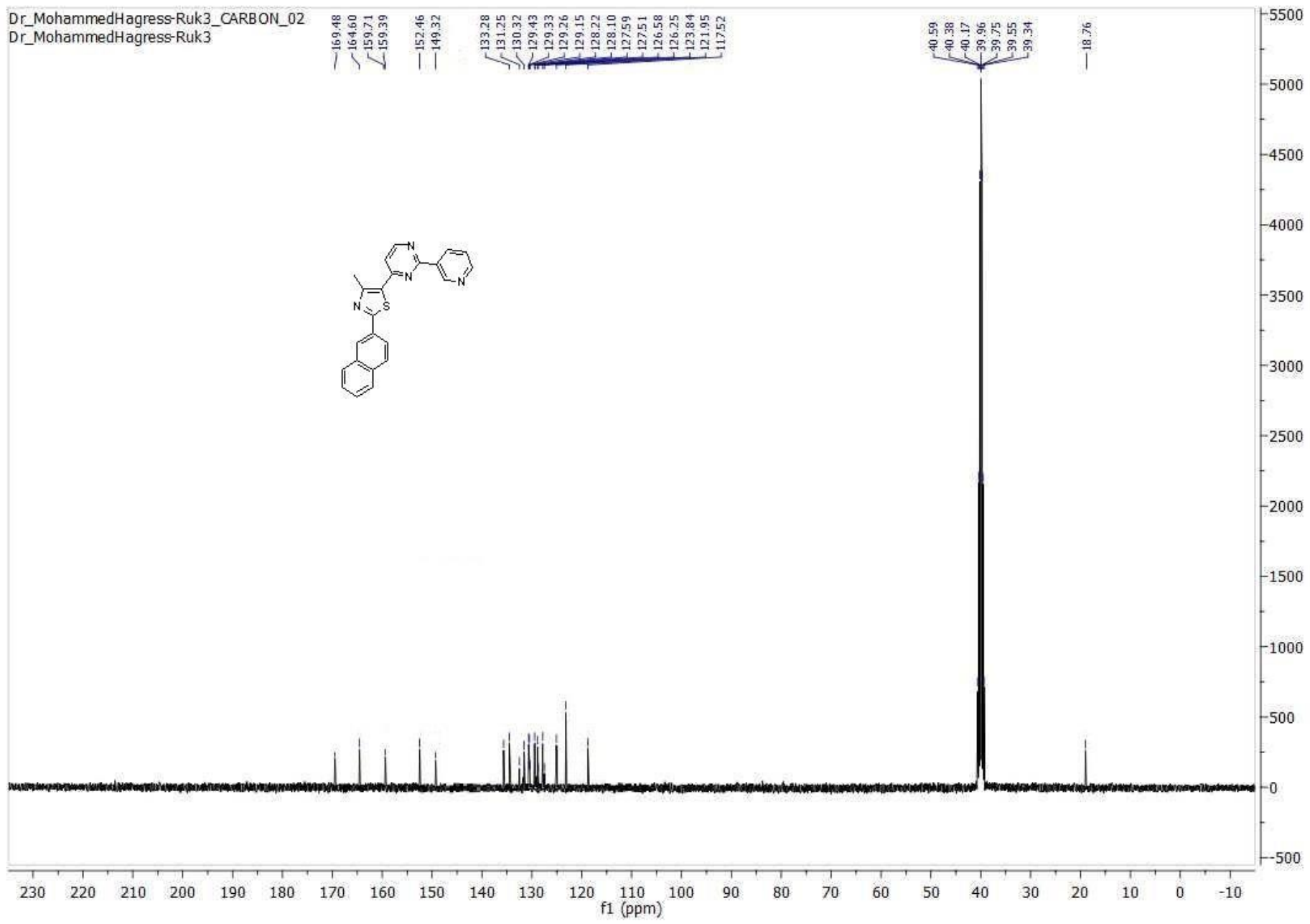
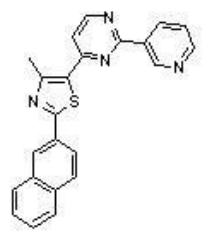


Dr_MohammedHagress-Ruk3_CARBON_02
Dr_MohammedHagress-Ruk3

169.48
164.60
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159.39
152.46
149.32
133.28
131.25
130.32
129.43
129.33
129.26
129.15
128.22
128.10
127.59
127.51
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40.59
40.38
40.17
39.96
39.75
39.55
39.34

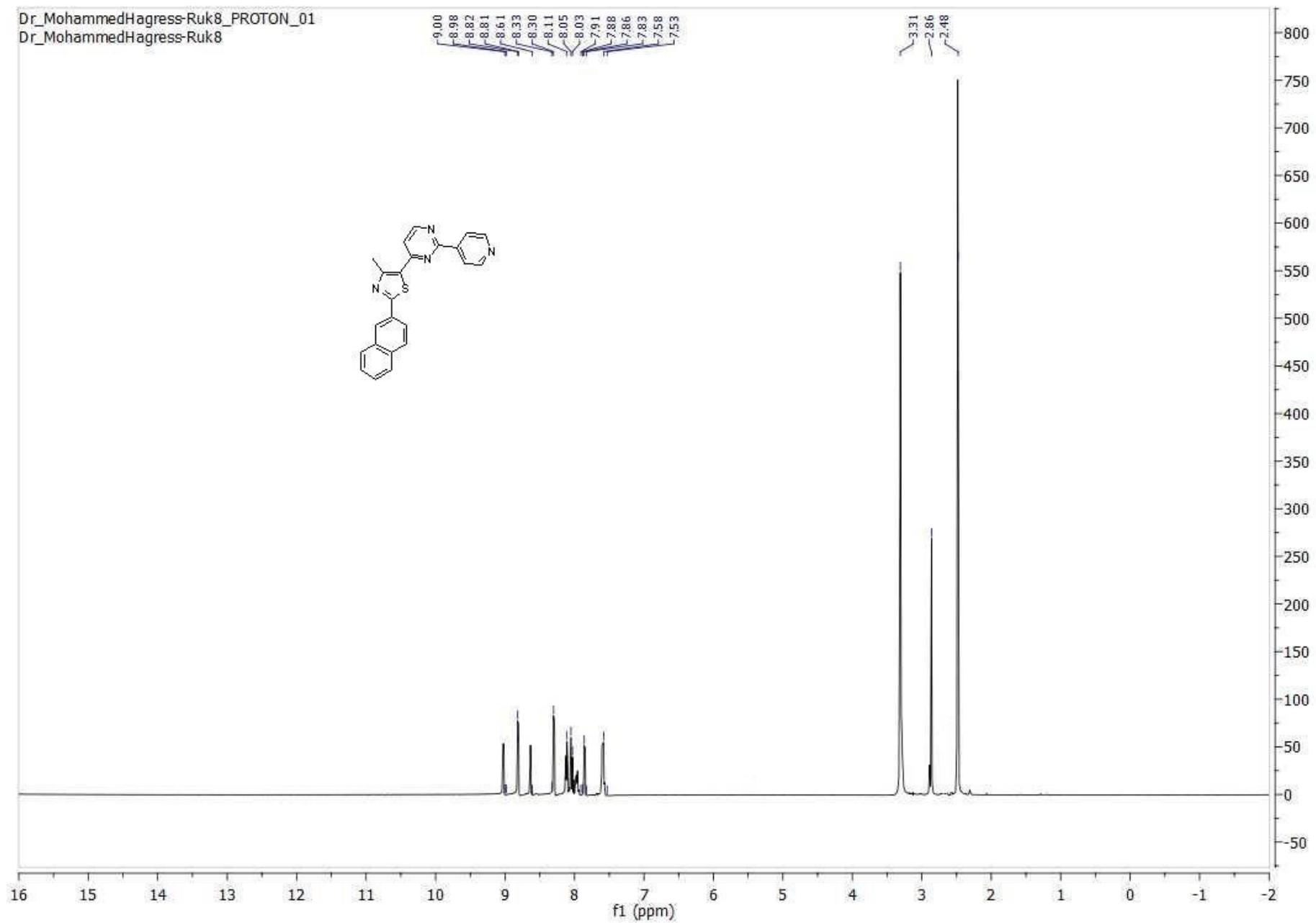
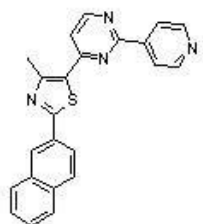
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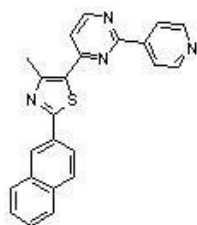
Dr_MohammedHagress-Ruk8_PROTON_01
Dr_MohammedHagress-Ruk8

9.00
8.98
8.82
8.81
8.61
8.33
8.30
8.11
8.05
8.03
7.91
7.88
7.86
7.83
7.58
7.53

3.31
2.86
2.48

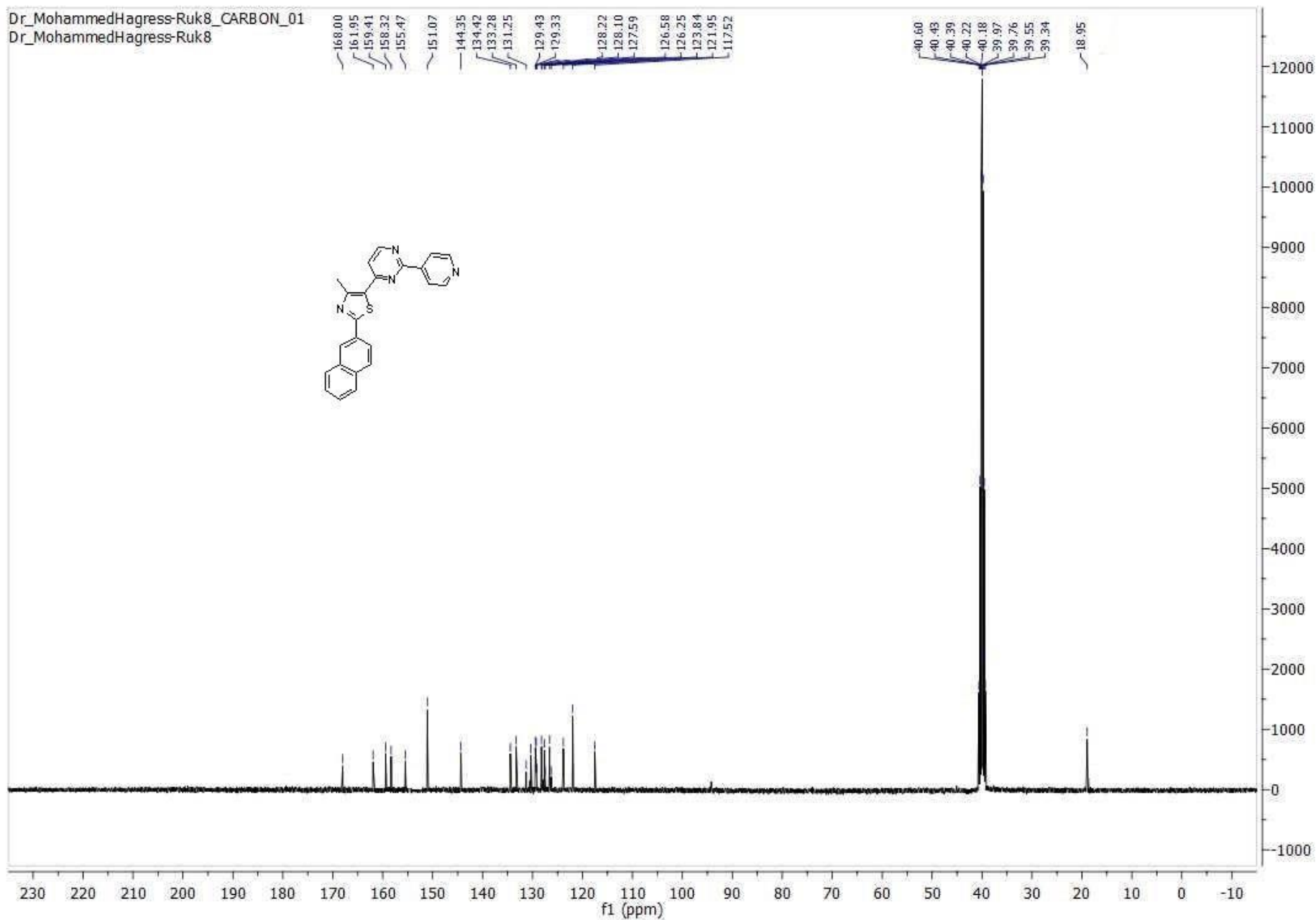


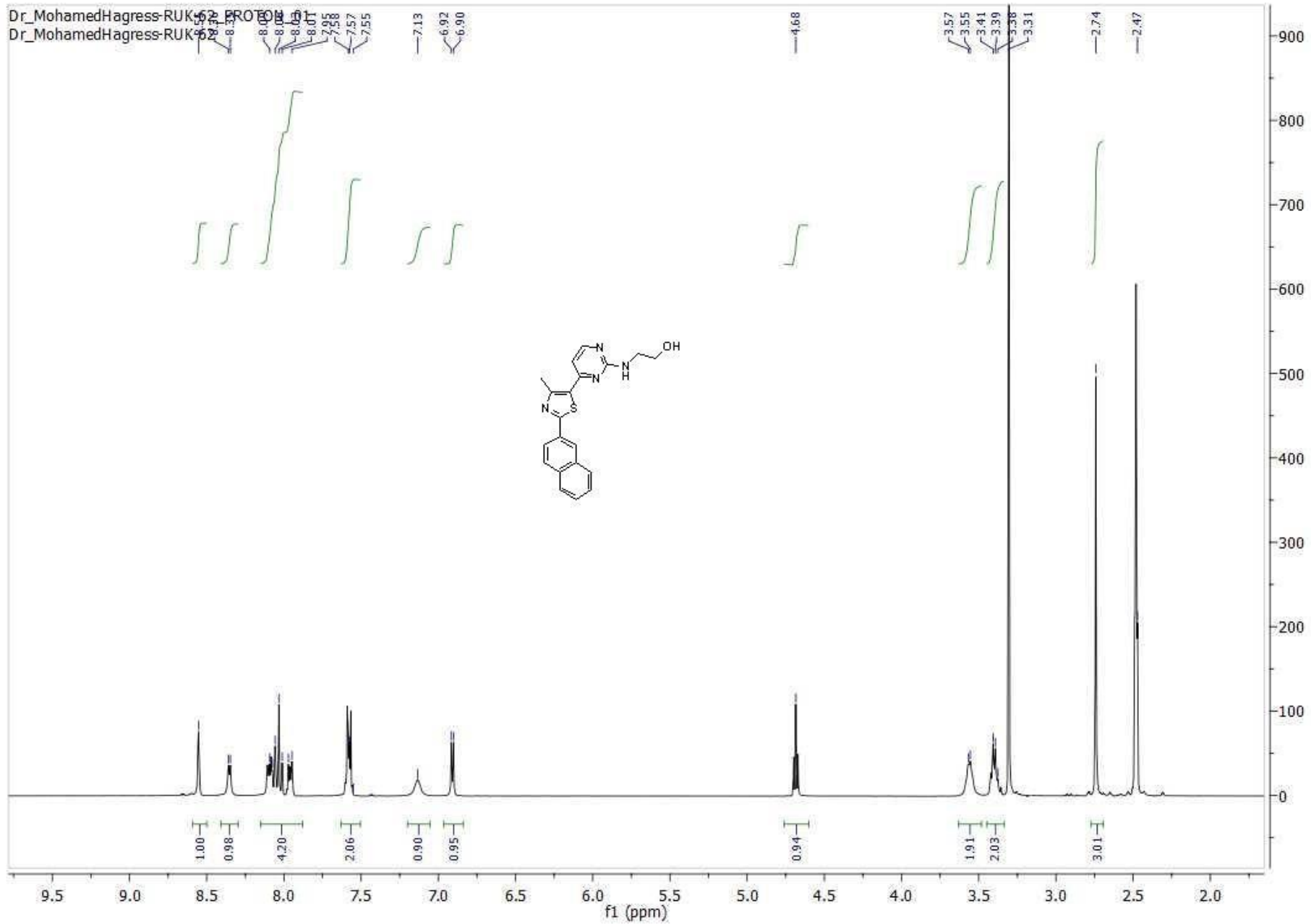
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Dr_MohammedHagress-Ruk8



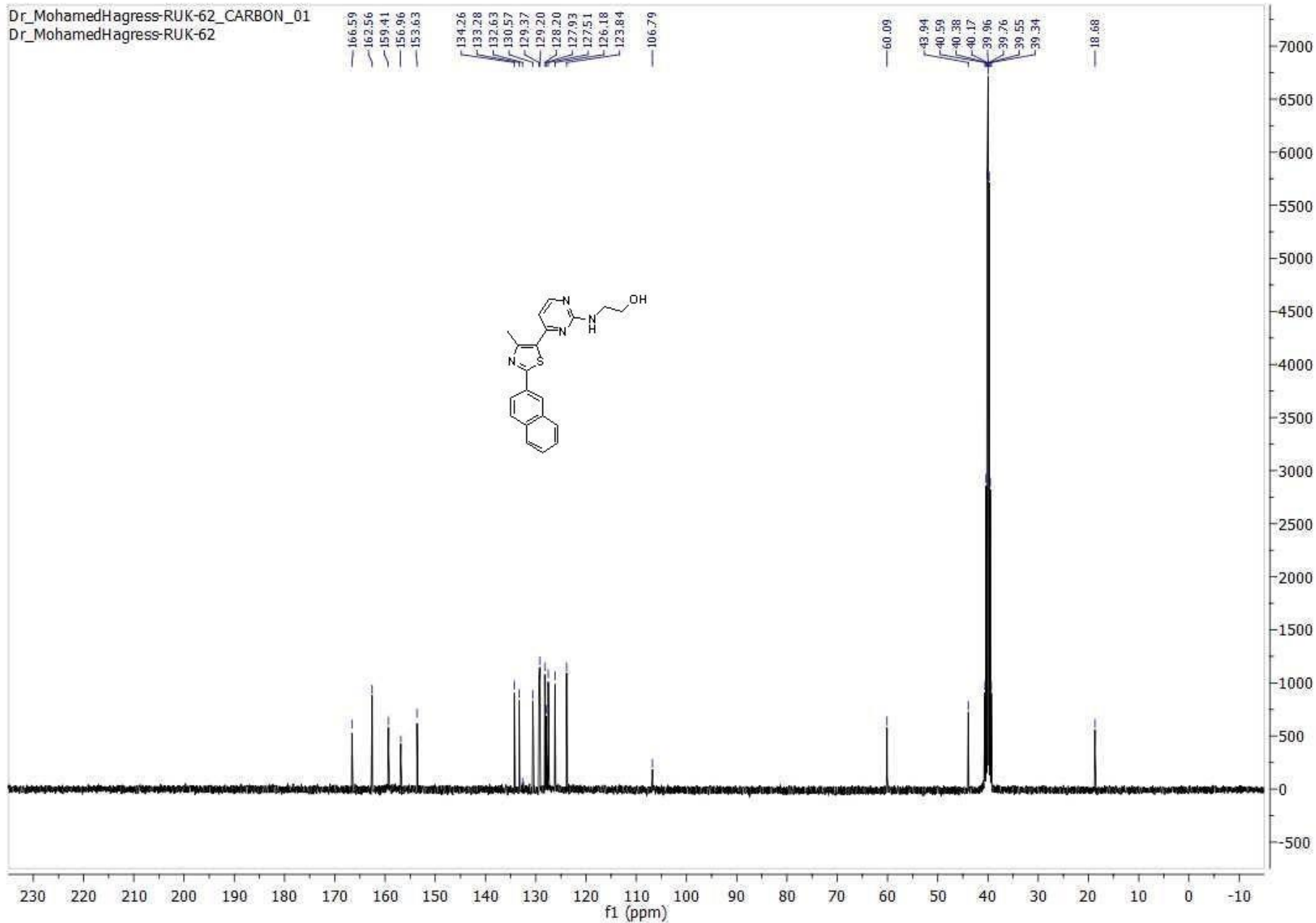
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128.10
127.59
126.58
126.25
123.84
121.95
117.52

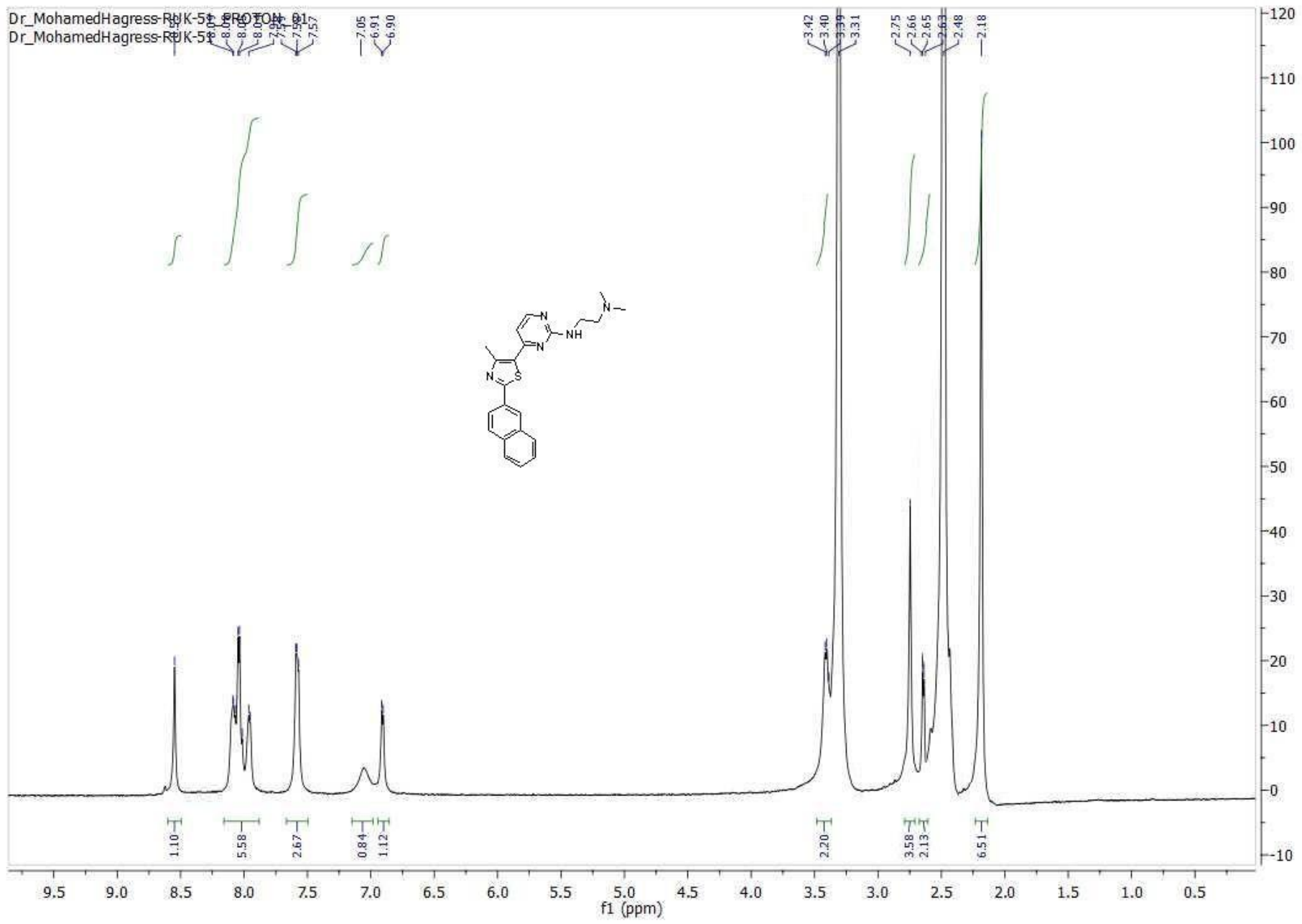
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40.39
40.22
39.18
39.97
39.76
39.55
39.34
18.95





Dr_MohamedHagress-RUK-62_CARBON_01
Dr_MohamedHagress-RUK-62

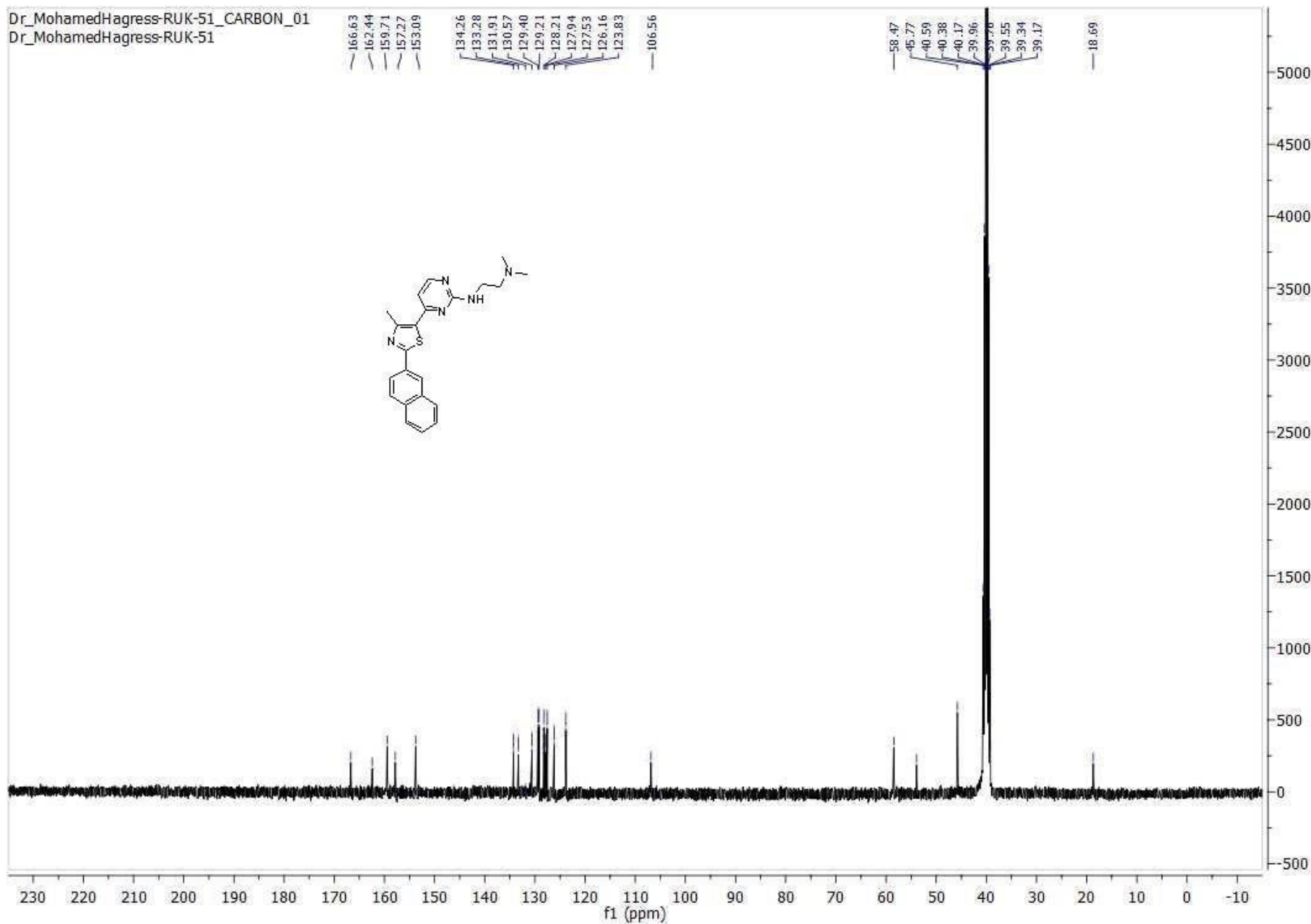
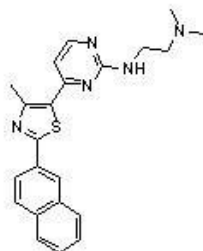


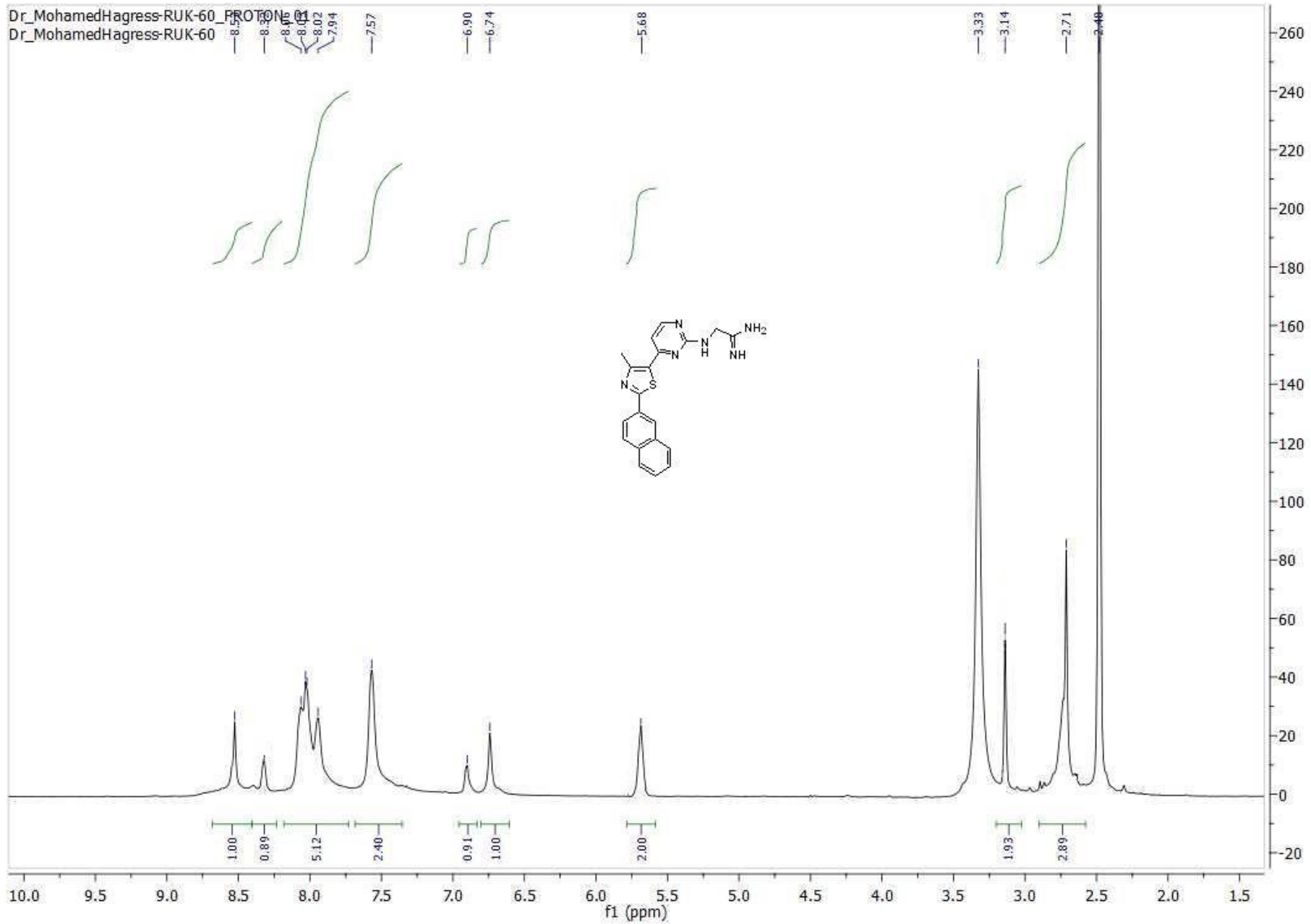


Dr_MohamedHagress-RUK-51_CARBON_01
Dr_MohamedHagress-RUK-51

166.63
162.44
159.71
157.27
153.09
134.26
133.28
131.91
130.57
129.40
129.21
128.21
127.94
127.53
126.16
123.83
106.56

58.47
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40.59
40.38
40.17
39.96
39.70
39.55
39.34
39.17
18.69

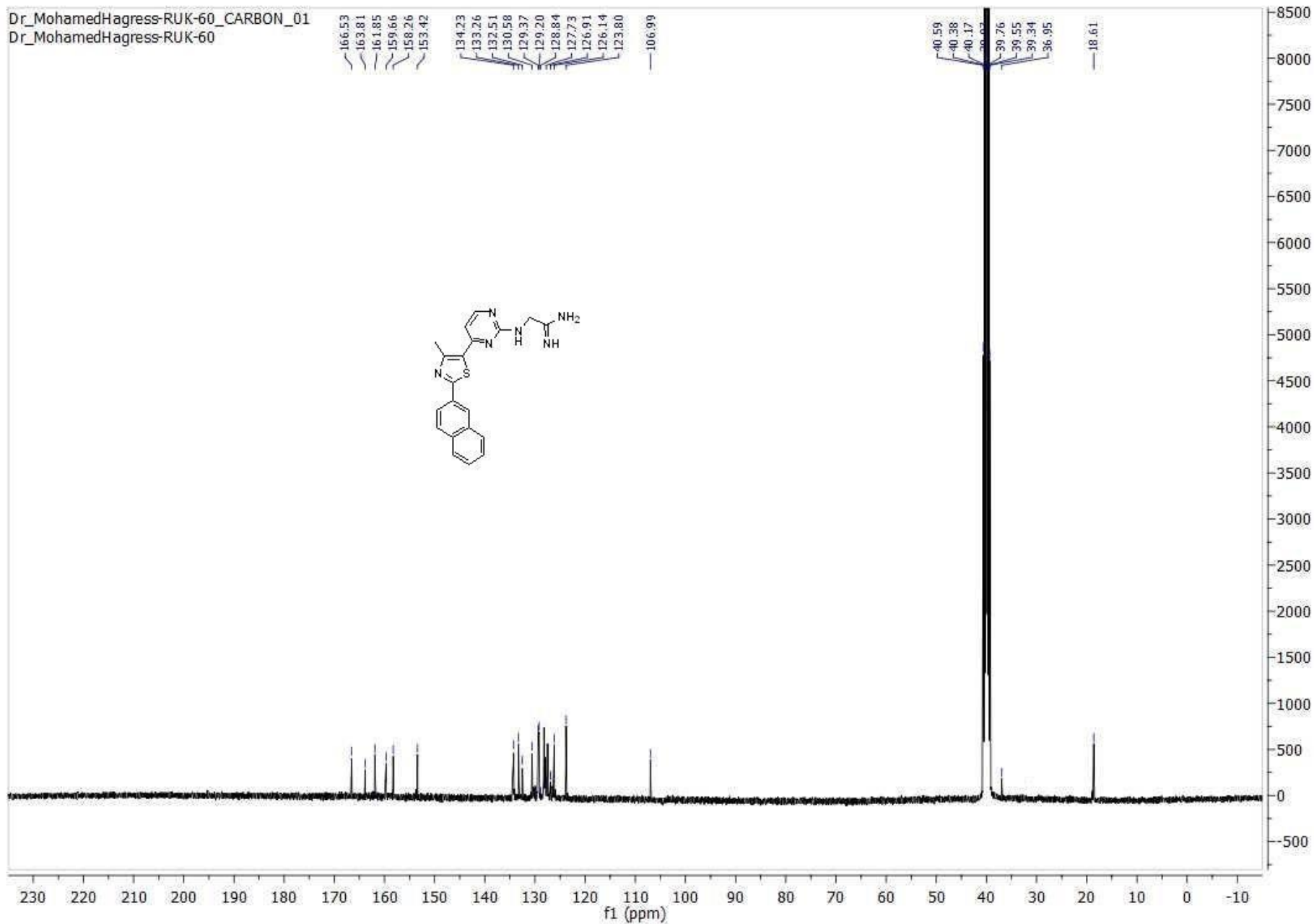
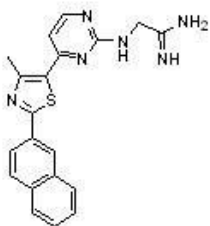


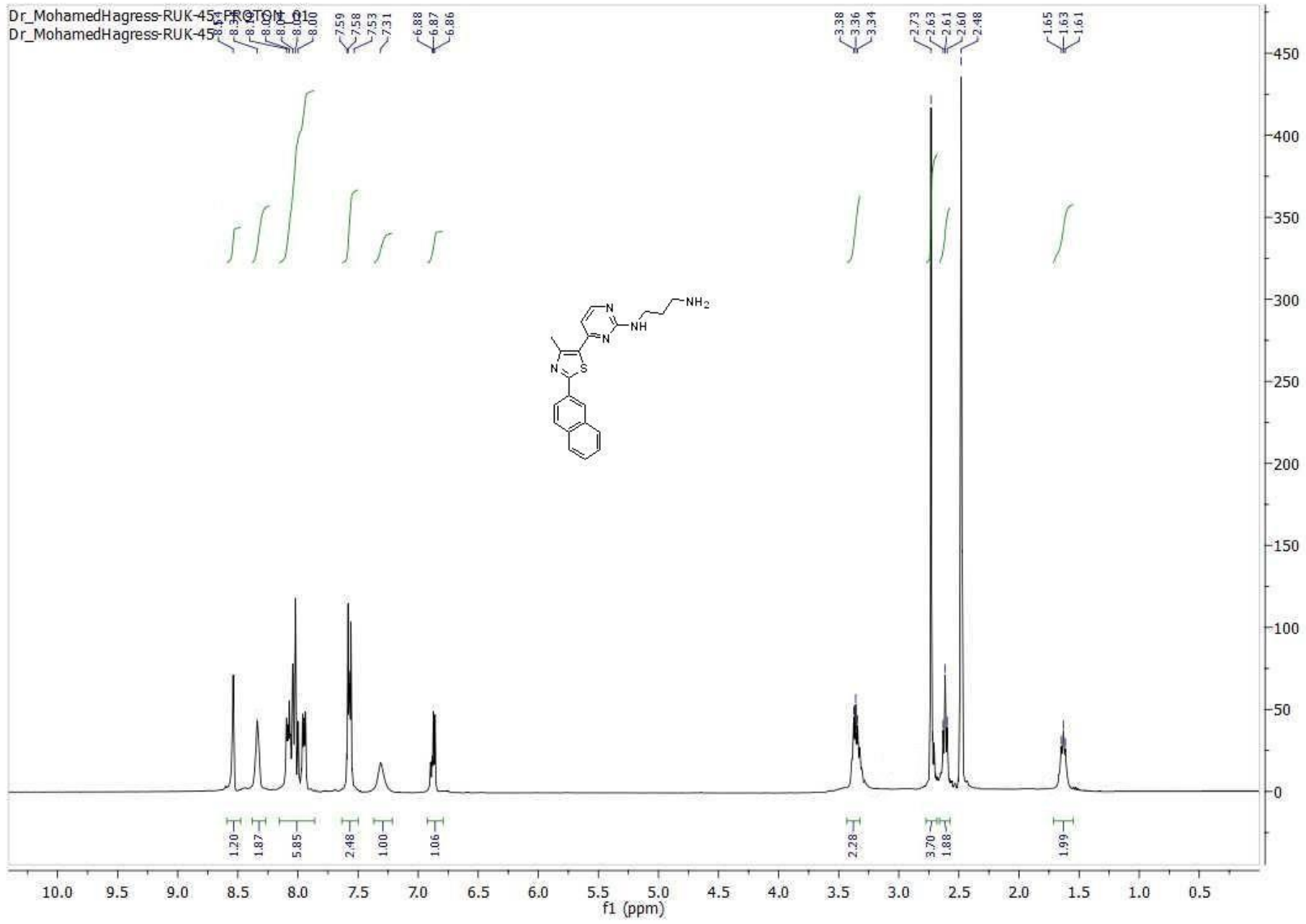


Dr_MohamedHagress-RUK-60_CARBON_01
Dr_MohamedHagress-RUK-60

166.53
163.81
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153.42
134.23
133.26
132.51
130.58
129.37
129.20
128.84
127.73
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126.14
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106.99

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40.17
39.76
39.55
39.34
36.95
18.61

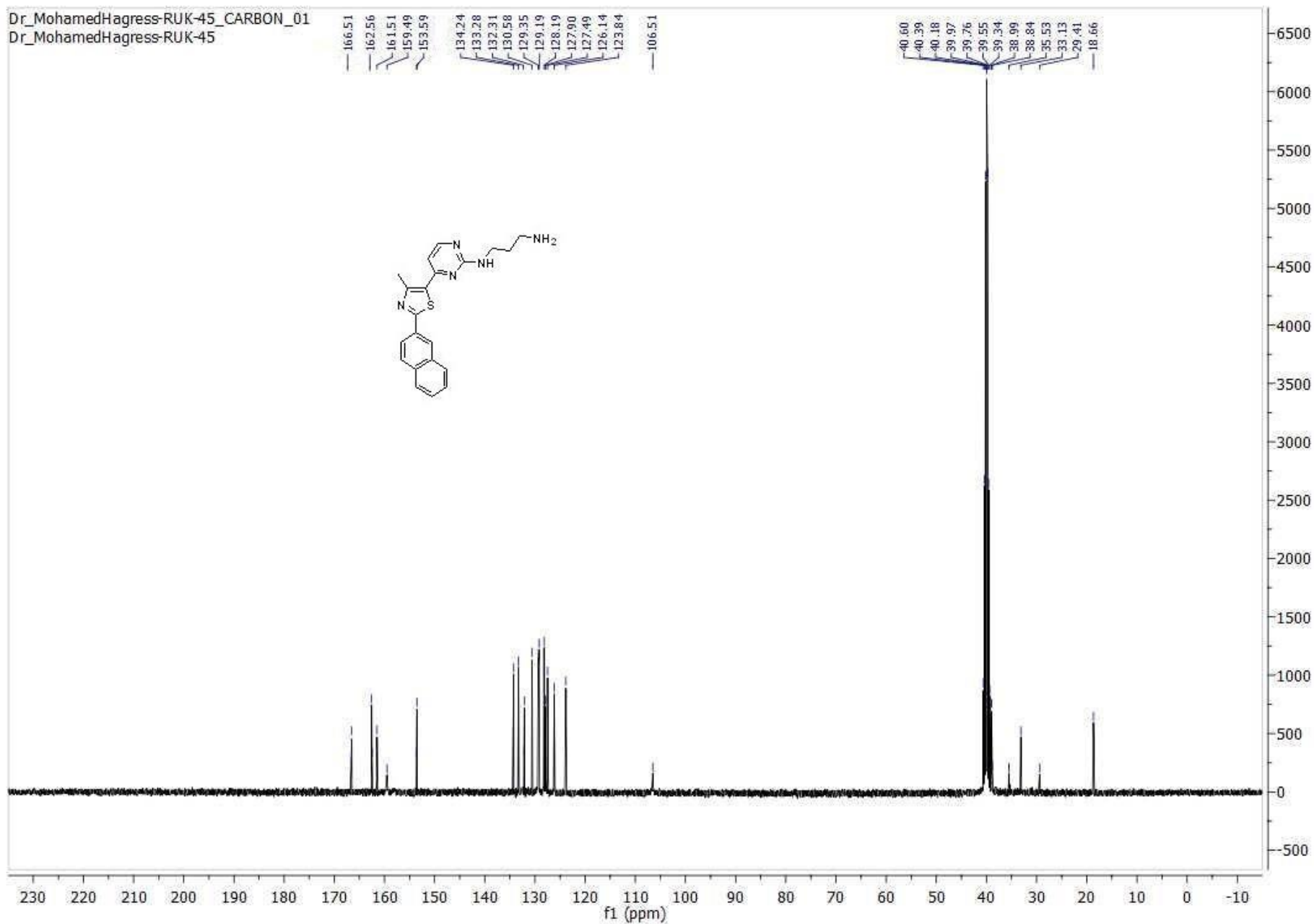
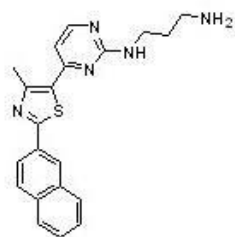


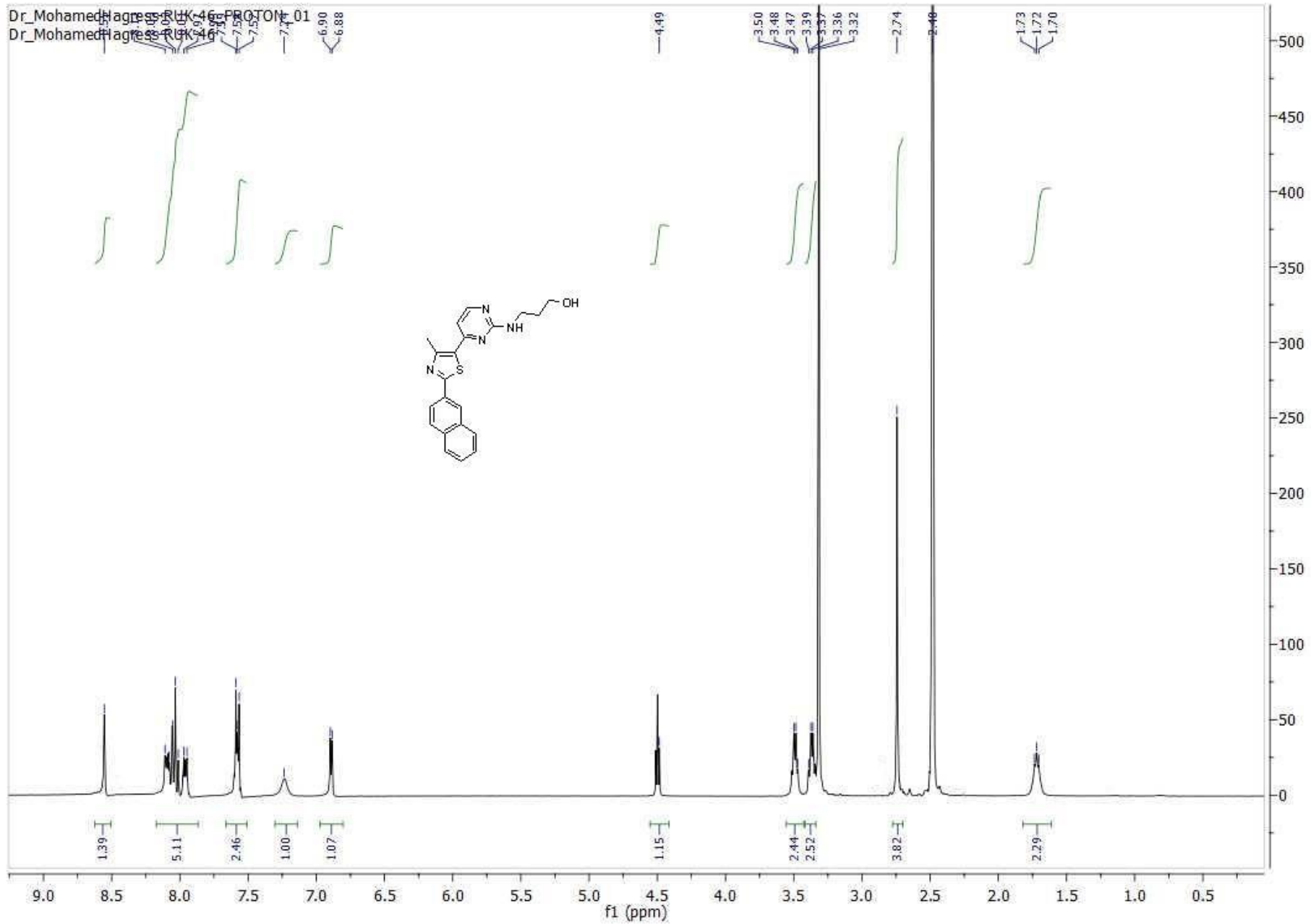


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Dr_MohamedHagress-RUK-45

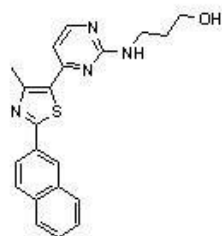
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127.90
127.49
126.14
123.84
106.51

40.60
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33.13
29.41
18.66



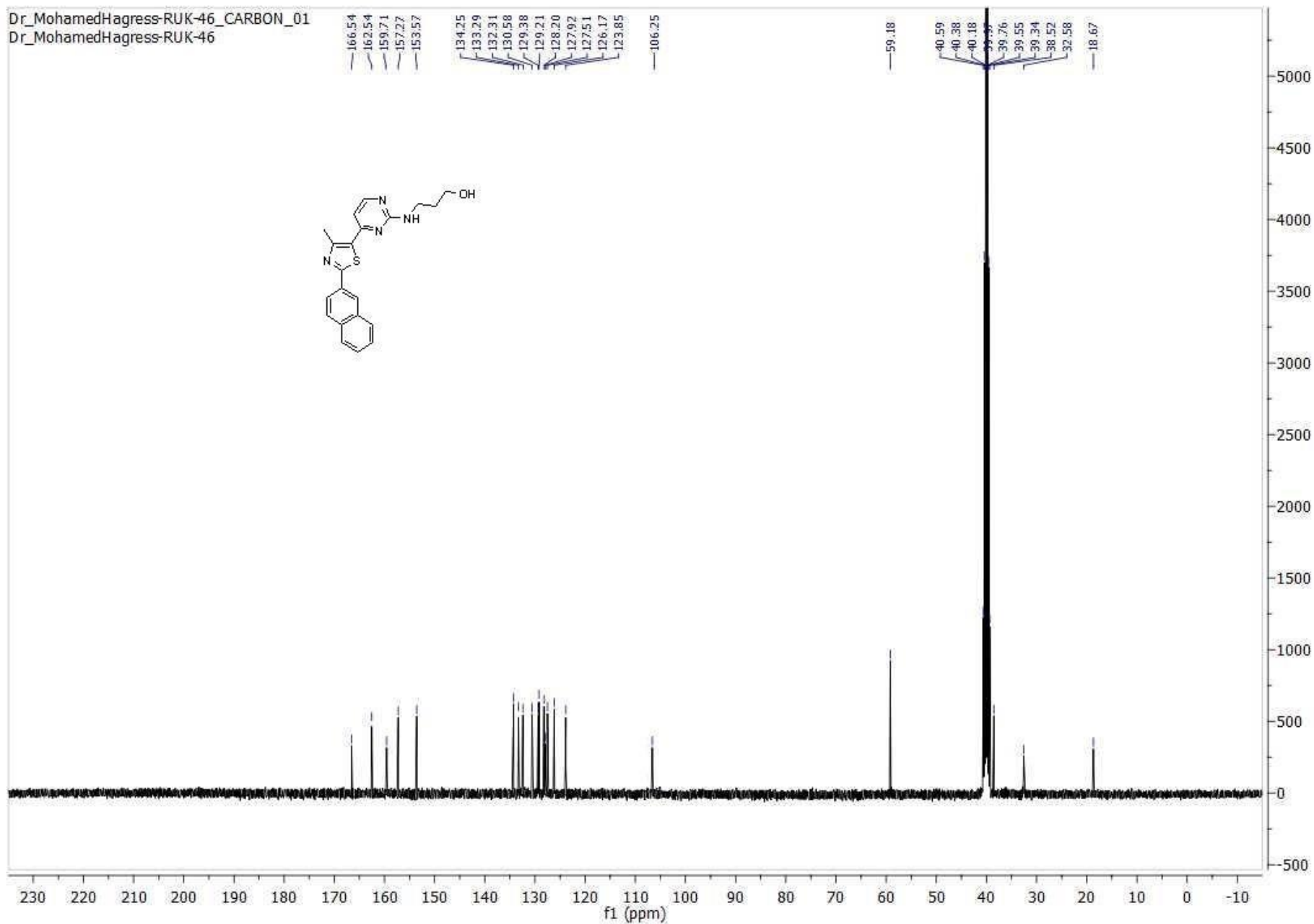


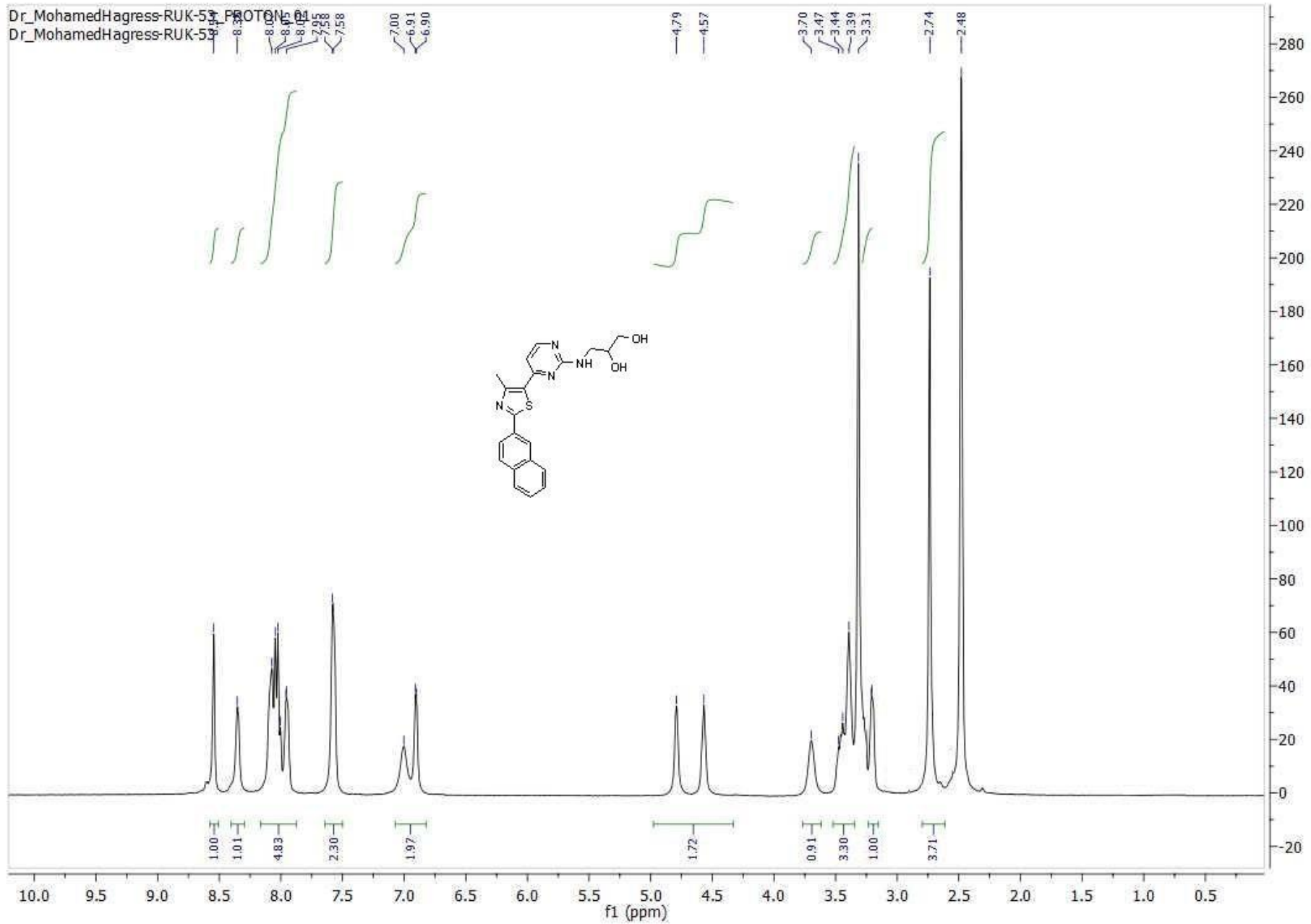
Dr_MohamedHagress-RUK-46_CARBON_01
Dr_MohamedHagress-RUK-46



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134.25
133.29
132.31
130.58
129.38
129.21
128.20
127.92
127.51
126.17
123.85
106.25

59.18
40.59
40.38
40.18
39.76
39.55
39.34
38.52
32.58
18.67

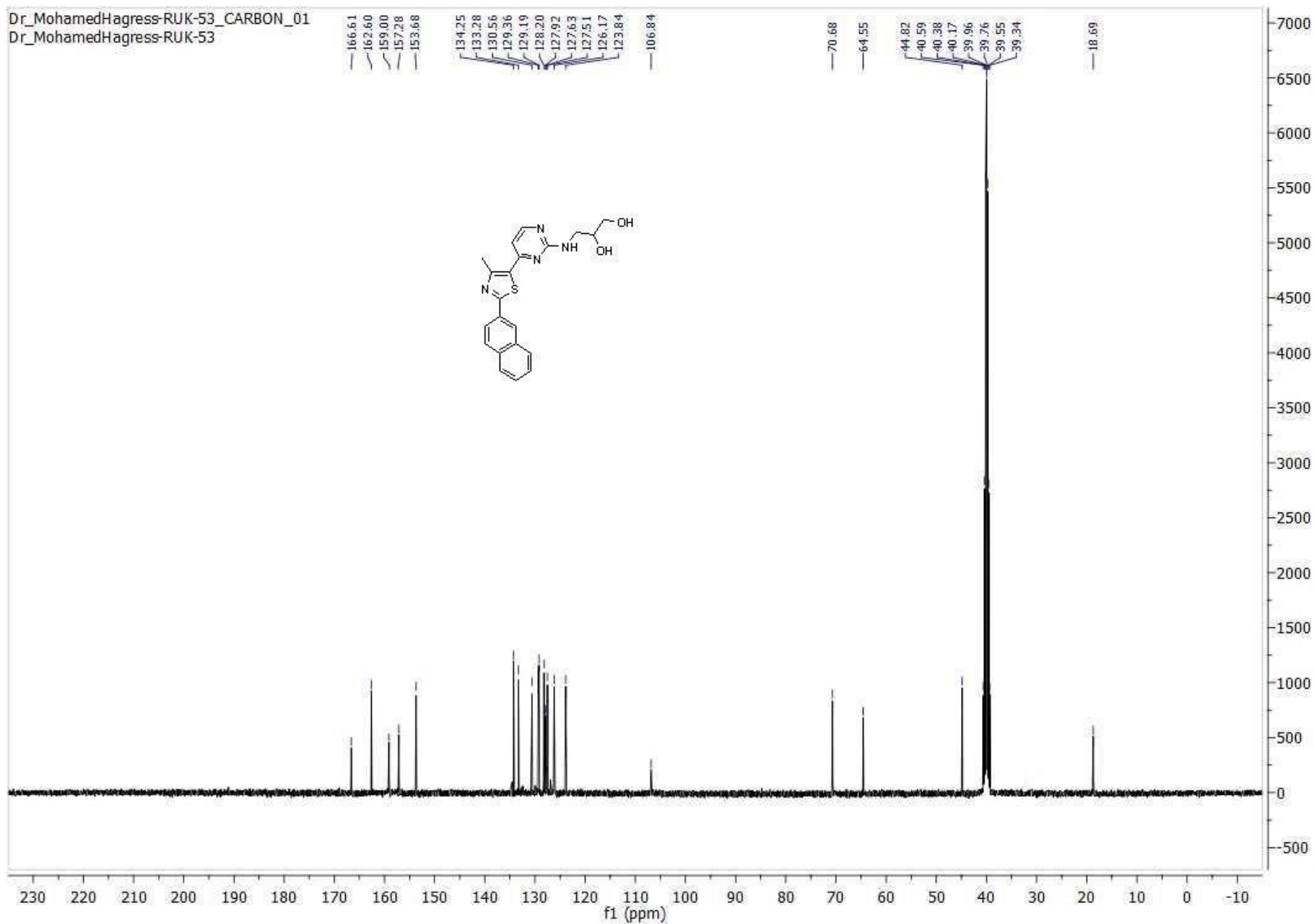
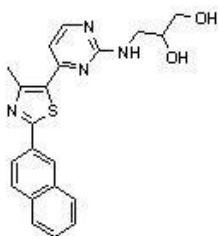


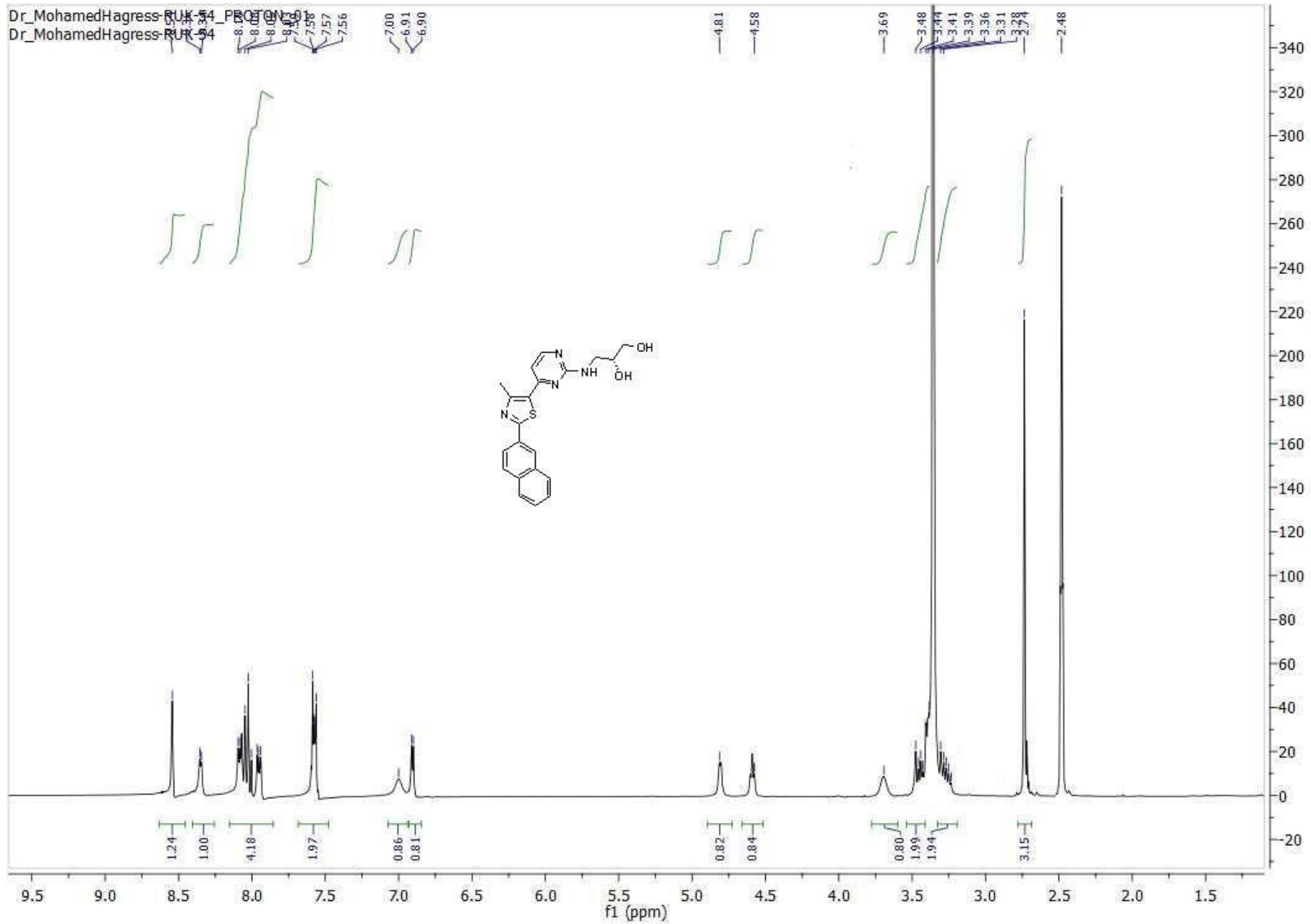


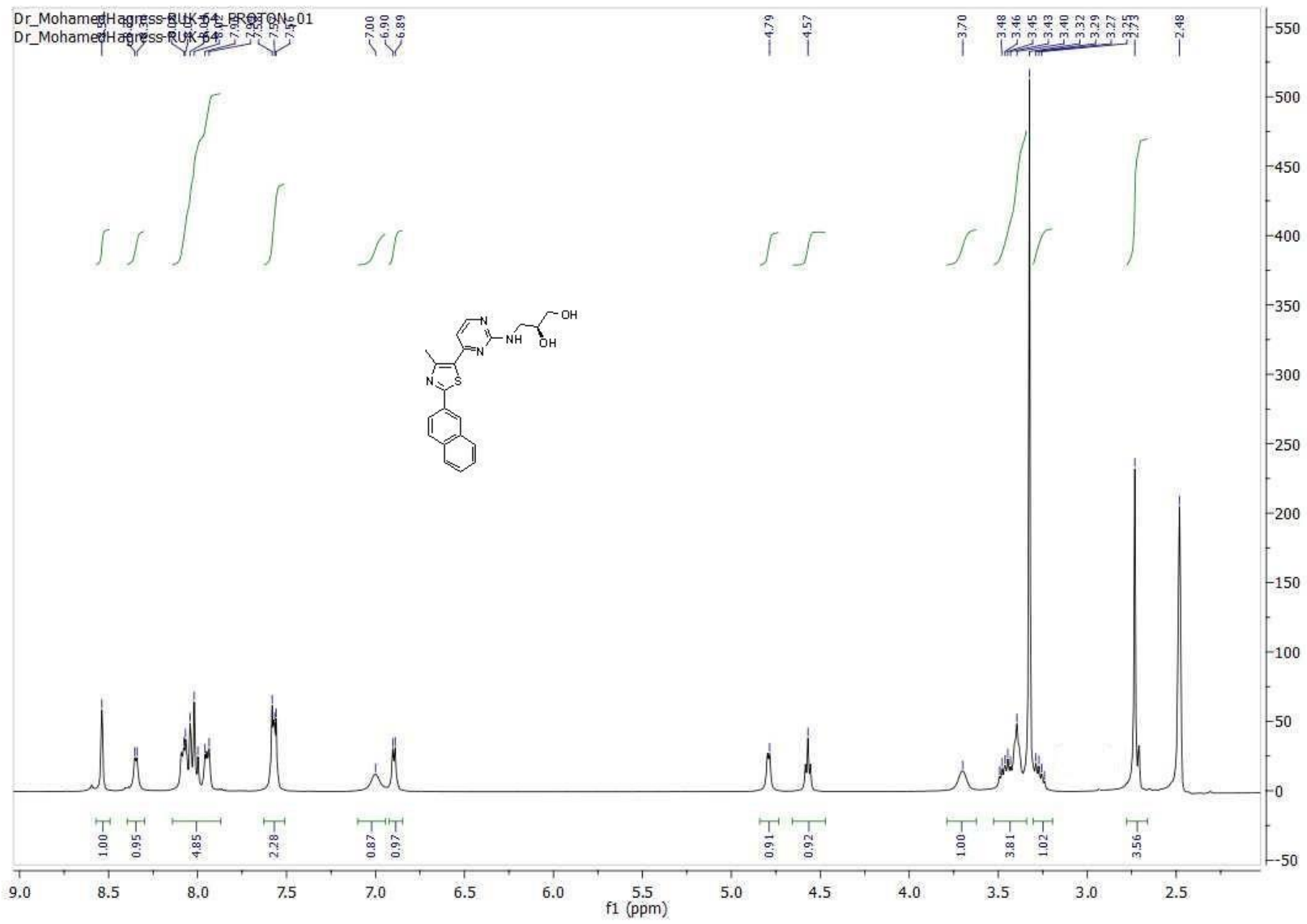
Dr_MohamedHagress-RUK-53_CARBON_01
Dr_MohamedHagress-RUK-53

166.61
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133.28
130.56
129.36
129.19
128.20
127.92
127.63
127.51
126.17
123.84
106.84

70.68
64.55
44.82
40.59
40.38
40.17
39.96
39.76
39.55
39.34
18.69



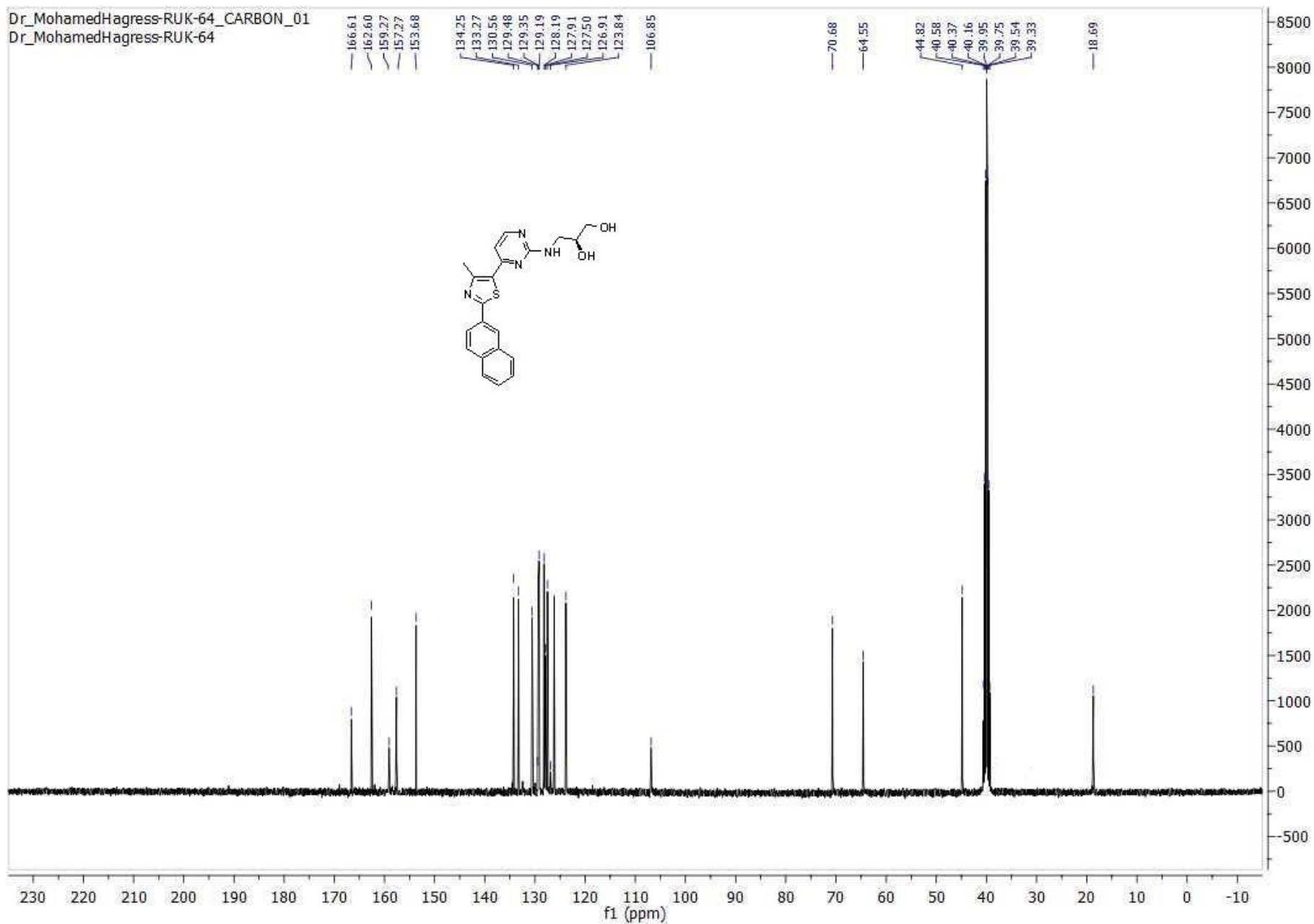
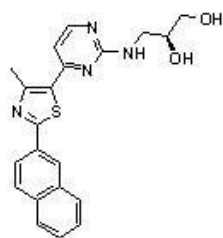


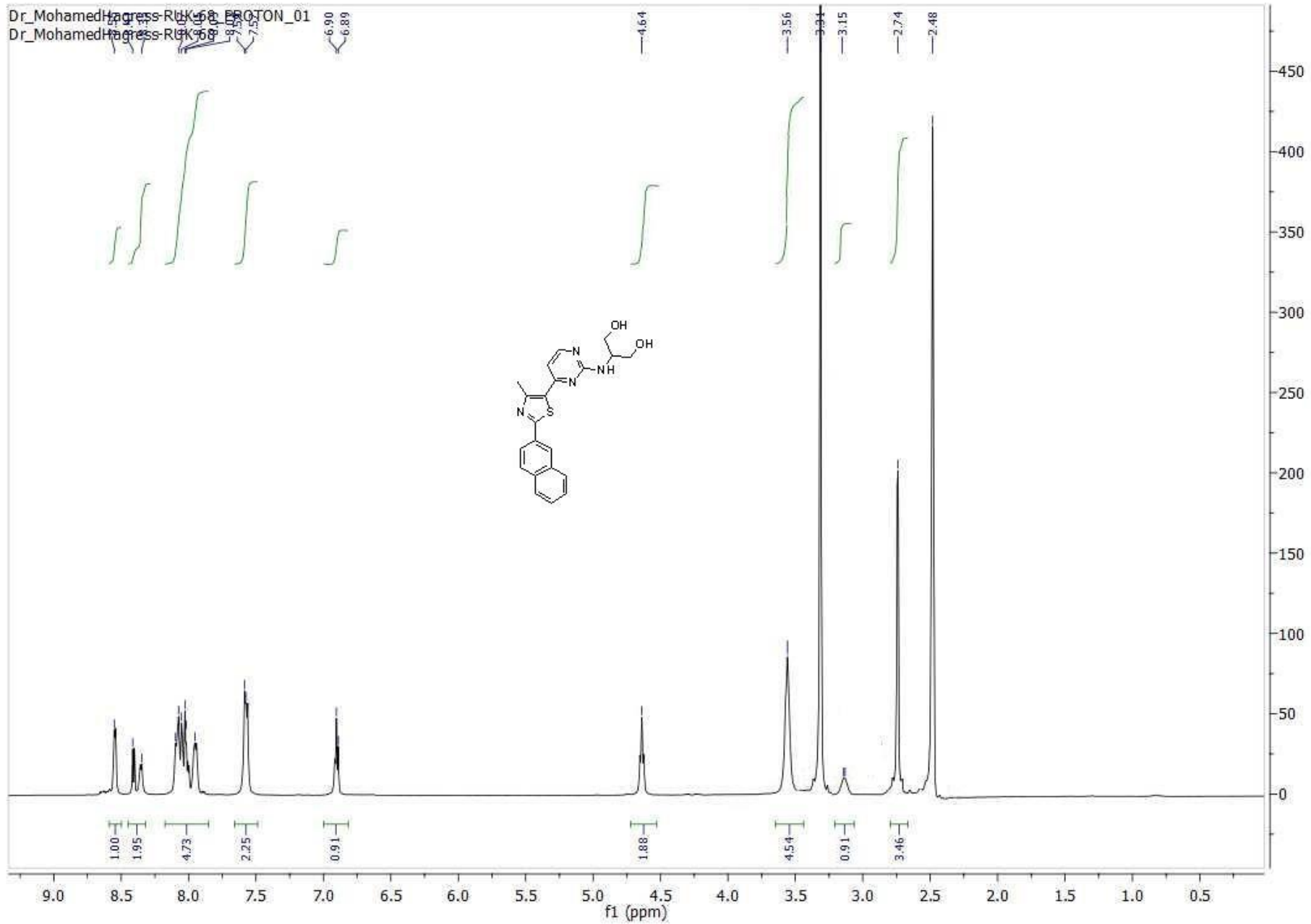


Dr_MohamedHagress-RUK-64_CARBON_01
Dr_MohamedHagress-RUK-64

166.61
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159.27
157.27
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134.25
133.27
130.56
129.48
129.35
129.19
128.19
127.91
127.50
126.91
123.84
106.85

70.68
64.55
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39.95
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39.54
39.33
18.69

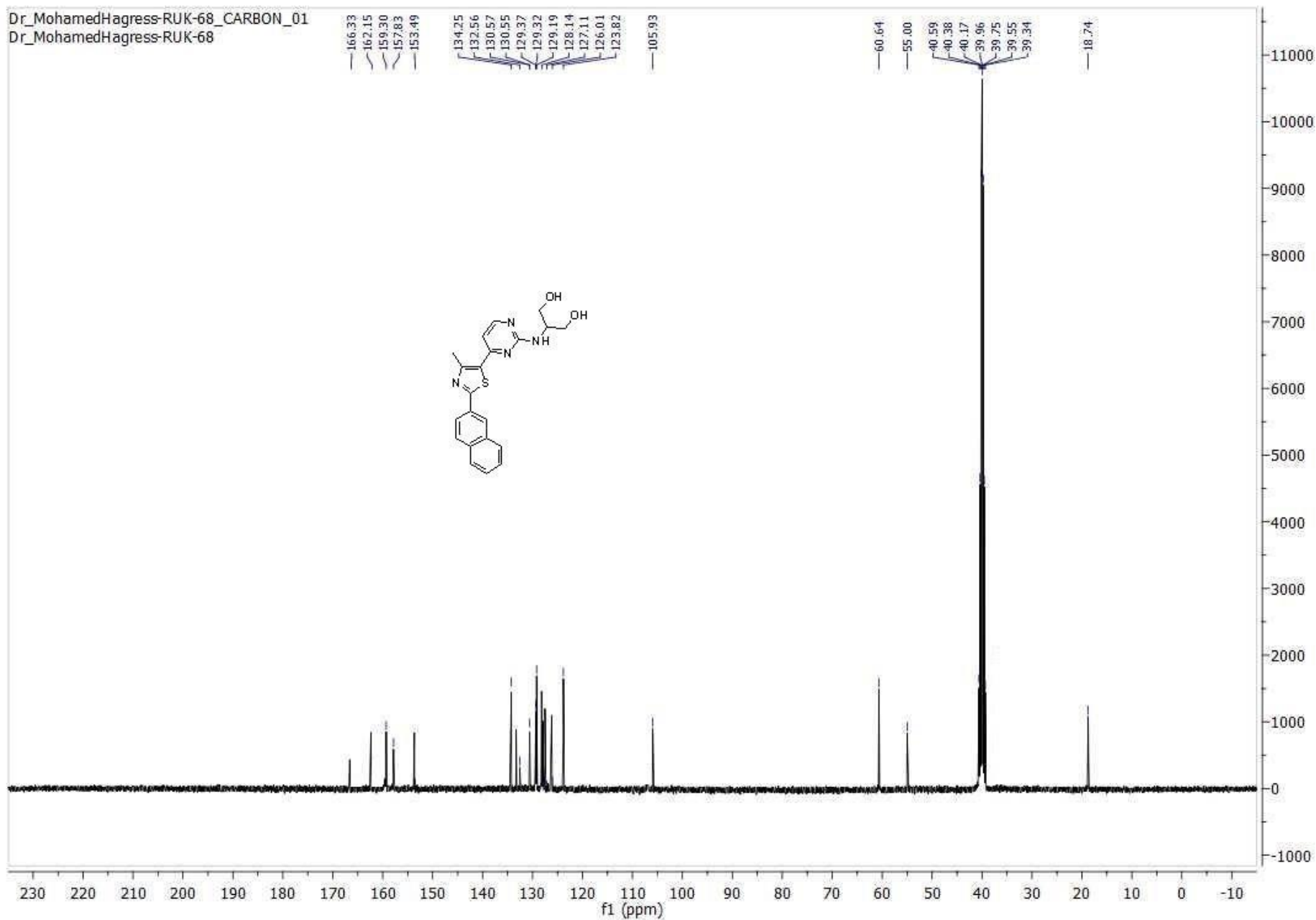
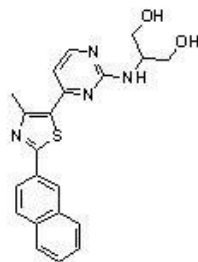


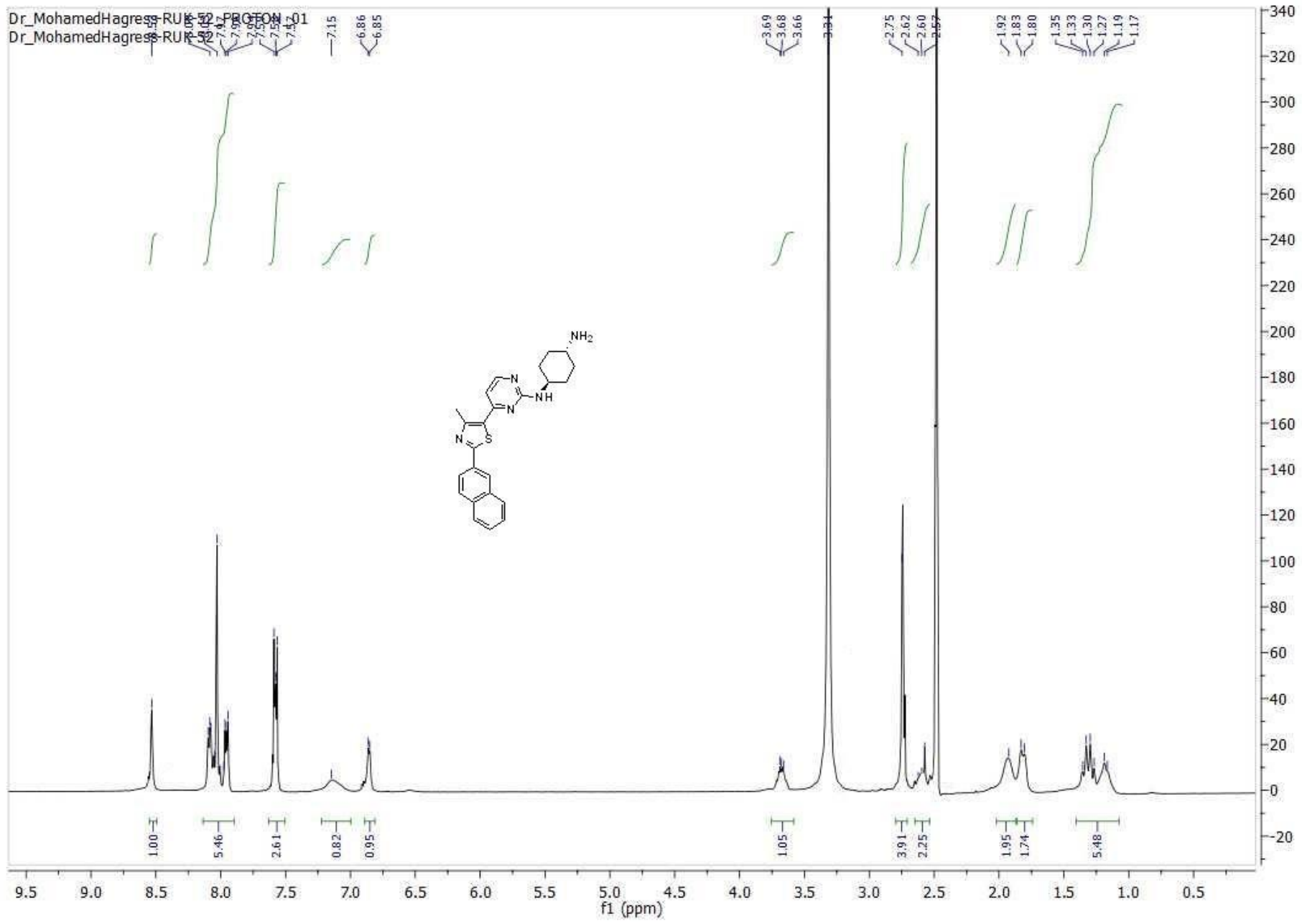


Dr_MohamedHagress-RUK-68_CARBON_01
Dr_MohamedHagress-RUK-68

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162.15
159.30
157.83
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134.25
132.56
130.57
130.55
129.37
129.32
129.19
128.14
127.11
126.01
123.82
105.93

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40.38
40.17
39.96
39.75
39.55
39.34
18.74





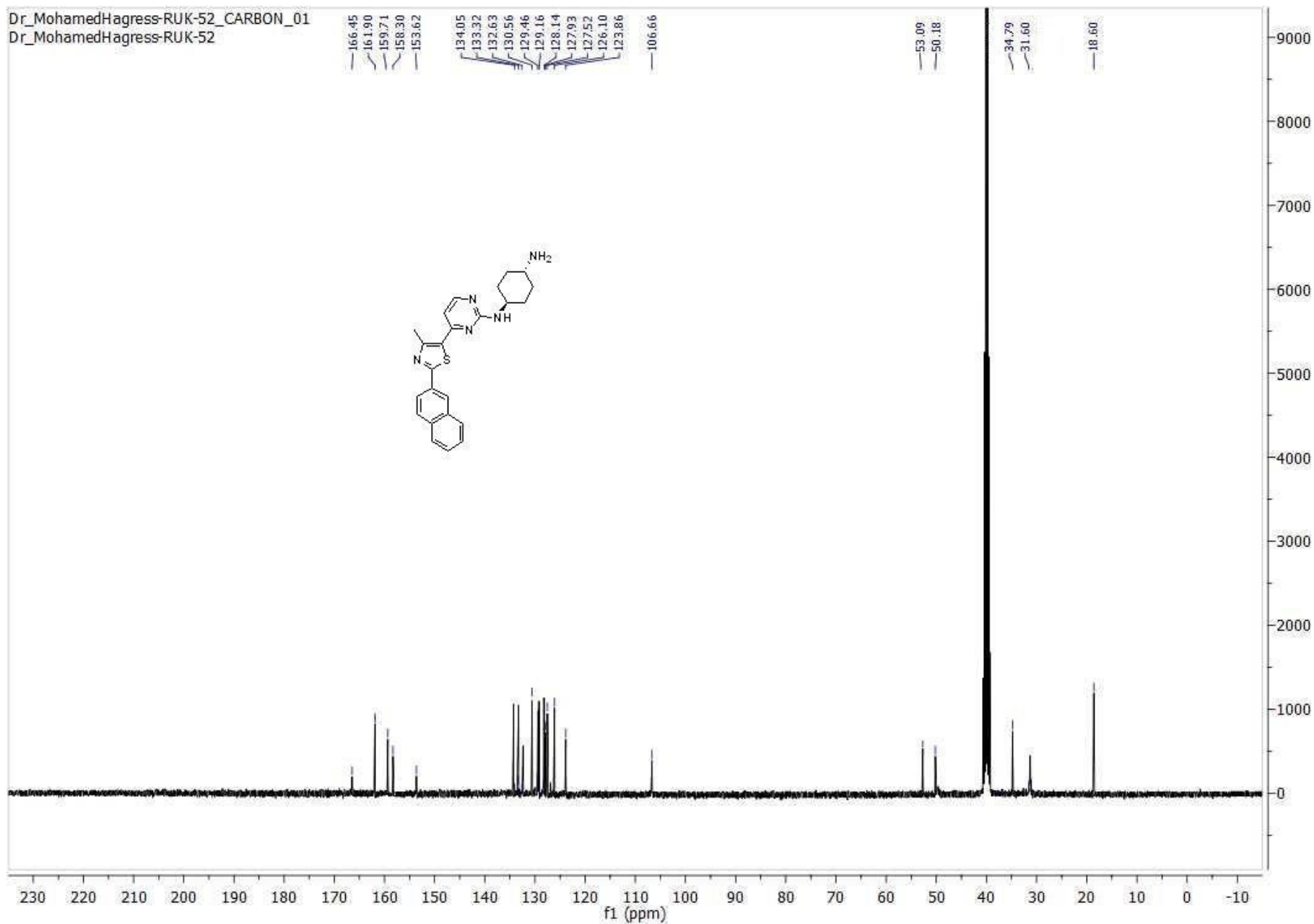
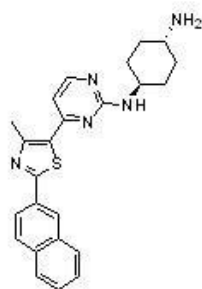
Dr_MohamedHagress-RUK-52_CARBON_01
Dr_MohamedHagress-RUK-52

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130.56
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129.16
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127.93
127.52
126.10
123.86
106.66

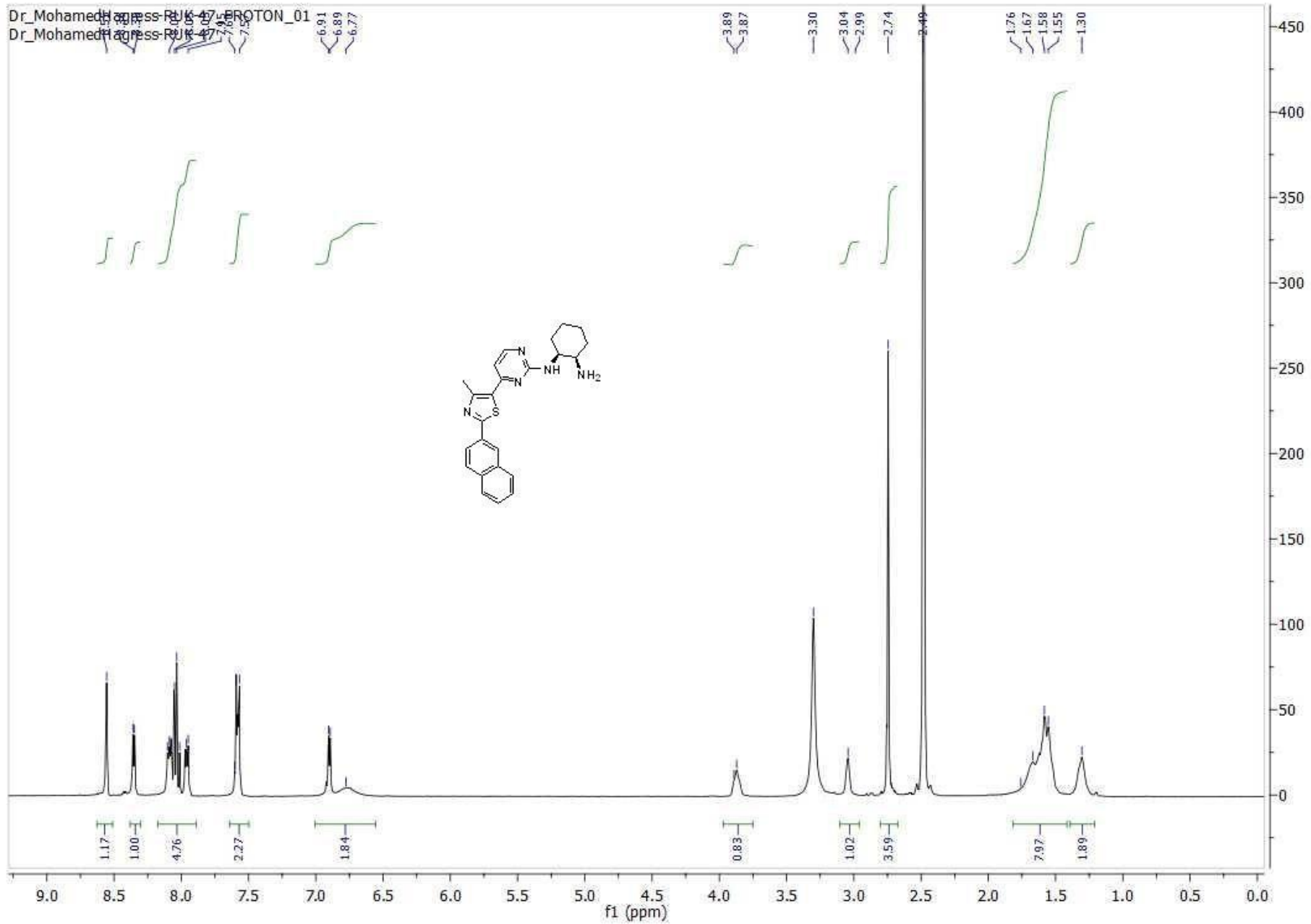
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34.79
31.60

18.60



Dr_MohamedHagress-RUK-47-PROTON_01
Dr_MohamedHagress-RUK-47



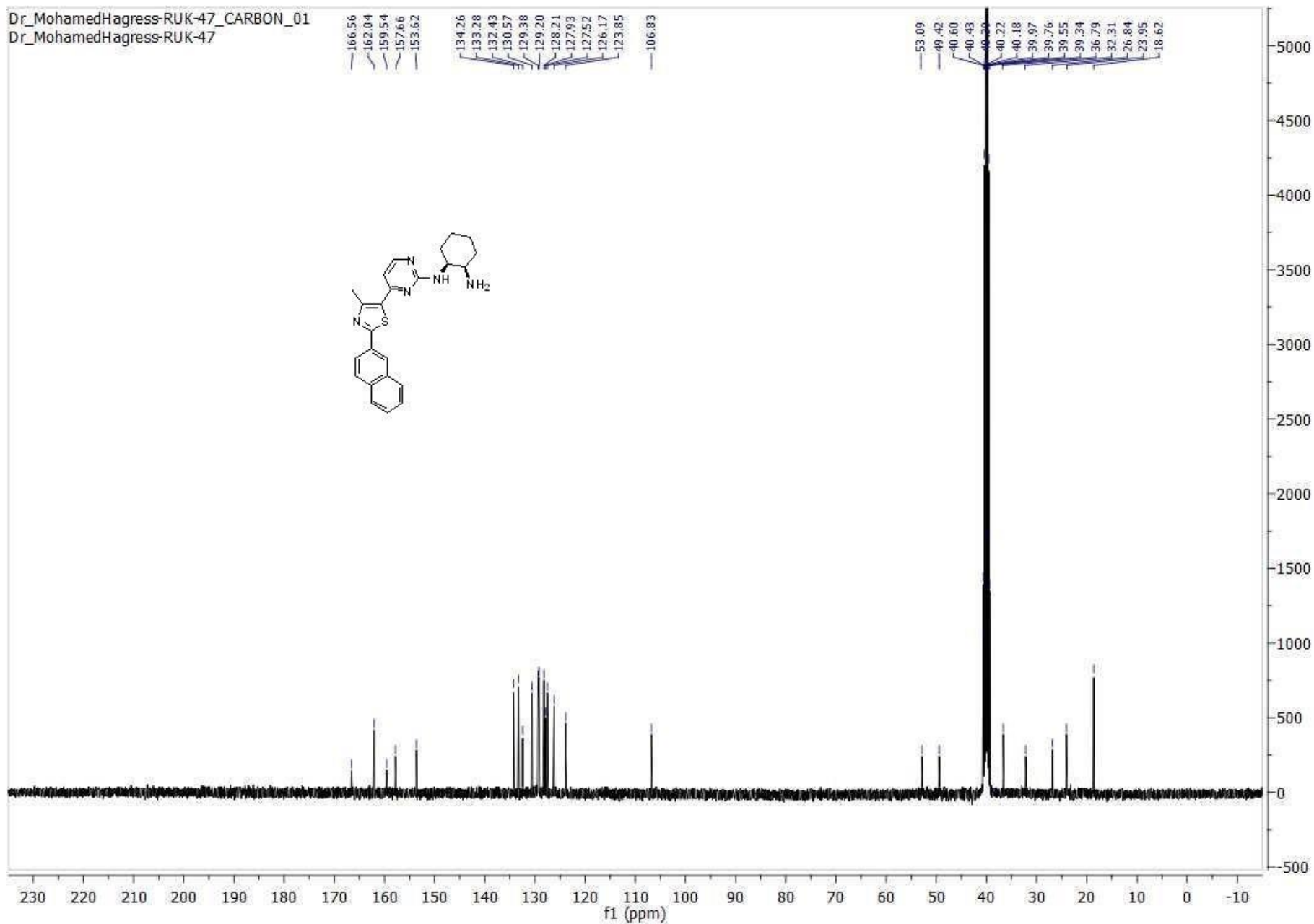
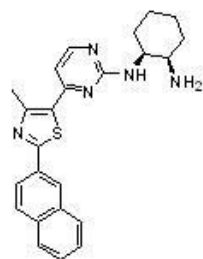
Dr_MohamedHagress-RUK-47_CARBON_01
Dr_MohamedHagress-RUK-47

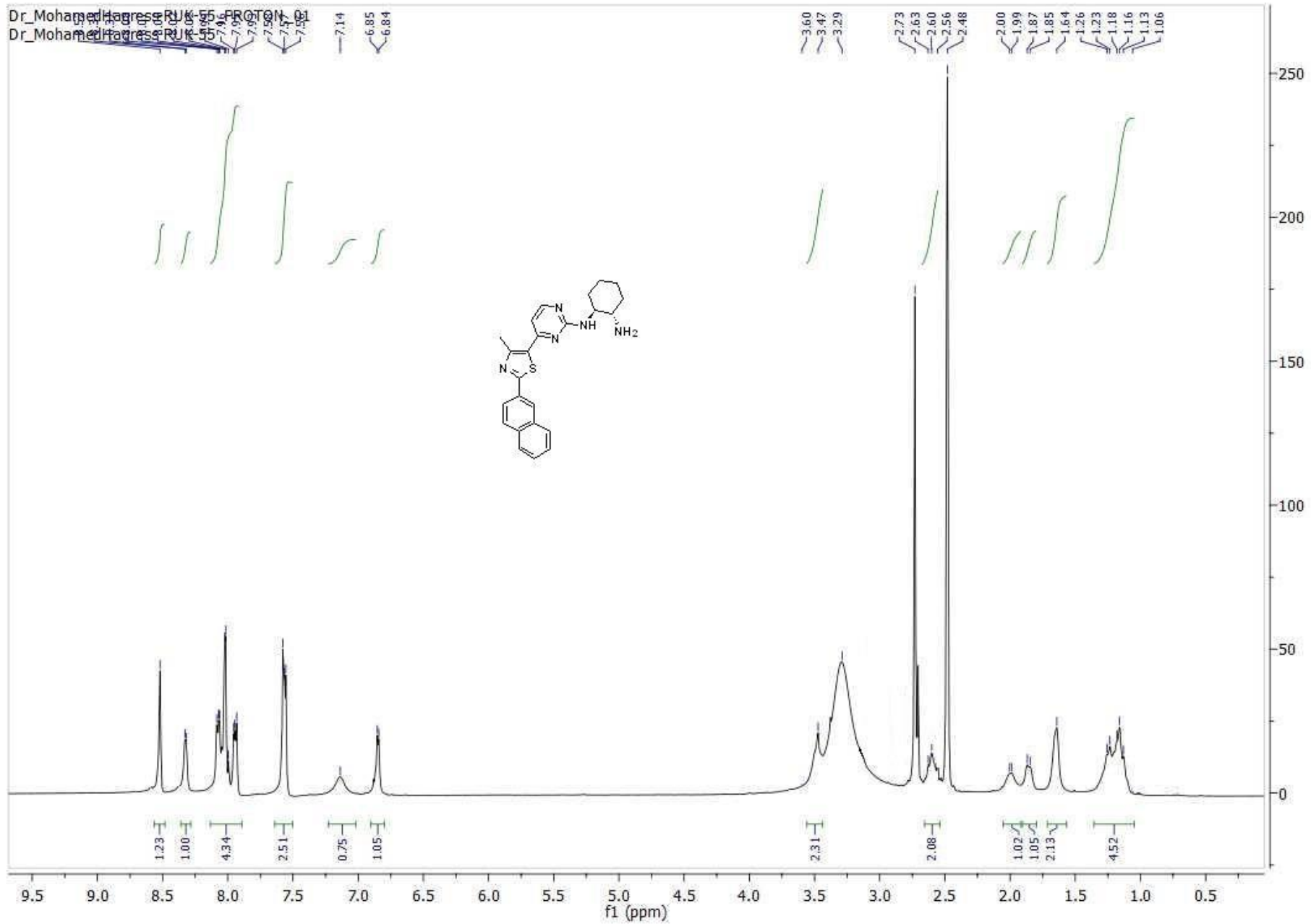
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129.38
129.20
128.21
127.93
127.52
126.17
123.85

106.83

53.09
49.42
40.60
40.43
40.30
40.22
40.18
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39.55
39.34
36.79
32.31
26.84
23.95
18.62



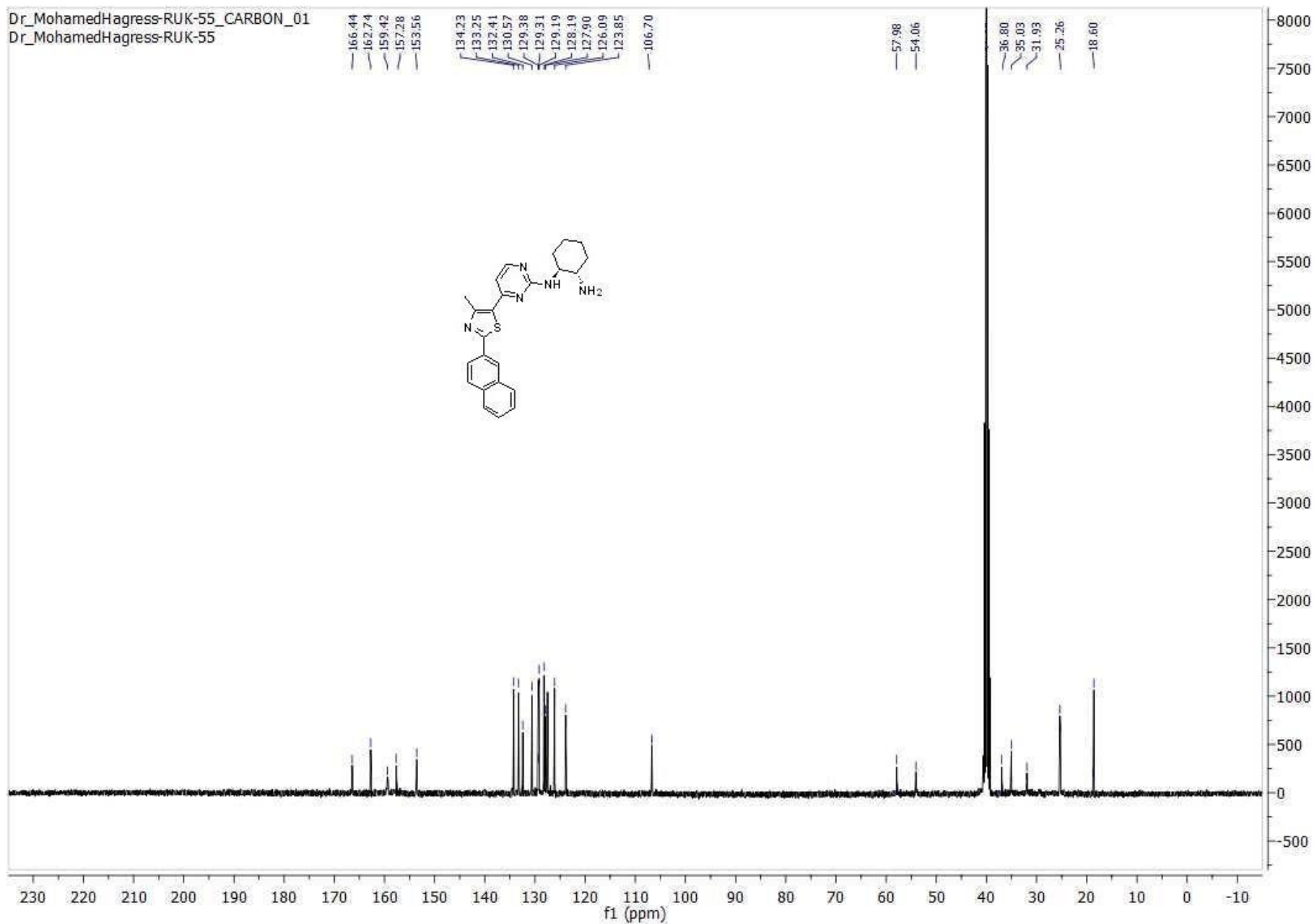
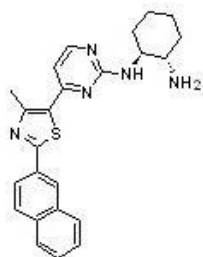


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Dr_MohamedHagress-RUK-55

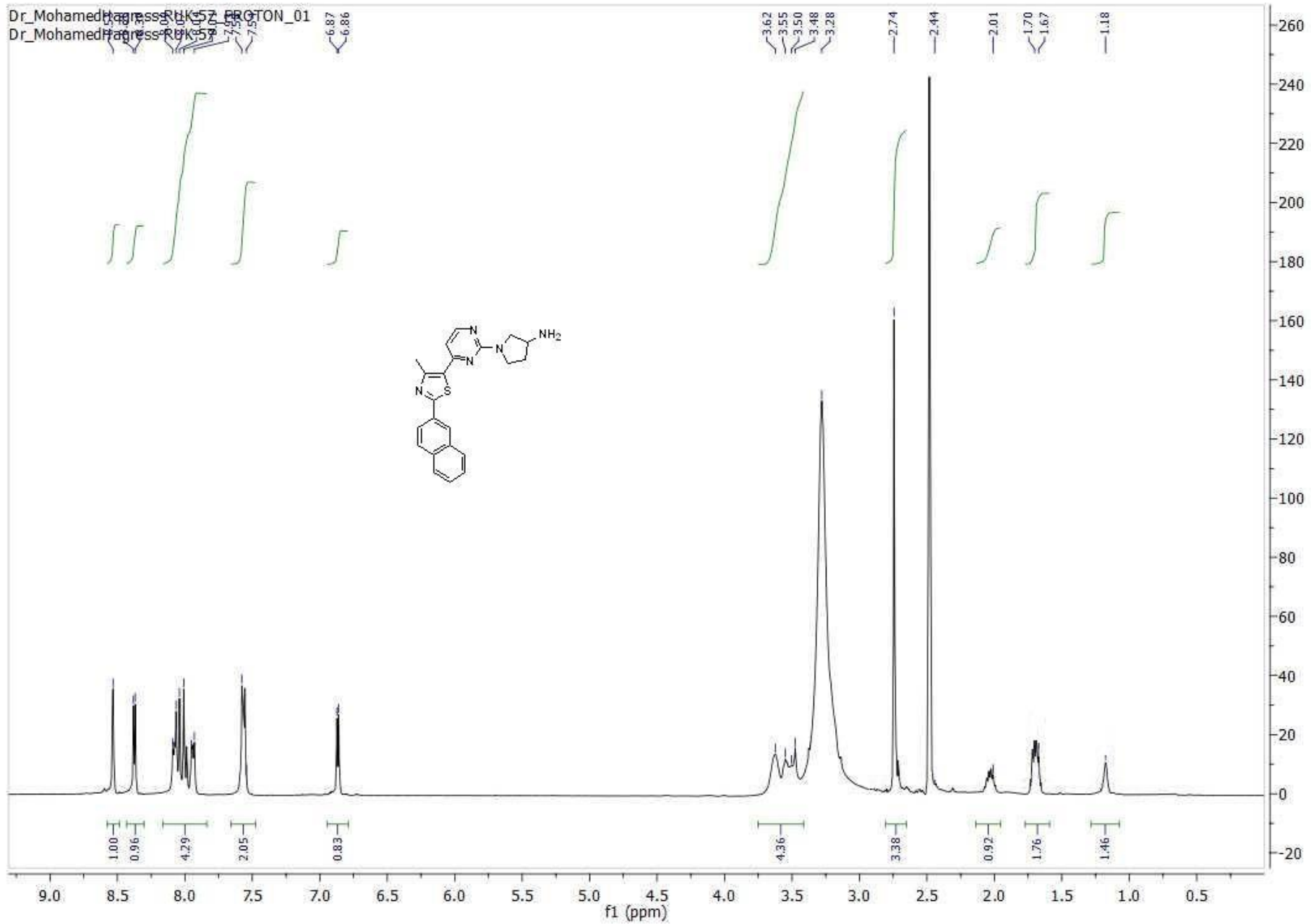
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129.19
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127.90
126.09
123.85
106.70

57.98
54.06

36.80
35.03
31.93
25.26
18.60



Dr_MohamedHagressRHK57 PRGTON_01
Dr_MohamedHagressRHK57

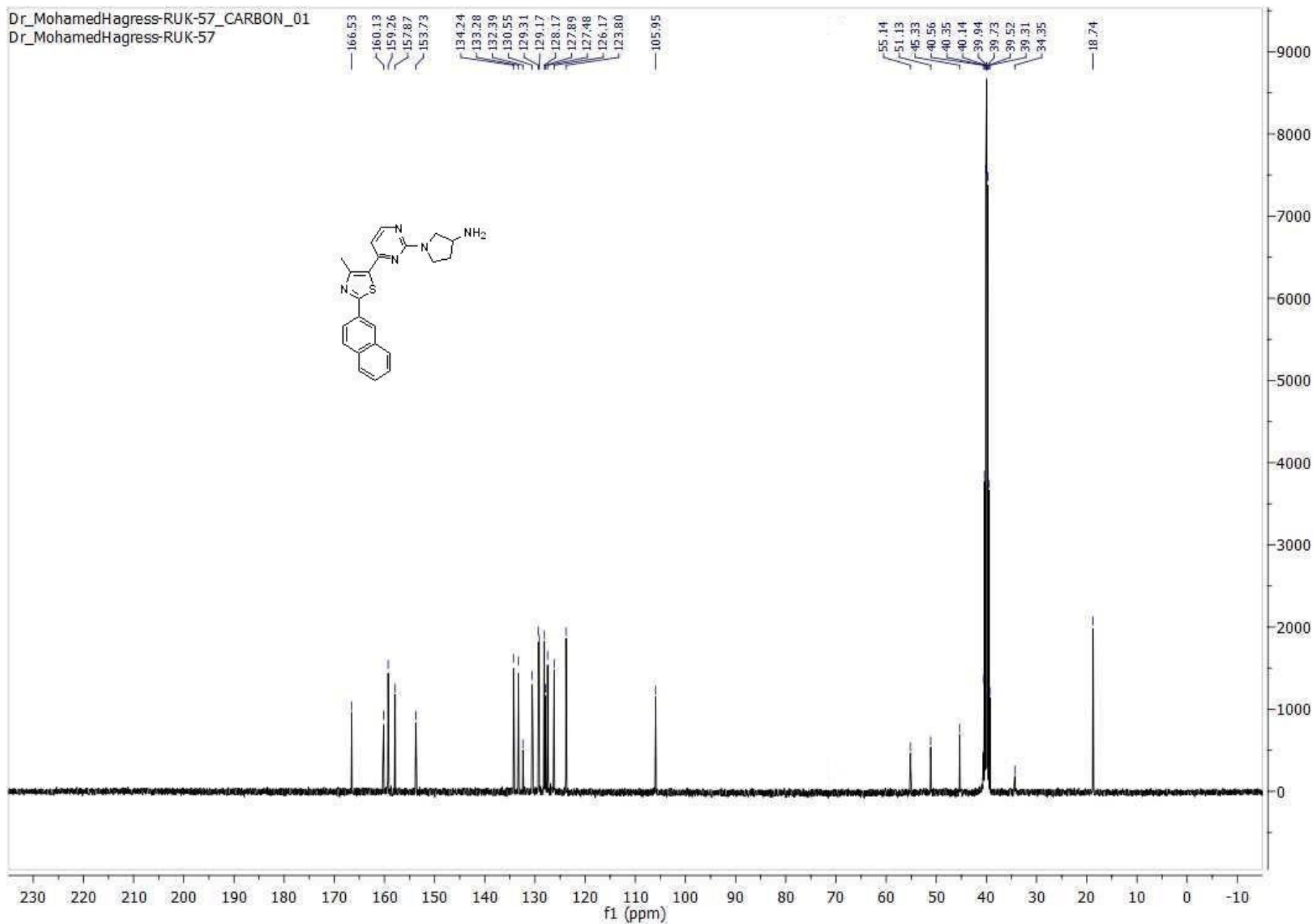
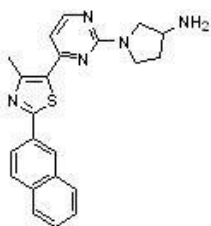


Dr_MohamedHagress-RUK-57_CARBON_01
Dr_MohamedHagress-RUK-57

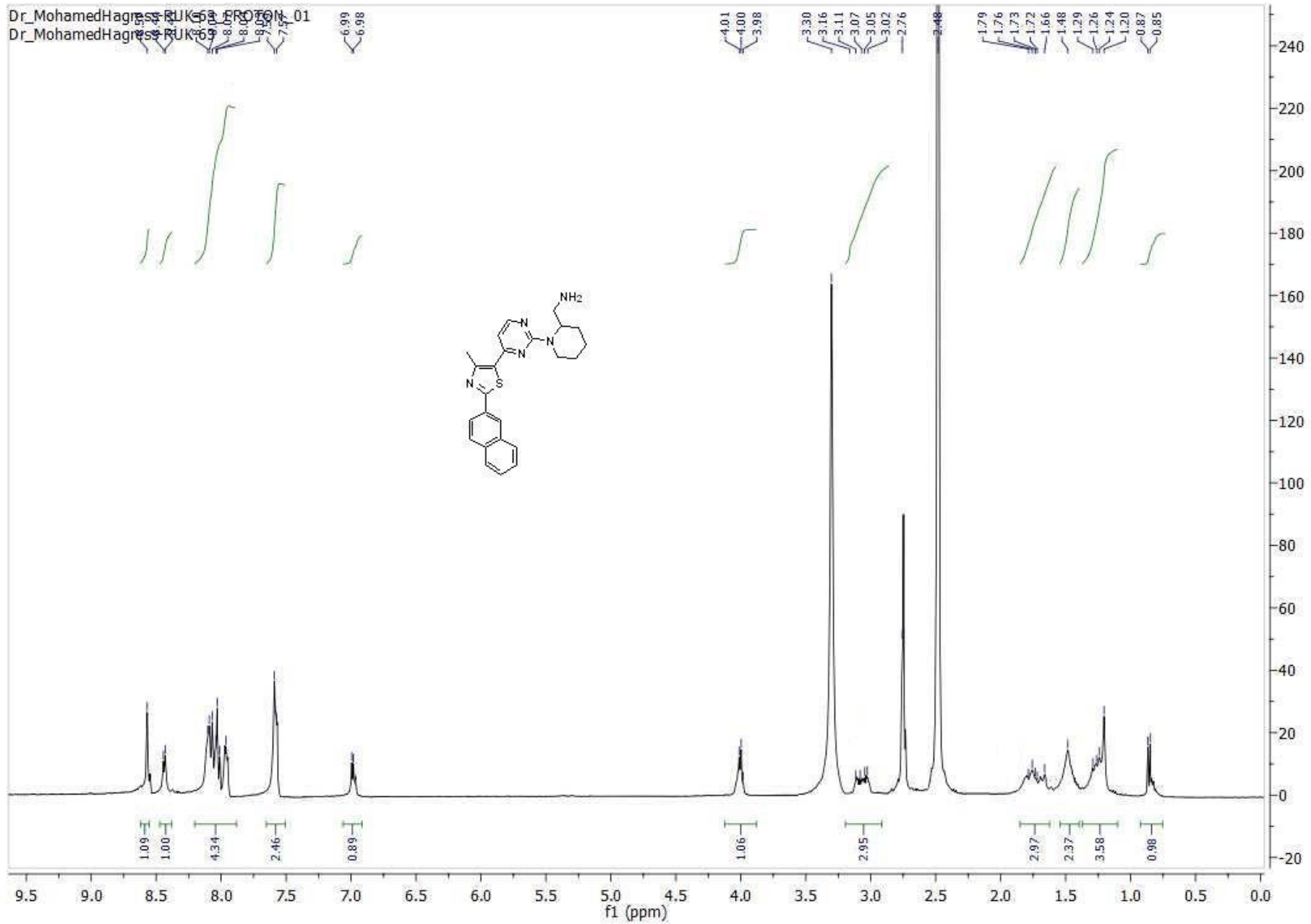
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127.48
126.17
123.80
105.95

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40.56
40.35
40.14
39.94
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39.31
34.35

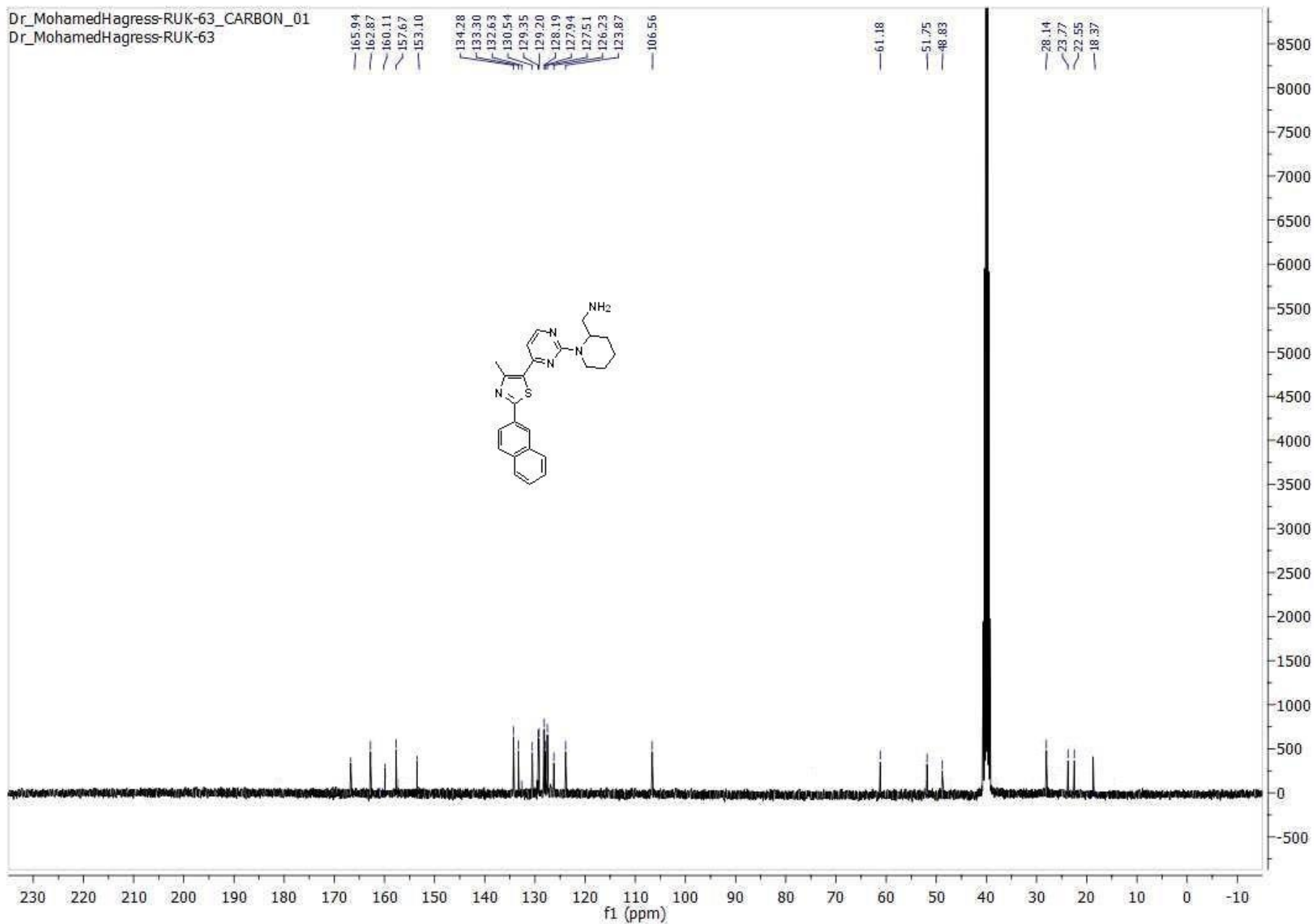
18.74



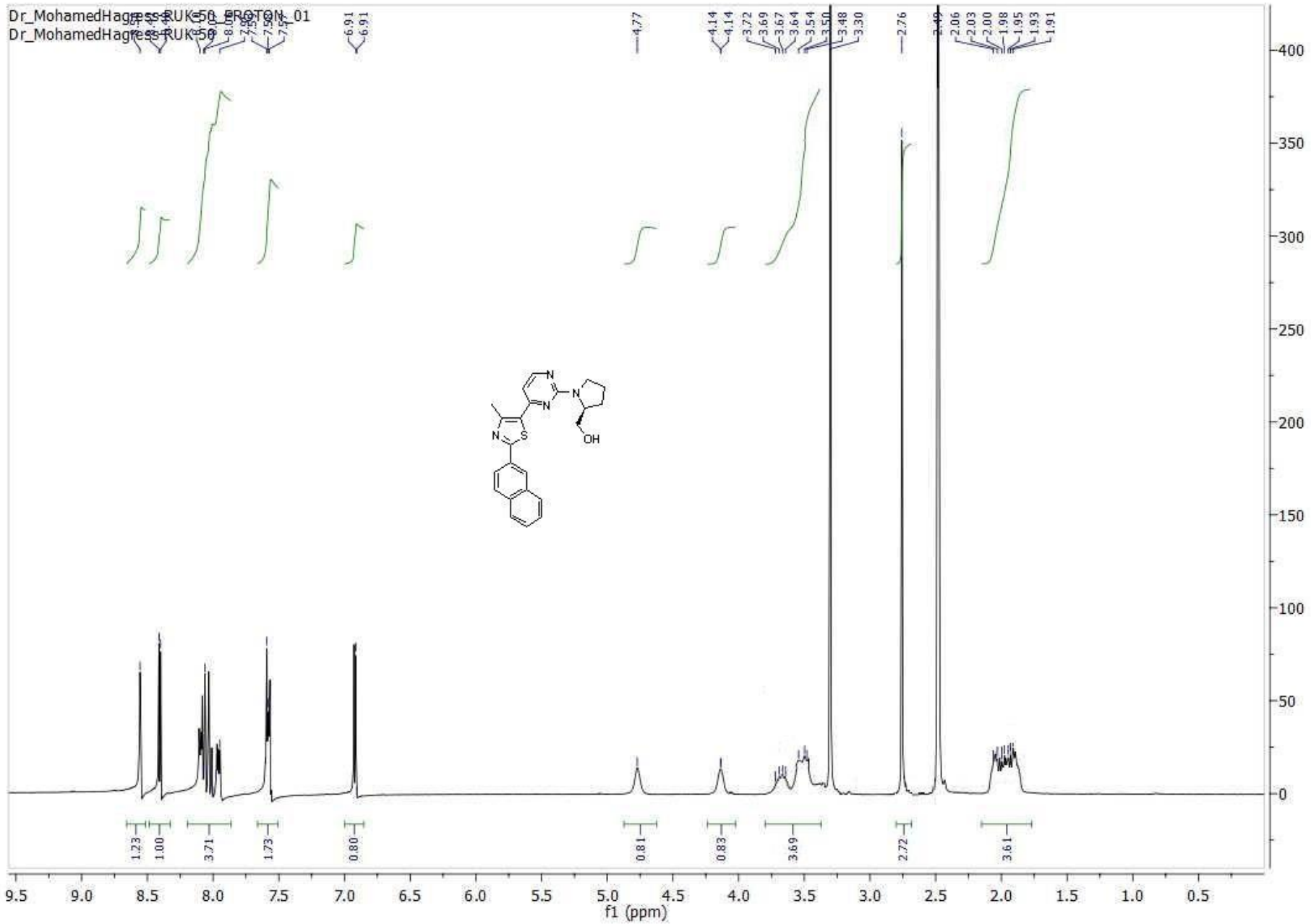
Dr_MohamedHagress-RUK-5a_PROTON_01
Dr_MohamedHagress-RUK-5a



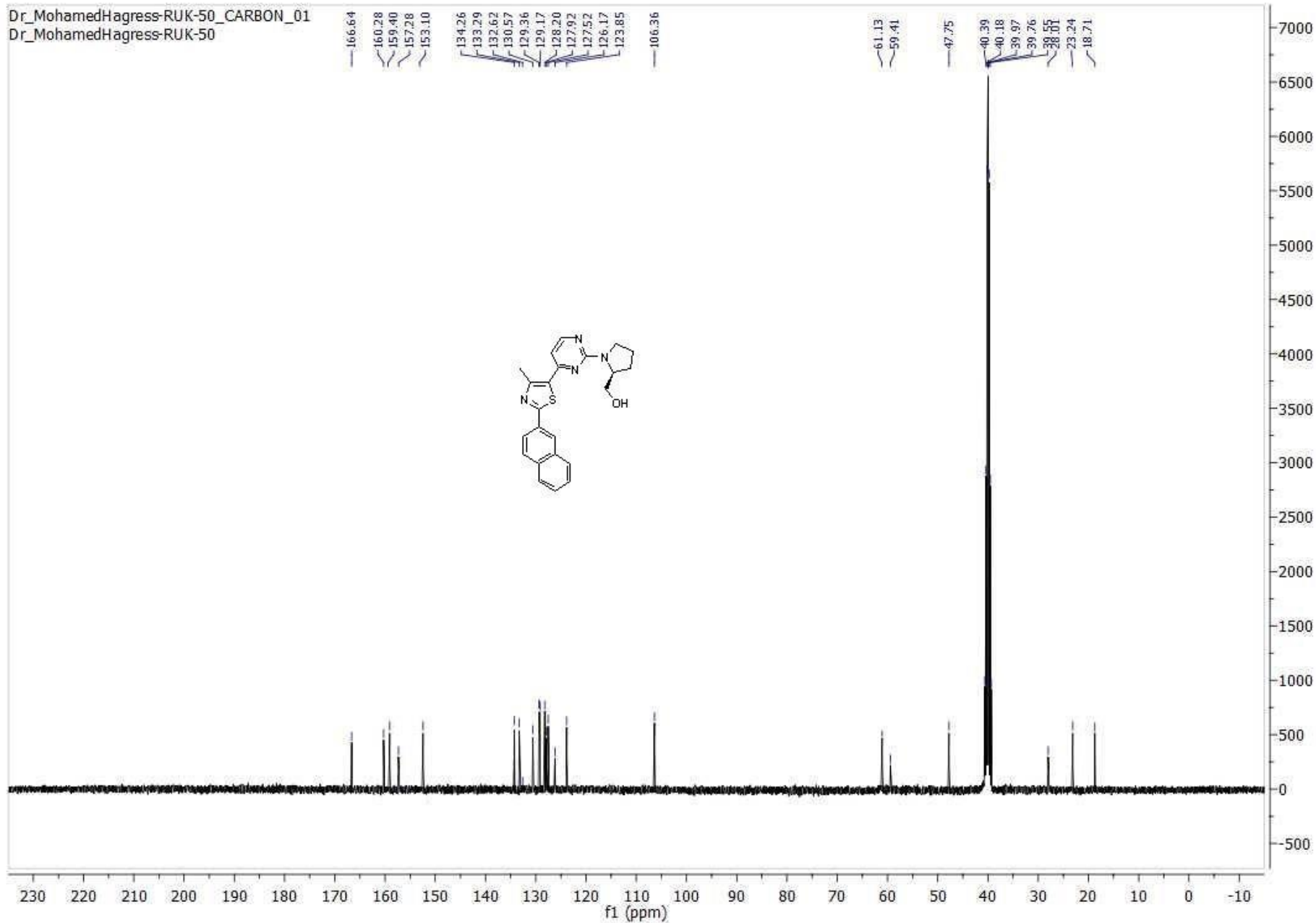
Dr_MohamedHagress-RUK-63_CARBON_01
Dr_MohamedHagress-RUK-63

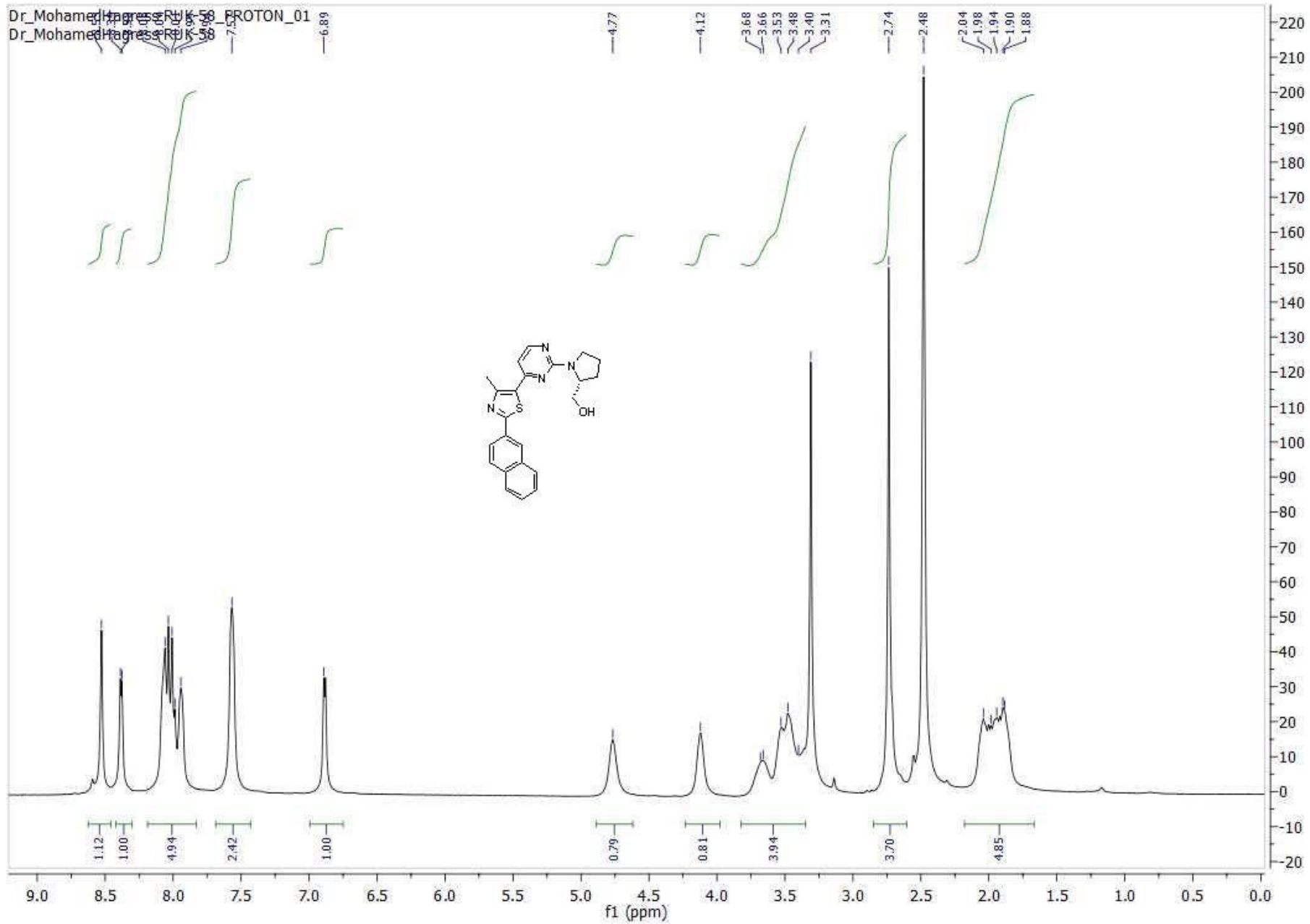


Dr_MohamedHagress_RUK-50_PROTON_01
Dr_MohamedHagress_RUK-50



Dr_MohamedHagress-RUK-50_CARBON_01
Dr_MohamedHagress-RUK-50

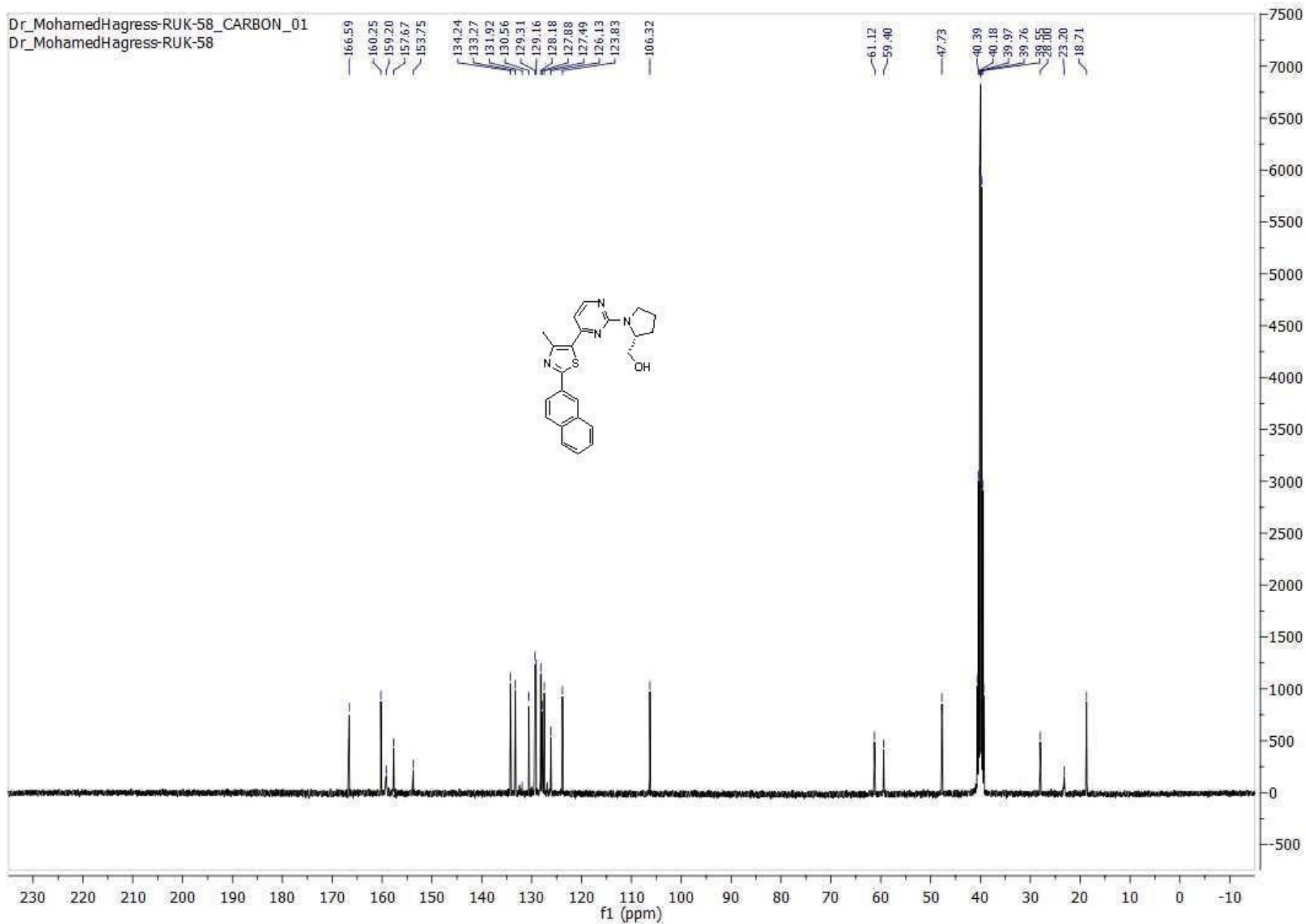
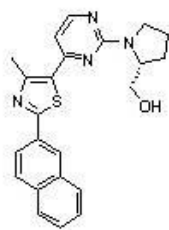




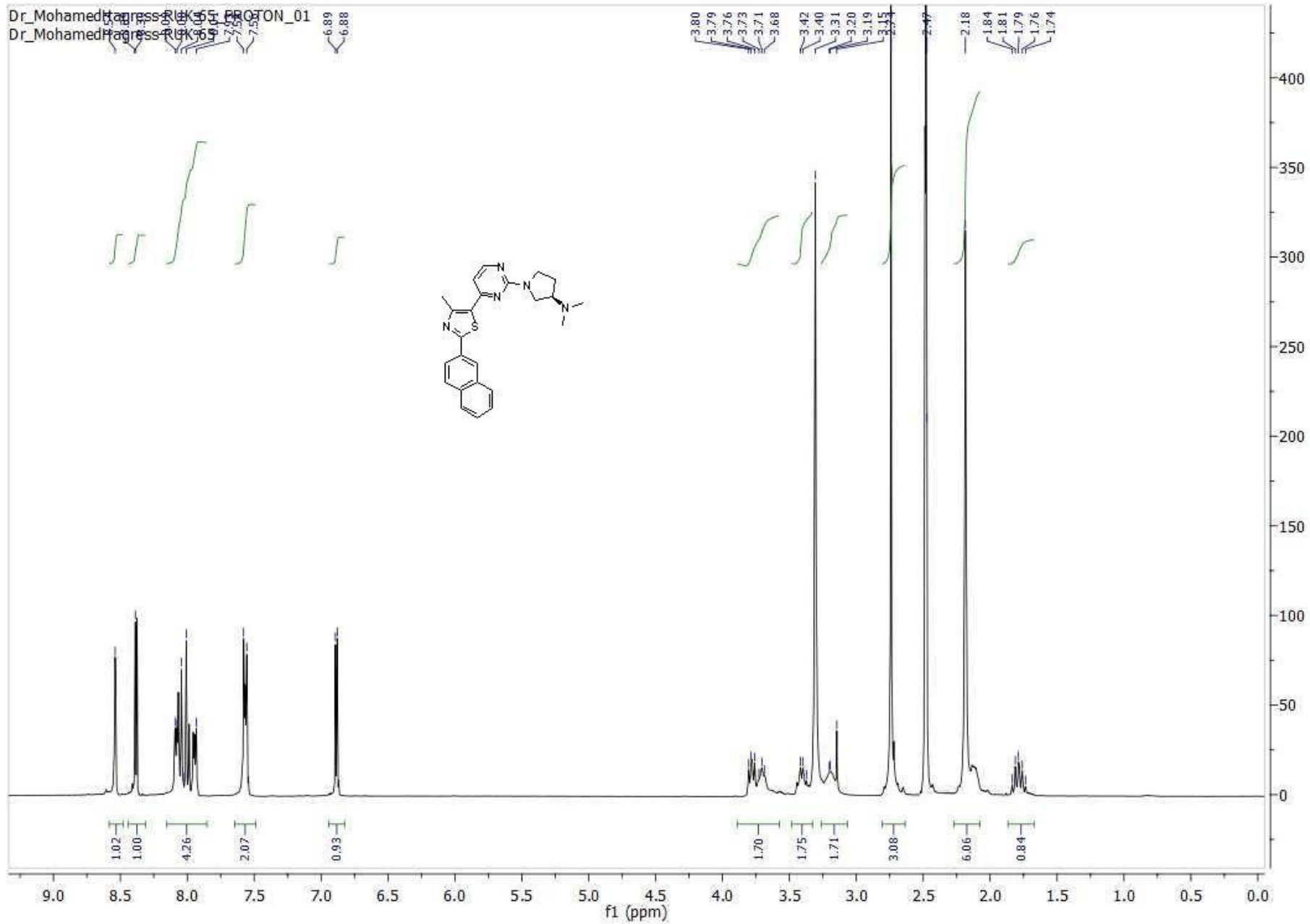
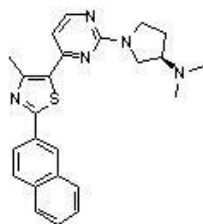
Dr_MohamedHagress-RUK-58_CARBON_01
Dr_MohamedHagress-RUK-58

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130.56
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128.18
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123.83
106.32

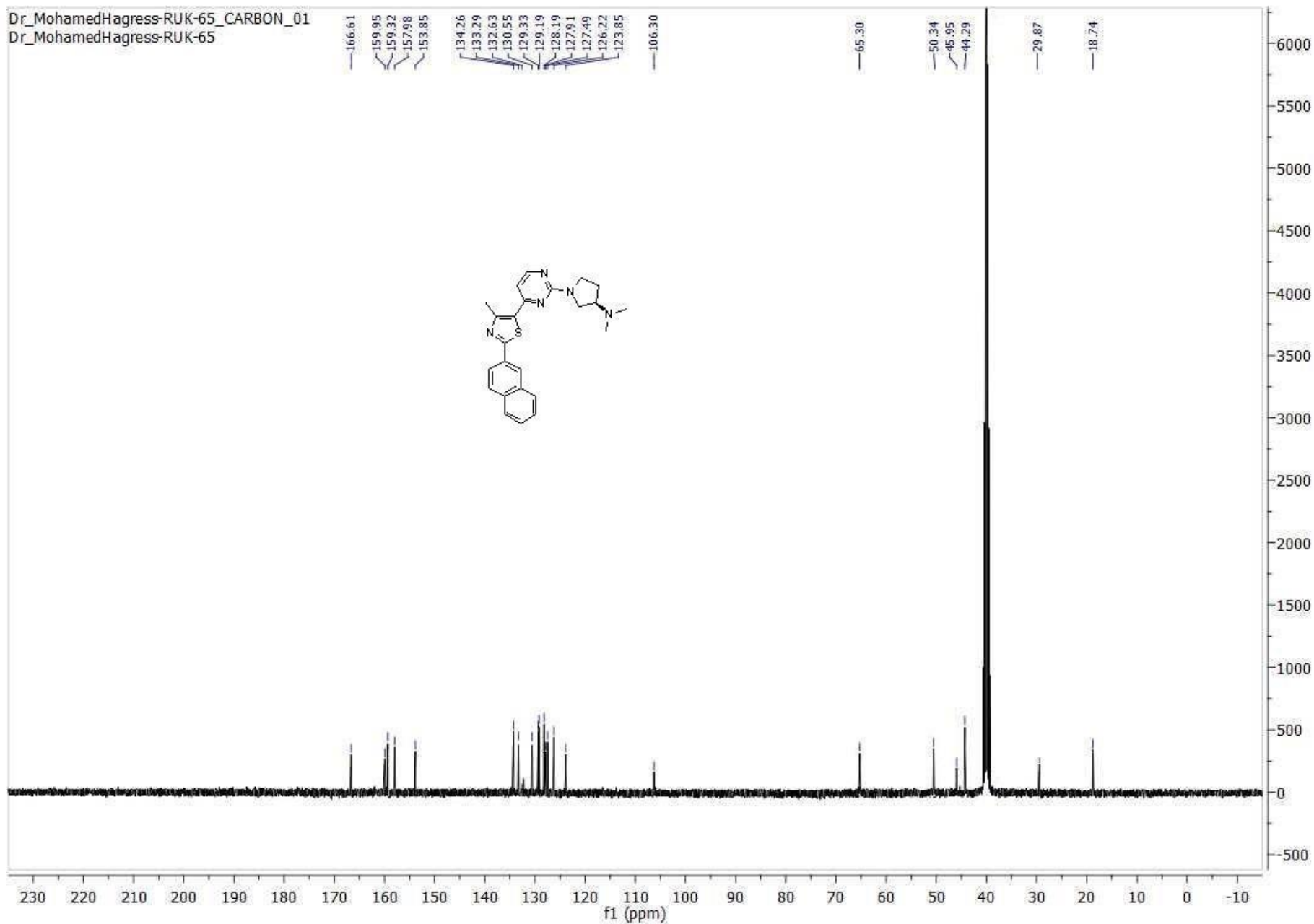
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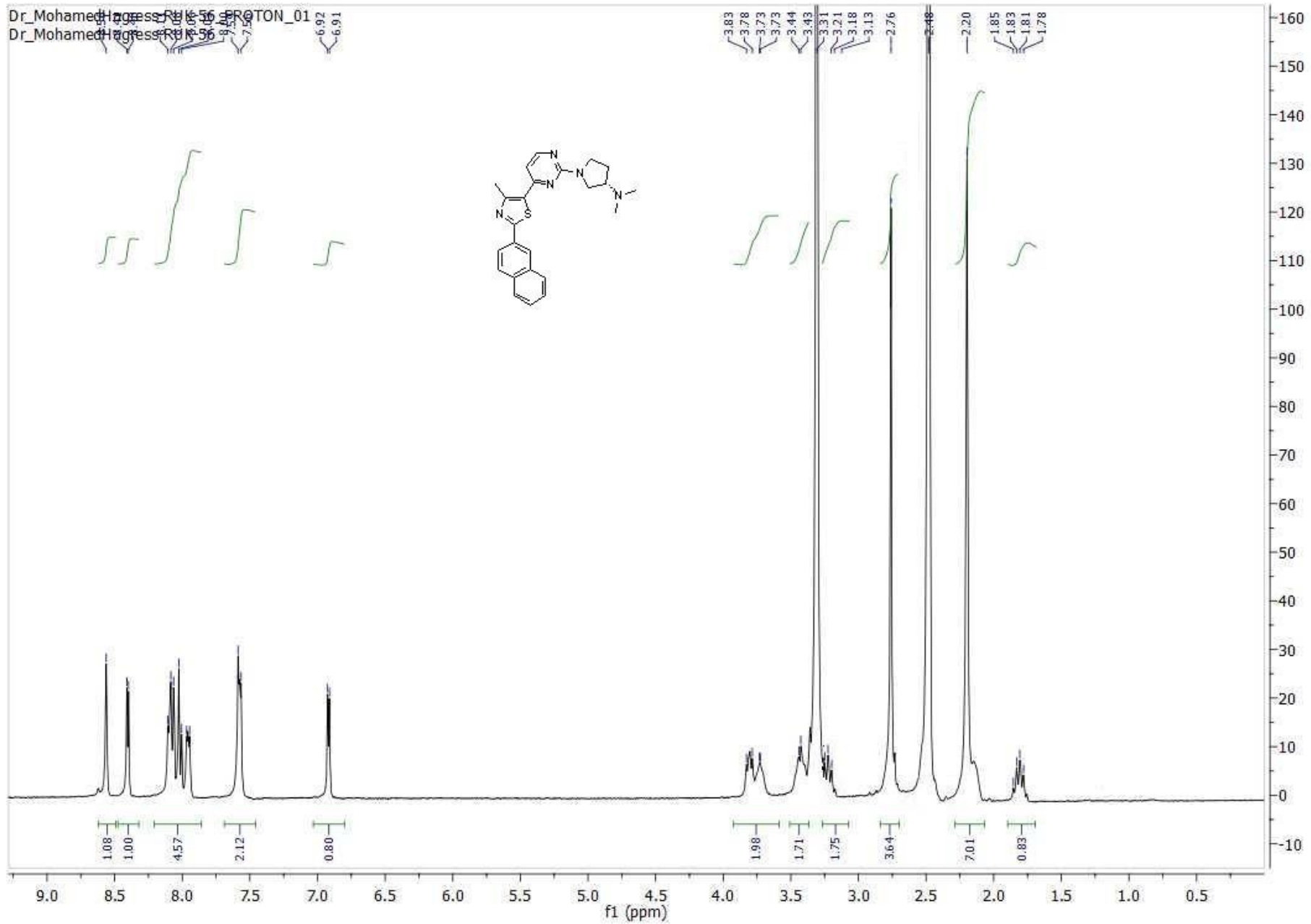


Dr_MohamedHagress-RIK-55-PROTON_01
Dr_MohamedHagress-RIK-55



Dr_MohamedHagress-RUK-65_CARBON_01
Dr_MohamedHagress-RUK-65

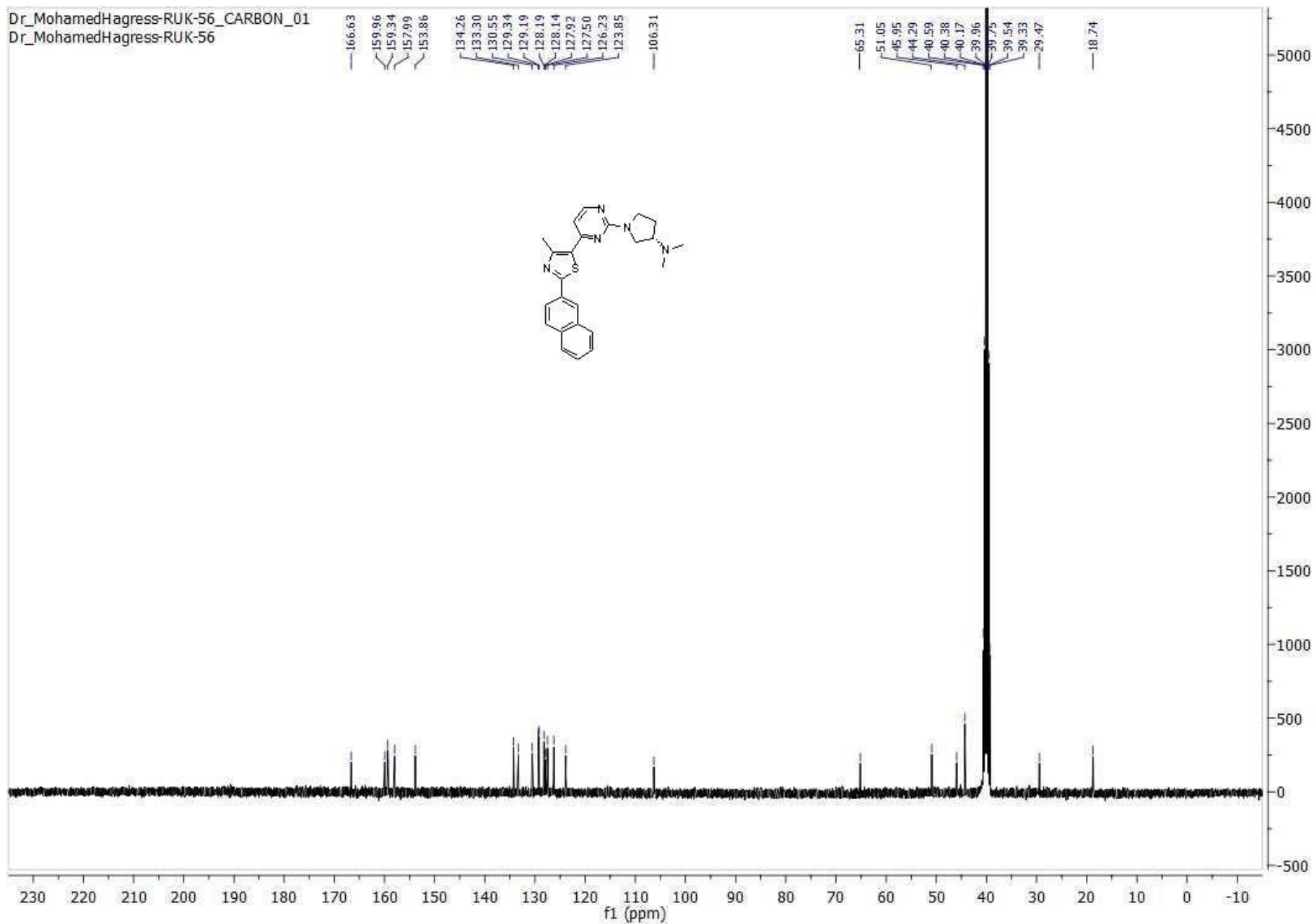
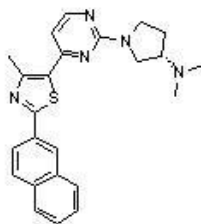




Dr_MohamedHagress-RUK-56_CARBON_01
Dr_MohamedHagress-RUK-56

166.63
159.96
159.34
157.99
153.86
134.26
133.30
130.55
129.34
129.19
128.19
128.14
127.92
127.50
126.23
123.85
106.31

65.31
51.05
45.95
44.29
40.59
40.38
40.17
39.96
39.75
39.54
39.33
29.47
18.74

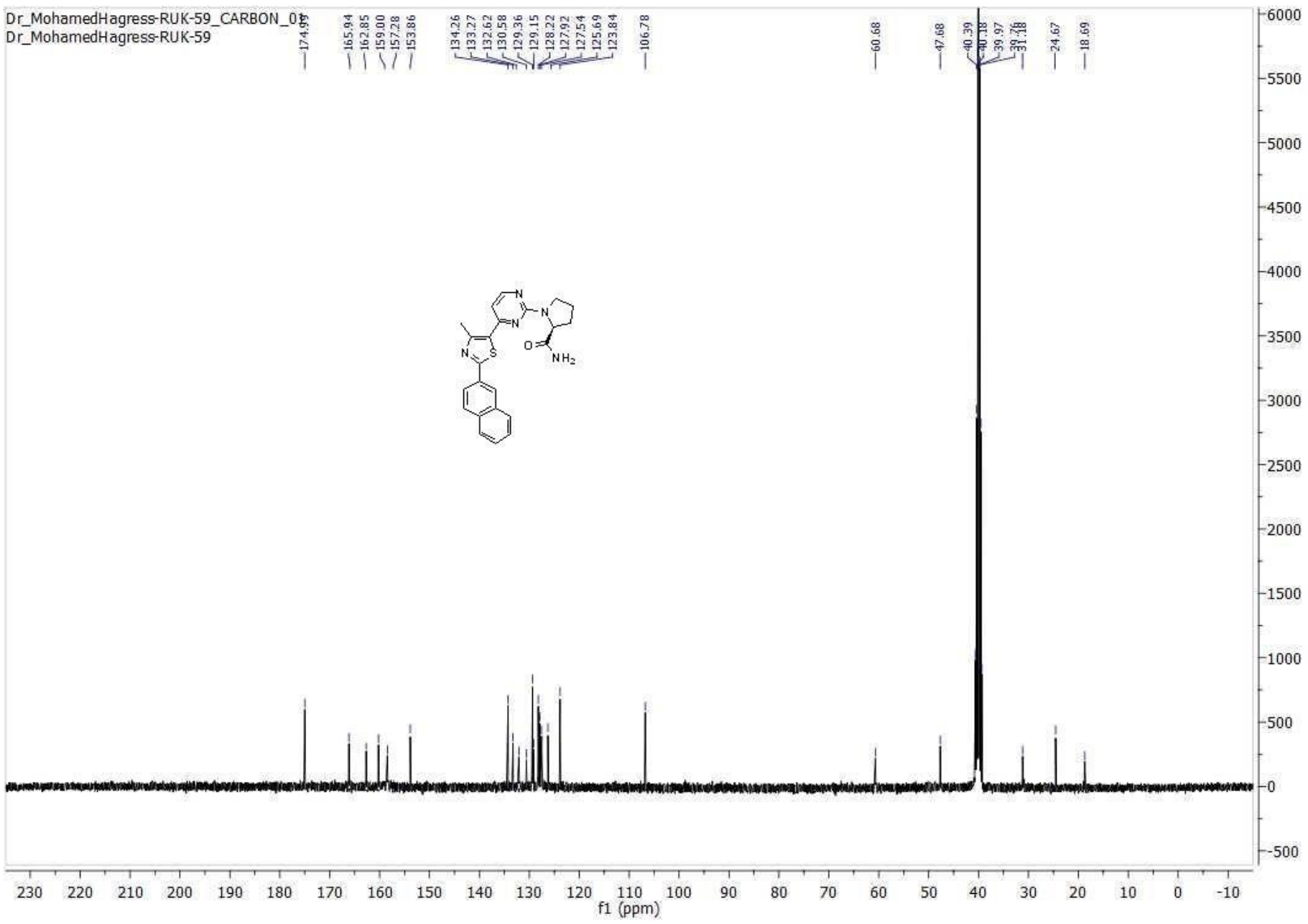
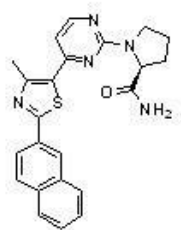


Dr_MohamedHagress-RUK-59_CARBON_07
Dr_MohamedHagress-RUK-59

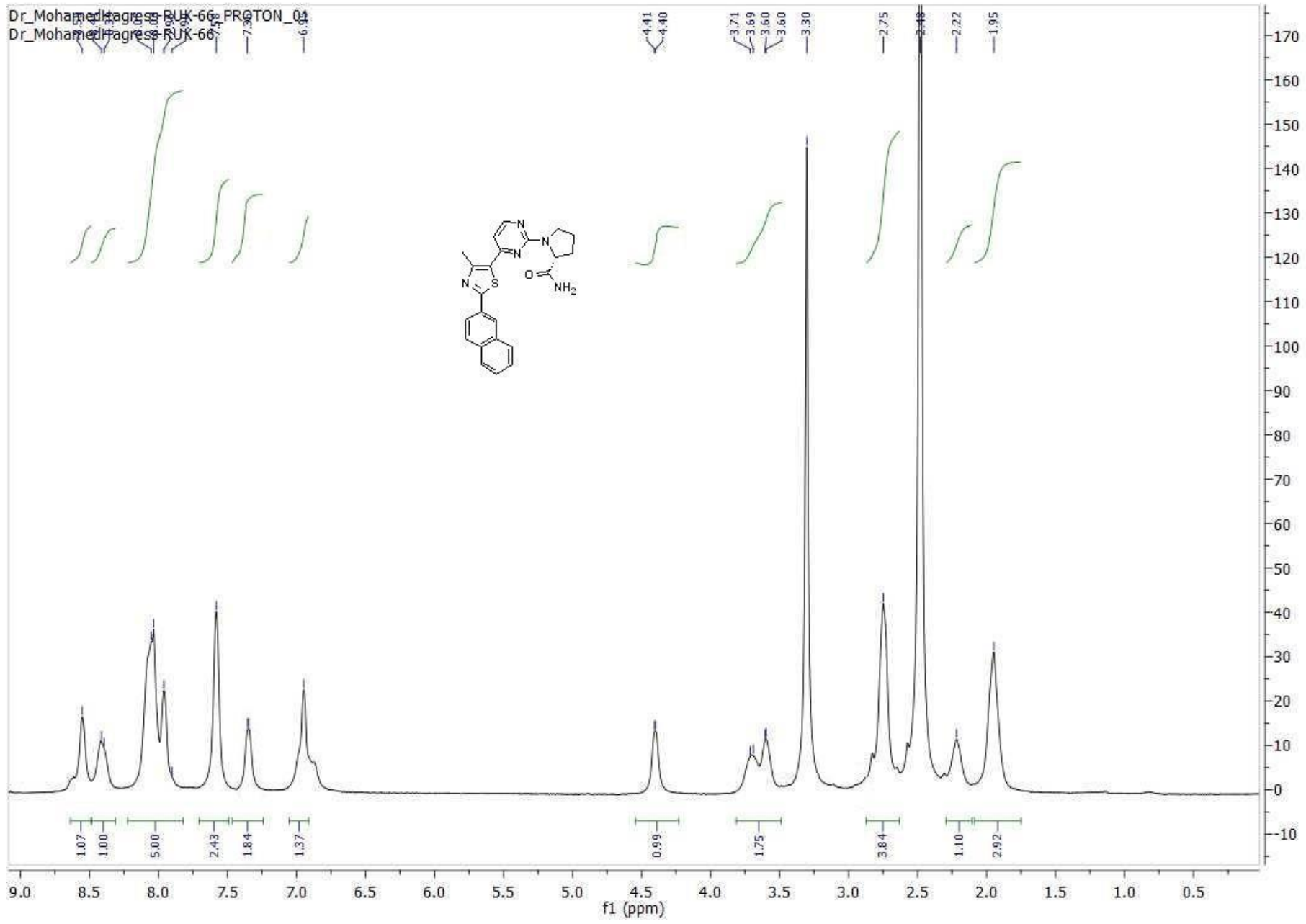
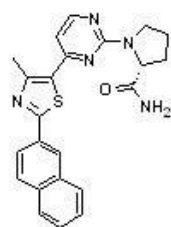
174.95
165.94
162.85
159.00
157.28
153.86

134.26
133.27
132.62
130.58
129.36
129.15
128.22
127.92
127.54
125.69
123.84
106.78

60.68
47.68
40.39
40.18
39.97
31.76
24.67
18.69

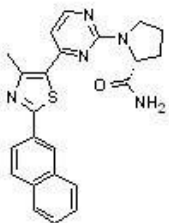


Dr_Mohamedtagres-RUK-66-PRGTON_04
Dr_Mohamedtagres-RUK-66



Dr_MohamedHagress-RUK-66_CARBON_001
Dr_MohamedHagress-RUK-66

- 174.95
- 166.65
- 160.11
- 159.01
- 157.27
- 153.86
- 134.26
- 133.27
- 132.32
- 130.59
- 129.36
- 129.15
- 128.22
- 127.92
- 127.55
- 126.41
- 123.84
- 106.78



- 60.67
- 47.68
- 40.39
- 40.18
- 39.97
- 31.75
- 23.96
- 18.68

5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
-500

230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
f1 (ppm)