Supplementary Information

Synthesis, Structure, Carbohydrate Enzyme Inhibition, Antioxidant Activity, In Silico Drug-Receptor Interactions and Drug-Like Profiling of the 5-Styryl-2-Aminochalcone Hybrids

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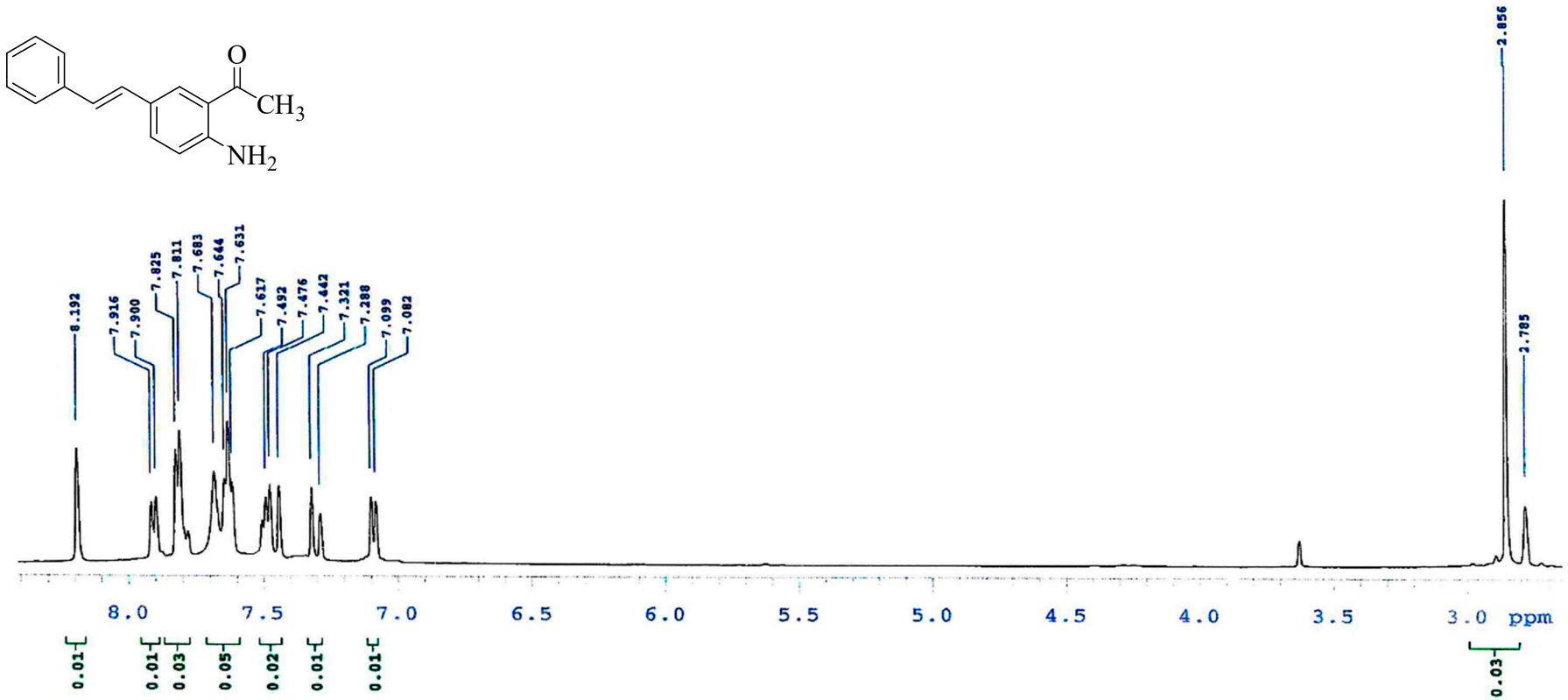
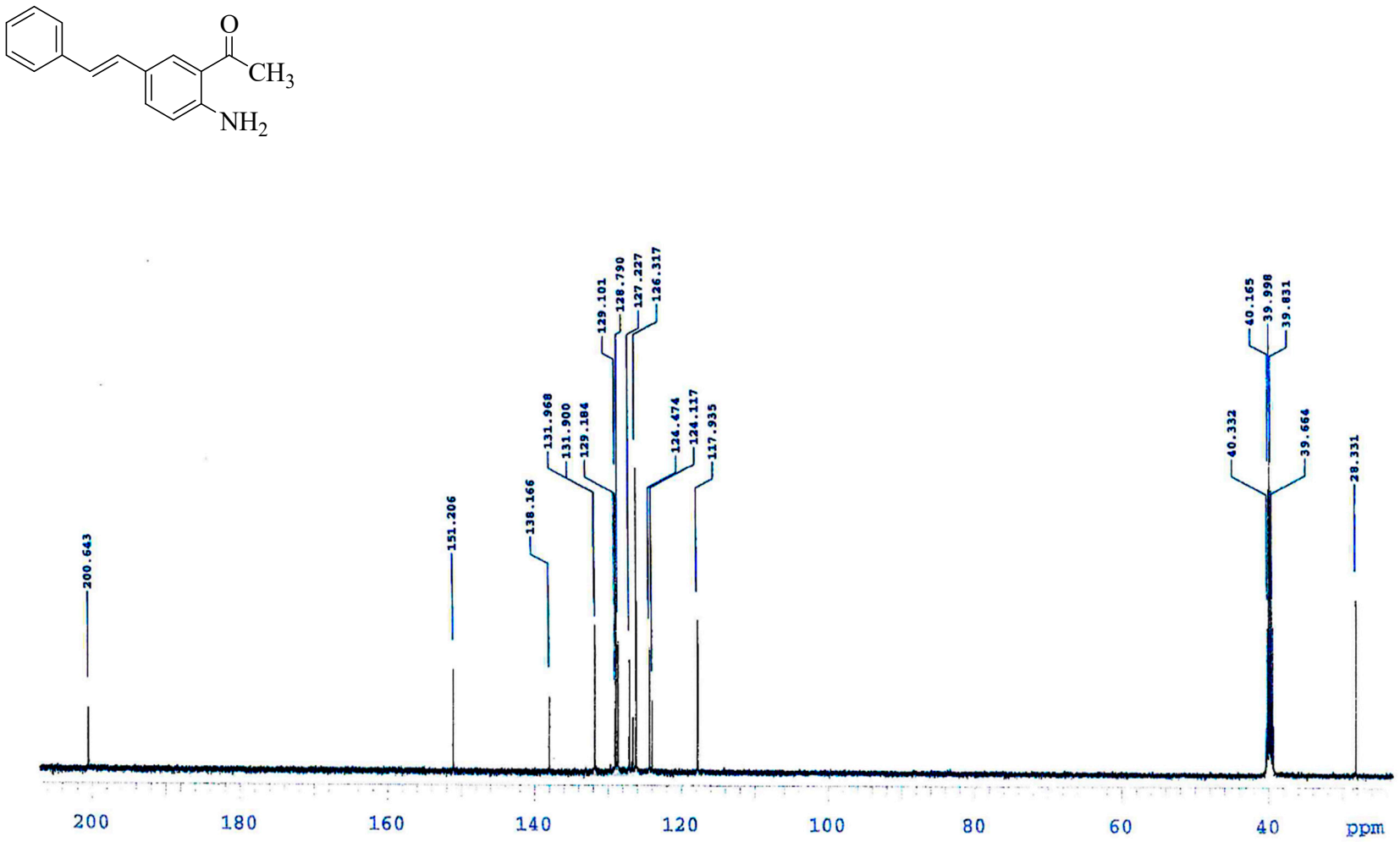
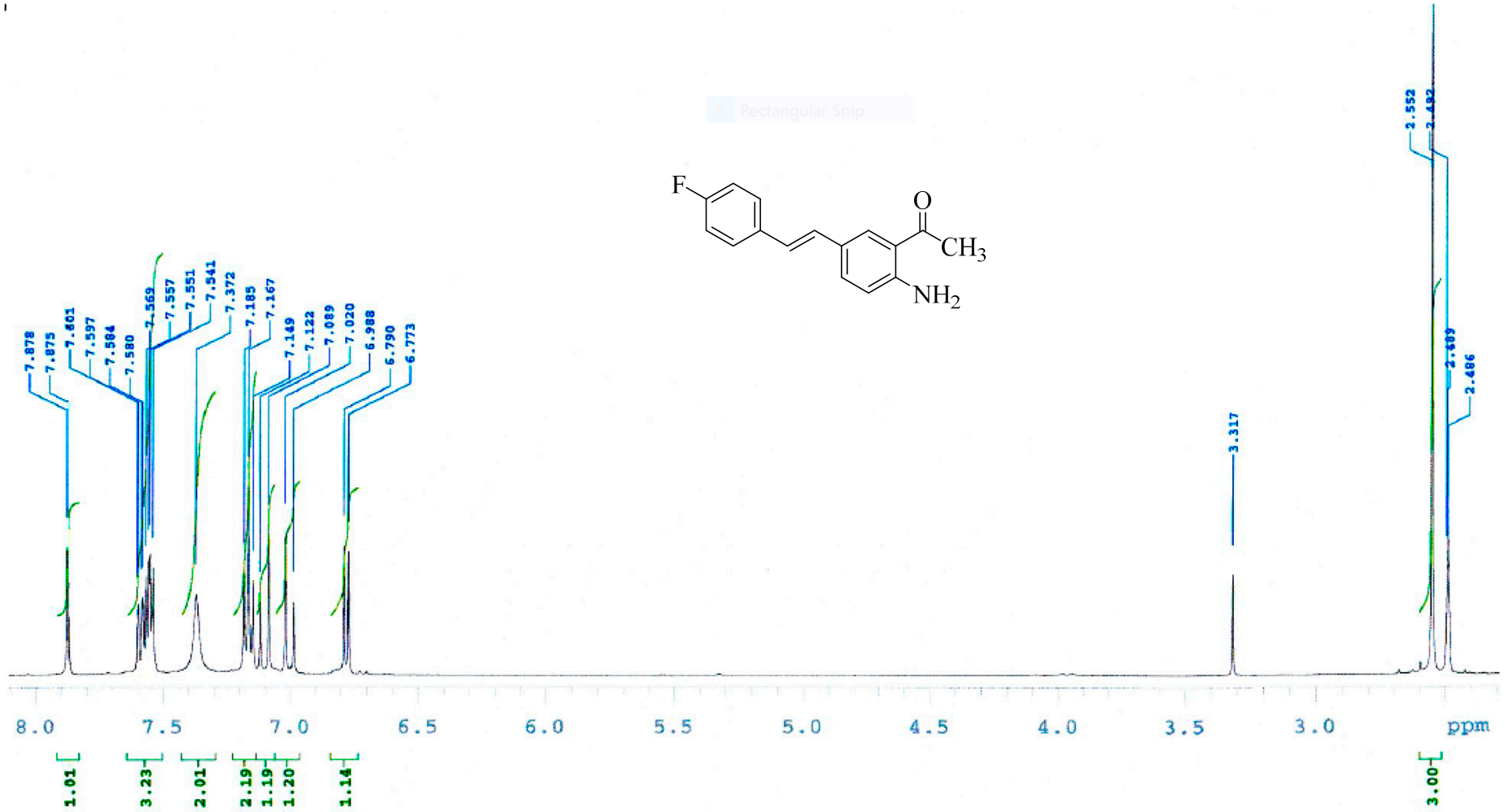

O
CH3
NH2
8.192
7.916
7.900
7.825
7.811
7.683
7.644
7.631
7.617
7.492
7.476
7.442
7.321
7.288
7.099
7.082
2.856
2.785
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
0.01
0.01
0.03
0.05
0.02
0.01
0.01
0.03

(**a**)

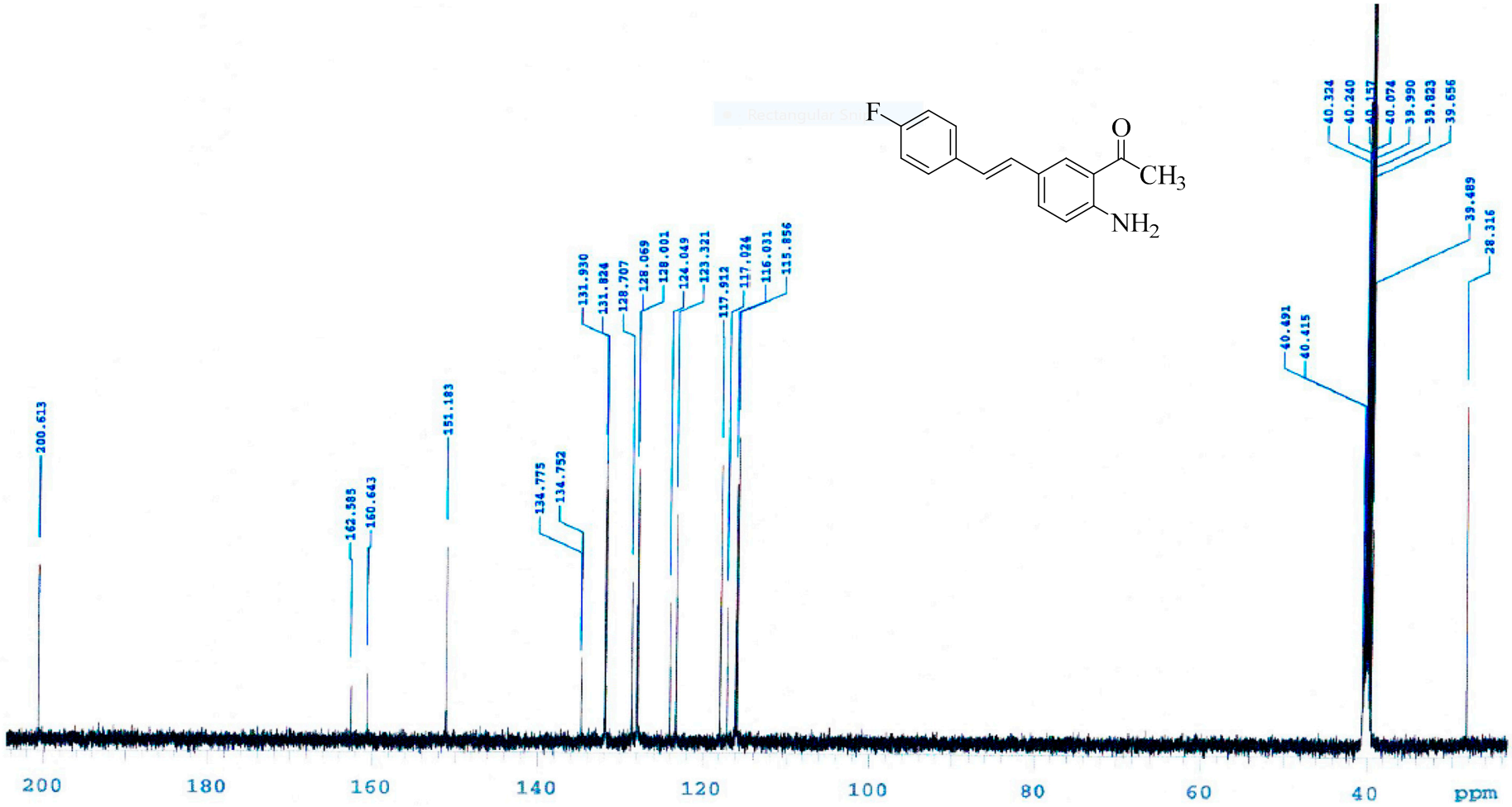


(**b**)

Figure S1.1: [1]H- and [13]C-NMR spectra of **2a** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.

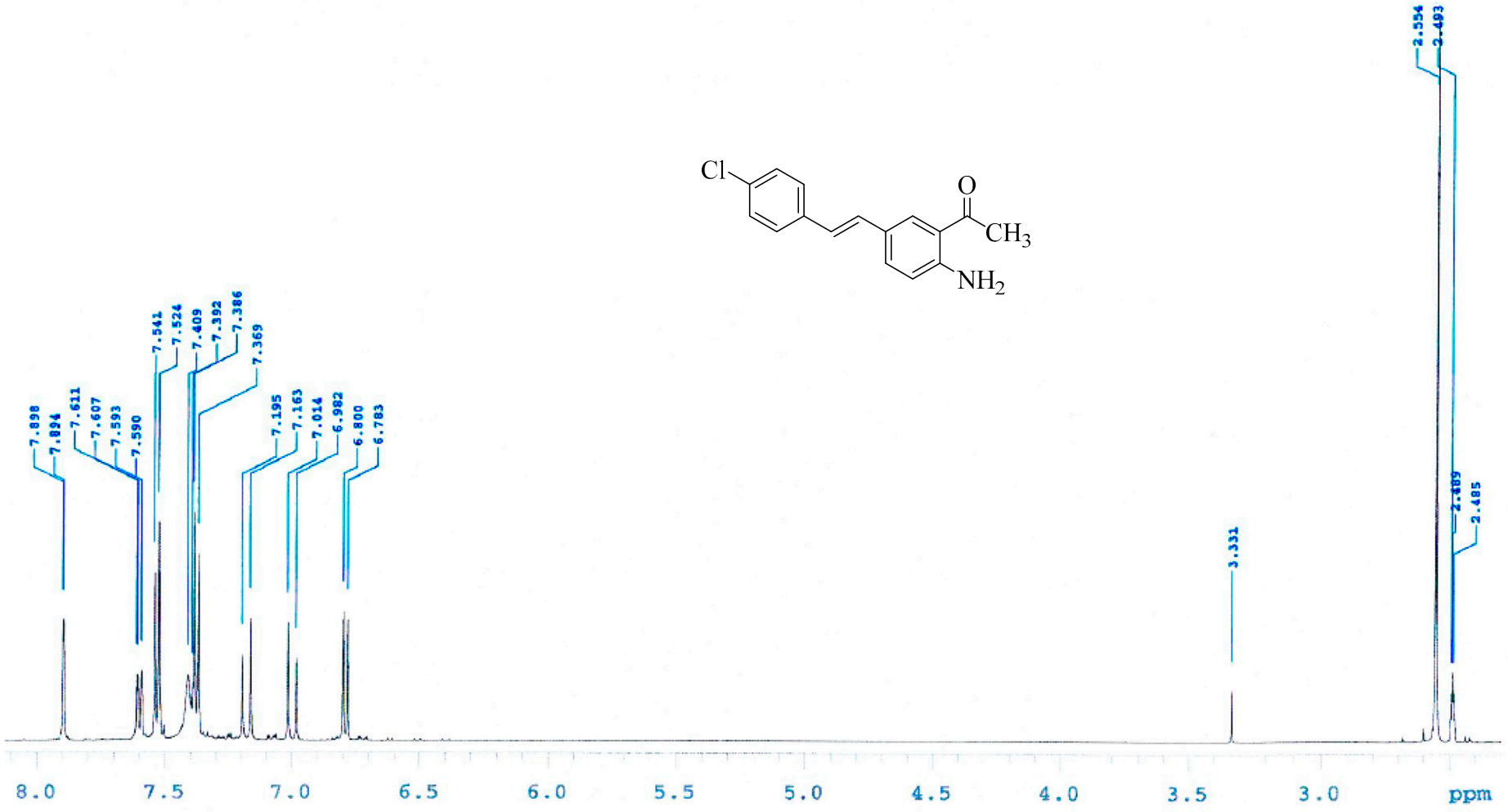

F
O
CH3
NH2
7.878
7.875
7.601
7.597
7.584
7.580
7.569
7.557
7.551
7.541
7.372
7.185
7.167
7.149
7.122
7.089
7.020
6.988
6.790
6.773
3.317
2.552
2.482
2.489
2.486
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
1.01
3.23
2.01
2.19
1.19
1.20
1.14
3.00

(**a**)

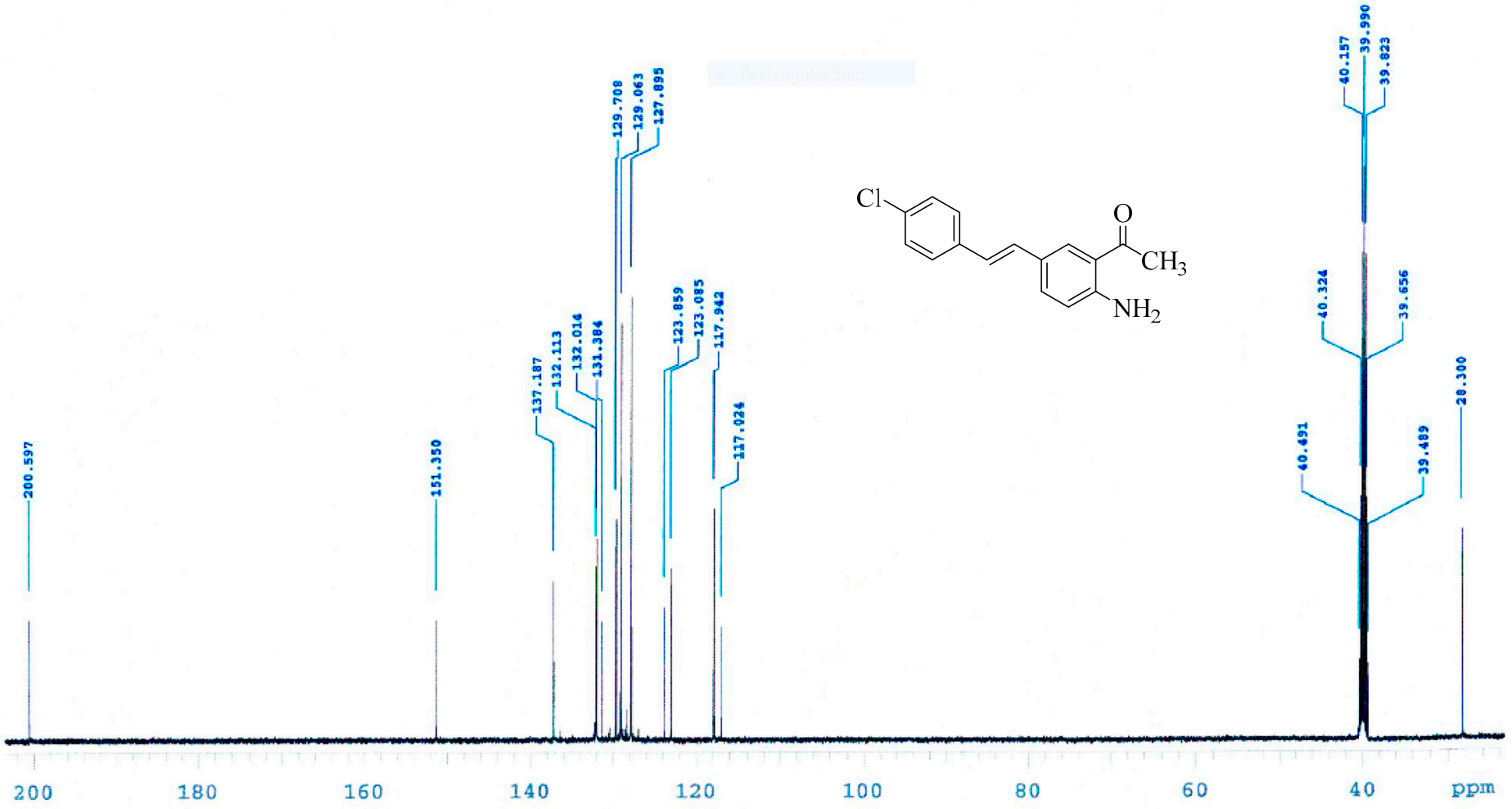


(**b**)

Figure S1.2: [1]H- and [13]C-NMR spectra of **2b** in DMSO-d_6 at 500 MHz (a) and 125 MHz (b), respectively.

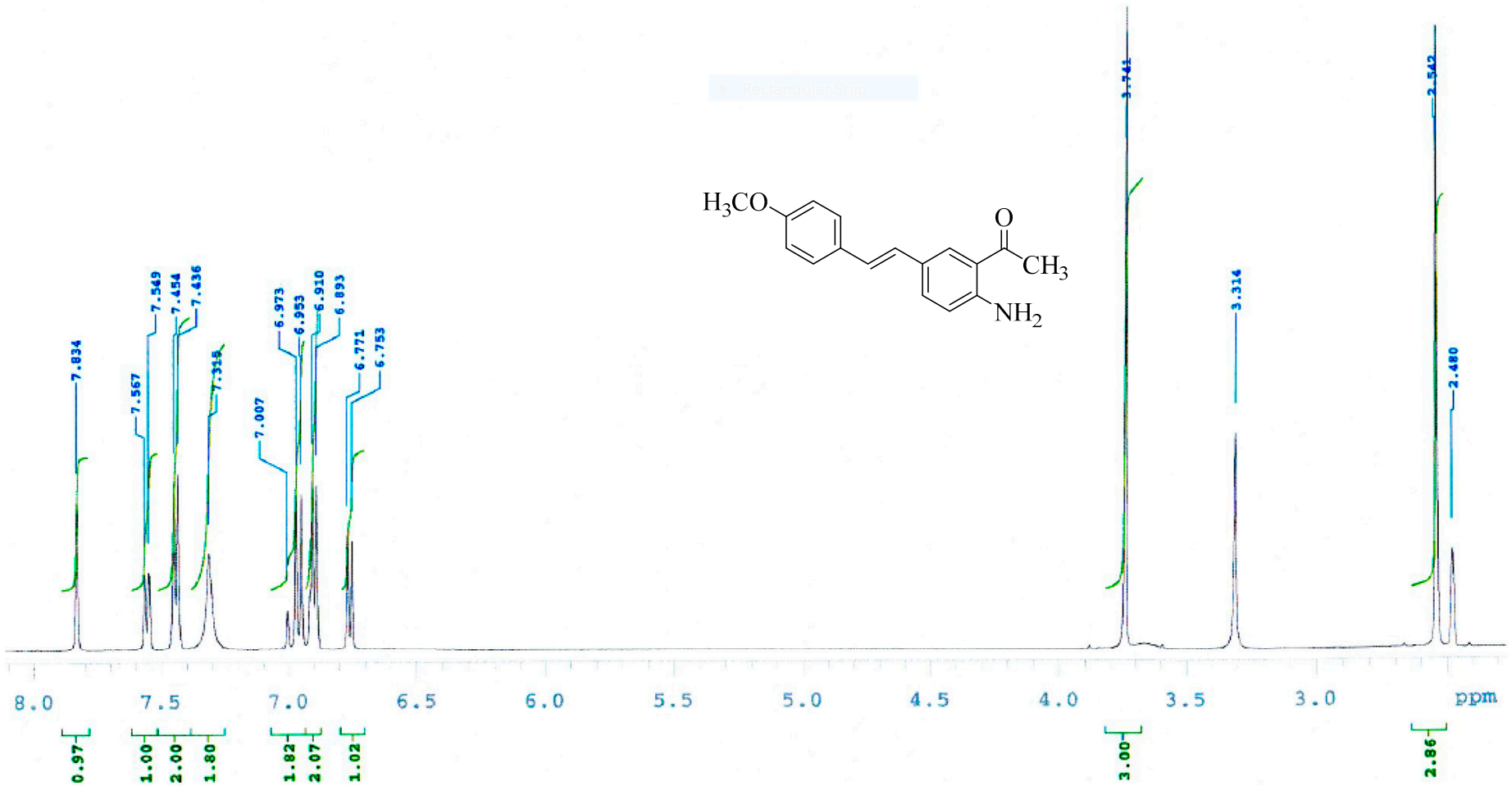

Cl
O
CH3
NH2
7.898
7.894
7.611
7.607
7.593
7.590
7.541
7.524
7.409
7.392
7.386
7.369
7.195
7.163
7.014
6.982
6.800
6.783
3.331
2.554
2.493
2.489
2.485
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm

(a)

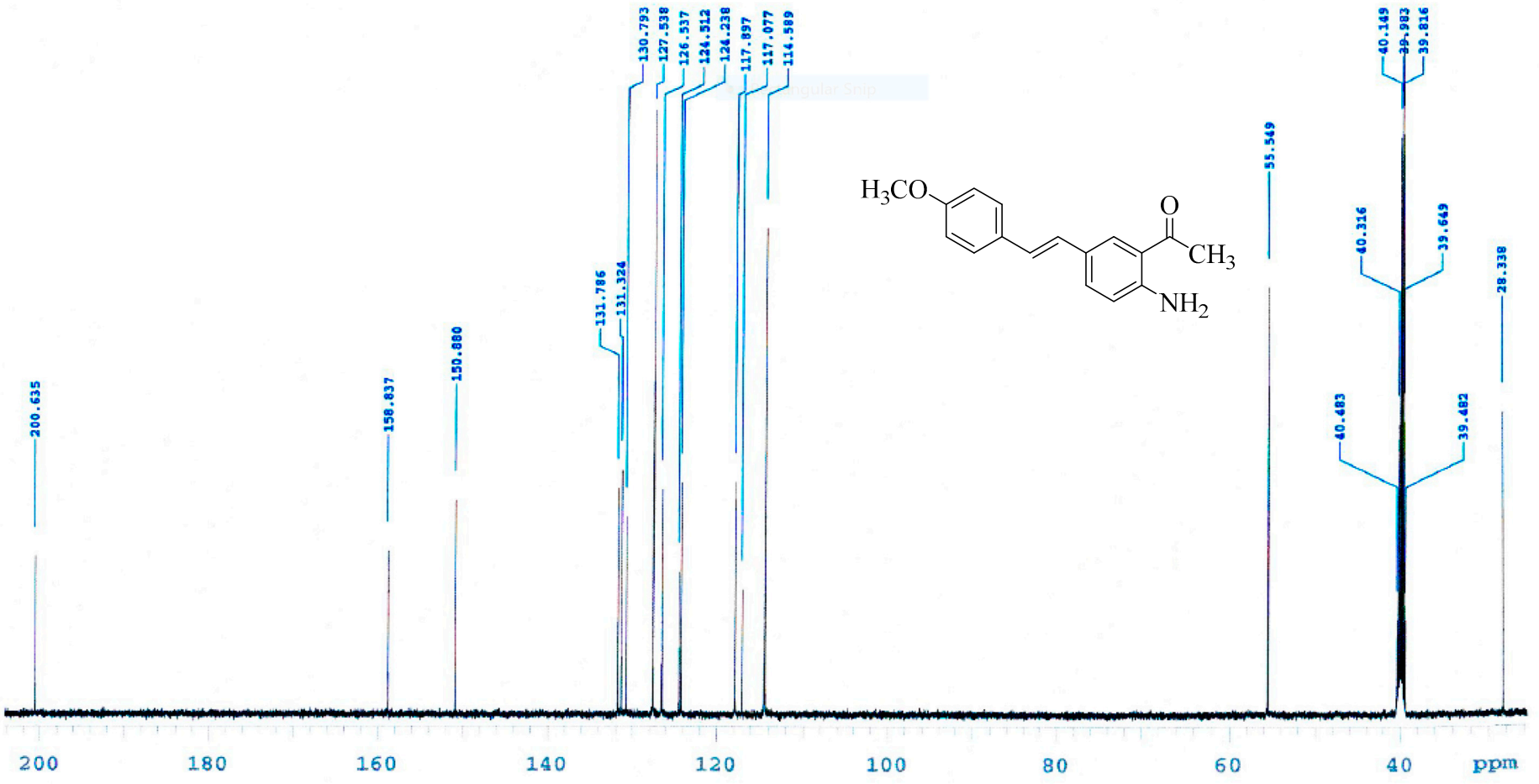


(**b**)

Figure S1.3: ^{1}H- and ^{13}C-NMR spectra of **2c** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.

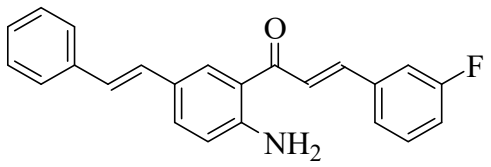

H3CO
O
CH3
NH2
7.834
7.567
7.549
7.454
7.436
7.315
7.007
6.973
6.953
6.910
6.893
6.771
6.753
3.741
3.314
2.542
2.480
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
0.97
1.00
2.00
1.80
1.82
2.07
1.02
3.00
2.86

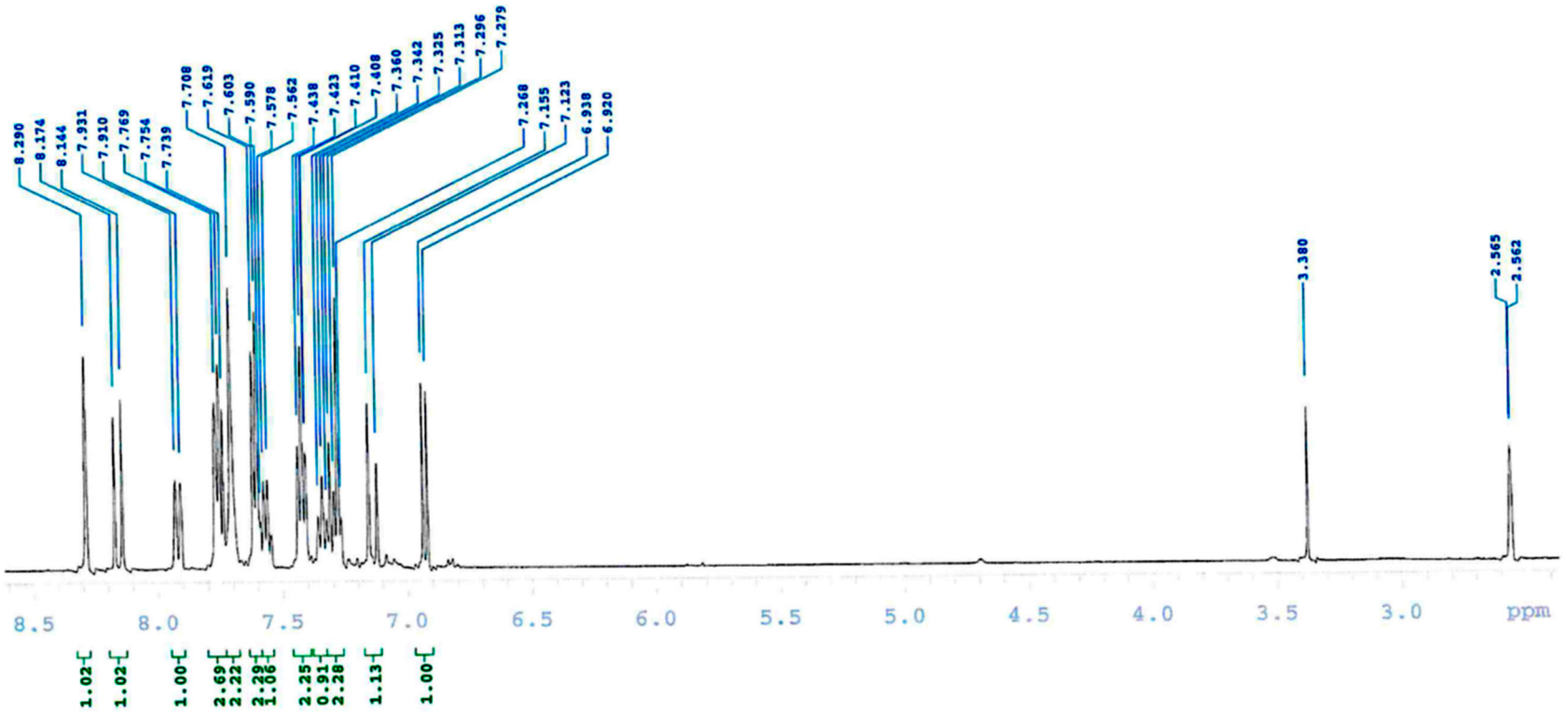
(**a**)



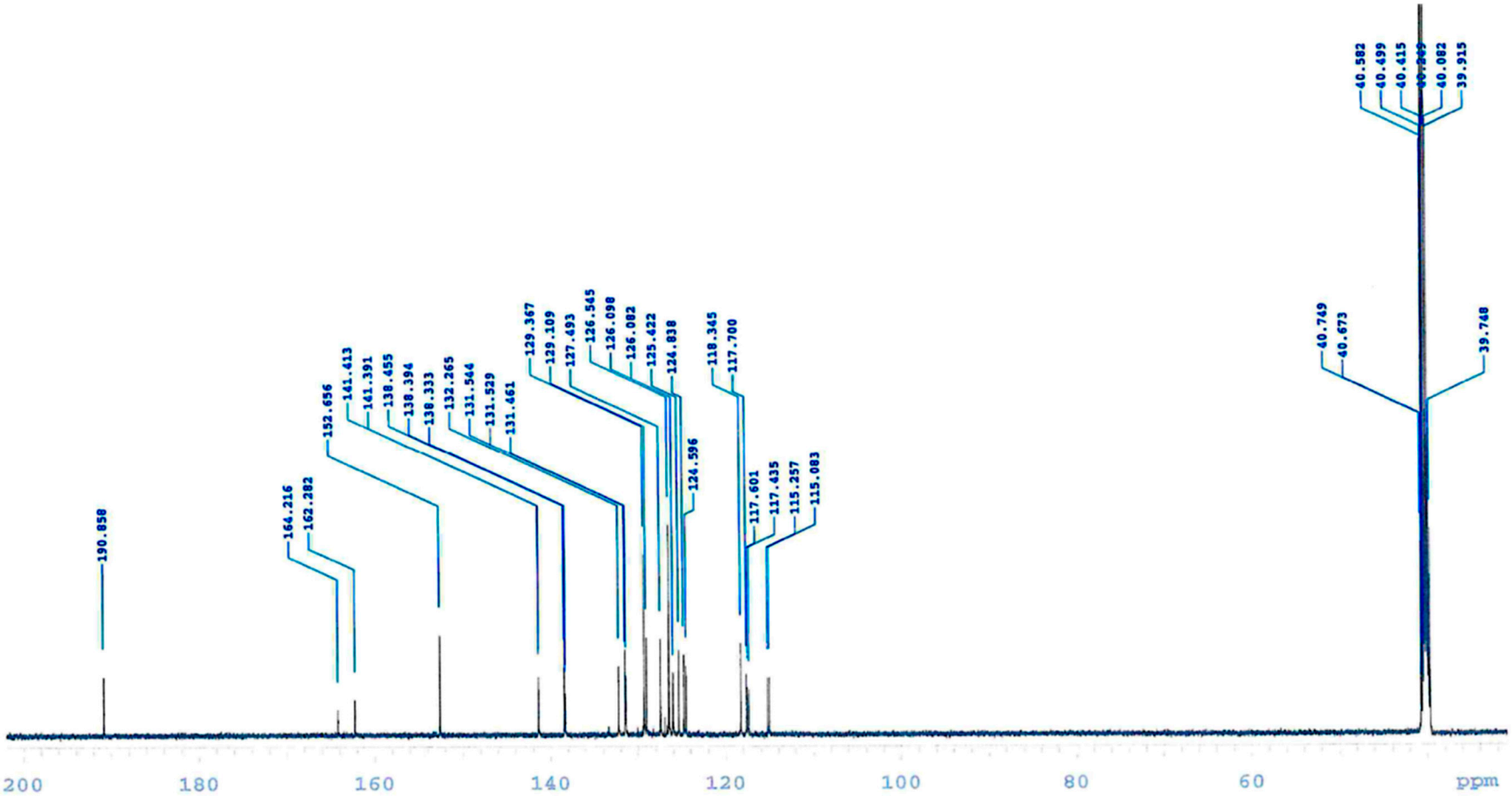
(**b**)

Figure S1.4: [1]H- and [13]C-NMR spectra of **2d** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.


O
F
NH2

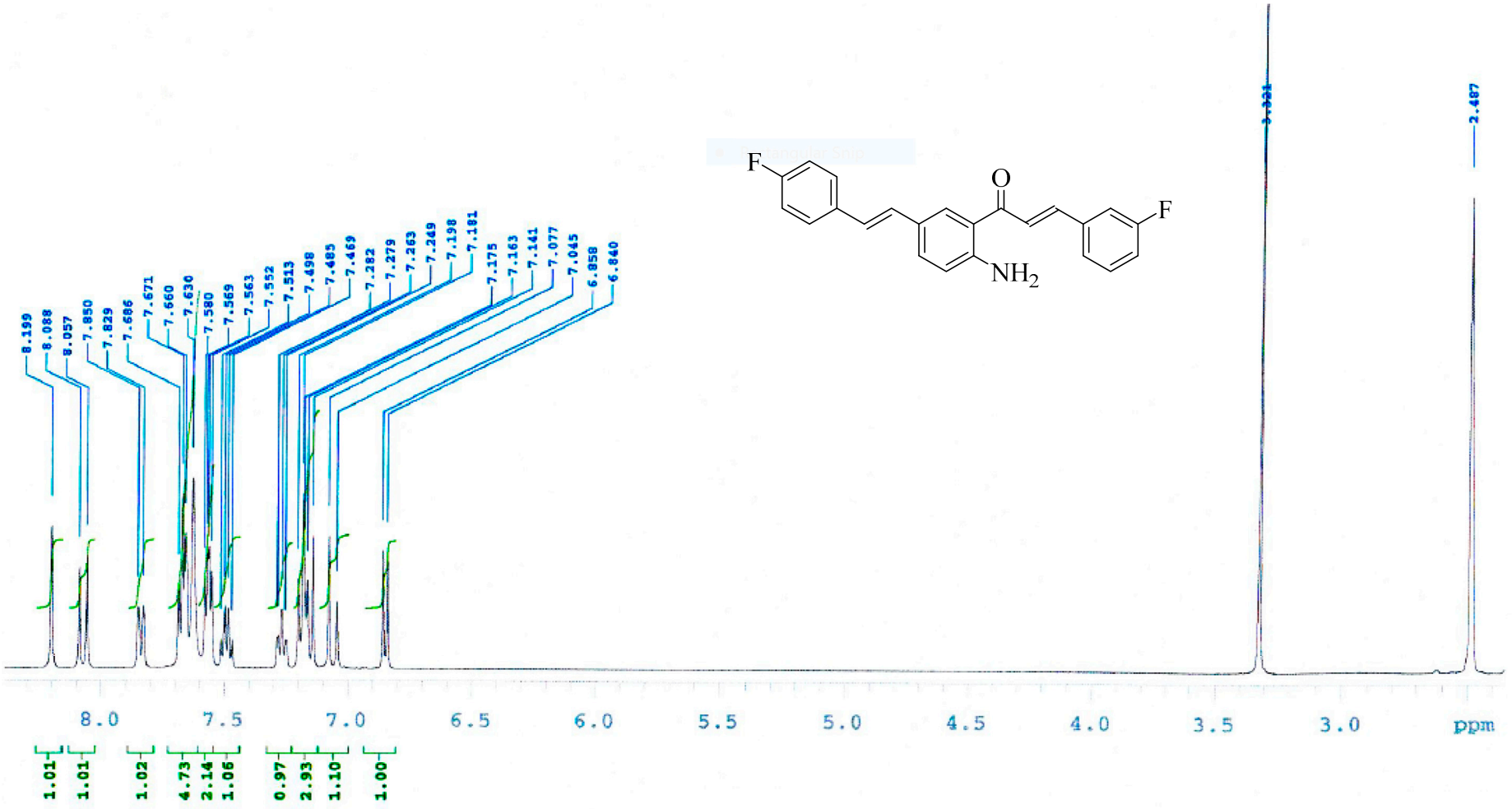

8.290
8.174
8.144
7.931
7.910
7.769
7.754
7.739
7.708
7.619
7.603
7.590
7.578
7.562
7.438
7.423
7.410
7.408
7.360
7.342
7.325
7.313
7.296
7.279
7.268
7.155
7.123
6.938
6.920
3.380
2.565
2.562
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
1.02
1.02
1.00
2.69
2.22
2.29
1.06
2.25
0.91
2.28
1.13
1.00

(**a**)

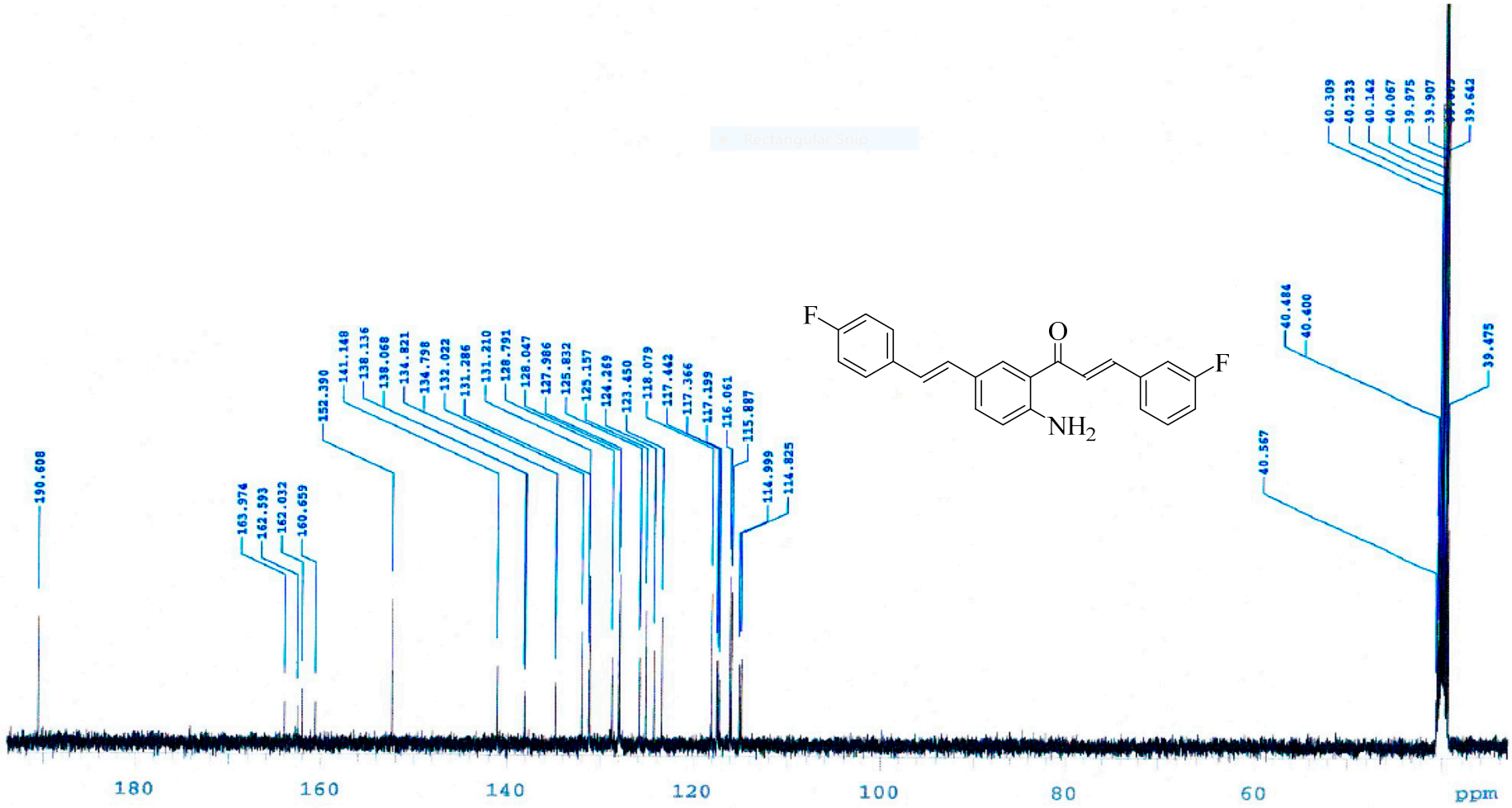


(**b**)

Figure S1.5: ^{1}H- and ^{13}C-NMR spectra of **3a** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.

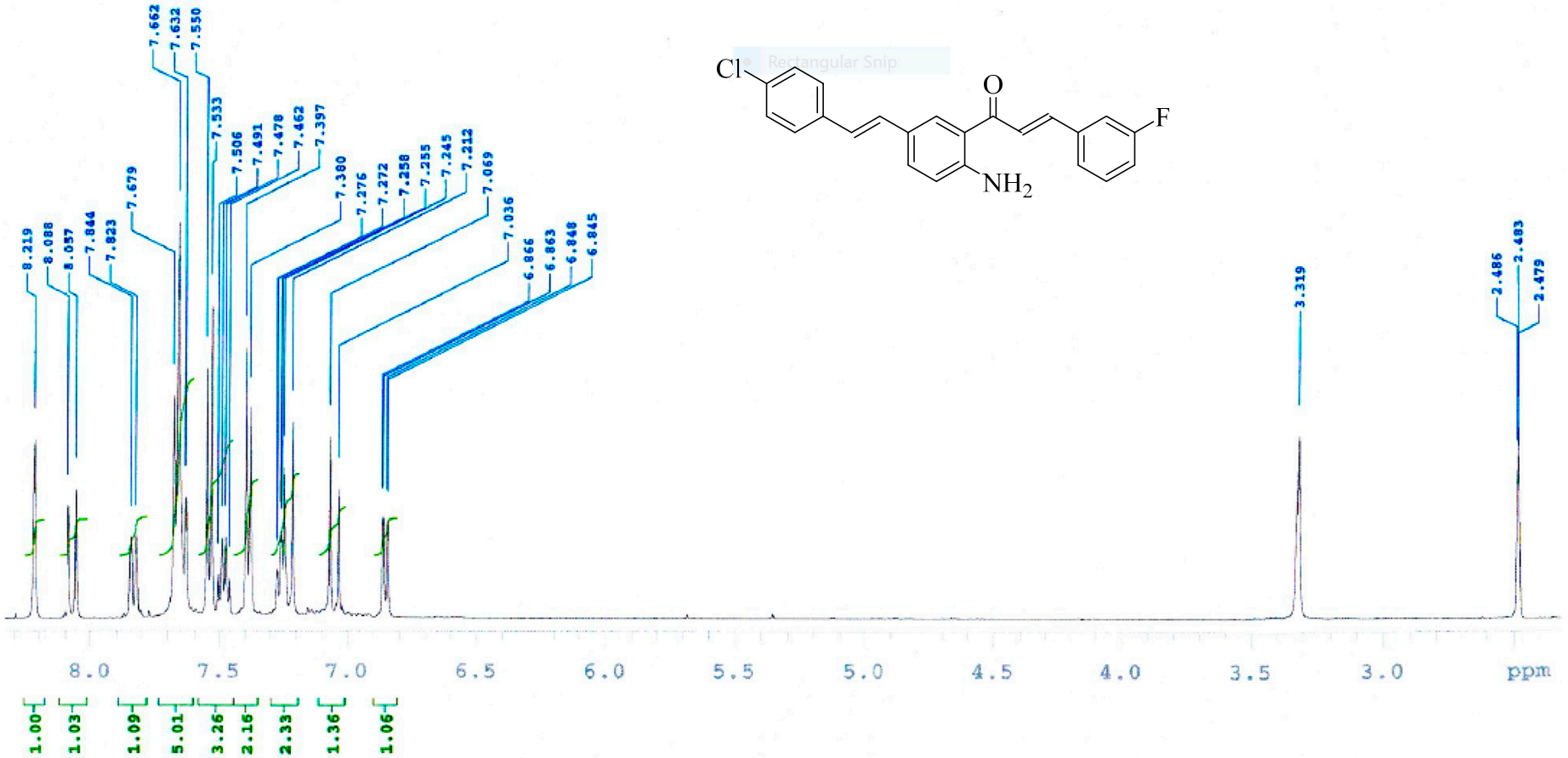

8.199
8.088
8.057
7.850
7.829
7.686
7.671
7.660
7.630
7.580
7.569
7.563
7.552
7.513
7.498
7.485
7.469
7.282
7.279
7.263
7.249
7.198
7.181
7.175
7.163
7.141
7.077
7.045
6.858
6.840
3.831
2.487
F
O
F
NH2
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
1.01
1.01
1.02
4.73
2.14
1.06
0.97
2.93
1.10
1.00

(**a**)

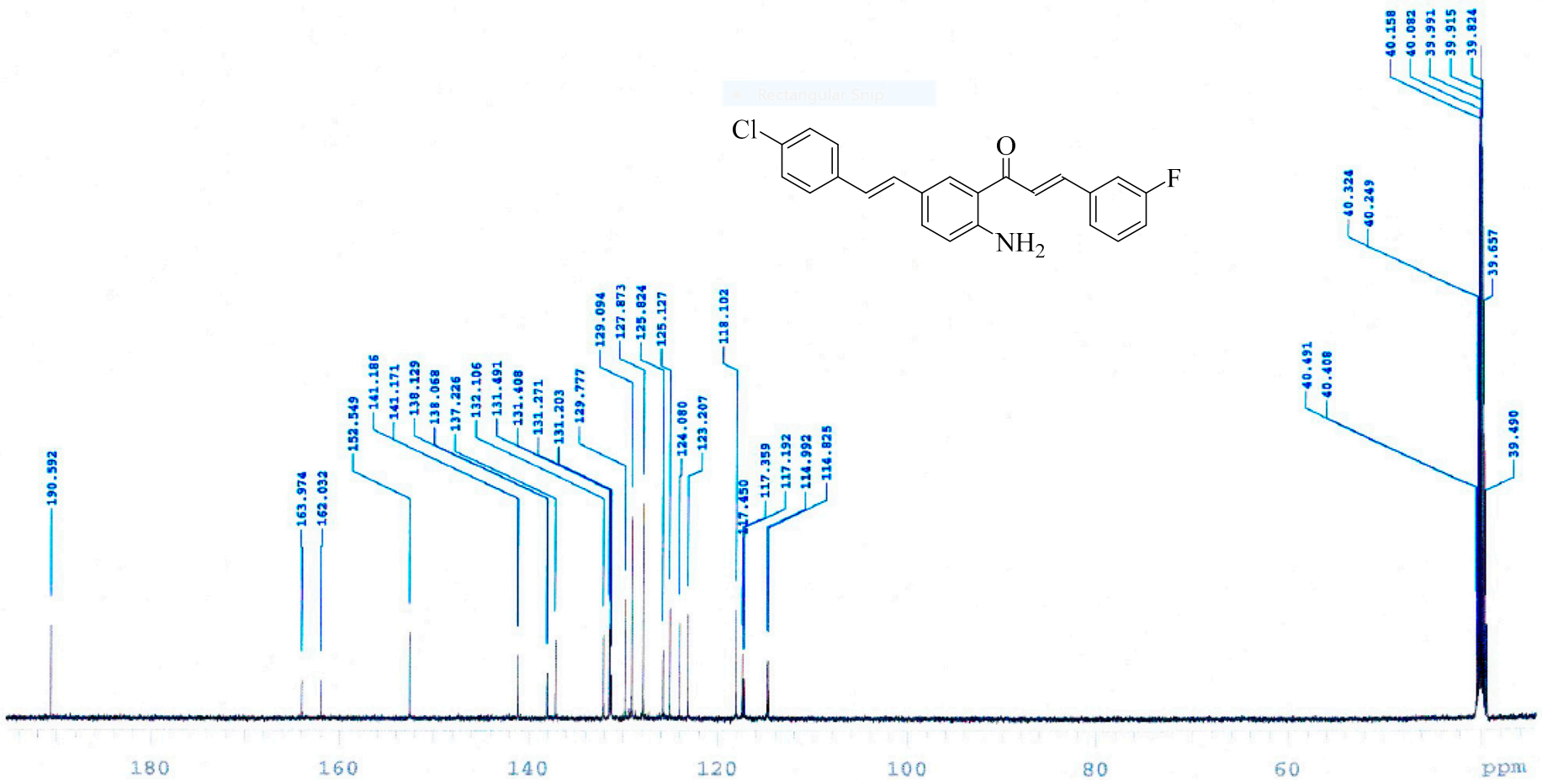


(**b**)

Figure S1.6: [1]H- and [13]C-NMR spectra of **3b** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.

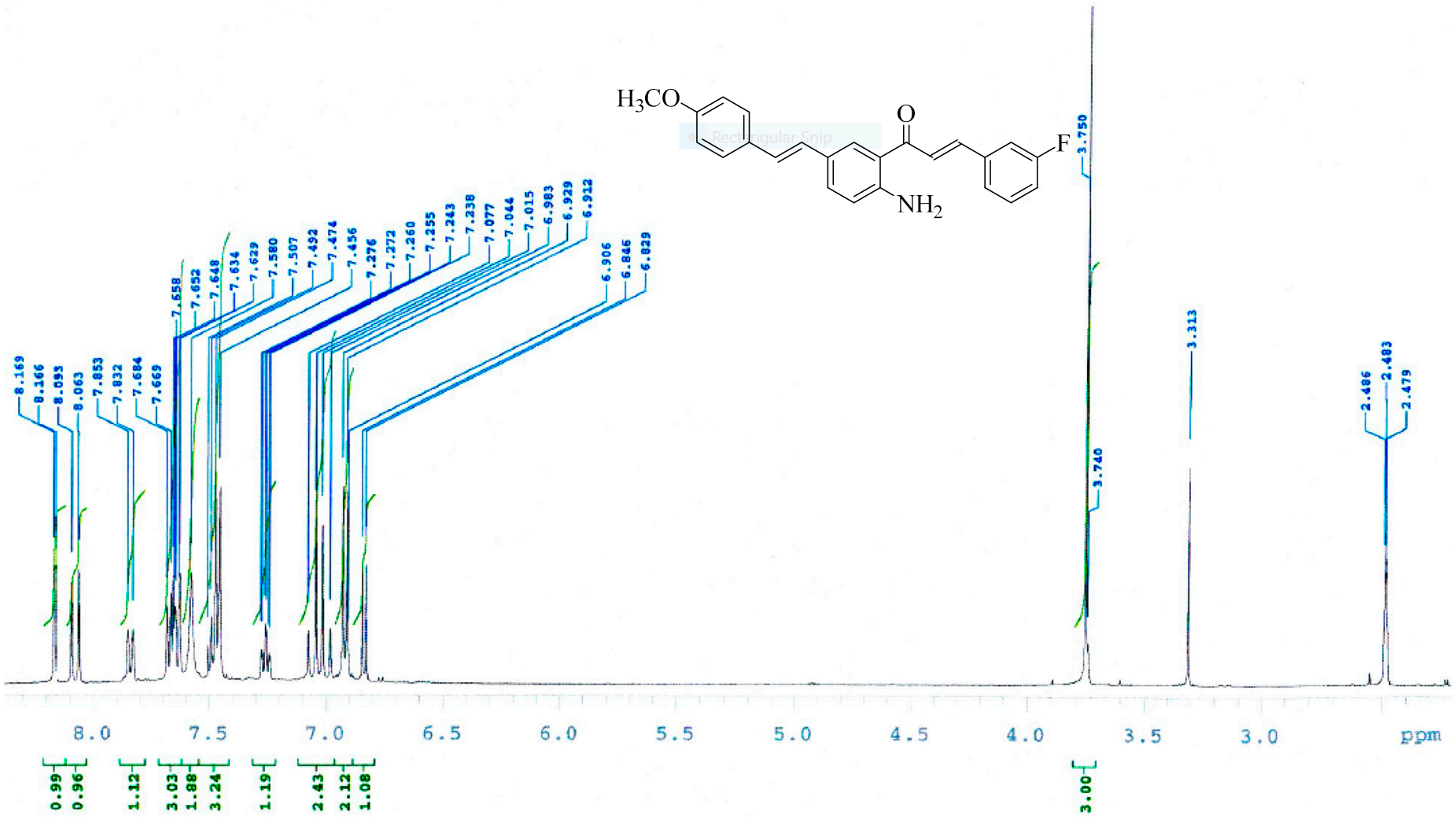

Cl
O
F
NH2
8.219
8.088
8.057
7.844
7.823
7.679
7.662
7.632
7.550
7.533
7.506
7.491
7.478
7.462
7.397
7.380
7.276
7.272
7.258
7.255
7.245
7.212
7.069
7.036
6.866
6.863
6.848
6.845
3.319
2.486
2.483
2.479
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
1.00
1.03
1.09
5.01
3.26
2.16
2.33
1.36
1.06

(**a**)

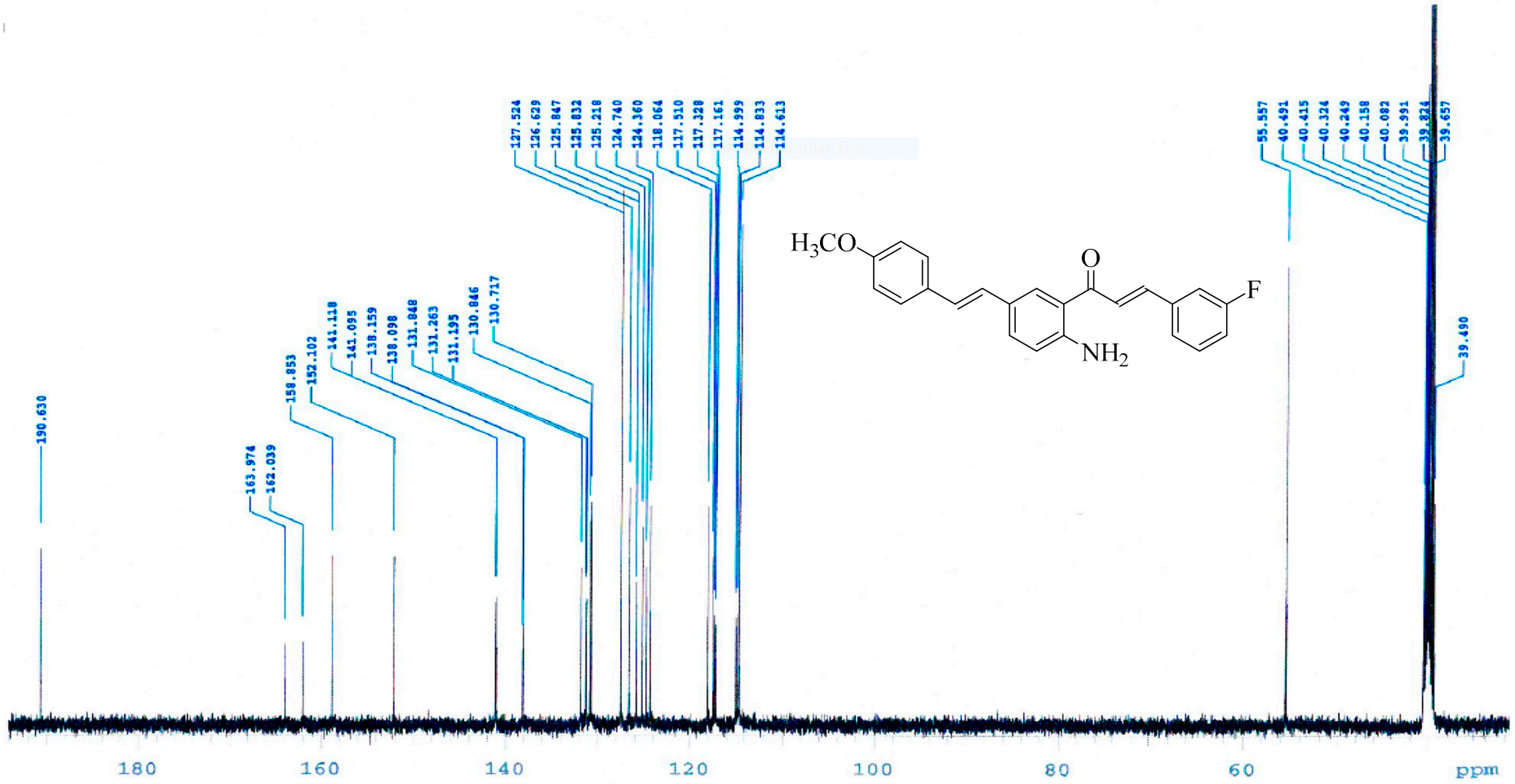


(**b**)

Figure S1.7: ^{1}H- and ^{13}C-NMR spectra of **3c** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.

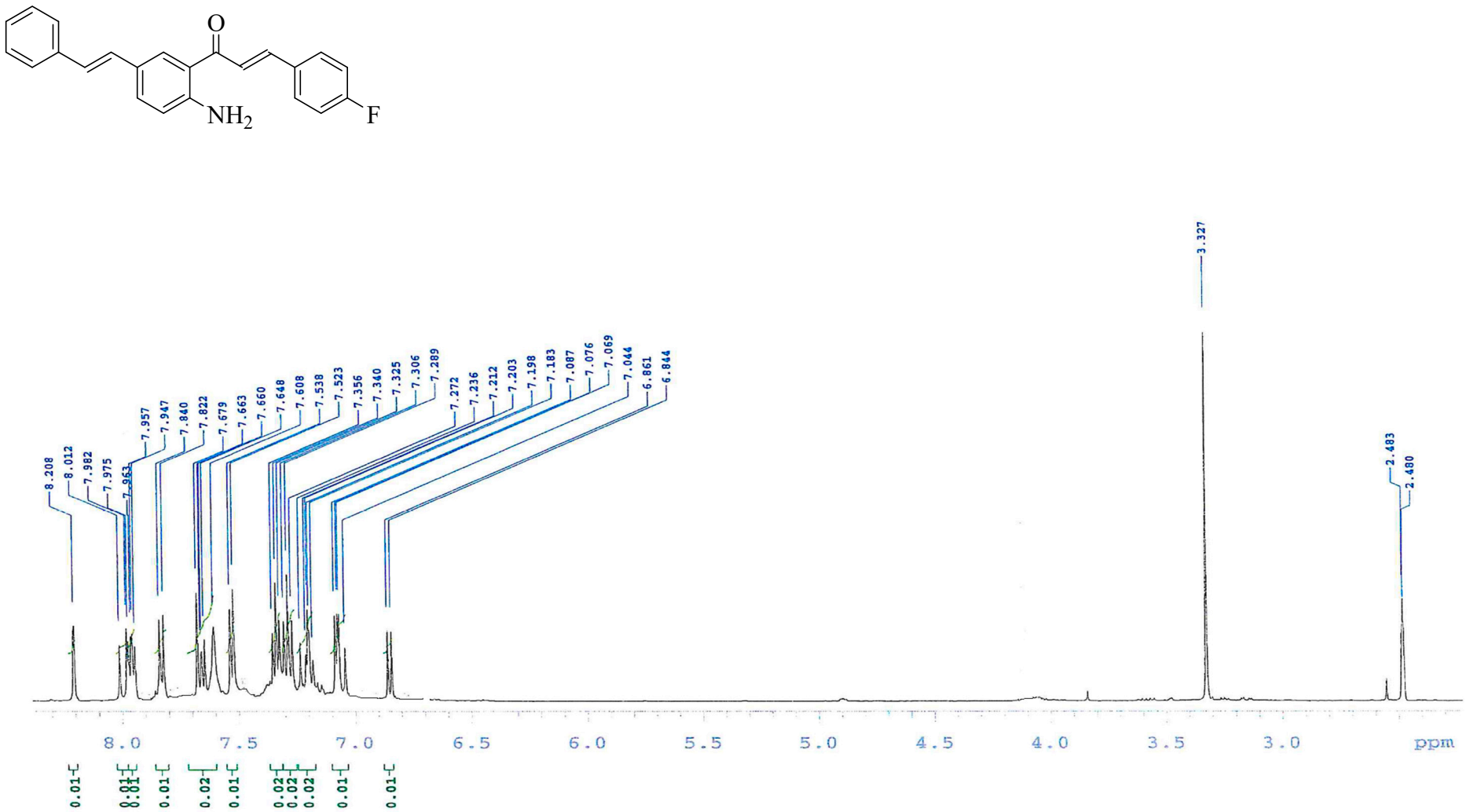

H3CO
O
F
NH2
8.169
8.166
8.093
8.063
7.853
7.832
7.684
7.669
7.658
7.652
7.648
7.634
7.629
7.580
7.507
7.492
7.474
7.456
7.276
7.272
7.260
7.255
7.243
7.238
7.077
7.044
7.015
6.983
6.939
6.912
6.906
6.846
6.829
3.750
3.740
3.313
2.486
2.483
2.479
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
0.99
0.96
1.12
3.03
1.88
3.24
1.19
2.43
2.12
1.08
3.00

(**a**)

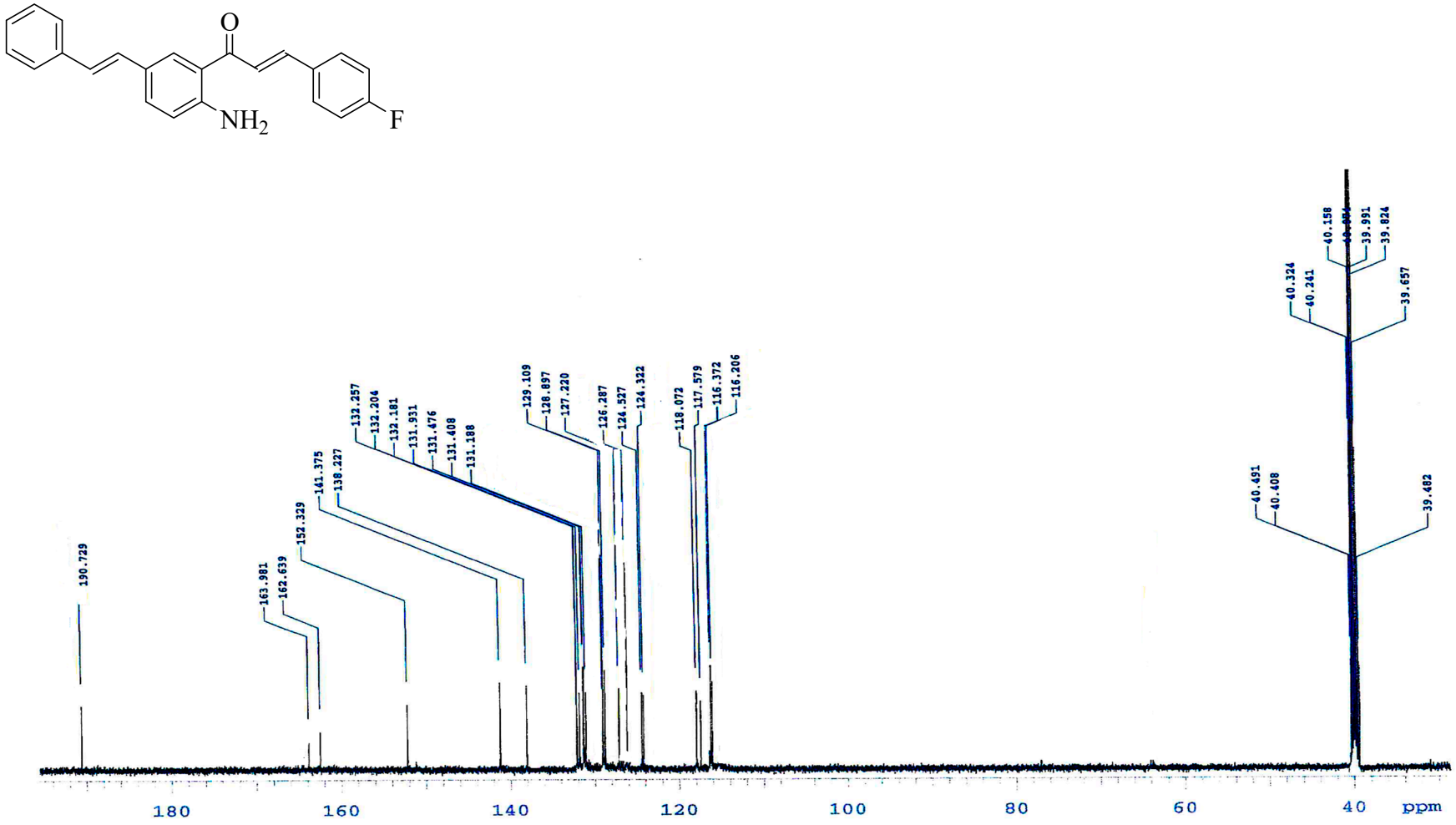


(**b**)

Figure S1.8: [1]H- and [13]C-NMR spectra of **3d** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.

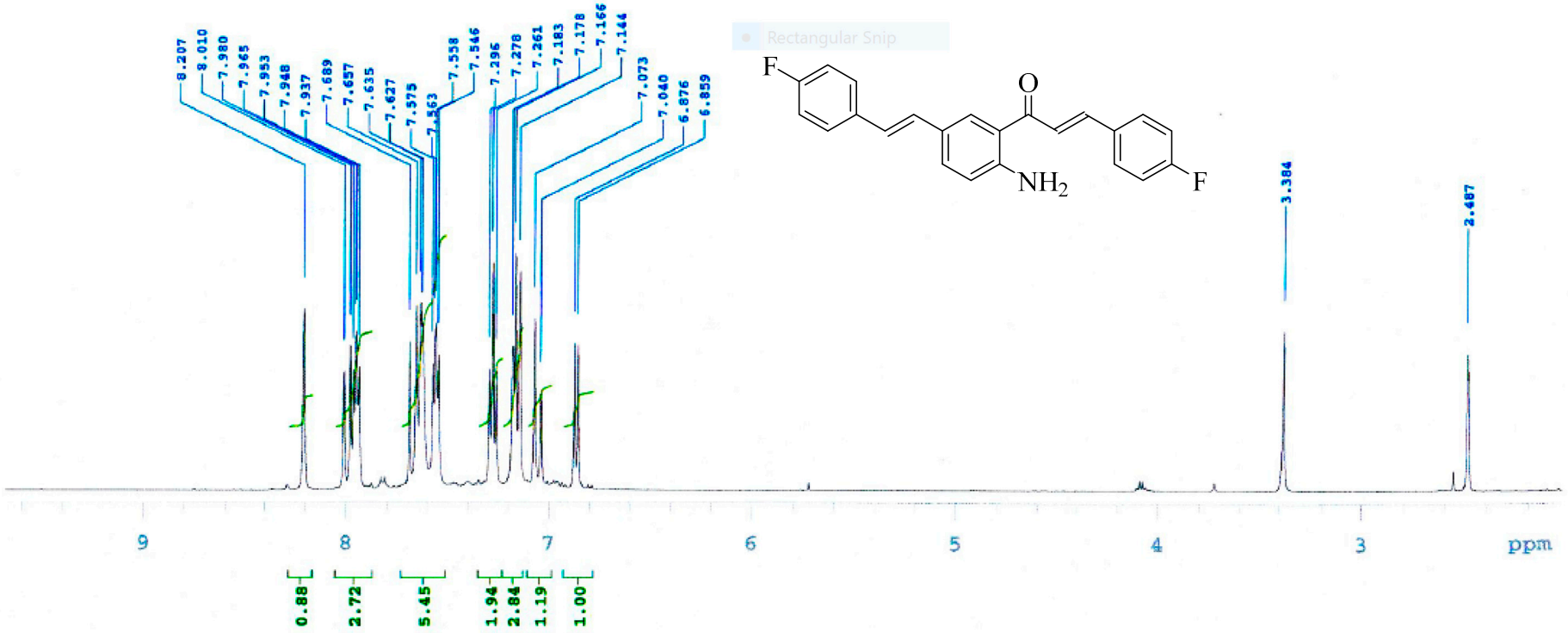

O
NH2
F
8.208
8.012
7.982
7.975
7.963
7.957
7.947
7.840
7.822
7.679
7.663
7.660
7.648
7.608
7.538
7.523
7.356
7.340
7.325
7.306
7.289
7.272
7.236
7.212
7.203
7.198
7.183
7.087
7.076
7.069
7.044
6.861
6.844
3.327
2.483
2.480
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
0.01
0.01
0.01
0.02
0.01
0.02
0.02
0.02
0.01
0.01

(**a**)



(**b**)

Figure S1.9: [1]H- and [13]C-NMR spectra of **3e** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.


8.207
8.010
7.980
7.965
7.953
7.948
7.937
7.689
7.657
7.635
7.627
7.575
7.563
7.558
7.546
7.296
7.278
7.261
7.183
7.178
7.166
7.144
7.073
7.040
6.876
6.859
3.384
2.487
F
O
NH2
F
9
8
7
6
5
4
3
ppm
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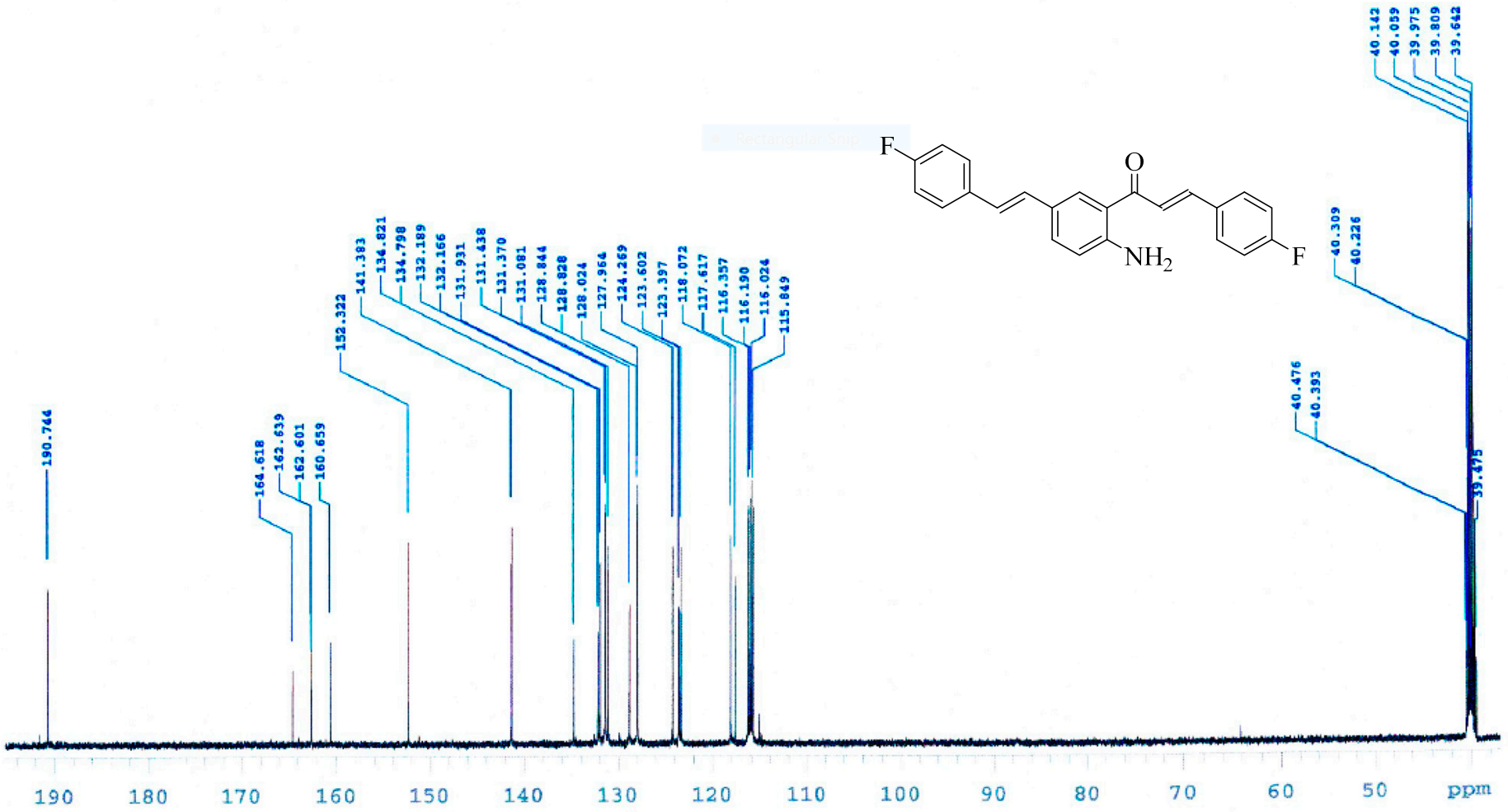
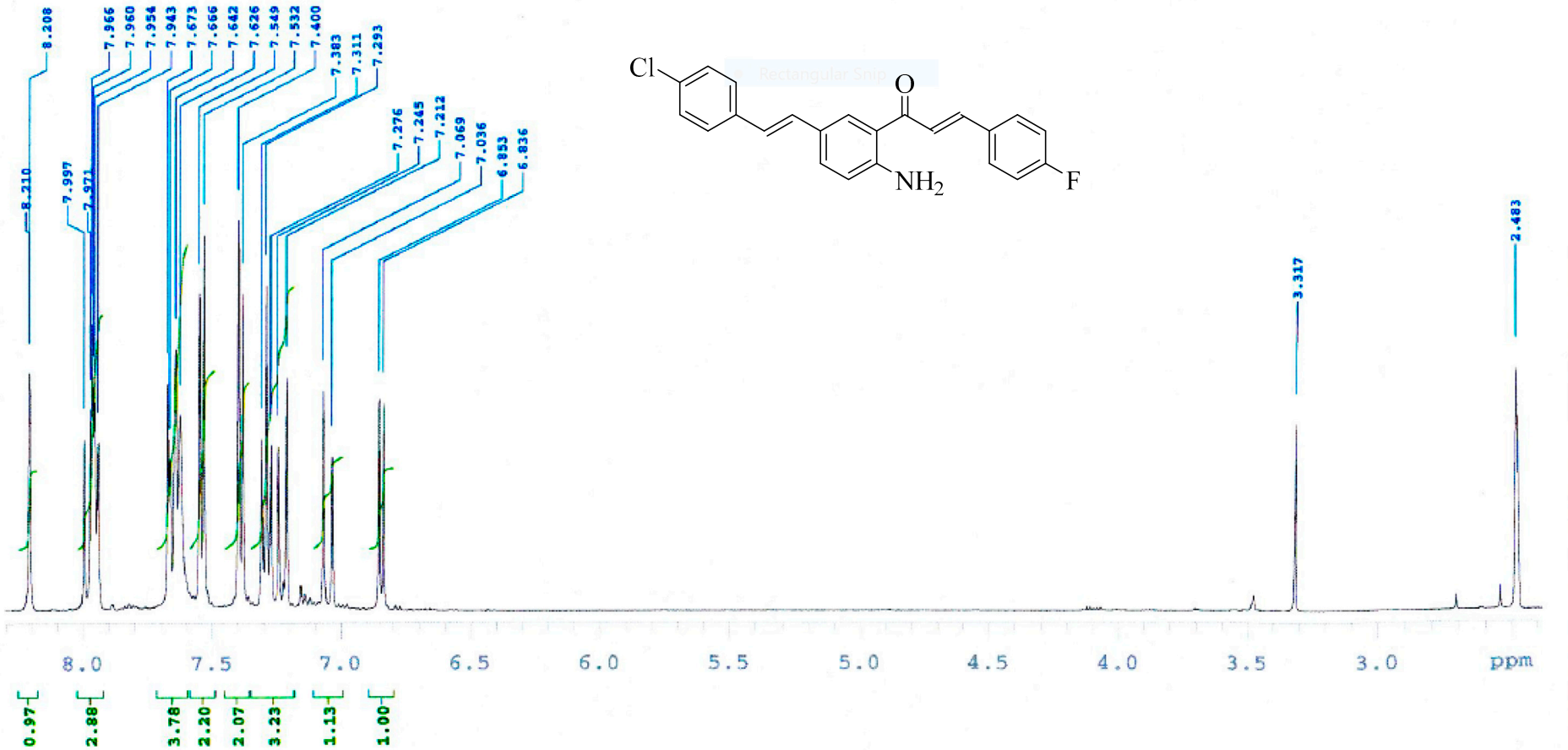
2.72
5.45
1.94
2.84
1.19
1.00

(**a**)

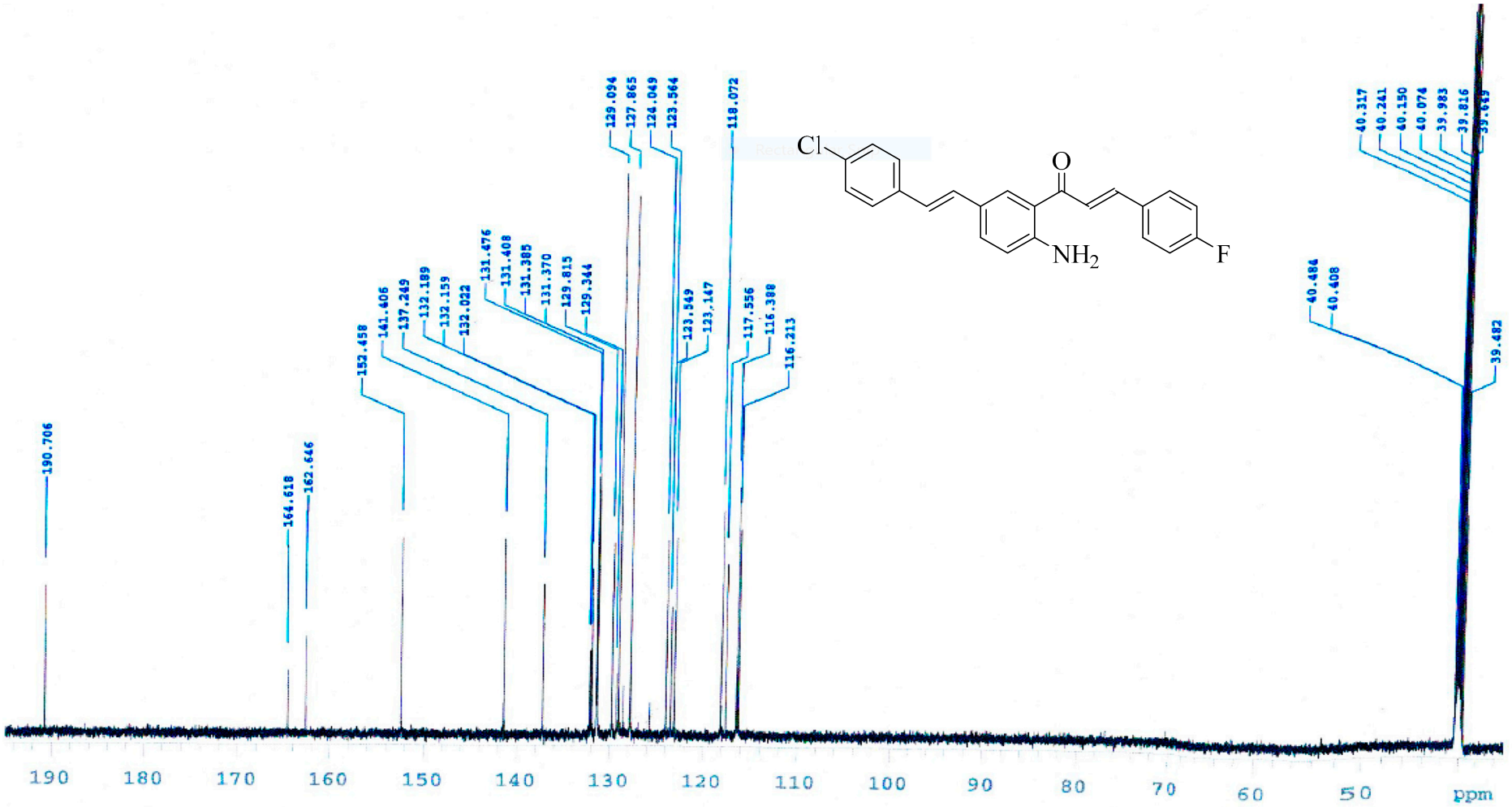


(**b**)

Figure S1.10: [1]H- and [13]C-NMR spectra of **3f** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.

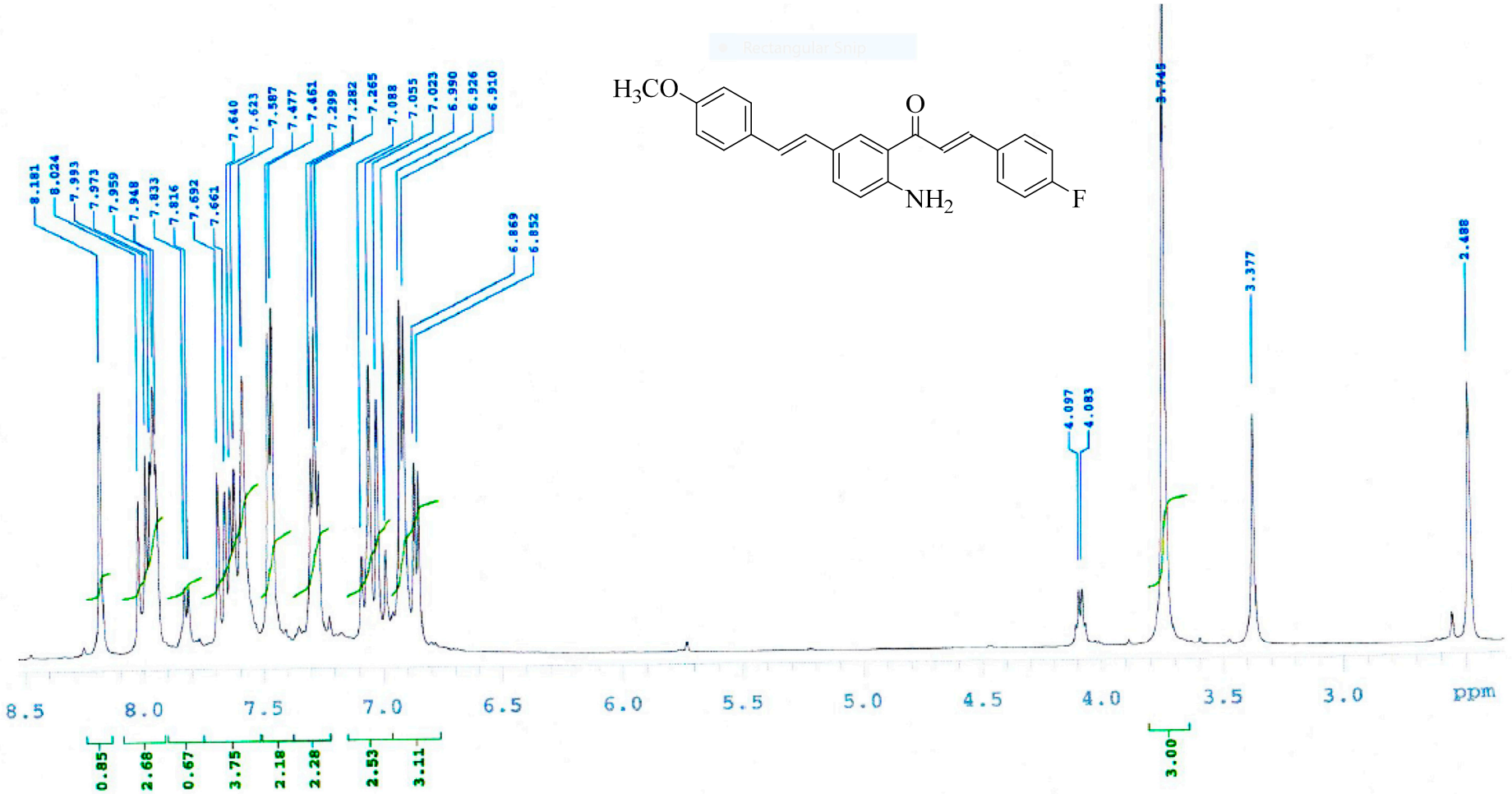

8.208
8.210
7.997
7.971
7.966
7.960
7.954
7.943
7.673
7.666
7.642
7.626
7.549
7.532
7.400
7.383
7.311
7.293
7.276
7.245
7.212
7.069
7.036
6.853
6.836
3.317
2.483
Cl
O
NH2
F
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
0.97
2.88
3.78
2.20
2.07
3.23
1.13
1.00

(**a**)

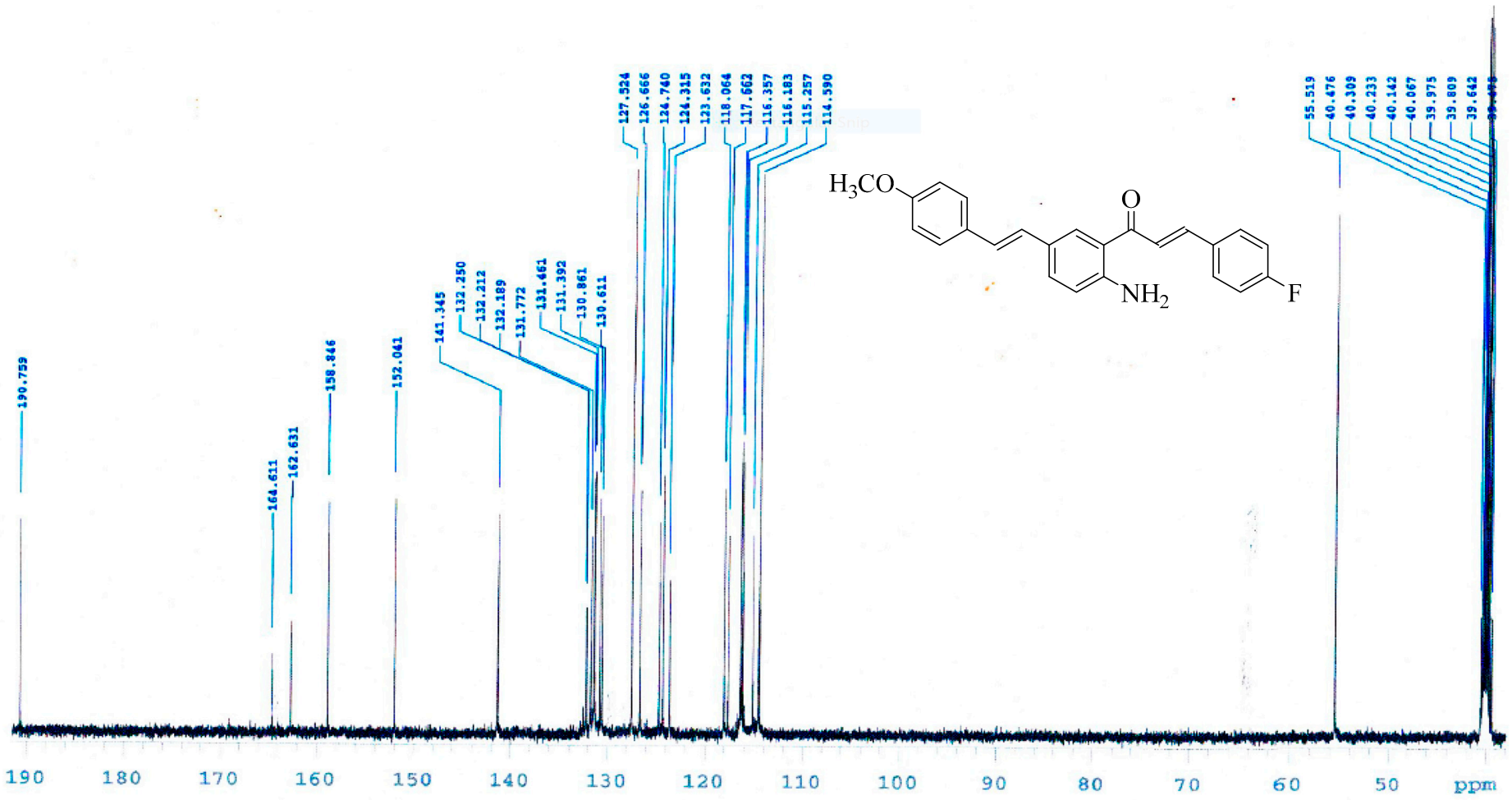


(**b**)

Figure S1.11: ^{1}H- and ^{13}C-NMR spectra of **3g** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.


8.181
8.024
7.993
7.973
7.959
7.948
7.833
7.816
7.692
7.661
7.640
7.623
7.587
7.477
7.461
7.299
7.282
7.265
7.088
7.055
7.023
6.990
6.926
6.910
6.869
6.852
4.097
4.083
3.745
3.377
2.488
H3CO
O
NH2
F
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
ppm
0.85
2.68
0.67
3.75
2.18
2.28
2.53
3.11
3.00

(**a**)



(**b**)

Figure S1.12: [1]H- and [13]C-NMR spectra of **3h** in DMSO-d_6 at 500 MHz (**a**) and 125 MHz (**b**), respectively.

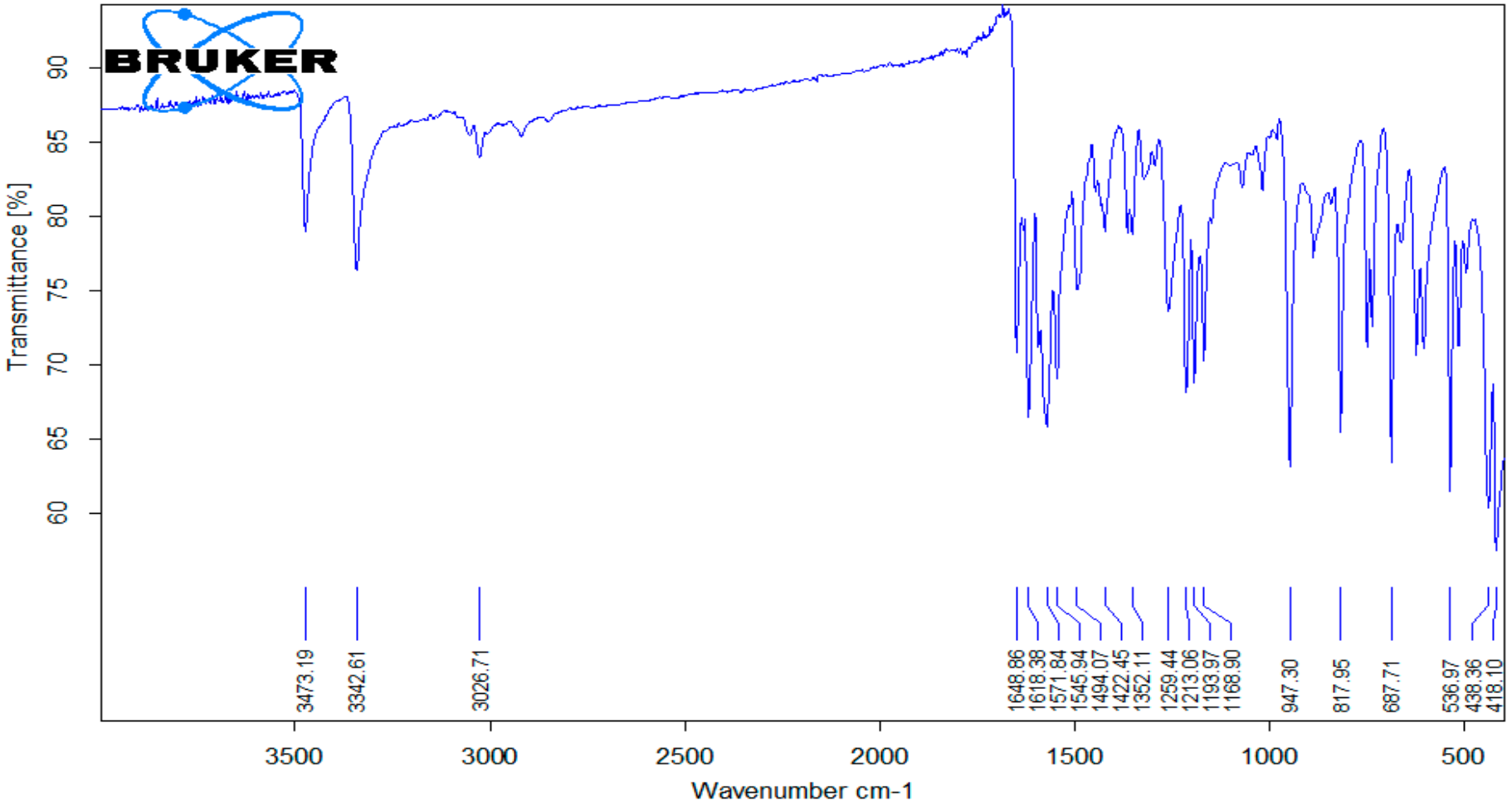


Figure S2.1: FT-IR spectrum of **2a**.

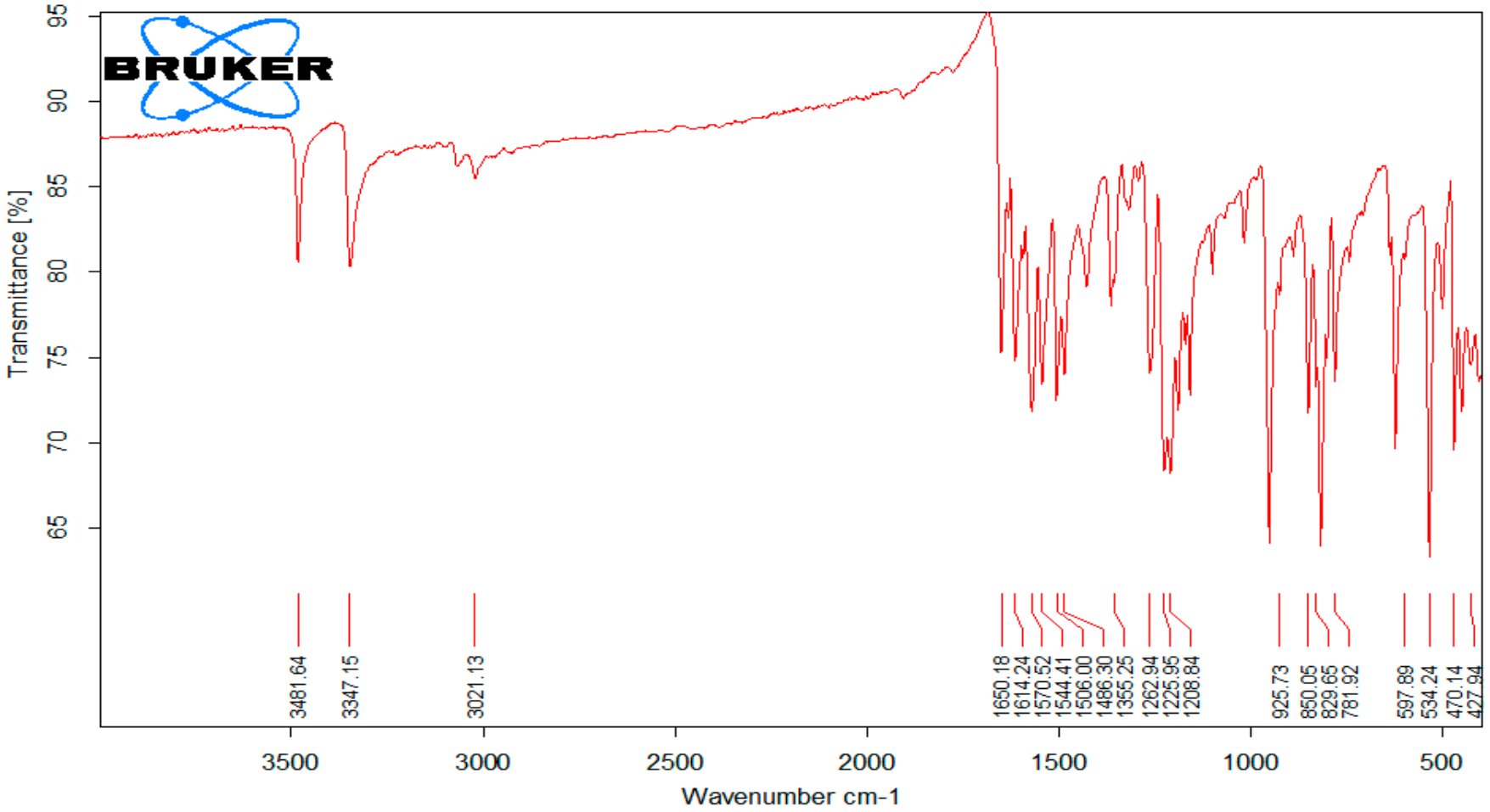


Figure S2.2: FT-IR spectrum of **2b**.

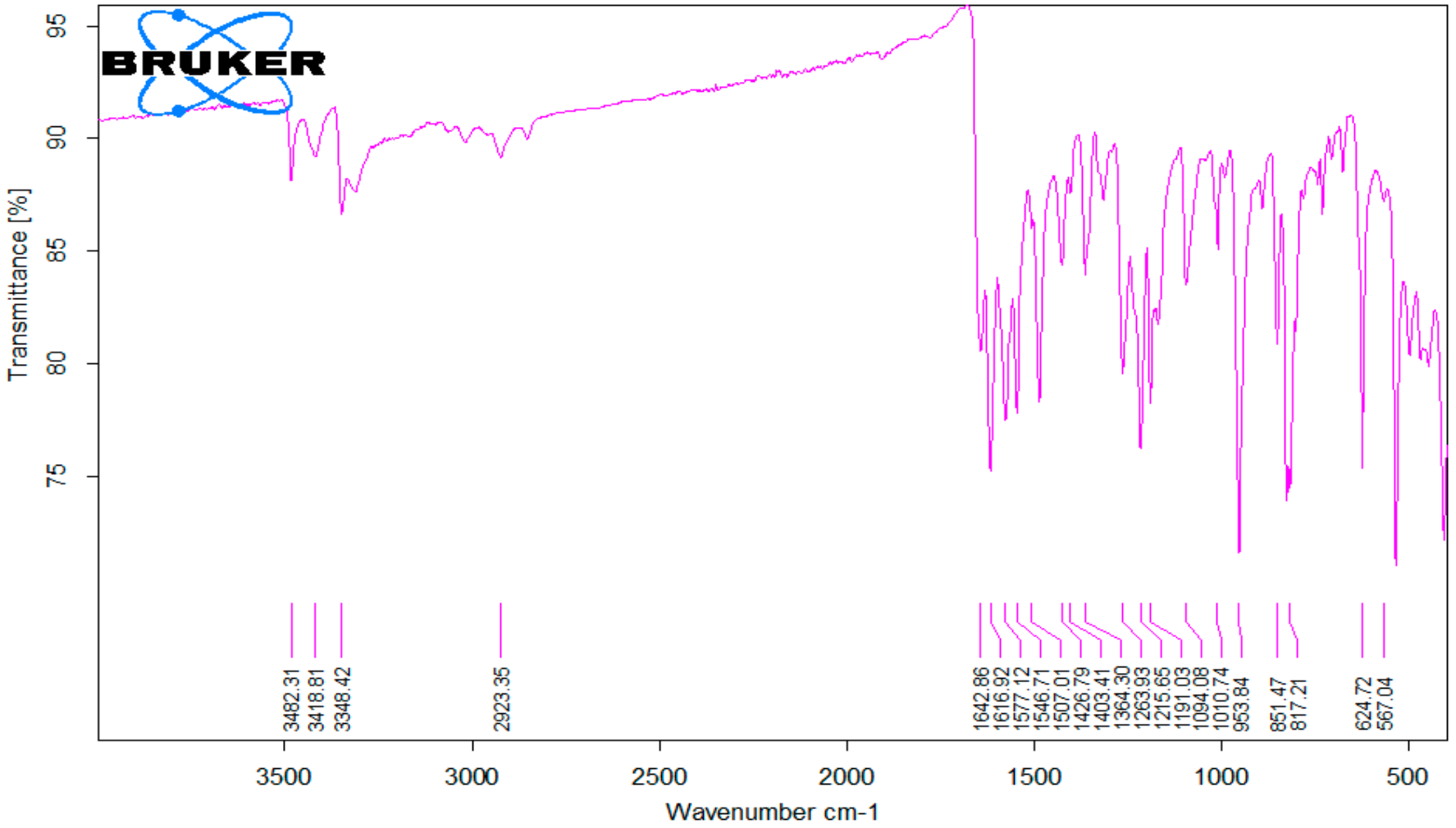


Figure S2.3: FT-IR spectrum of **2c**.

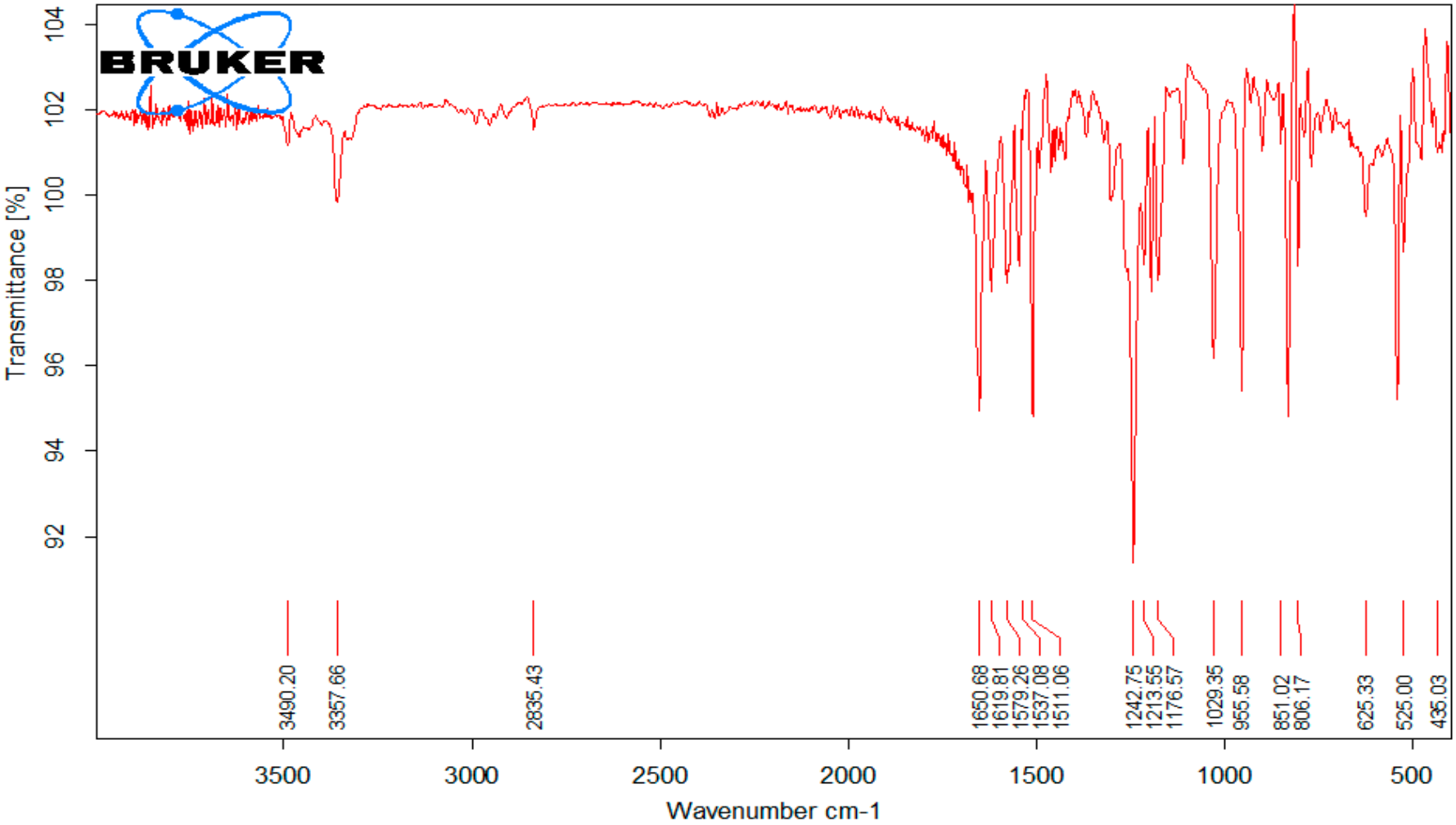


Figure S2.4: FT-IR spectrum of **2d**.

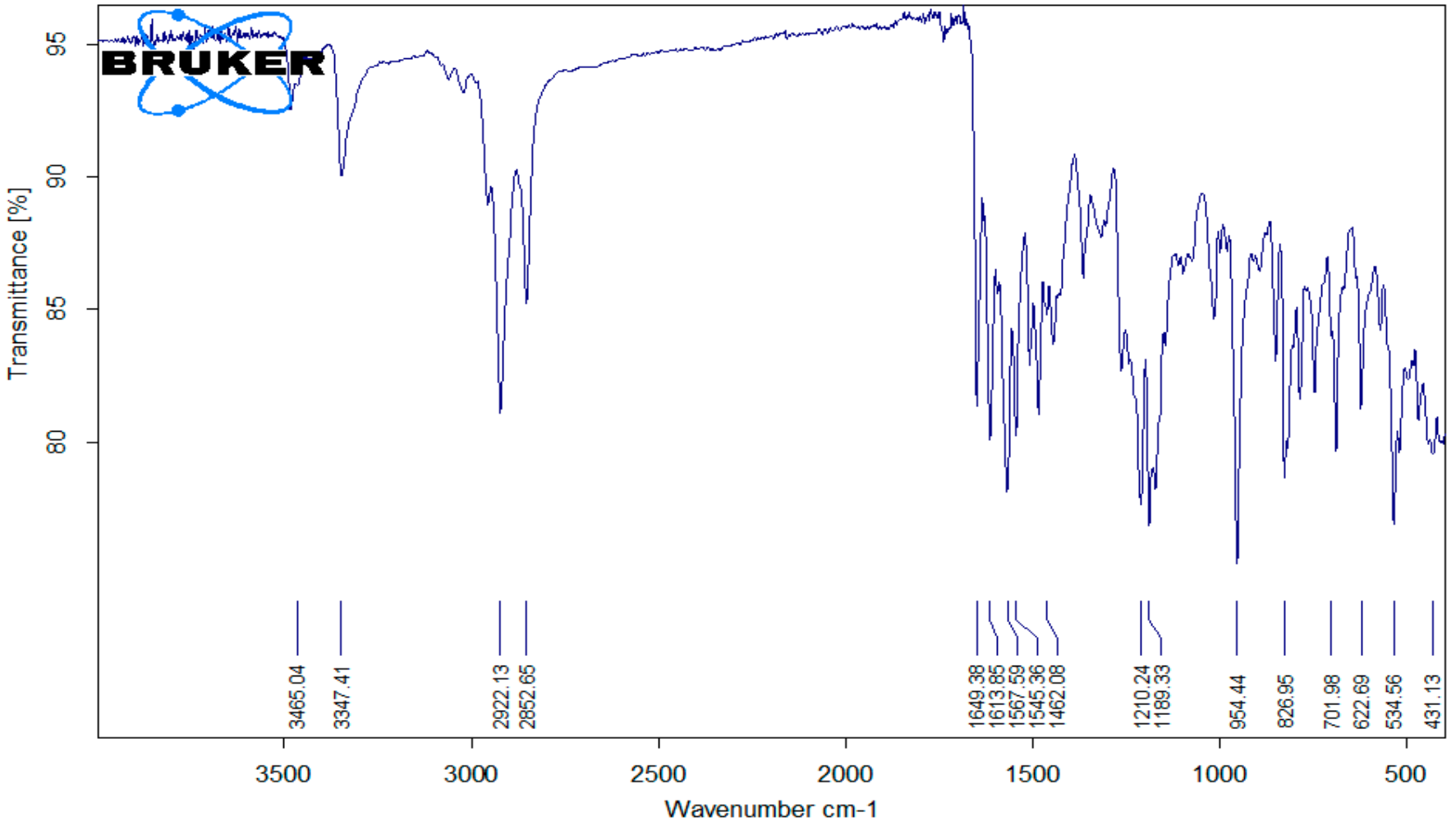


Figure S2.5: FT-IR spectrum of **3a**.

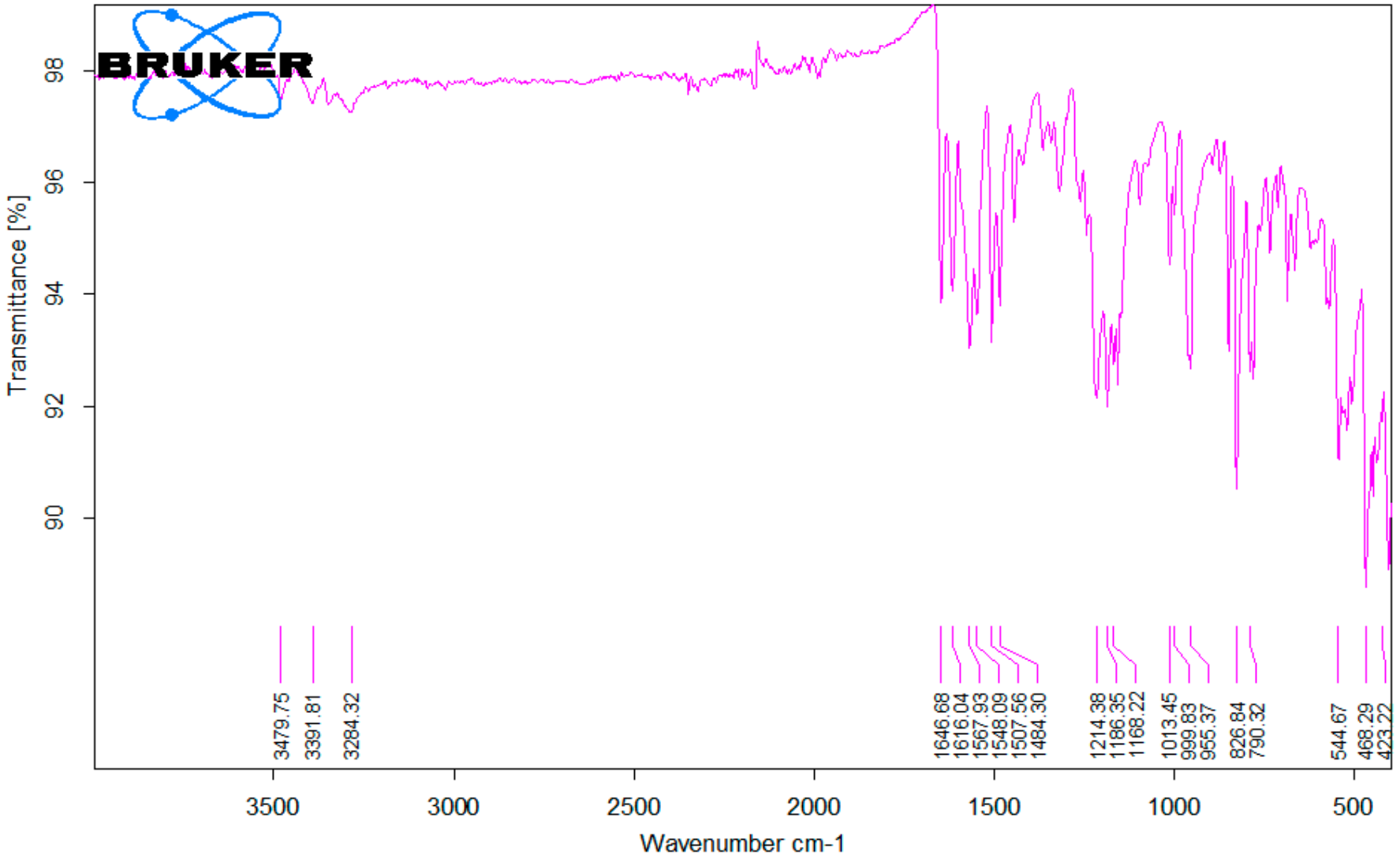


Figure S2.6: FT-IR spectrum of **3b**.

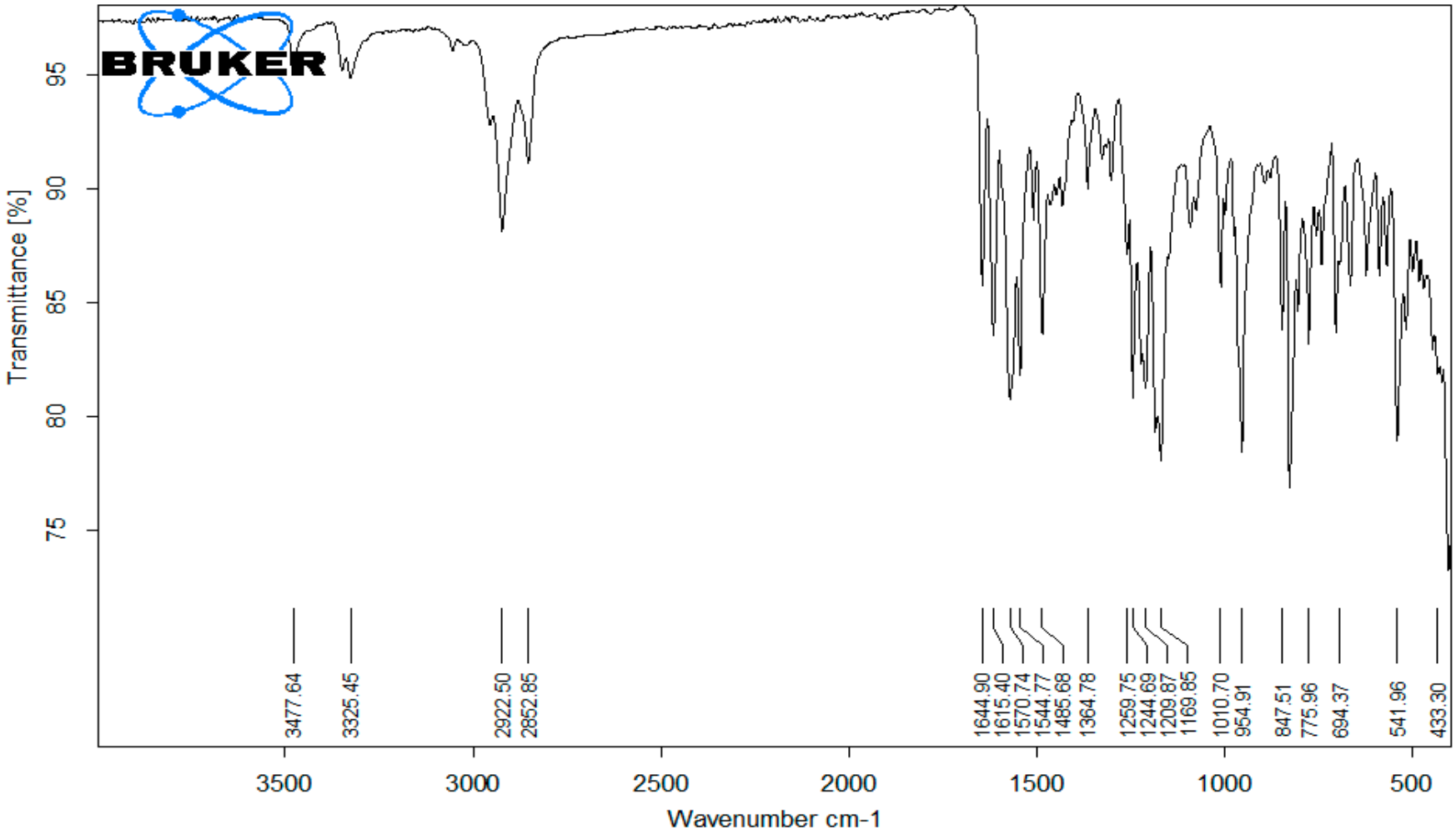


Figure S2.7: FT-IR spectrum of **3c**.

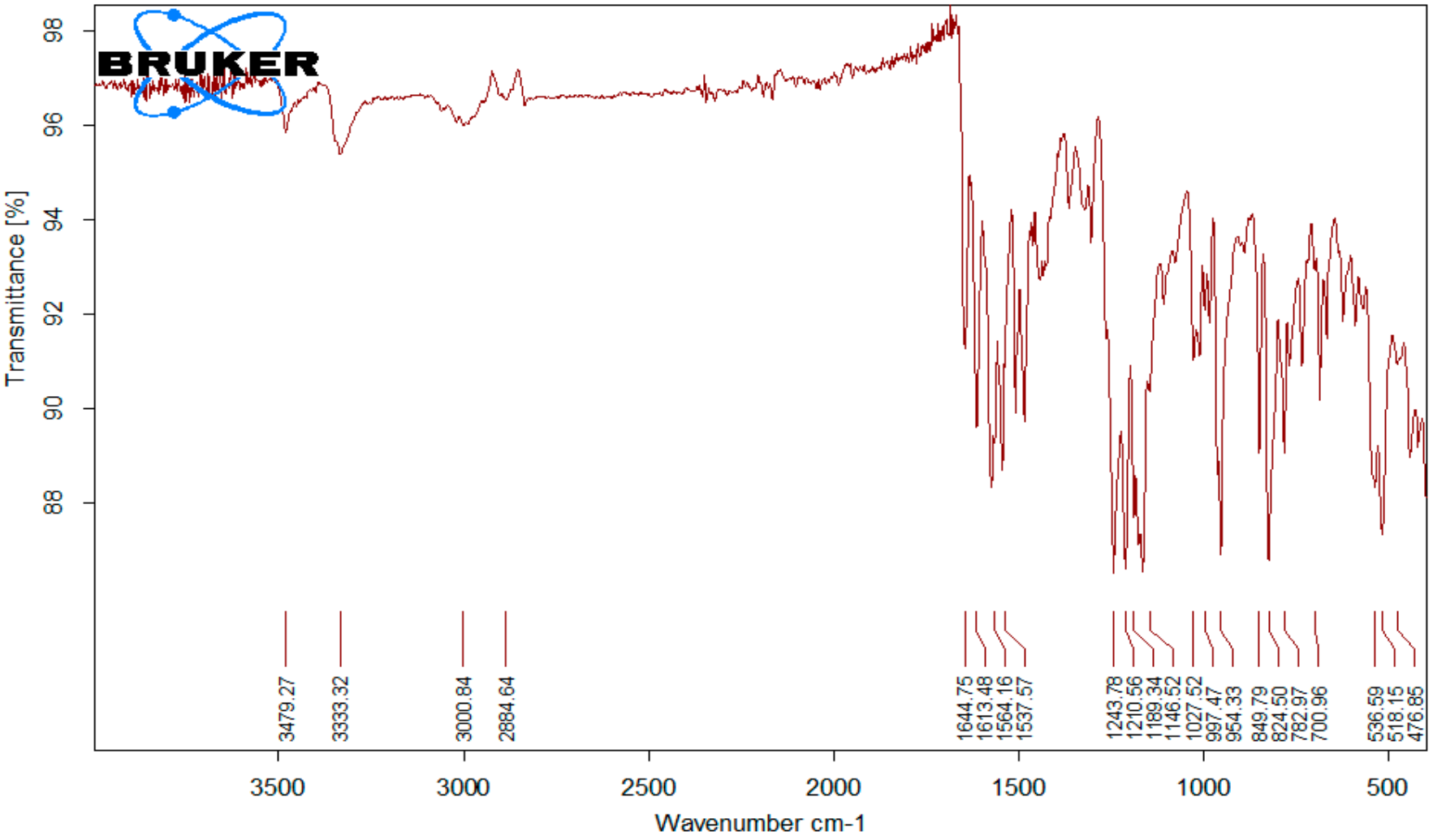


Figure S2.8: FT-IR spectrum of **3d**.

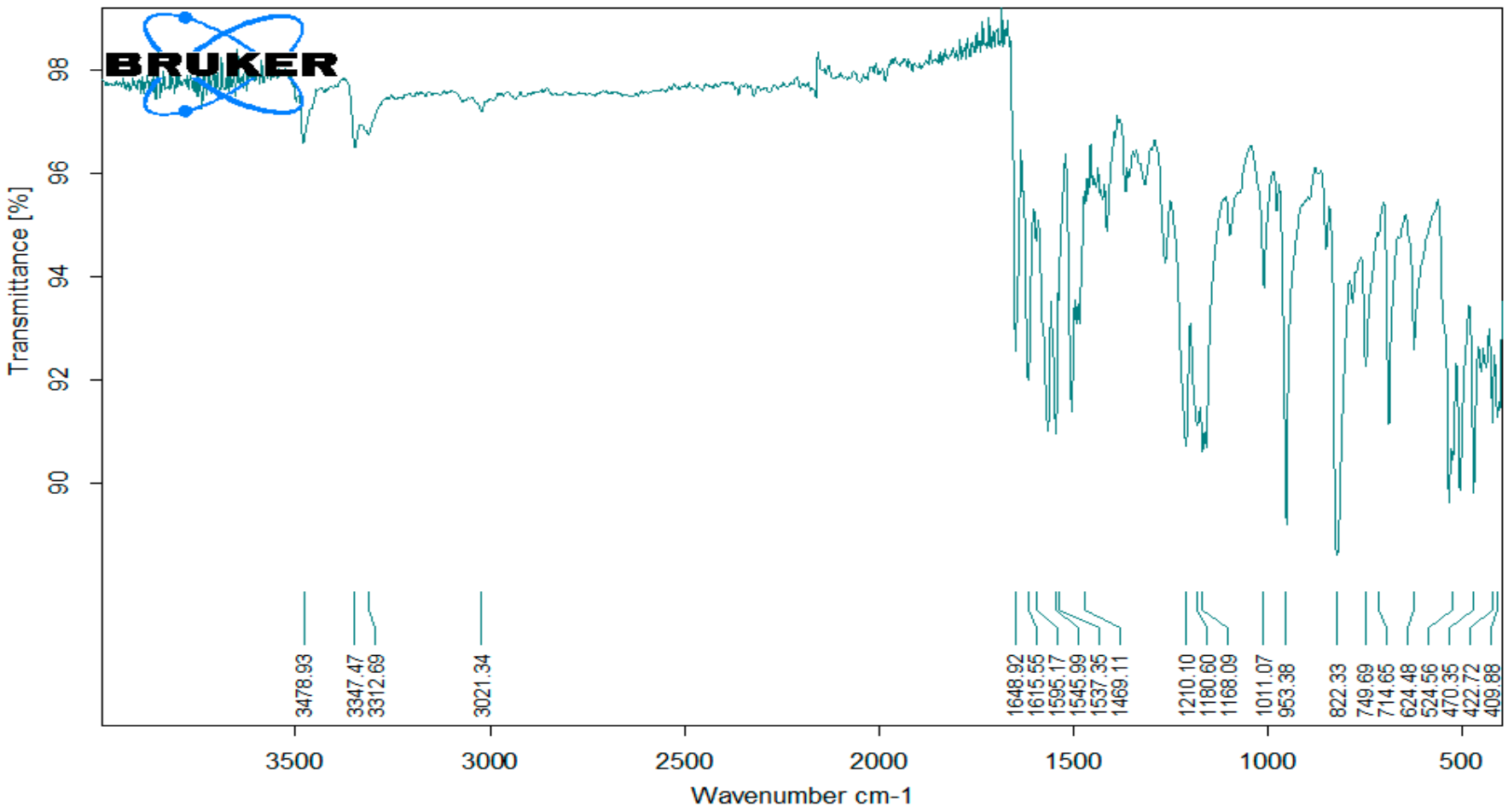


Figure S2.9: FT-IR spectrum of **3e**.

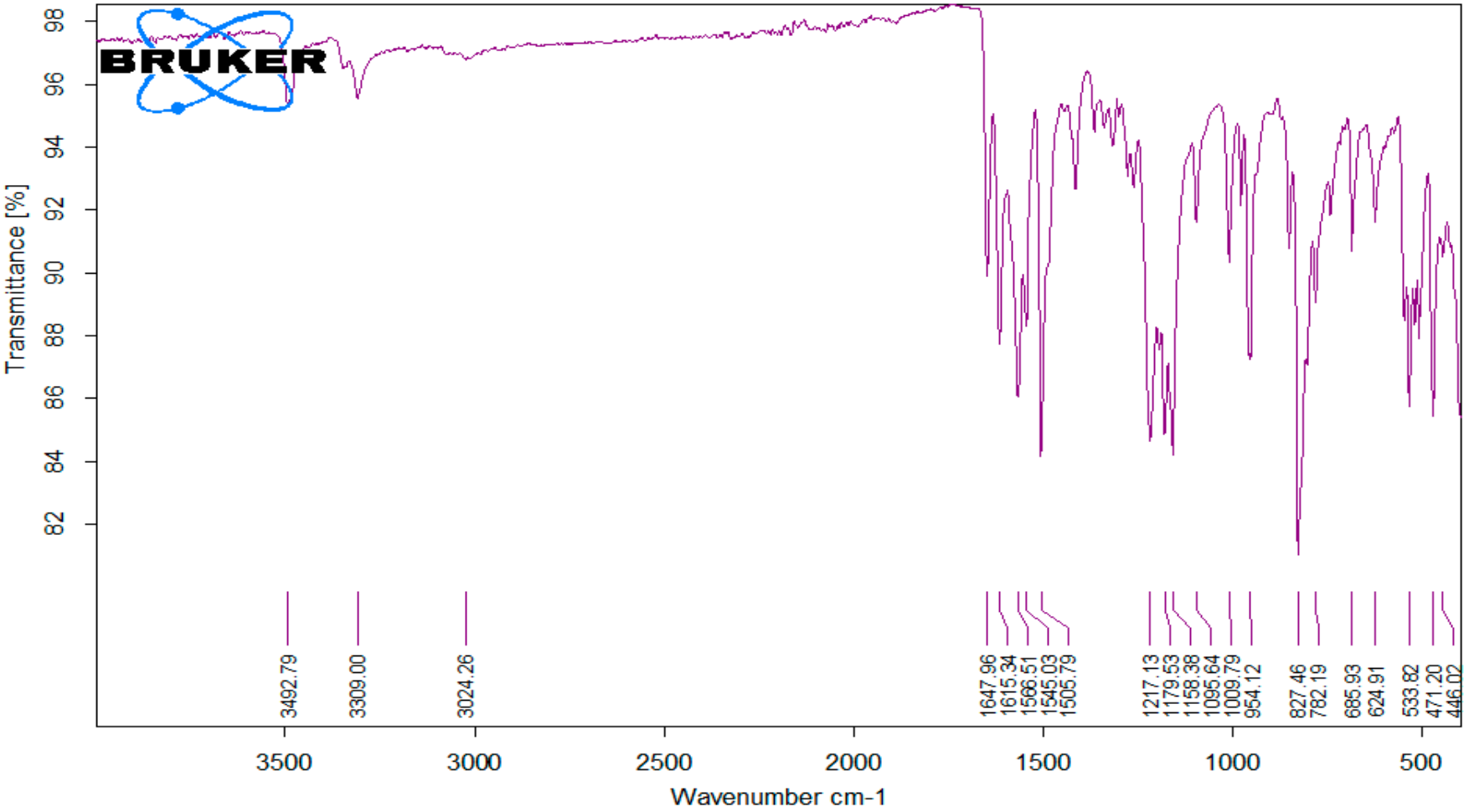


Figure S2.10: FT-IR spectrum of **3f**.

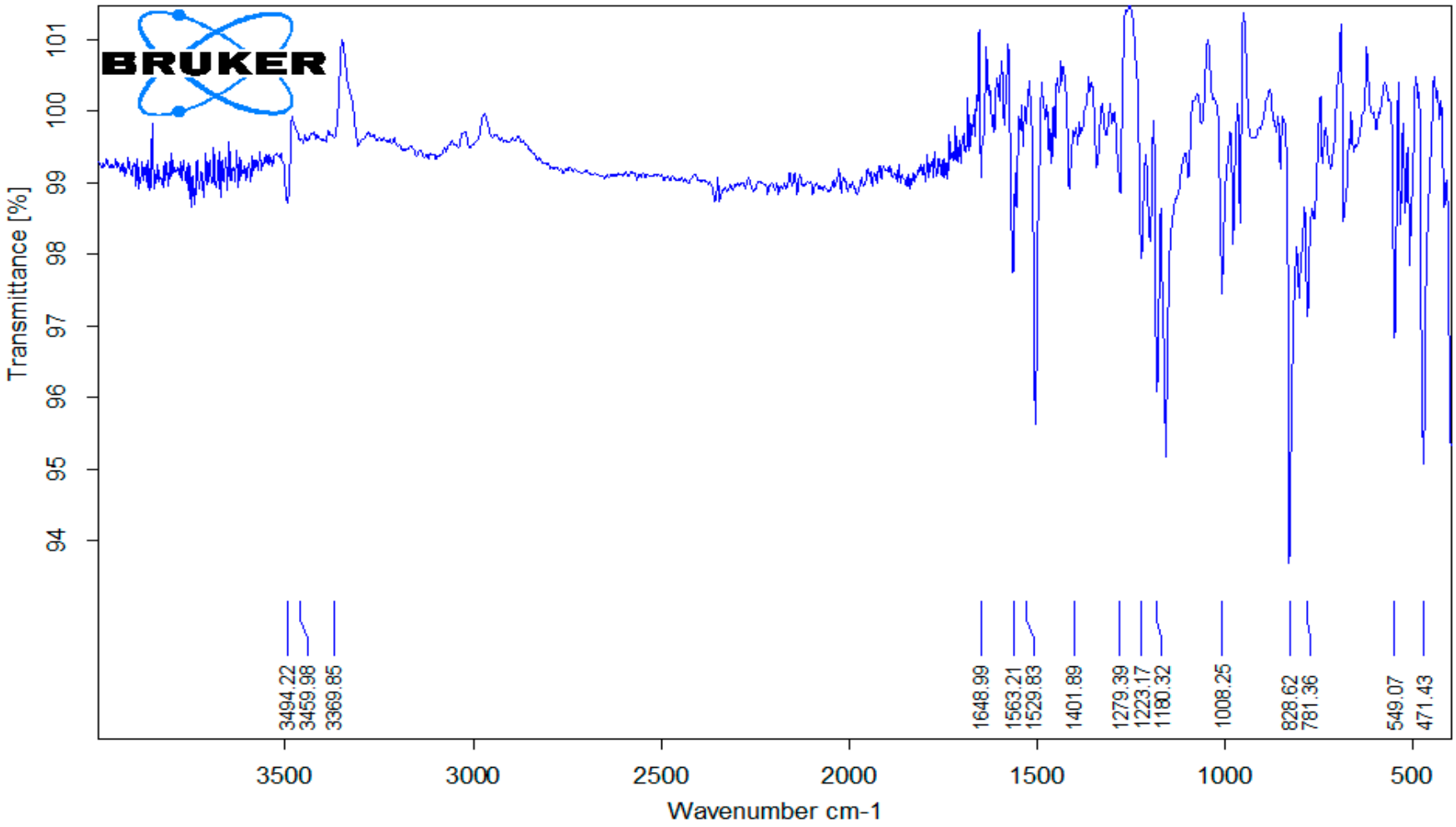


Figure S2.11: FT-IR spectrum of **3g**.

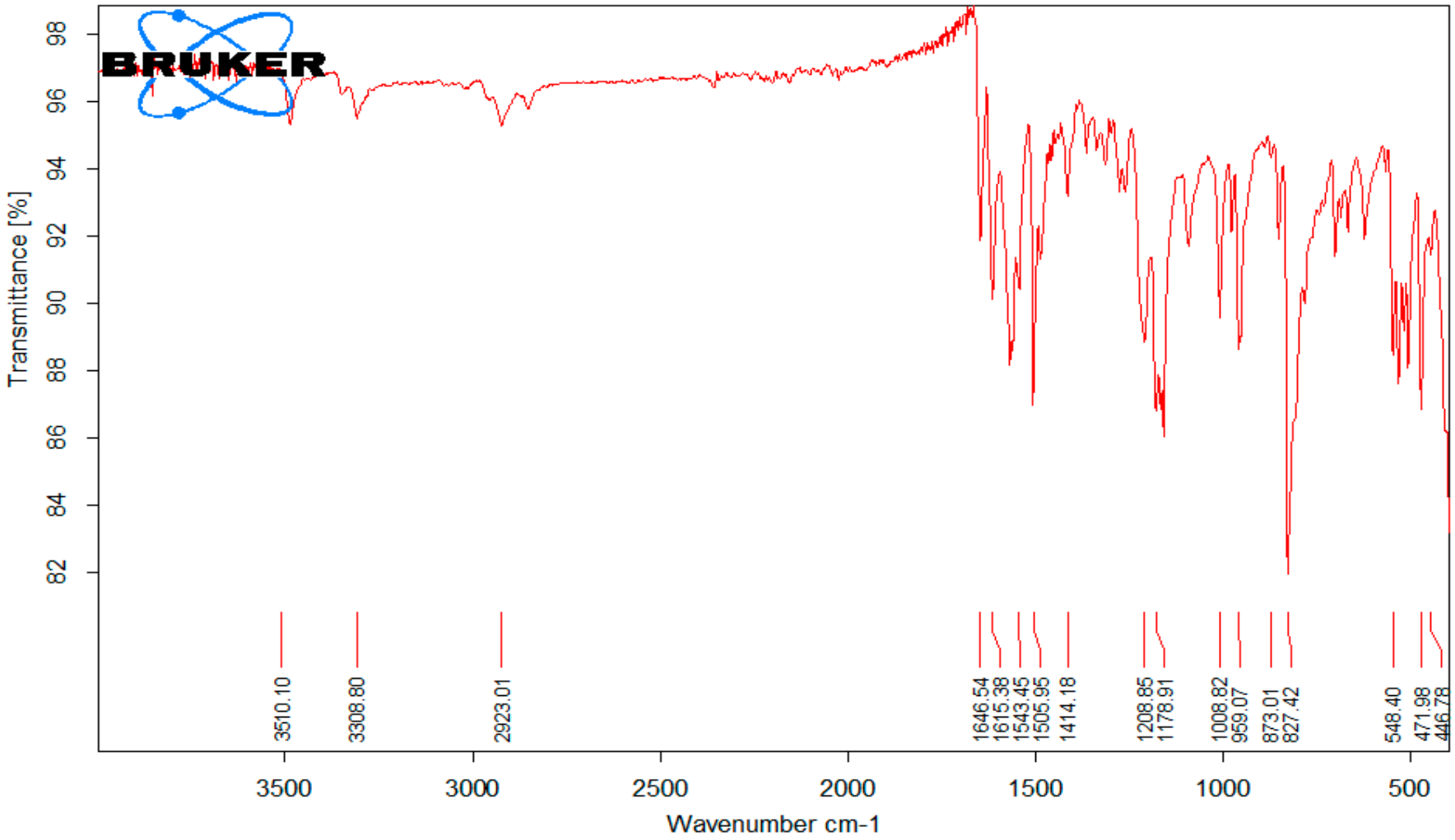


Figure S2.12: FT-IR spectrum of 3h.

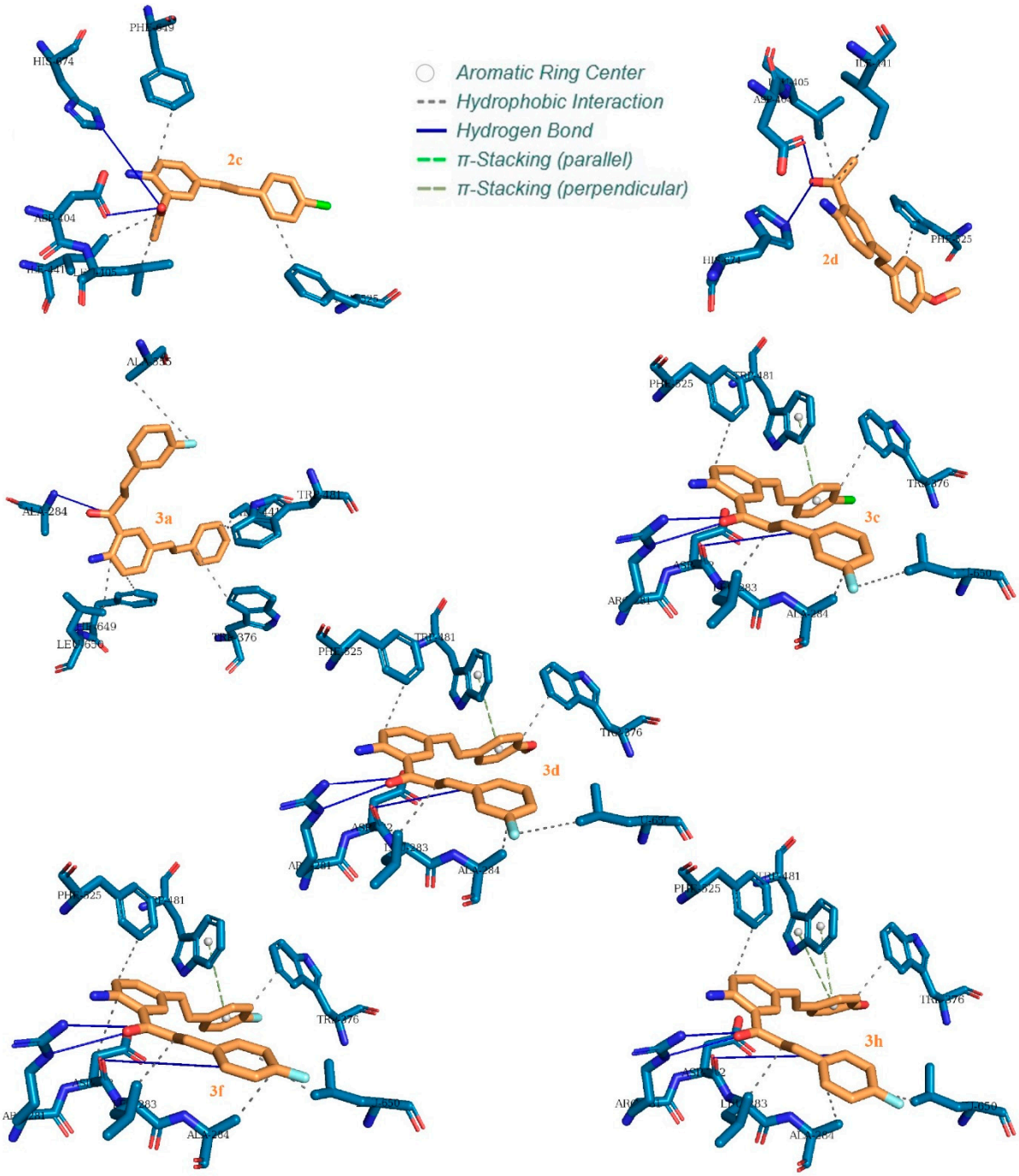


Figure S3. The interactions of compounds **2c, 2d**, **3a**, **3c**, **3d**, **3f** and **3h** against α-glucosidase.

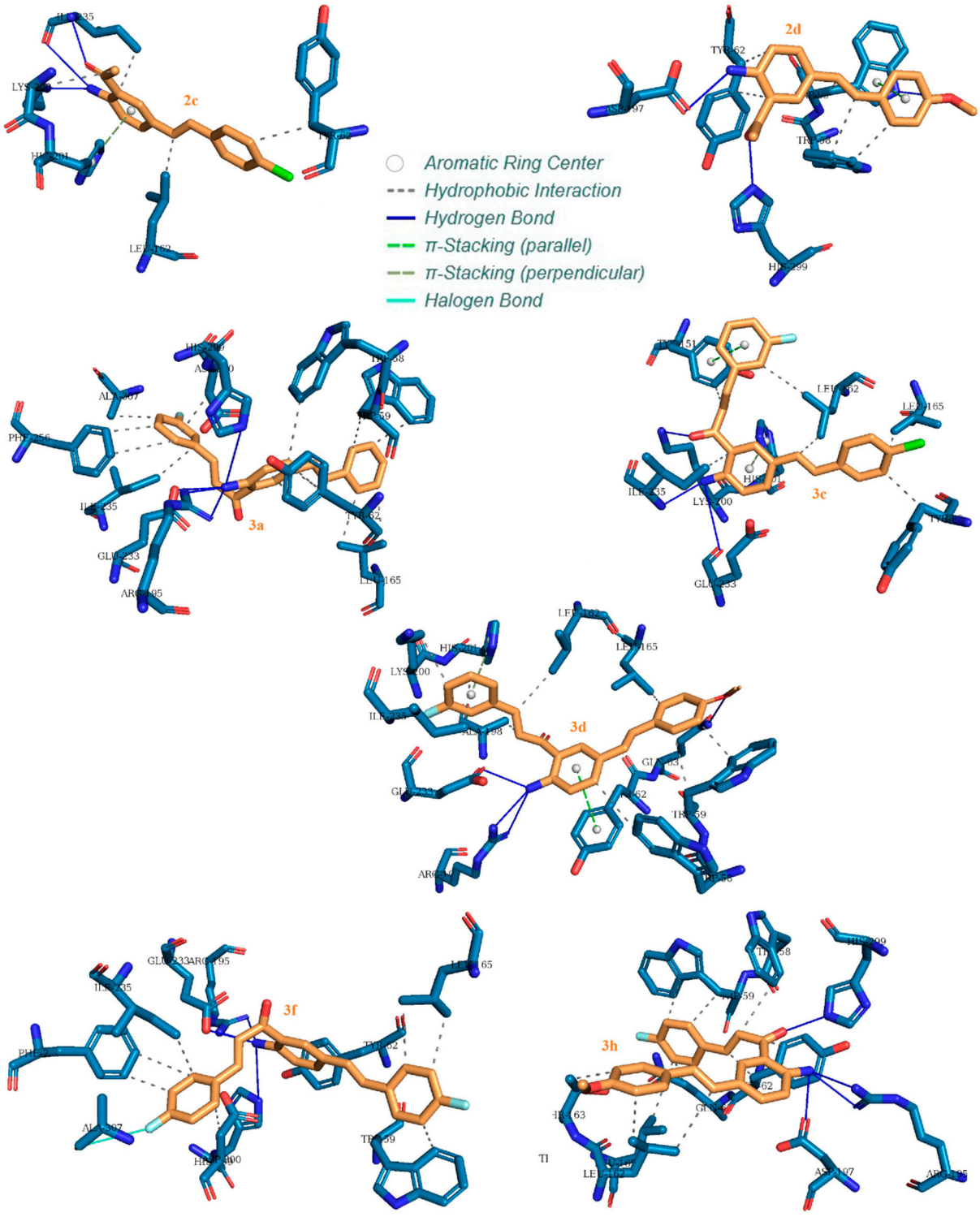


Figure S4. The interactions of compounds **2c, 2d**, **3a**, **3c**, **3d**, **3f** and **3h** against α-amylase.