

Discovery of New Pyrrolo[2,3-d]pyrimidine Derivatives as Potential Multi-Targeted Kinase Inhibitors and Apoptosis Inducers

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Department of Pharmaceutical Chemistry, College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia

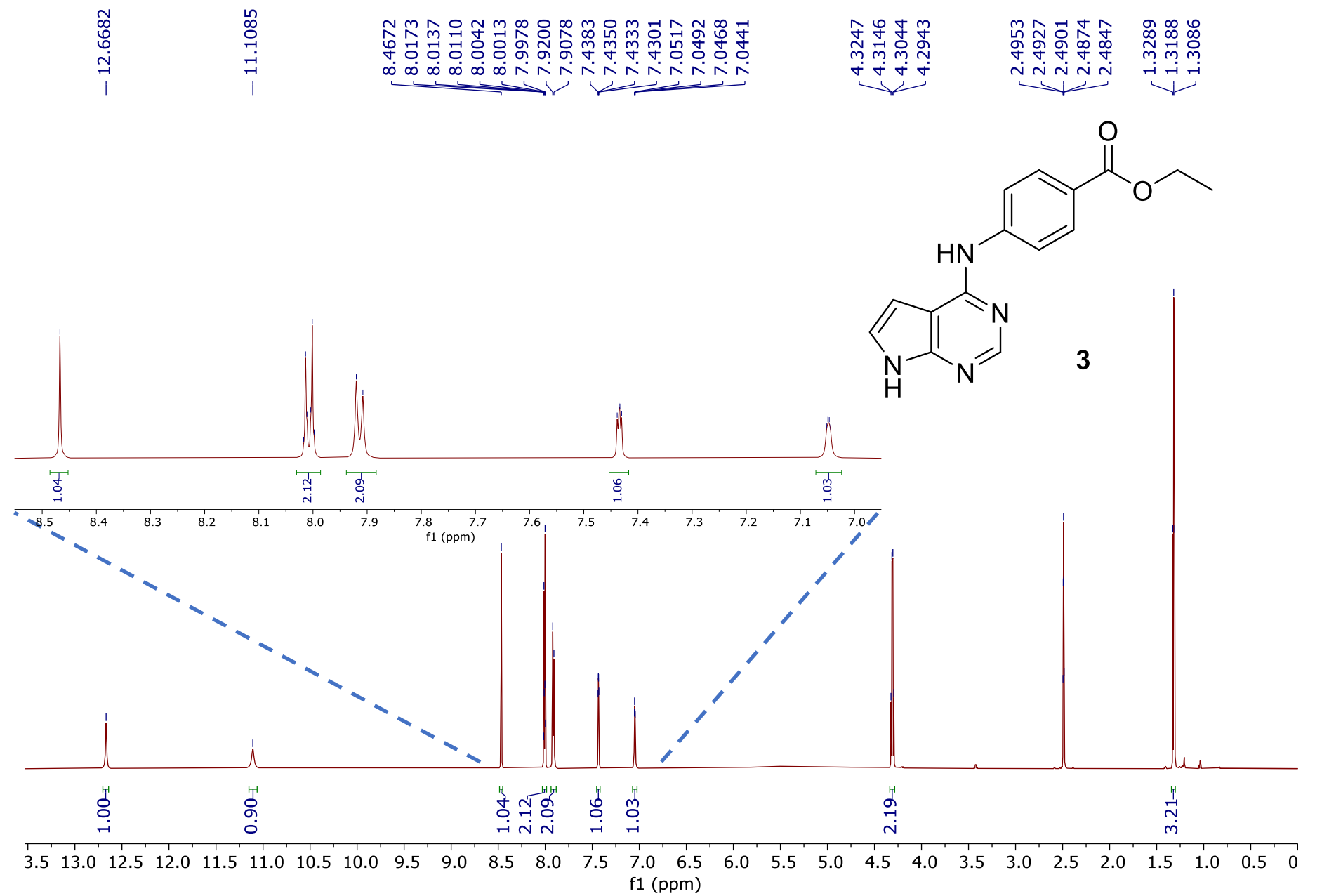
*Corresponding Authors: mmalanazi@ksu.edu.sa ;
afmrahman@ksu.edu.sa

[†]These authors contributed equally to this work

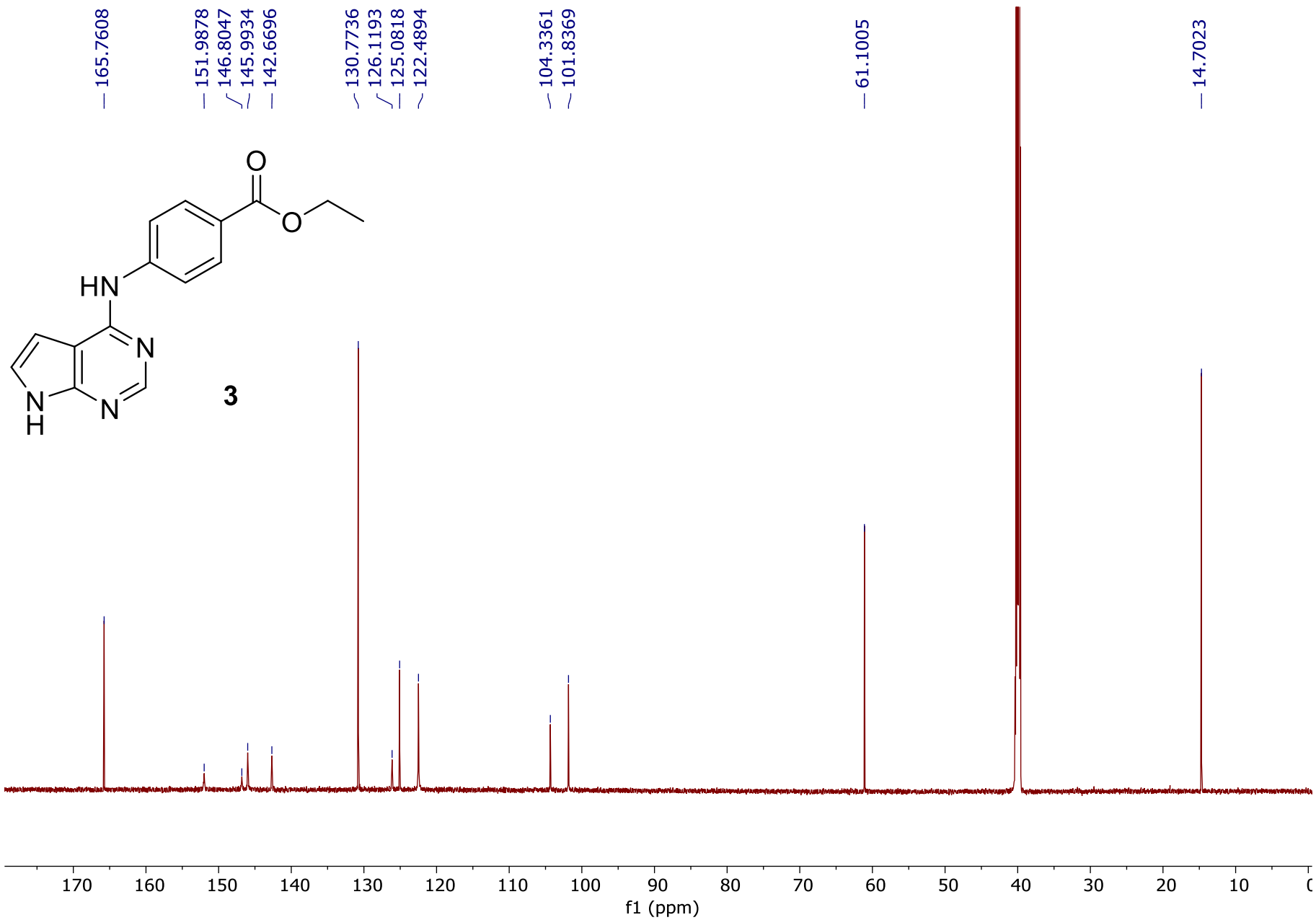
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5j	Mass spectra of 5j	51			
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5k	¹ H-NMR spectra of 5k	53			
5k	¹³ C-NMR spectra of 5k	54			
5k	Mass spectra of 5k	55			

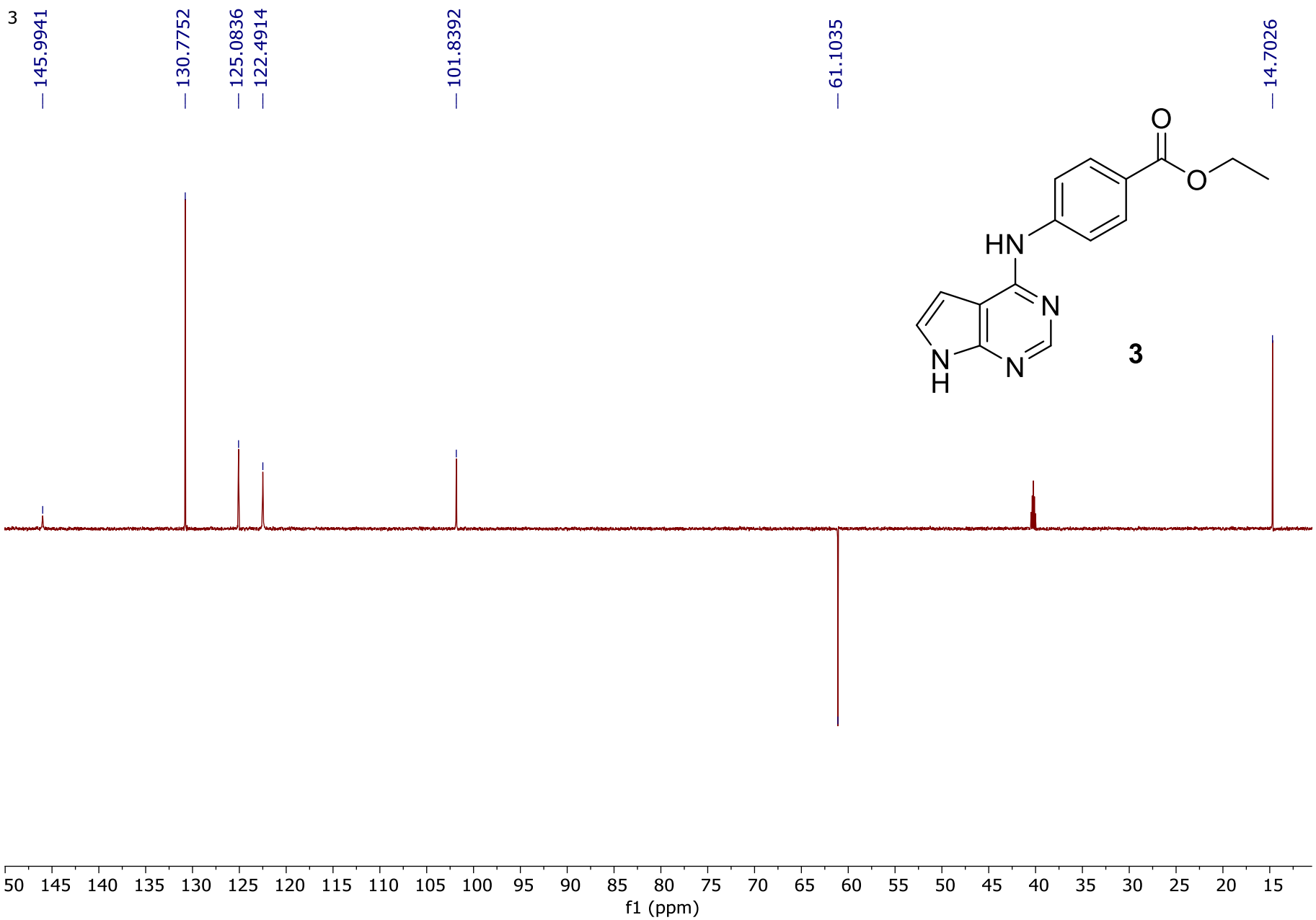
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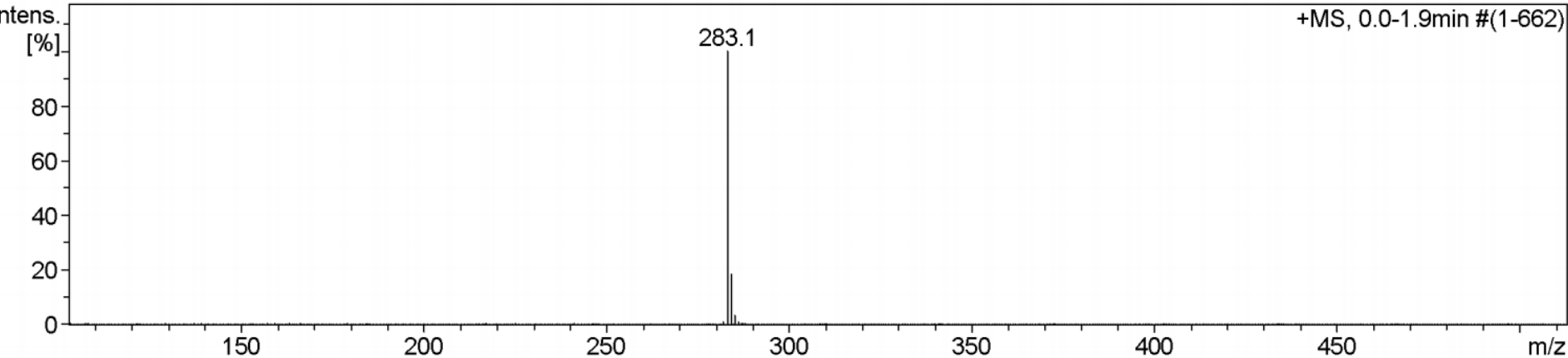
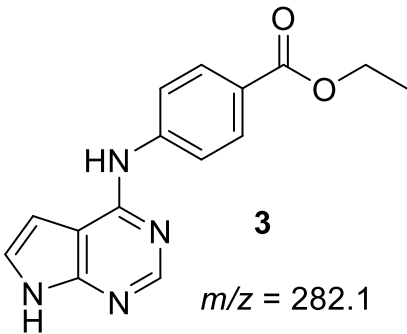
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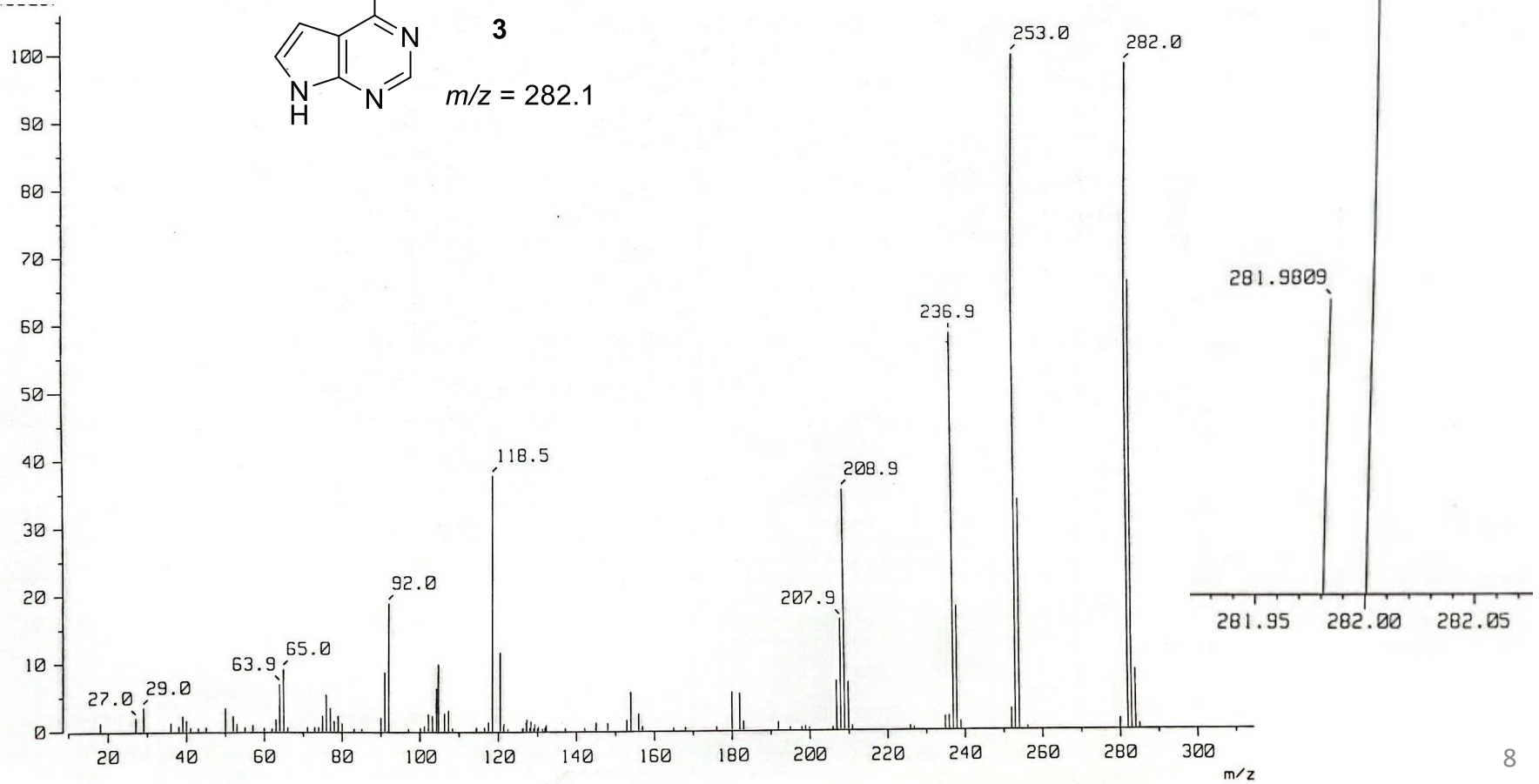
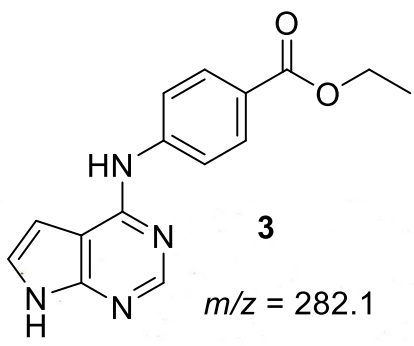
¹³C-NMR (DEPT135) spectra of 3



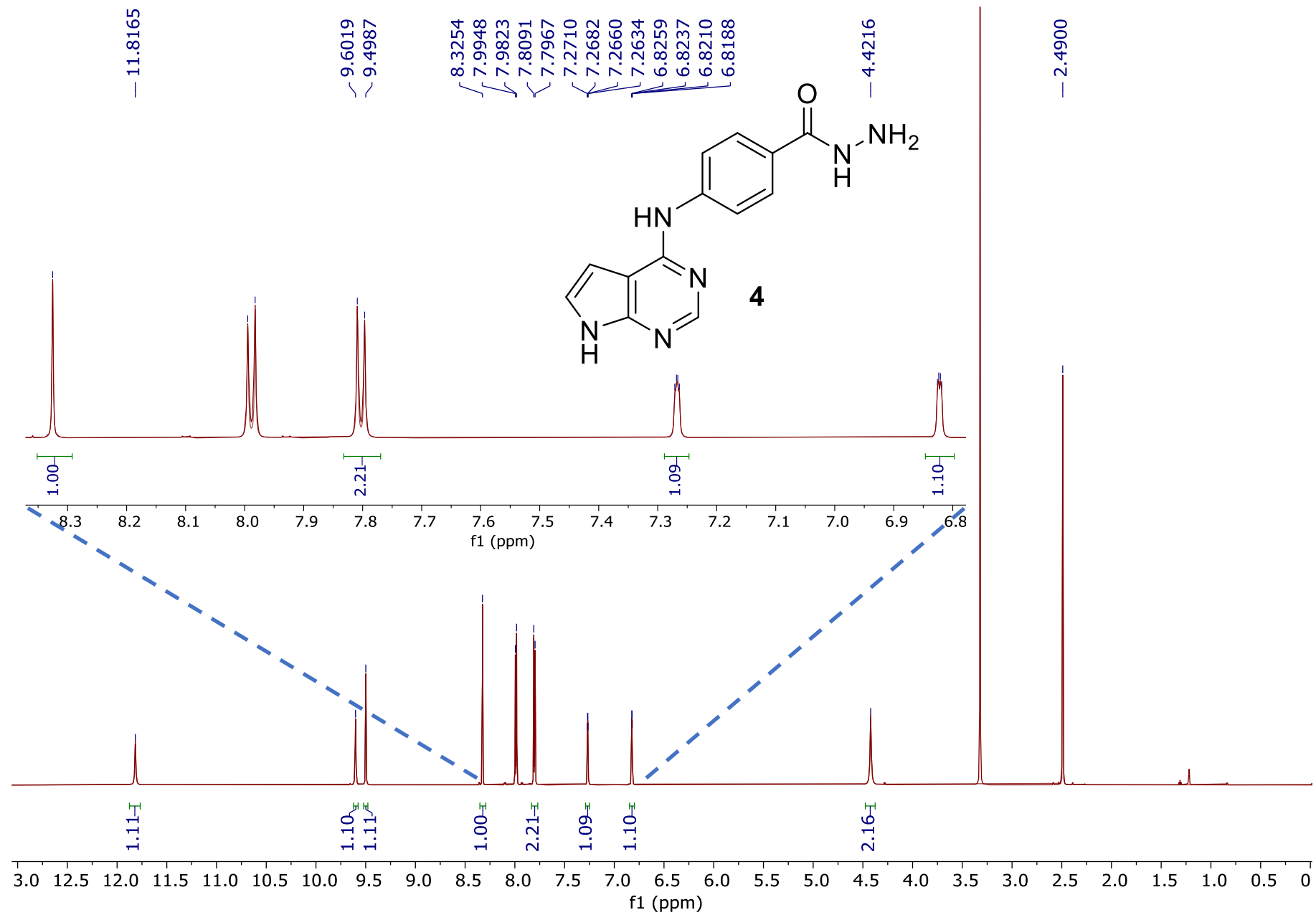
Mass spectra of **3**



HMRS Mass spectra of **3**

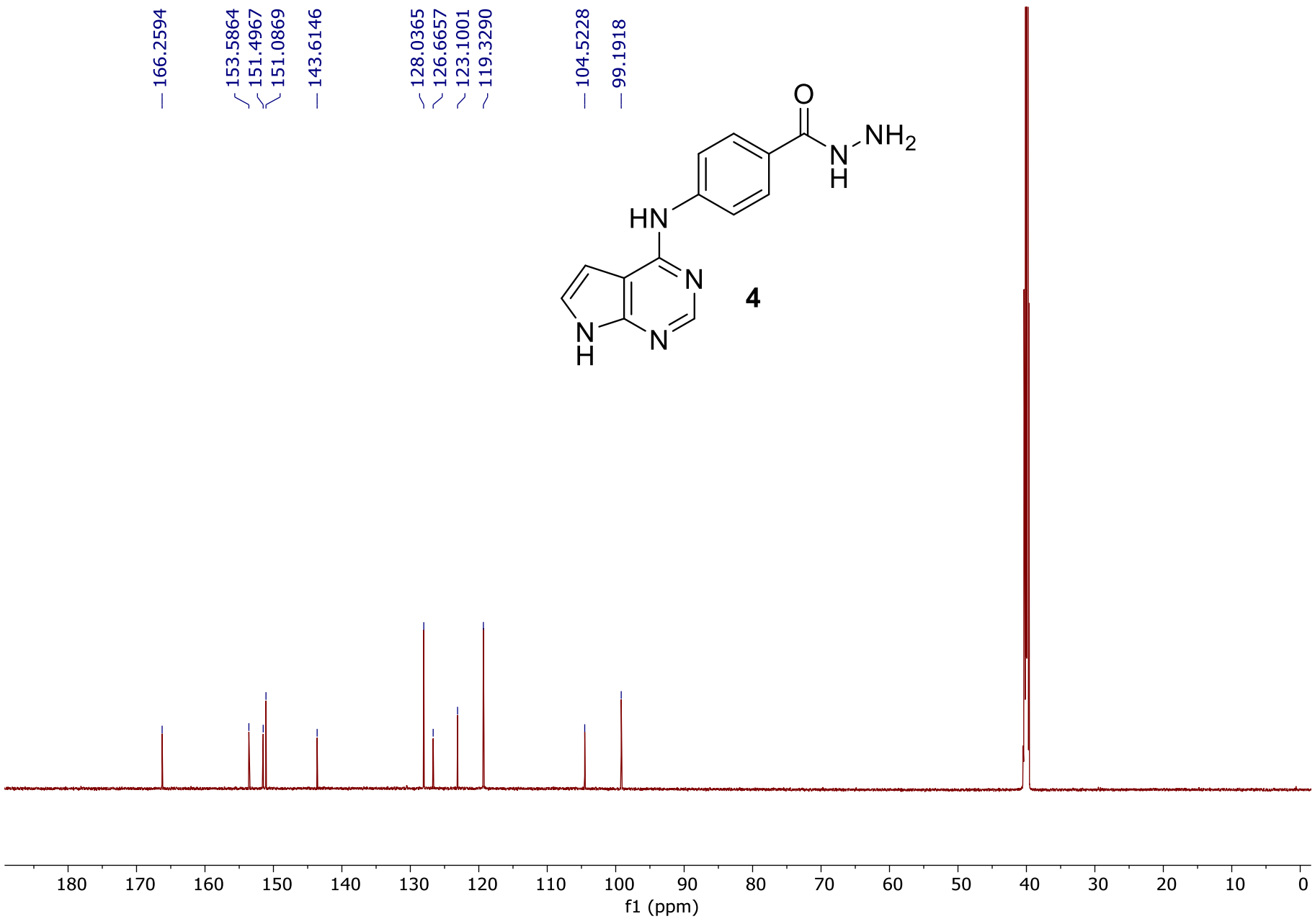
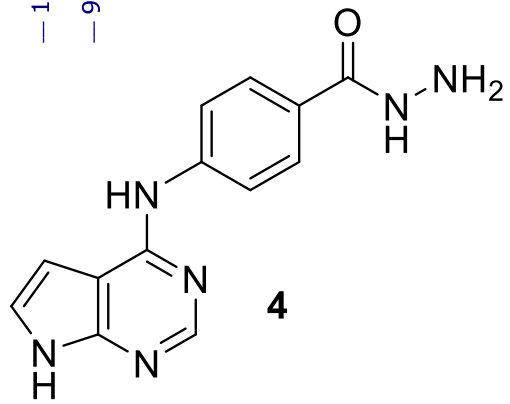


¹H-NMR spectra of **4**

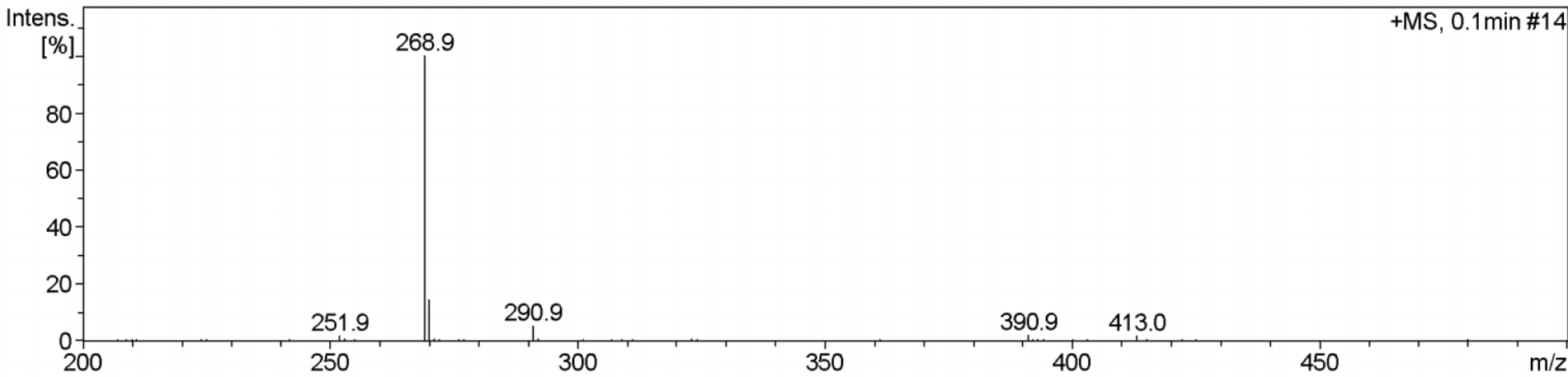
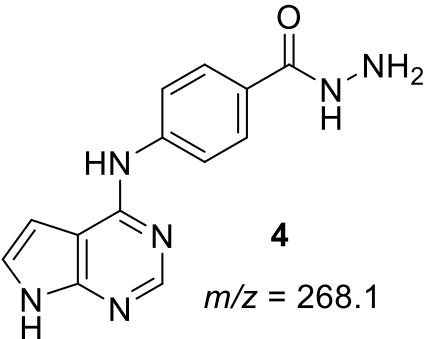


¹³C-NMR spectra of **4**

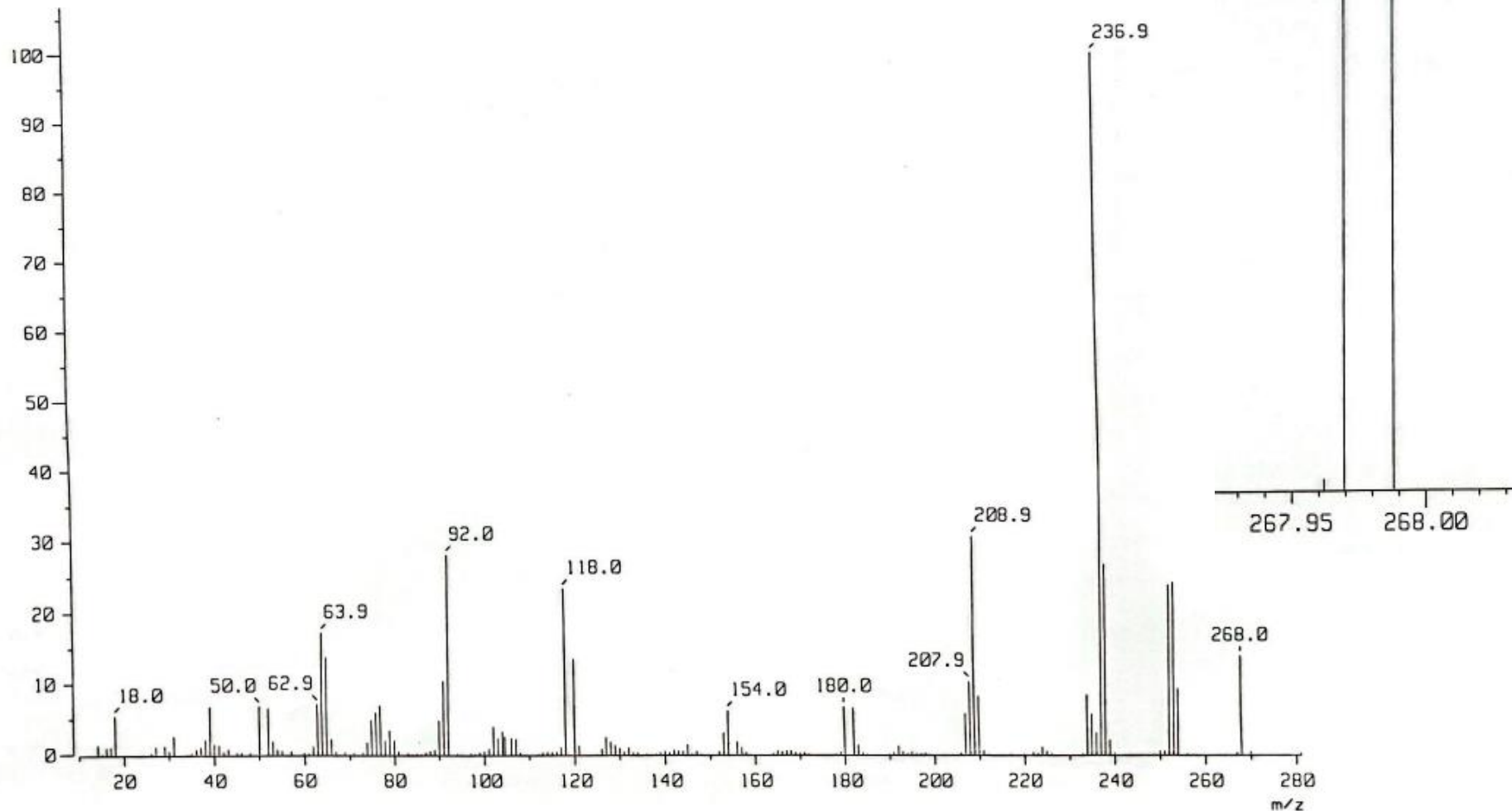
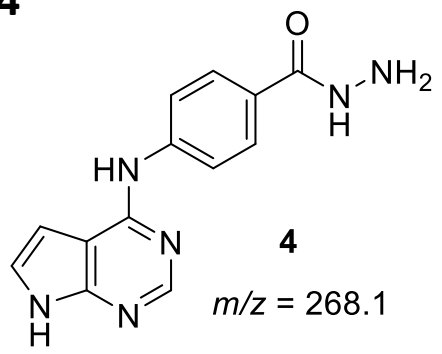
- 166.2594
- ~ 153.5864
- ~ 151.4967
- ~ 151.0869
- 143.6146
- ~ 128.0365
- ~ 126.6657
- ~ 123.1001
- ~ 119.3290
- 104.5228
- 99.1918



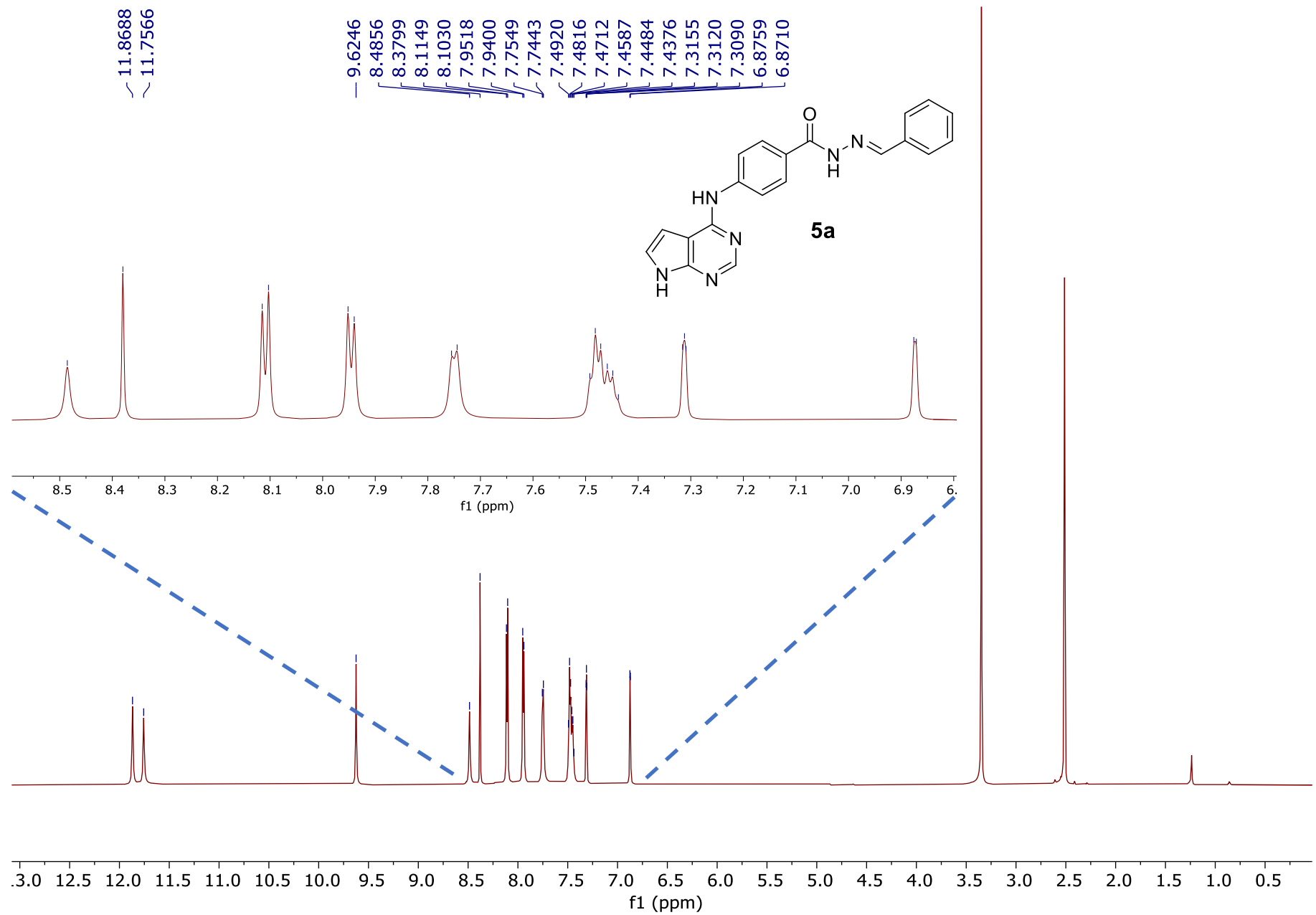
Mass spectra of **4**



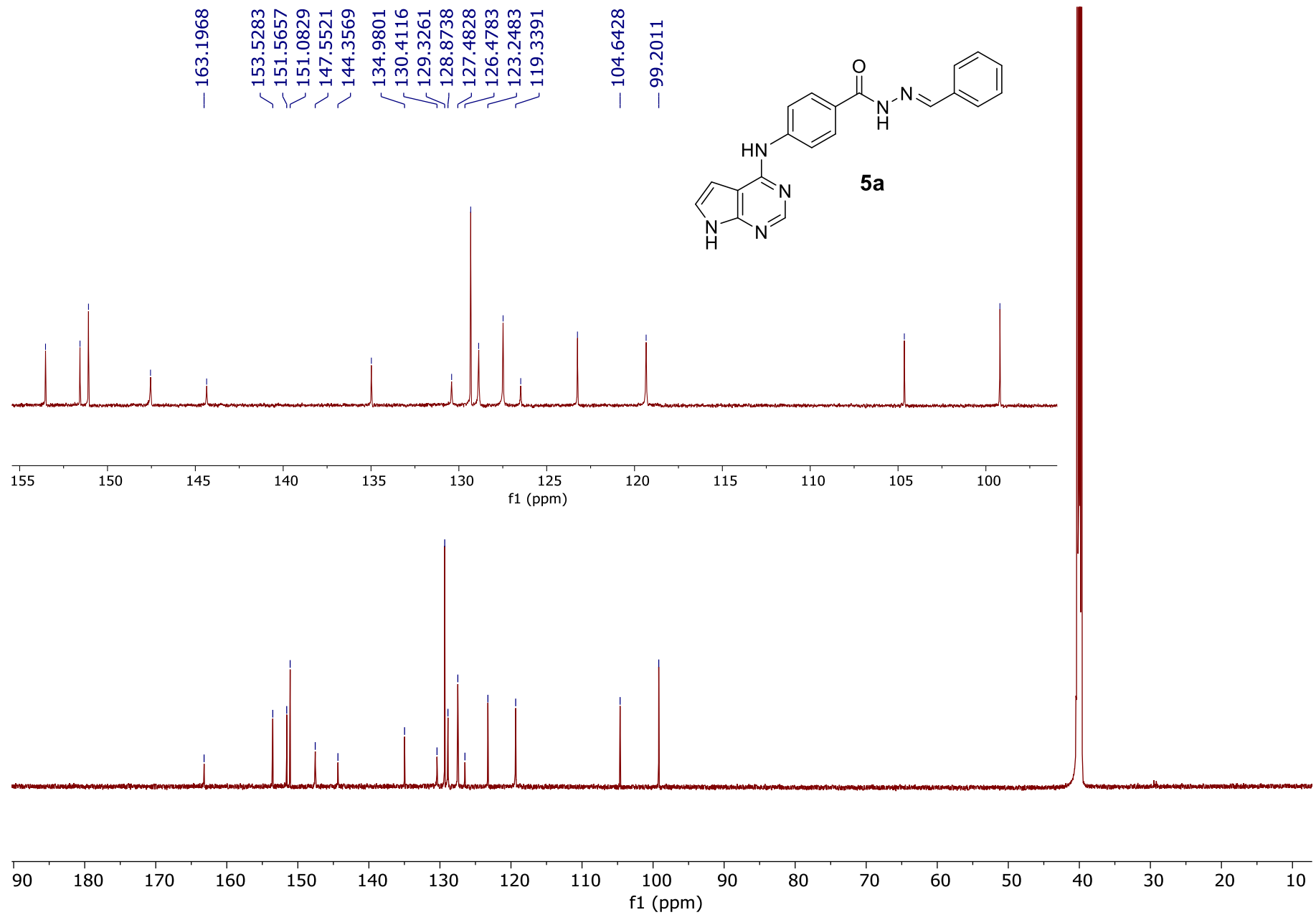
HMRS Mass spectra of **4**



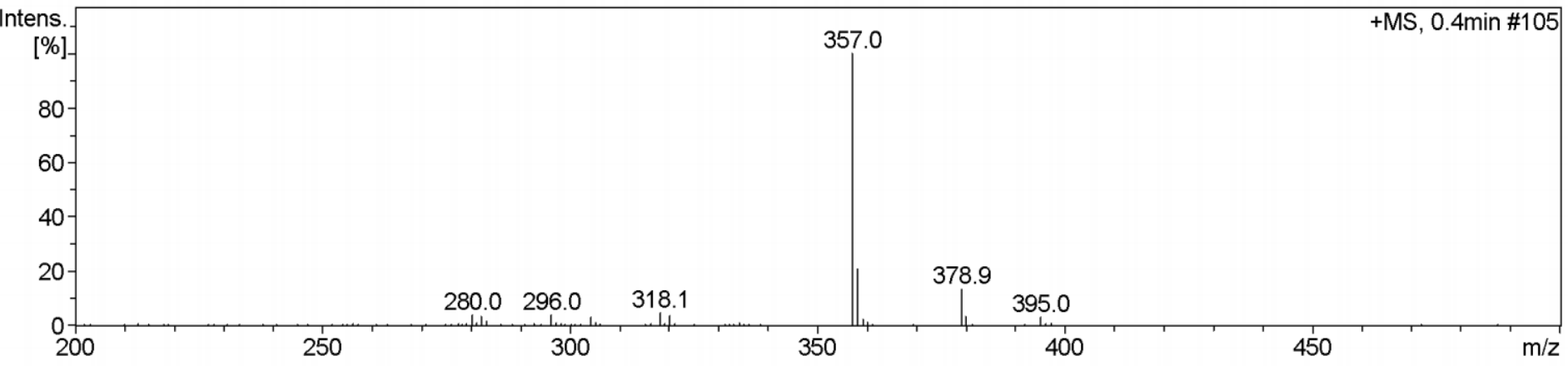
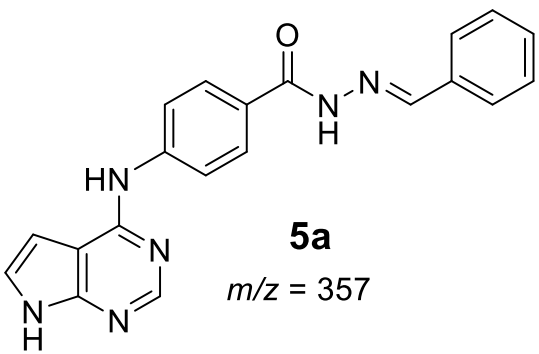
¹H-NMR spectra of **5a**



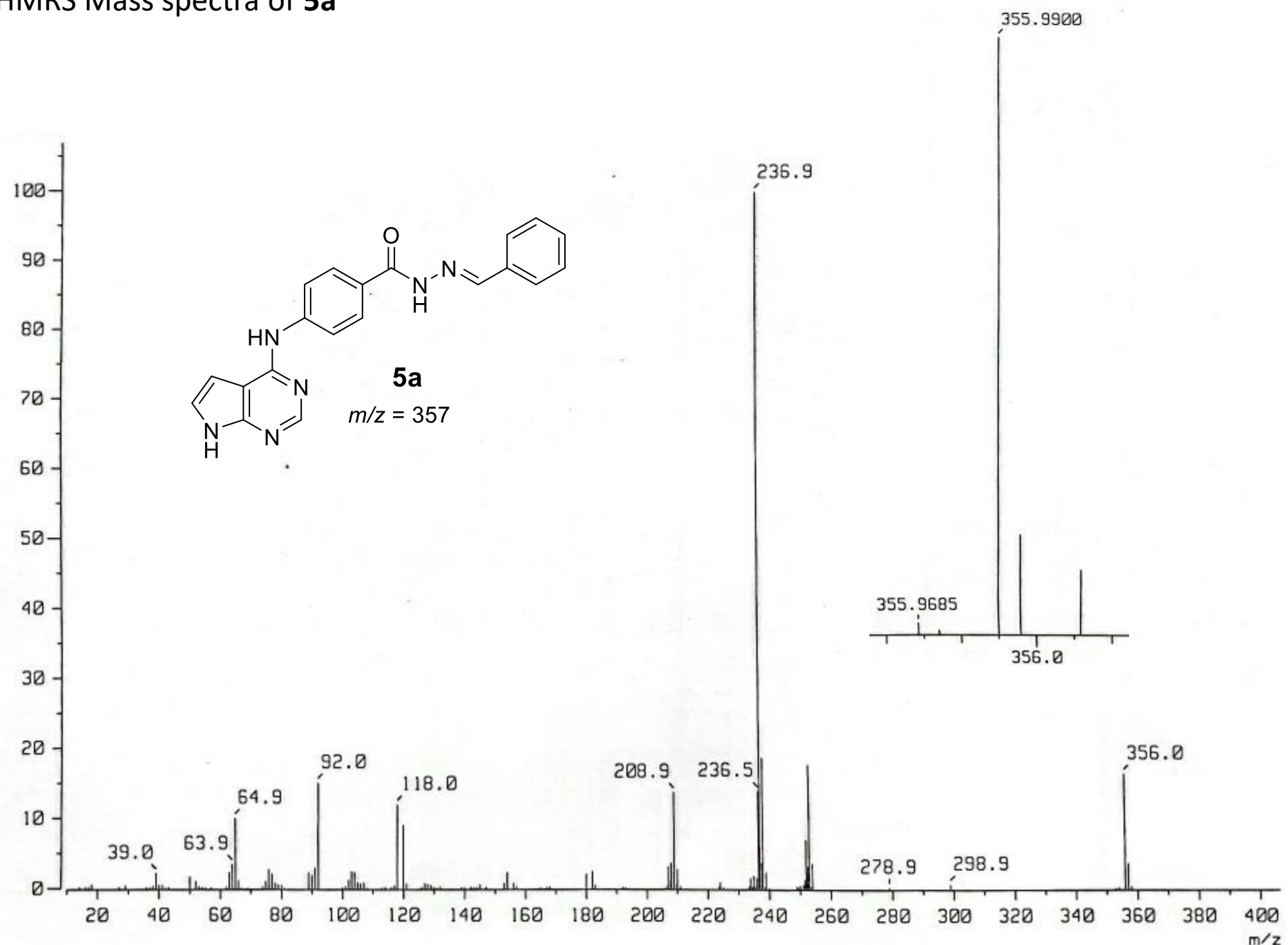
¹³C-NMR spectra of **5a**



Mass spectra of **5a**

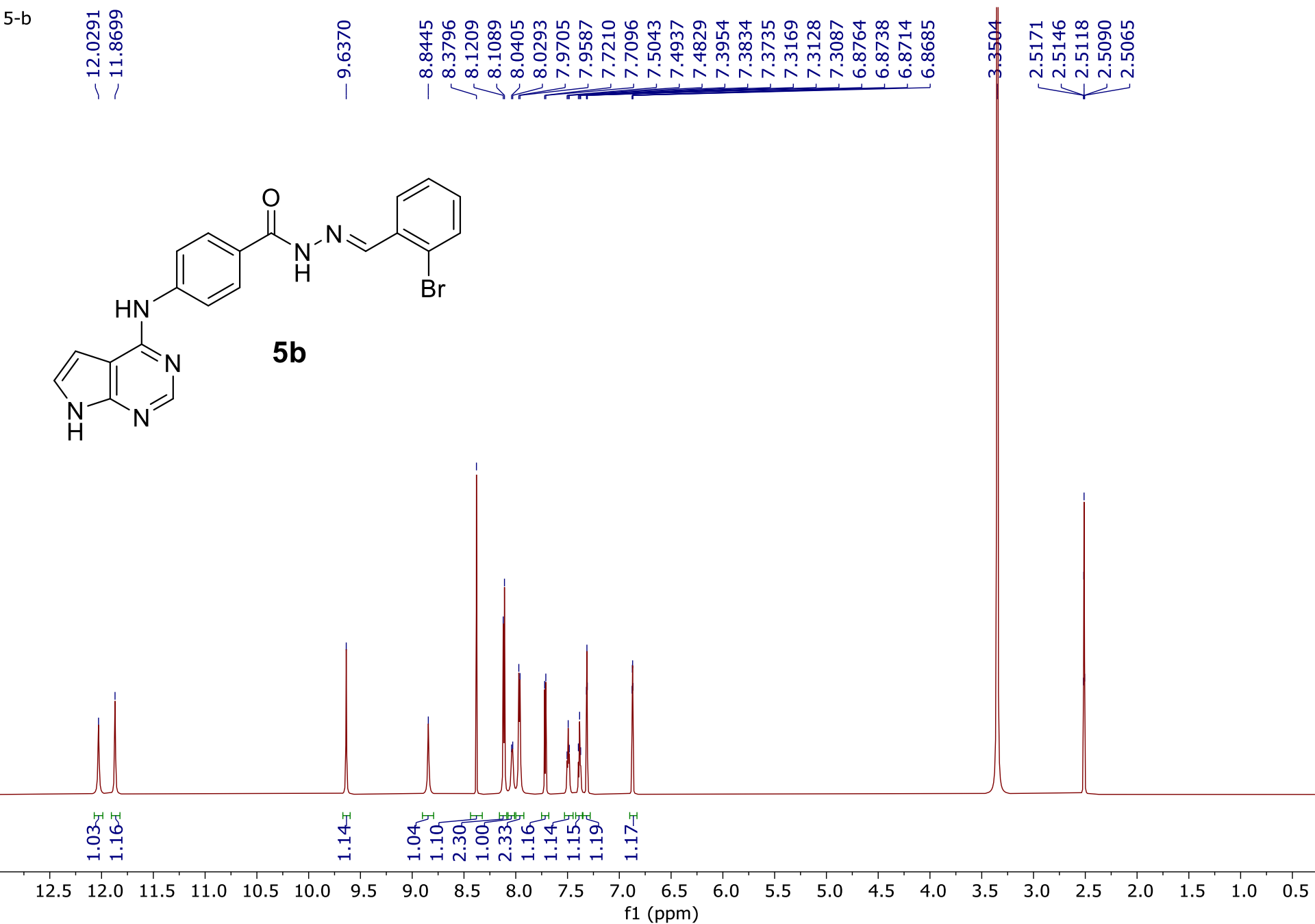
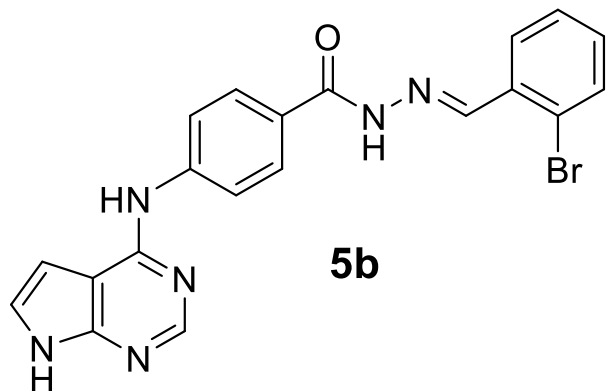


HMRS Mass spectra of **5a**



^1H -NMR spectra of **5b**

5-b

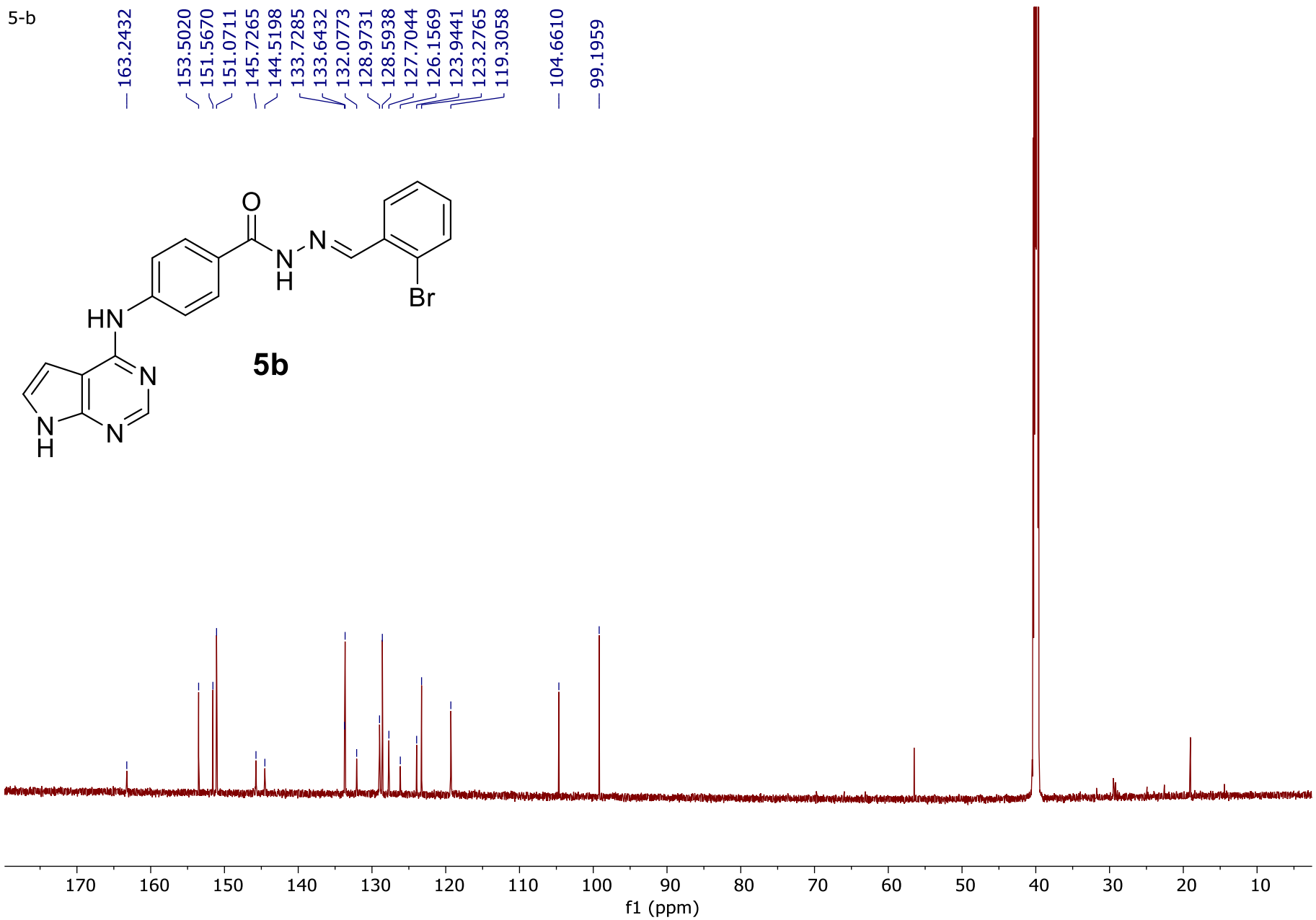
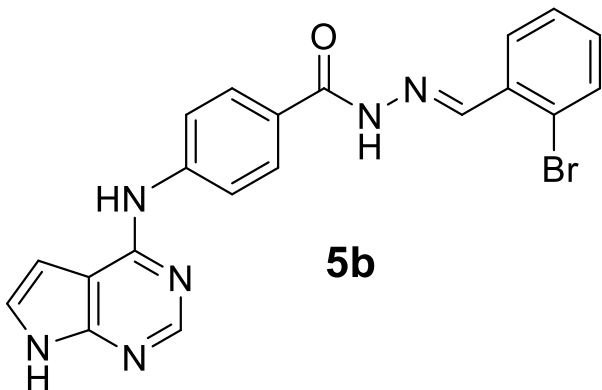


¹³C-NMR spectra of **5b**

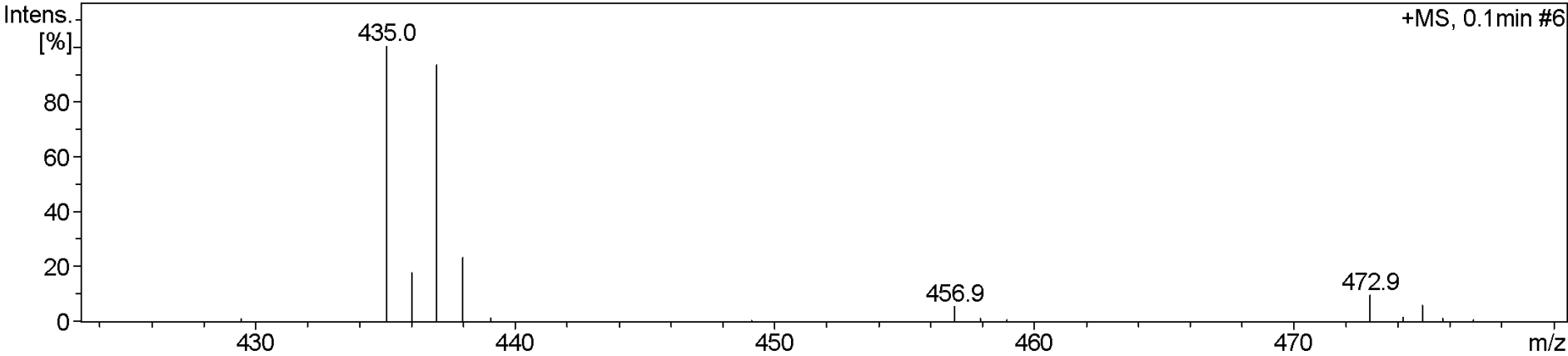
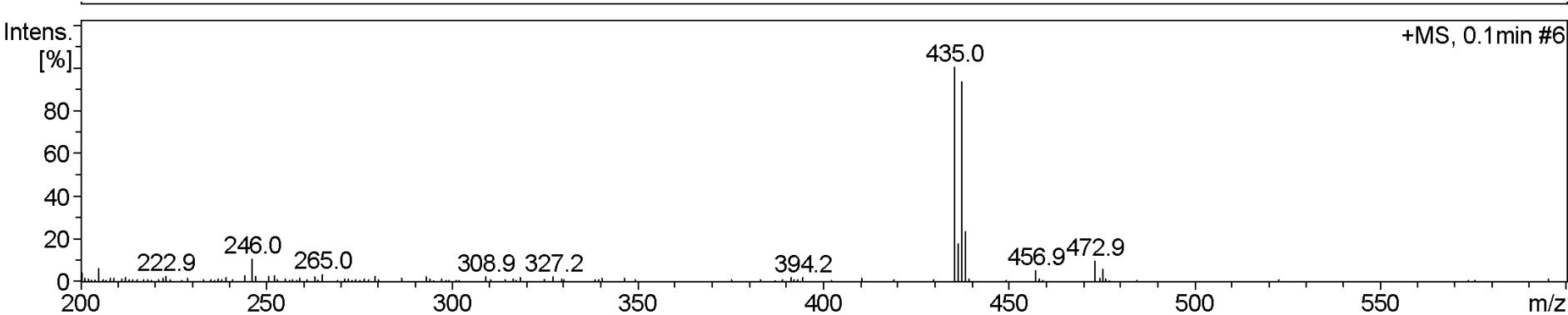
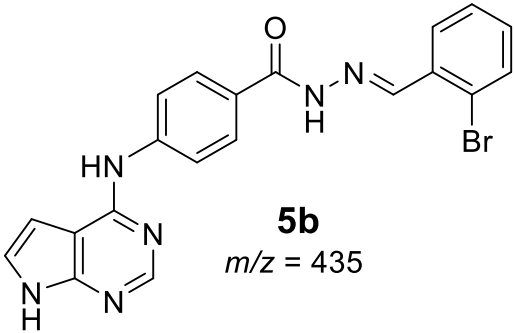
5-b

— 163.2432
— 153.5020
— 151.5670
— 151.0711
— 145.7265
— 144.5198
— 133.7285
— 133.6432
— 132.0773
— 128.9731
— 128.5938
— 127.7044
— 126.1569
— 123.9441
— 123.2765
— 119.3058

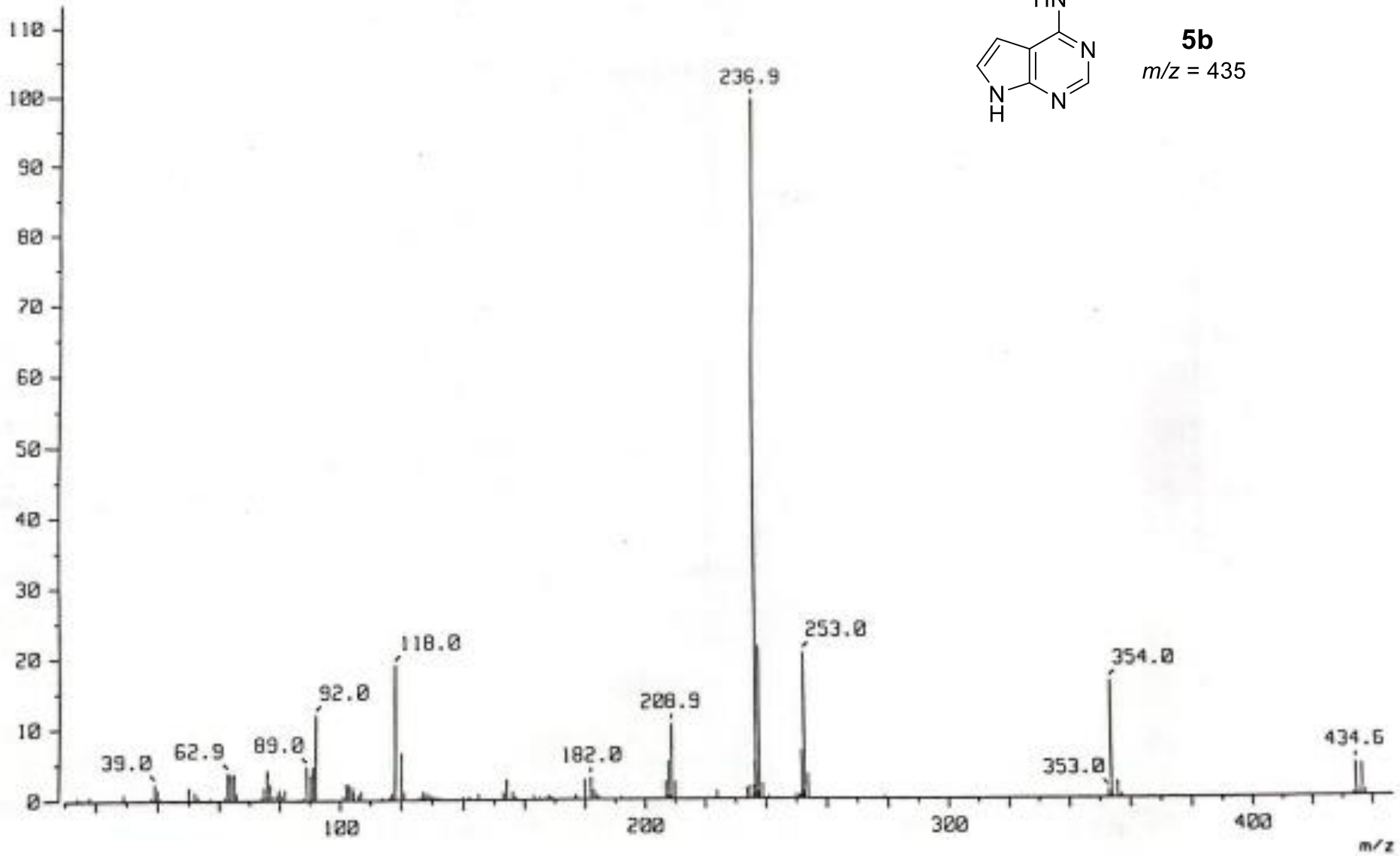
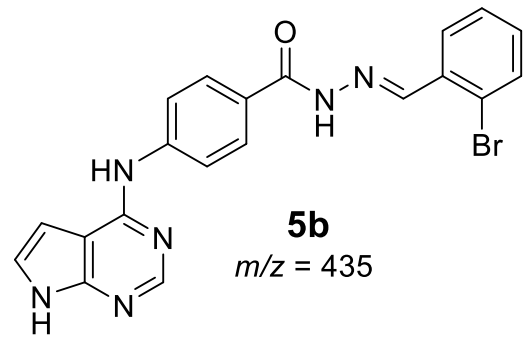
— 104.6610
— 99.1959



Mass spectra of **5b**

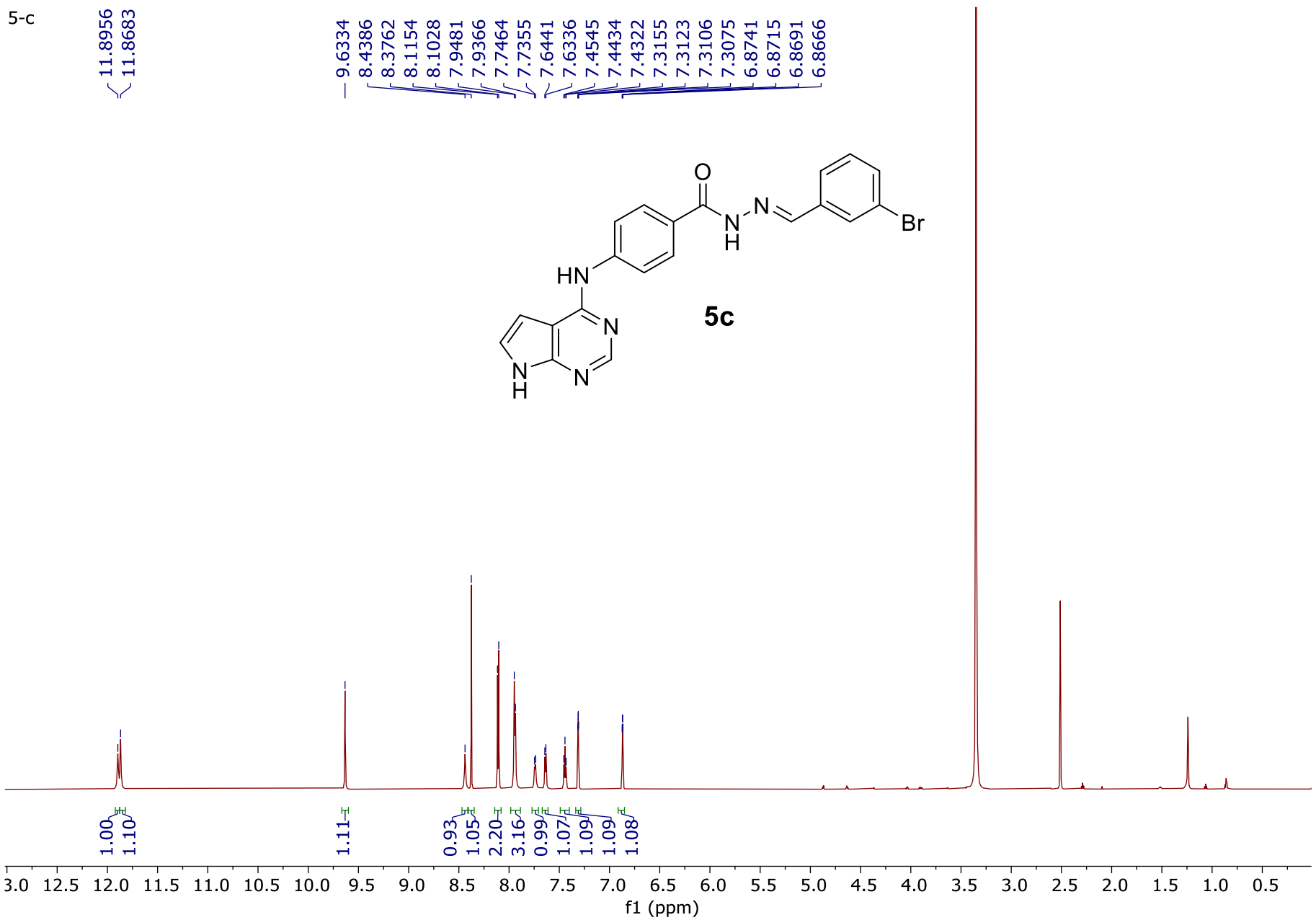


HMRS Mass spectra of **5b**



¹H-NMR spectra of **5c**

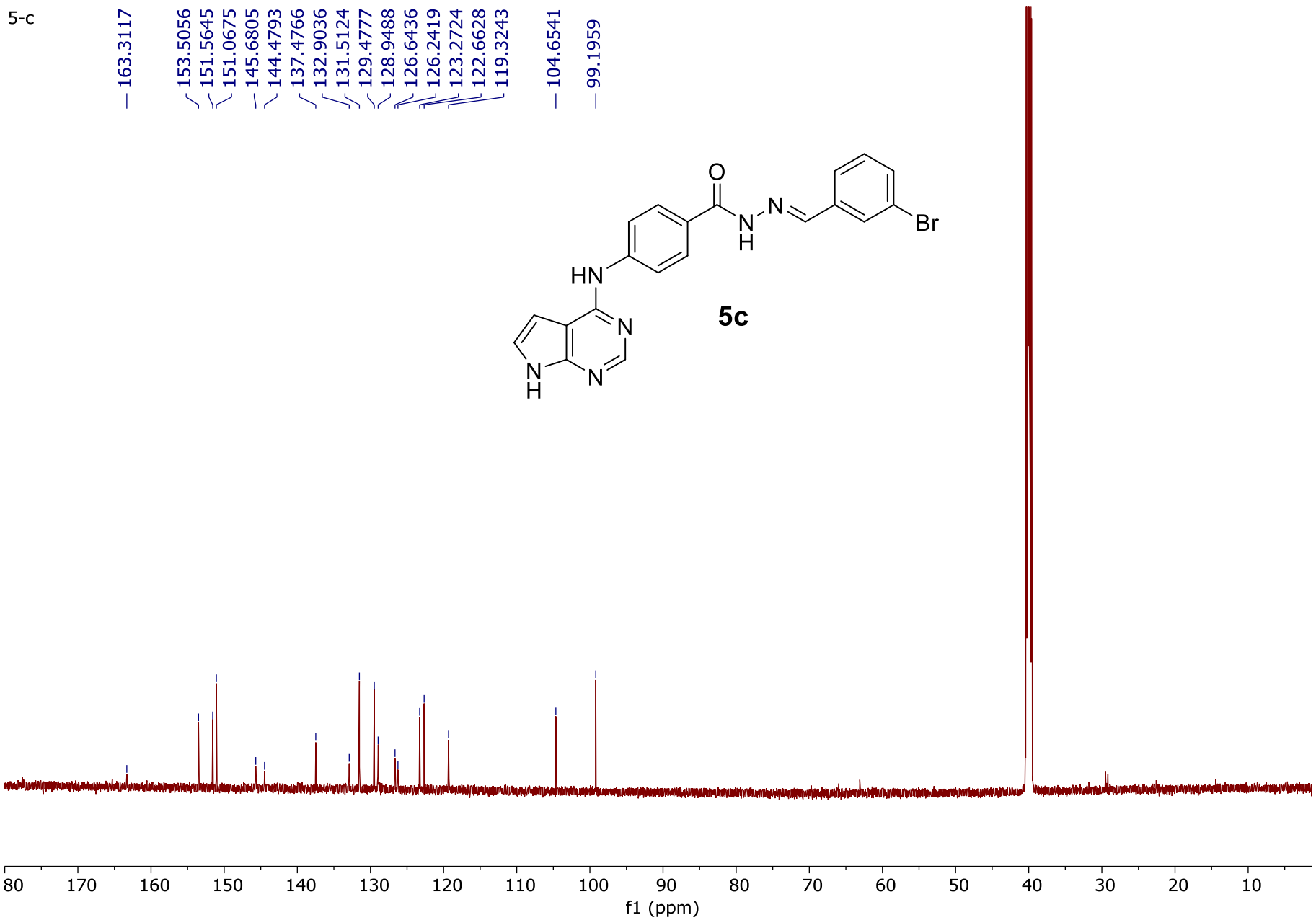
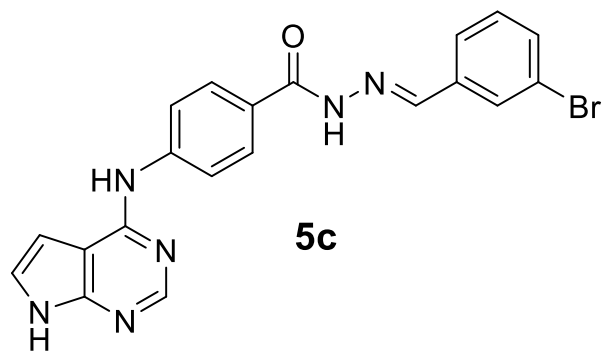
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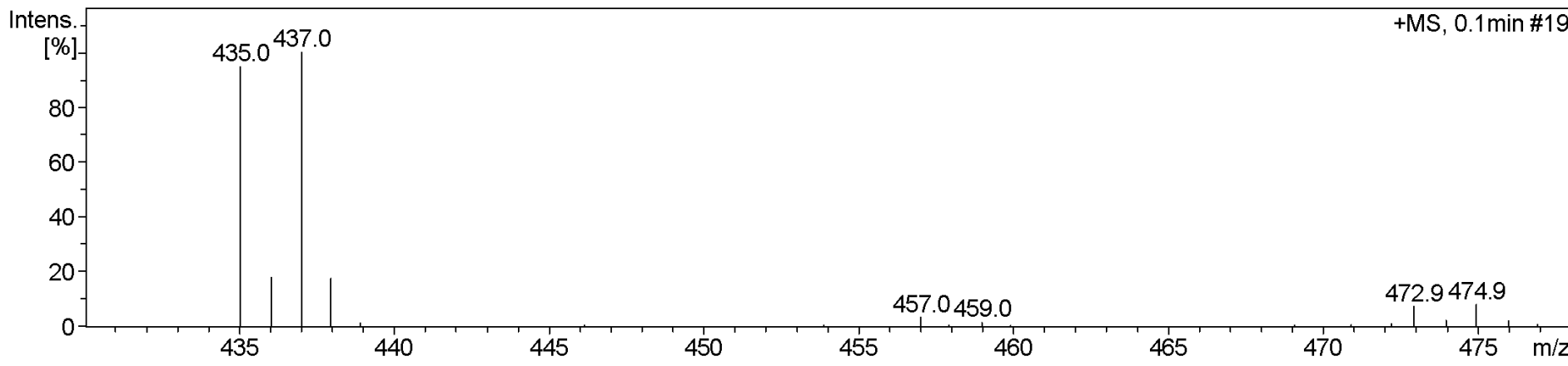
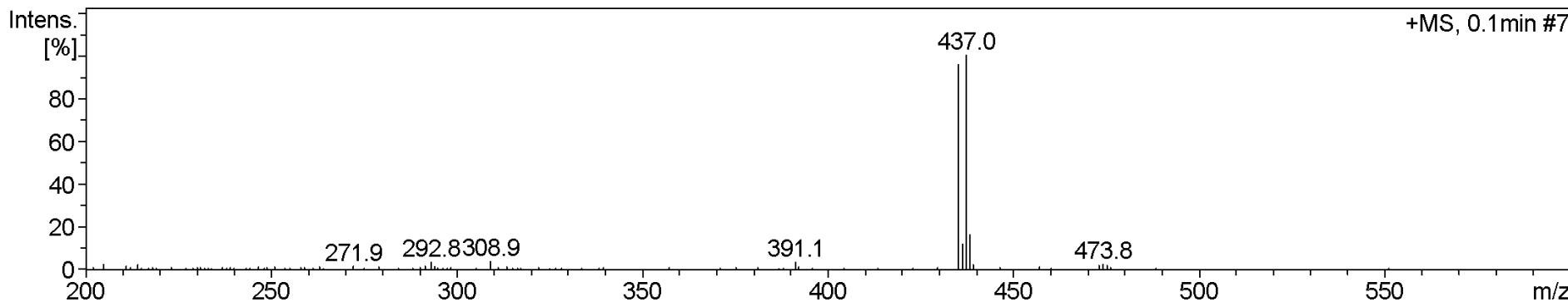
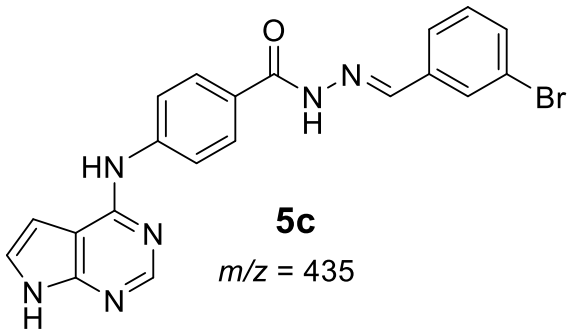
¹³C-NMR spectra of **5c**

5-c

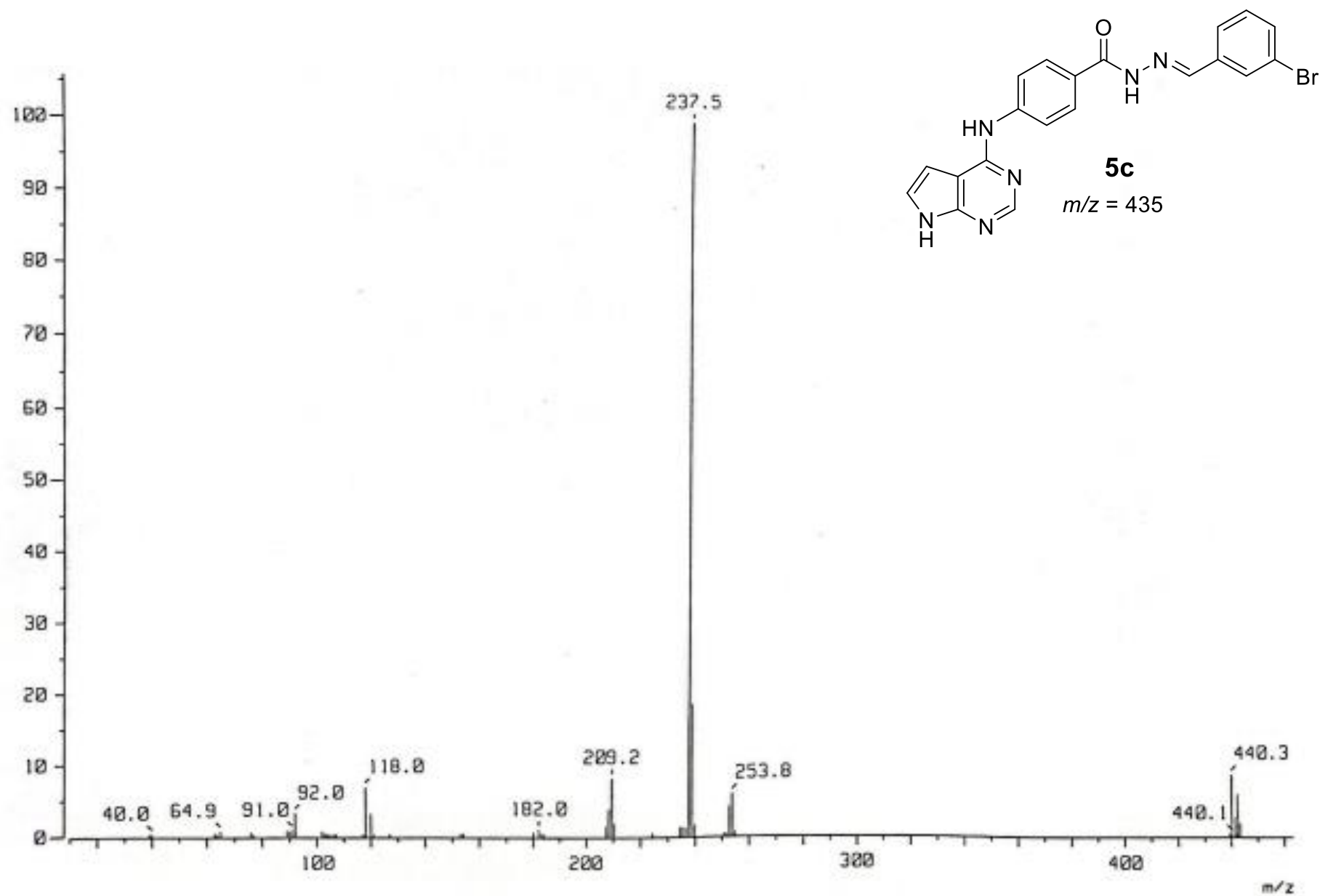
- 163.3117
- 153.5056
- 151.5645
- 151.0675
- 145.6805
- 144.4793
- 137.4766
- 132.9036
- 131.5124
- 129.4777
- 128.9488
- 126.6436
- 126.2419
- 123.2724
- 122.6628
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- 104.6541
- 99.1959



Mass spectra of **5c**

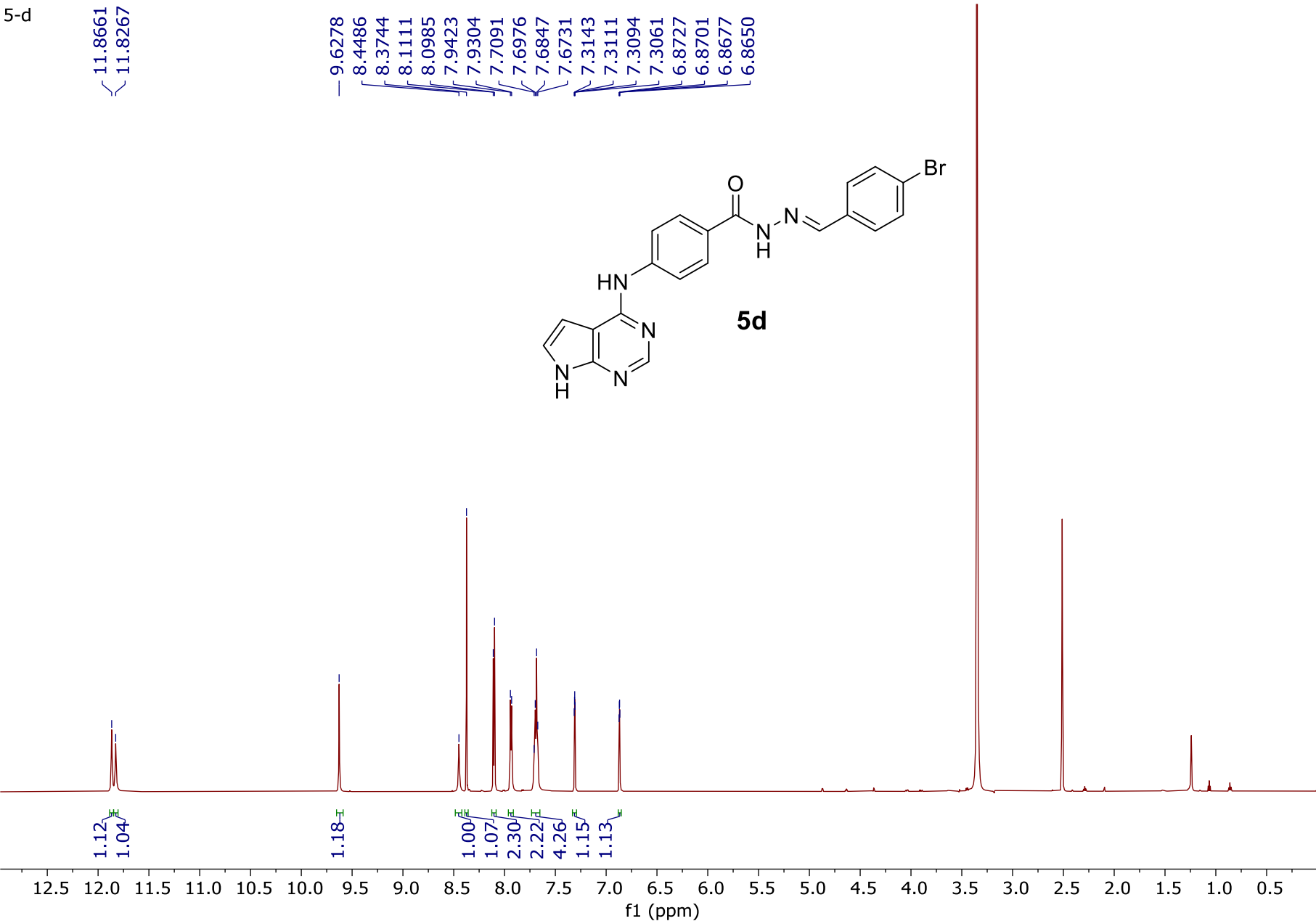


HMRS Mass spectra of **5c**



¹H-NMR spectra of **5d**

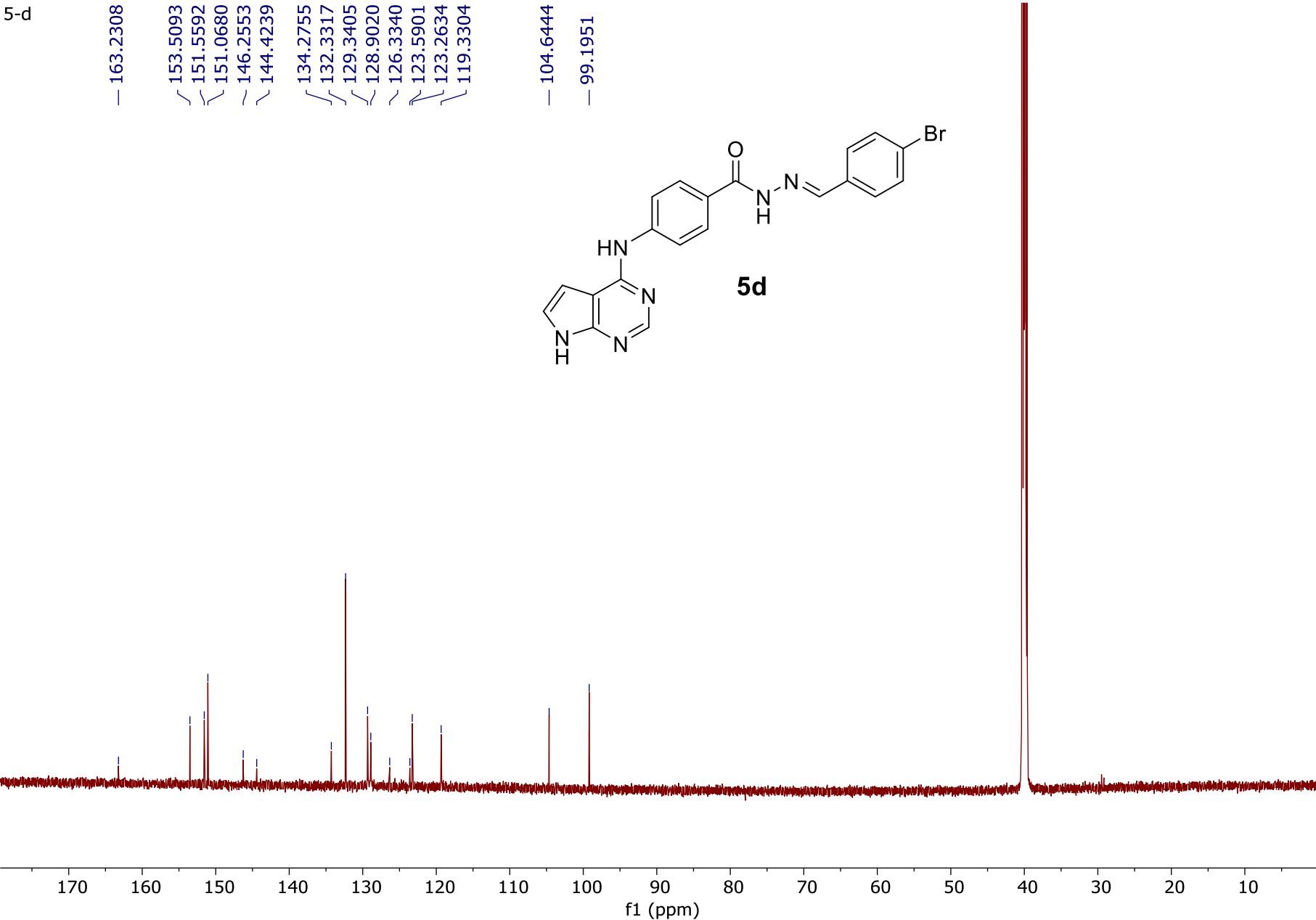
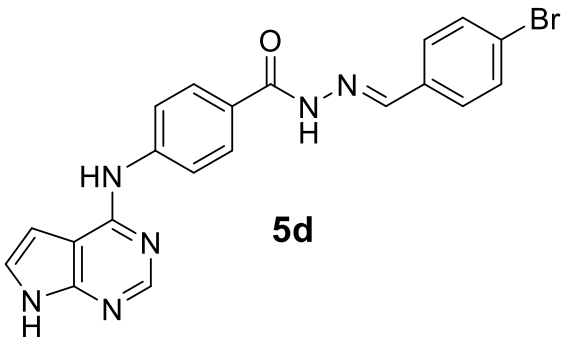
5-d



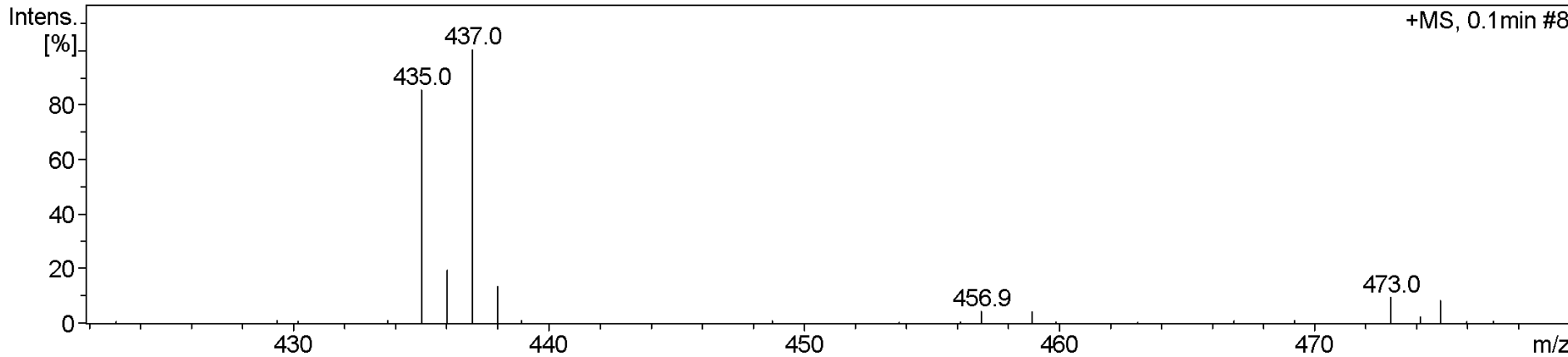
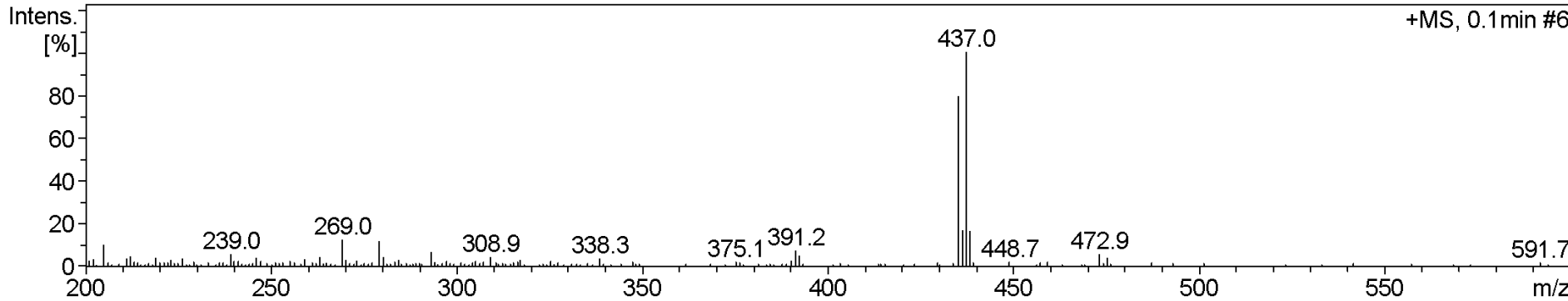
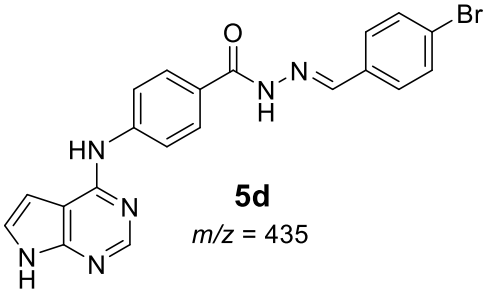
¹³C-NMR spectra of **5d**

5-d

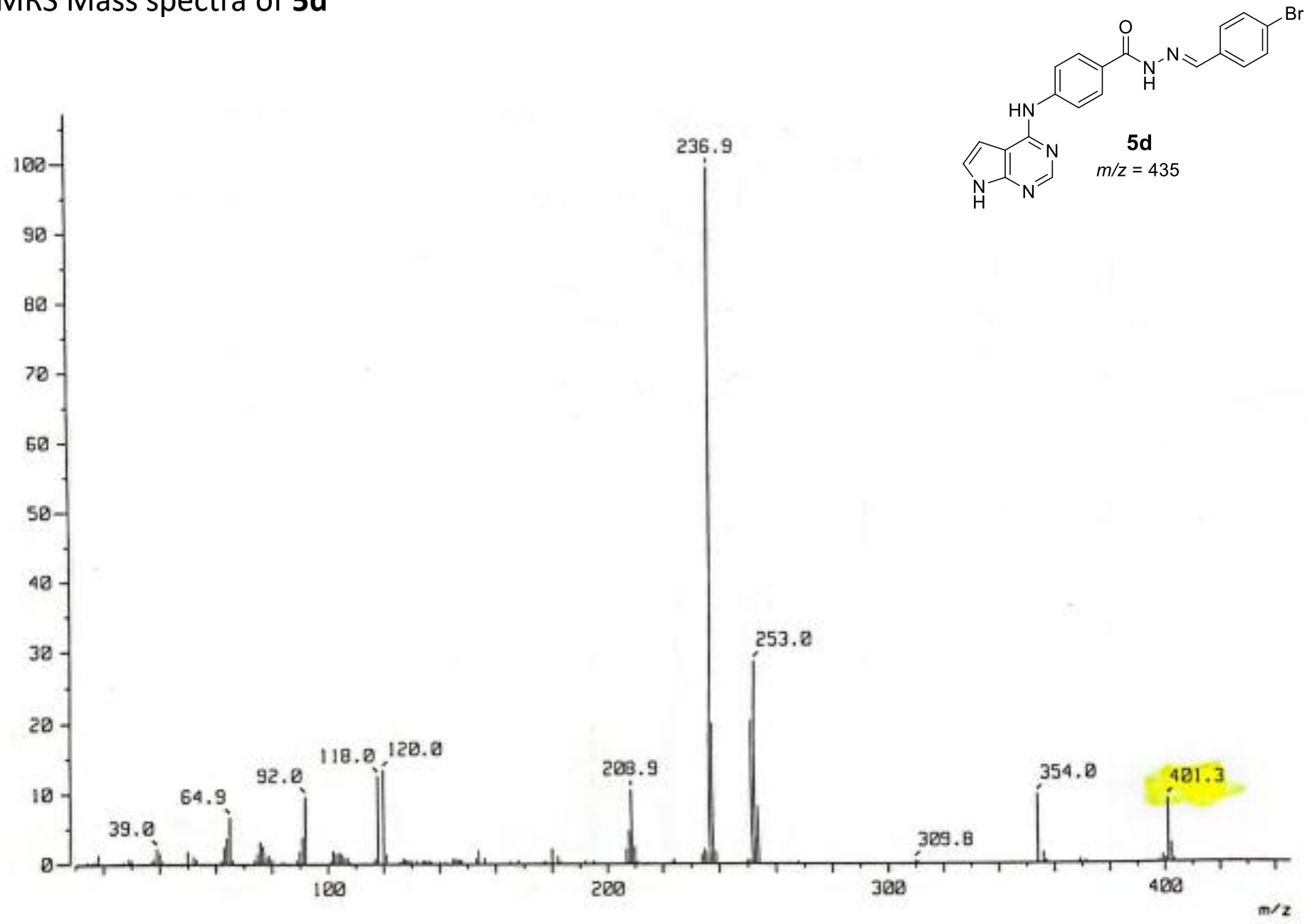
- 163.2308
- 153.5093
- 151.5592
- 151.0680
- 146.2553
- 144.4239
- 134.2755
- 132.3317
- 129.3405
- 128.9020
- 126.3340
- 123.5901
- 123.2634
- 119.3304
- 104.6444
- 99.1951



Mass spectra of **5d**

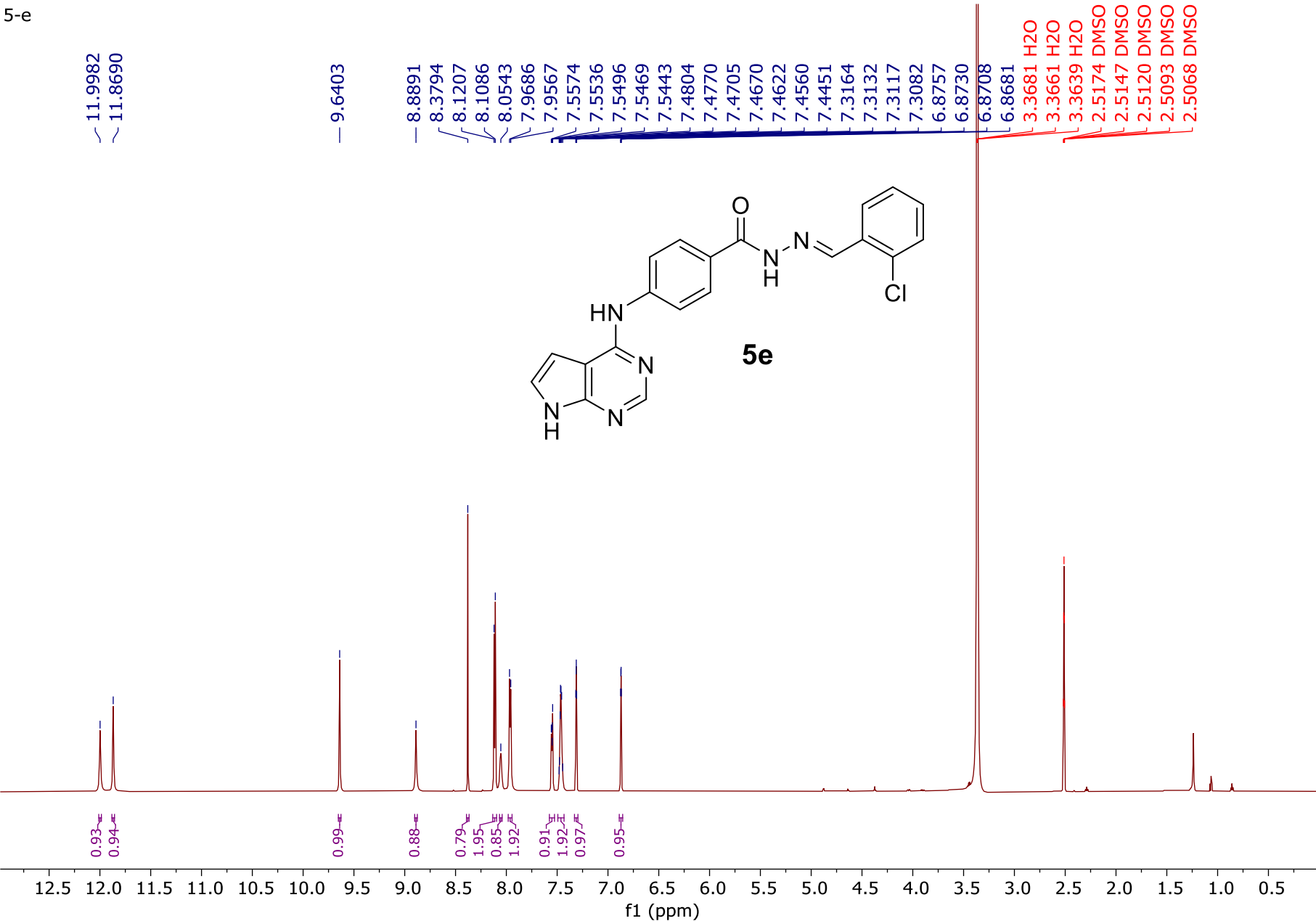


HMRS Mass spectra of **5d**



¹H-NMR spectra of **5e**

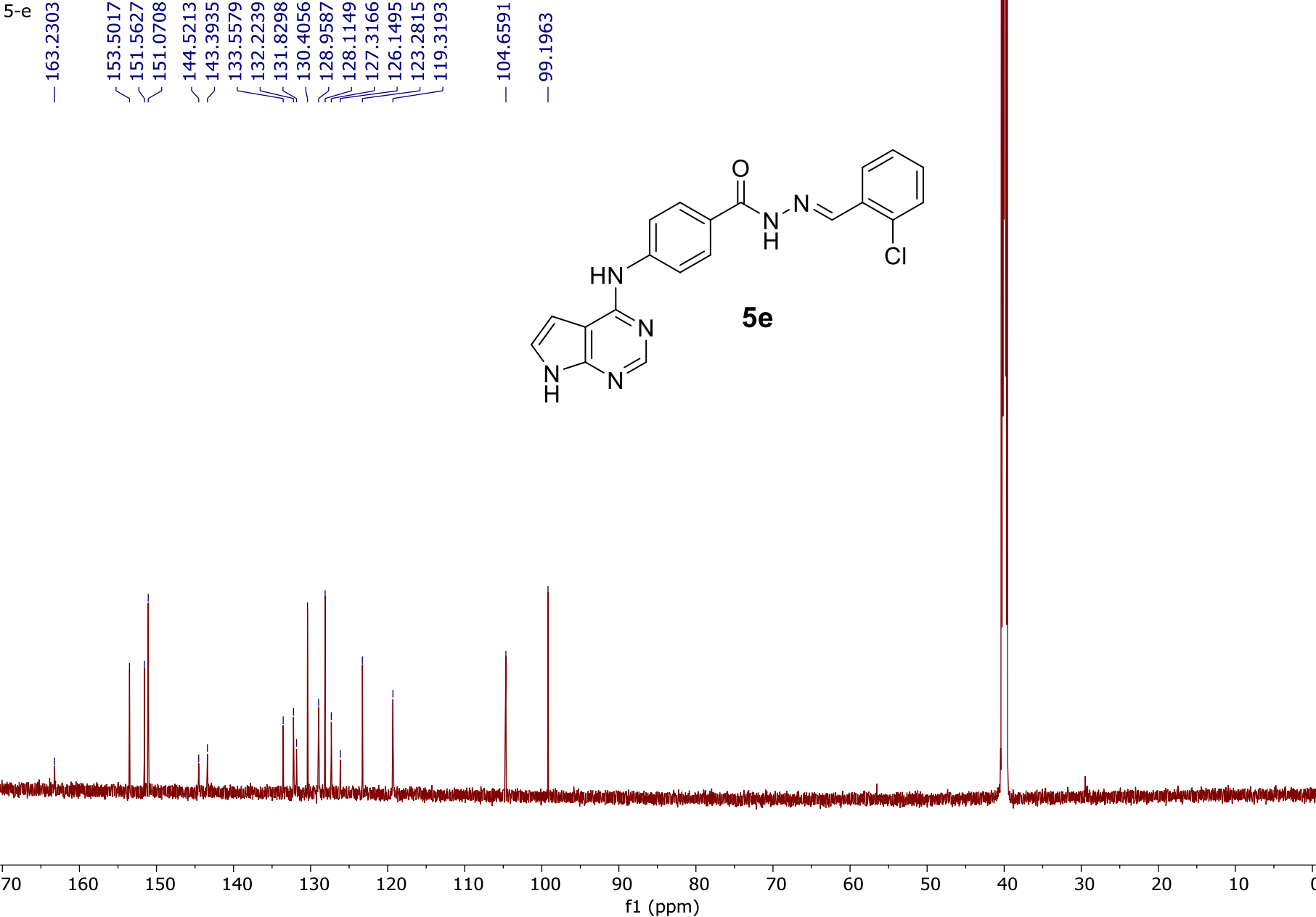
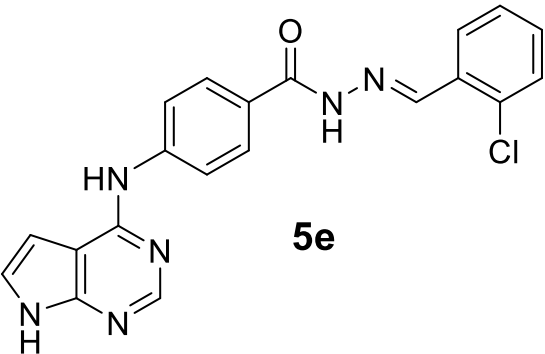
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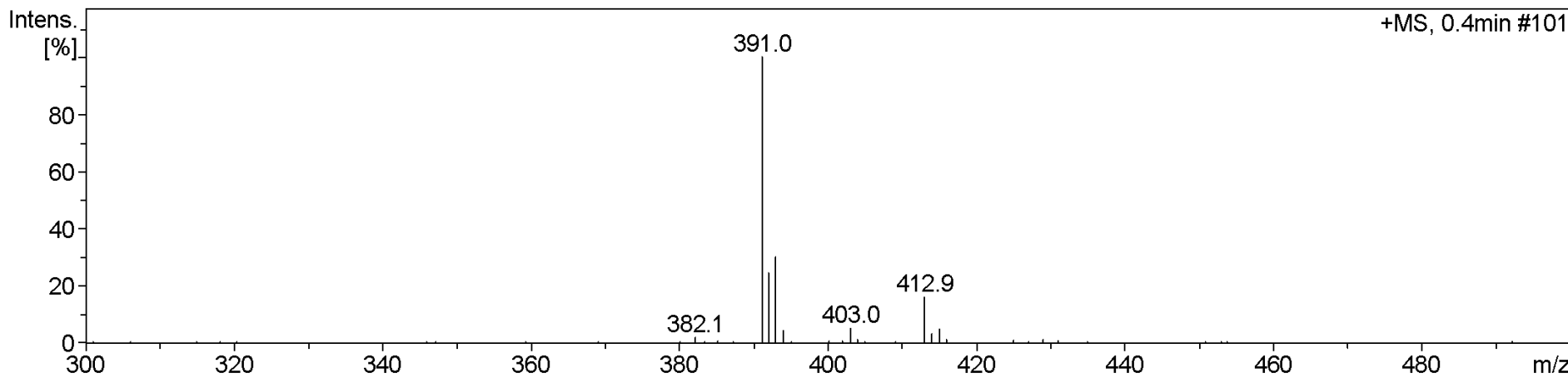
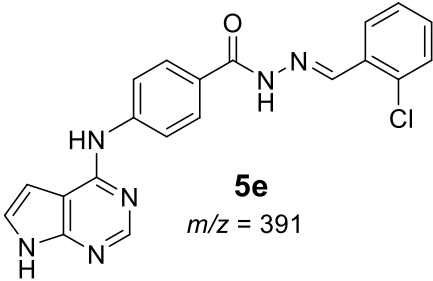
¹³C-NMR spectra of **5e**

5-e

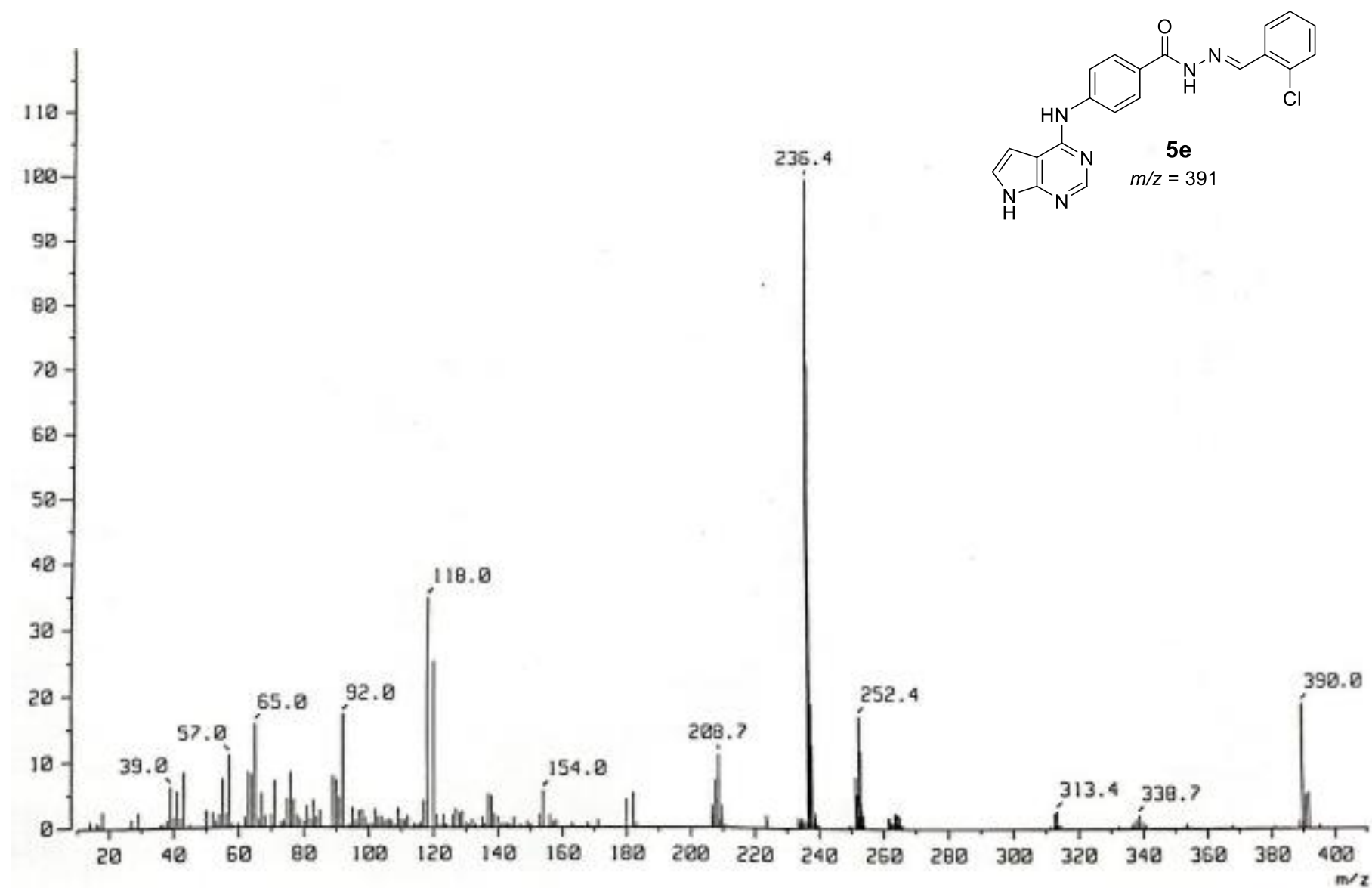
- 163.2303
- 153.5017
- 151.5627
- 151.0708
- 144.5213
- 143.3935
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- 130.4056
- 128.9587
- 128.1149
- 127.3166
- 126.1495
- 123.2815
- 119.3193
- 104.6591
- 99.1963



Mass spectra of **5e**

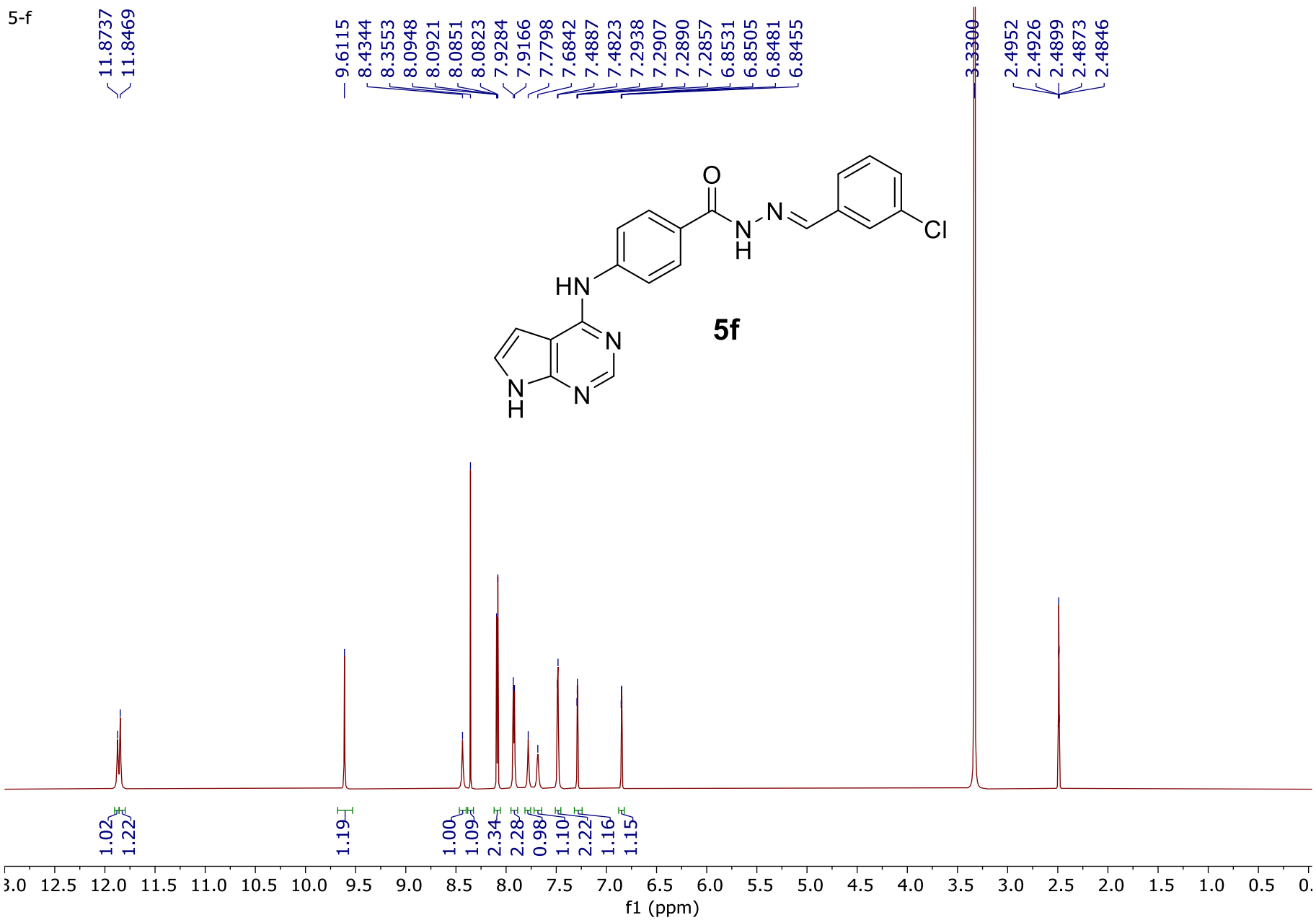


HMRS Mass spectra of **5e**

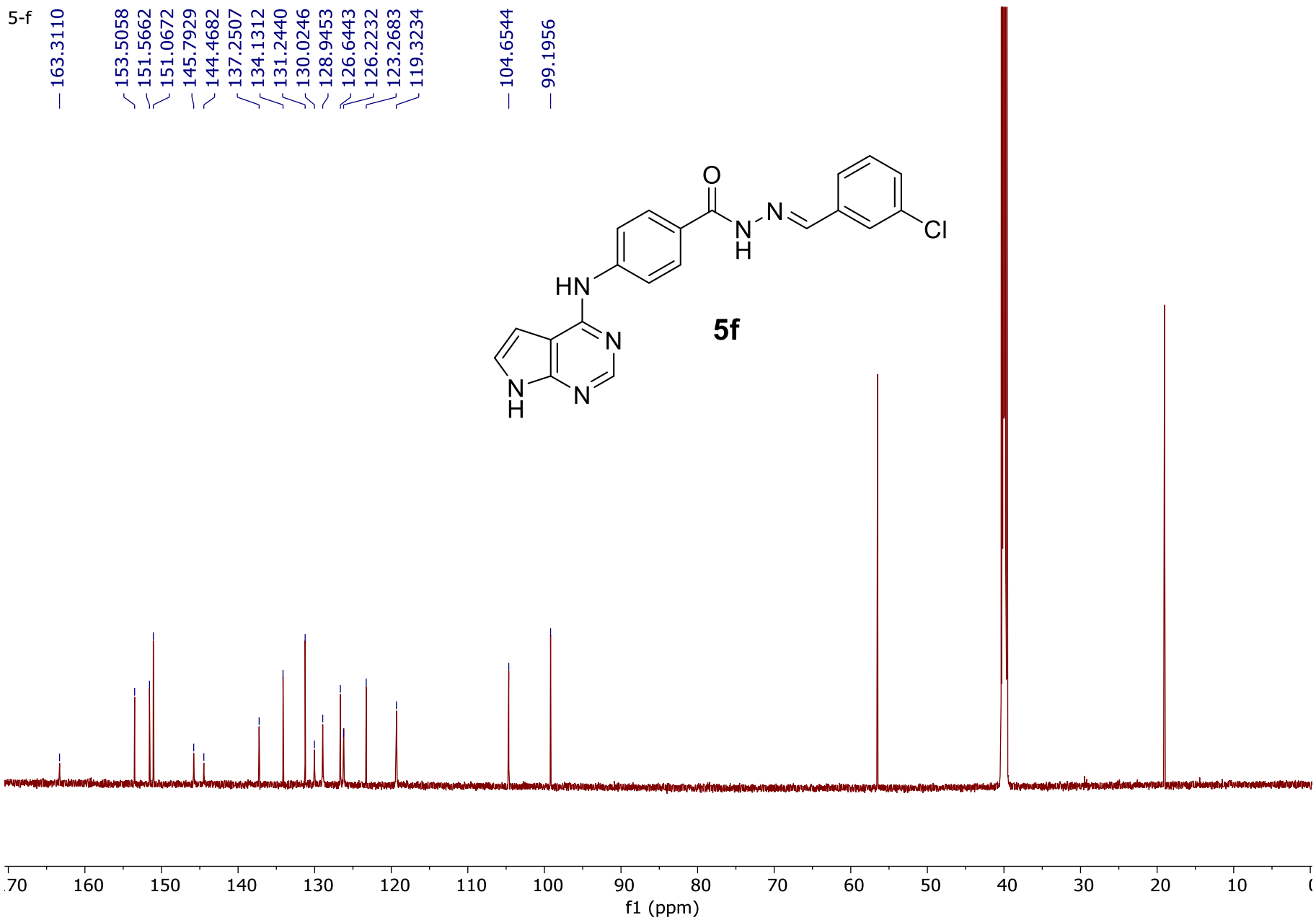


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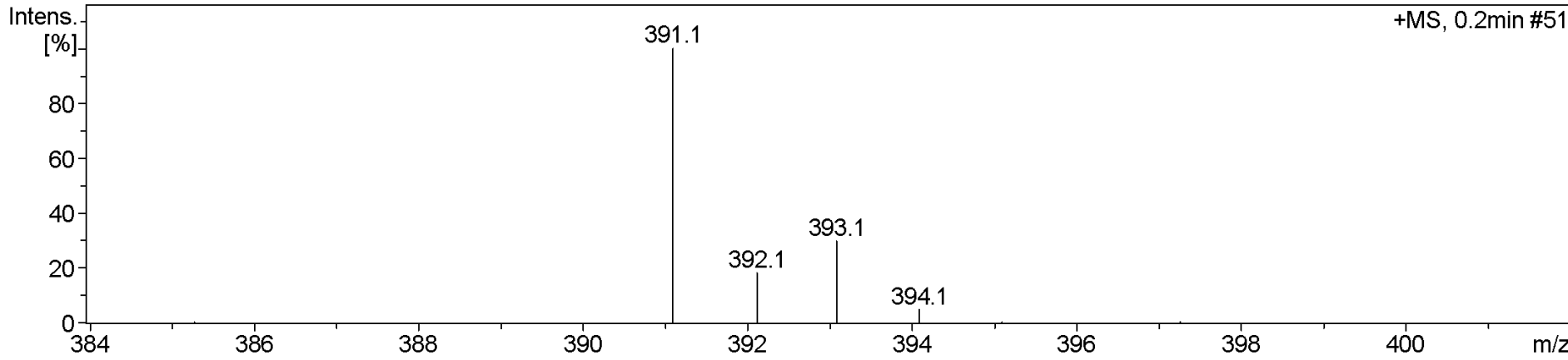
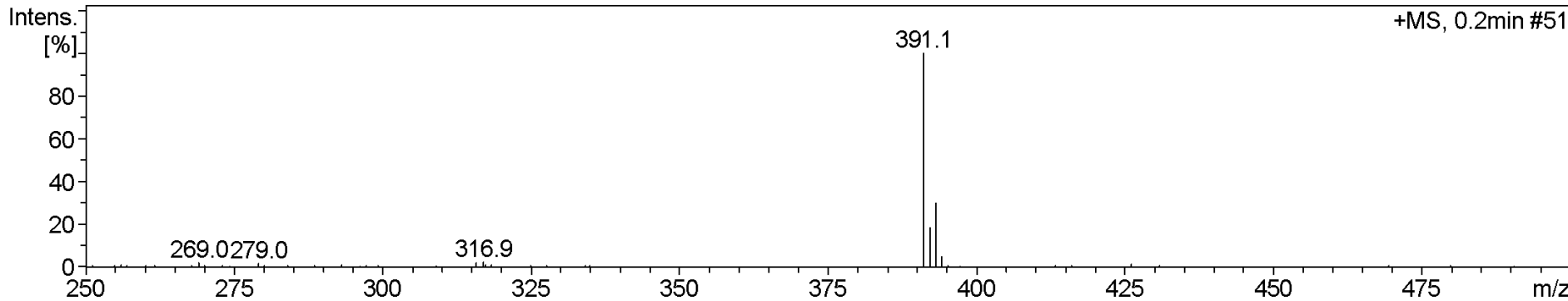
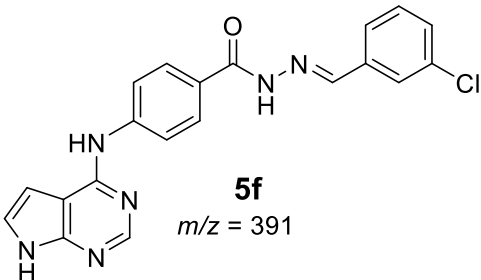
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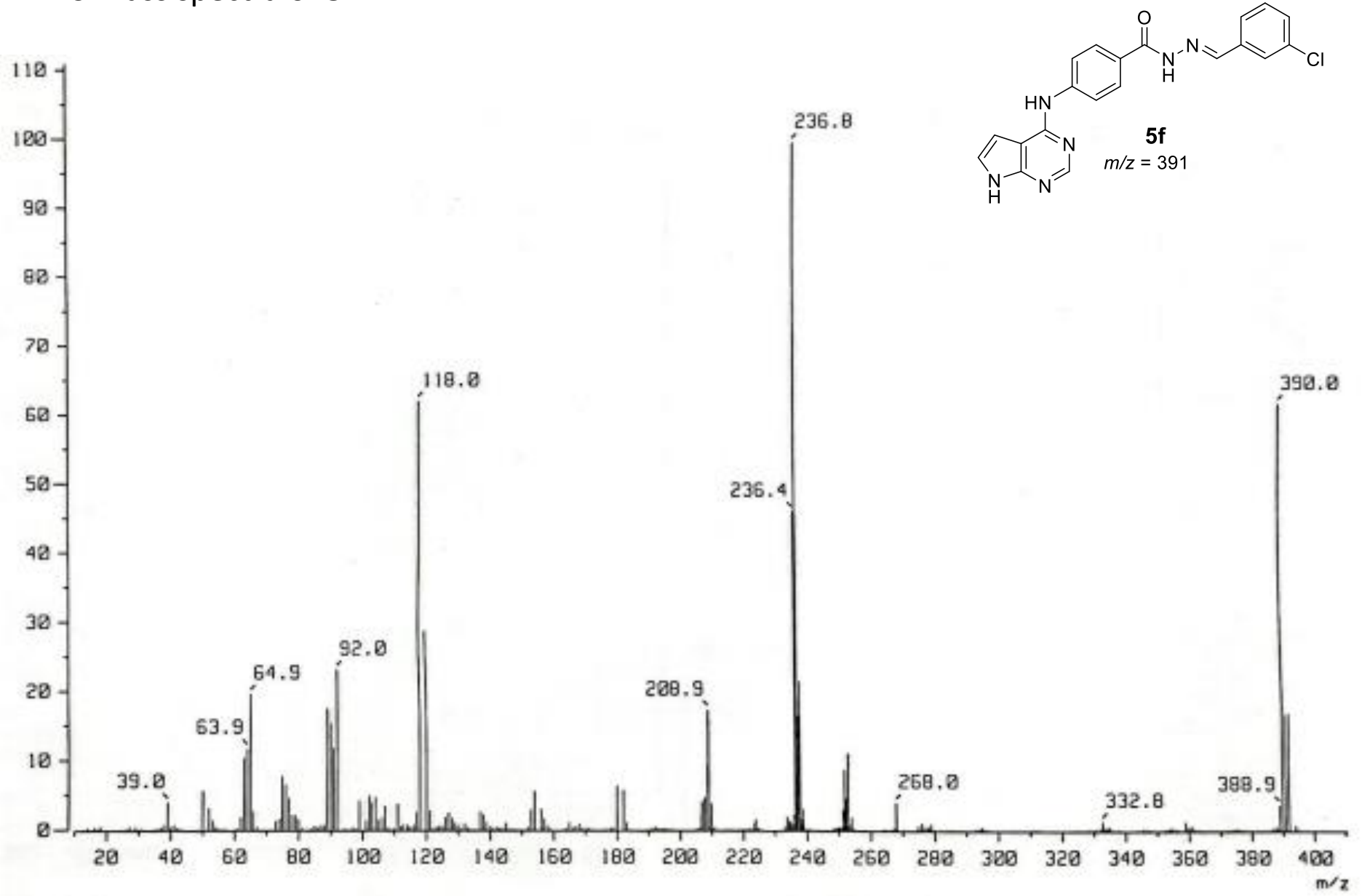
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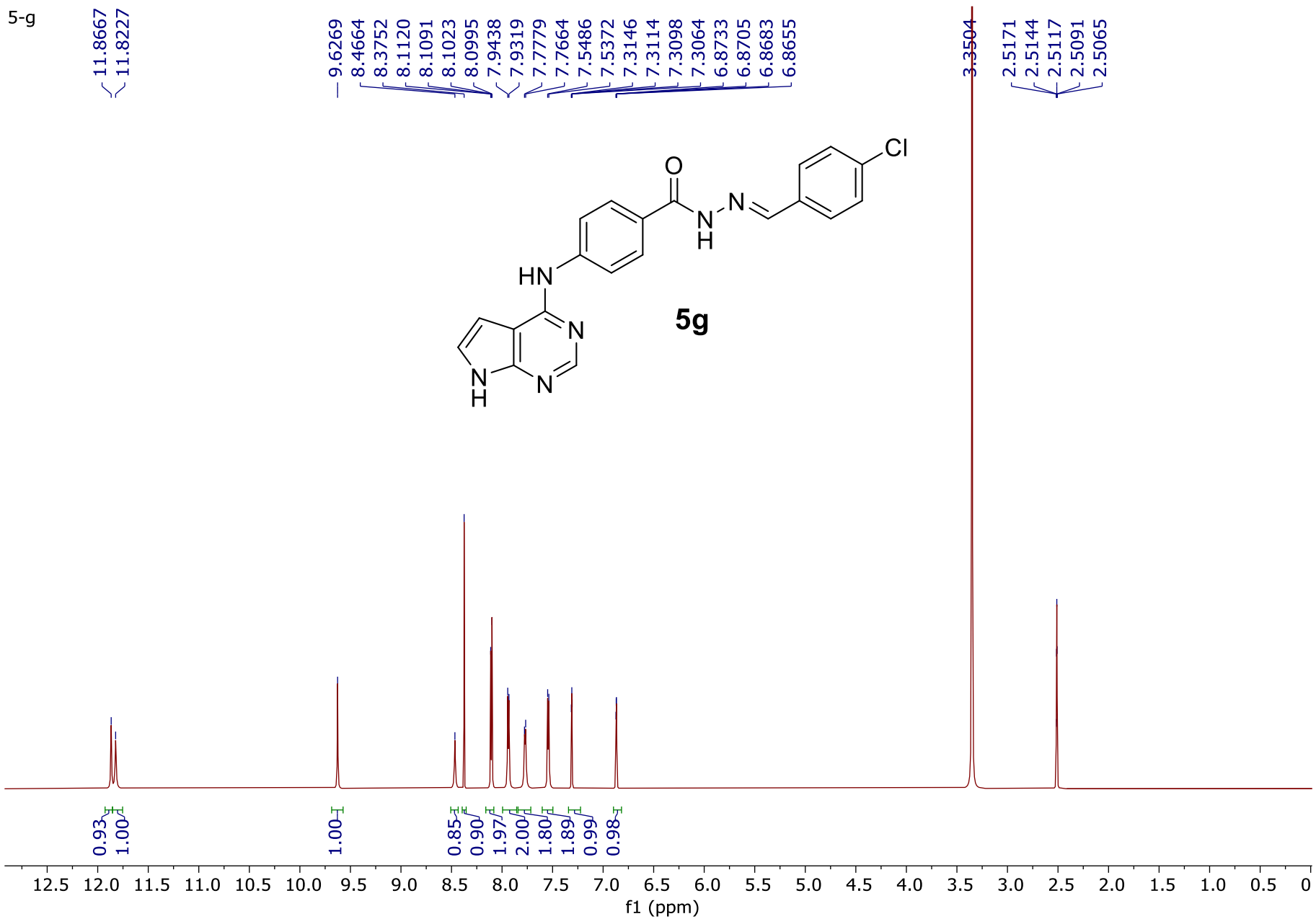
Mass spectra of **5f**



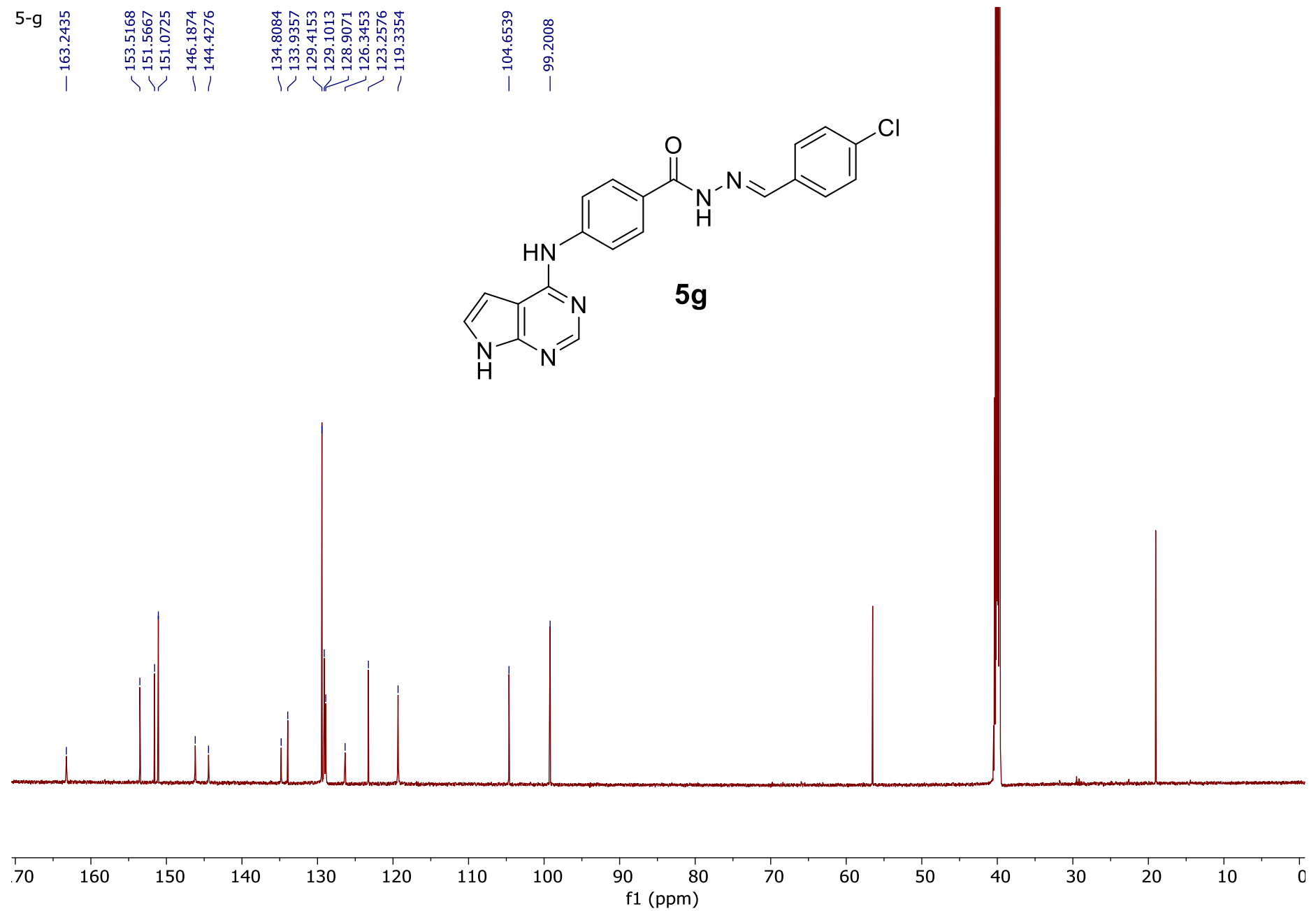
HMRS Mass spectra of **5f**



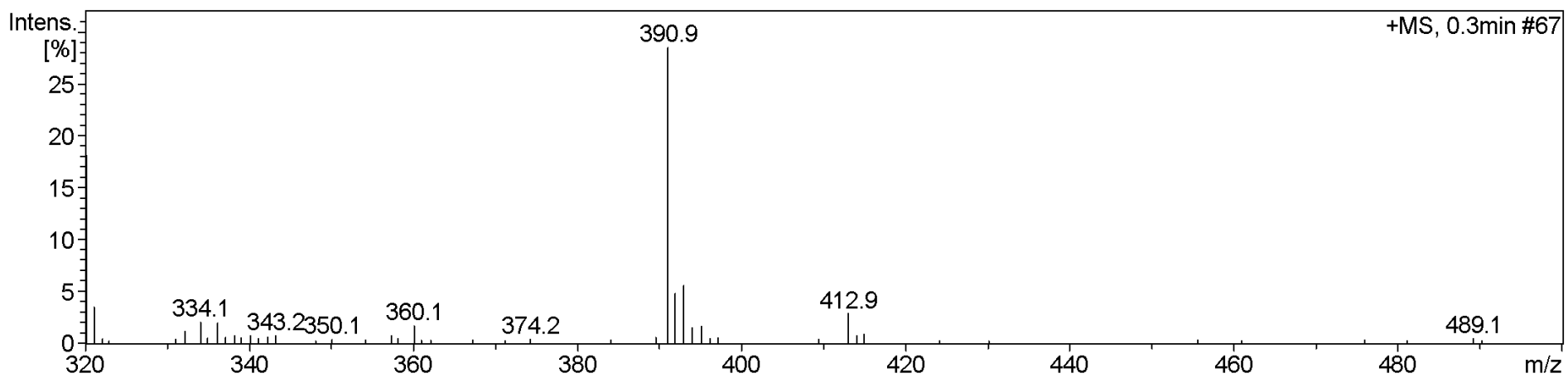
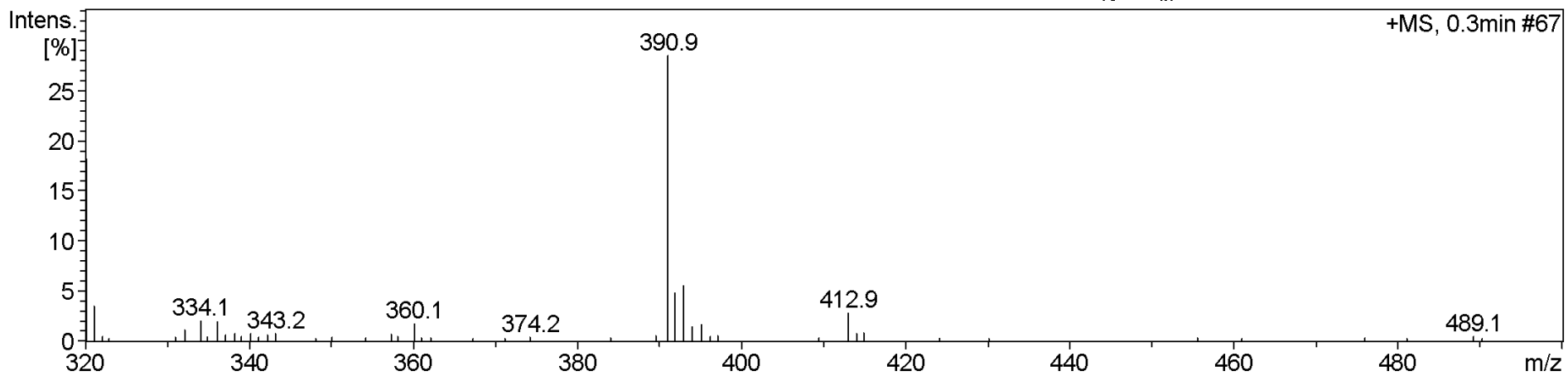
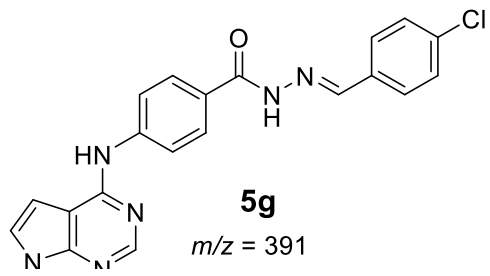
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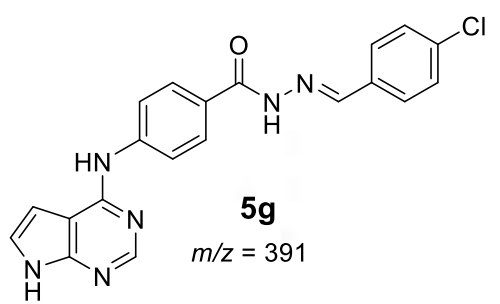
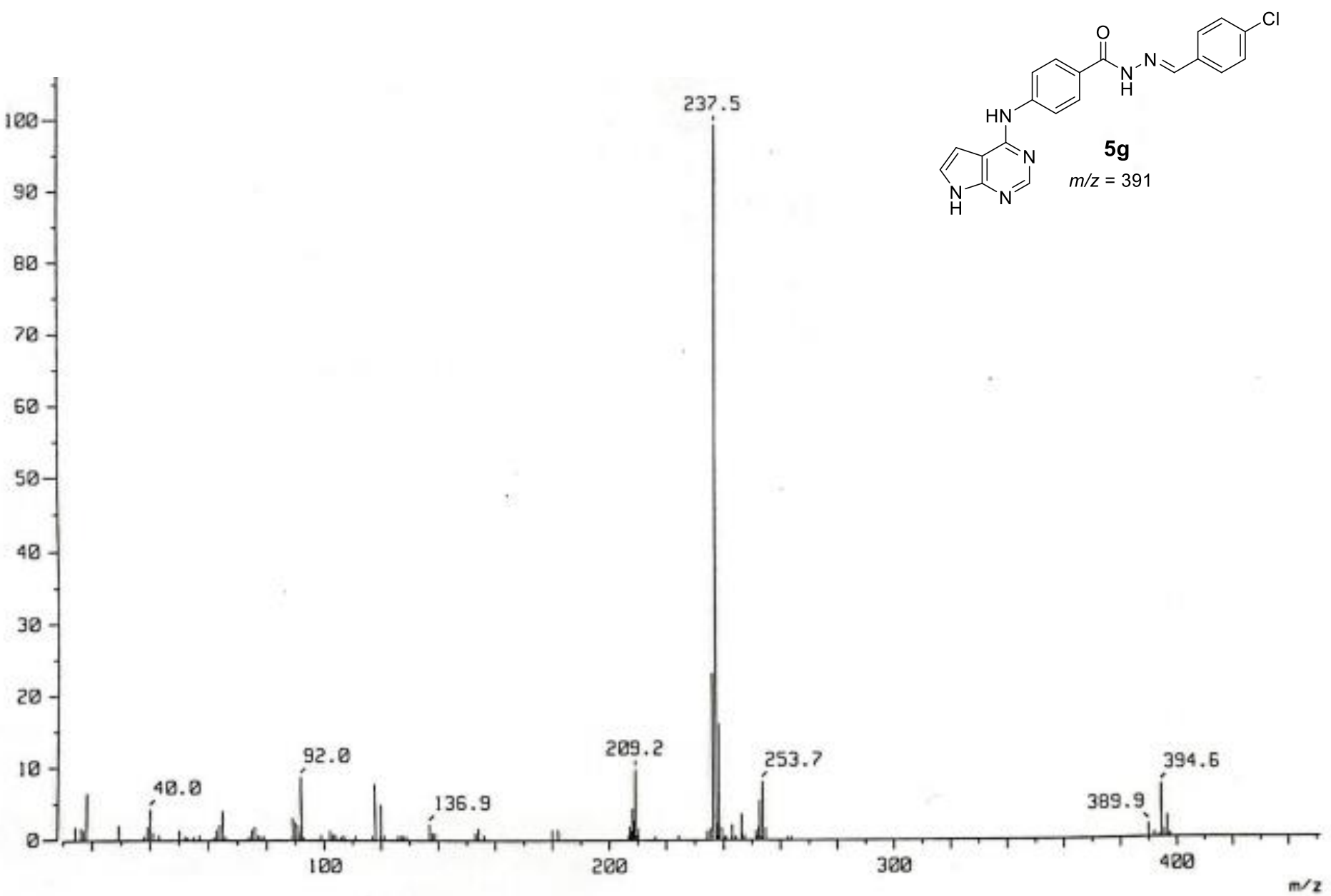
¹³C-NMR spectra of **5g**



Mass spectra of **5g**

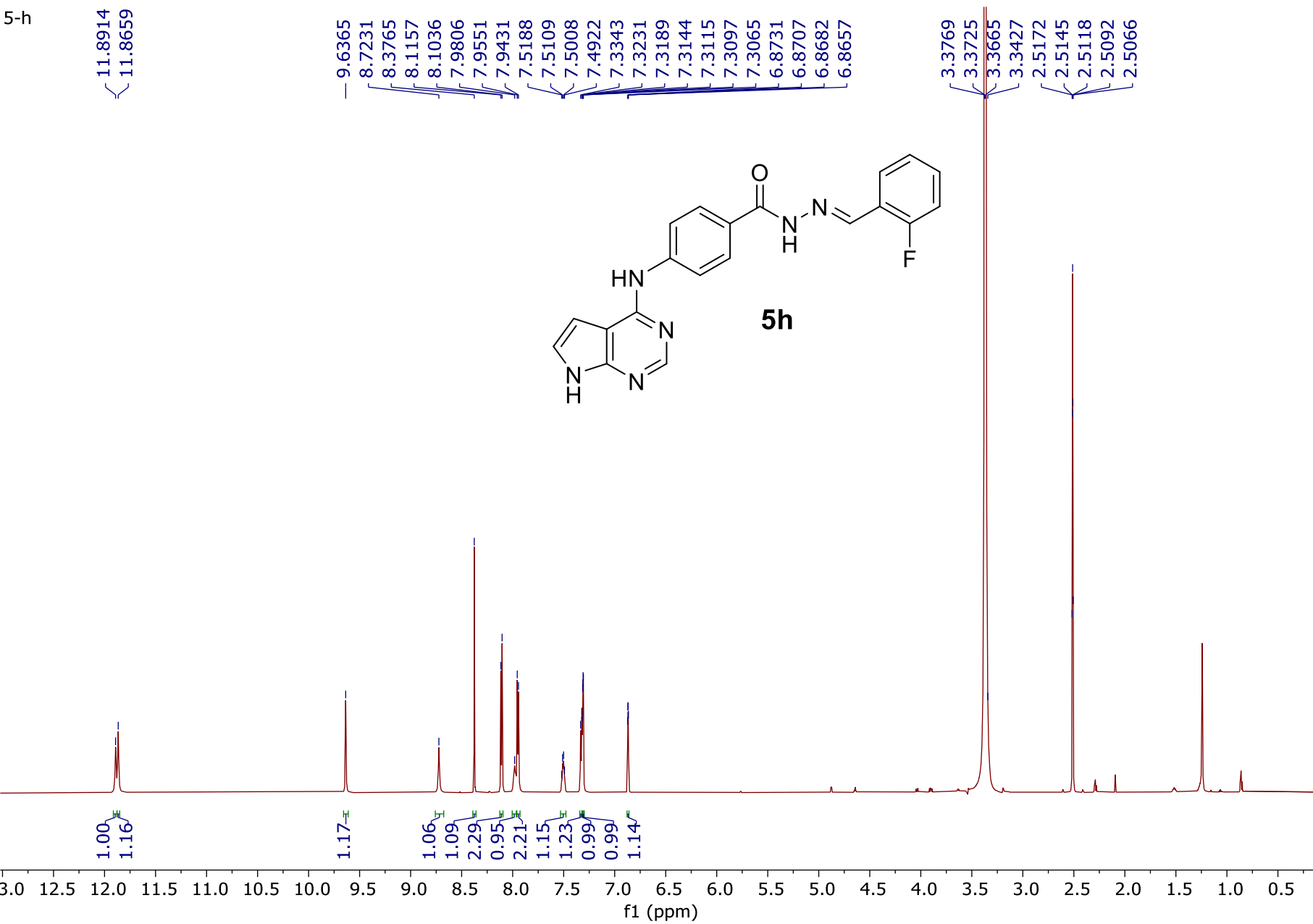


HMRS Mass spectra of **5g**



¹H-NMR spectra of **5h**

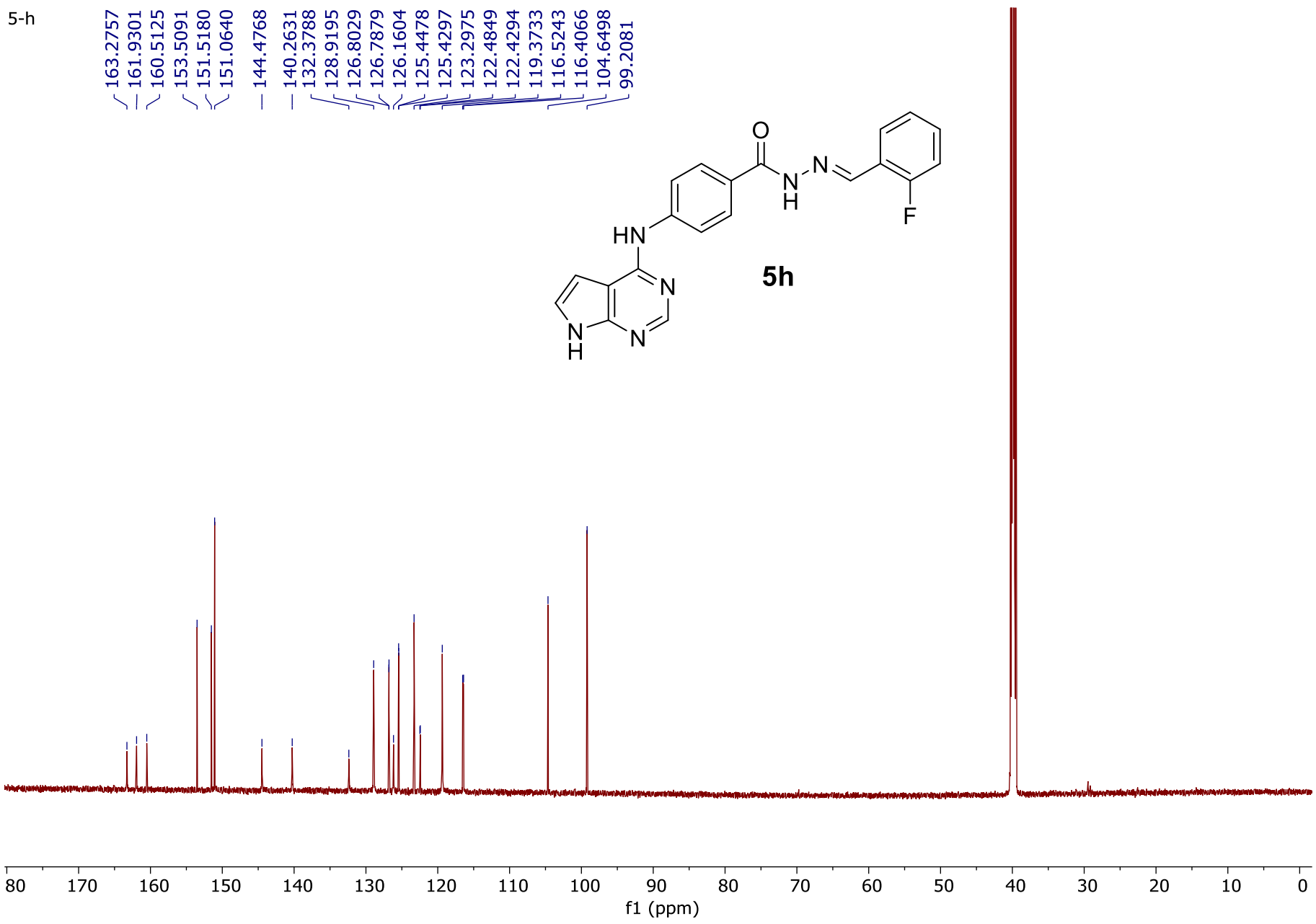
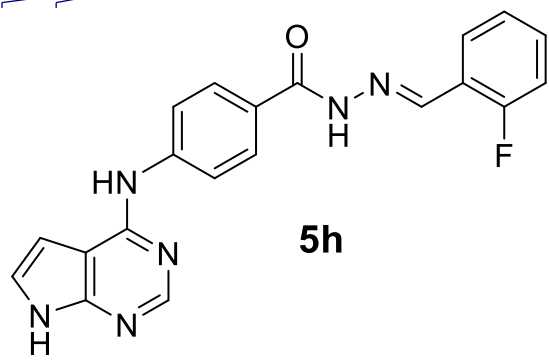
5-h



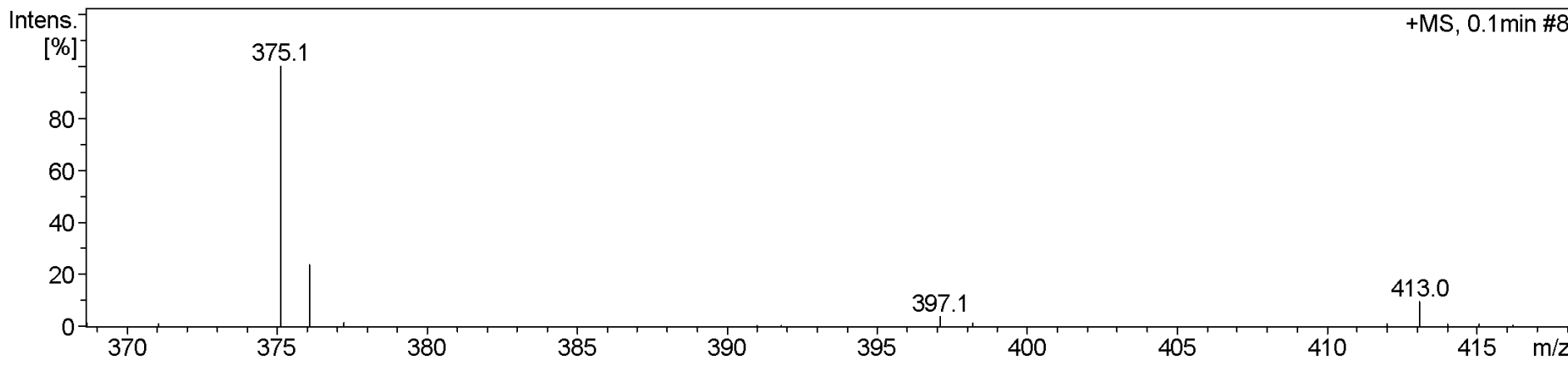
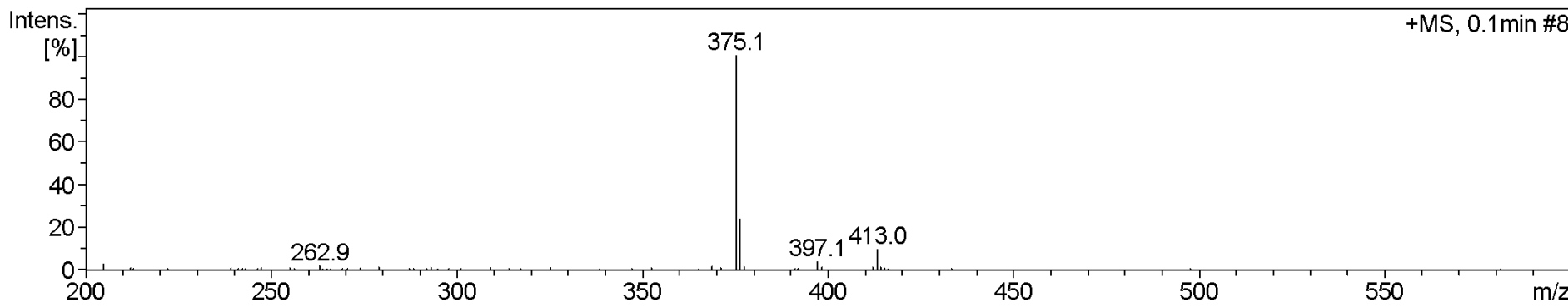
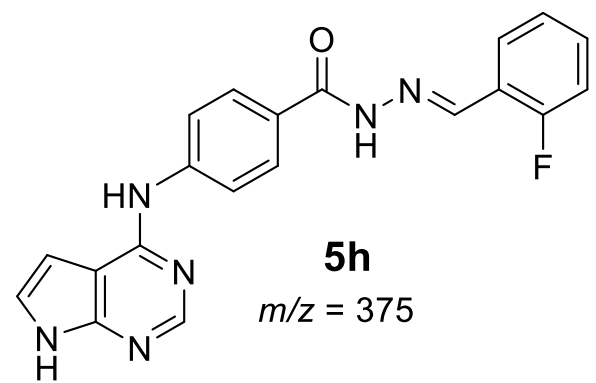
¹³C-NMR spectra of **5h**

5-h

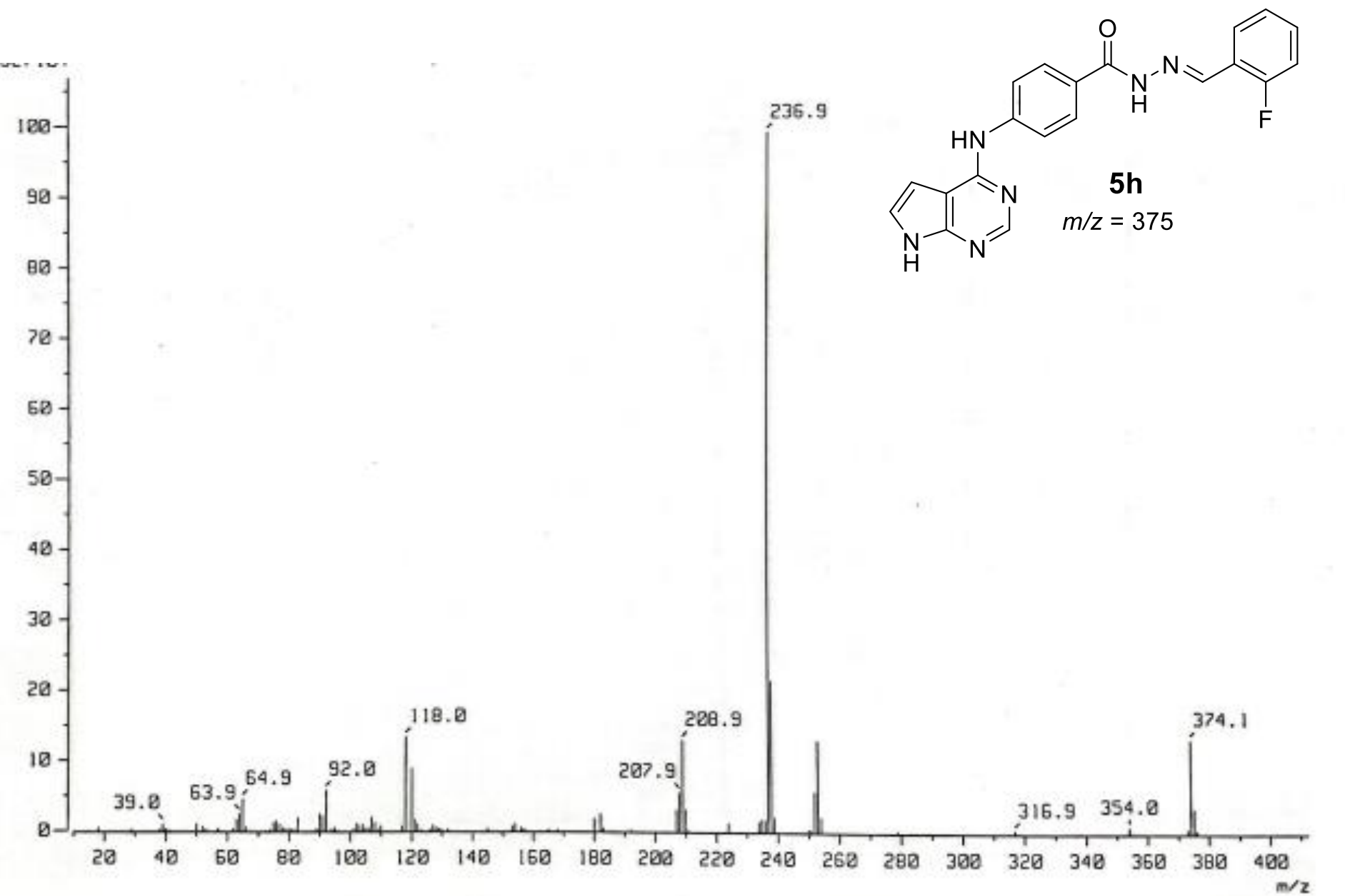
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Mass spectra of **5h**



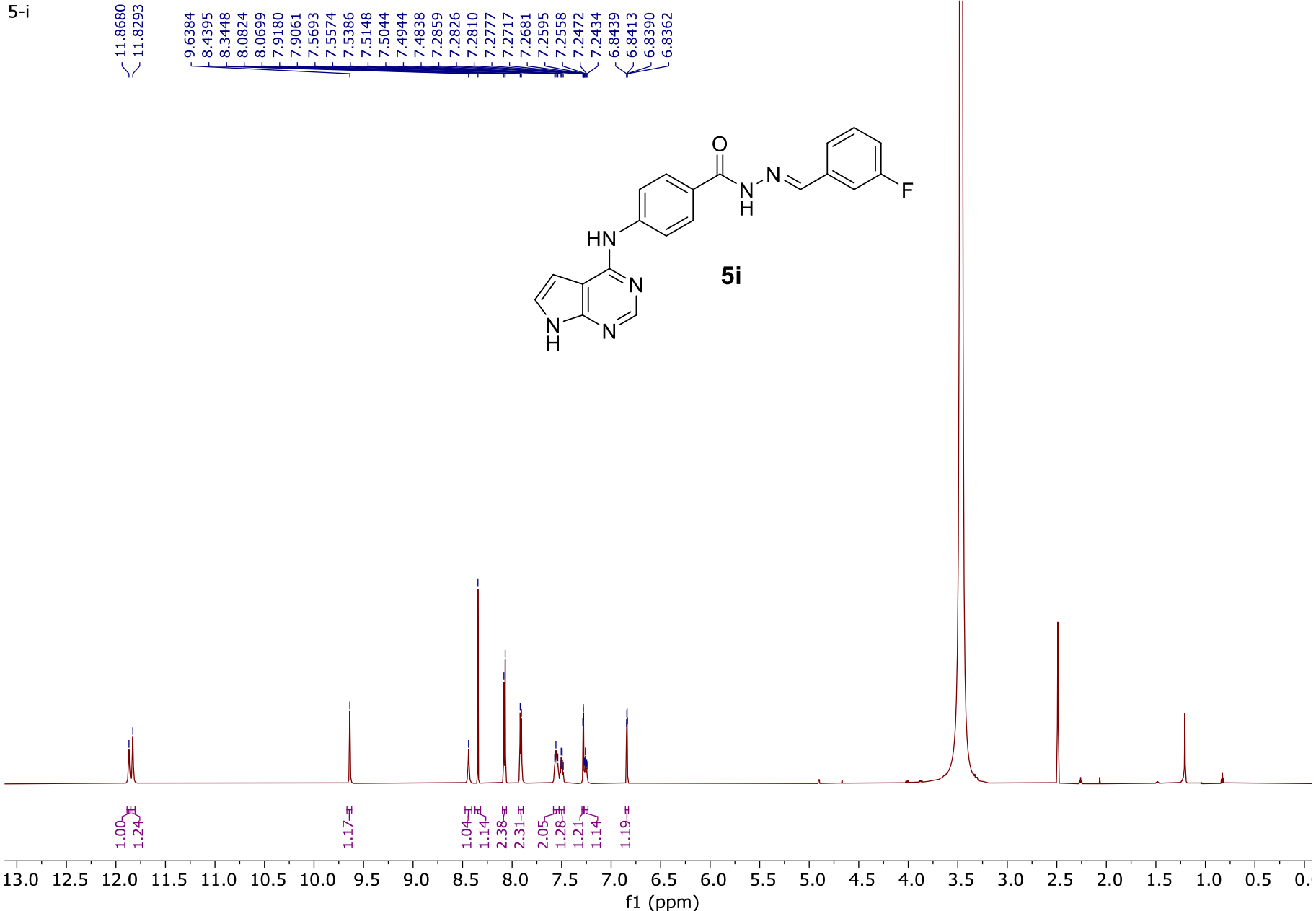
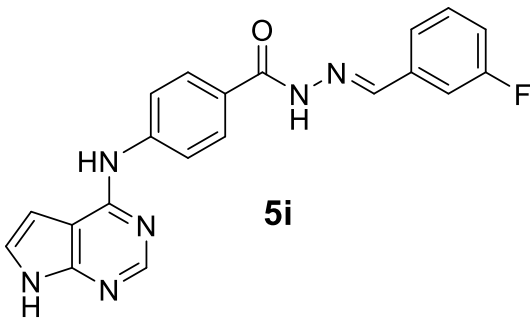
HMRS Mass spectra of **5h**



¹H-NMR spectra of **5i**

5-i

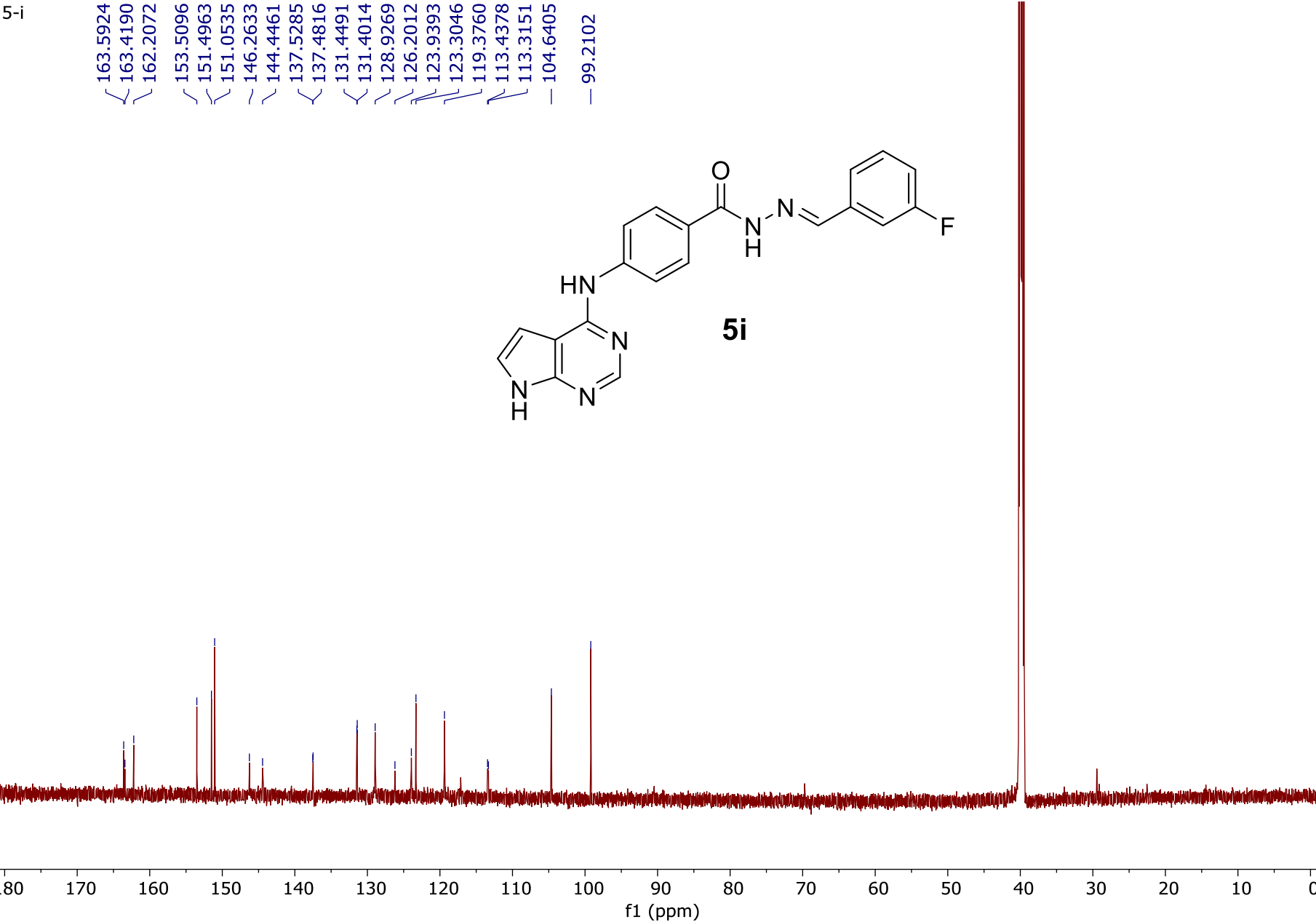
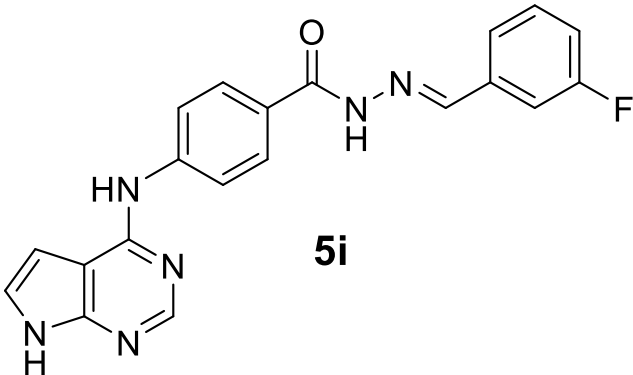
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7.5386
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7.5044
7.4944
7.4838
7.2859
7.2826
7.2810
7.2777
7.2717
7.2681
7.2595
7.2558
7.2472
7.2434
6.8439
6.8413
6.8390
6.8362



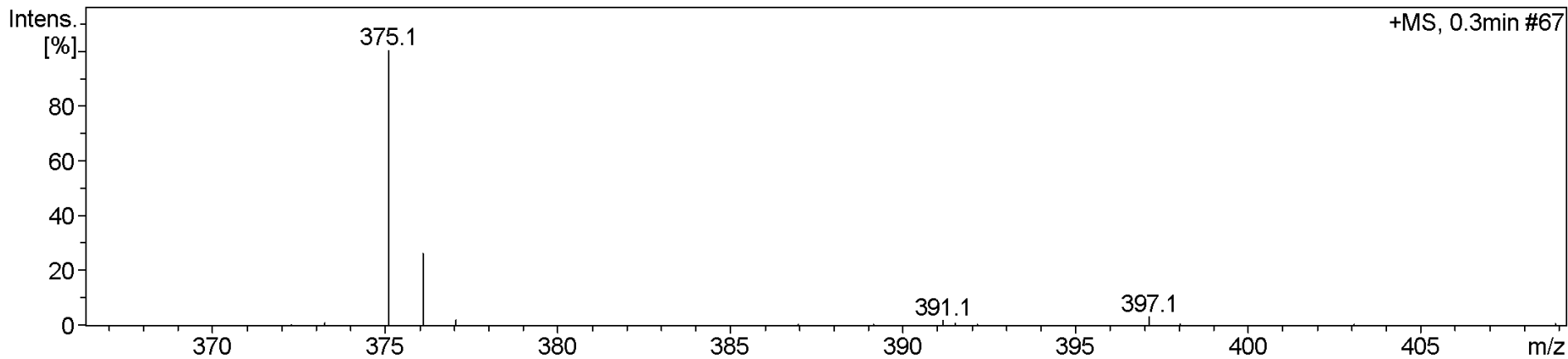
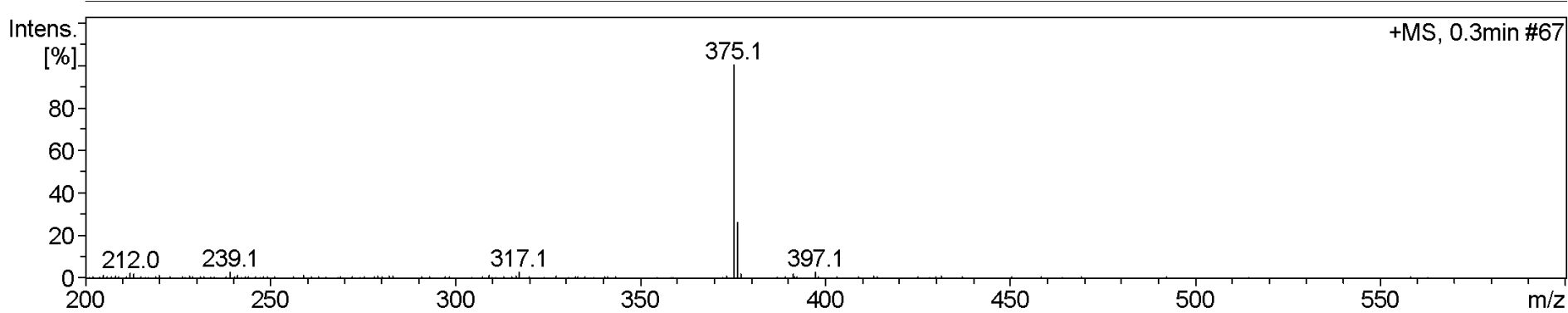
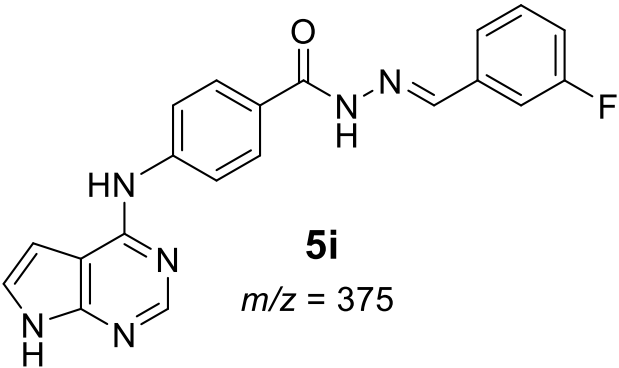
¹³C-NMR spectra of **5i**

5-i

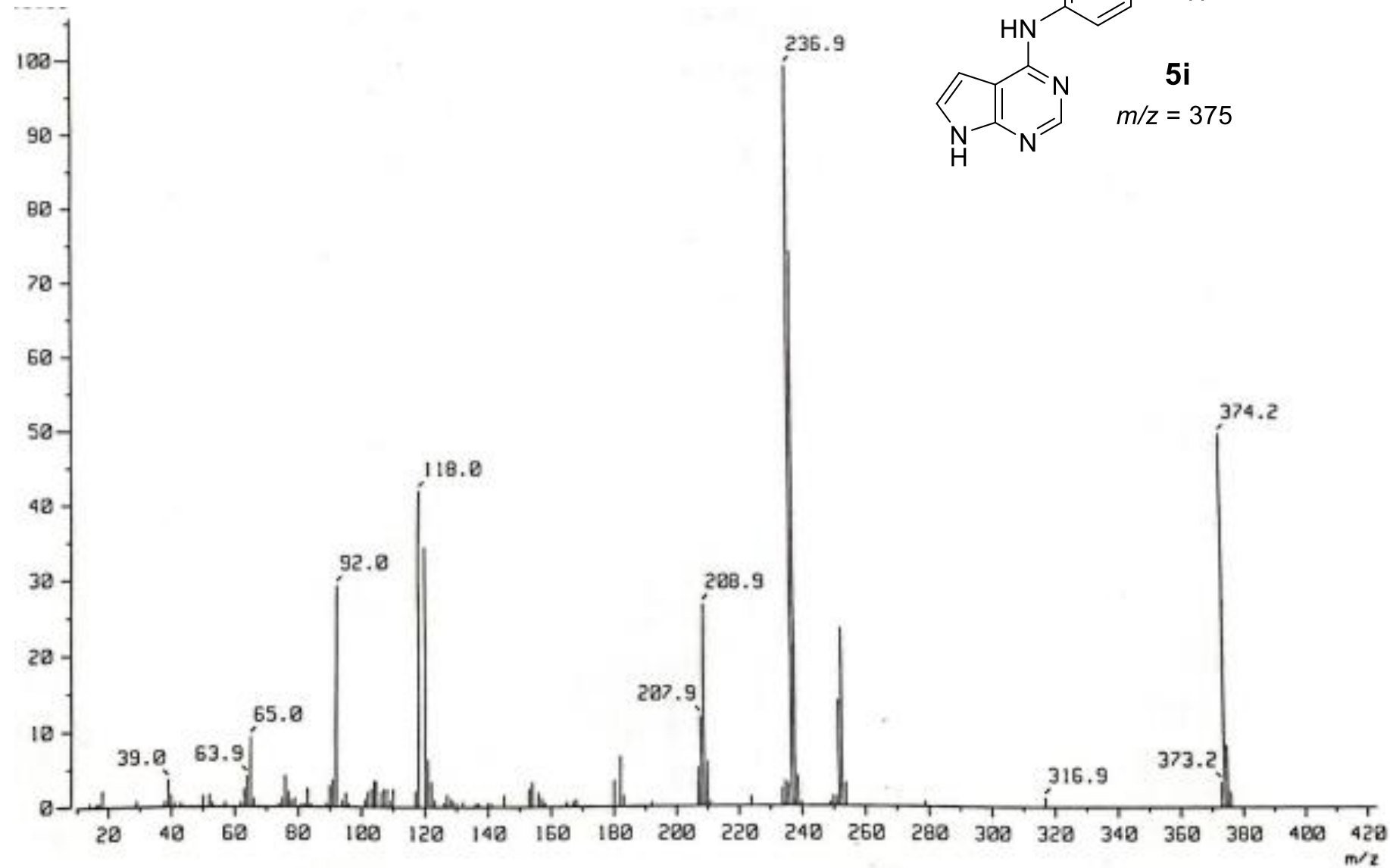
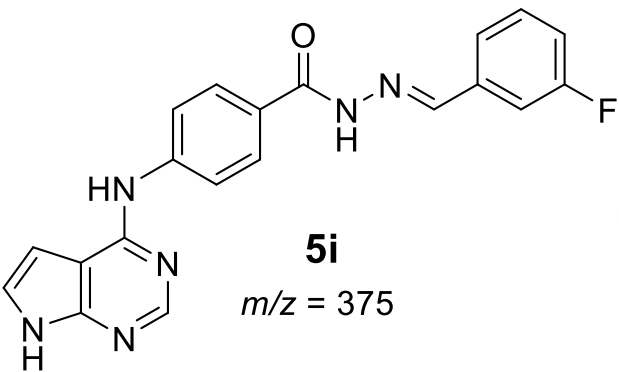
163.5924
163.4190
162.2072
153.5096
151.4963
151.0535
146.2633
144.4461
137.5285
137.4816
131.4491
131.4014
128.9269
126.2012
123.9393
123.3046
119.3760
113.4378
113.3151
104.6405
99.2102



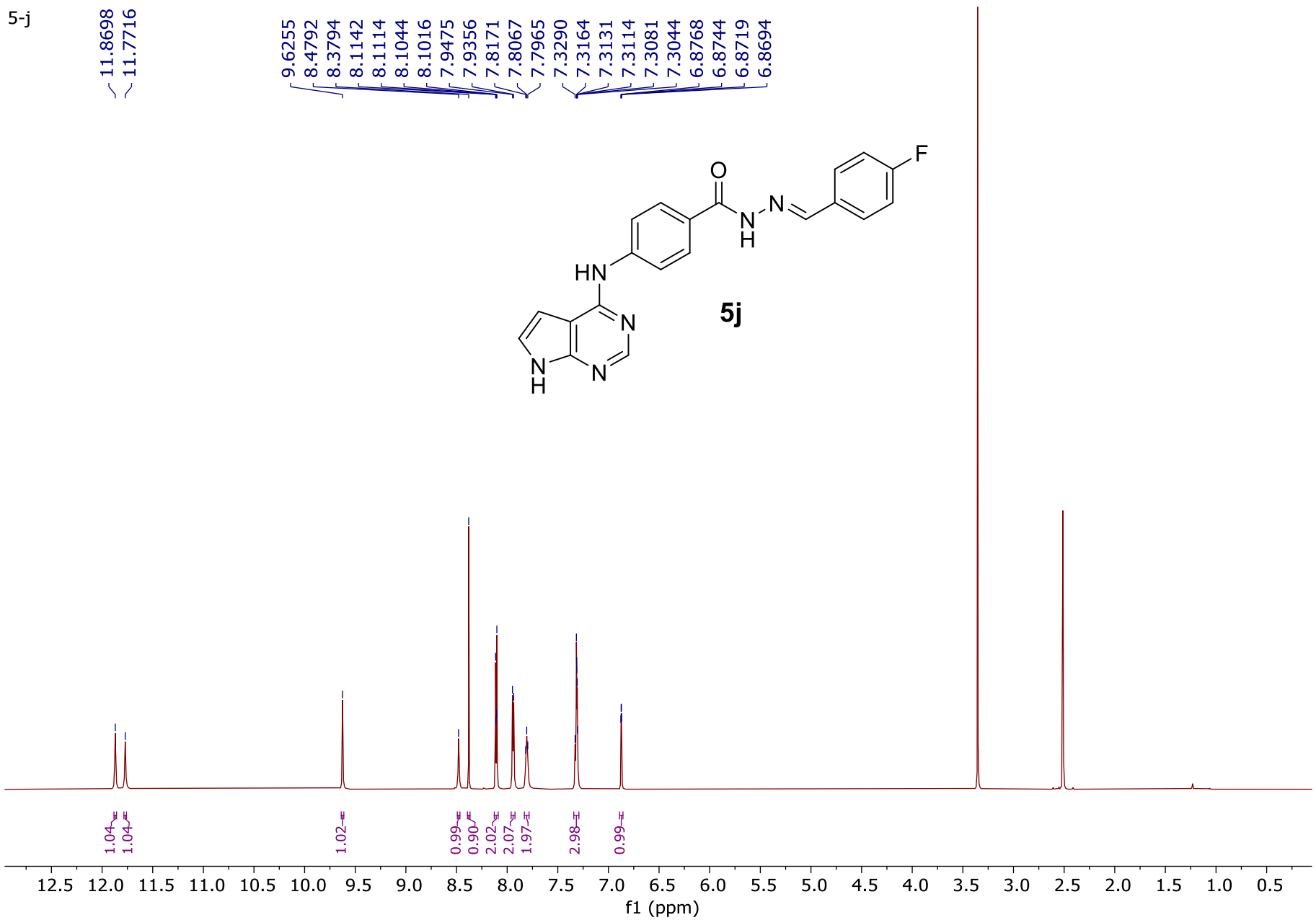
Mass spectra of **5i**



HMRS Mass spectra of **5i**



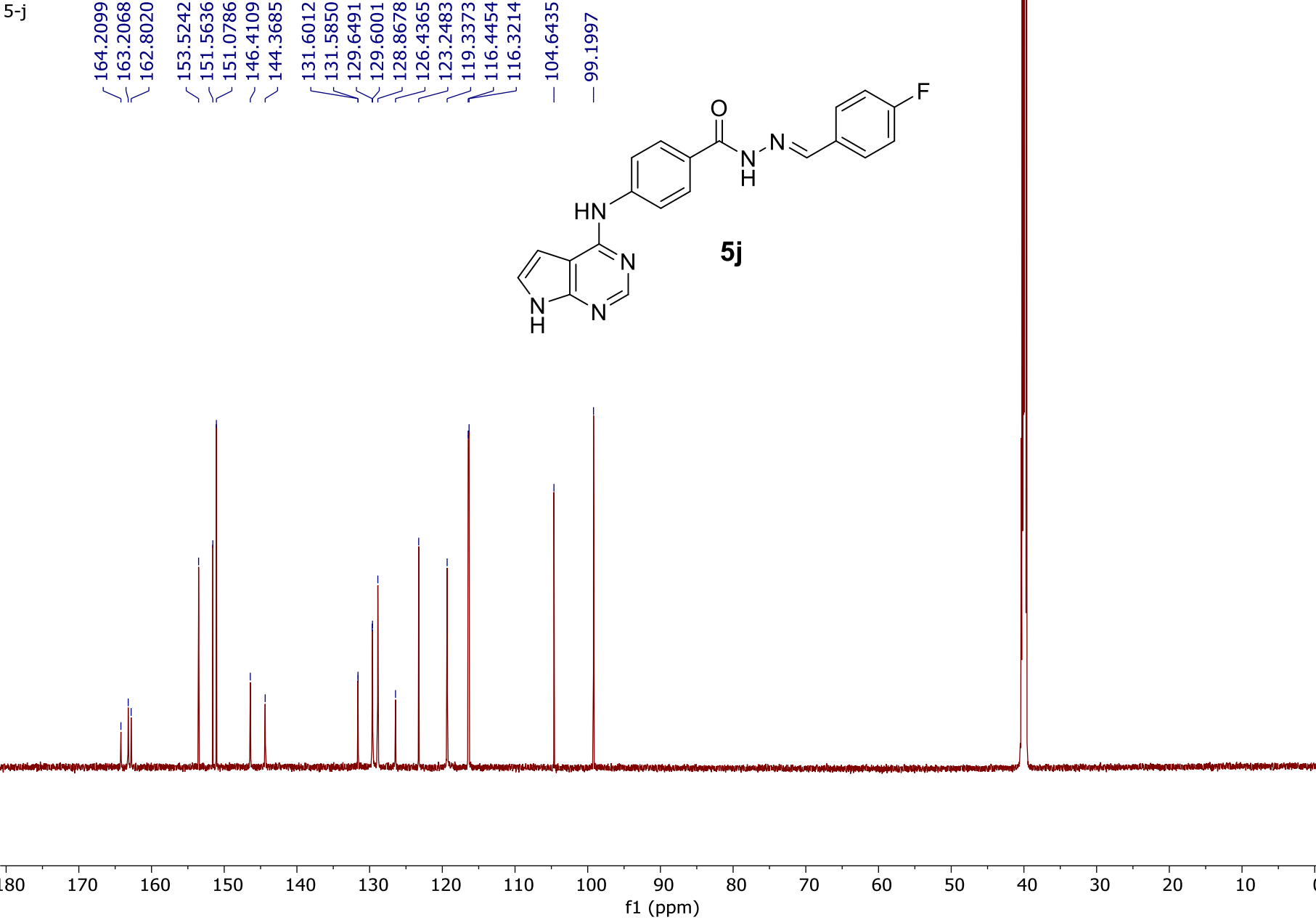
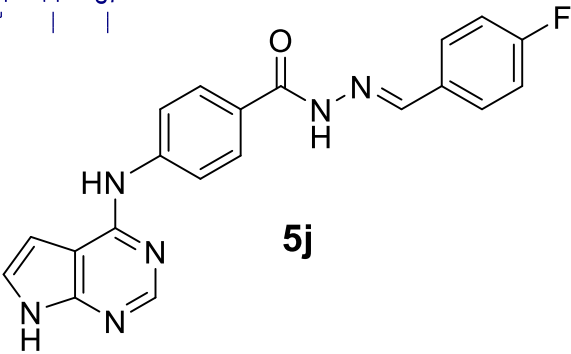
¹H-NMR spectra of **5j**



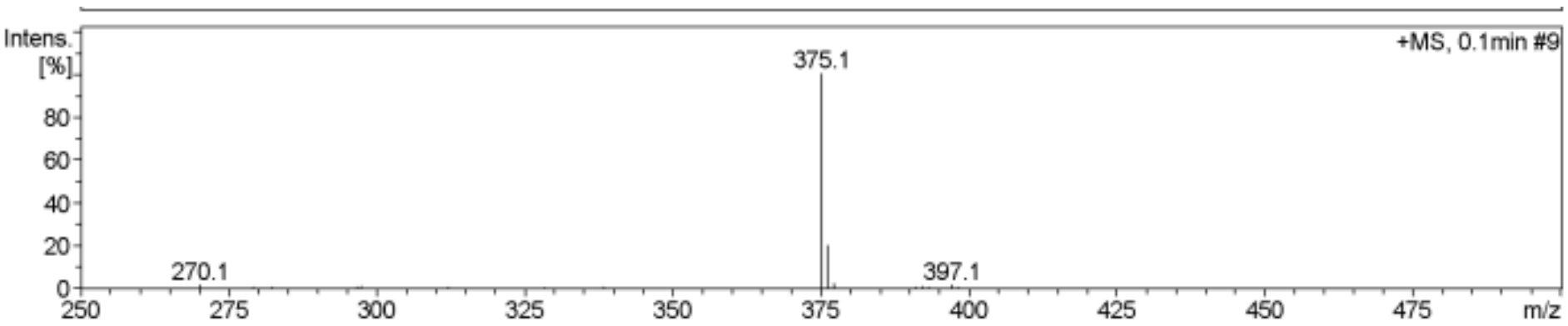
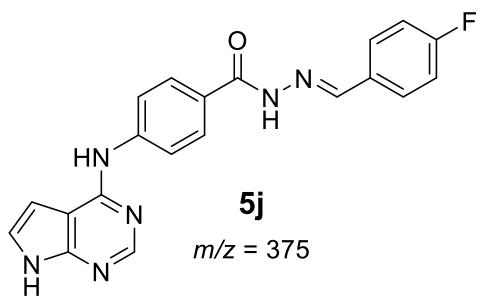
¹³C-NMR spectra of **5j**

5-j

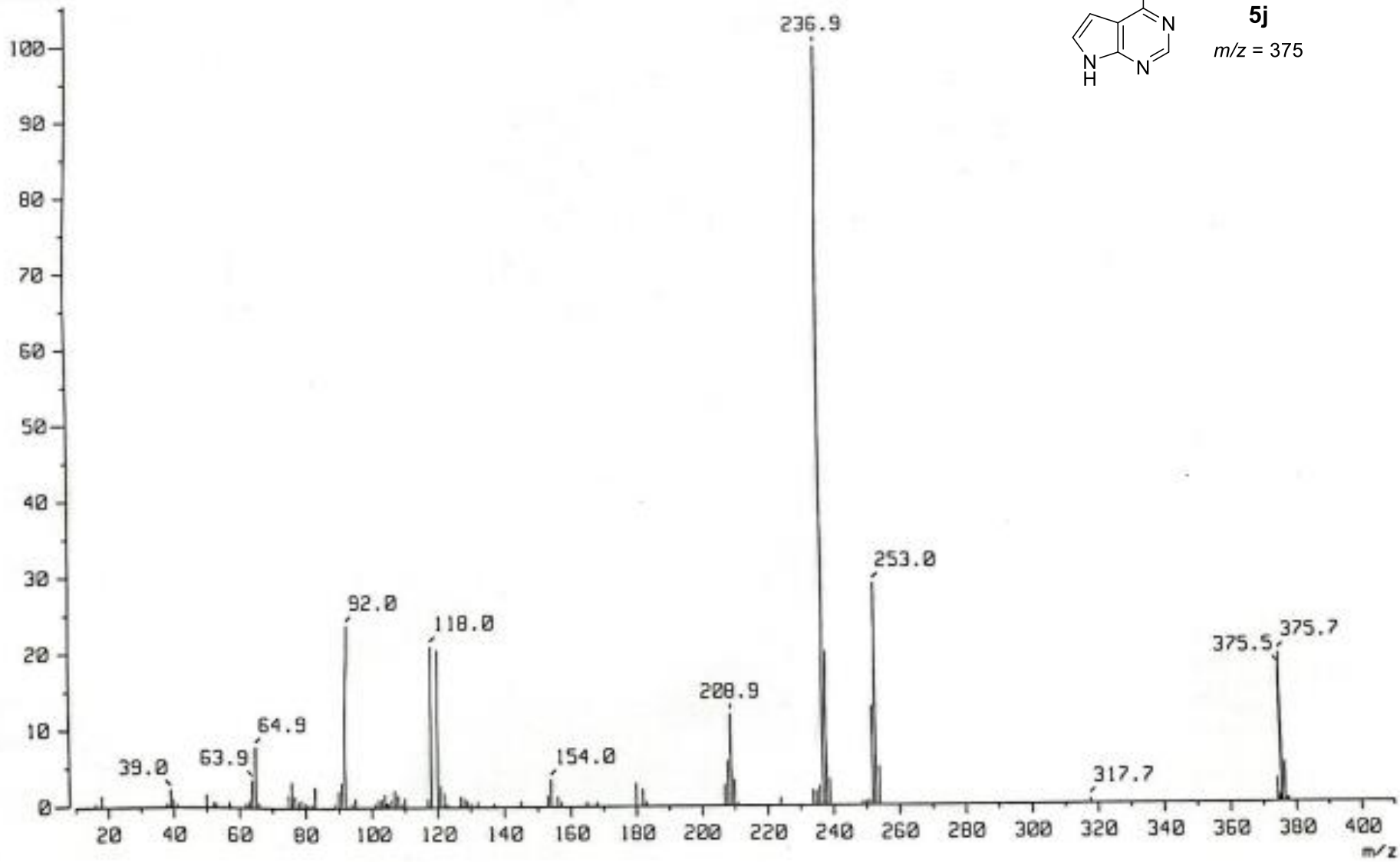
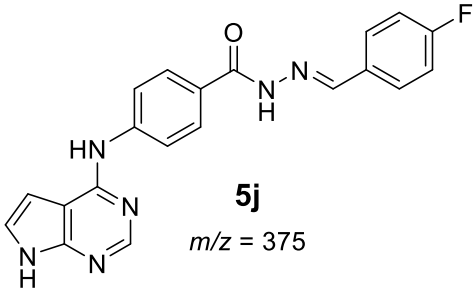
164.2099
163.2068
162.8020
153.5242
151.5636
151.0786
146.4109
144.3685
131.6012
131.5850
129.6491
129.6001
128.8678
126.4365
123.2483
119.3373
116.4454
116.3214
104.6435
99.1997



Mass spectra of **5j**

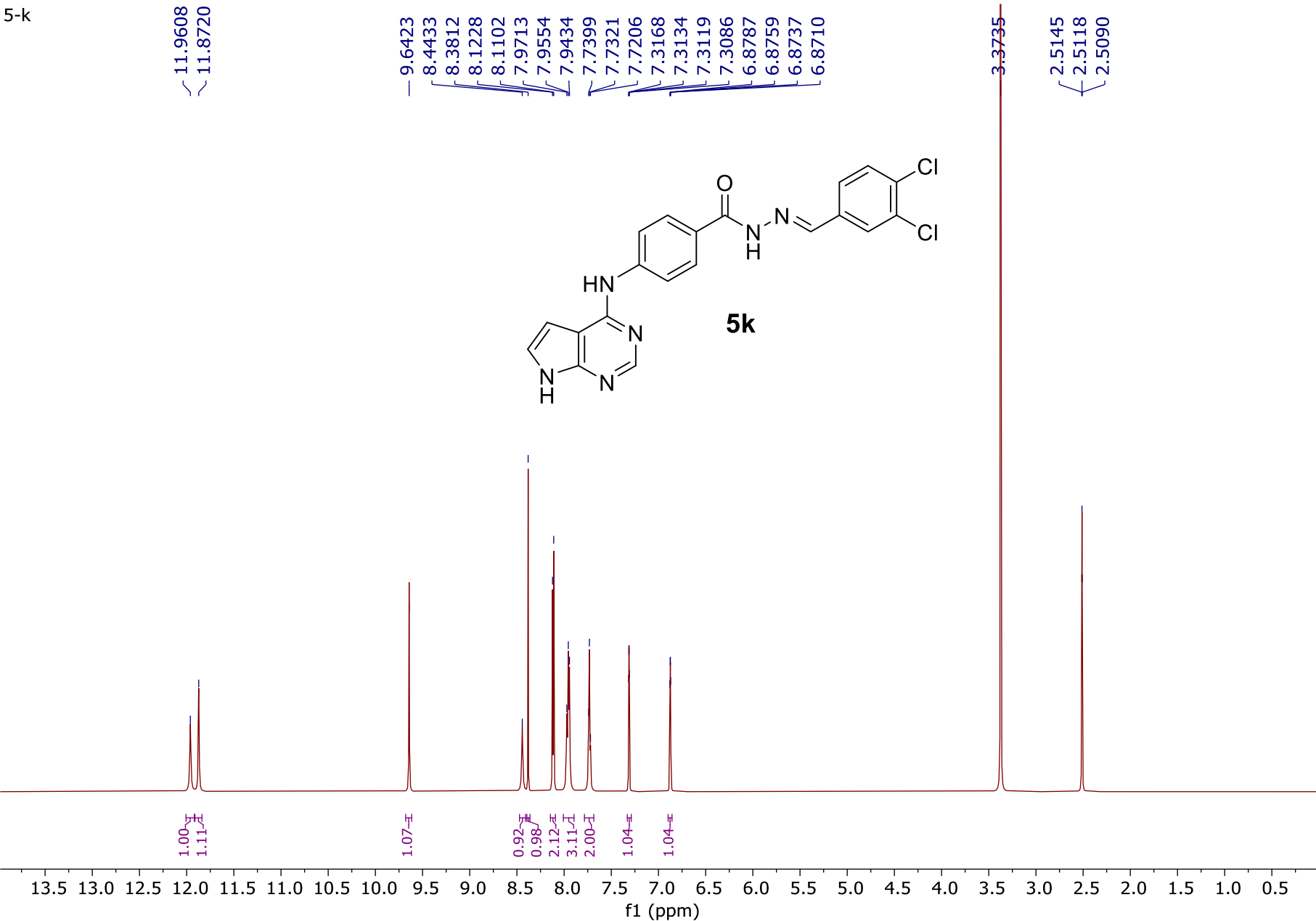


HMRS Mass spectra of **5j**



¹H-NMR spectra of **5k**

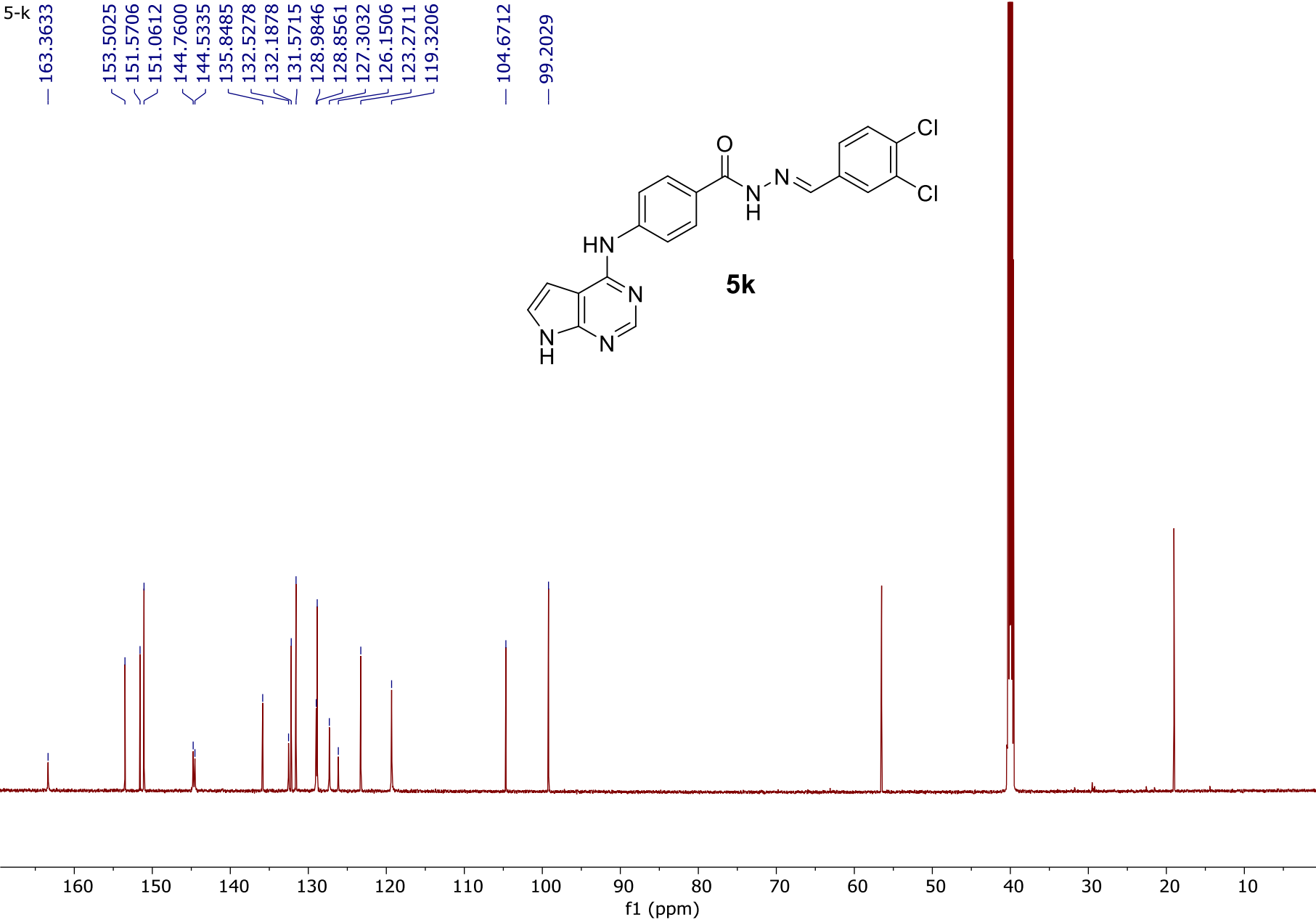
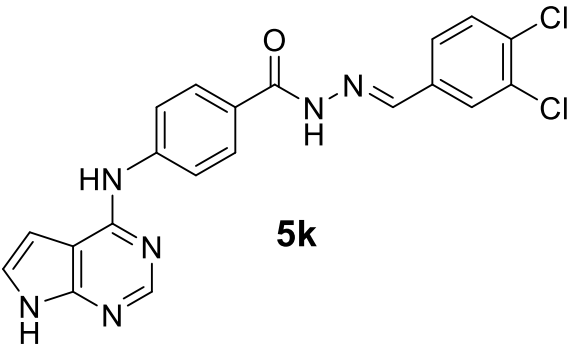
5-k



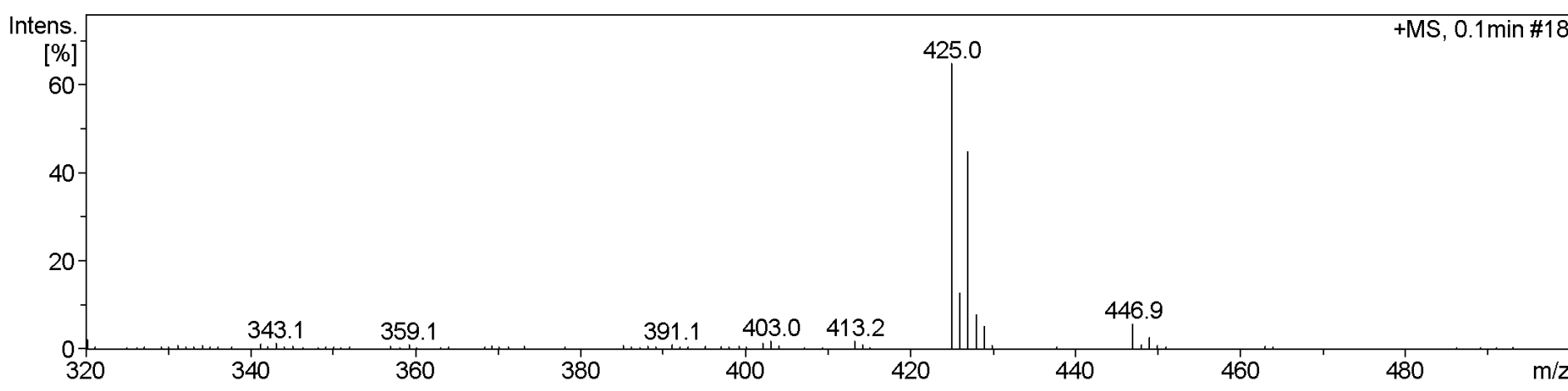
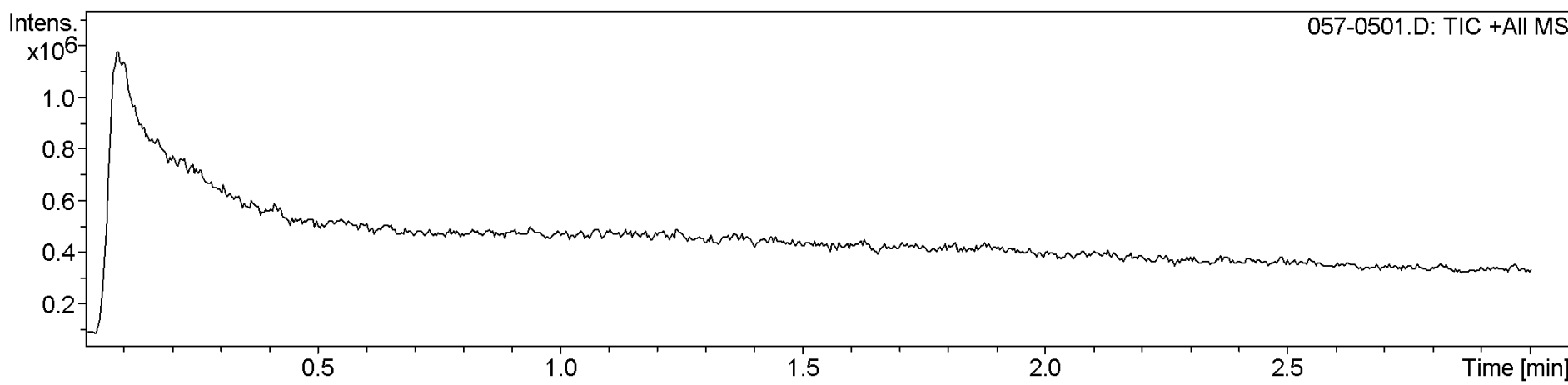
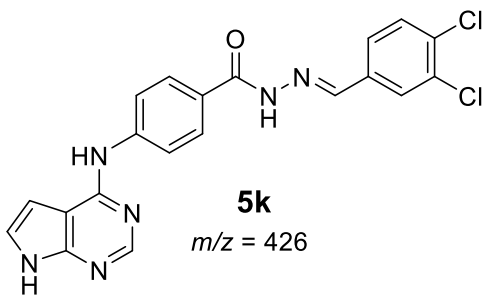
¹³C-NMR spectra of **5k**

5-k
— 163.3633
/ 153.5025
< 151.5706
< 151.0612
< 144.7600
< 144.5335
/ 135.8485
/ 132.5278
/ 132.1878
/ 131.5715
/ 128.9846
/ 128.8561
/ 127.3032
/ 126.1506
/ 123.2711
/ 119.3206

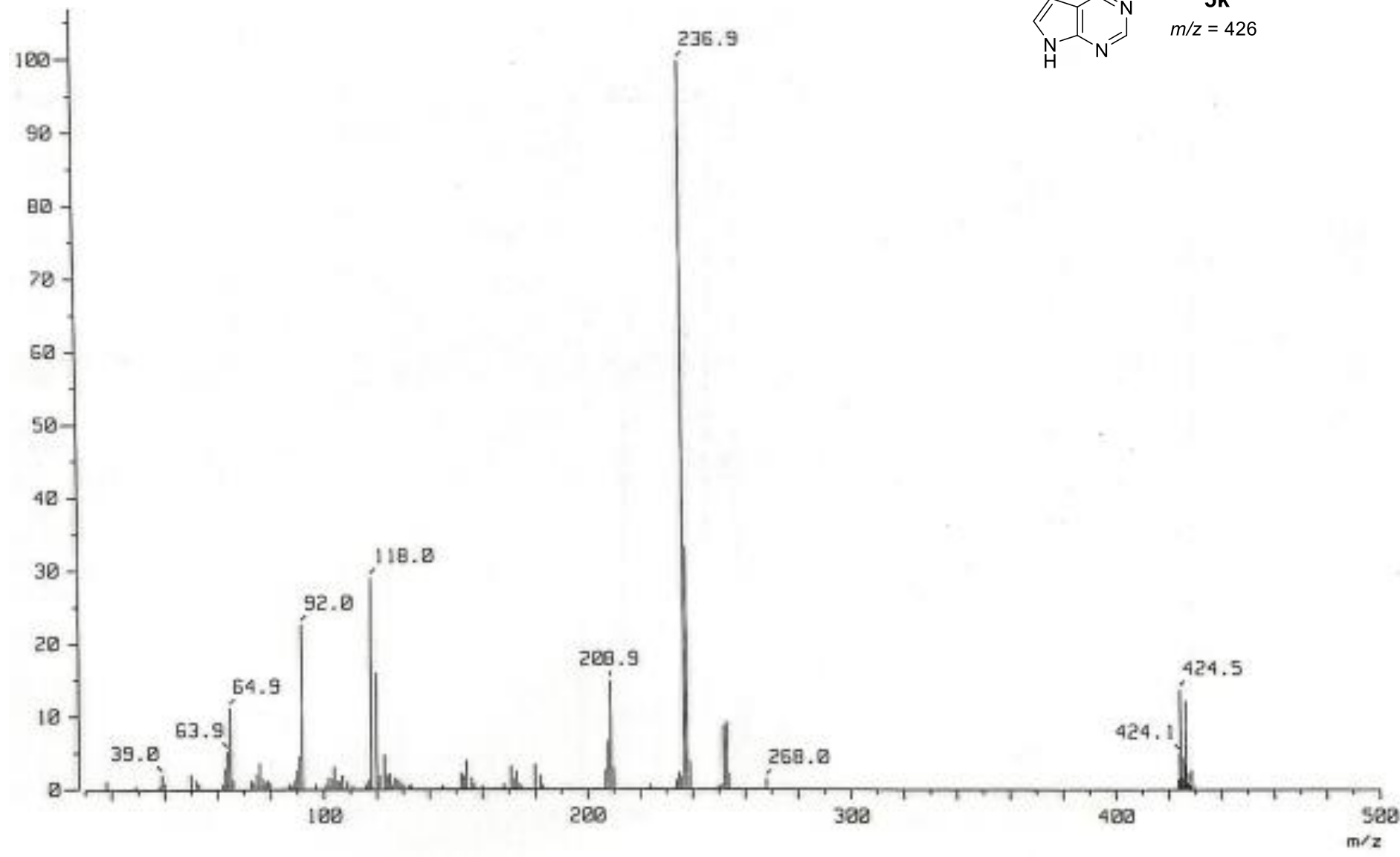
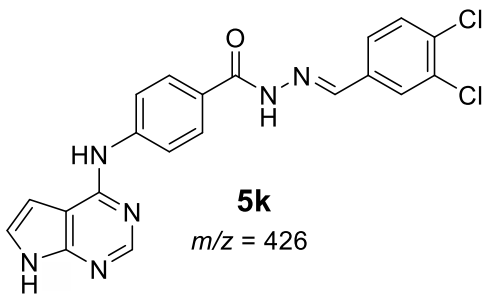
— 104.6712
— 99.2029



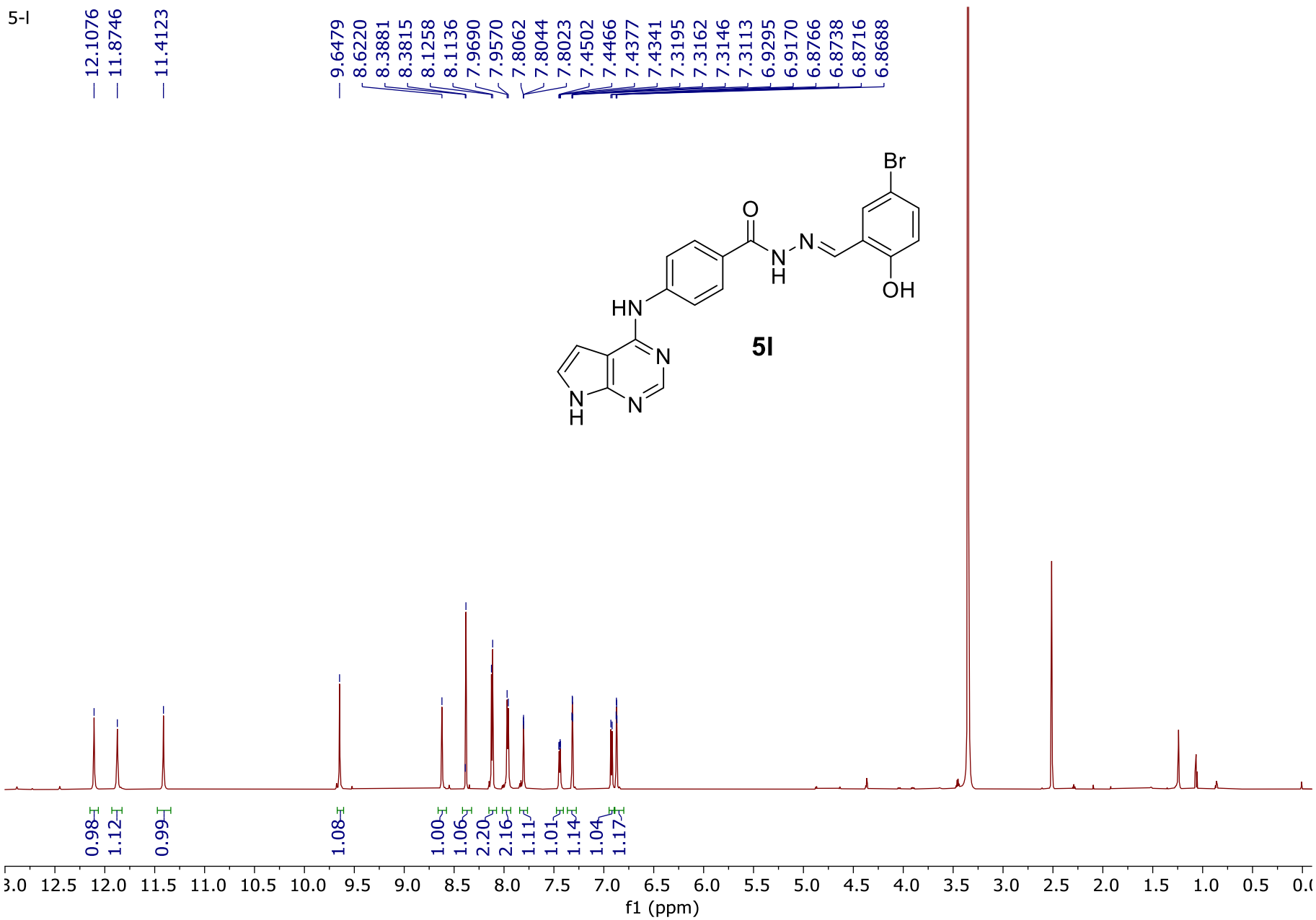
Mass spectra of **5k**



HMRS Mass spectra of **5k**



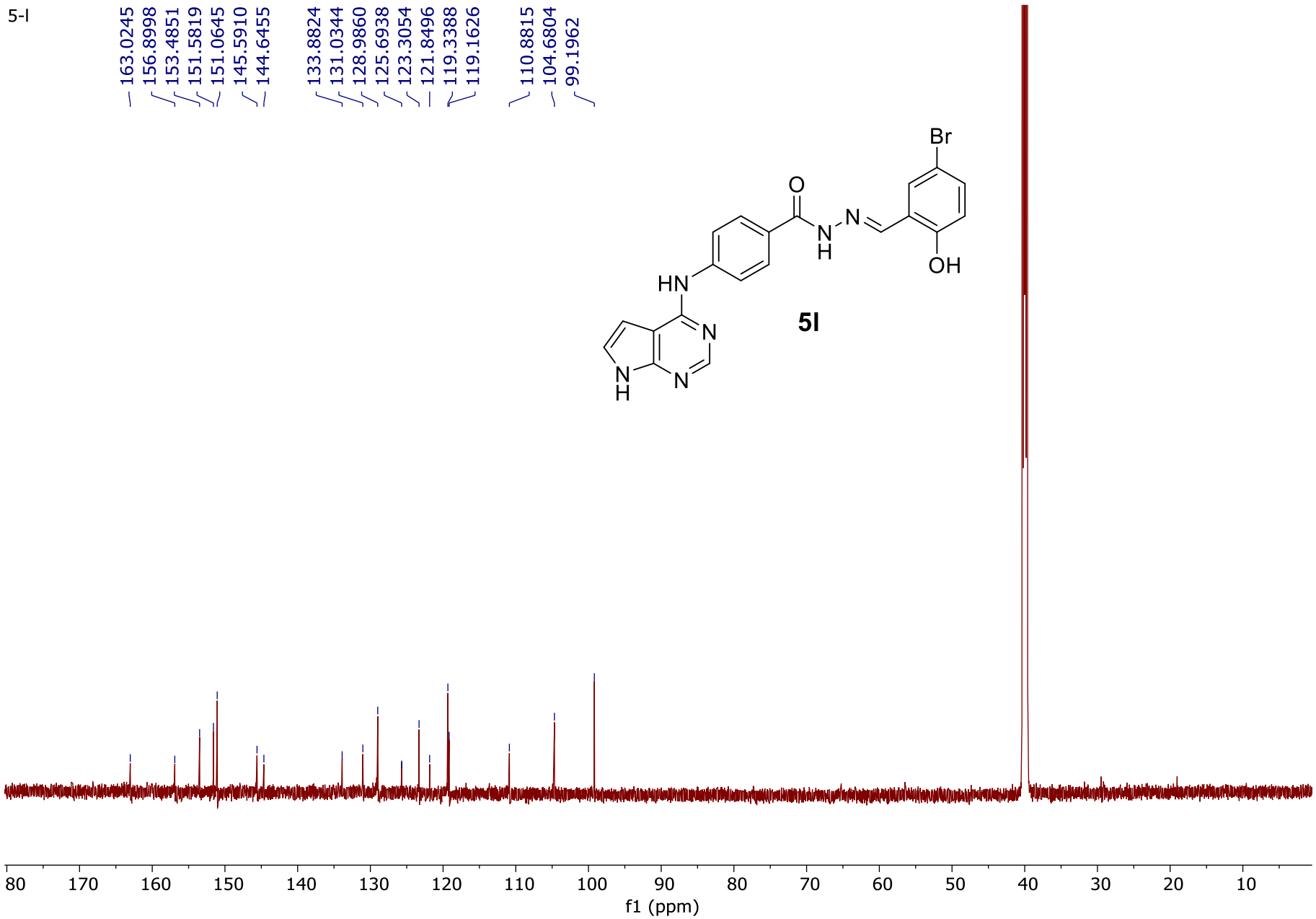
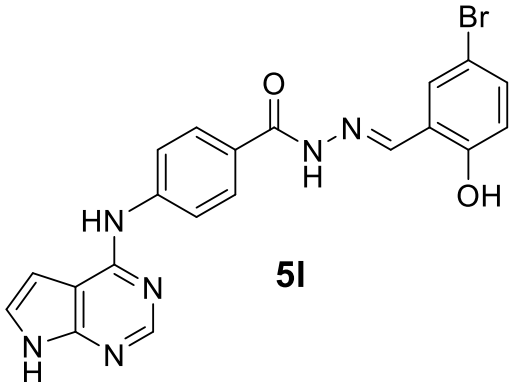
¹H-NMR spectra of **5I**



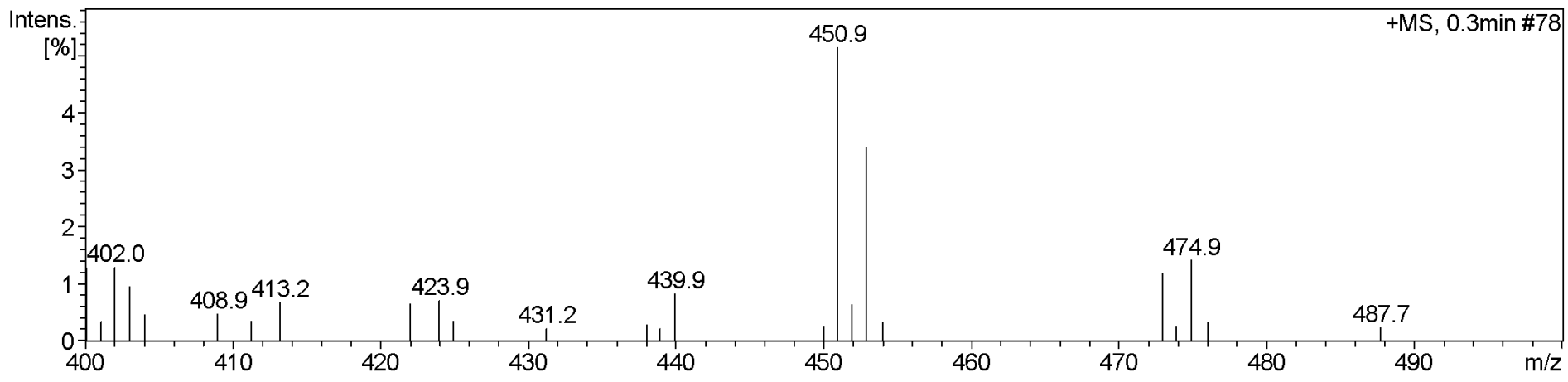
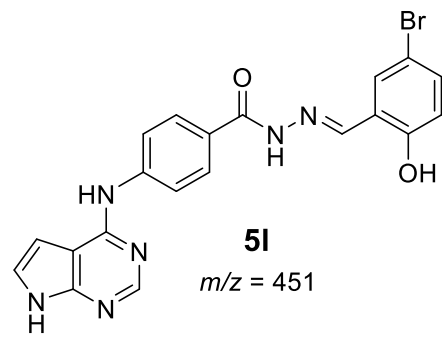
¹³C-NMR spectra of **5I**

5-I

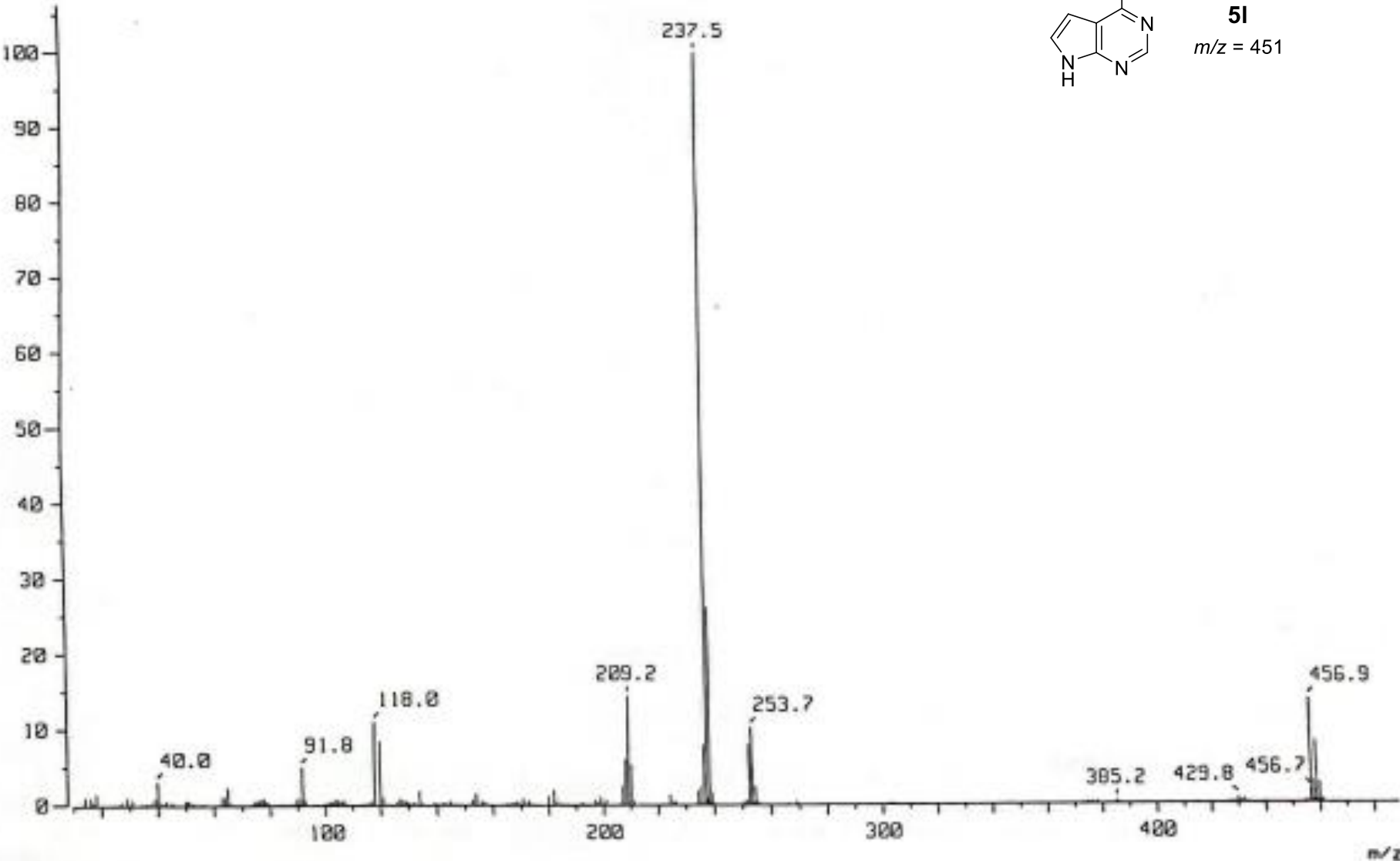
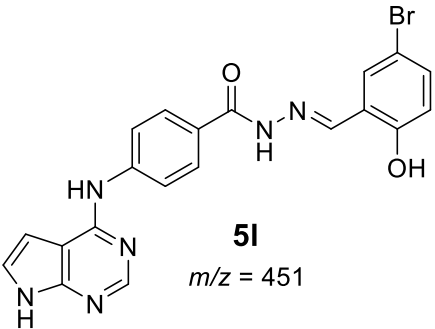
- 163.0245
- 156.8998
- 153.4851
- 151.5819
- 151.0645
- 145.5910
- 144.6455
- 133.8824
- 131.0344
- 128.9860
- 125.6938
- 123.3054
- 121.8496
- 119.3388
- 119.1626
- 110.8815
- 104.6804
- 99.1962



Mass spectra of **5l**

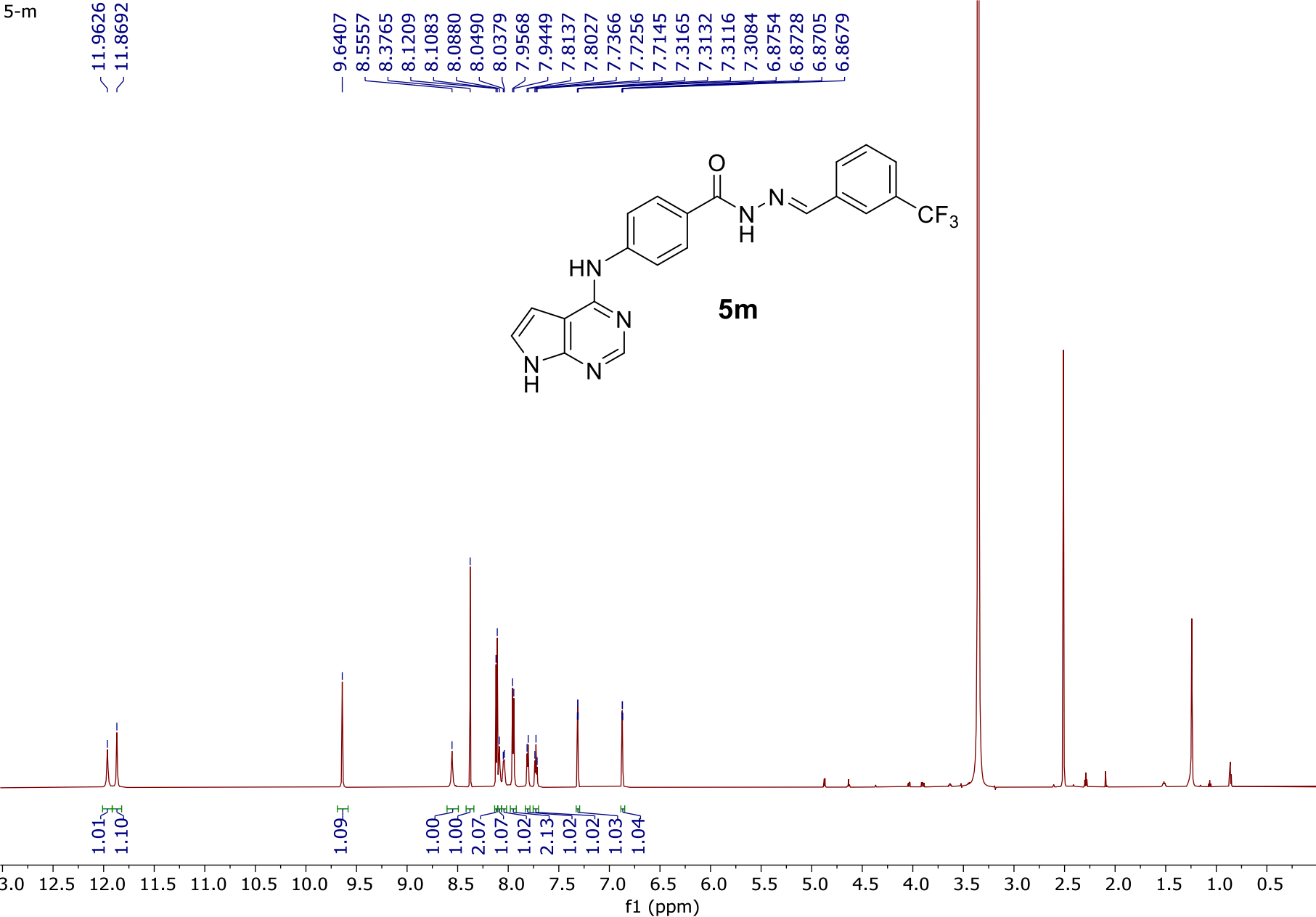


HMRS Mass spectra of **5l**

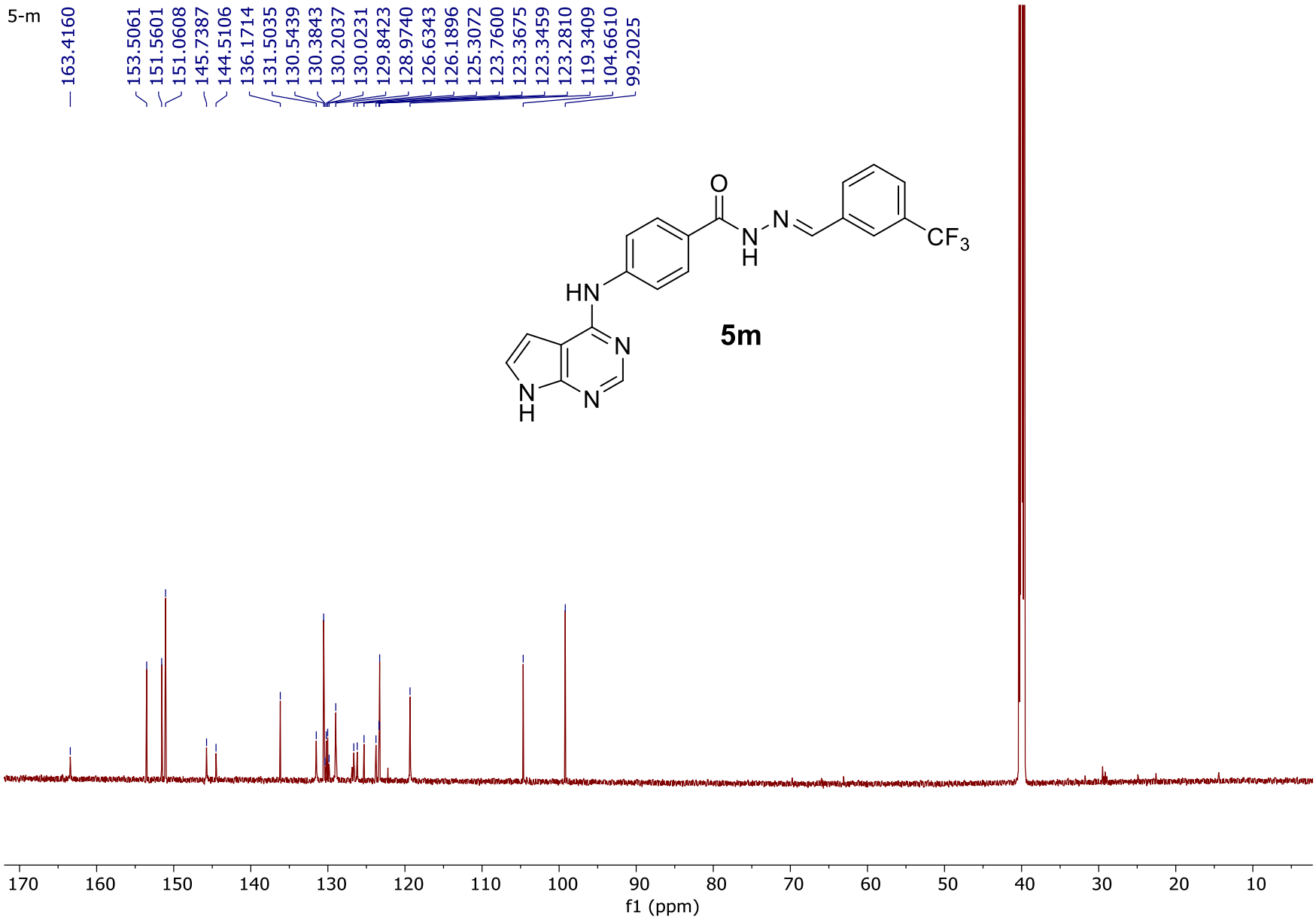


¹H-NMR spectra of **5m**

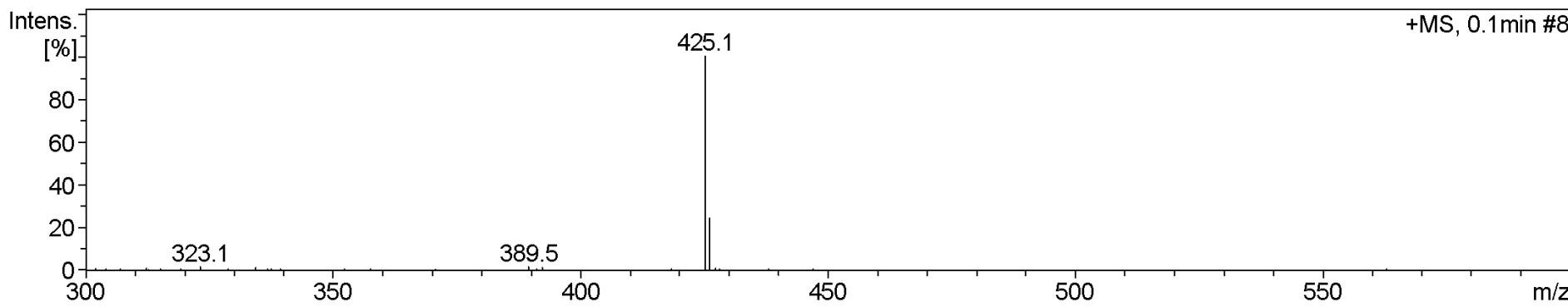
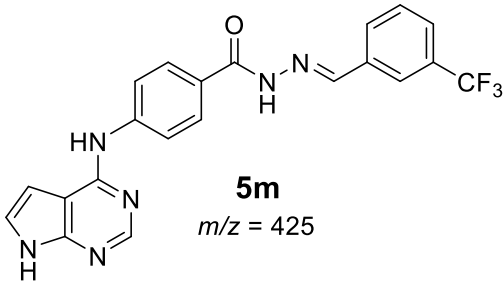
5-m



¹³C-NMR spectra of **5m**



Mass spectra of **5m**



HMRS Mass spectra of **5m**

