

Supplementary Material
for

**Friedel-Crafts Chemistry. Part 53. Divergent and diversity-oriented
synthesis of condensed indole scaffolds via Friedel-Crafts ring closure
approach**

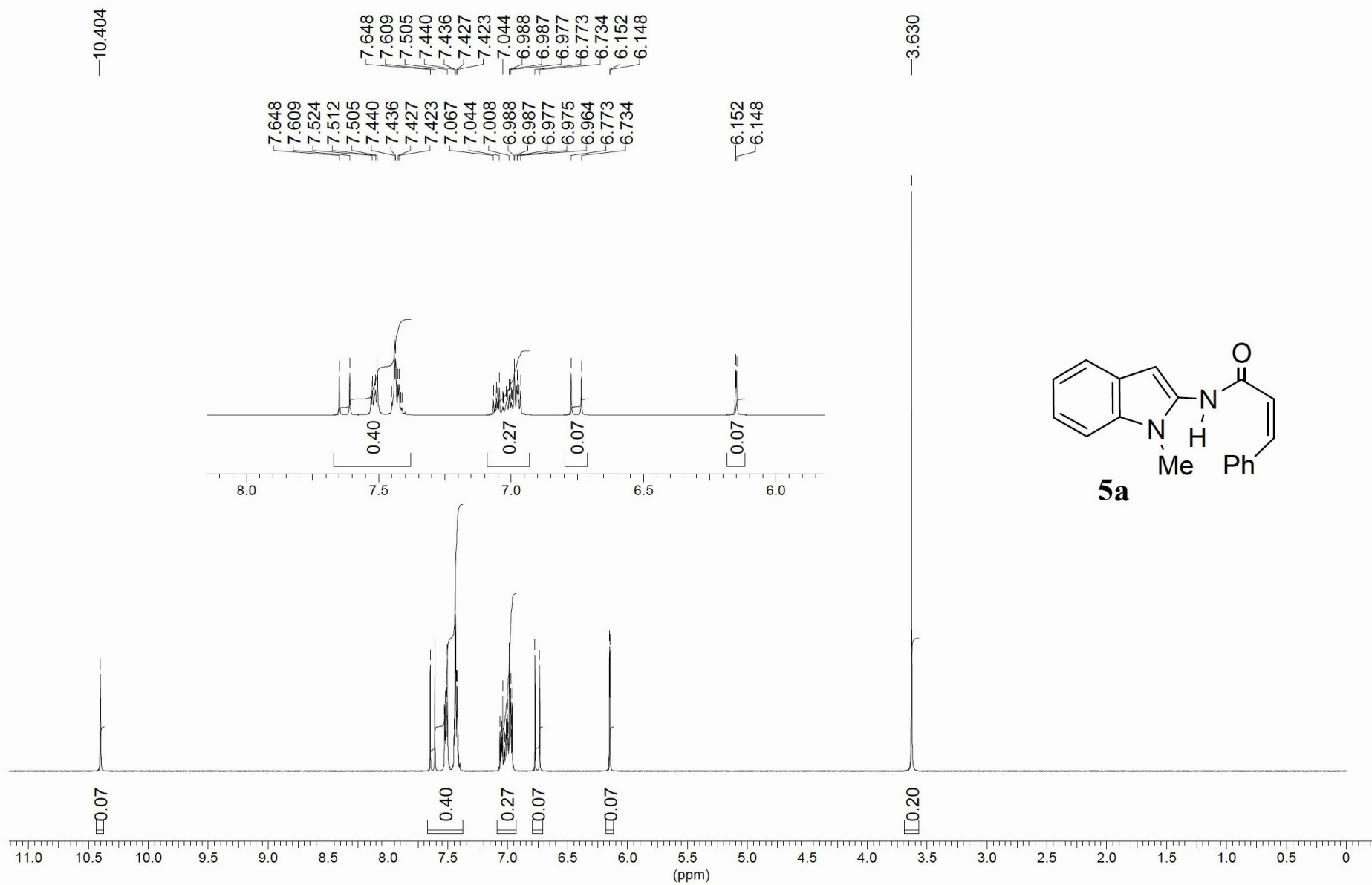
Hassan A. K. Abd El-Aal* and Ali A. Khalaf

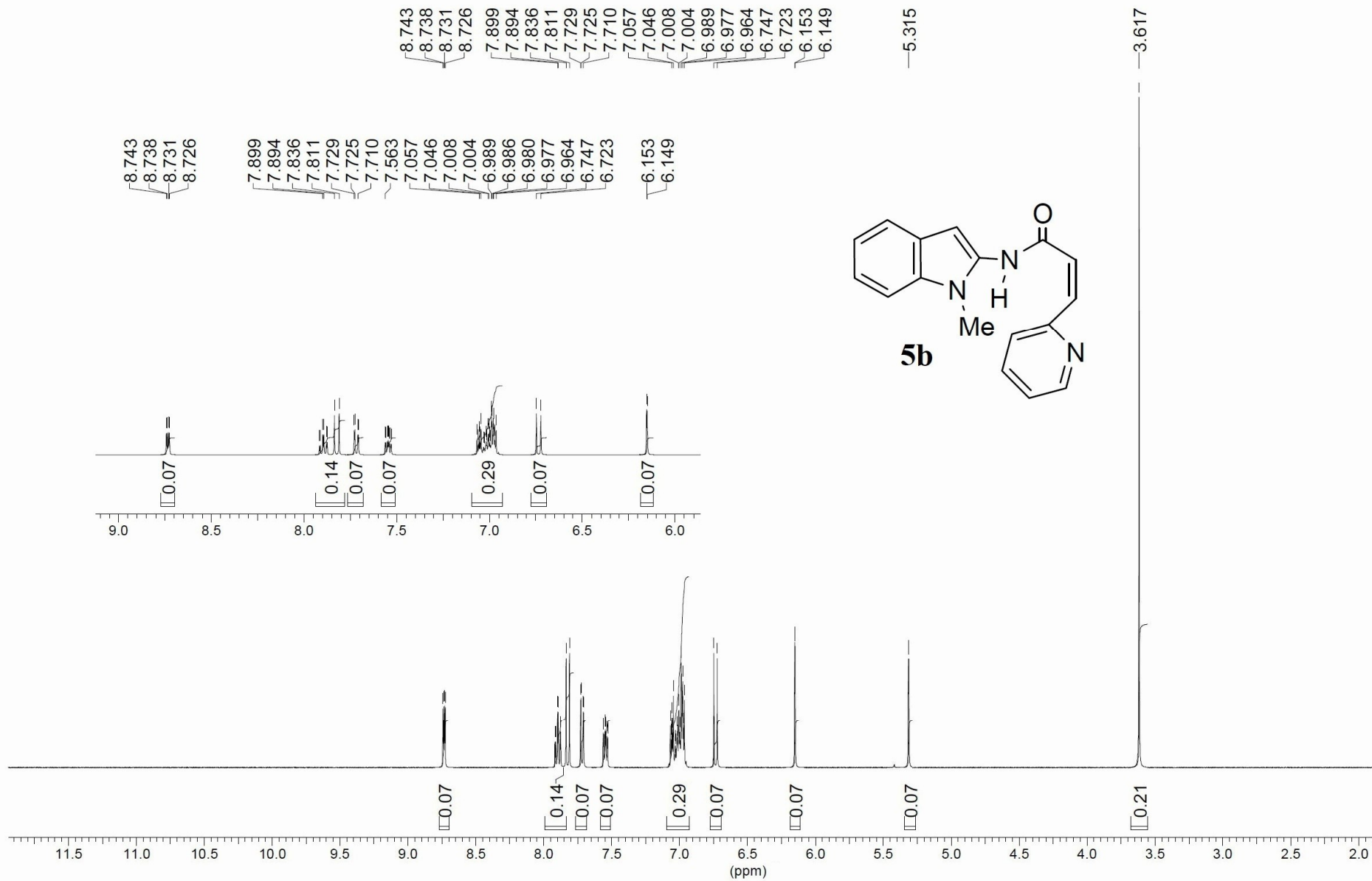
Chemistry Department, Faculty of Science, Assiut University, Assiut, 71516, Egypt

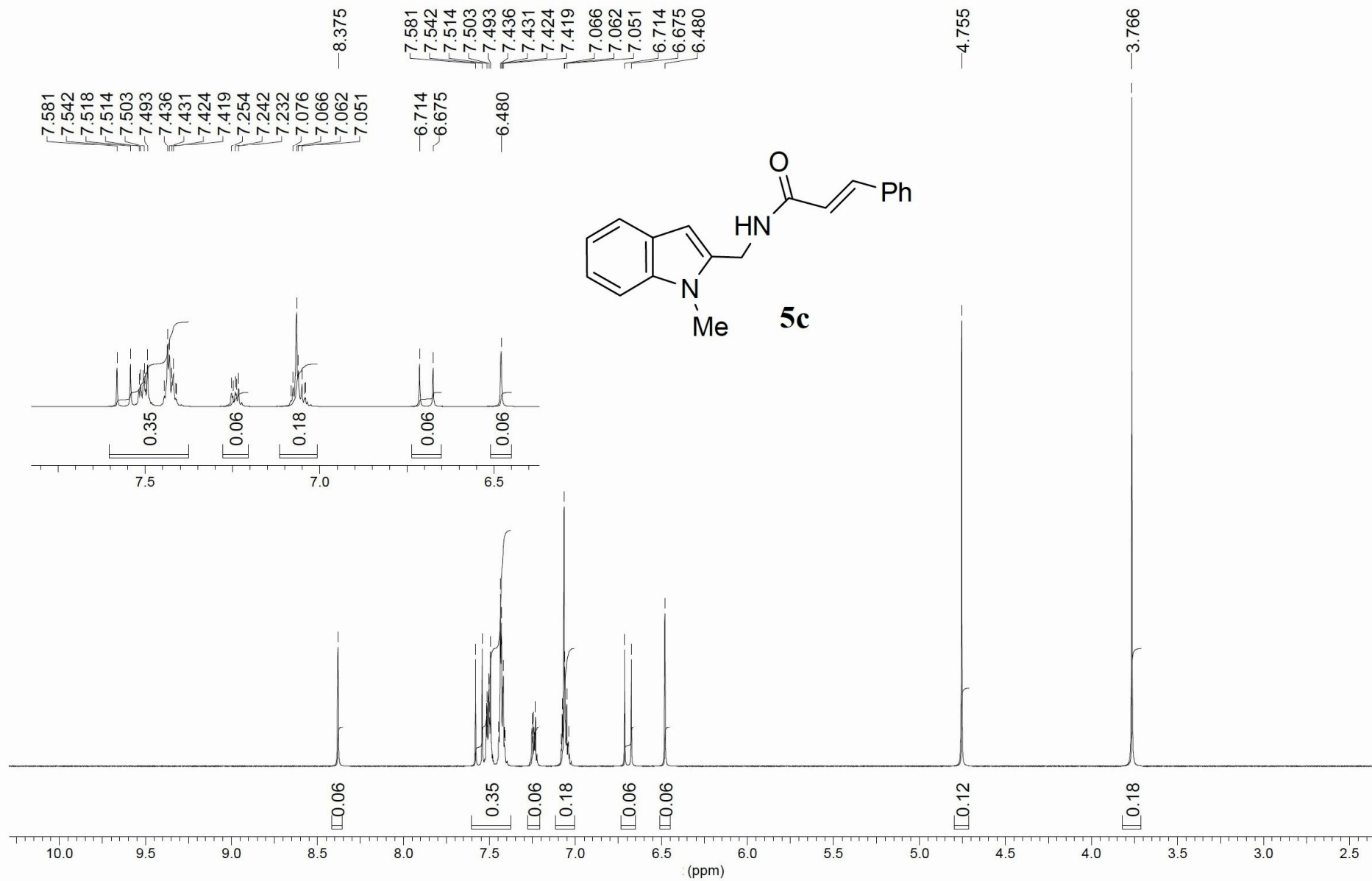
E-mail: hassankotb33@yahoo.com

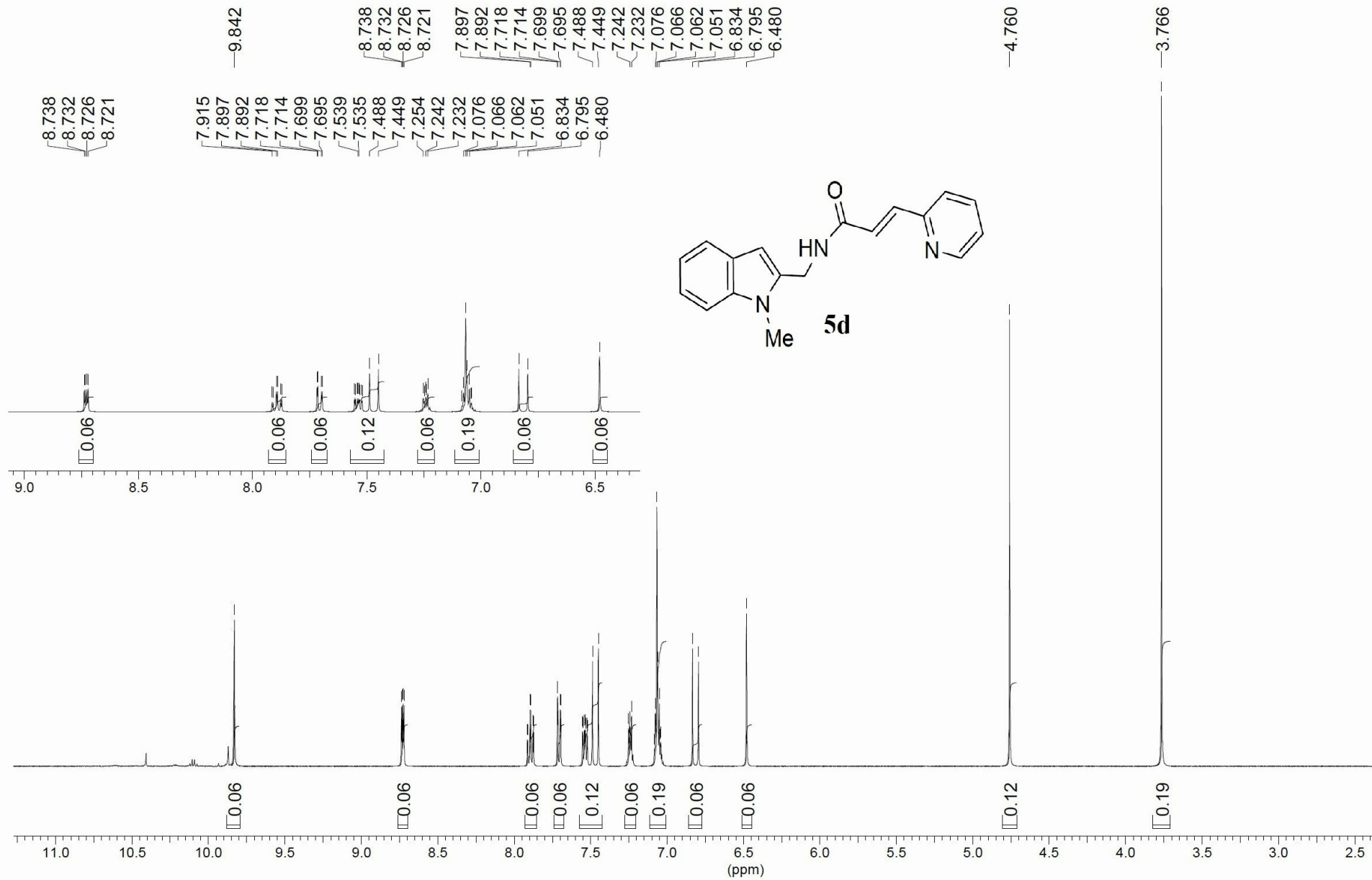
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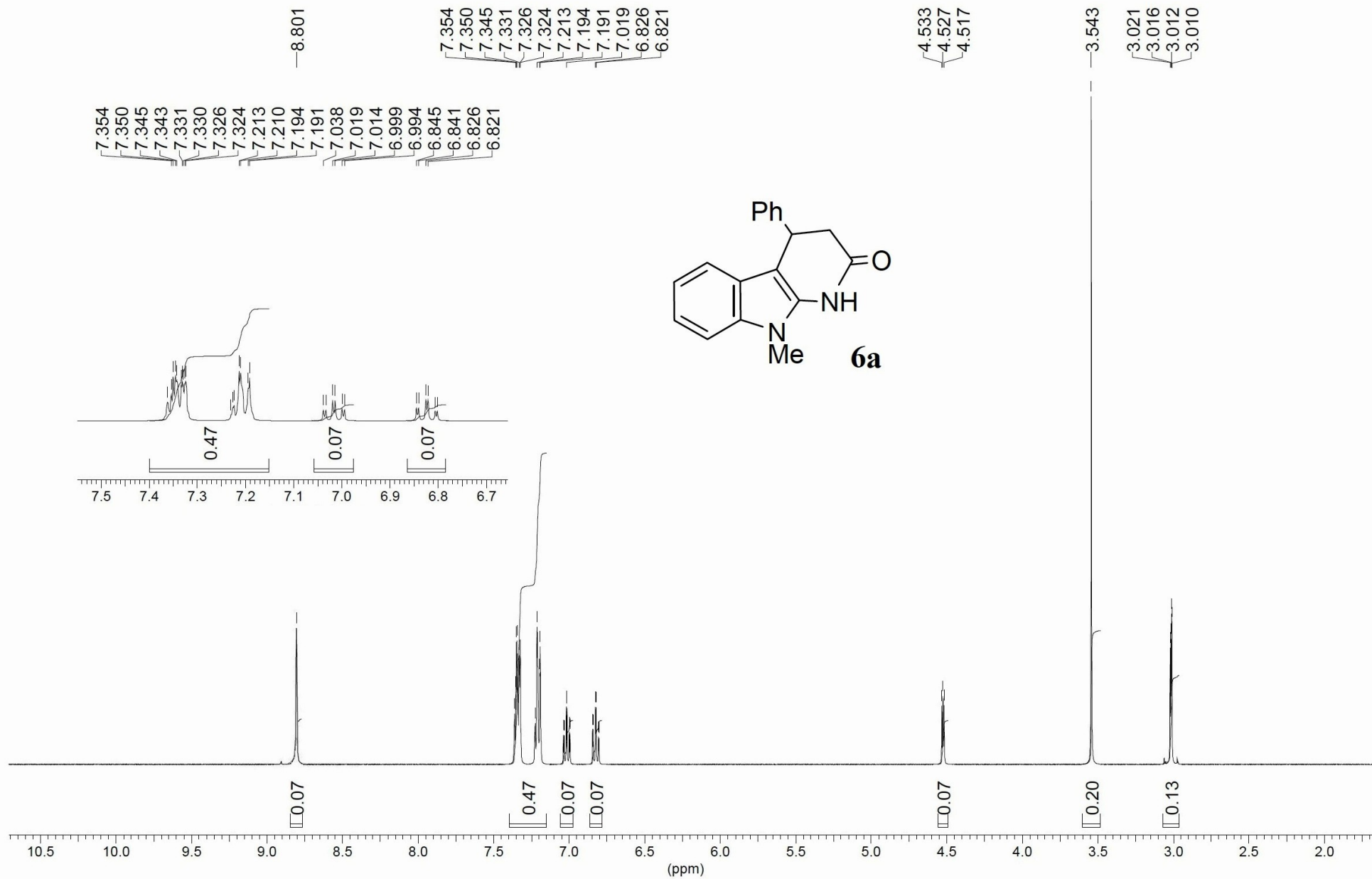
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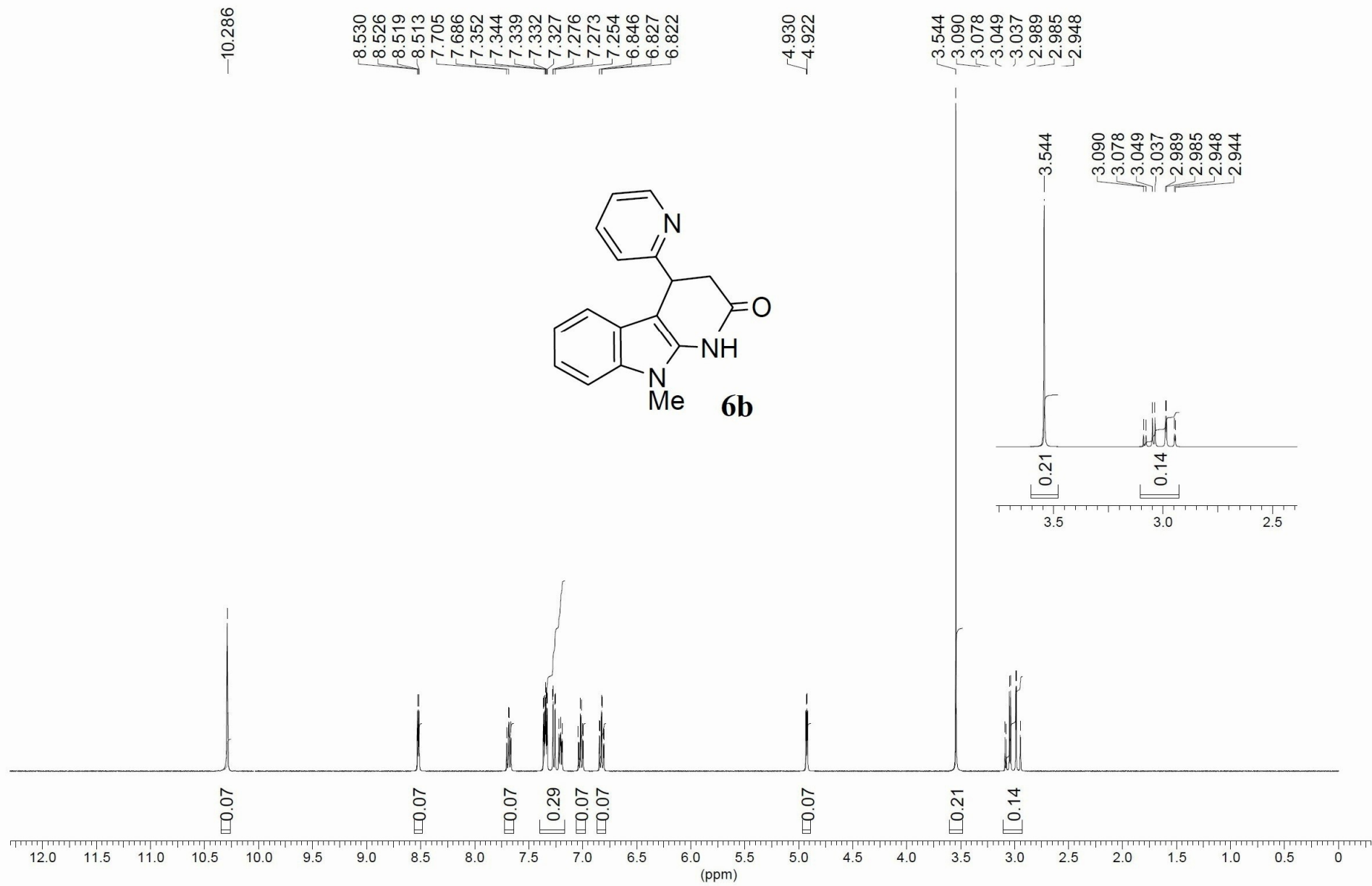


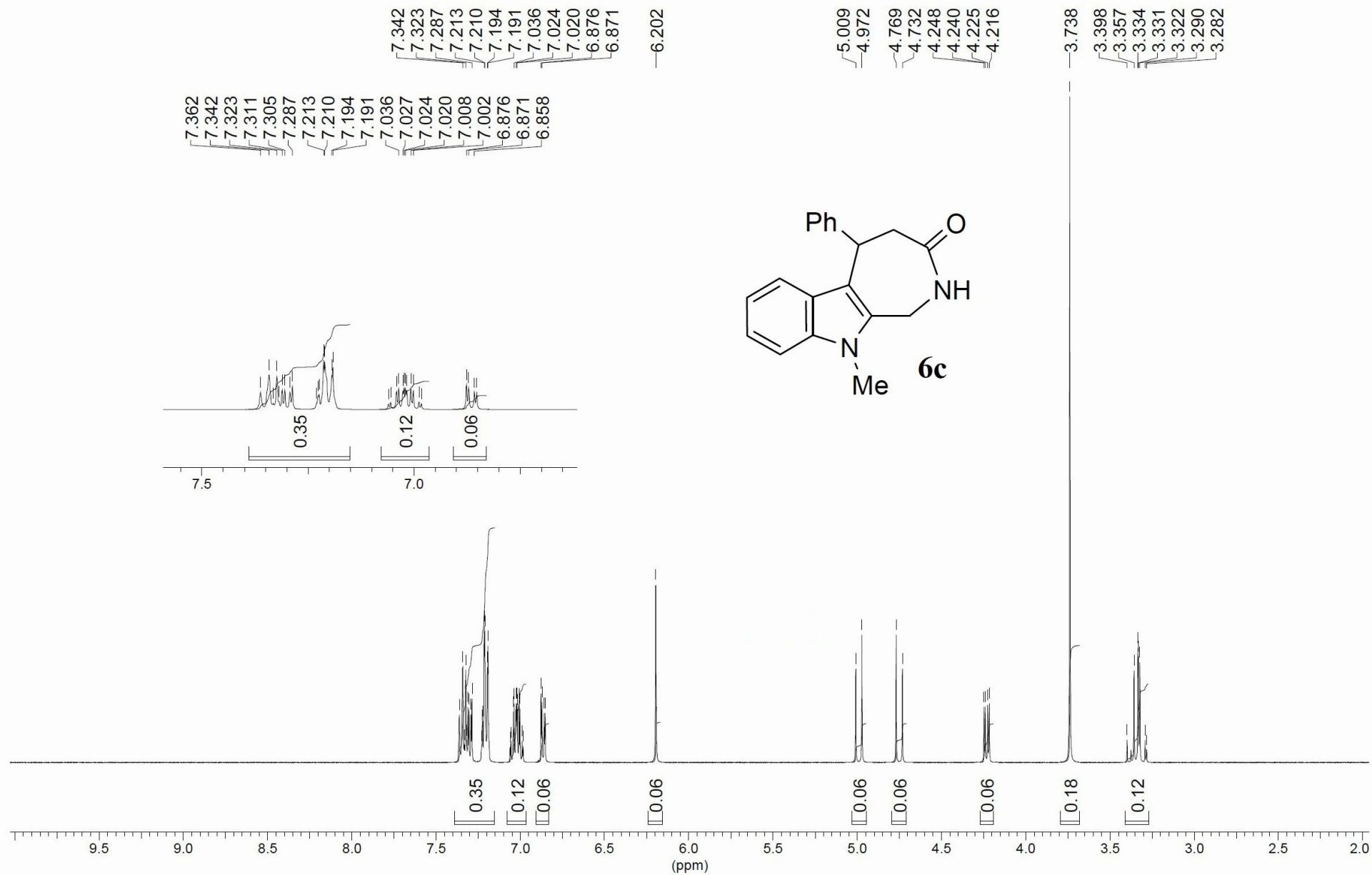


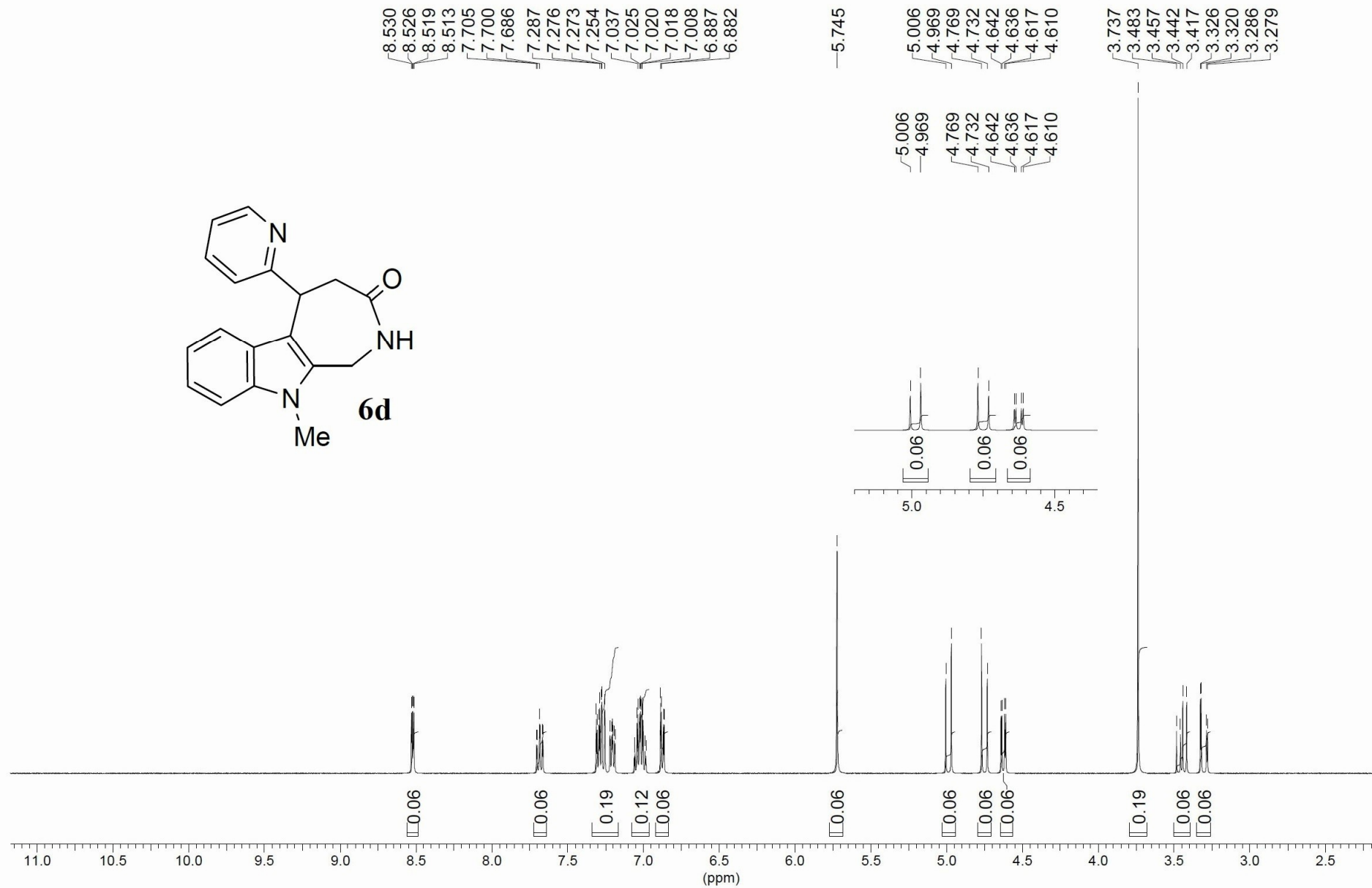


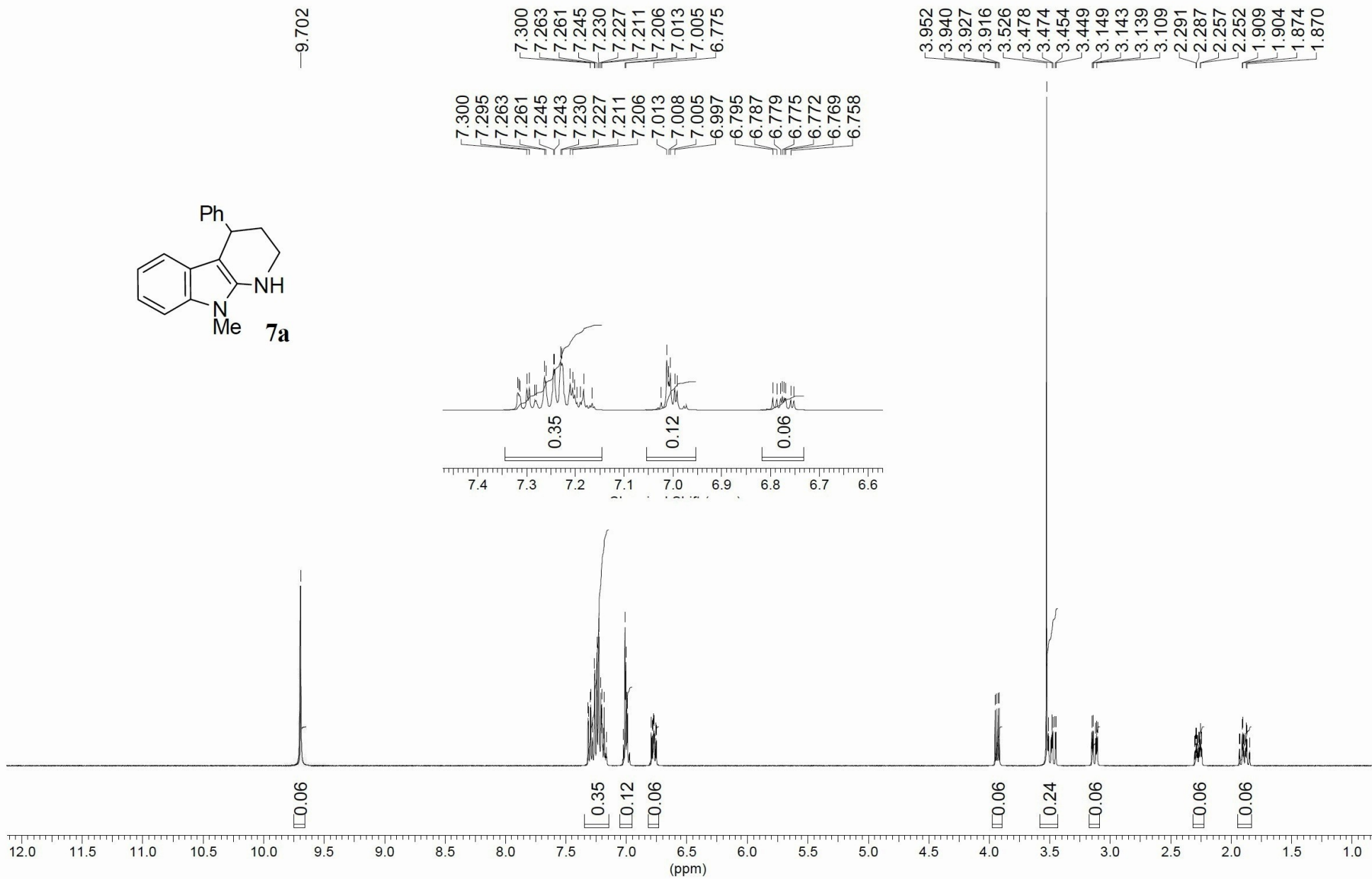
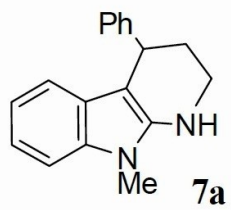


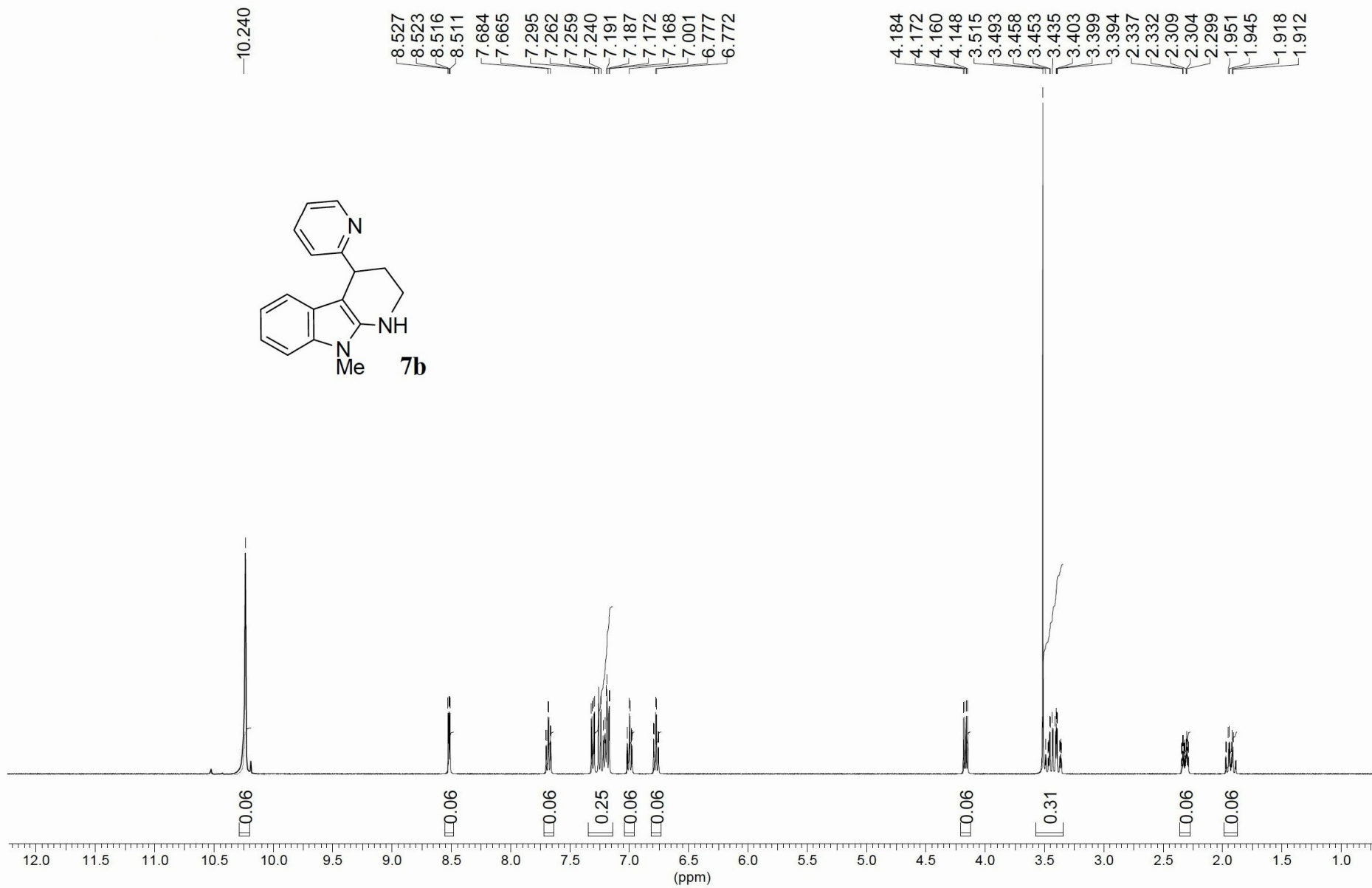


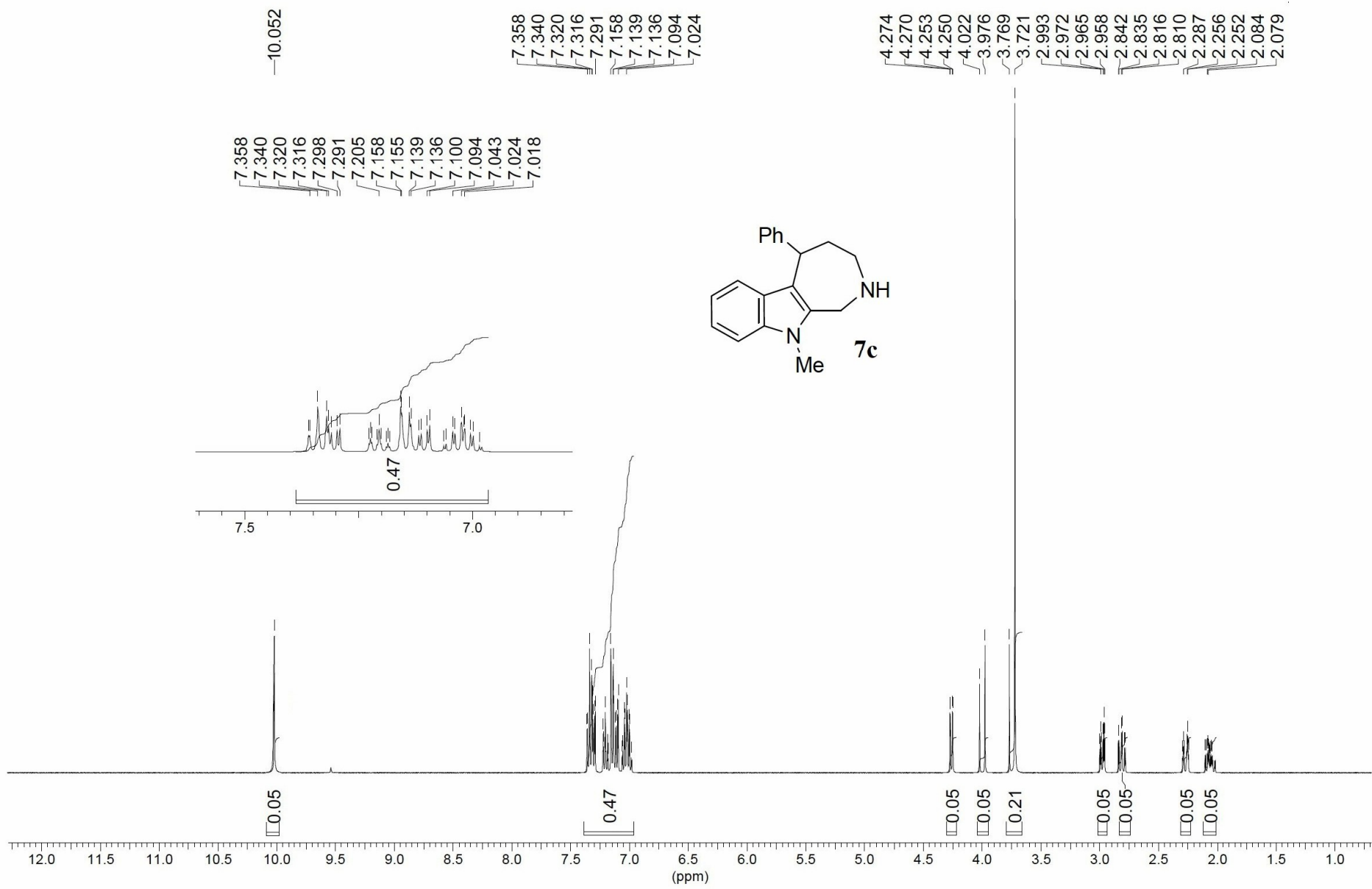


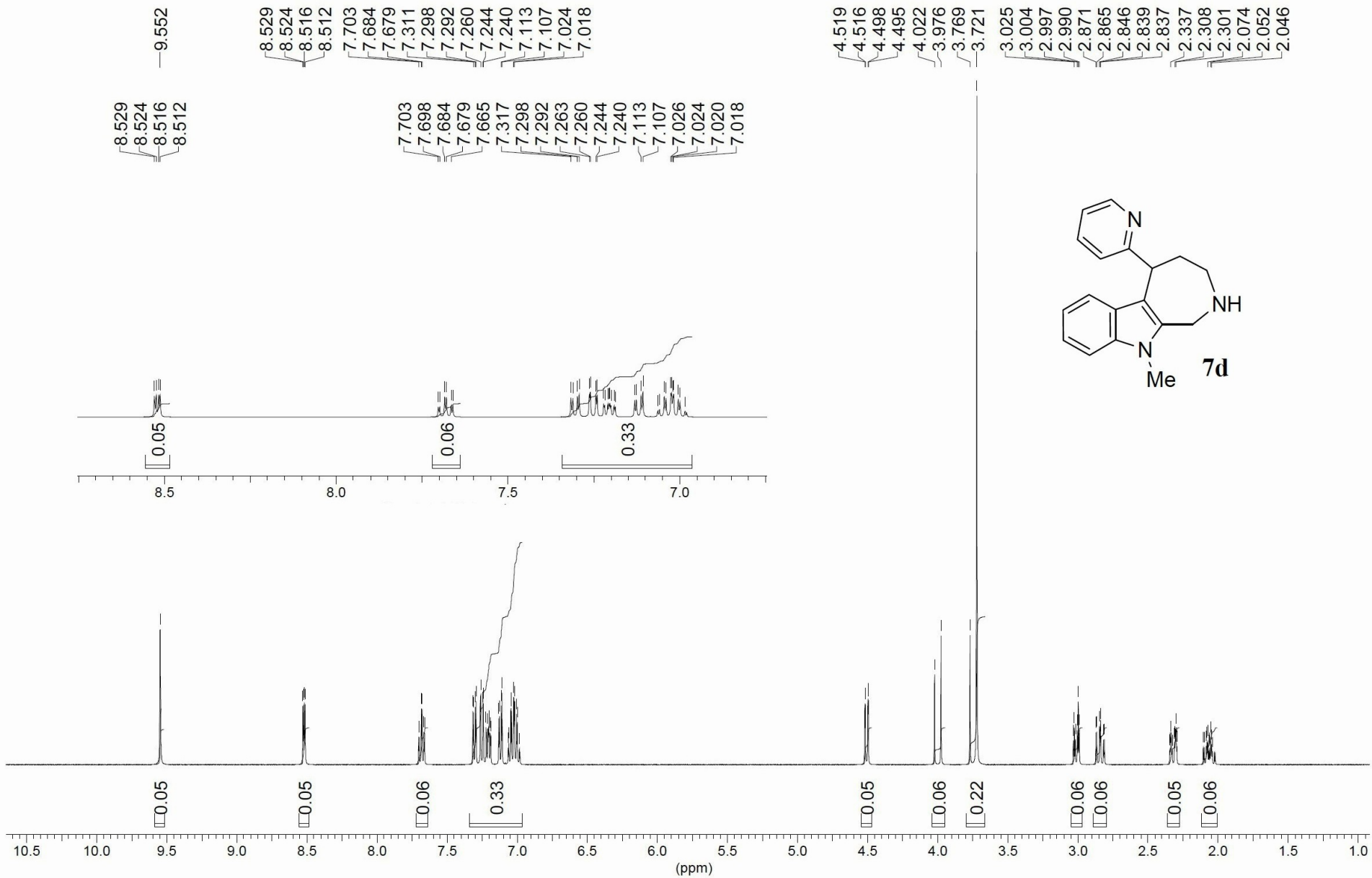


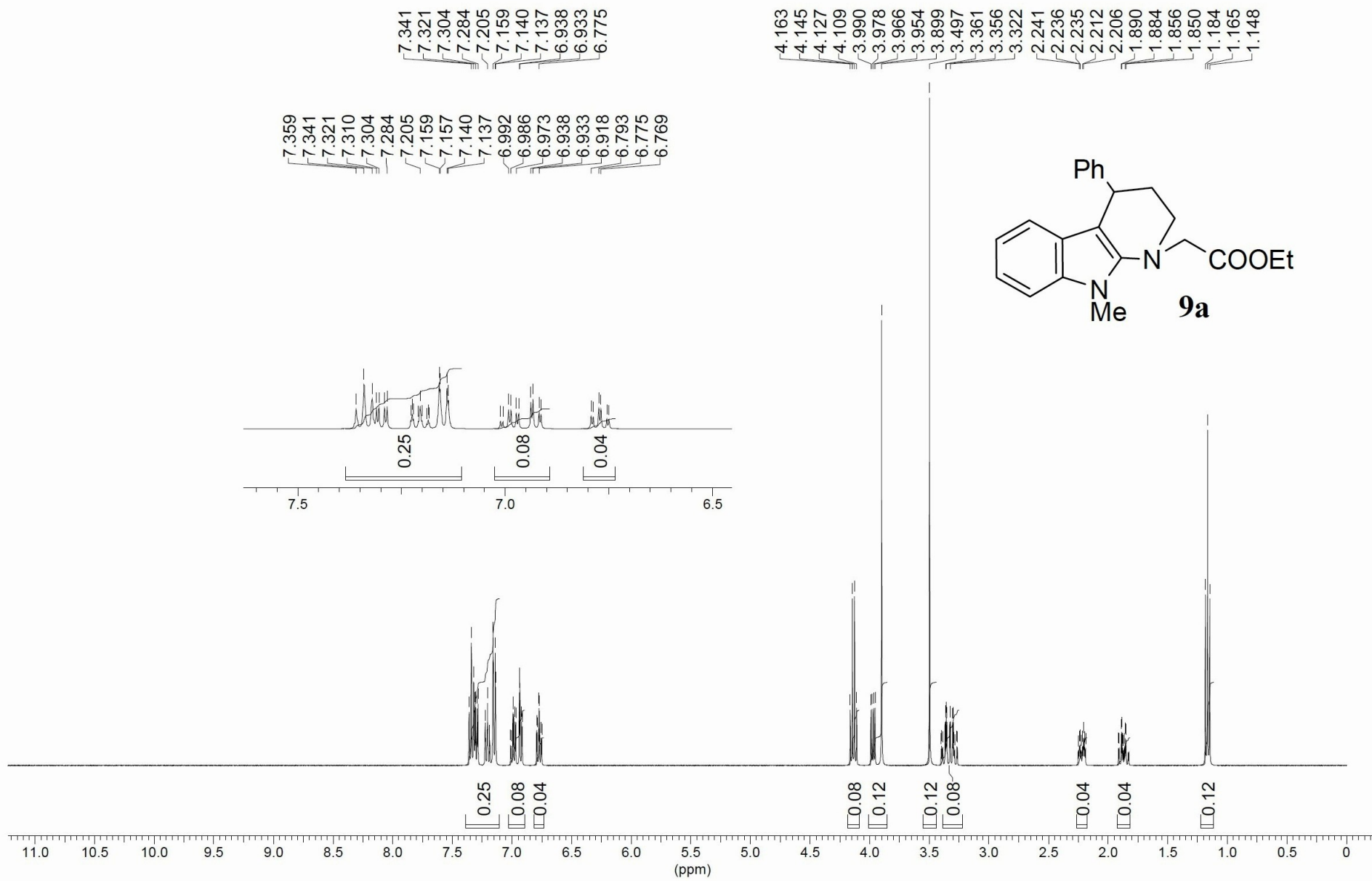


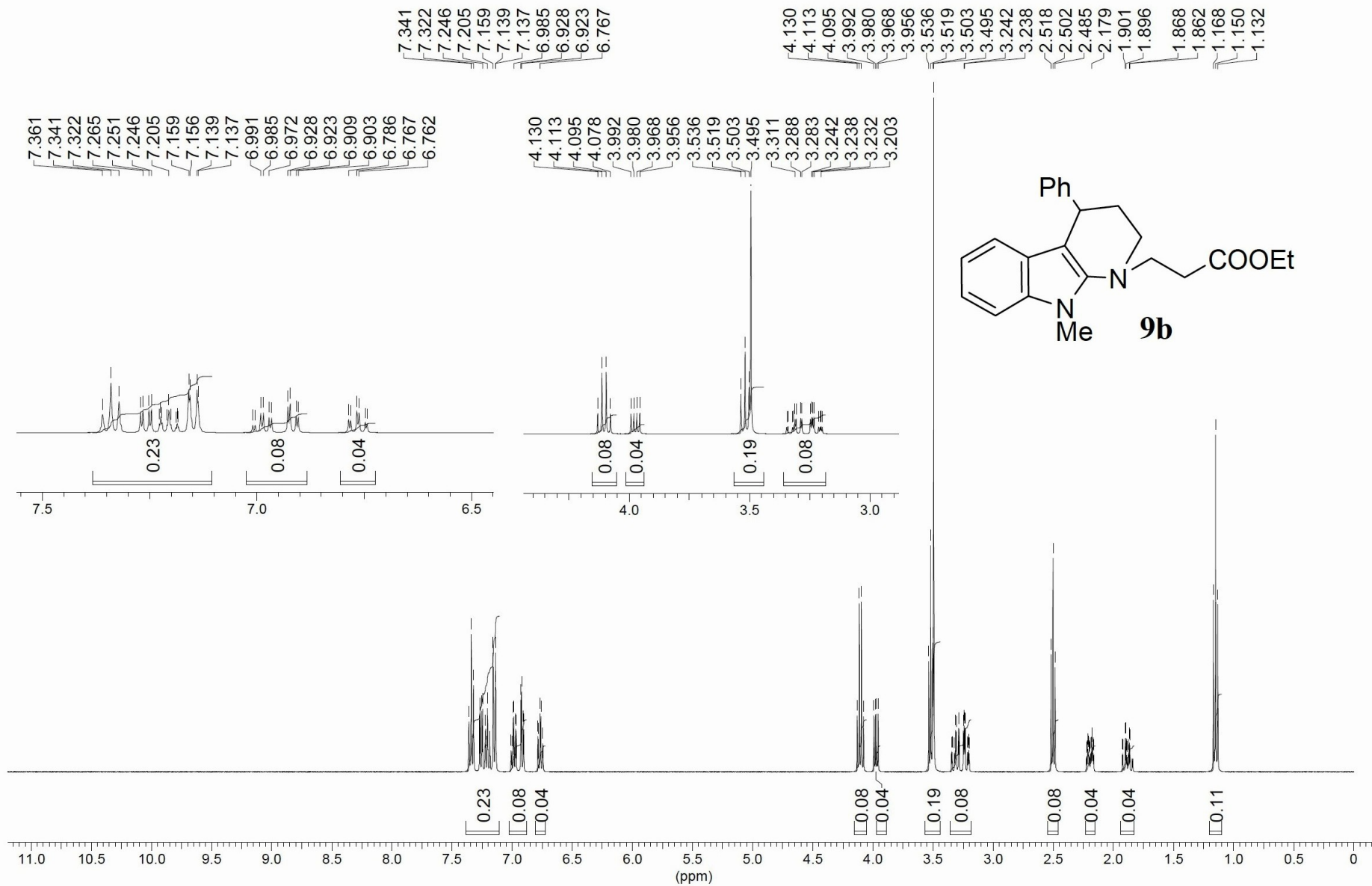


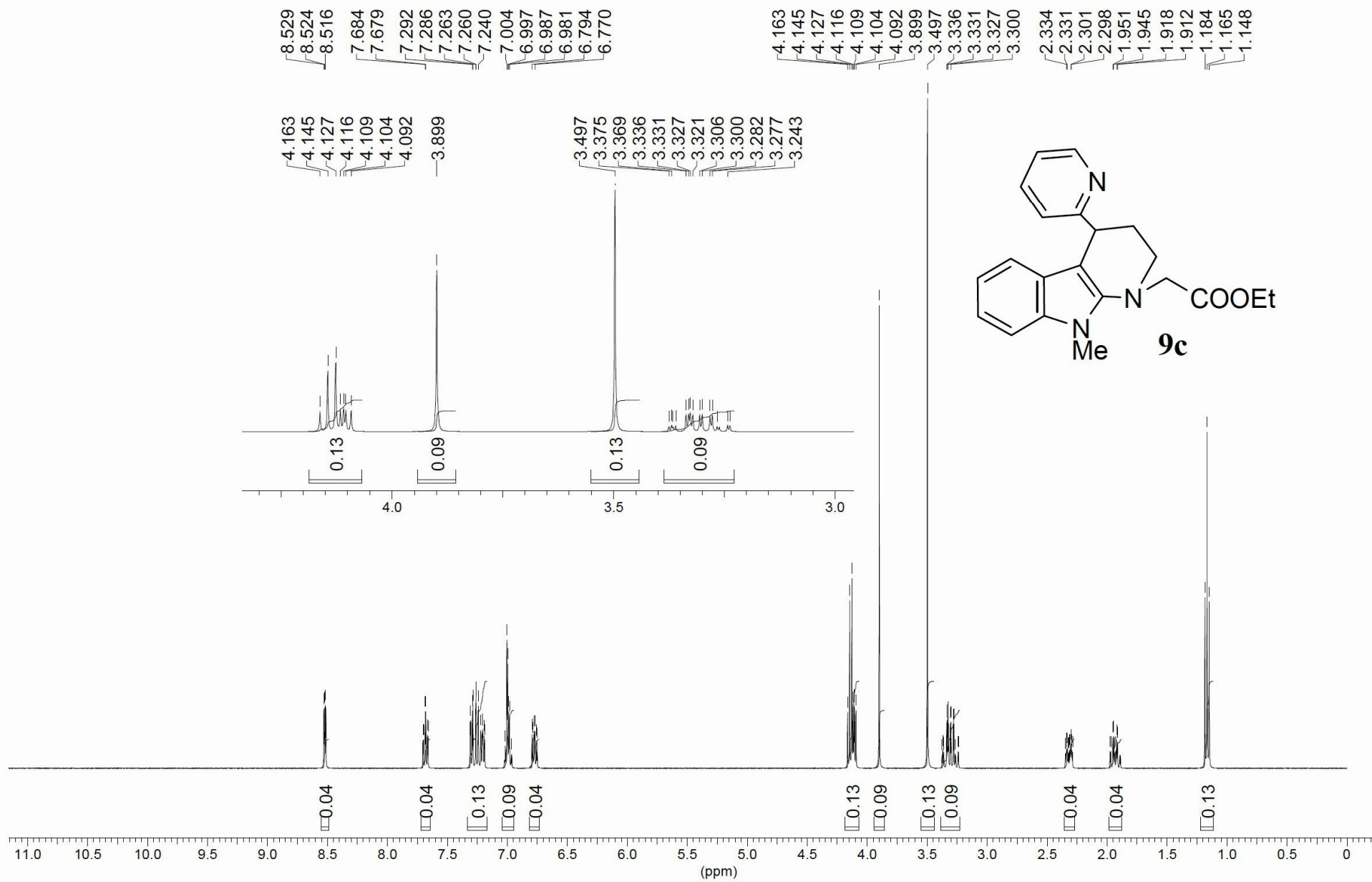


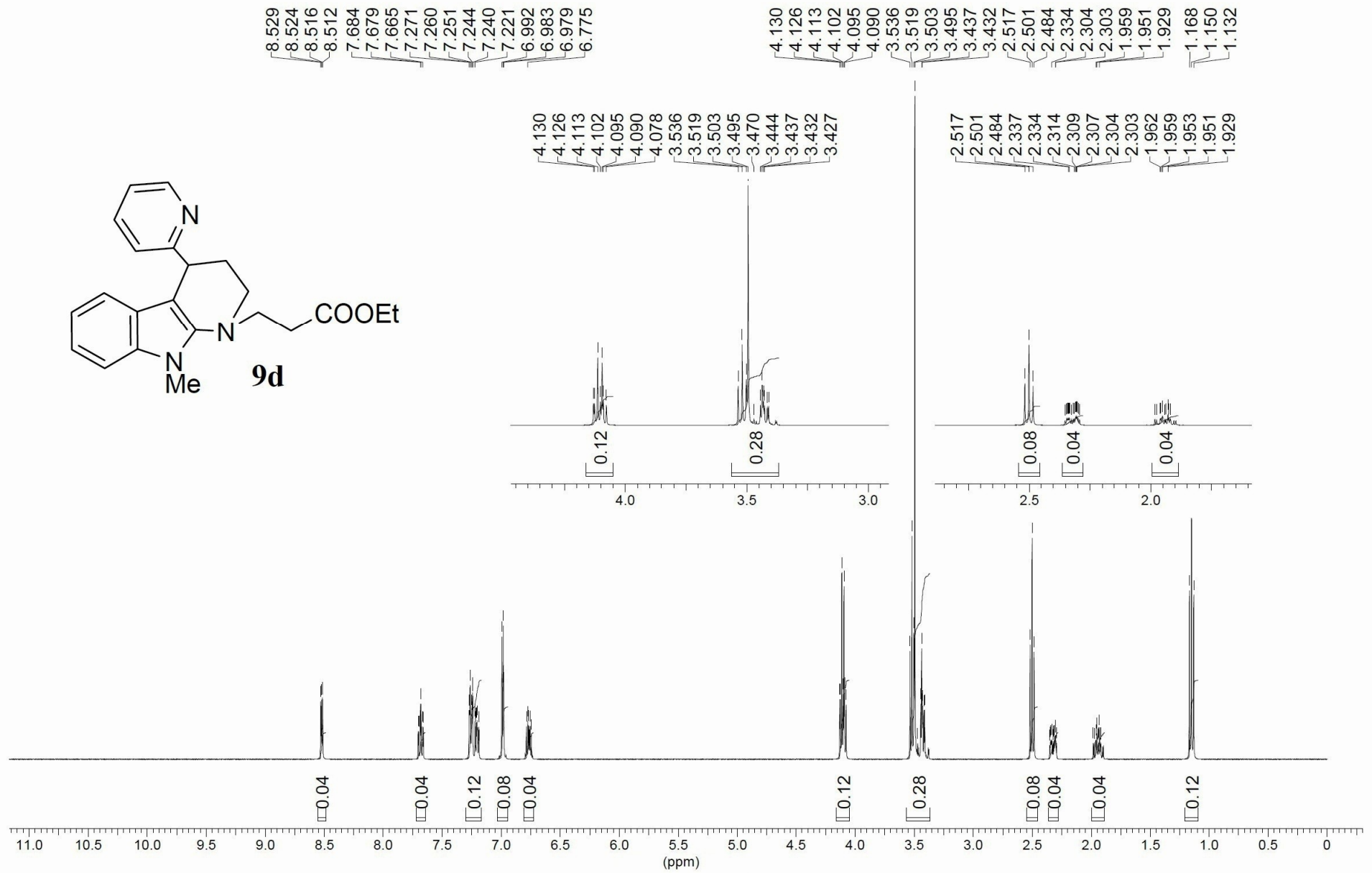


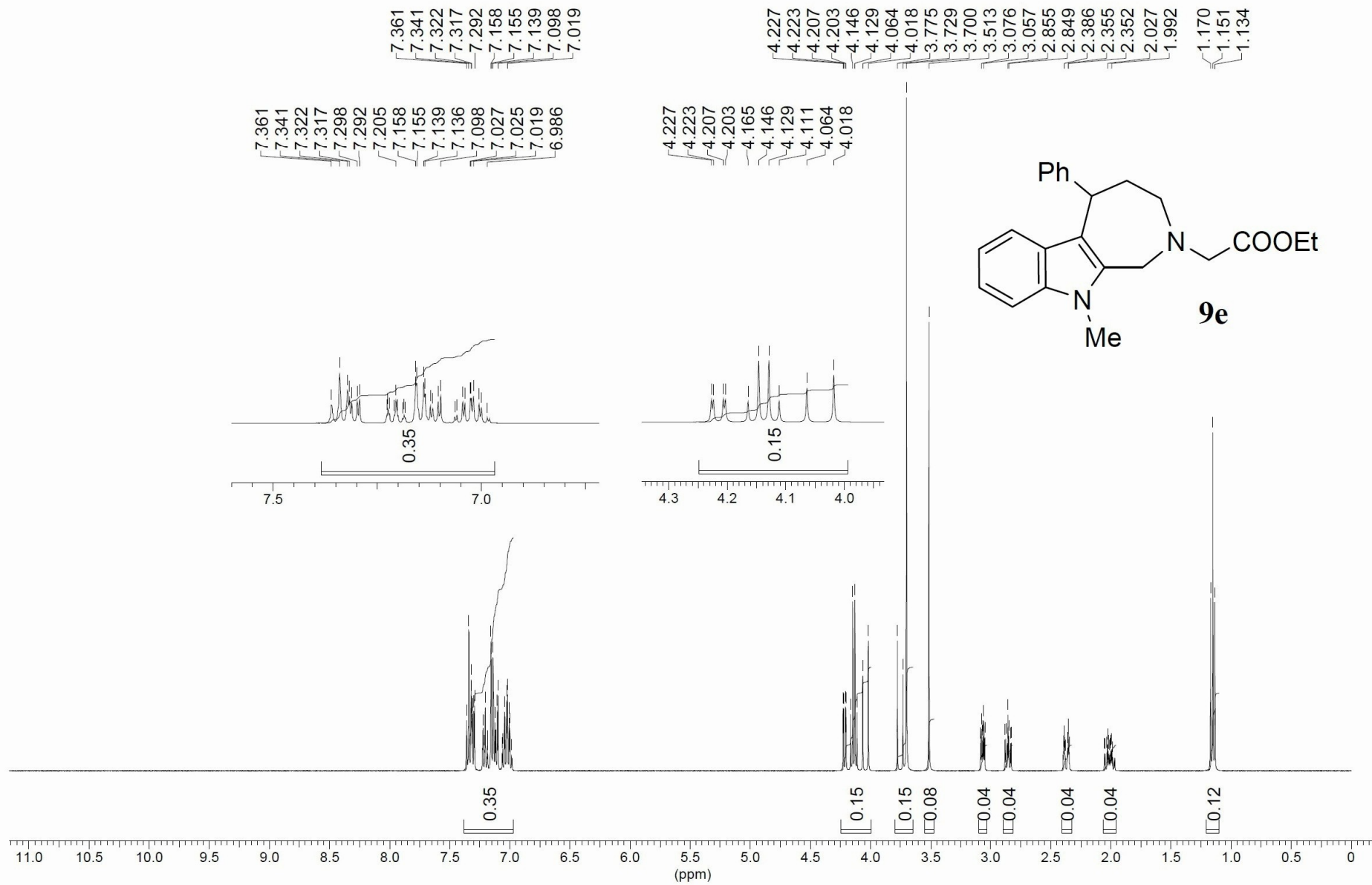


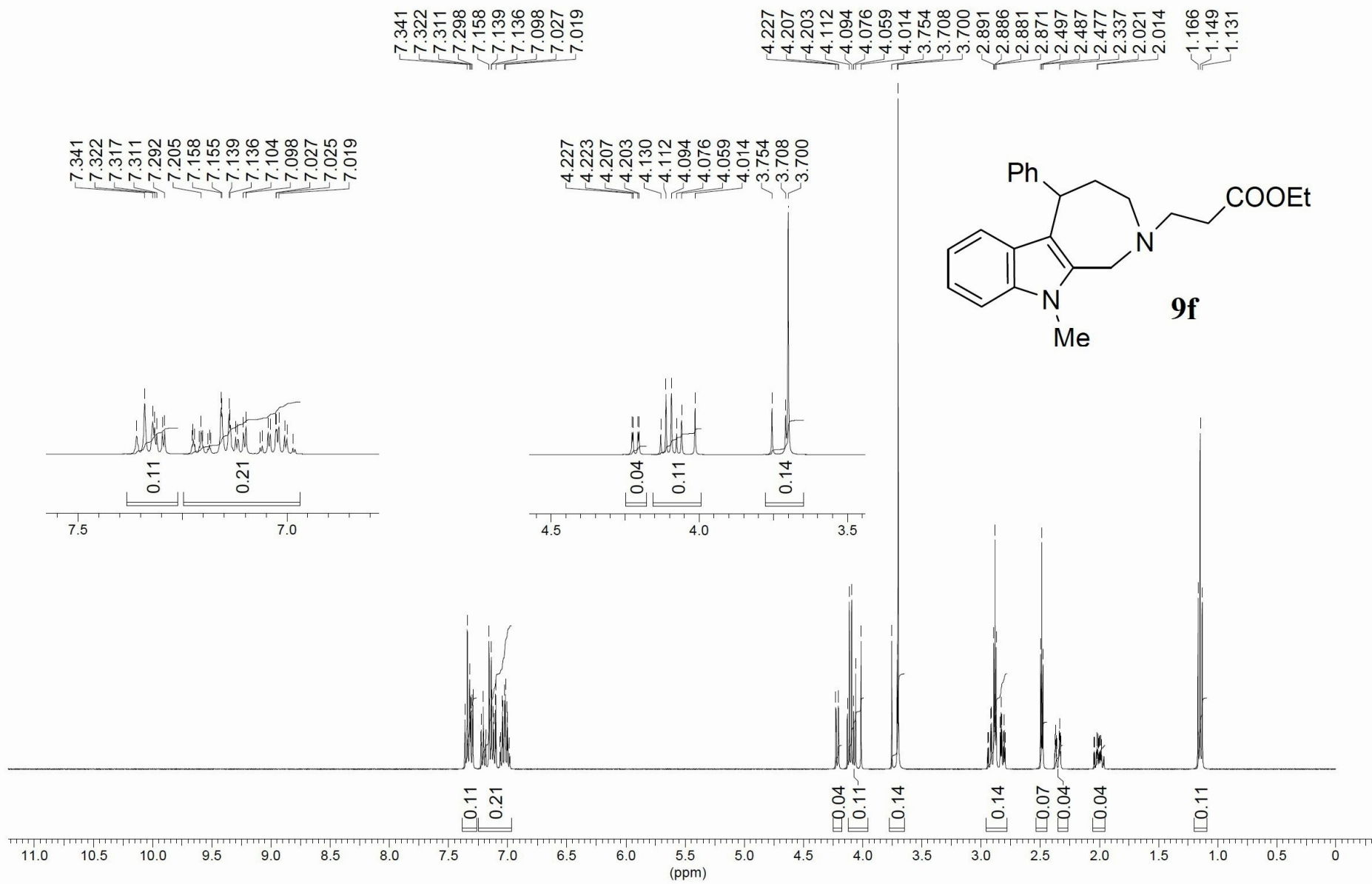


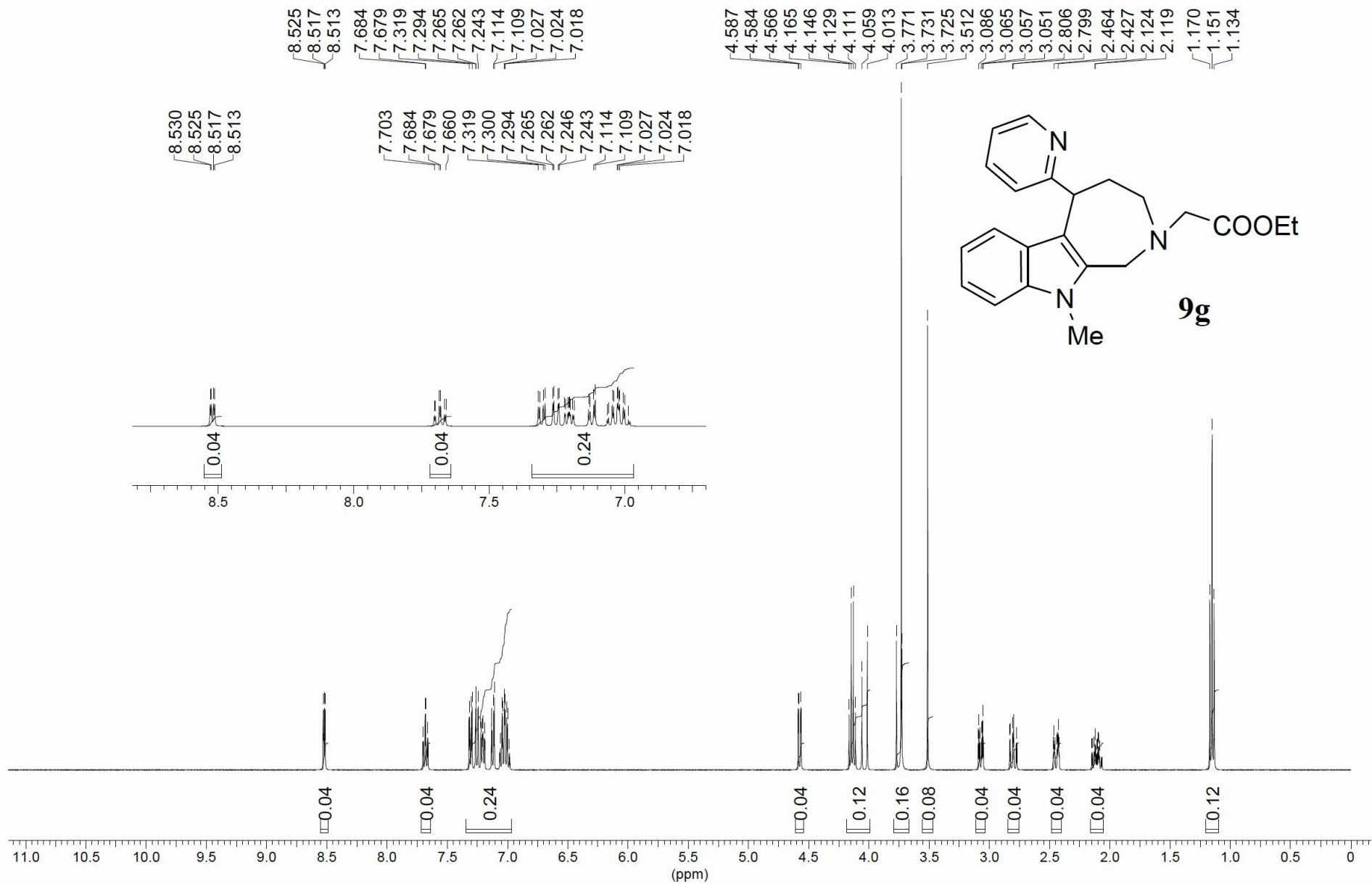


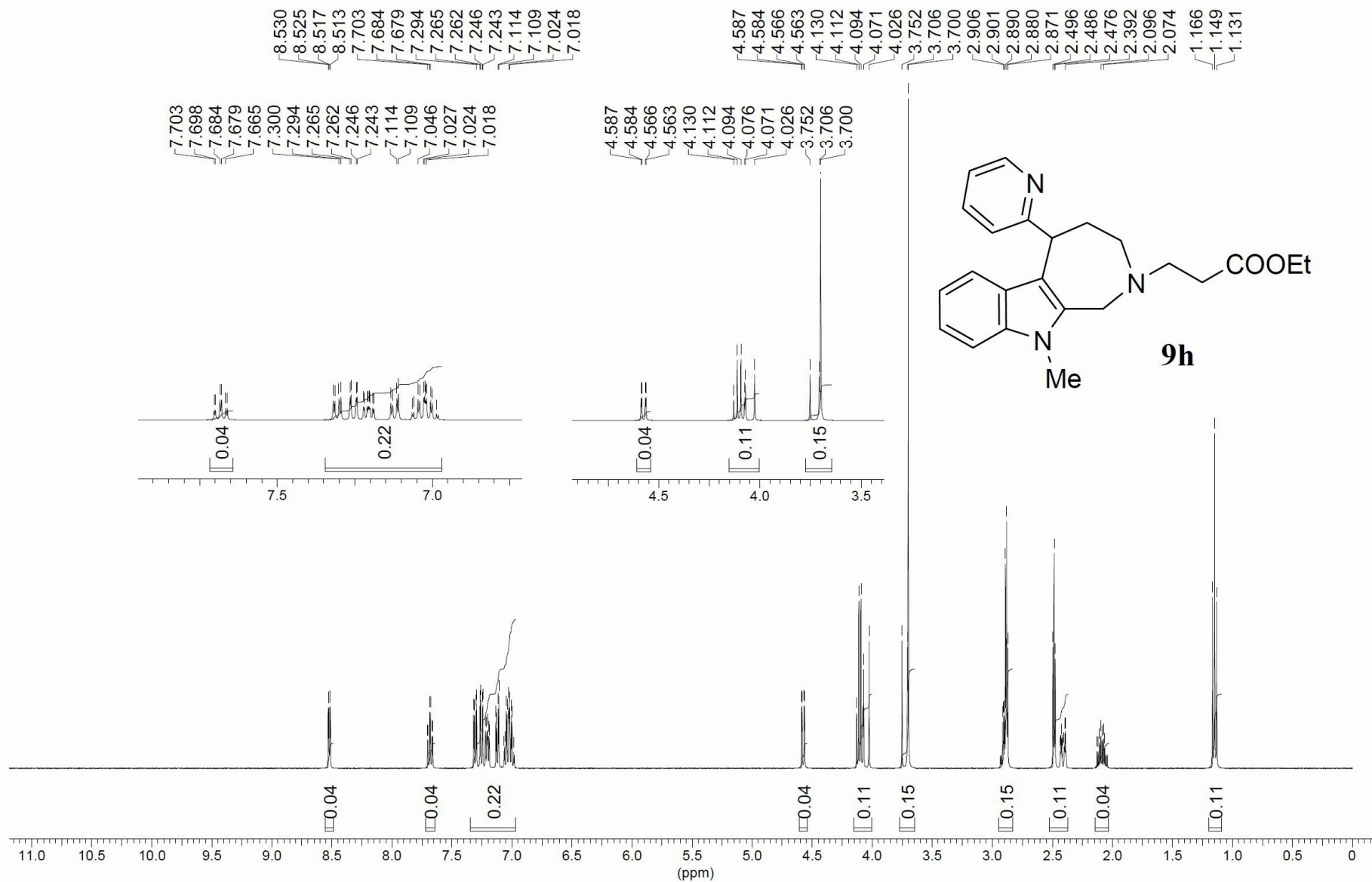


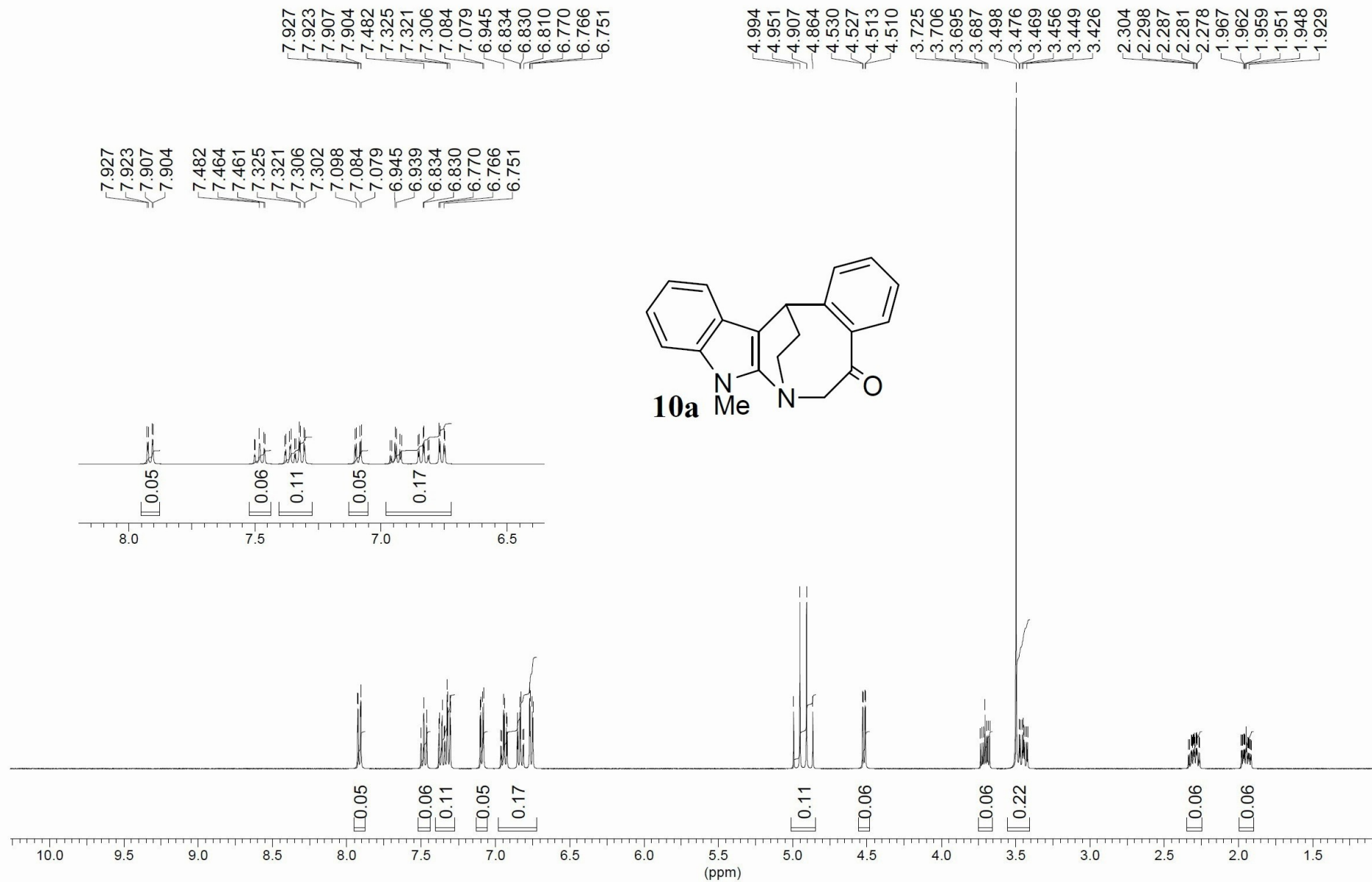


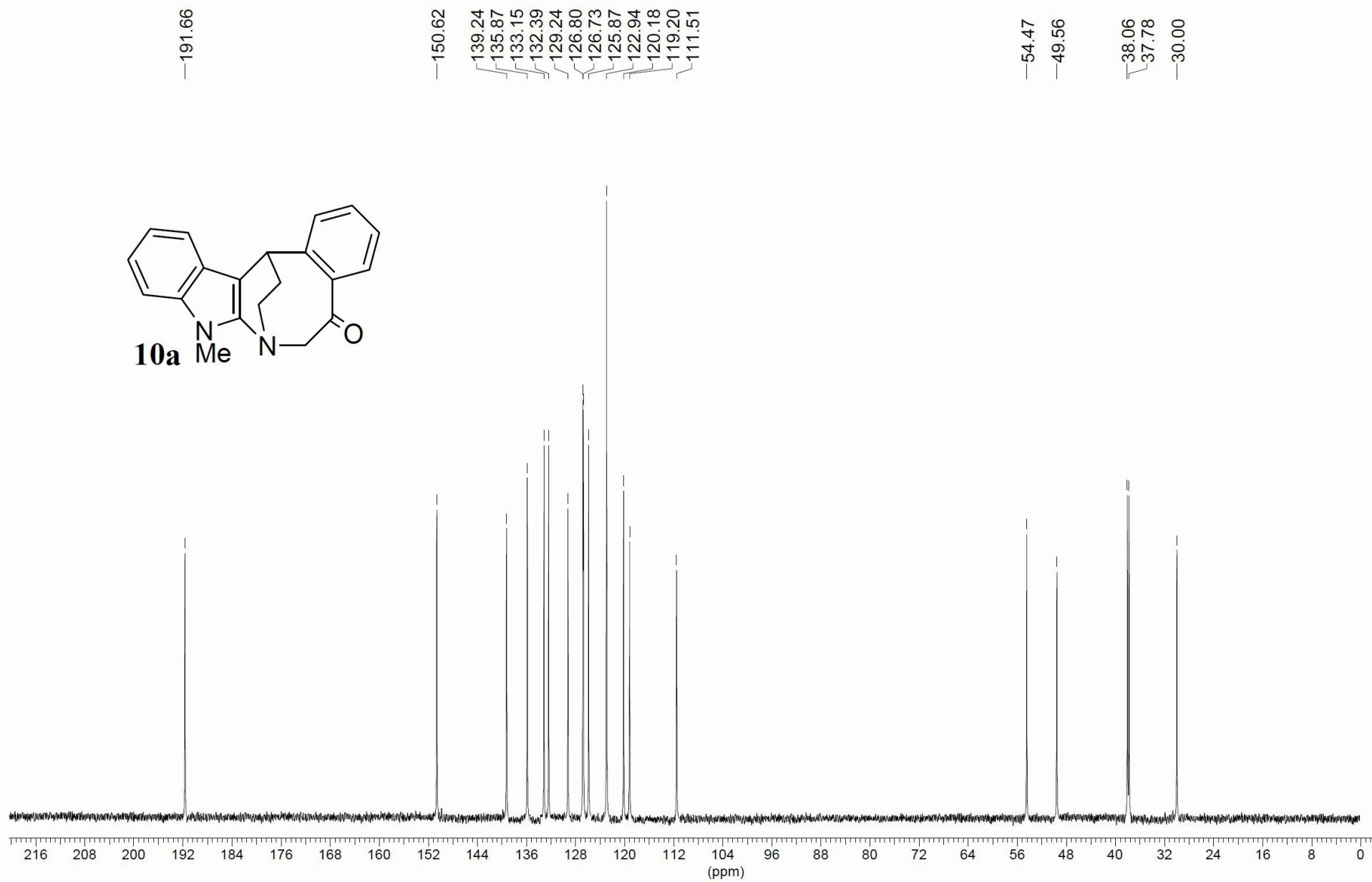
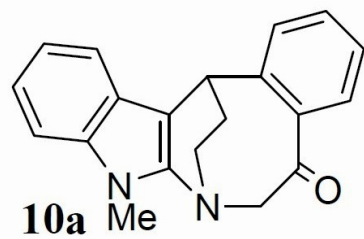


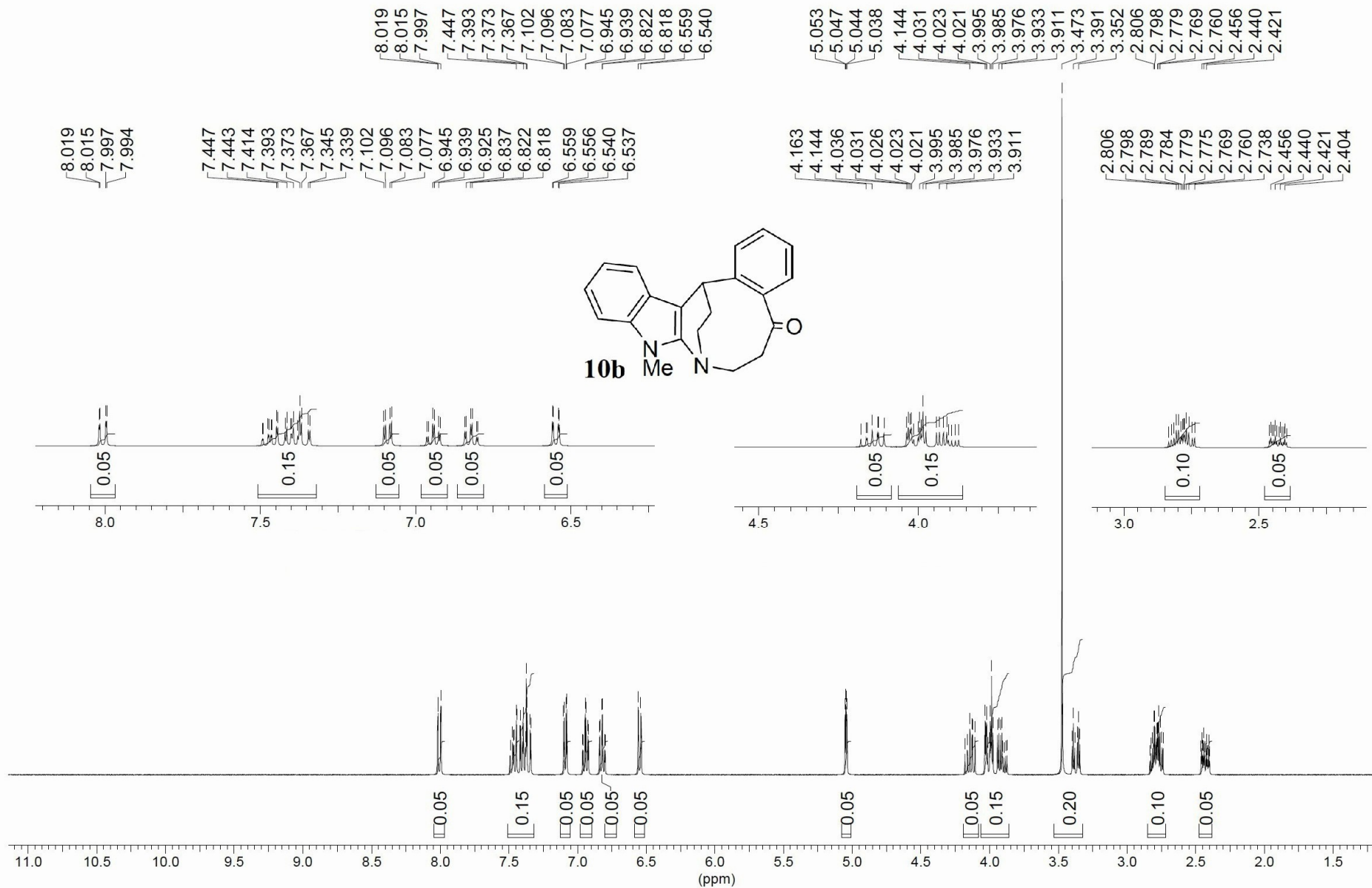


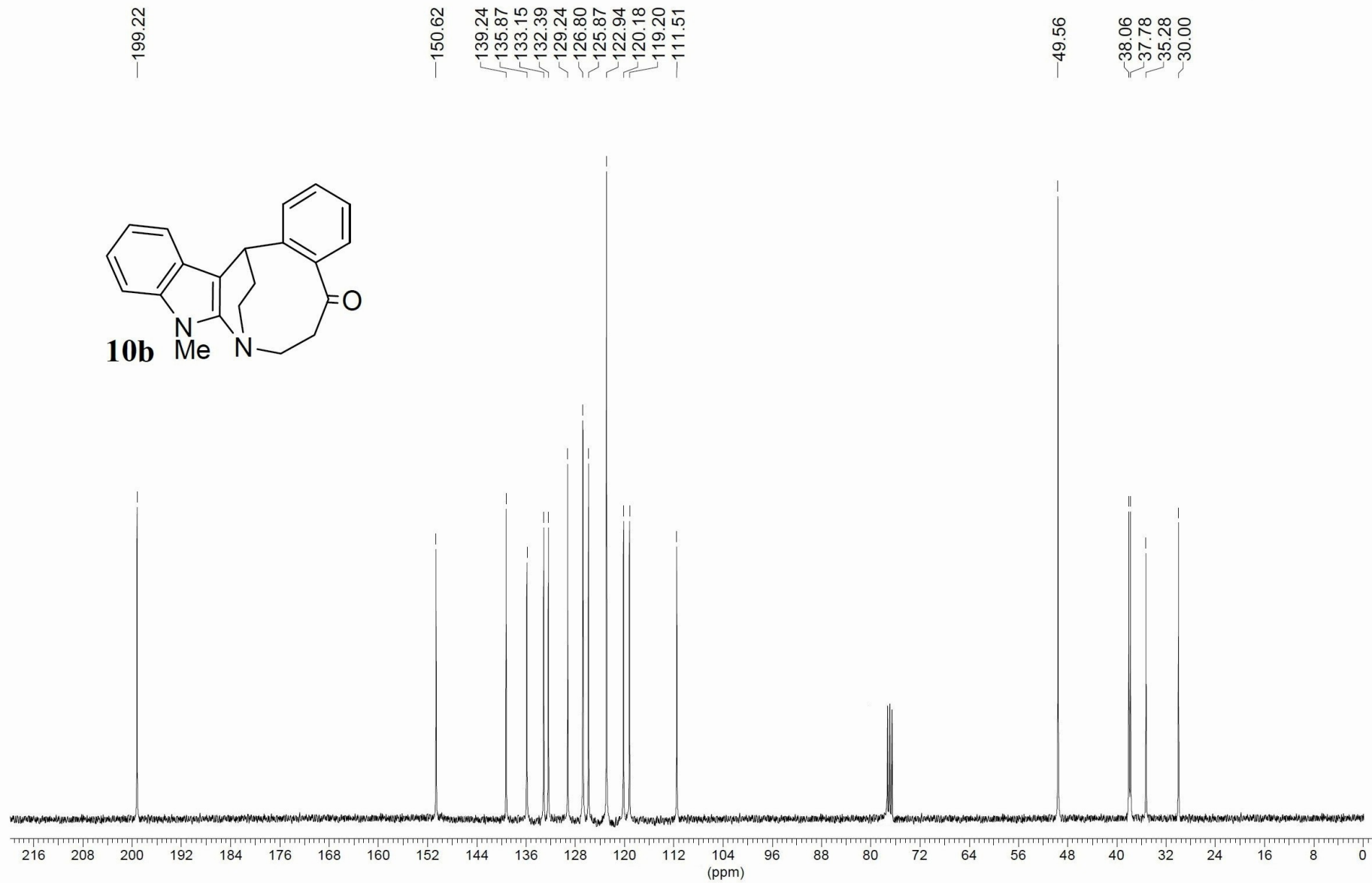


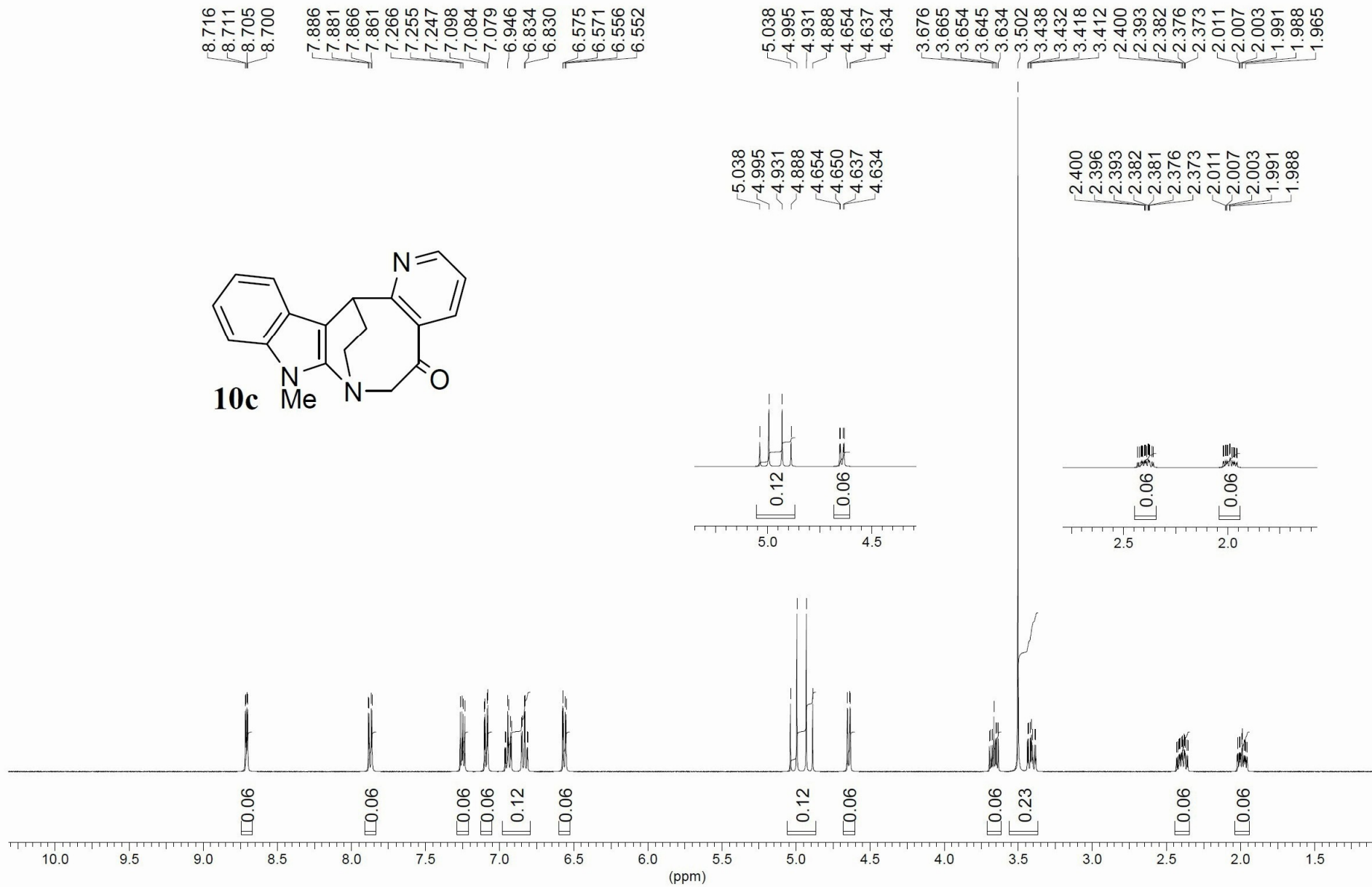


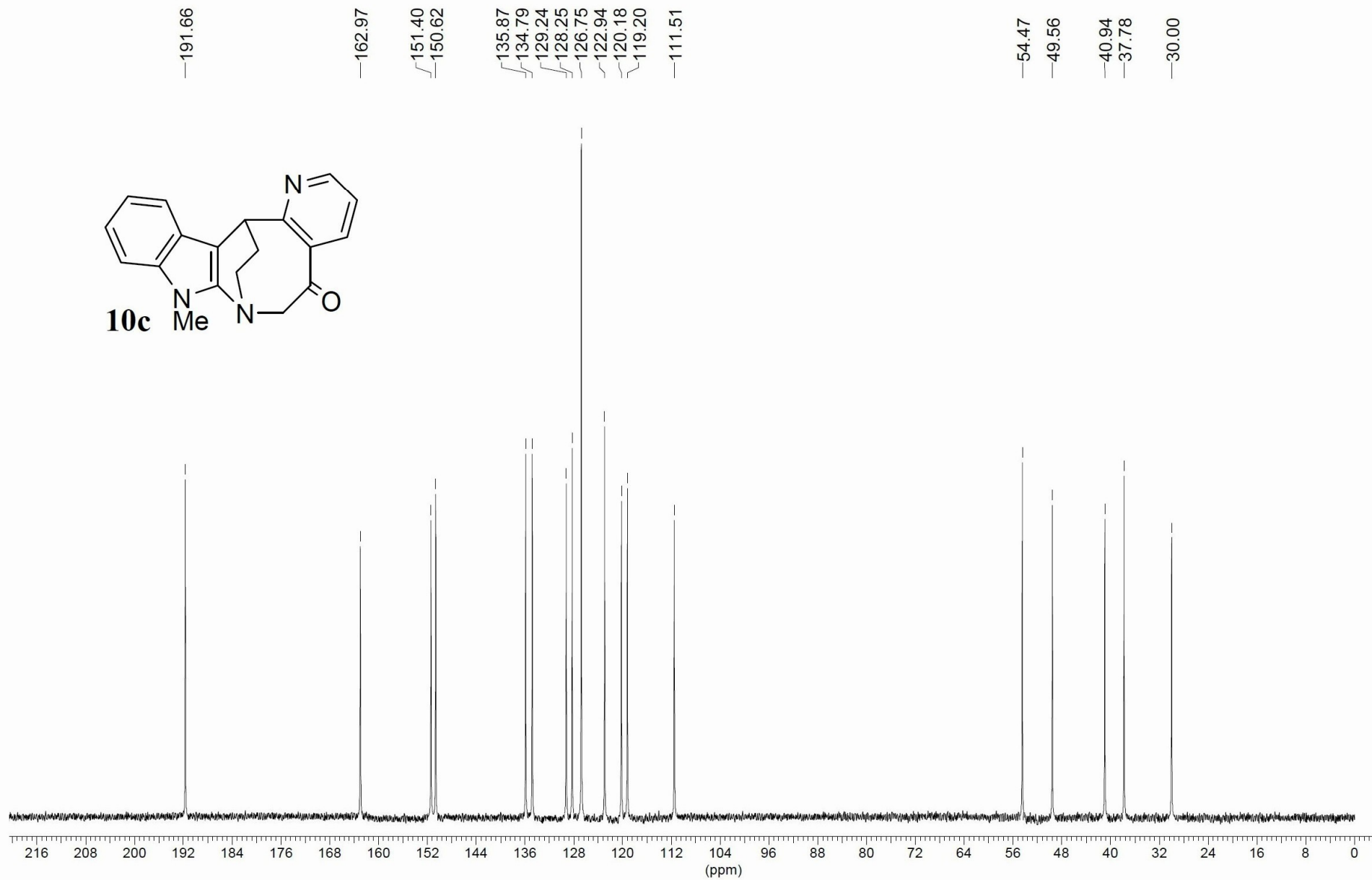
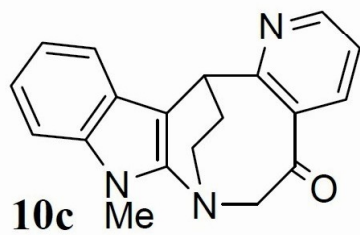


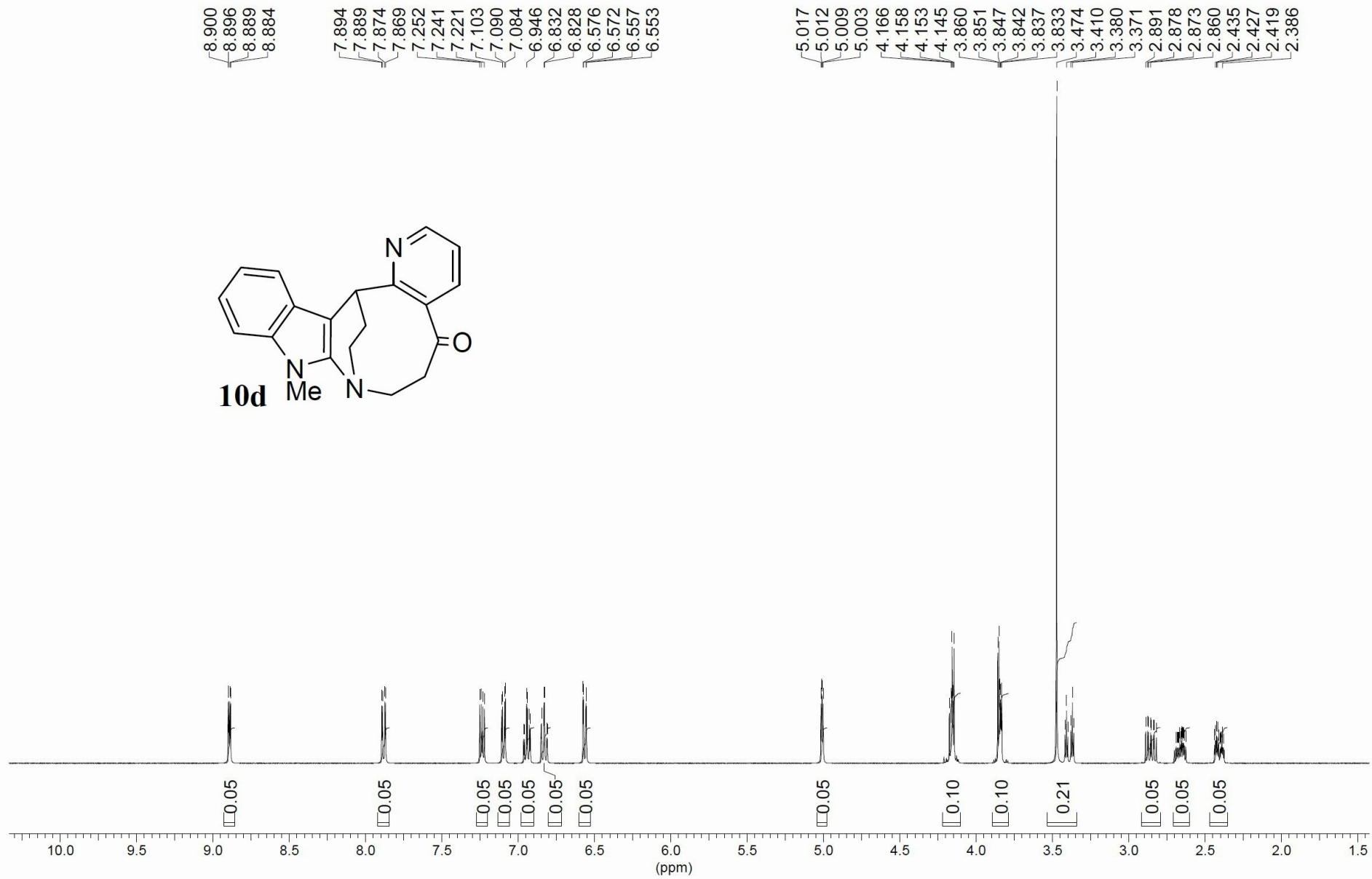


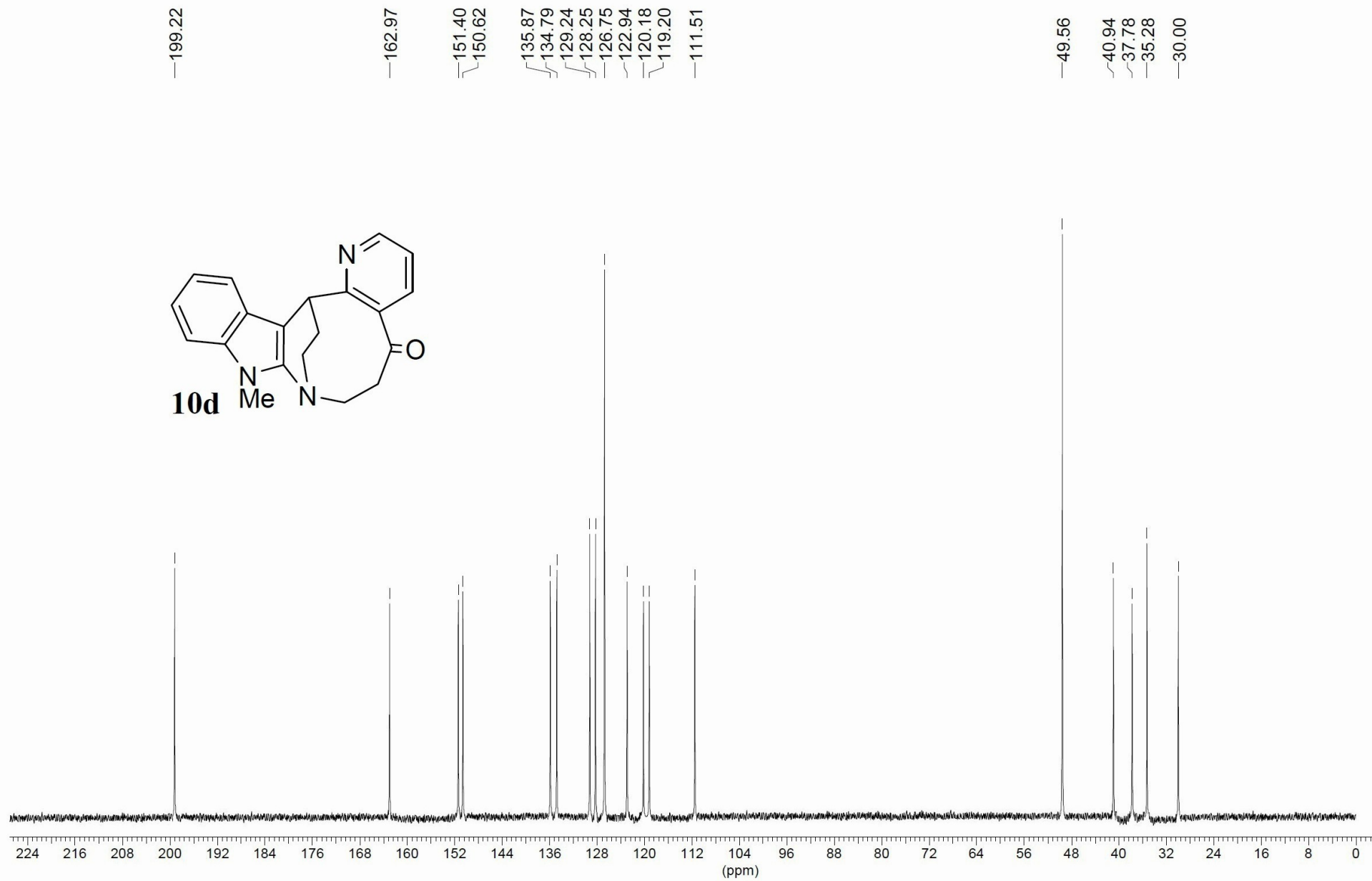


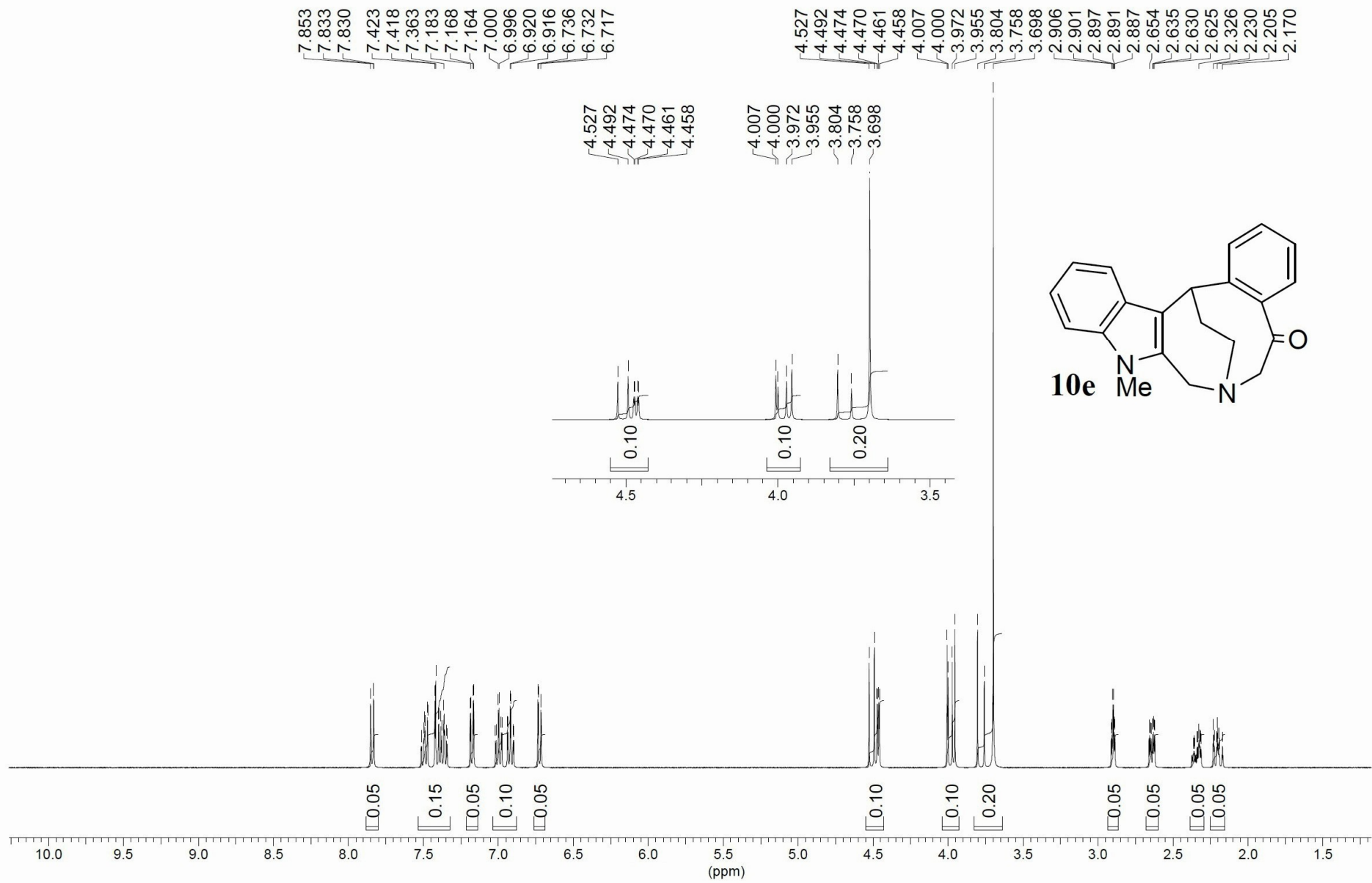


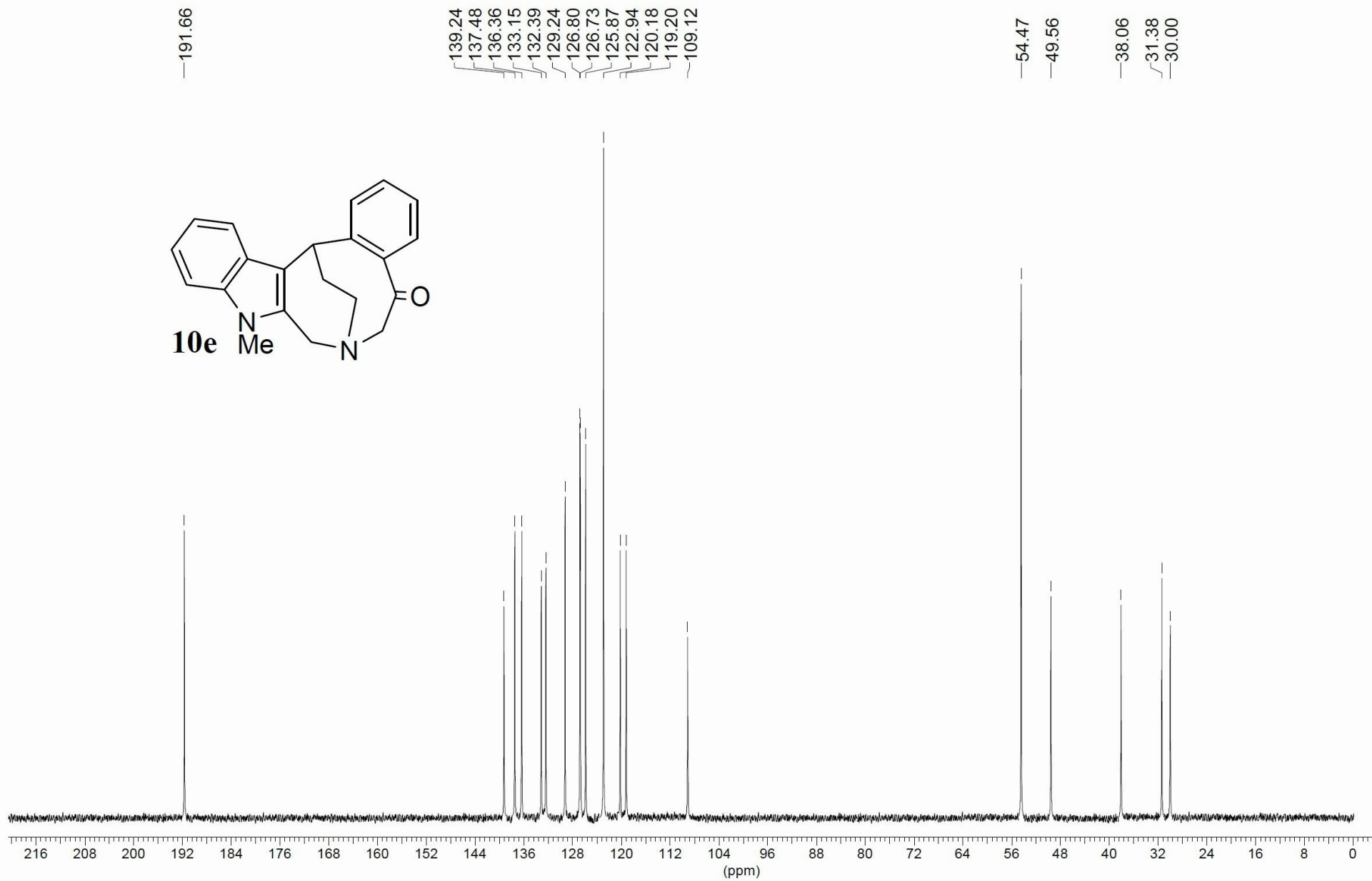
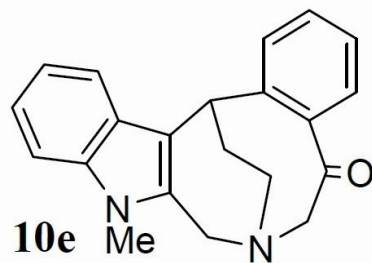


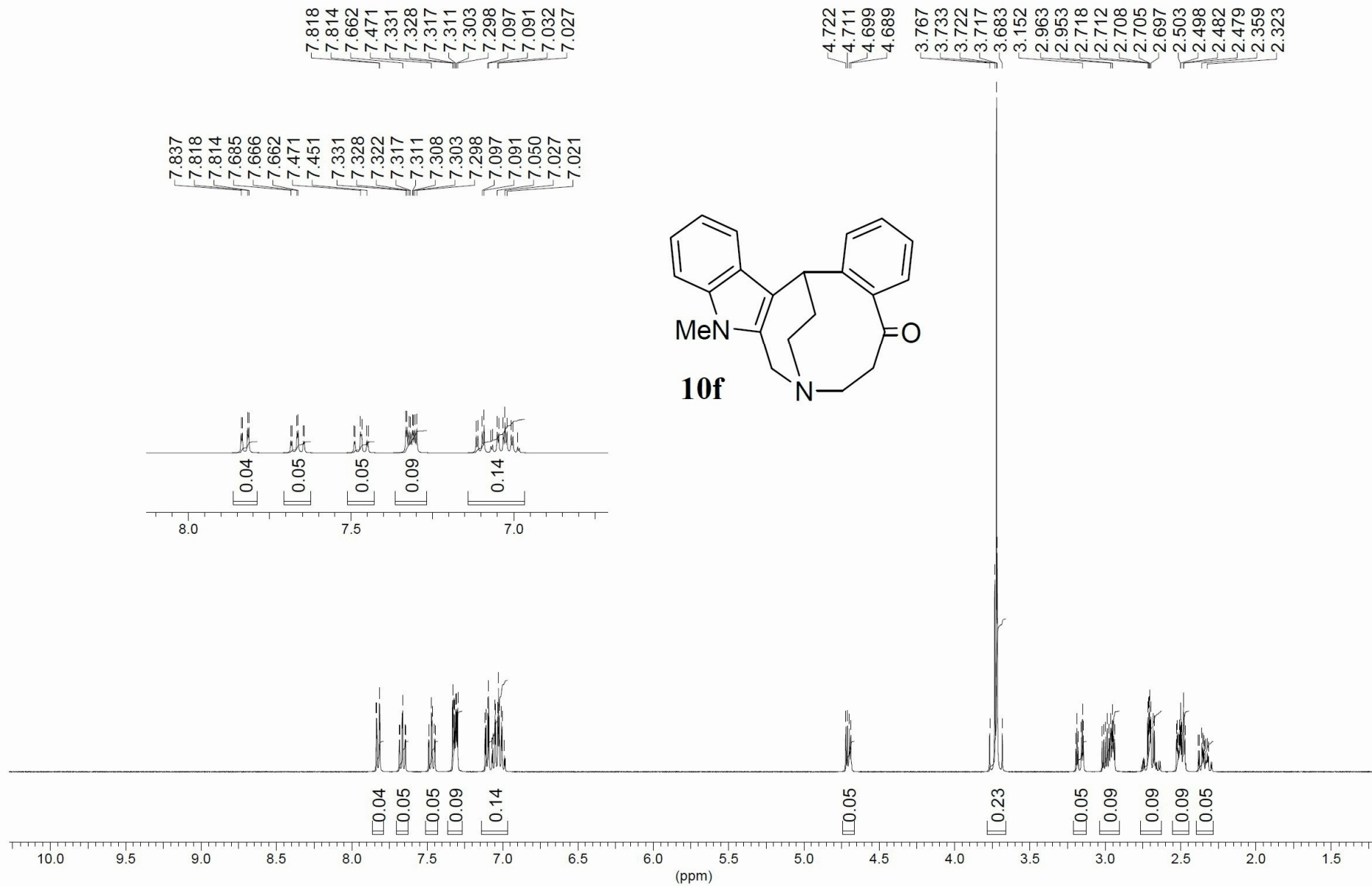


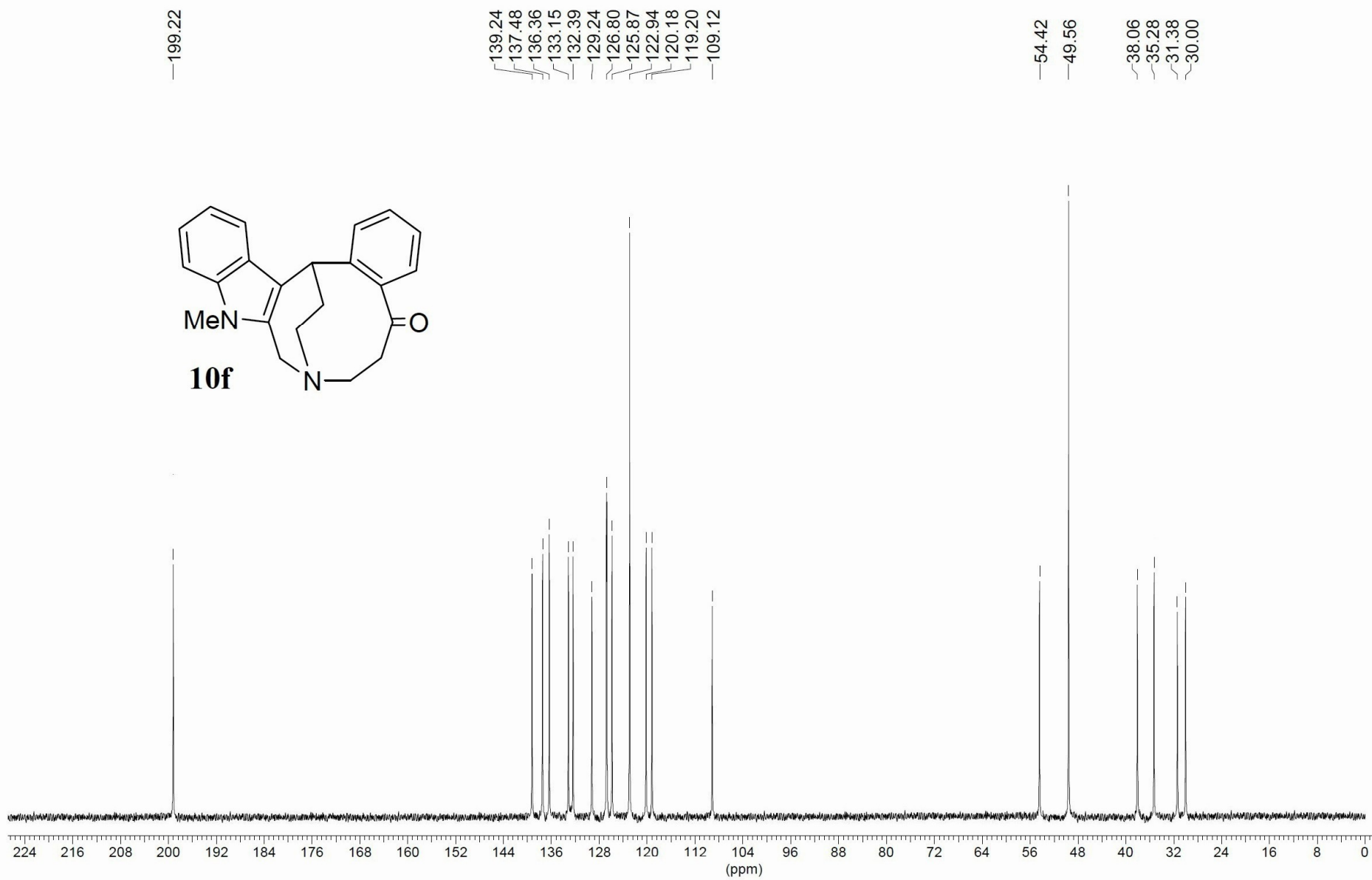


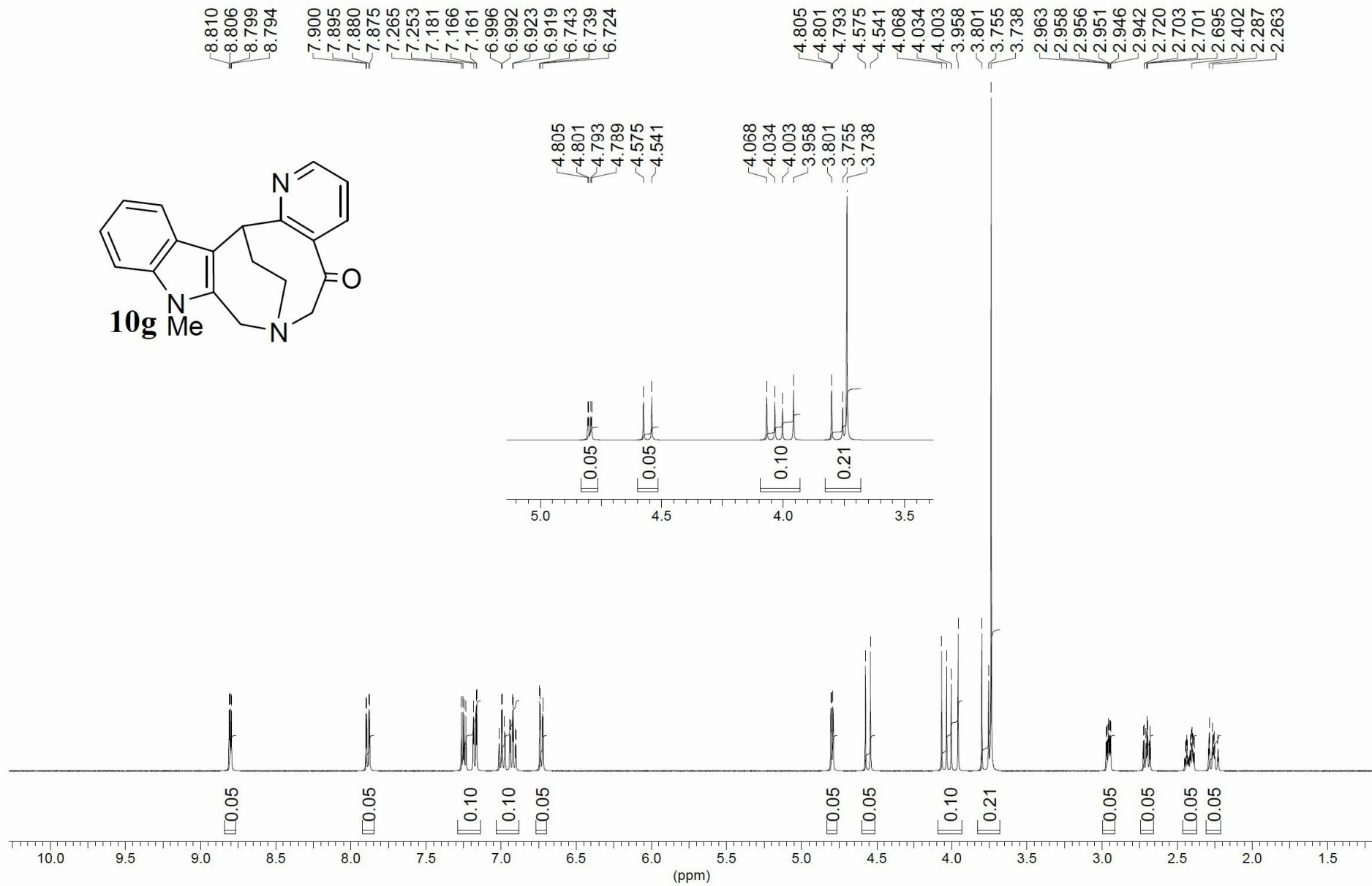
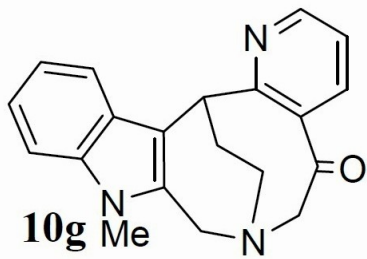


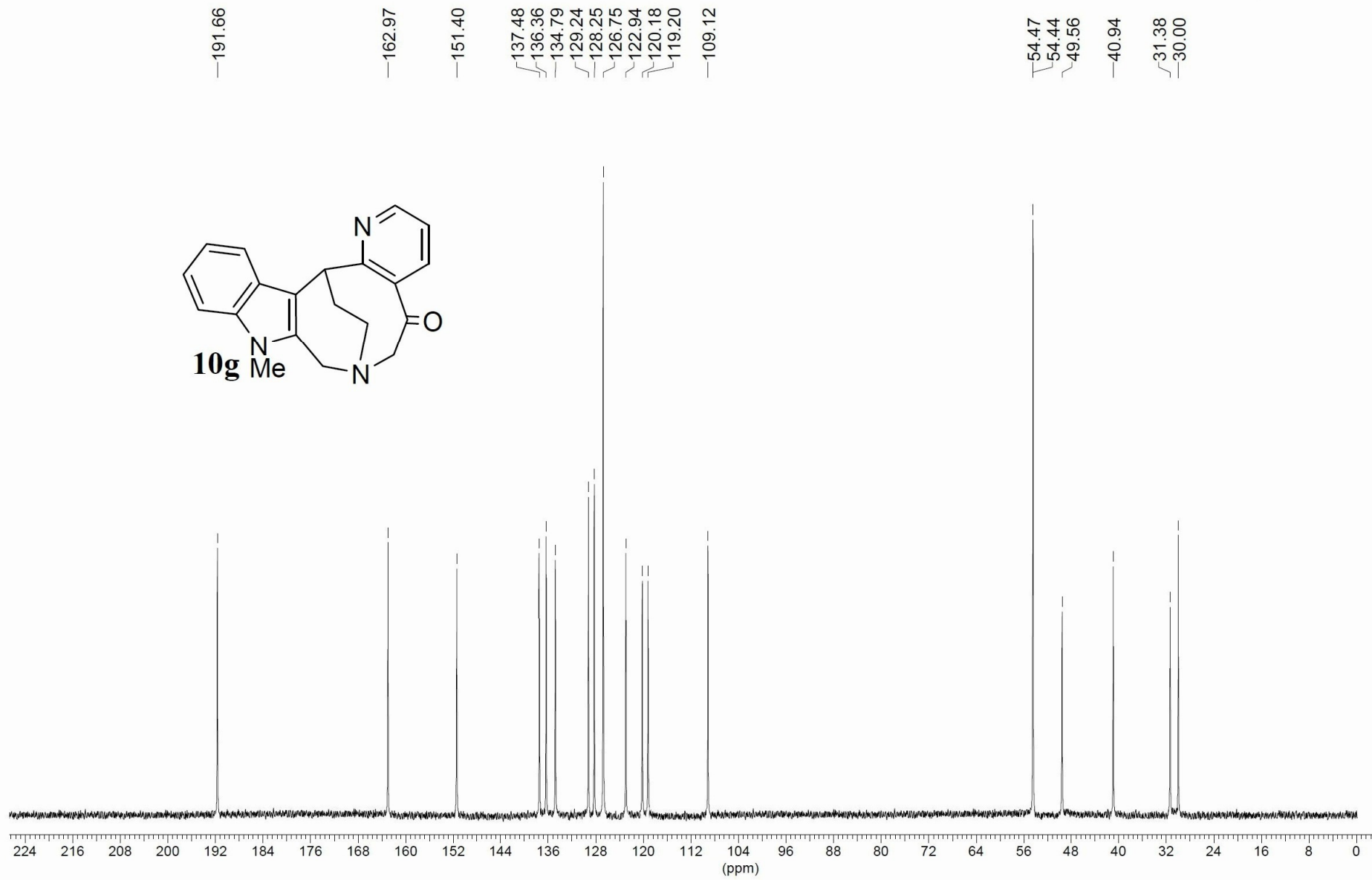


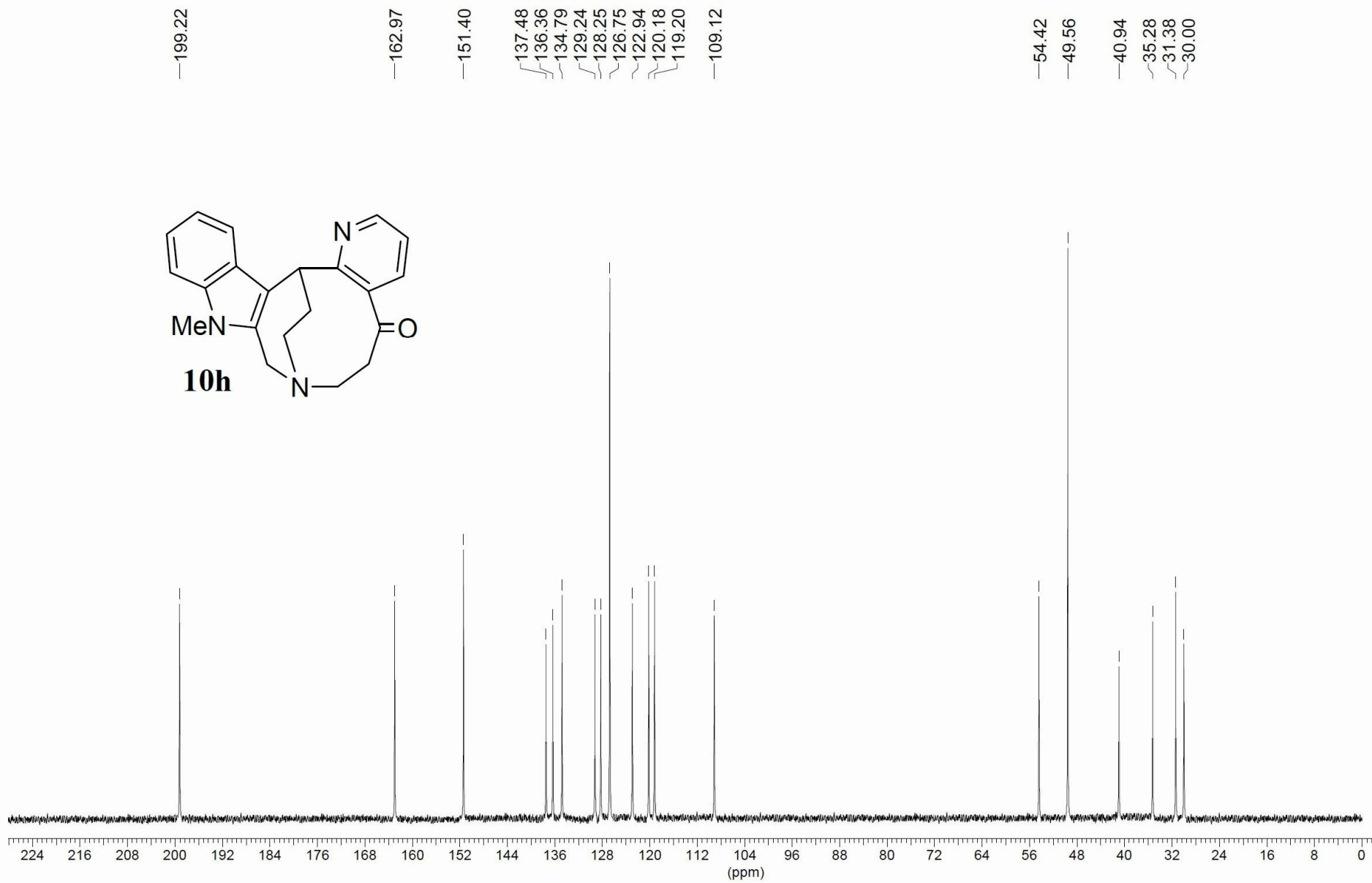
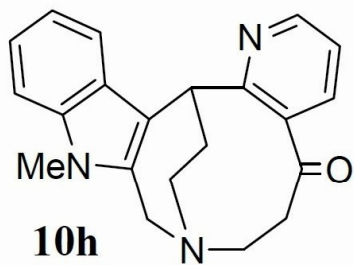


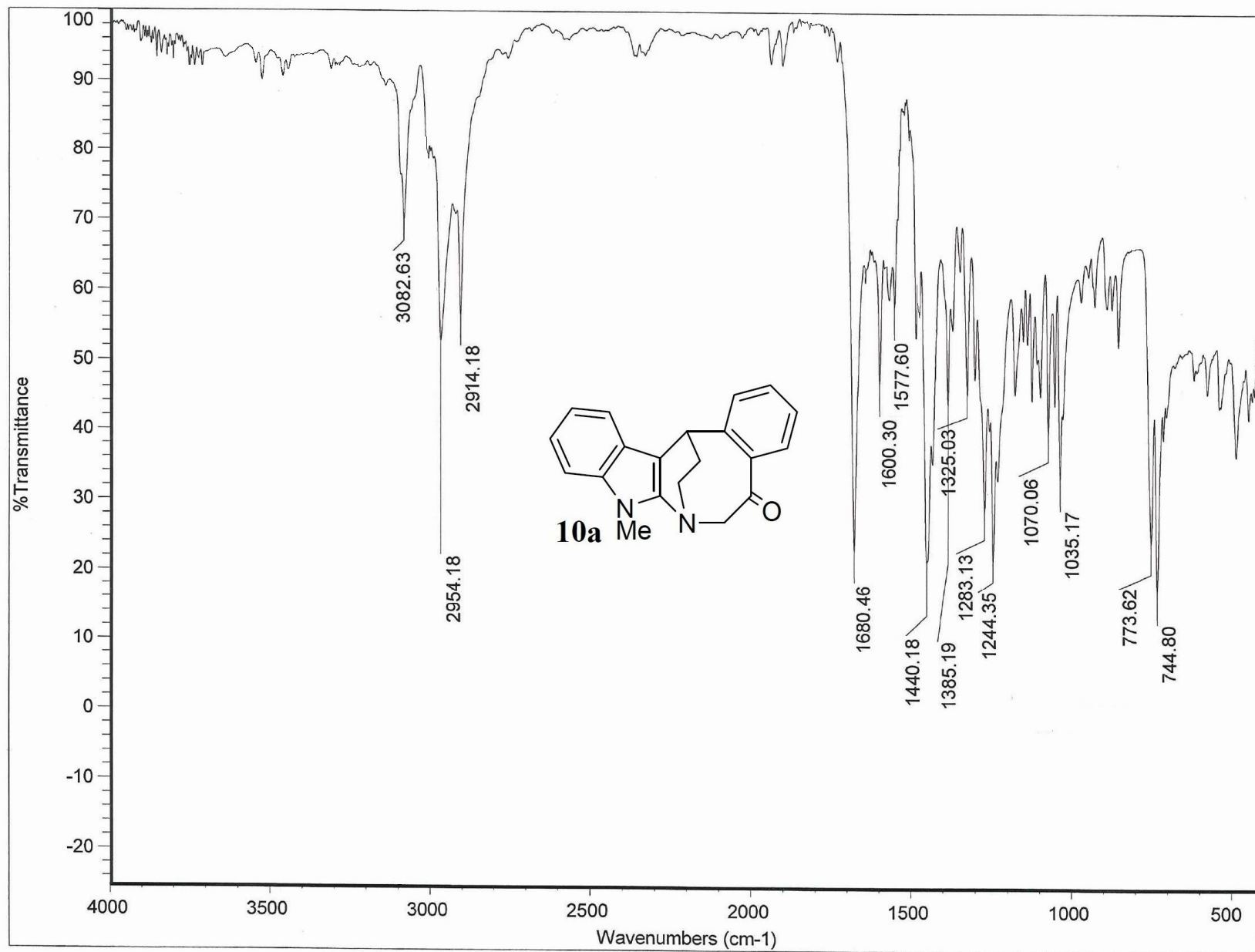


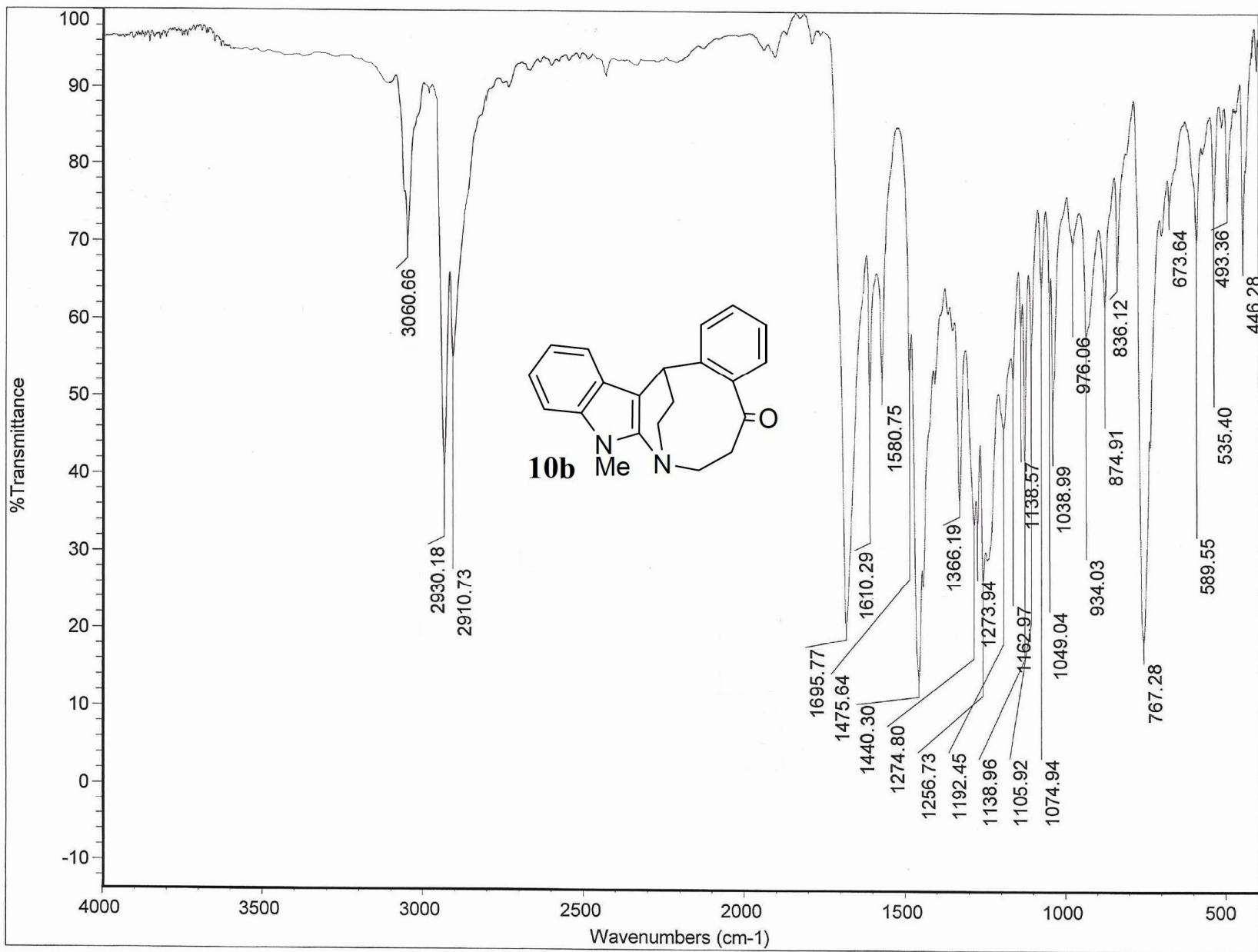


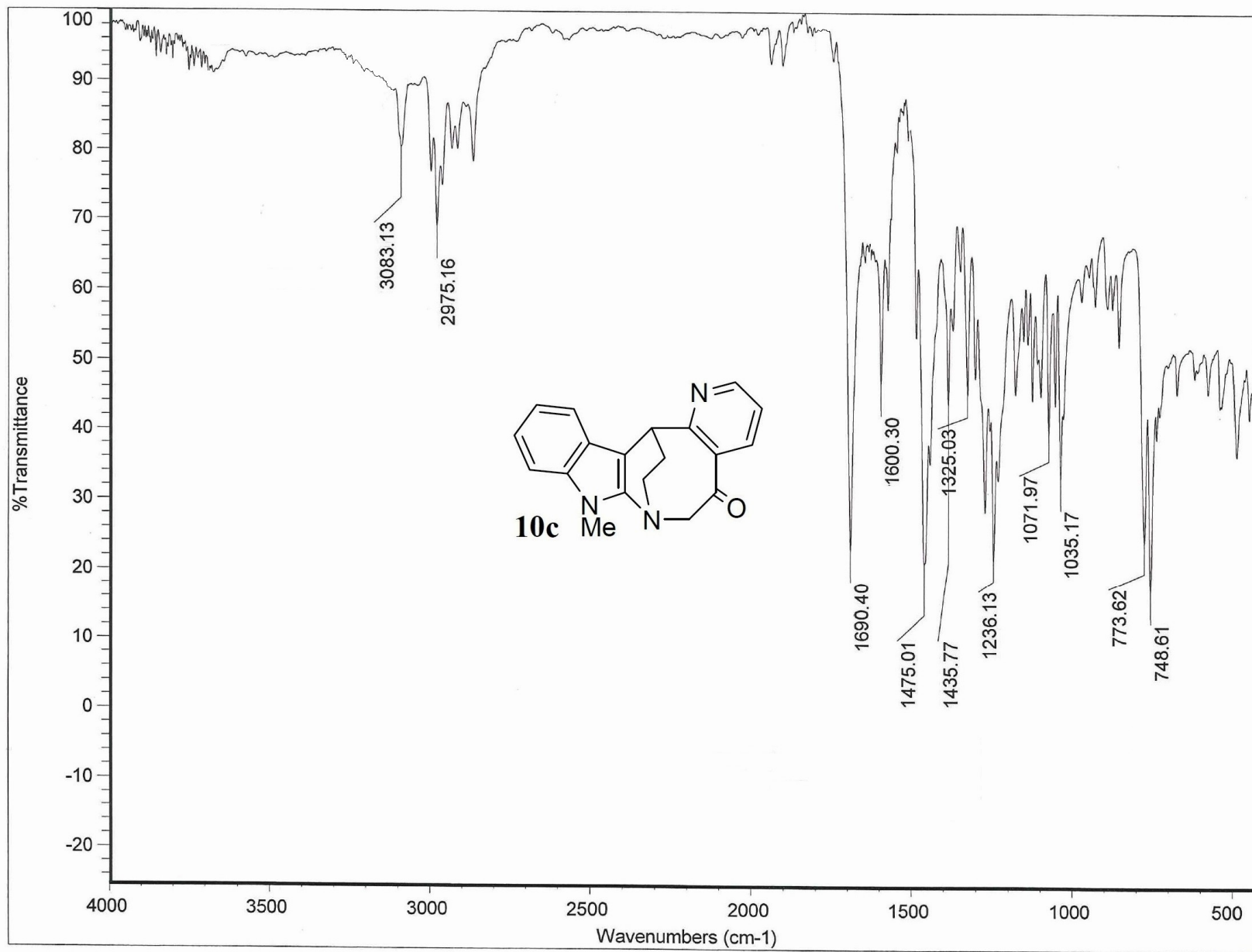


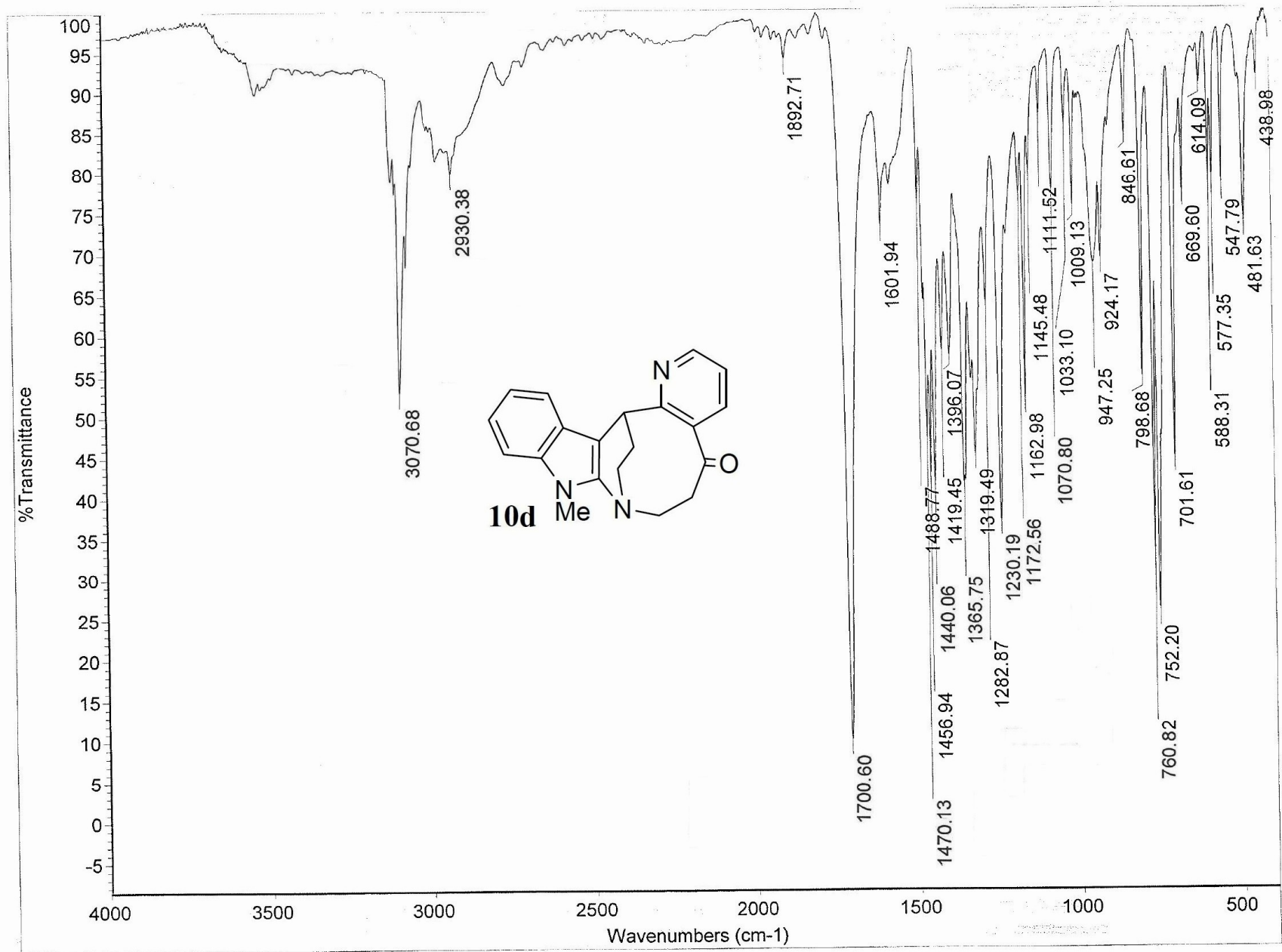


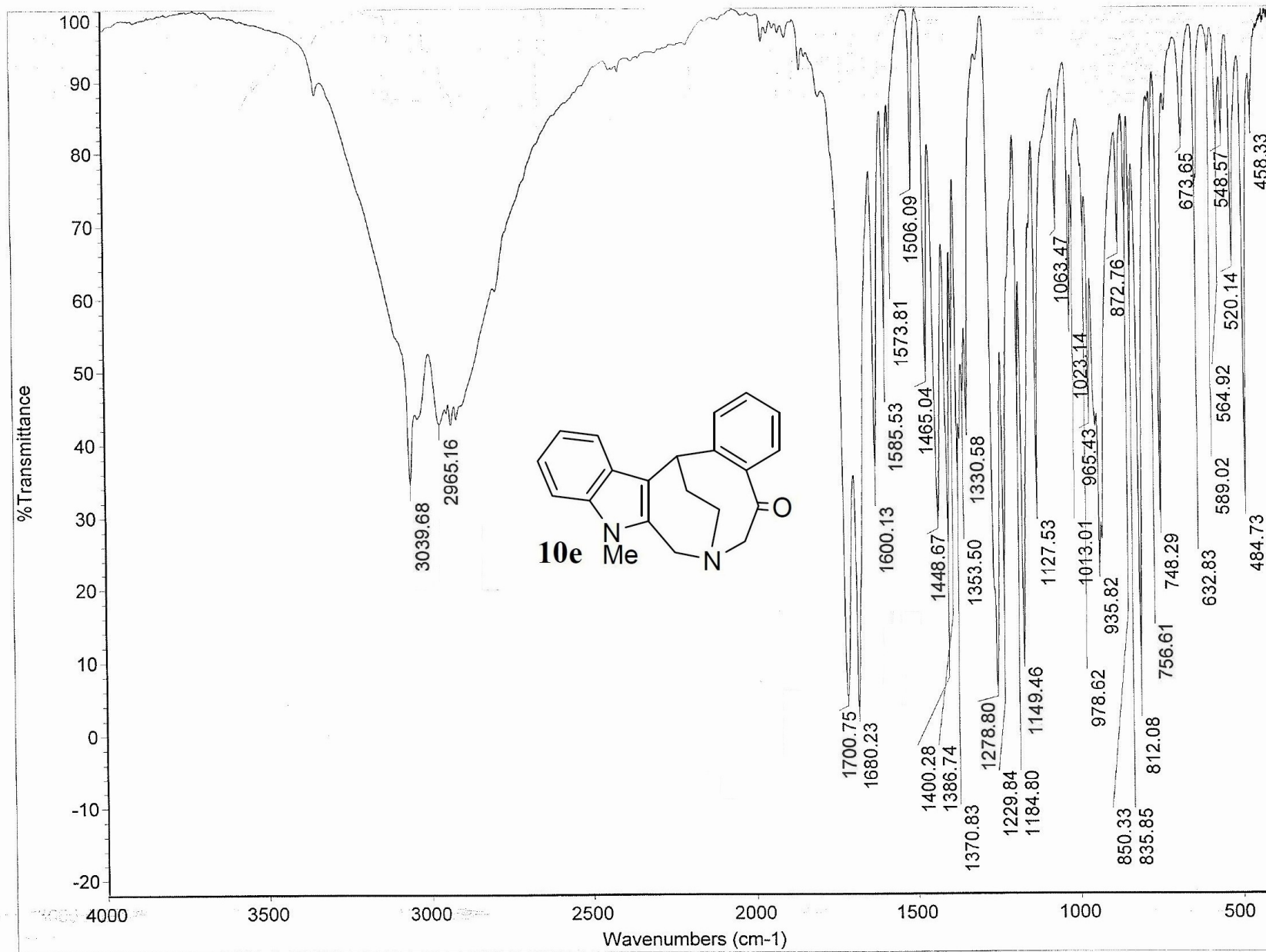


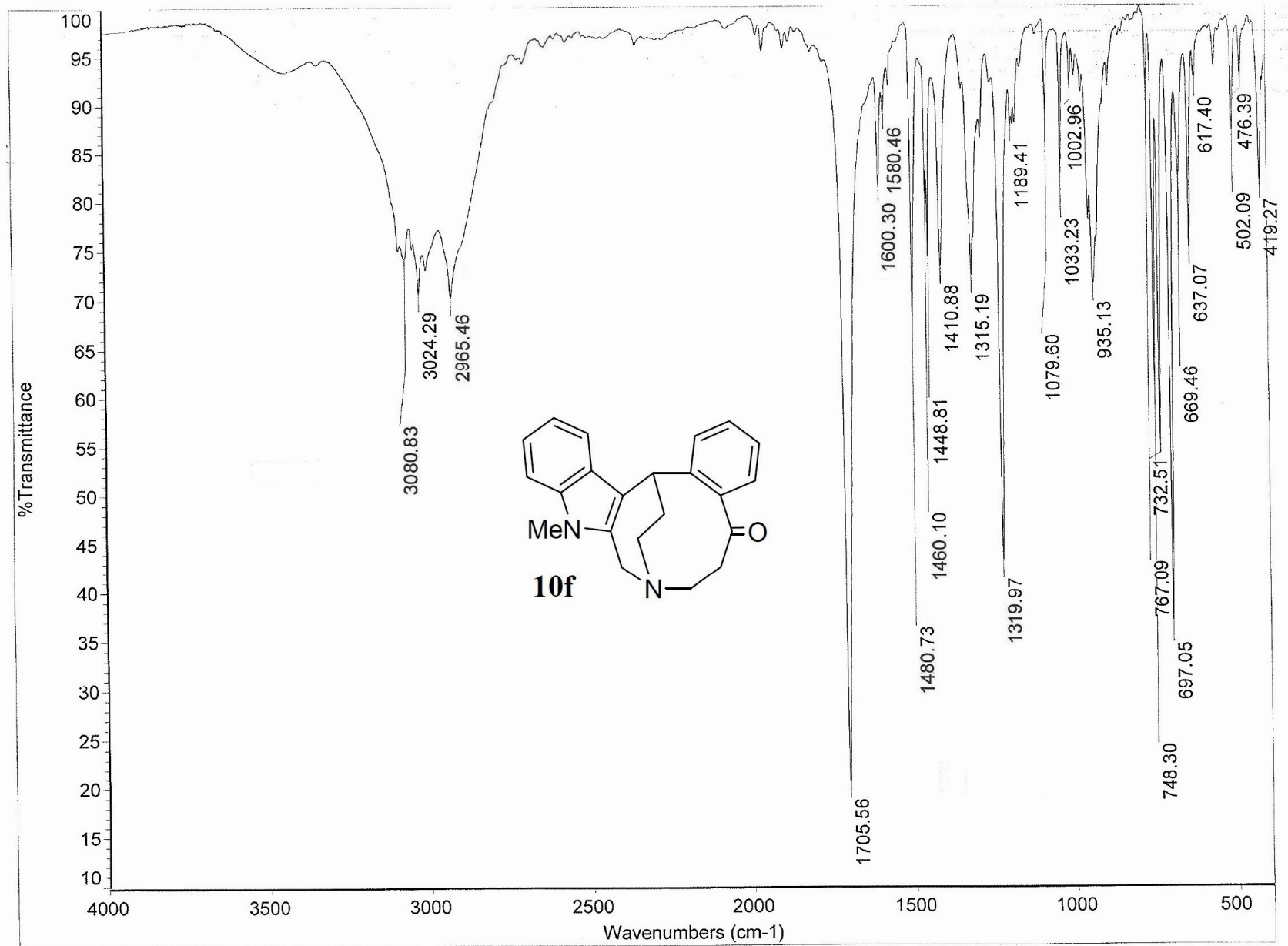


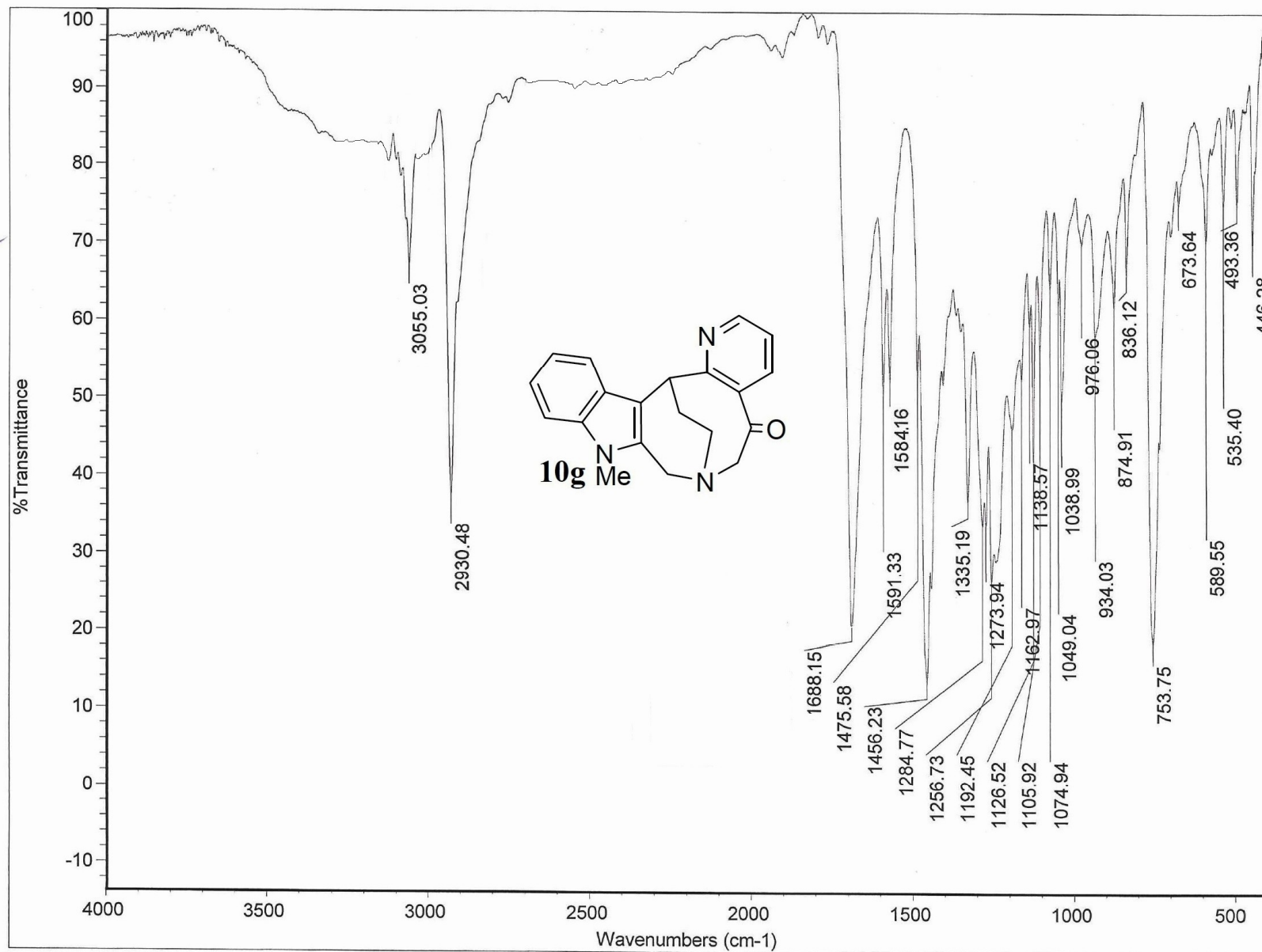




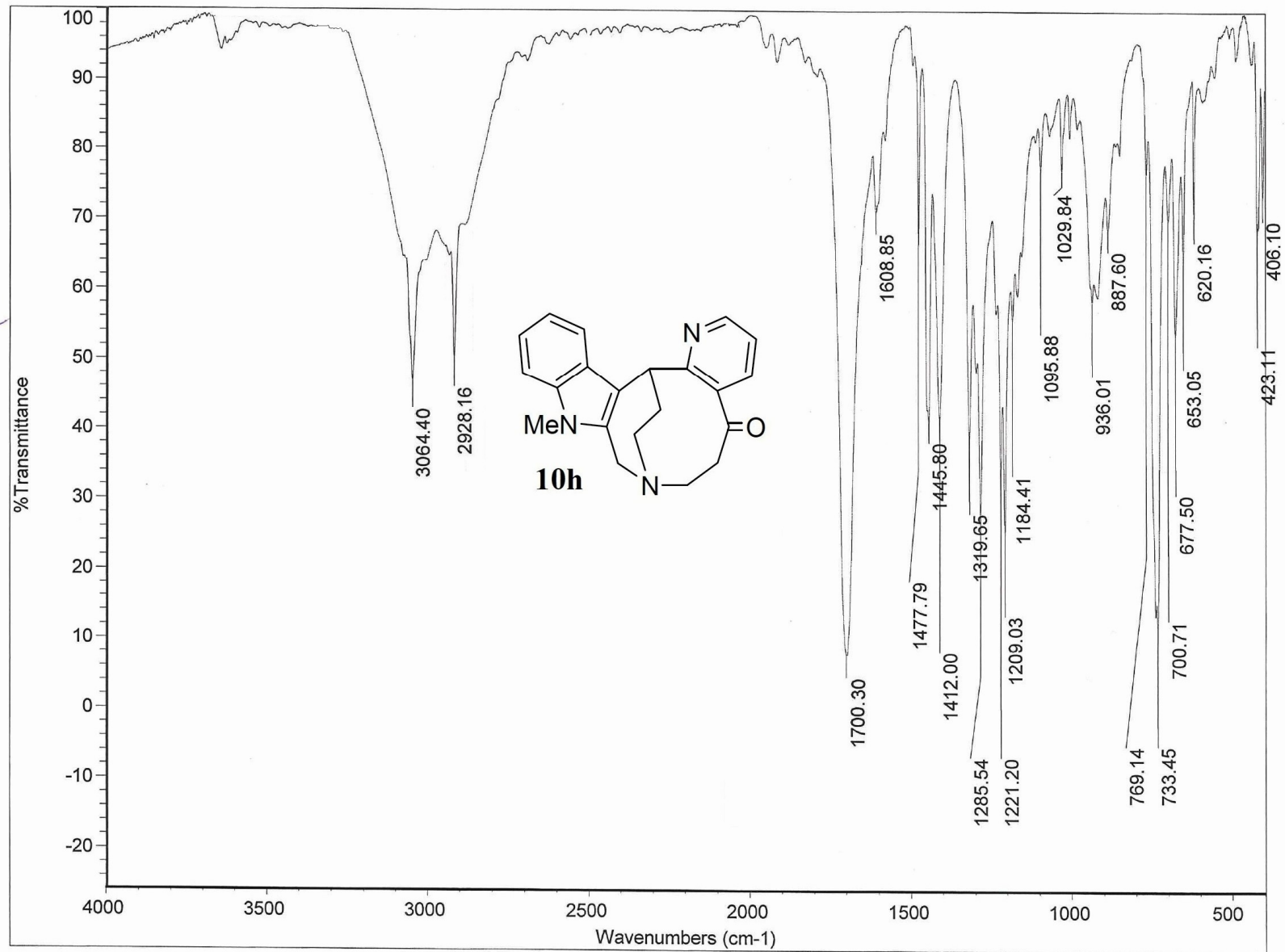








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B. Bergmann

Dr. H. Abdo

Dr. H. Abdo

No. Name	Weight [mg]	Date	Time	Info	O2 Inx	Prot. Fact.	Prot. [%]	C/N Ratio	User1	User2	Content [%]	Peak Area	Blank Value	Daily Factor
20 Sulfanilic acid	5.4880	19.06.18	14:59		1	0.000	0.000	5.143	0.000	0.000	N: 8.090 C: 41.61 S: 18.50 H: 4.070	15916 58237 11532 14623		0 0.9971 0 1.0004 0 0.9983 0 0.9818
21 Acetanilid	5.3550	19.06.18	15:15	Su	1	0.000	0.000	6.862	0.000	0.000	N: 10.36 C: 71.09 S: 0.025 H: 6.710	20014 96412 24 25701		0 0.9911 0 1.0019 0 1.0000 0 0.9442
① 22 Dr.H.Abdo(1) 9a	2.5360	19.06.18	15:29	Su	1	0.000	0.000	9.646	0.000	0.000	N: 7.862 C: 75.82 S: 0.004 H: 6.973	16288 96412 2 25166		0 0.9928 0 0.9999 0 1.0072 0 0.9741
② 23 Dr.H.Abdo(2) 9b	2.7730	19.06.18	15:47	Su	1	0.000	0.000	10.07	0.000	0.000	N: 7.552 C: 76.09 S: 0.066 H: 7.253	14257 96926 33 25426		0 0.9928 0 0.9999 0 1.0072 0 0.9741
③ 24 Dr.H.Abdo(3) 9c	3.1540	19.06.18	16:03	Su	1	0.000	0.000	8.086	0.000	0.000	N: 9.066 C: 73.33 S: 0.021 H: 5.538	19400 85823 10 12393		0 0.9928 0 0.9999 0 1.0072 0 0.9741
25 Dr.H.Abdo(3) 9c	3.2010	19.06.18	16:19	Su	1	0.000	0.000	6.090	0.000	0.000	N: 11.88 C: 72.36 S: 0.016 H: 6.503	22578 89052 9 23379		0 0.9928 0 0.9999 0 1.0072 0 0.9741
④ 26 Dr.H.Abdo(4) 9d	3.4890	19.06.18	16:37	NuSu	1	0.000	0.000	6.165	0.000	0.000	N: 11.80 C: 72.75 S: 0.048 H: 6.740	19899 92384 30 20480		0 0.9928 0 0.9999 0 1.0072 0 0.9741
⑤ 27 Dr.H.Abdo(5) 9e	2.5510	19.06.18	16:51	Su	1	0.000	0.000	10.05	0.000	0.000	N: 7.607 C: 76.40 S: 0.002 H: 7.404	14956 95220 1 21065		0 0.9928 0 0.9999 0 1.0072 0 0.9741
29 Sulfanilic acid	4.9520	19.06.18	17:25		1	0.000	0.000	5.143	0.000	0.000	N: 8.090 C: 41.61 S: 18.50 H: 4.070	14326 52345 10252 12961		0 0.9996 0 1.0050 0 1.0149 0 0.9932

Maher Hamed

Dr.Hassan Abdo
Faculty Of Science
Assiut University

محمد هادي
مختبر - صيد

28.06.18

No. Name	Weight [mg]	Date	Time	Info	O2 Inx	Prot. Fact.	Prot. [%]	C/N Ratio	User1	User2	Content [%]	Peak Area	Blank Value	Daily Factor
37 Sulfanilic Acid	5.1320	28.06.18	22:36		1	0.000	0.000	5.143	0.000	0.000	N: 8.090 C: 41.61 S: 18.50 H: 4.070	14956 55220 10437 11065	0	0.9892 0.9830 1.0328 0.8862
38 Acetanilid	5.0470	28.06.18	22:53	Su	1	0.000	0.000	6.862	0.000	0.000	N: 10.36 C: 71.09 S: 0.119 H: 6.710	19080 92384 76 19899	0	0.9759 0.9826 1.0000 0.9424
39 Dr.Hassn Abdo(A)	3.3280	28.06.18	08:55	NuSu	1	0.000	0.000	10.51	0.000	0.000	N: 7.298 C: 76.62 S: 0.000 H: 7.406	14014 96433 0 25701	0	0.9826 0.9828 1.0328 0.9143
9g														
40 Dr.Hassn Abdo(B)	3.5000	28.06.18	09:12	Su	1	0.000	0.000	6.159	0.000	0.000	N: 11.77 C: 72.50 S: 0.000 H: 6.804	18910 97400 0 26753	0	0.9826 0.9828 1.0328 0.9143
9f														
41 Dr.Hassn Abdo(C)	3.4410	28.06.18	09:27	NuSu	1	0.000	0.000	6.588	0.000	0.000	N: 11.11 C: 73.20 S: 0.000 H: 7.198	12961 96071 0 26353	0	0.9826 0.9828 1.0328 0.9143
9h														
42 Dr.Hassn Abdo(H)	3.0110	28.06.18	09:42	Su	1	0.000	0.000	8.446	0.000	0.000	N: 9.407 C: 79.40 S: 0.073 H: 5.826	17360 97444 27 20252	0	0.9826 0.9828 1.0328 0.9143
10a														
43 Dr.Hassn Abdo(H)	3.1060	28.06.18	09:57	Su	1	0.000	0.000	9.001	0.000	0.000	N: 8.846 C: 79.58 S: 0.000 H: 6.553	15117 97565 0 24263	0	0.9826 0.9828 1.0328 0.9143
10b														
44 Dr.Hassn Abdo(I)	3.6030	28.06.18	10:13	Su	1	0.000	0.000	5.489	0.000	0.000	N: 13.70 C: 75.20 S: 0.000 H: 5.800	25013 89910 0 21933	0	0.9826 0.9828 1.0328 0.9143
10c														
45 Dr.Hassn Abdo(J)	2.8810	28.06.18	10:28	Su	1	0.000	0.000	5.680	0.000	0.000	N: 13.29 C: 75.50 S: 0.020 H: 6.142	27819 98122 7 22961	0	0.9826 0.9828 1.0328 0.9143
10d														

Mohar Hamed

No.	Name	Weight [mg]	Date	Time	Info	O2 Inx	Prot. Fact.	Prot. [%]	C/N Ratio	User1	User2	Content [%]	Peak Area	Blank Value	Daily Factor
51	Sulfanilic acid	4.8270	28.06.18	13:16		1	0.000	0.000	5.143	0.000	0.000	N: 8.090 C: 41.61 S: 18.50 H: 4.070	14263 51990 9753 8331		0 0.9758 0 0.9825 0 1.0407 0 0.9951
53	Acetanilid	4.8800	28.06.18	13:50	Su	1	0.000	0.000	6.862	0.000	0.000	N: 10.36 C: 71.09 S: 0.076 H: 6.710	18379 89052 47 18910		0 0.9797 0 0.9860 0 1.0000 0 0.9478
54	Dr.Hassn Abdo(2)	3.4440	28.06.18	14:05	Su	1	0.000	0.000	9.175	0.000	0.000	N: 8.714 C: 79.92 S: 0.078 H: 6.209	15393 99510 33 19141		0 0.9777 0 0.9842 0 1.0407 0 0.9714
55	Dr.Hassn Abdo(3)	2.7720	28.06.18	14:19	Su	1	0.000	0.000	9.370	0.000	0.000	N: 8.525 C: 79.84 S: 0.000 H: 6.693	15437 99104 0 25403		0 0.9777 0 0.9842 0 1.0407 0 0.9714
56	Dr.Hassn Abdo(4)	3.2420	28.06.18	14:34	Su	1	0.000	0.000	5.723	0.000	0.000	N: 13.20 C: 75.51 S: 0.020 H: 6.071	25695 97858 8 20718		0 0.9777 0 0.9842 0 1.0407 0 0.9714
57	Dr.Hassn Abdo(6)	3.1030	28.06.18	14:48	Su	1	0.000	0.000	6.106	0.000	0.000	N: 12.50 C: 76.33 S: 0.008 H: 6.351	23141 95457 3 23444		0 0.9777 0 0.9842 0 1.0407 0 0.9714
58	Dr.Hassn Abdo(6)	3.3640	28.06.18	15:03	Su	1	0.000	0.000	6.493	0.000	0.000	N: 11.63 C: 75.49 S: 0.015 H: 6.521	14257 95484 6 10360		0 0.9777 0 0.9842 0 1.0407 0 0.9714
62	Sulfanilic acid	4.8770	28.06.18	15:59		1	0.000	0.000	5.143	0.000	0.000	N: 8.090 C: 41.61 S: 18.50 H: 4.070	14213 51910 9541 9357		0 0.9894 0 0.9942 0 1.0752 0 0.9373
64	Acetanilid	5.0990	28.06.18	16:33	Su	1	0.000	0.000	6.862	0.000	0.000	N: 10.36 C: 71.09 S: 0.062 H: 6.710	19243 92900 40 20215		0 0.9775 0 0.9871 0 1.0000 0 0.9406

Maher Hamed