

## Supporting Information

### Discovery of Brain-Penetrant, Orally Bioavailable Aminothienopyridazine Inhibitors of Tau Aggregation

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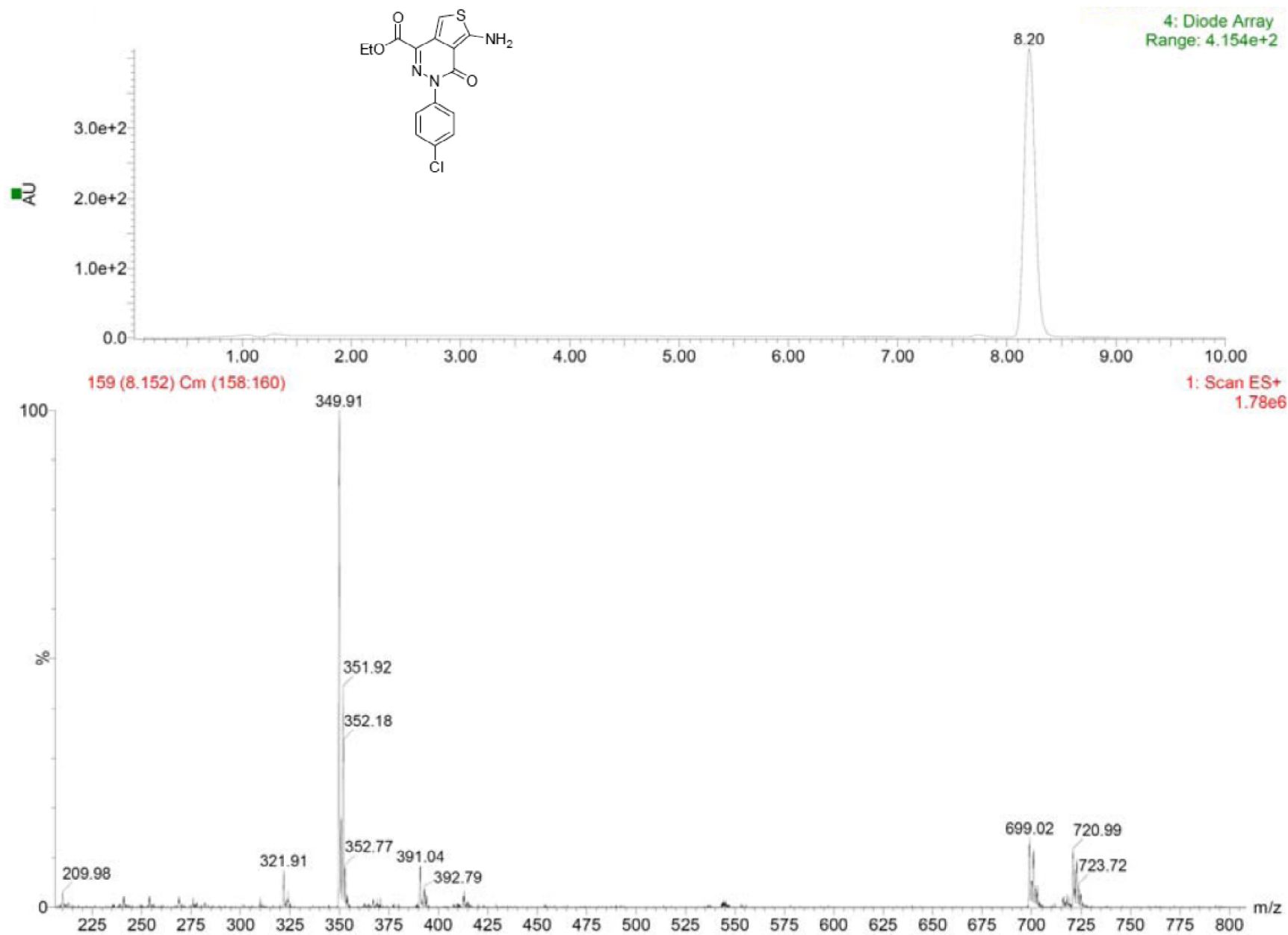
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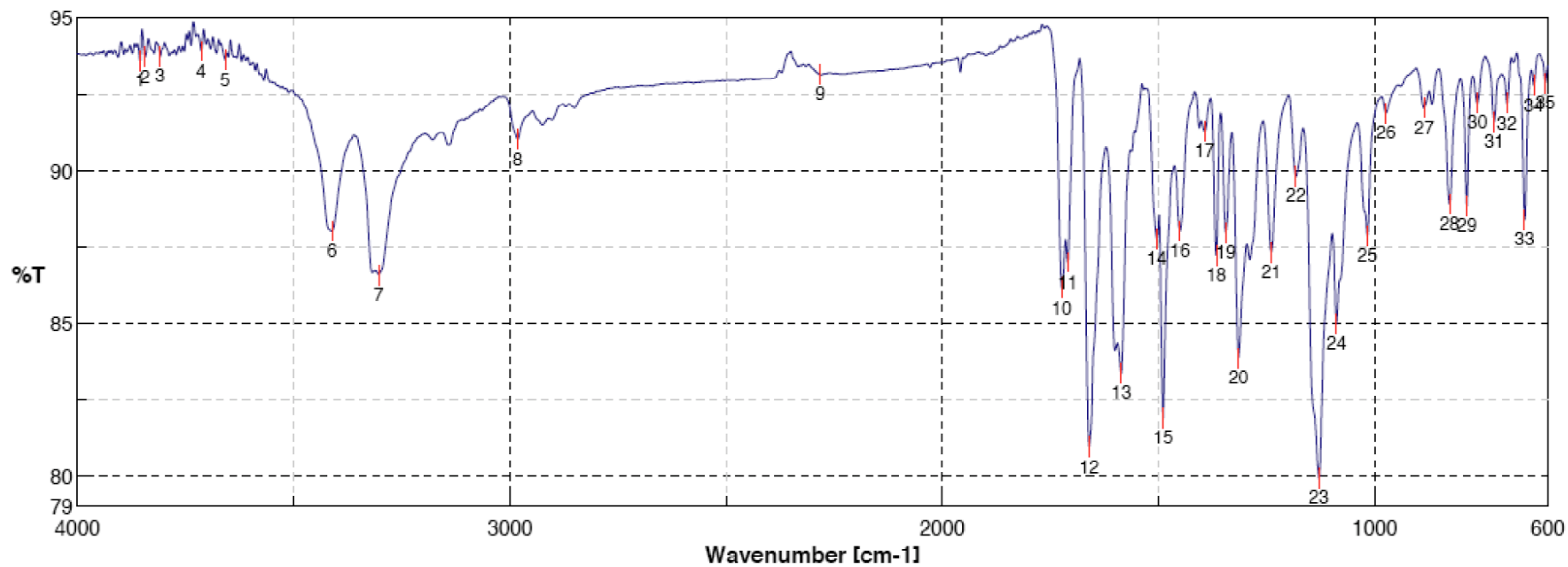
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# HPLC chromatogram and mass spectrum of compound 8

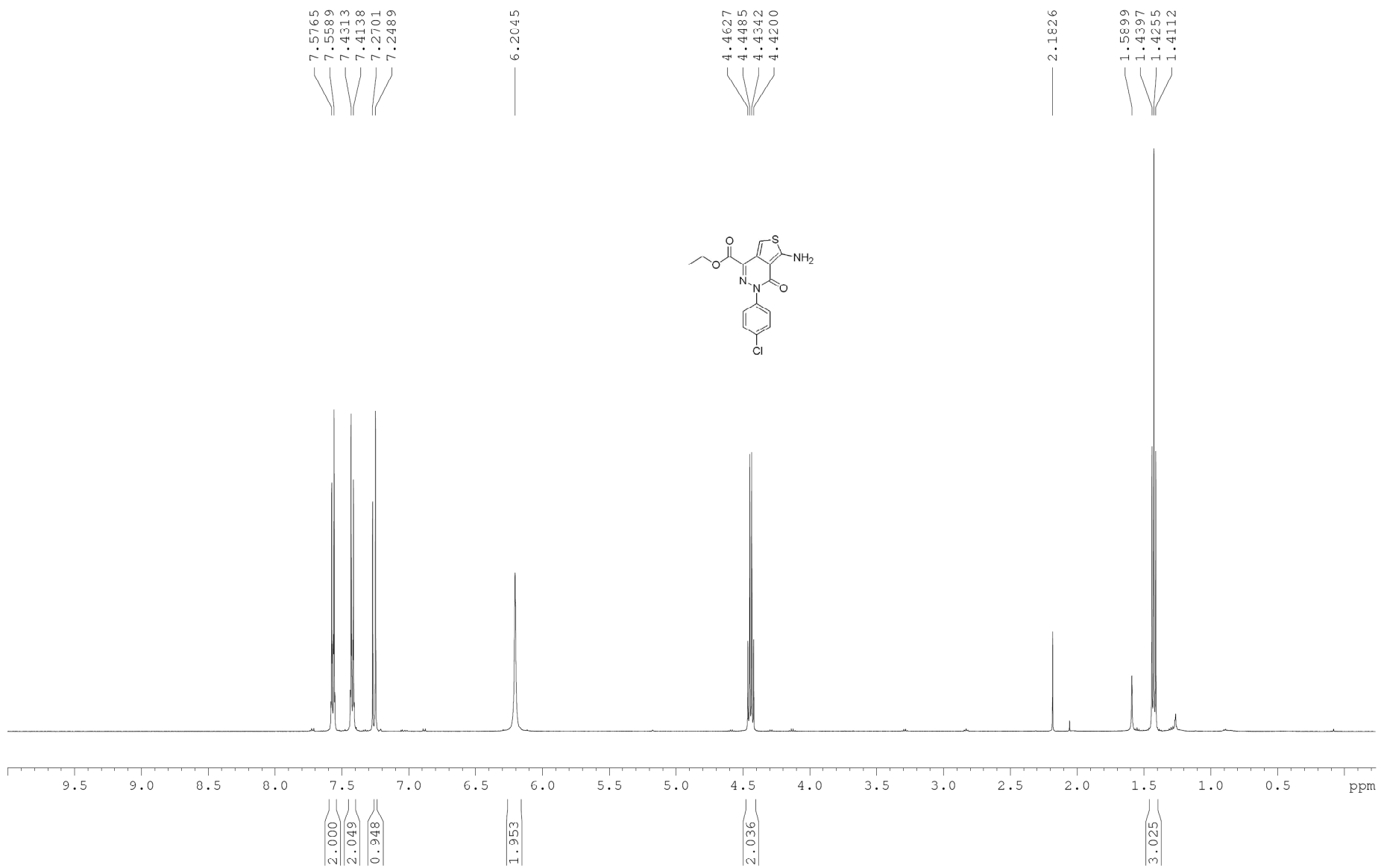


### IR spectrum of compound 8

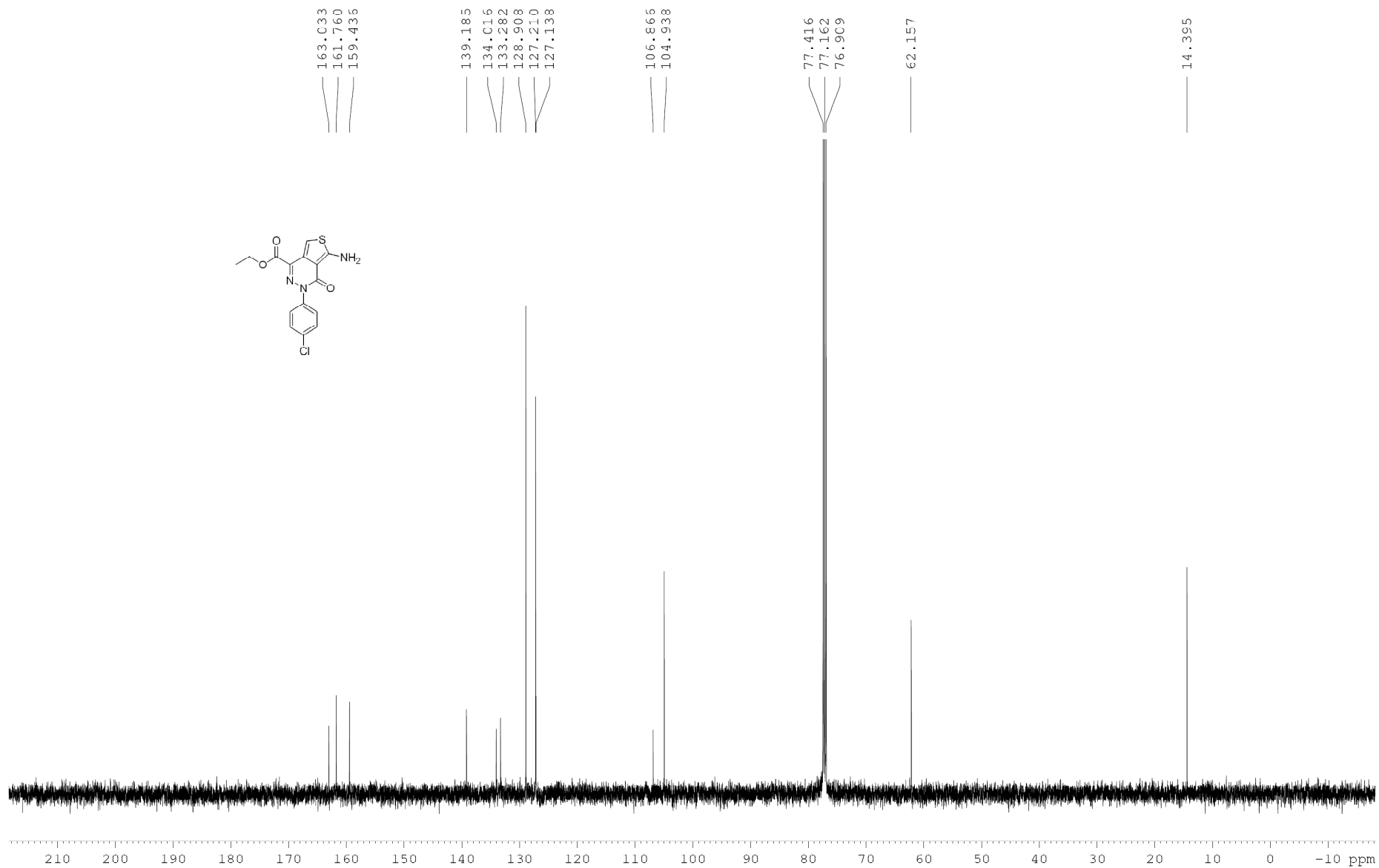


No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
1	3855.01	93.6296	2	3843.43	93.7439	3	3808.72	93.756	4	3713.26	93.9336	5	3658.3	93.6455
6	3411.46	88.0237	7	3303.46	86.5911	8	2981.41	91.0351	9	2281.38	93.1611	10	1724.05	86.1593
11	1709.59	86.9852	12	1660.41	80.9304	13	1586.16	83.3675	14	1504.2	87.746	15	1489.74	81.8849
16	1450.21	88.0253	17	1393.32	91.2954	18	1366.32	87.2297	19	1344.14	87.9672	20	1315.21	83.8797
21	1239.04	87.3142	22	1182.15	89.814	23	1129.12	79.902	24	1088.62	84.9899	25	1017.27	87.8684
26	973.876	91.8987	27	886.131	92.0635	28	827.312	88.9066	29	786.815	88.8374	30	762.709	92.2281
31	724.139	91.6119	32	694.248	92.2158	33	653.75	88.3903	34	632.537	92.8119	35	605.539	92.8999

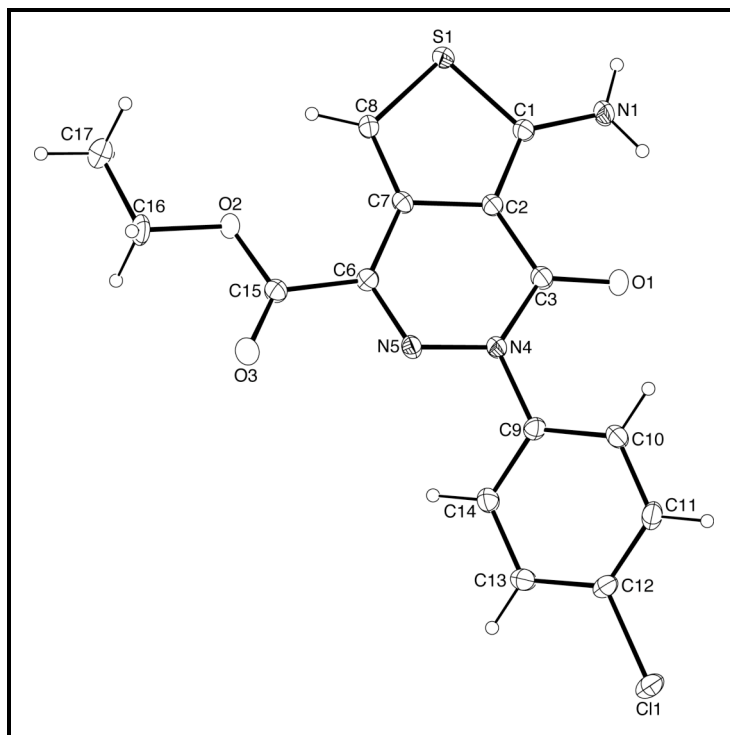
<sup>1</sup>H NMR spectrum of compound **8**



<sup>13</sup>C NMR spectrum of compound **8**

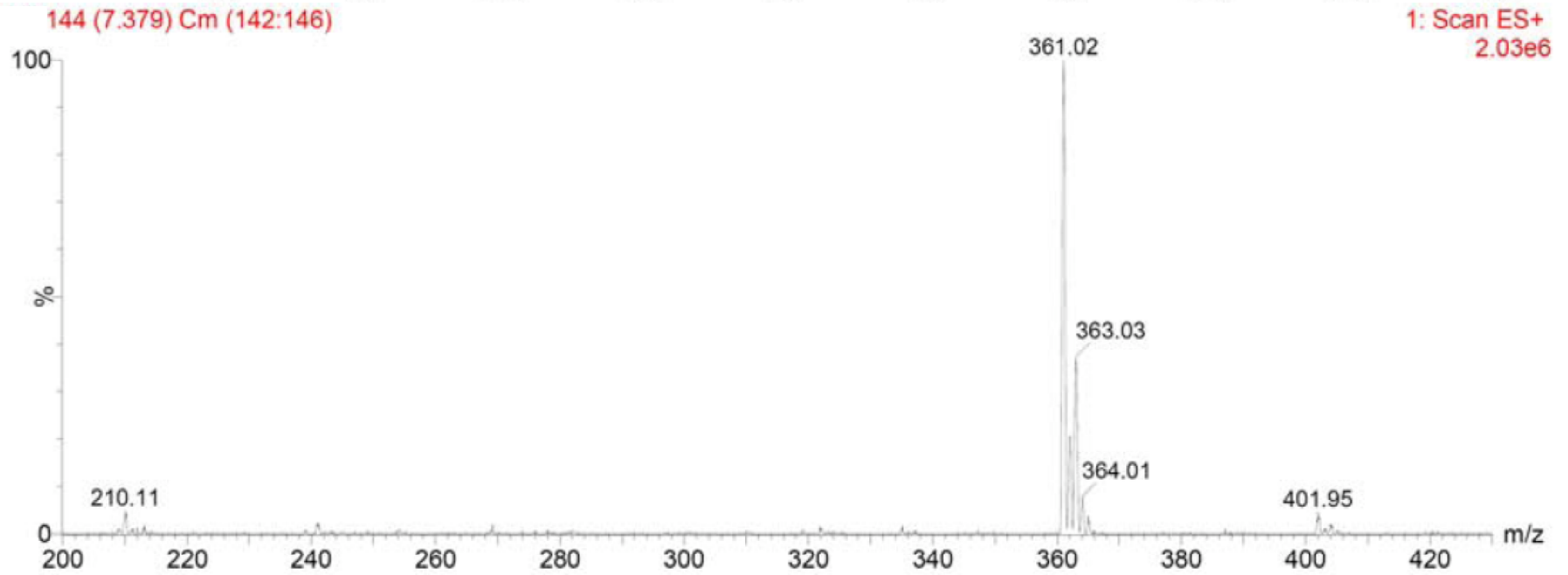
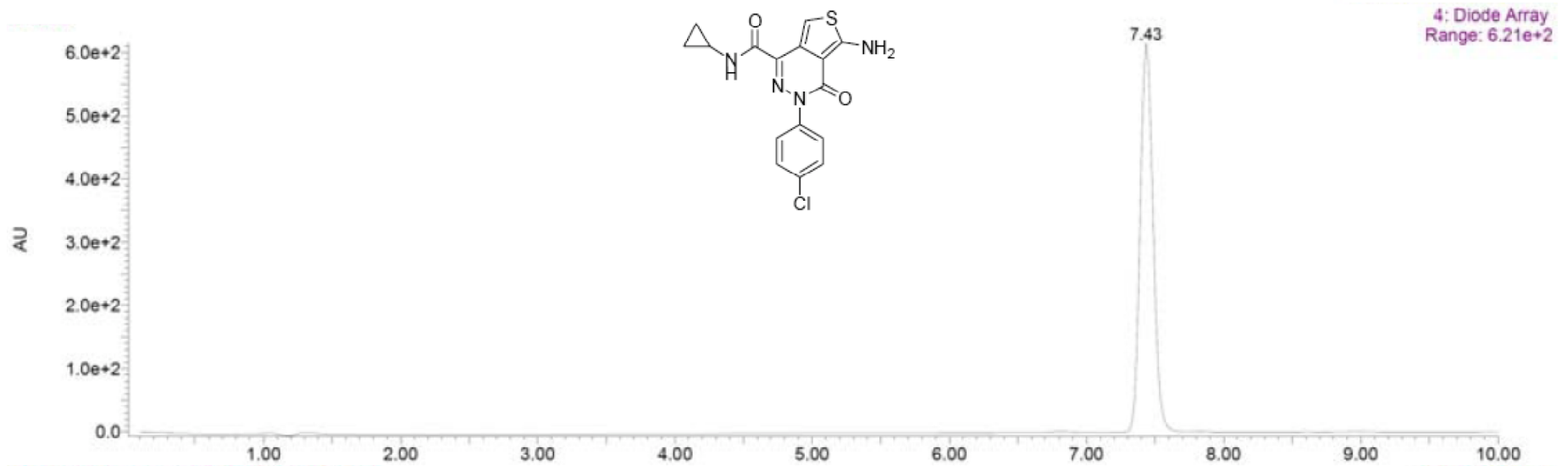
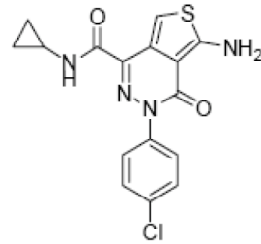


X-ray crystal structure of compound **8** (CCDC 763542)

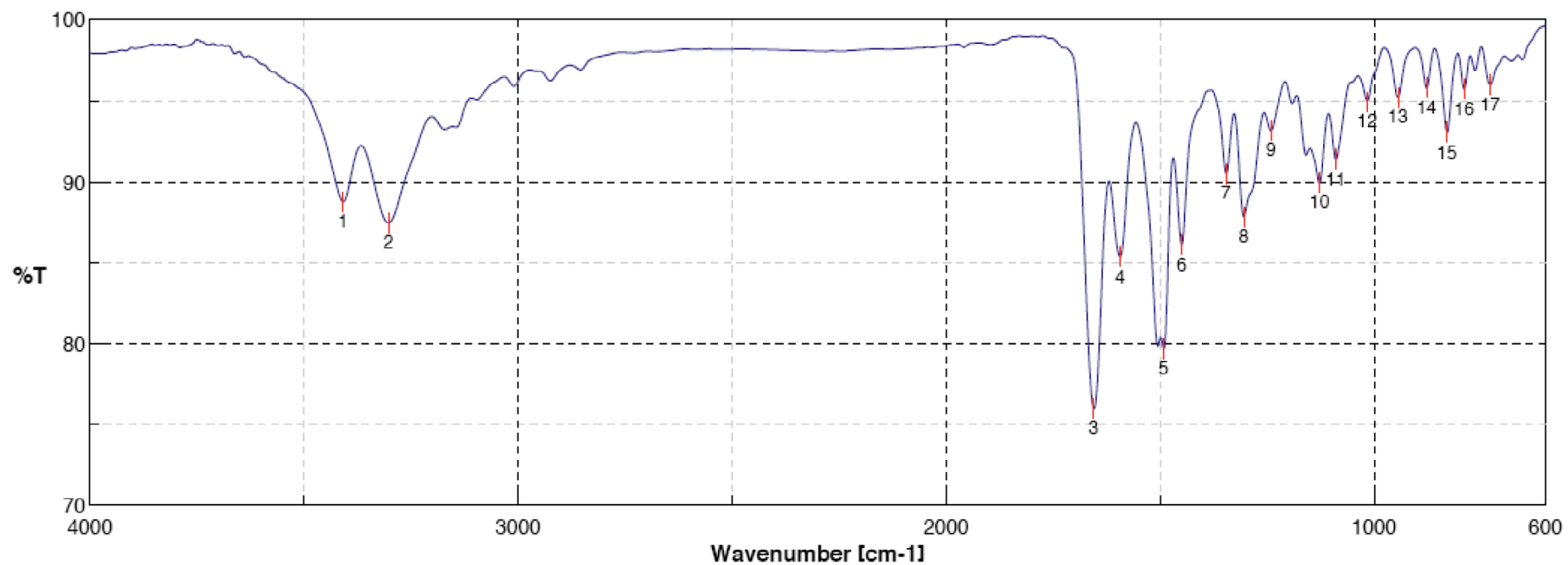




# HPLC chromatogram and mass spectrum of compound 16

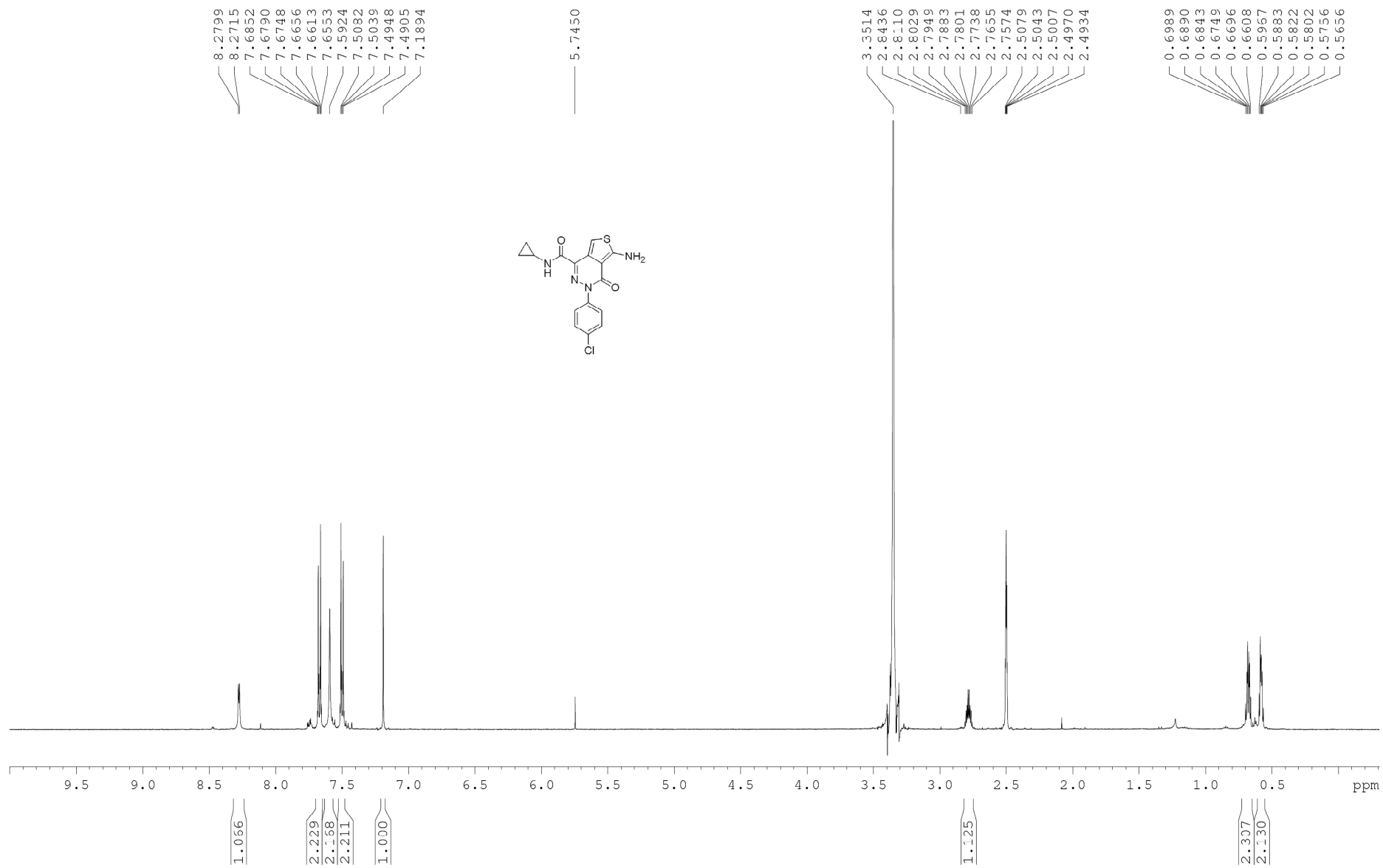


### IR spectrum of compound 16

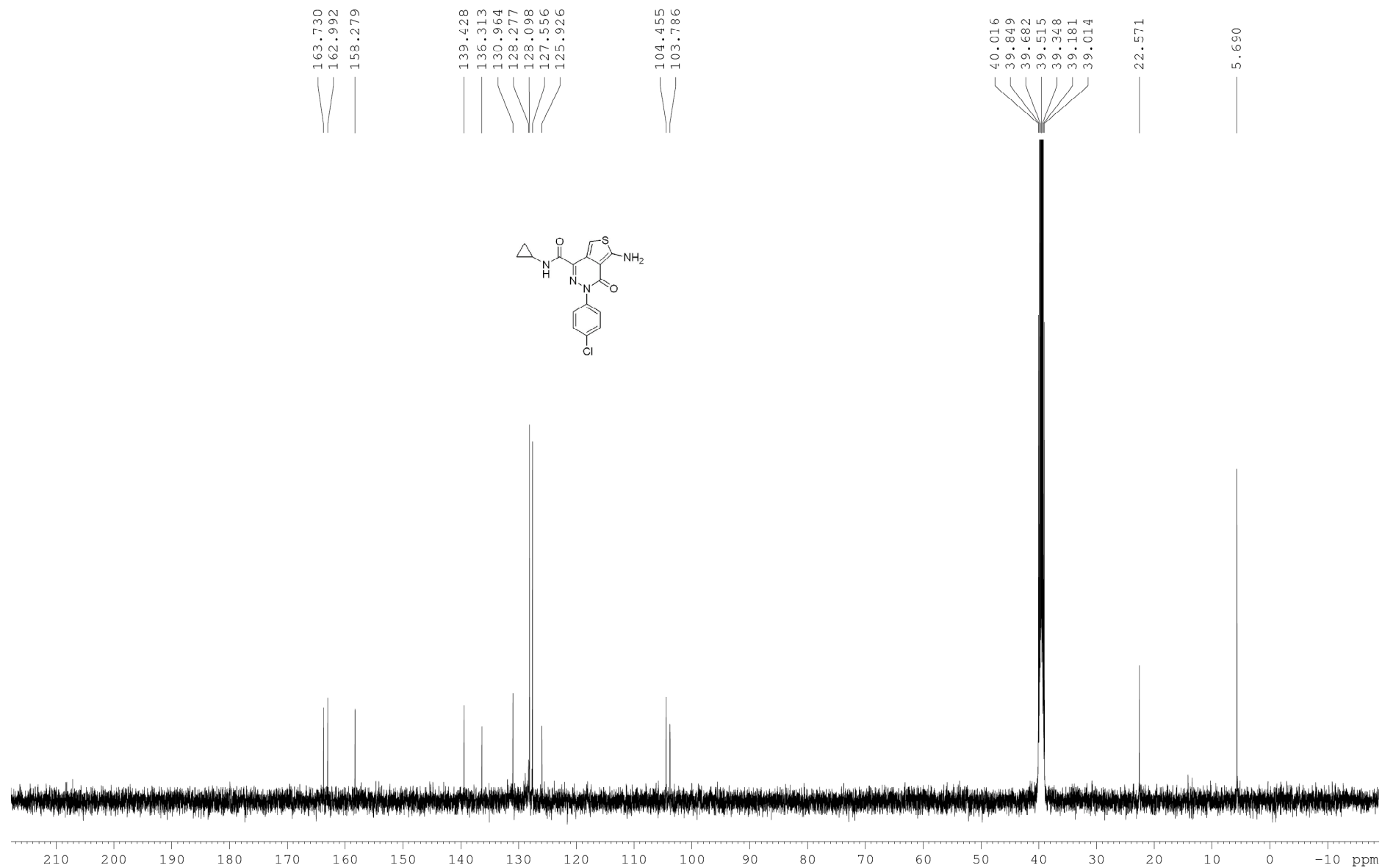


No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
1	3408.57	88.717	2	3302.5	87.4323	3	1654.62	75.9592	4	1593.4	85.3621
6	1449.73	86.0946	7	1345.59	90.4801	8	1304.61	87.8093	9	1240.97	93.1338
11	1089.58	91.3594	12	1015.82	94.9526	13	944.467	95.2184	14	877.452	95.792
16	789.707	95.7074	17	728.961	95.9858				15	829.723	93.0352

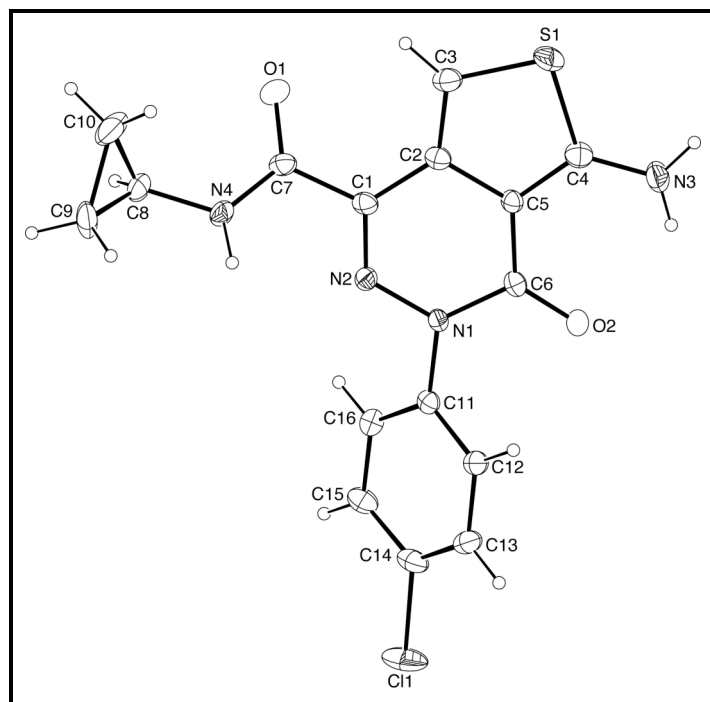
<sup>1</sup>H NMR spectrum of compound **16**



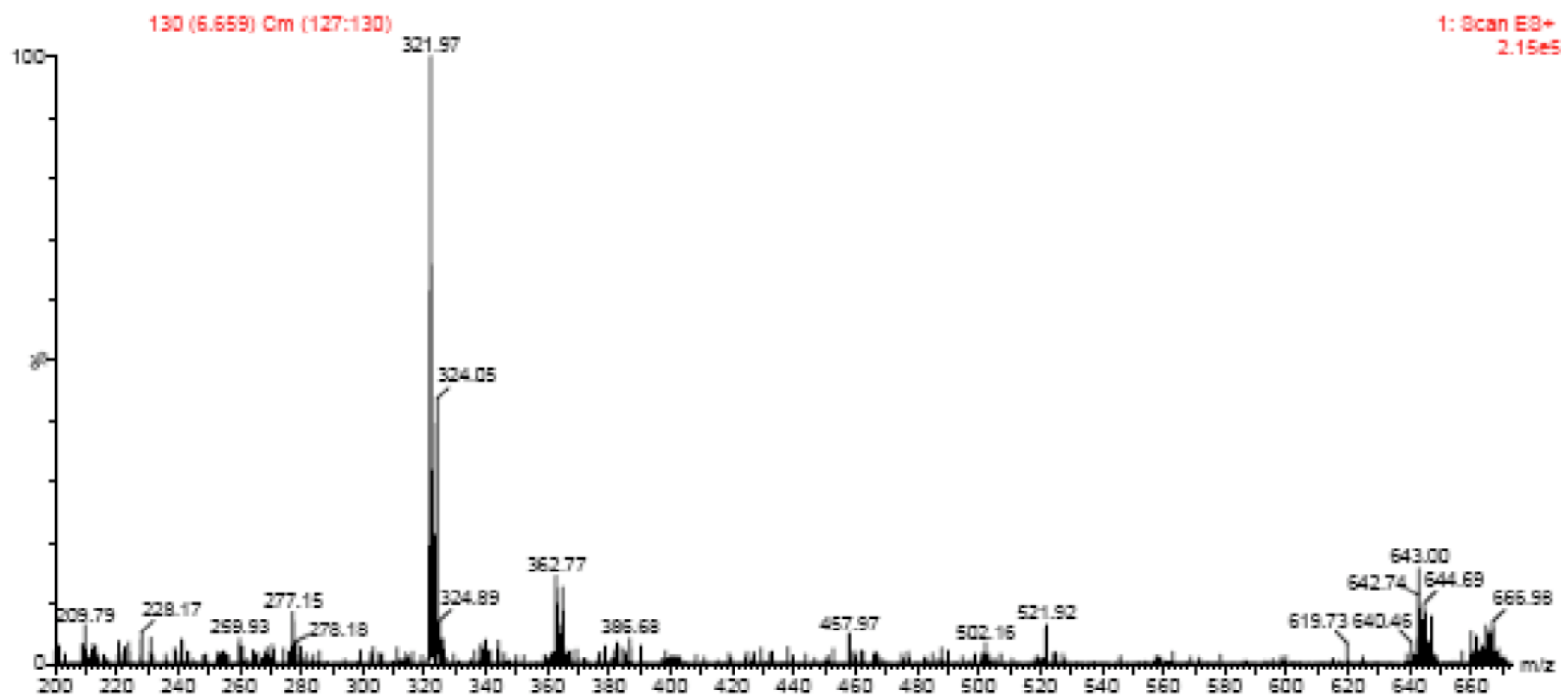
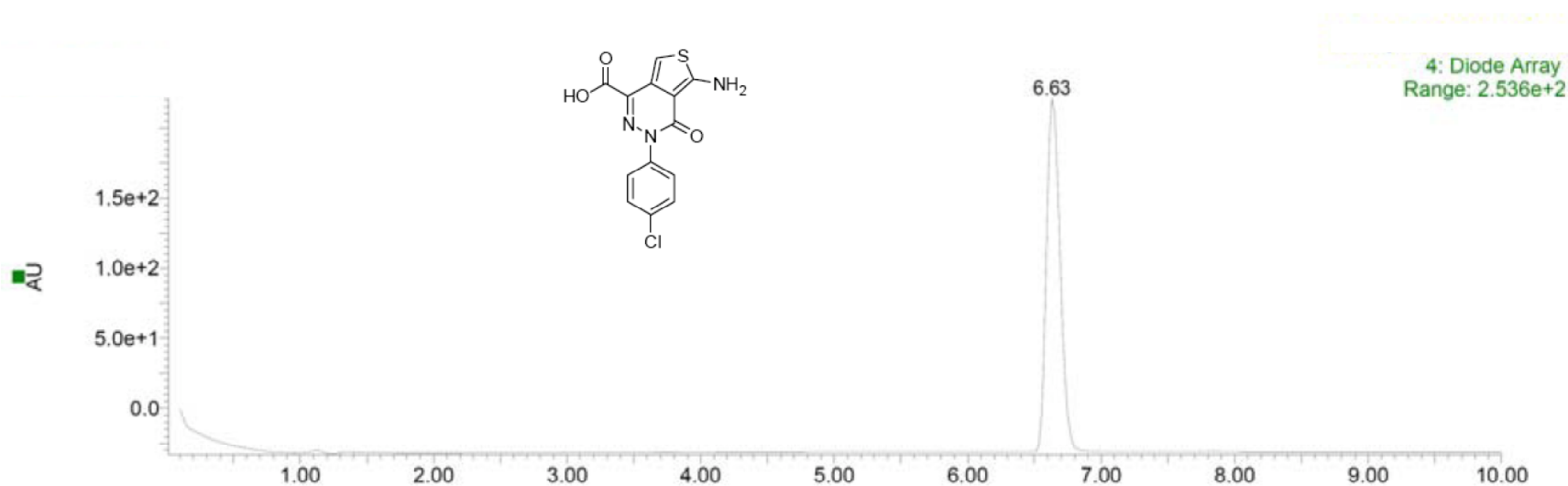
<sup>13</sup>C NMR spectrum of compound **16**



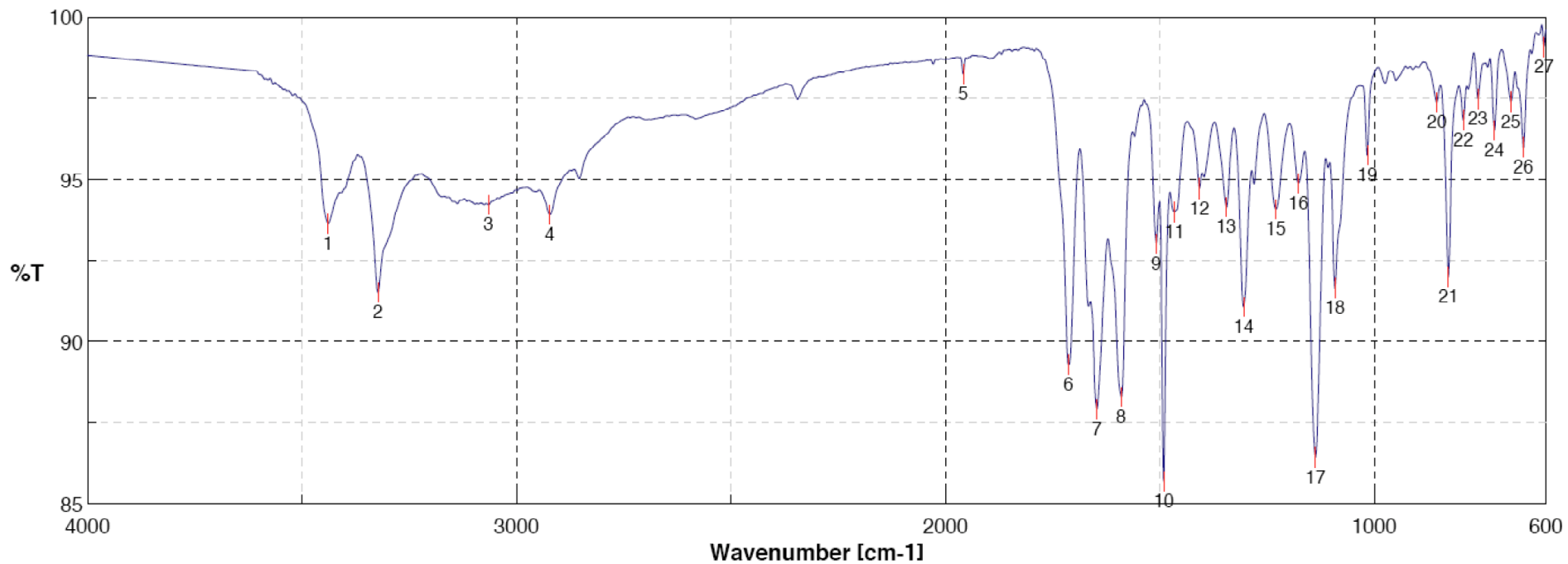
X-ray crystal structure of compound **16** (CCDC 763541)



# HPLC chromatogram and mass spectrum of compound **11**



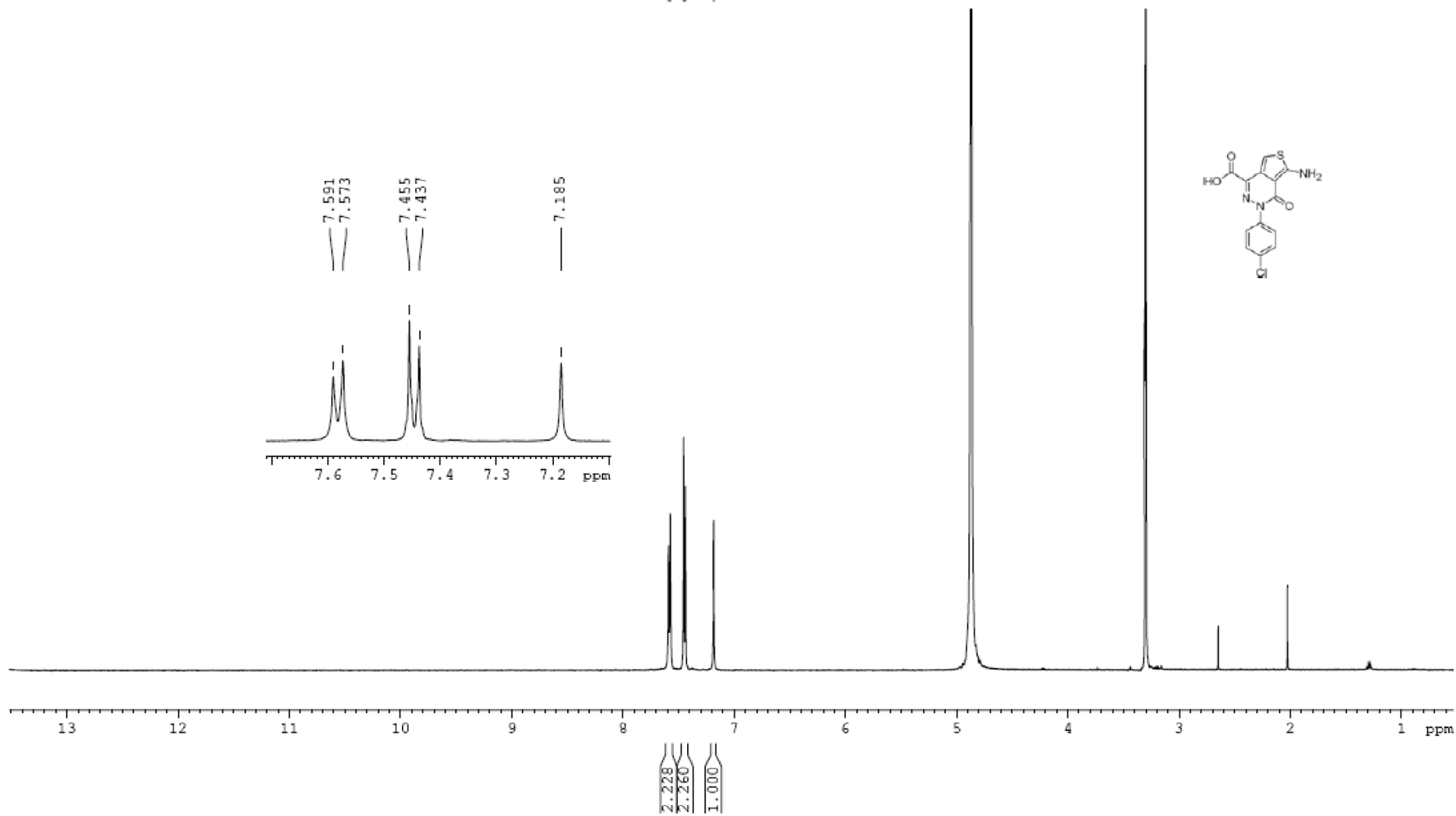
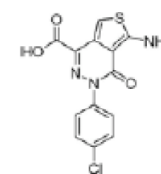
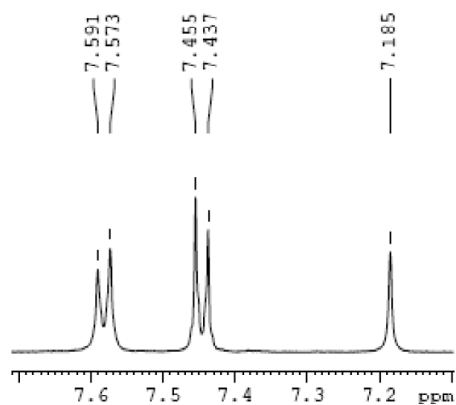
### IR spectrum of compound 11



No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
1	3439.42	93.6432	2	3322.75	91.5133	3	3065.3	94.2198	4	2921.63	93.9143	5	1958.36	98.2408
6	1712.48	89.2896	7	1646.91	87.9232	8	1590.02	88.302	9	1508.06	93.0202	10	1490.7	85.6871
11	1465.63	93.9893	12	1407.78	94.7268	13	1345.11	94.1498	14	1304.61	91.0695	15	1229.4	94.0942
16	1177.33	94.8926	17	1136.83	86.4373	18	1091.51	91.646	19	1016.3	95.7438	20	854.311	97.3776
21	827.312	91.9981	22	792.6	96.8312	23	758.852	97.4834	24	720.282	96.5123	25	681.713	97.3933
26	652.786	95.9792	27	604.574	99.077									

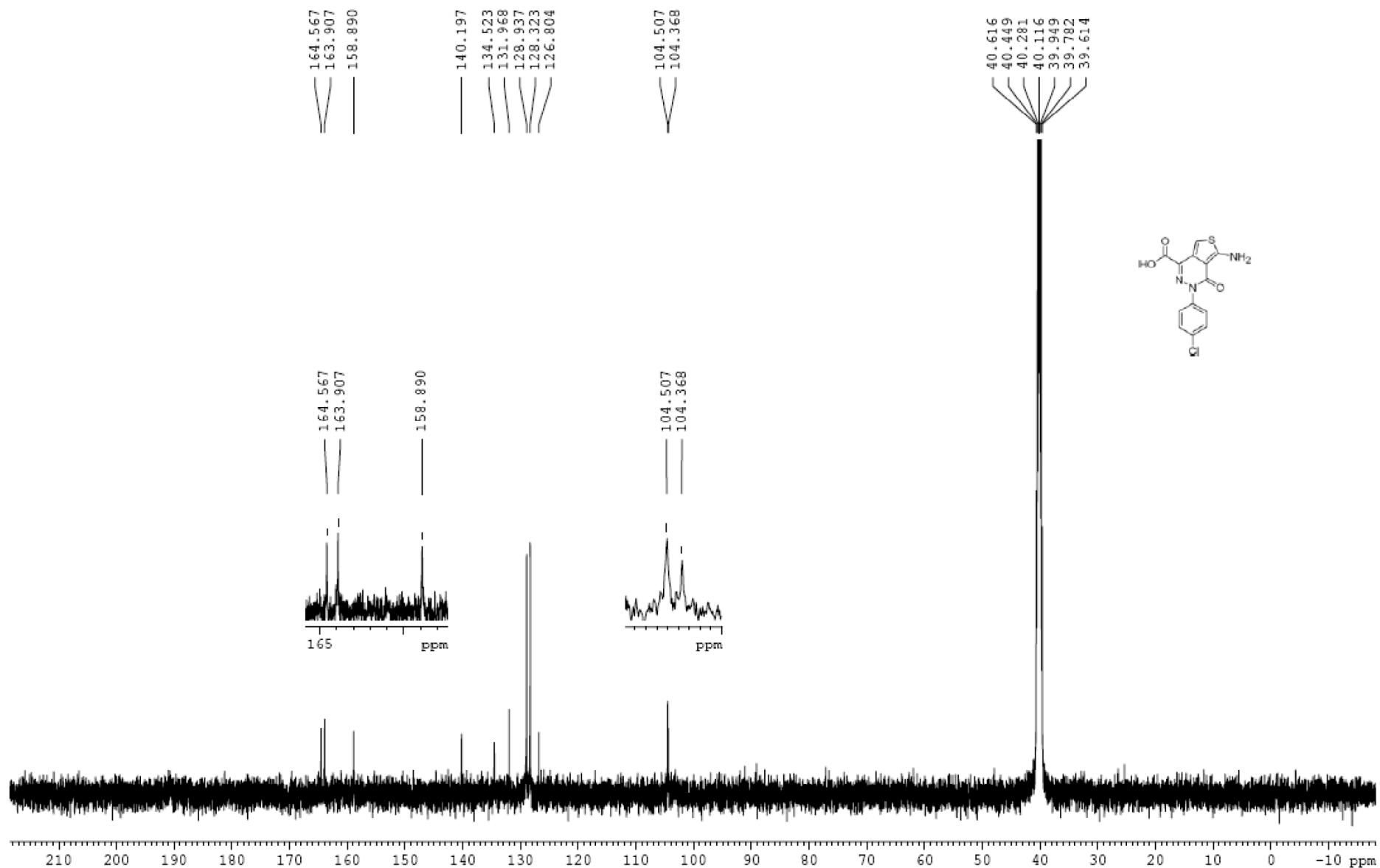
<sup>1</sup>H NMR spectrum of compound **11**

7.591  
7.573  
7.455  
7.437  
7.185

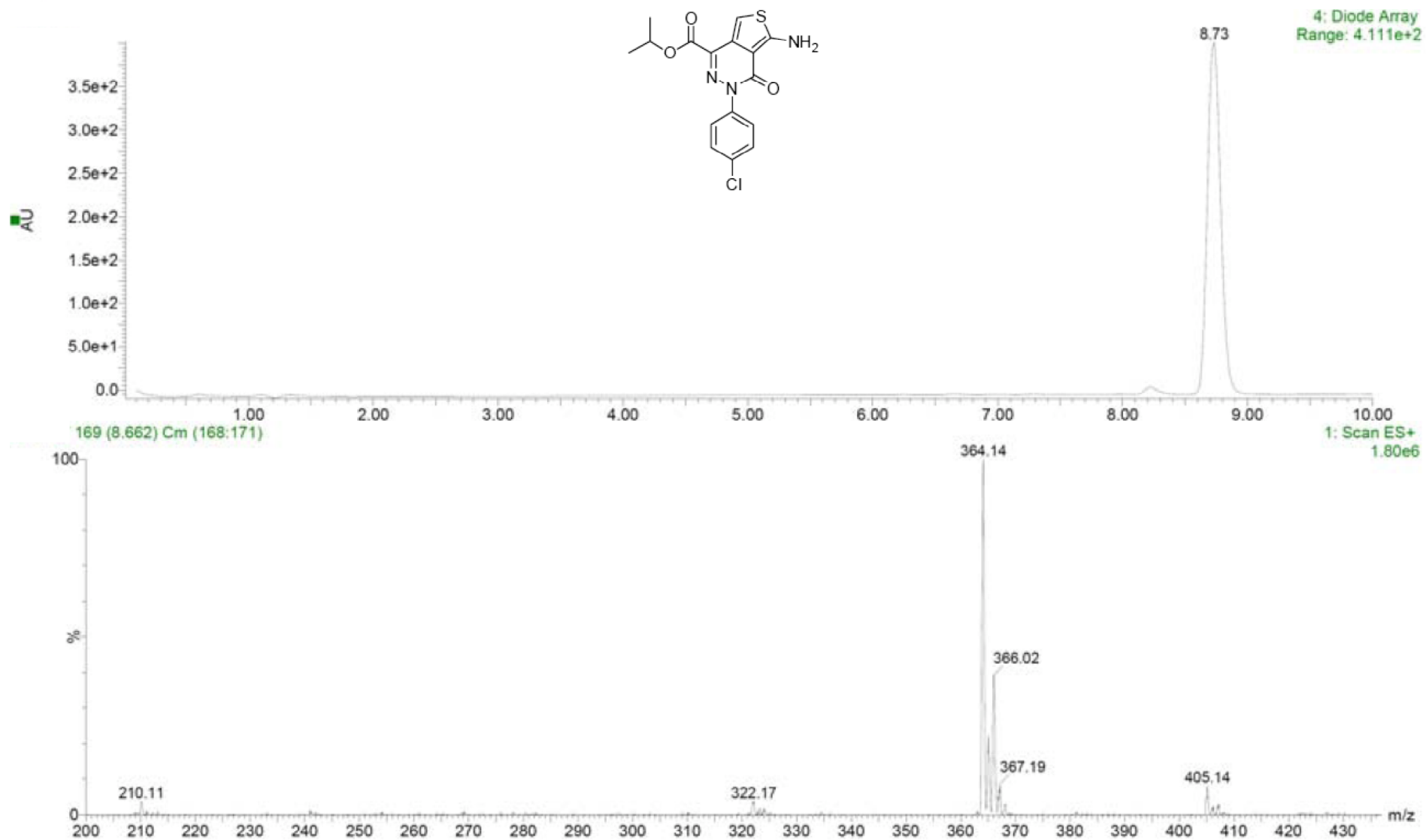
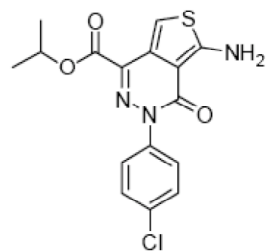




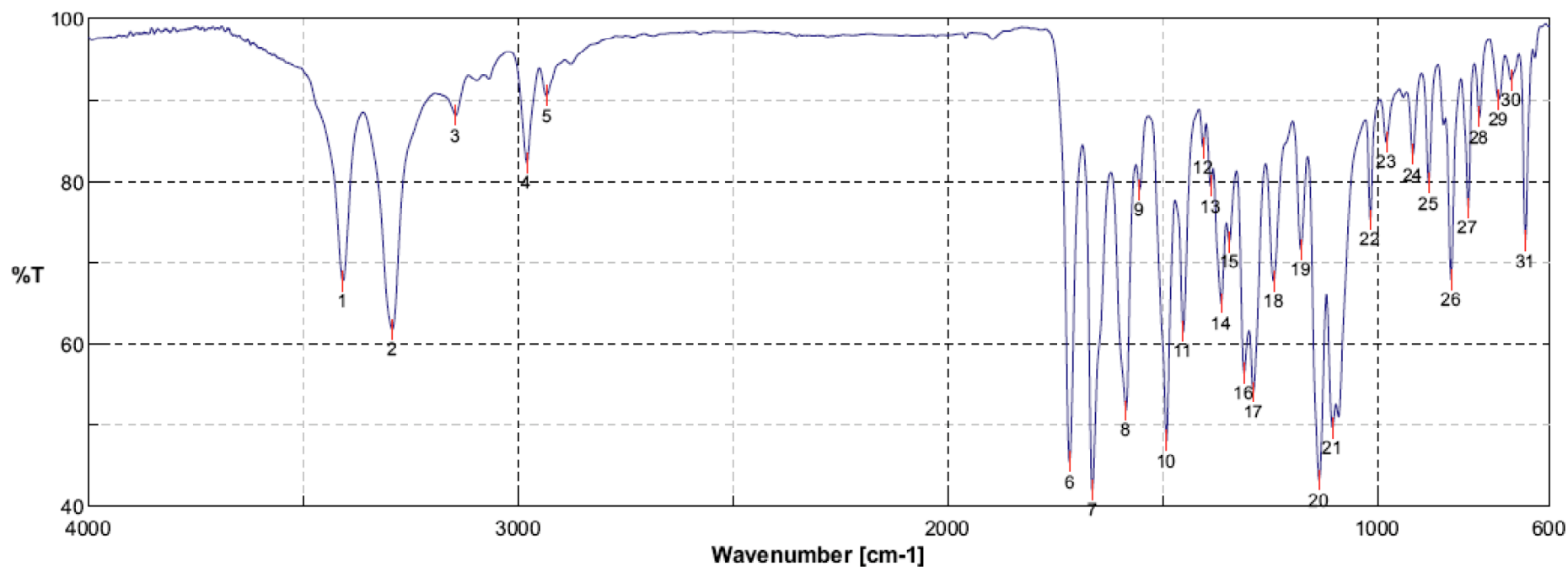
<sup>13</sup>C NMR spectrum of compound **11**



# HPLC chromatogram and mass spectrum of compound 10

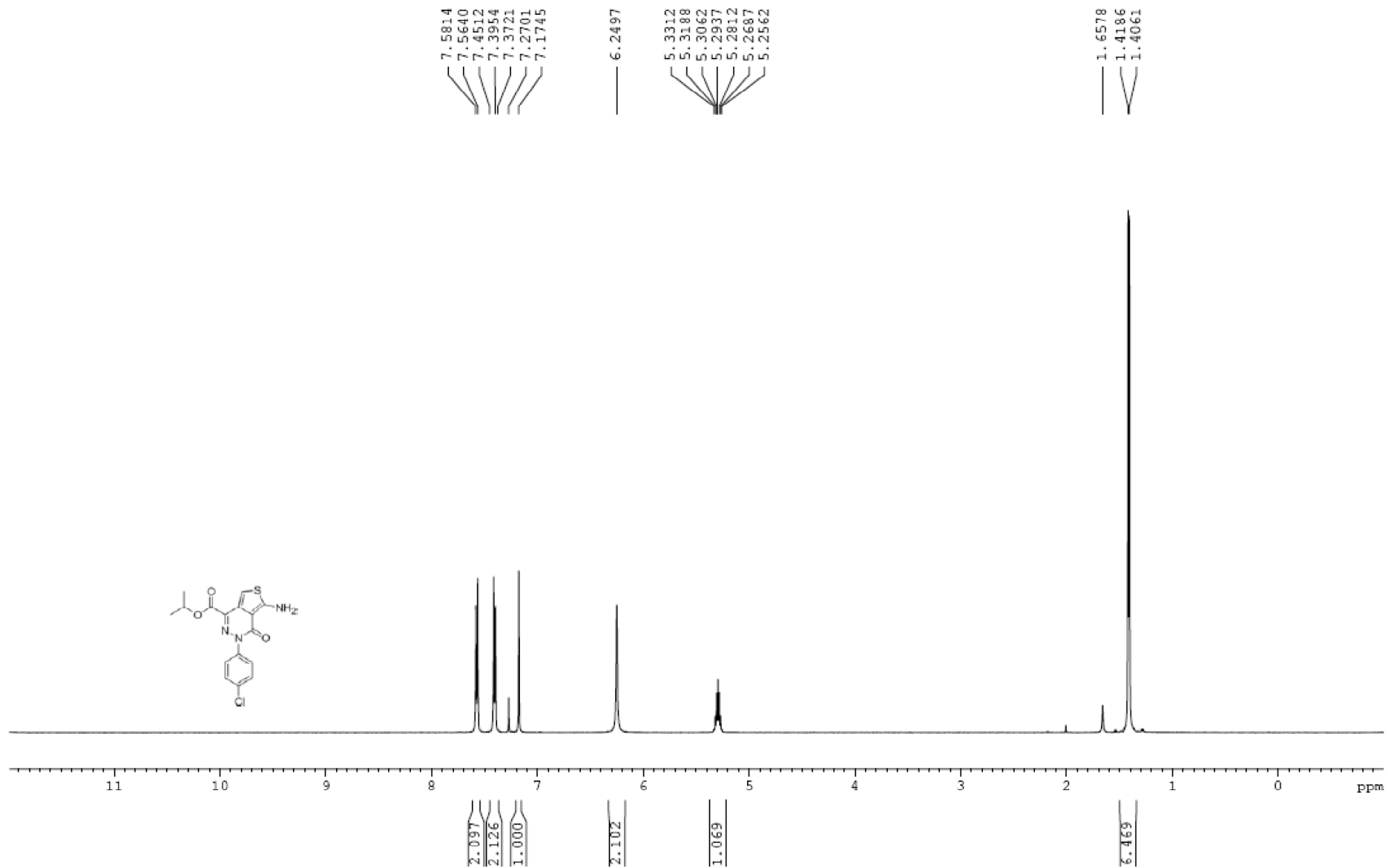


### IR spectrum of compound 10

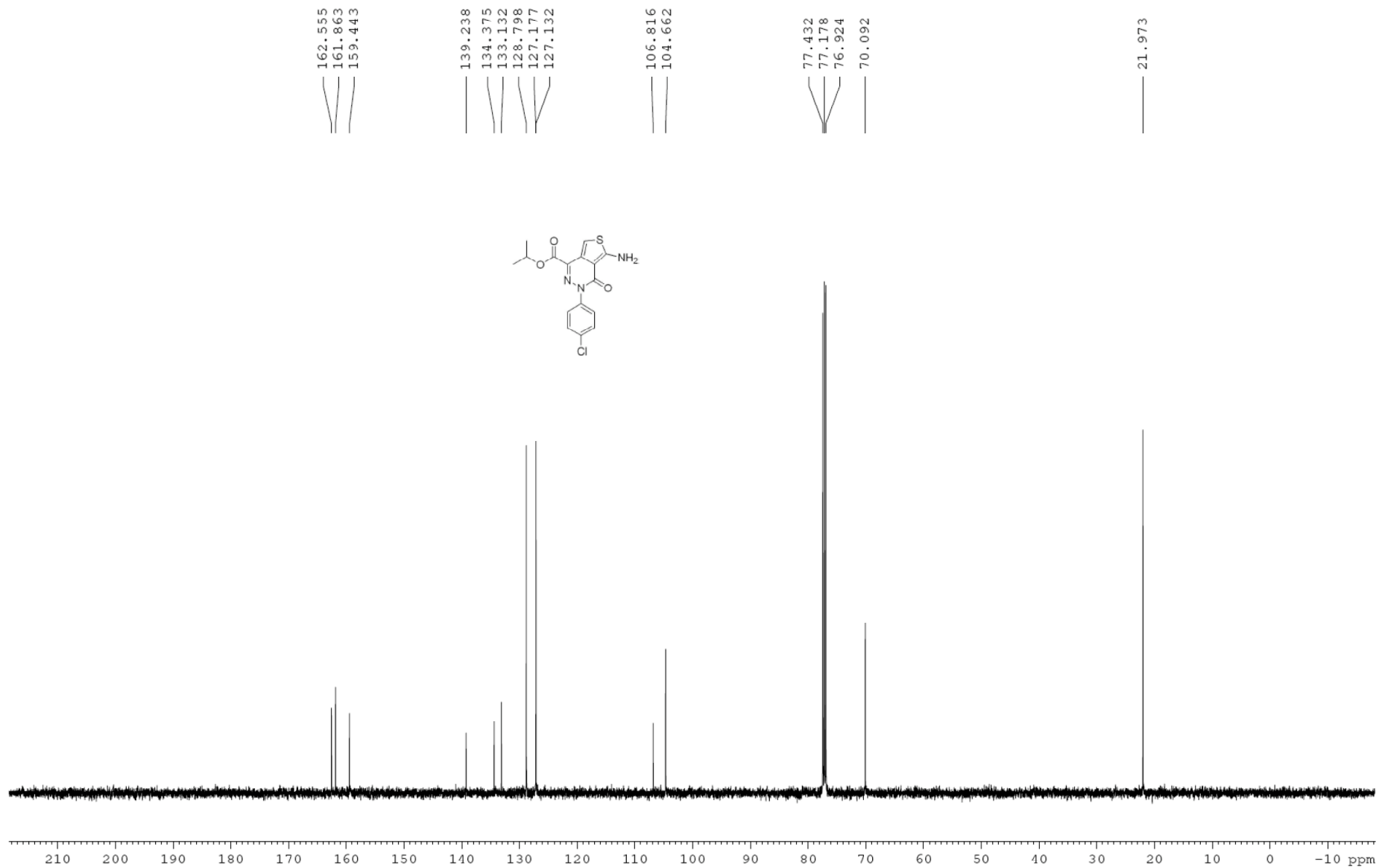


No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T			
1	3408.57	67.6885	2	3294.3	61.7655	3	3145.81	88.1026	4	2980.45	82.245	5	2934.64	90.5034
6	1716.82	45.3832	7	1663.78	41.9591	8	1585.2	51.791	9	1553.86	78.97	10	1491.19	47.9724
11	1452.14	61.4939	12	1405.85	84.1903	13	1388.5	79.4188	14	1363.91	64.9597	15	1344.62	72.4547
16	1310.39	56.4469	17	1288.7	54.0629	18	1241.45	67.6539	19	1178.29	71.578	20	1135.38	43.1684
21	1104.53	49.5966	22	1016.3	75.2488	23	979.179	84.8188	24	917.468	83.2697	25	880.345	79.7425
26	828.277	67.9027	27	788.743	76.7616	28	762.709	87.8938	29	717.39	90.0555	30	688.945	92.3784
31	655.197	72.5708												

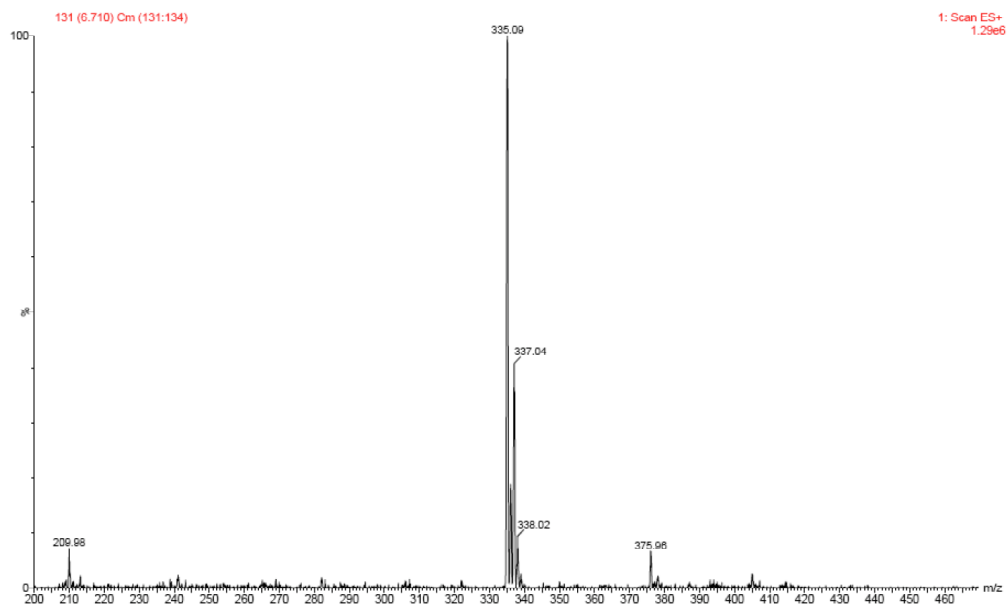
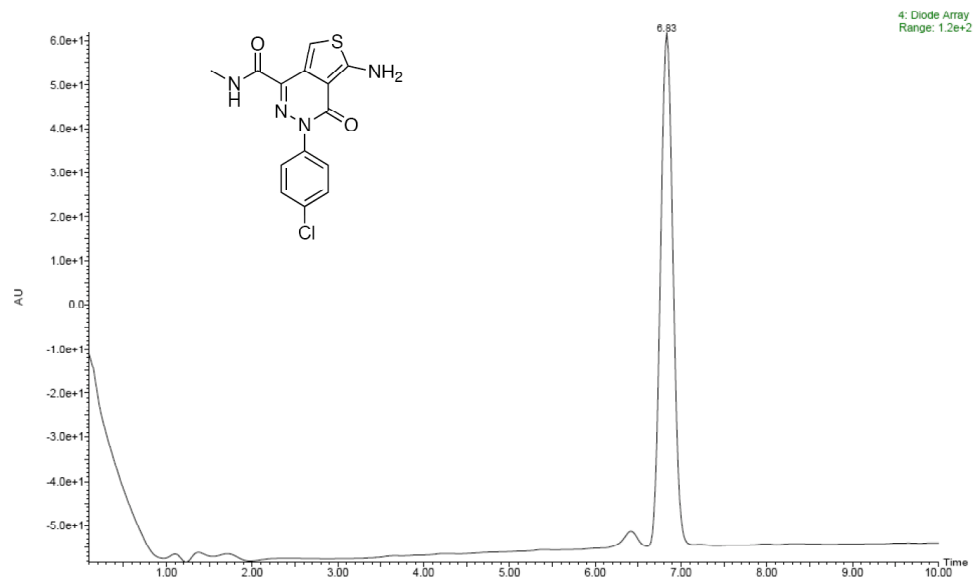
<sup>1</sup>H NMR spectrum of compound **10**



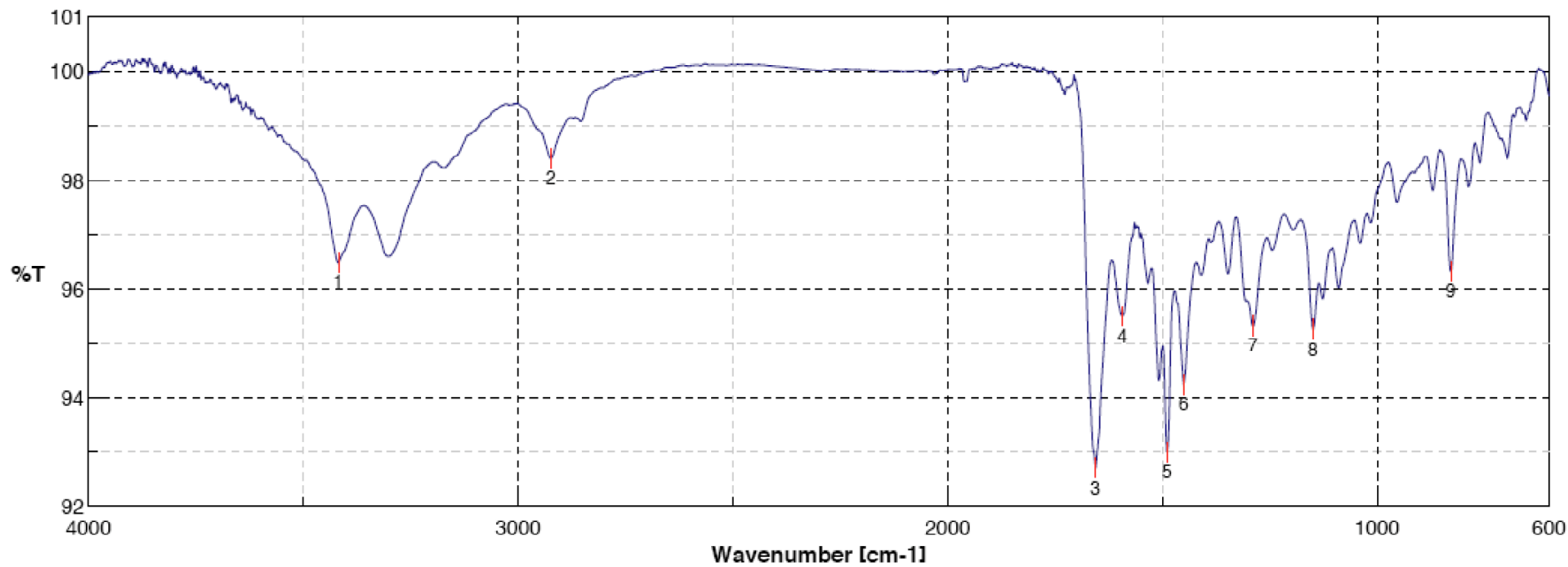
<sup>13</sup>C NMR spectrum of compound **10**



# HPLC chromatogram and mass spectrum of compound 13

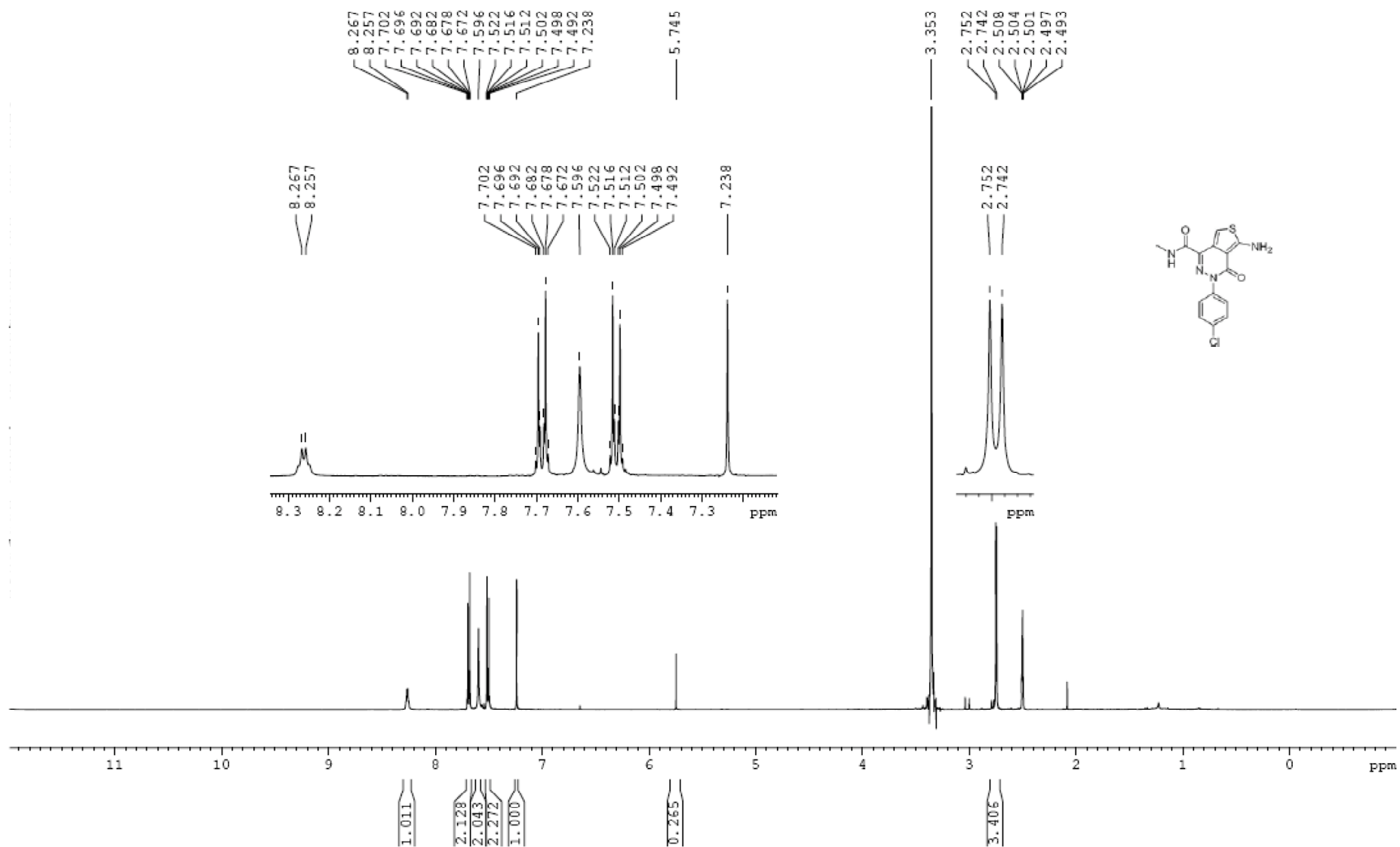


IR spectrum of compound **13**



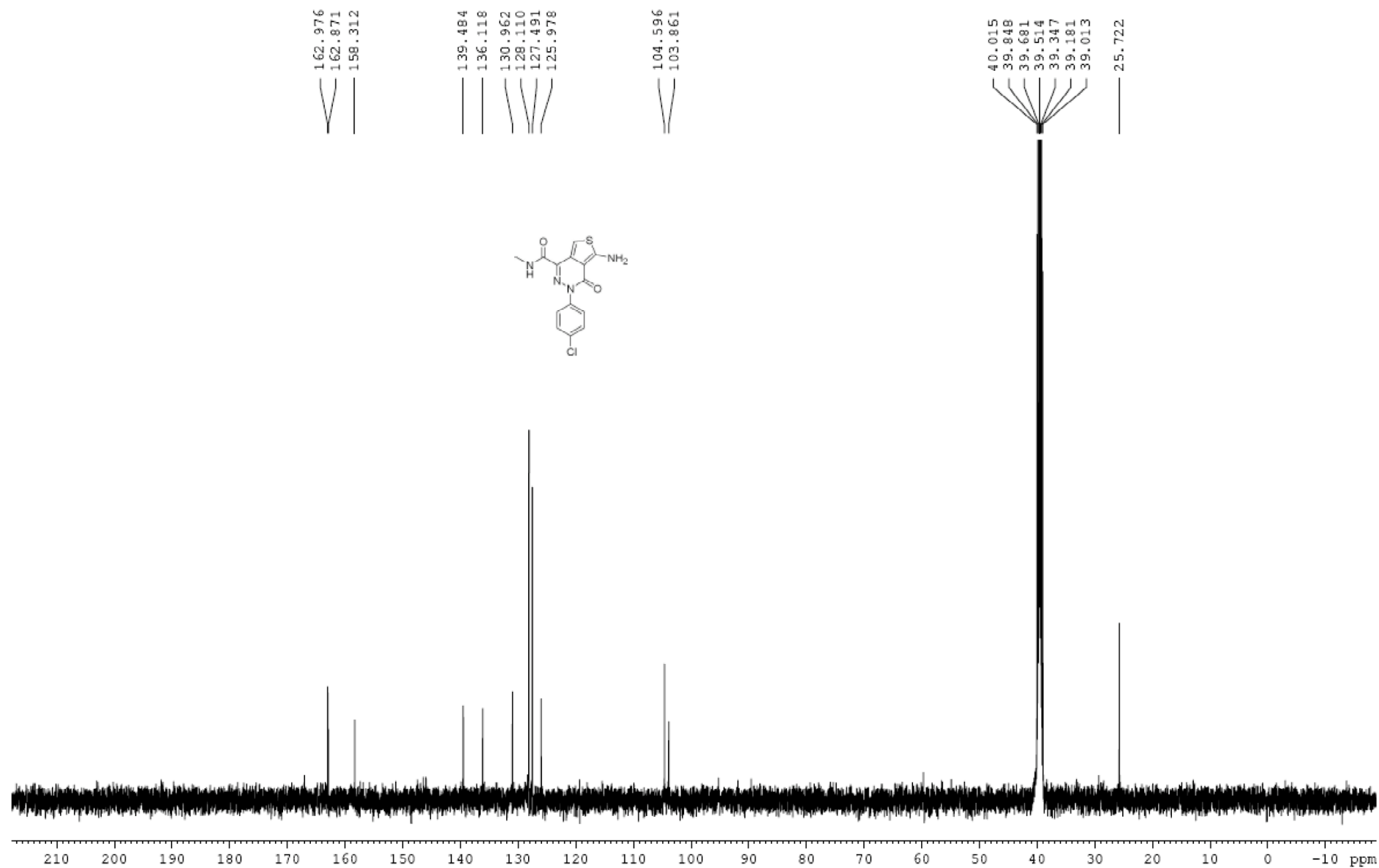
No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
1	3418.69	96.4811	2	2924.04	98.3931	3	1656.07	92.6963	4	1593.4	95.4933	5	1488.78	92.999
6	1450.21	94.236	7	1289.18	95.3136	8	1149.37	95.2522	9	828.759	96.3135			

<sup>1</sup>H NMR spectrum of compound **13**

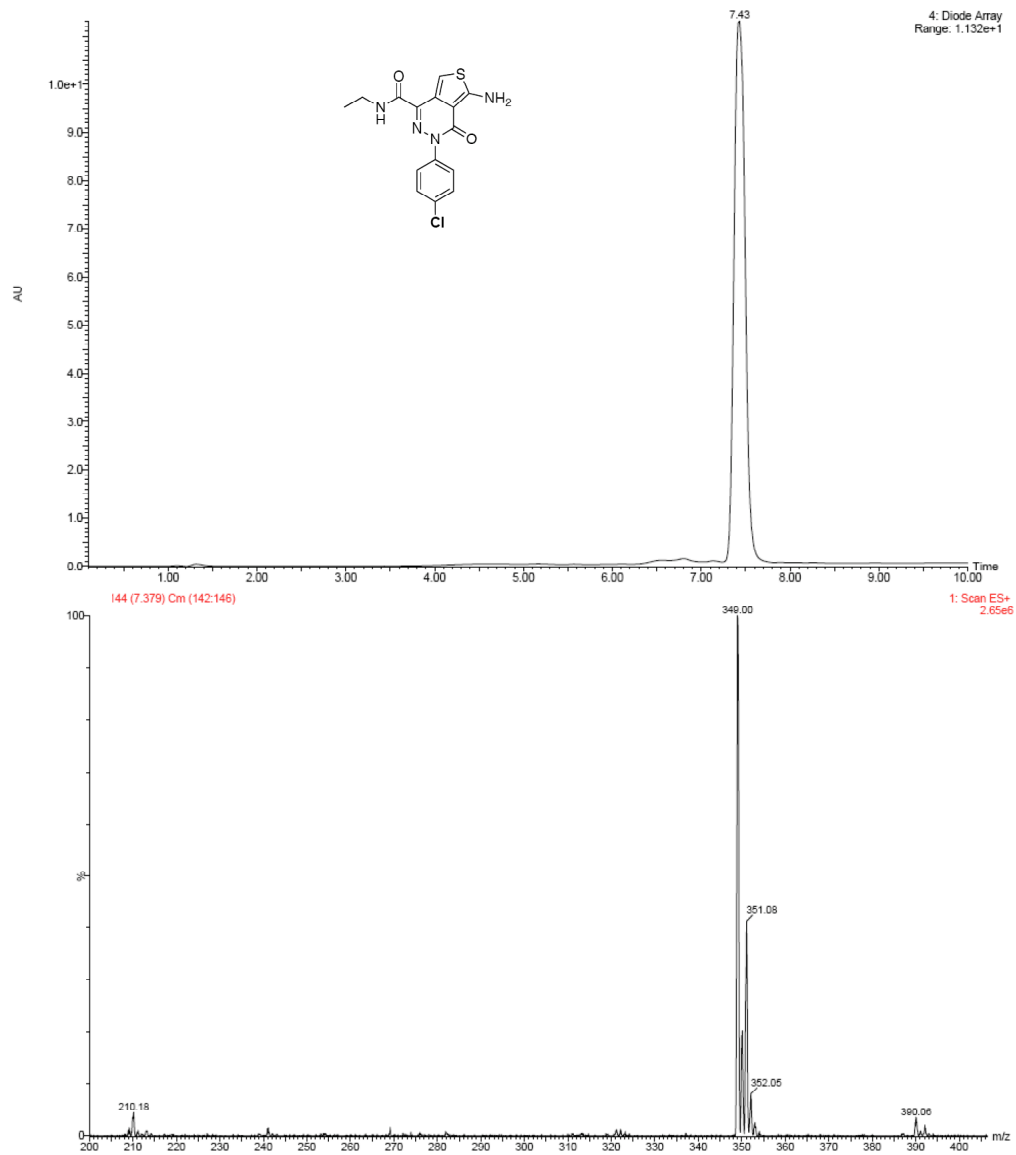




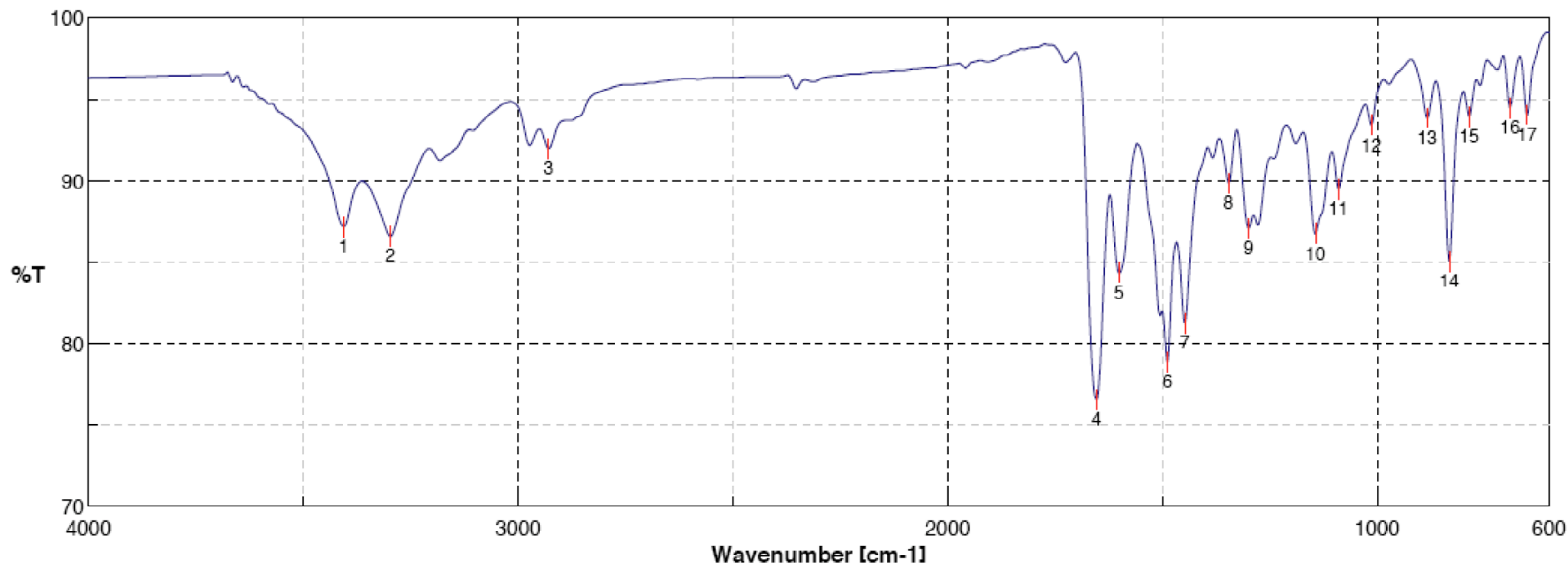
<sup>13</sup>C NMR spectrum of compound **13**



# HPLC chromatogram and mass spectrum of compound **14**

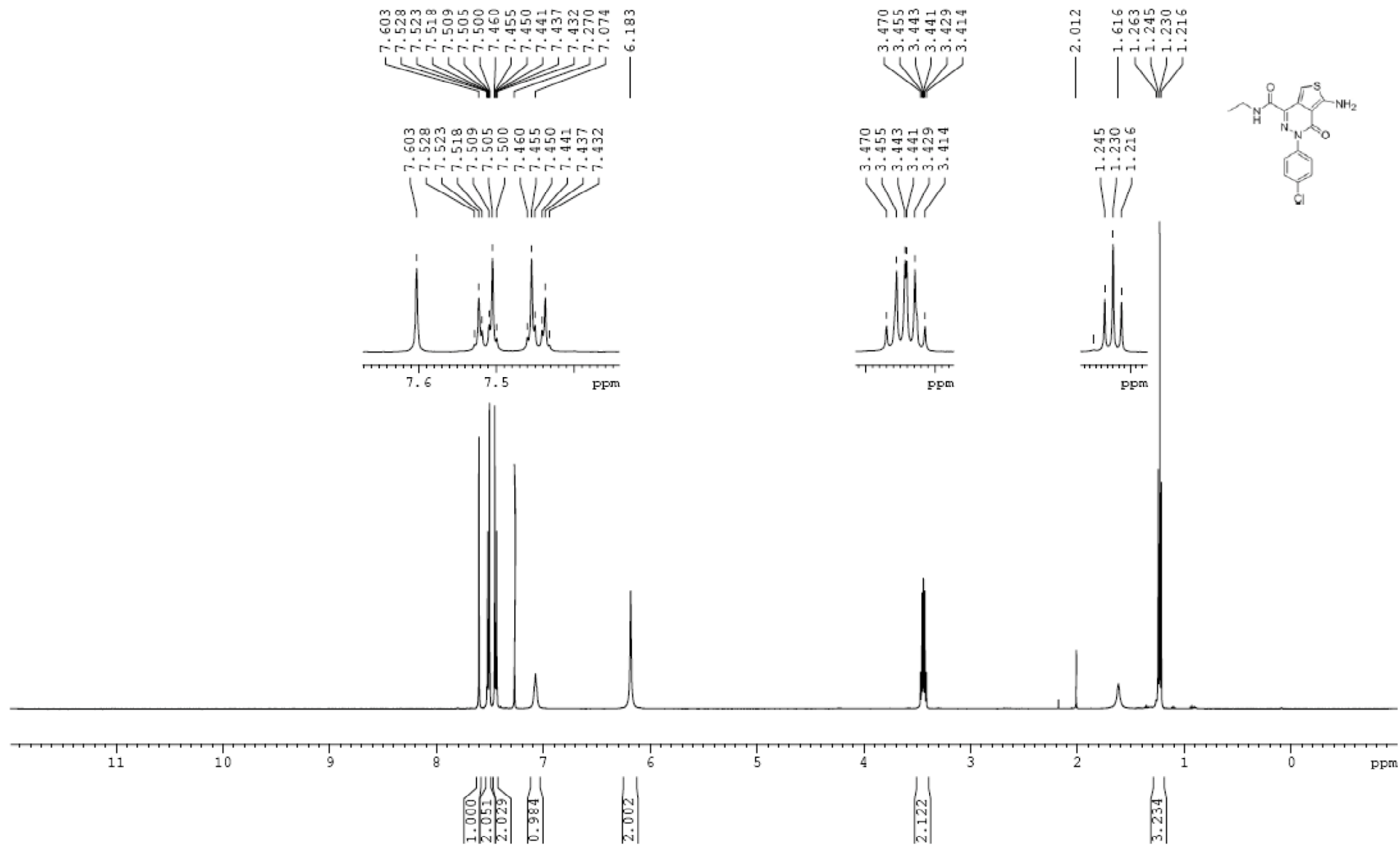


IR spectrum of compound **14**

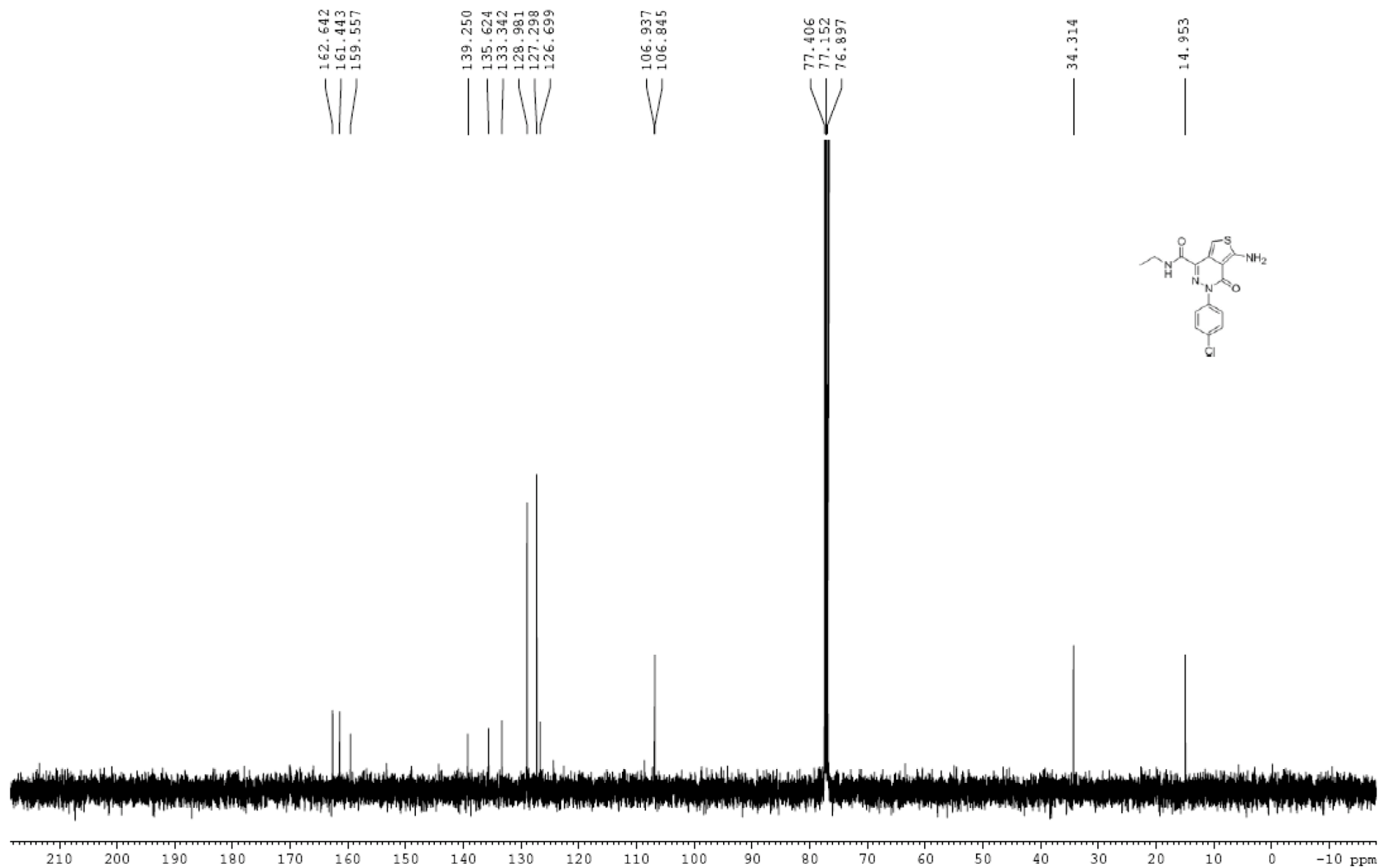


No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
1	3405.67	87.164	2	3297.2	86.5933	3	2928.86	91.9859	4	1652.7	76.5536
6	1488.29	78.8429	7	1447.8	81.2489	8	1345.59	89.8486	9	1299.3	87.0485
11	1090.07	89.4415	12	1013.41	93.4043	13	883.72	93.8533	14	832.133	85.056
16	690.873	94.4672	17	650.858	94.0304				15	785.85	93.9398

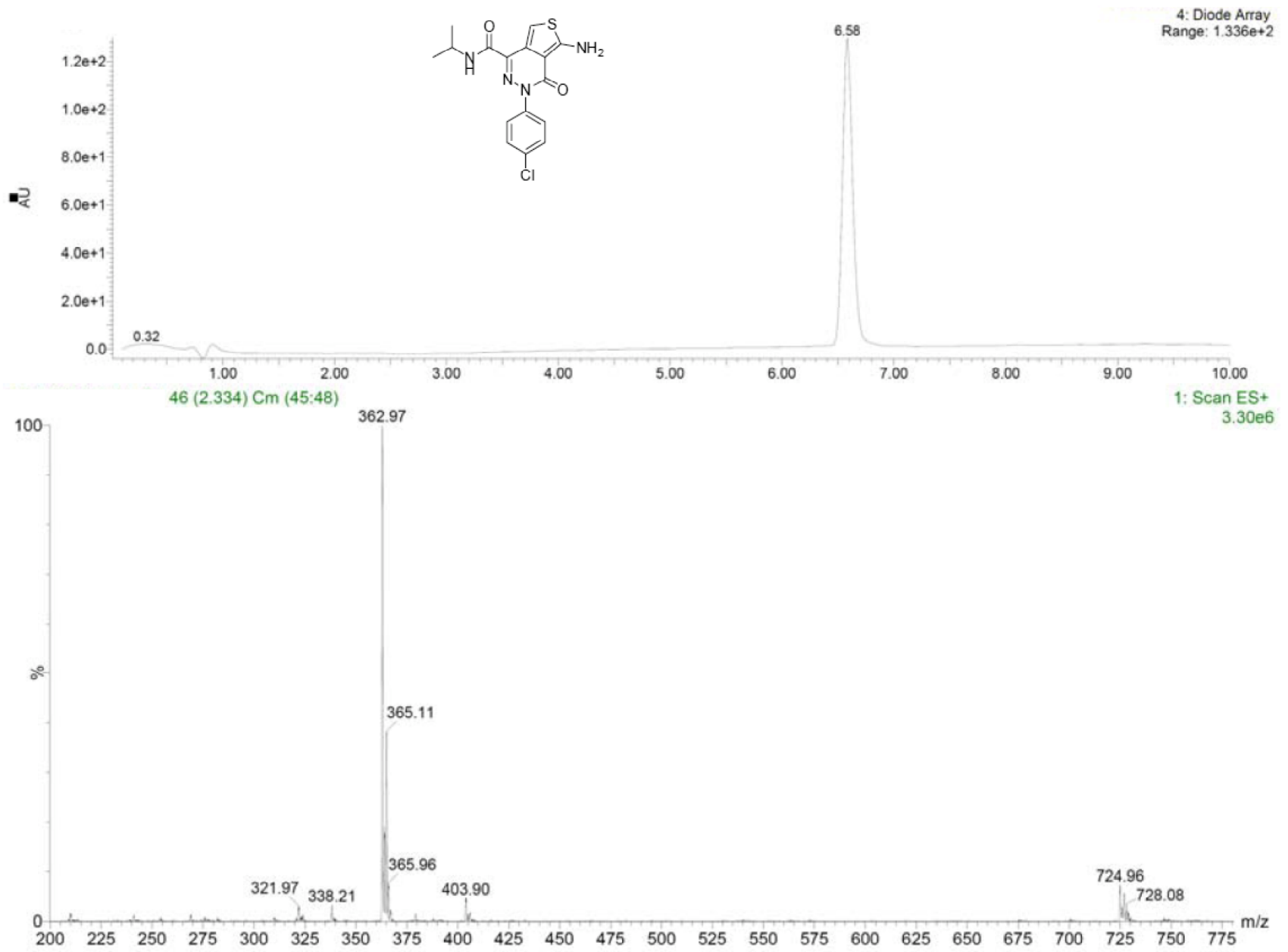
<sup>1</sup>H NMR spectrum of compound **14**



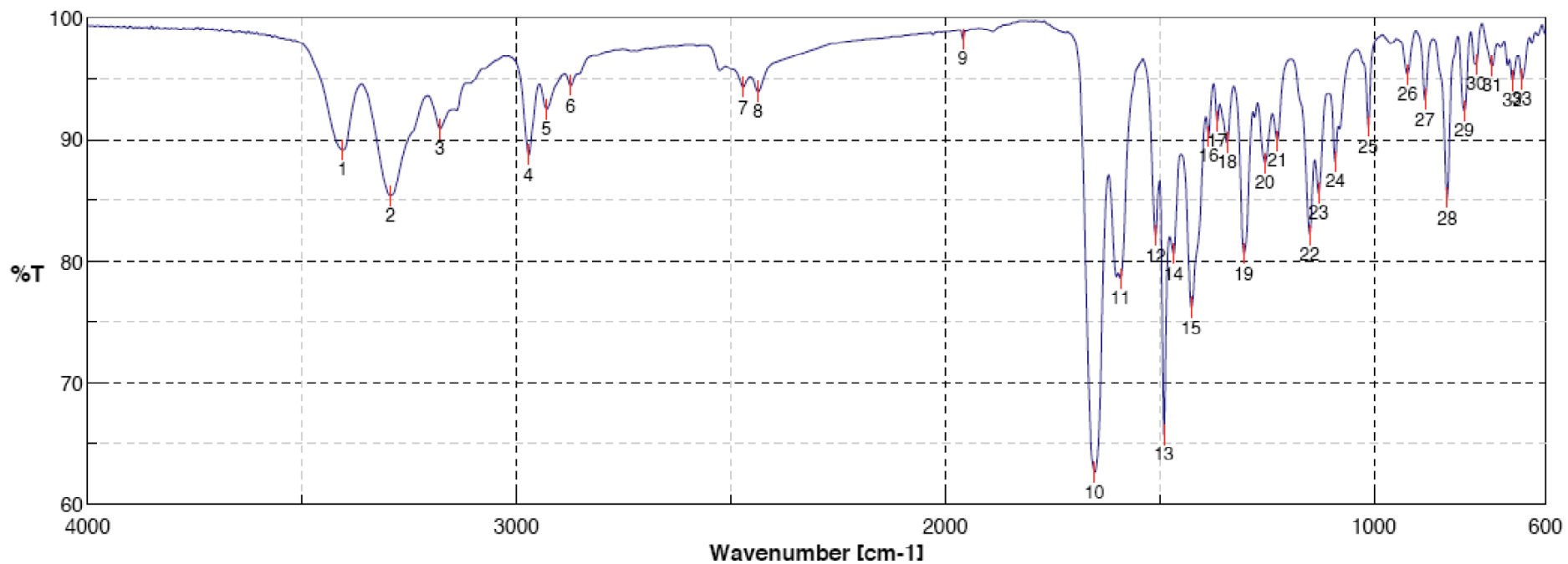
<sup>13</sup>C NMR spectrum of compound **14**



HPLC chromatogram and mass spectrum of compound **15**

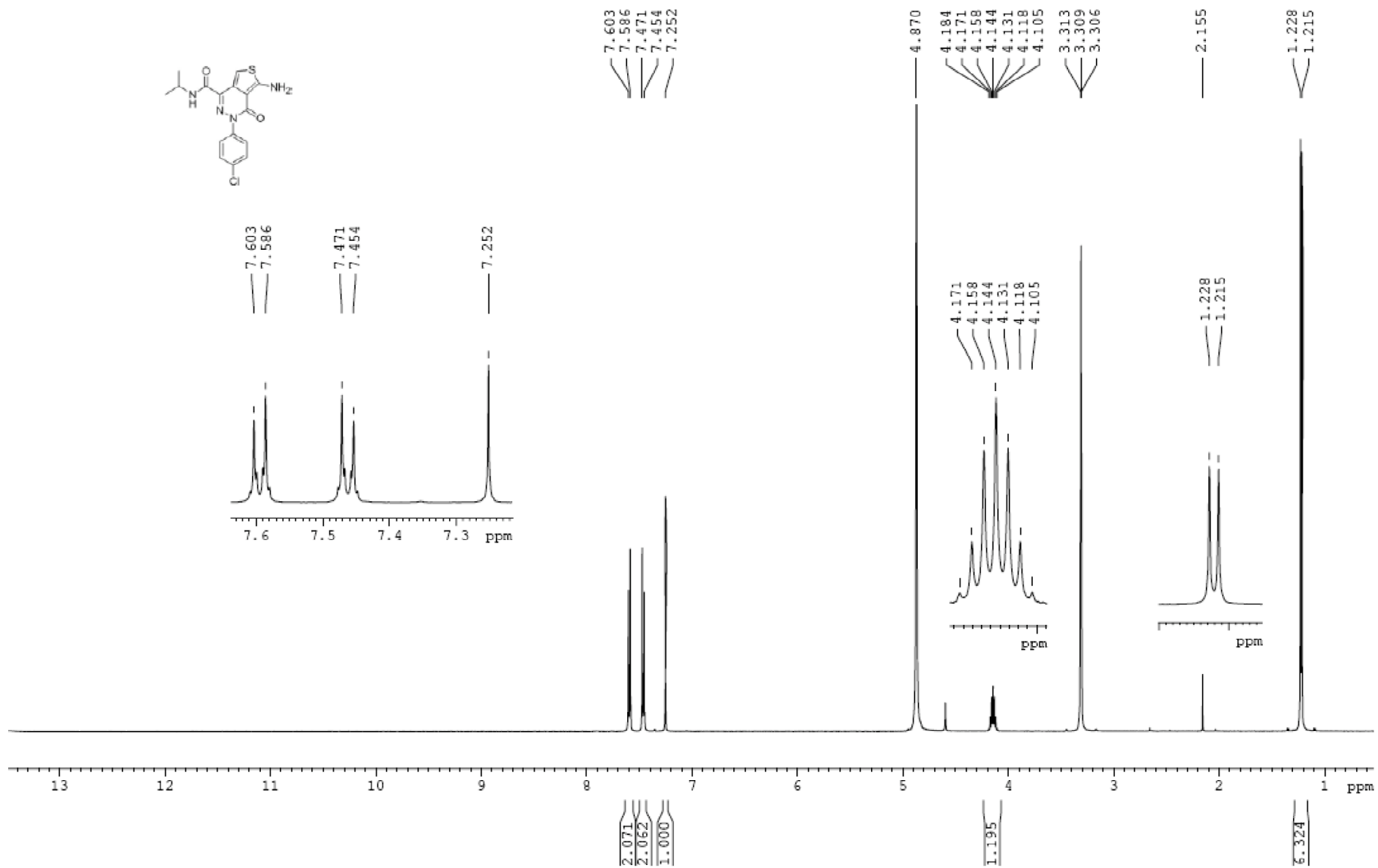


### IR spectrum of compound 15



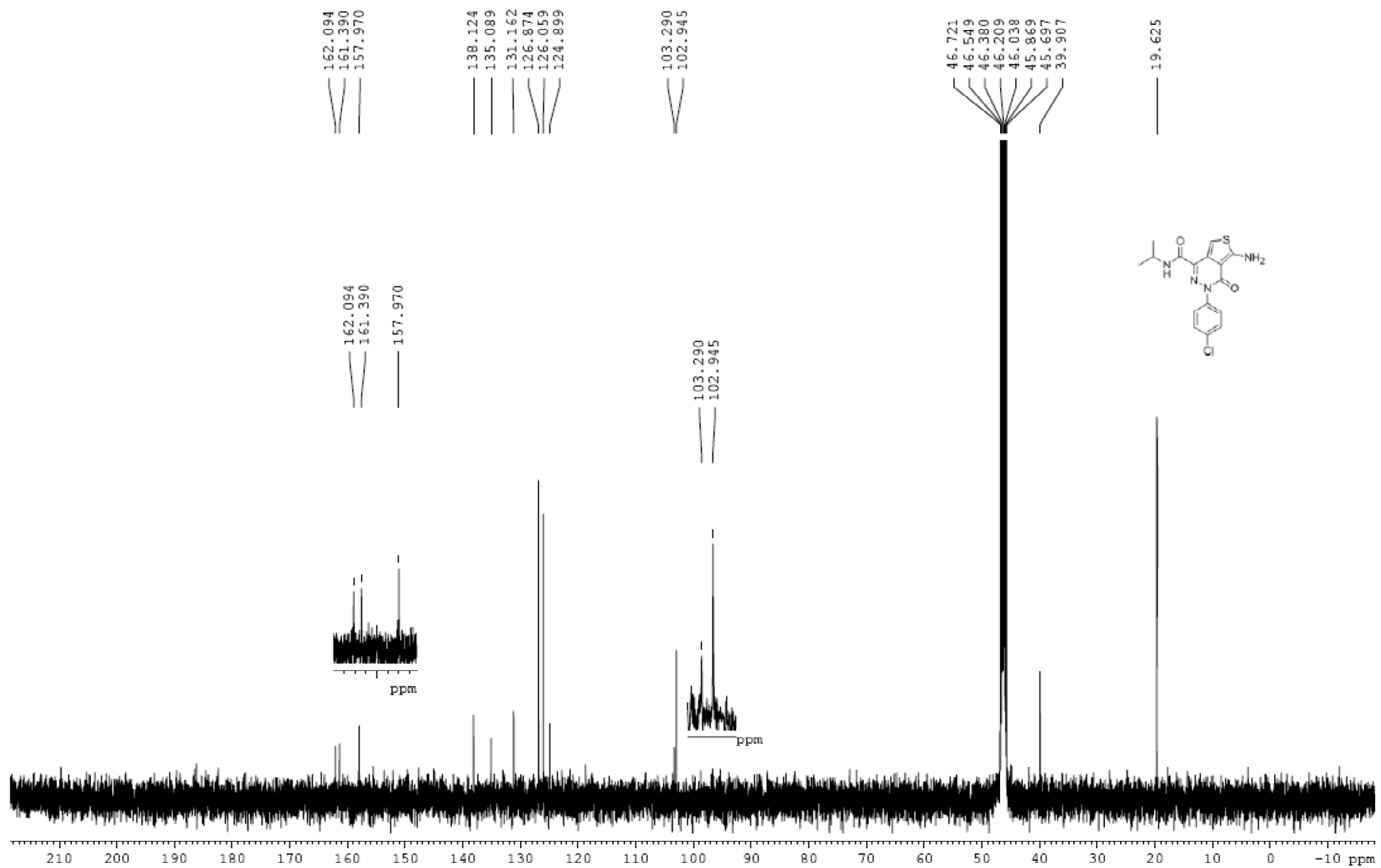
No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
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6	2873.42	94.4016	7	2471.33	94.282	8	2436.62	93.9223	9	1958.36	98.2441
11	1590.99	78.5597	12	1509.03	82.0837	13	1489.74	65.7431	14	1467.56	80.5998
16	1385.6	90.3018	17	1365.35	91.4904	18	1342.21	89.735	19	1303.64	80.6181
21	1225.54	89.9495	22	1150.33	82.1856	23	1129.12	85.5783	24	1090.55	88.1406
26	921.807	95.3312	27	881.309	93.2779	28	829.241	85.1721	29	789.707	92.3515
31	724.139	96.0568	32	676.892	94.8075	33	654.715	94.9432			

<sup>1</sup>H NMR spectrum of compound **15**

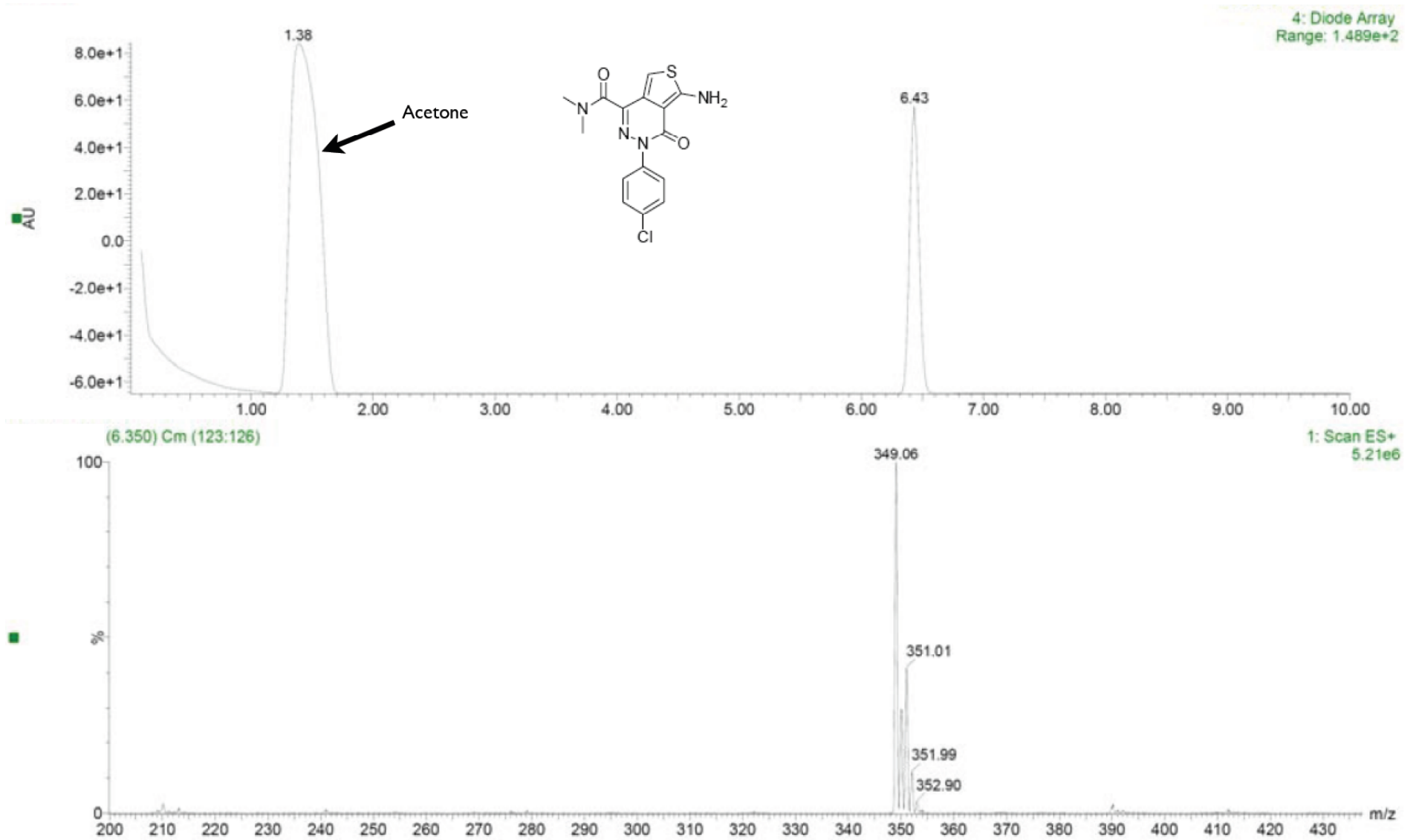




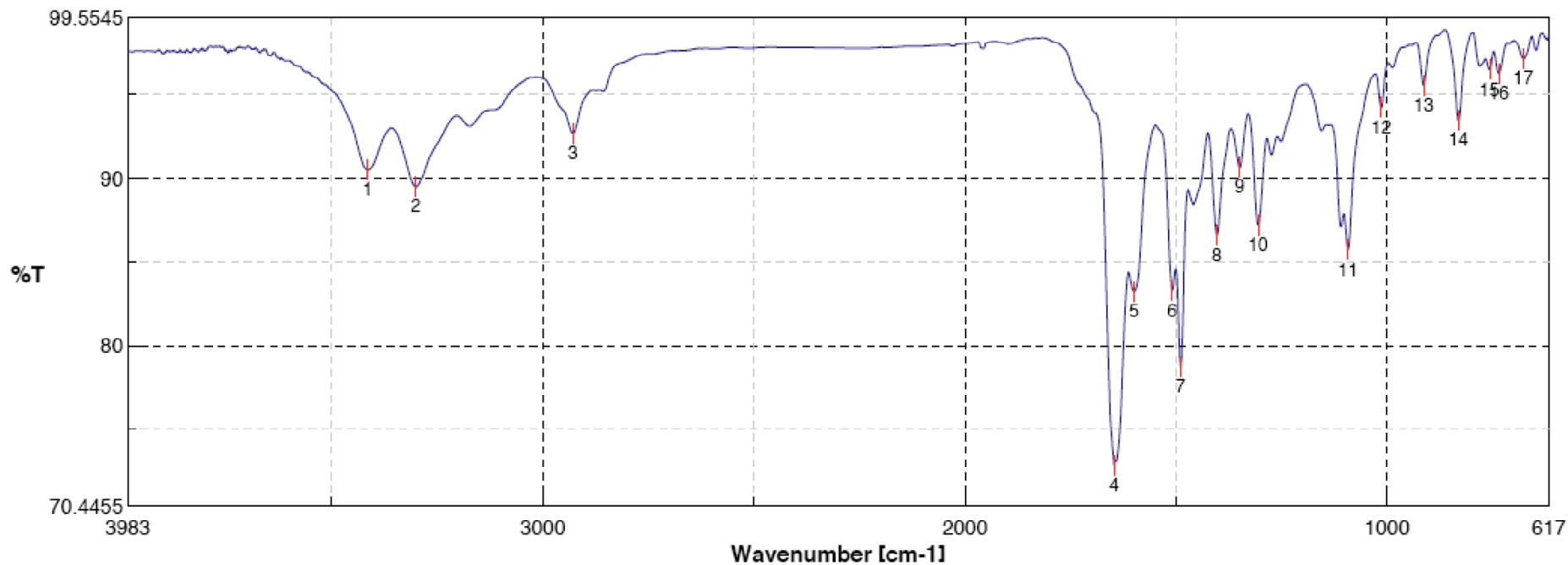
<sup>13</sup>C NMR spectrum of compound **15**



# HPLC chromatogram and mass spectrum of compound 17

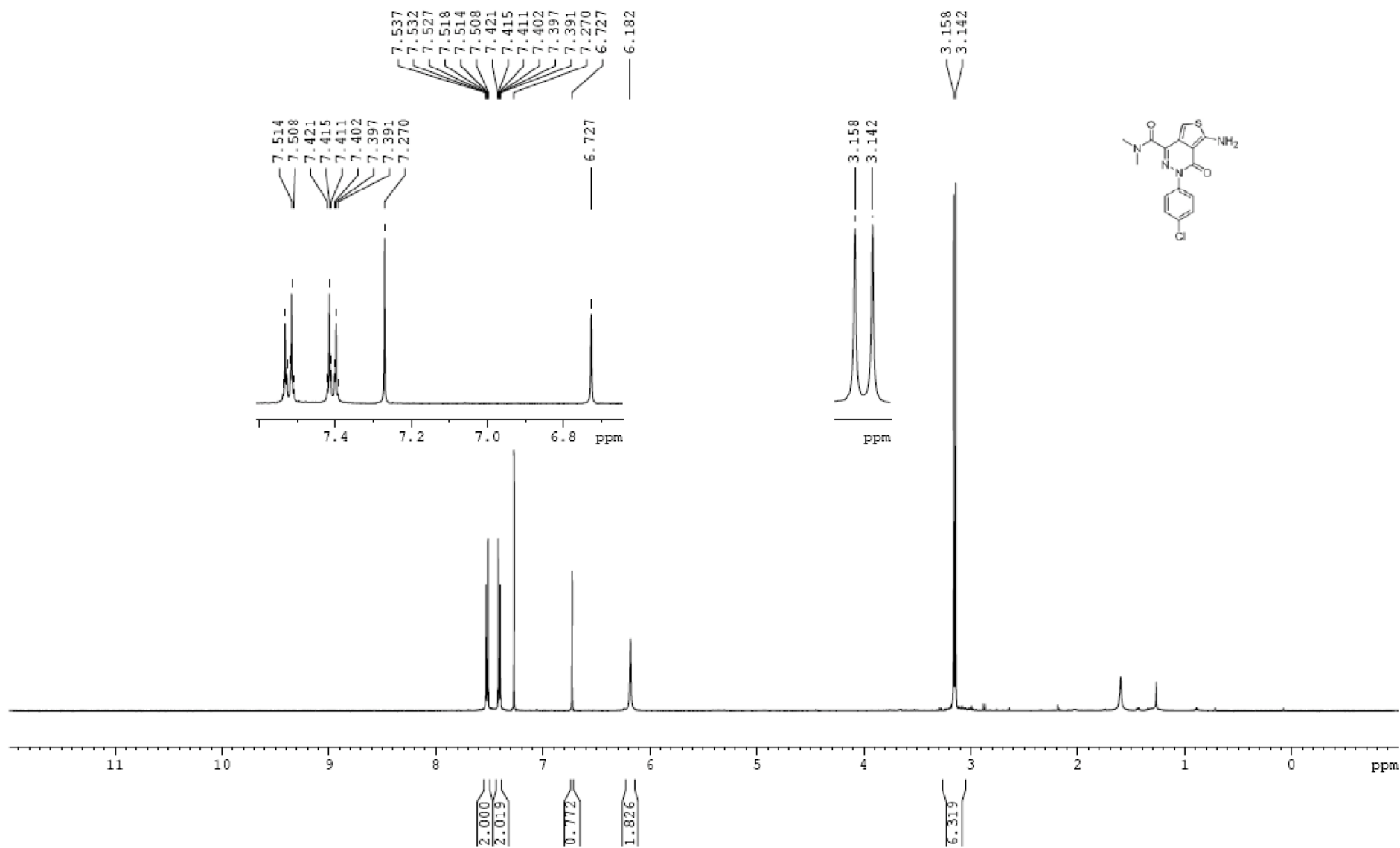


### IR spectrum of compound 17

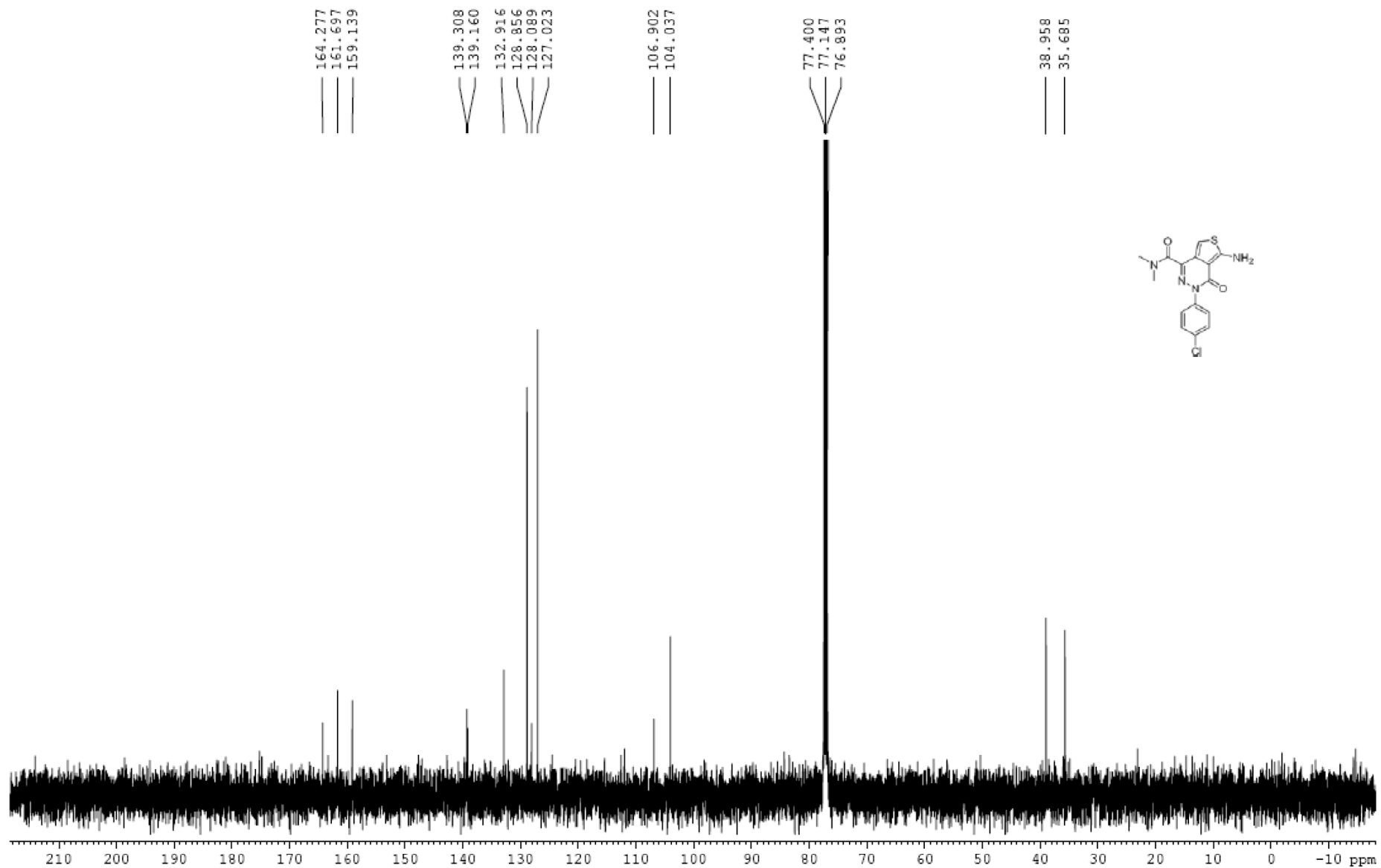


No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
1	3414.35	90.4741	2	3300.57	89.495	3	2928.38	92.6505	4	1646.43	72.8397
6	1509.51	83.2874	7	1489.26	78.7742	8	1402.96	86.608	9	1349.44	90.6484
11	1092.48	85.7207	12	1013.89	94.2206	13	913.611	95.5545	14	831.169	93.4493
16	735.71	96.2448	17	676.892	97.1305				15	757.405	96.4646

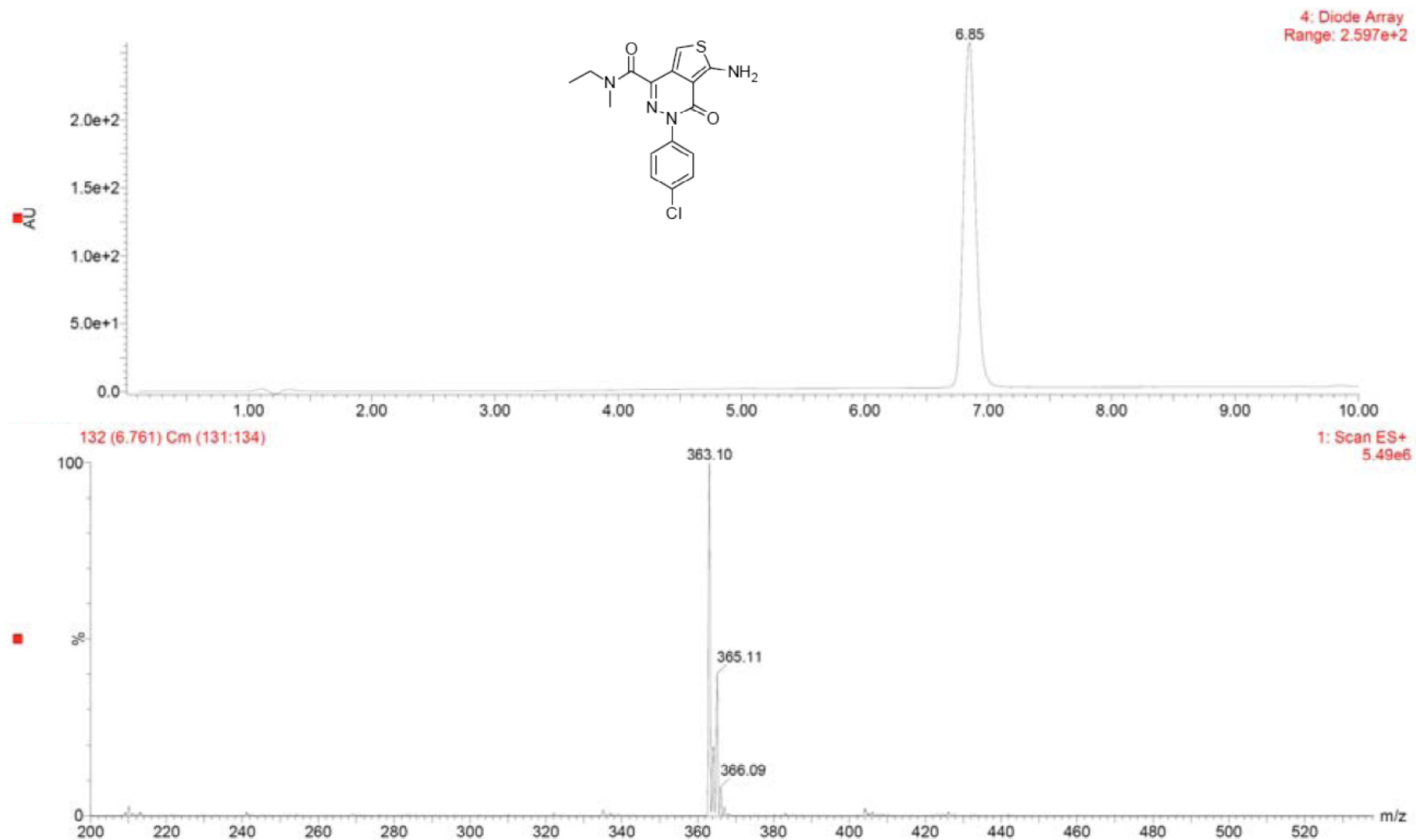
<sup>1</sup>H NMR spectrum of compound **17**



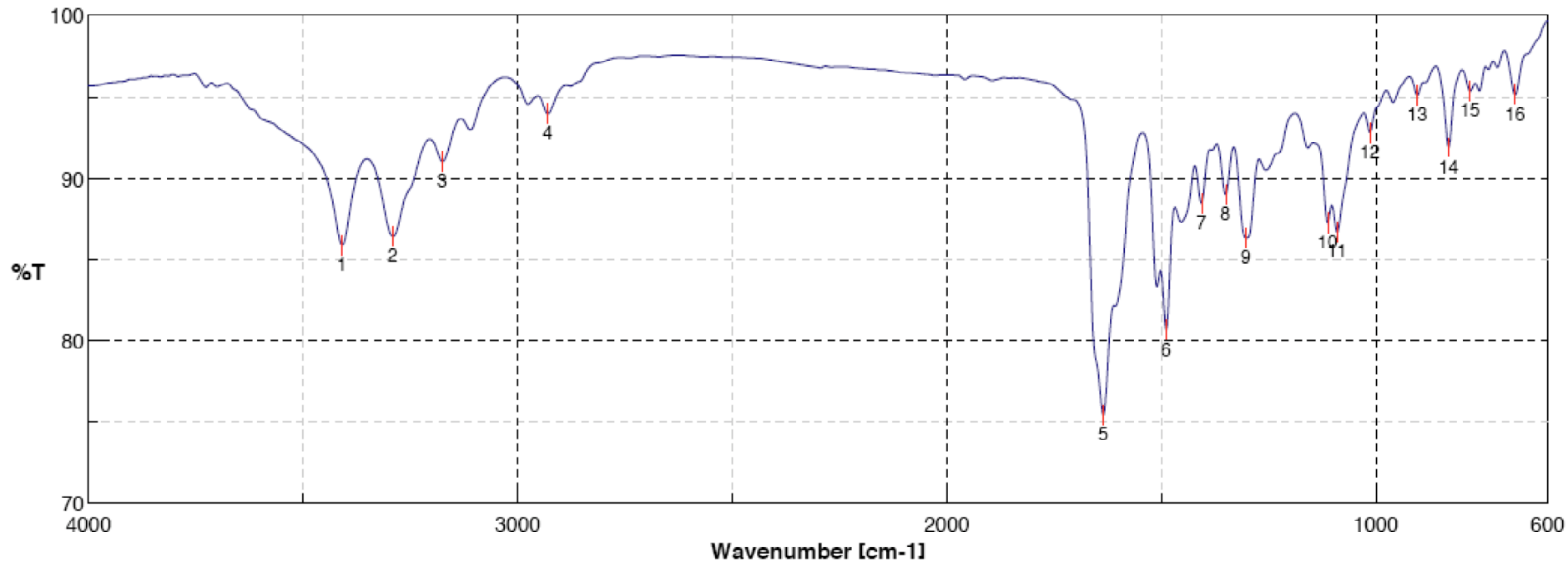
<sup>13</sup>C NMR spectrum of compound **17**



# HPLC chromatogram and mass spectrum of compound **18**

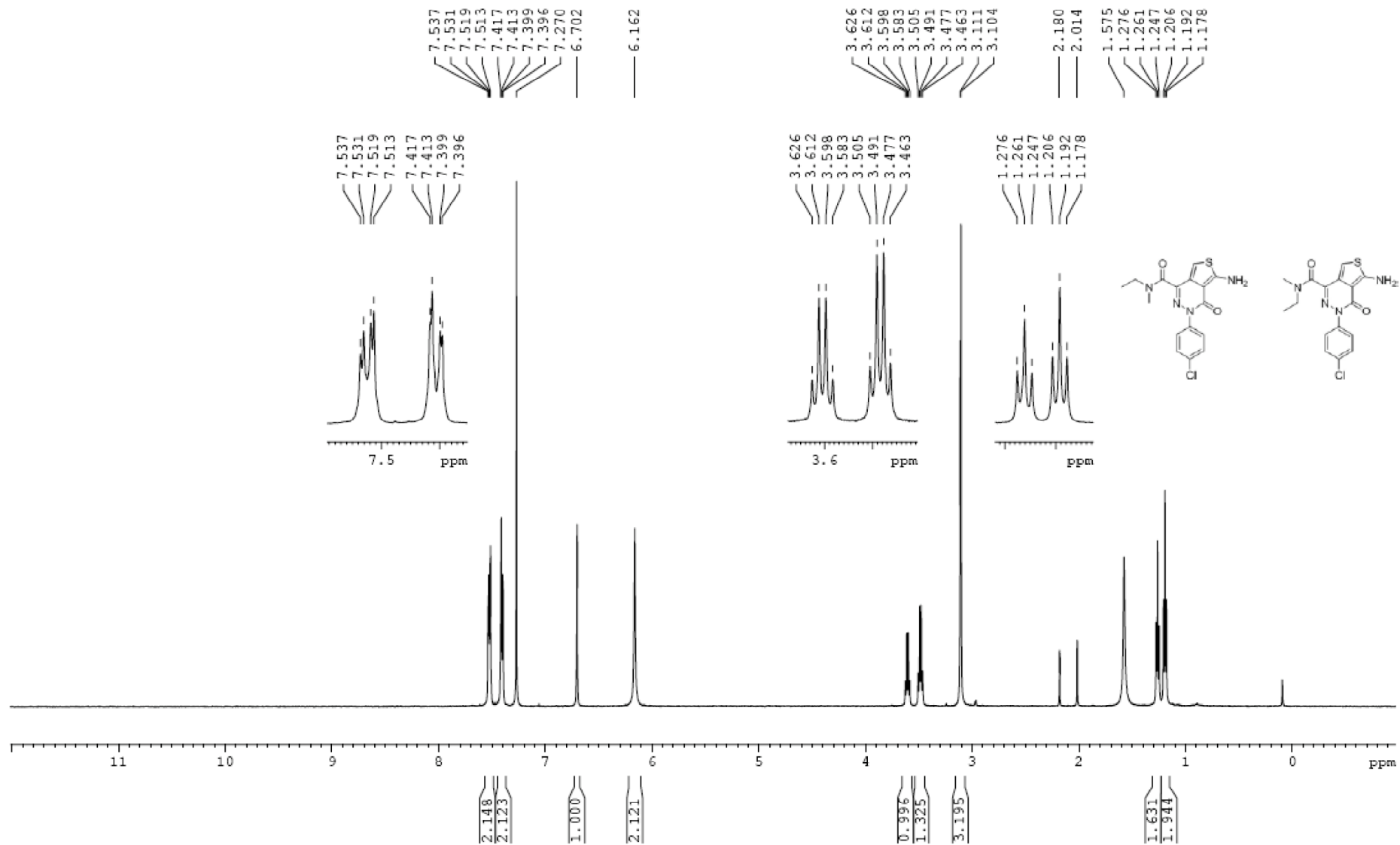


### IR spectrum of compound 18



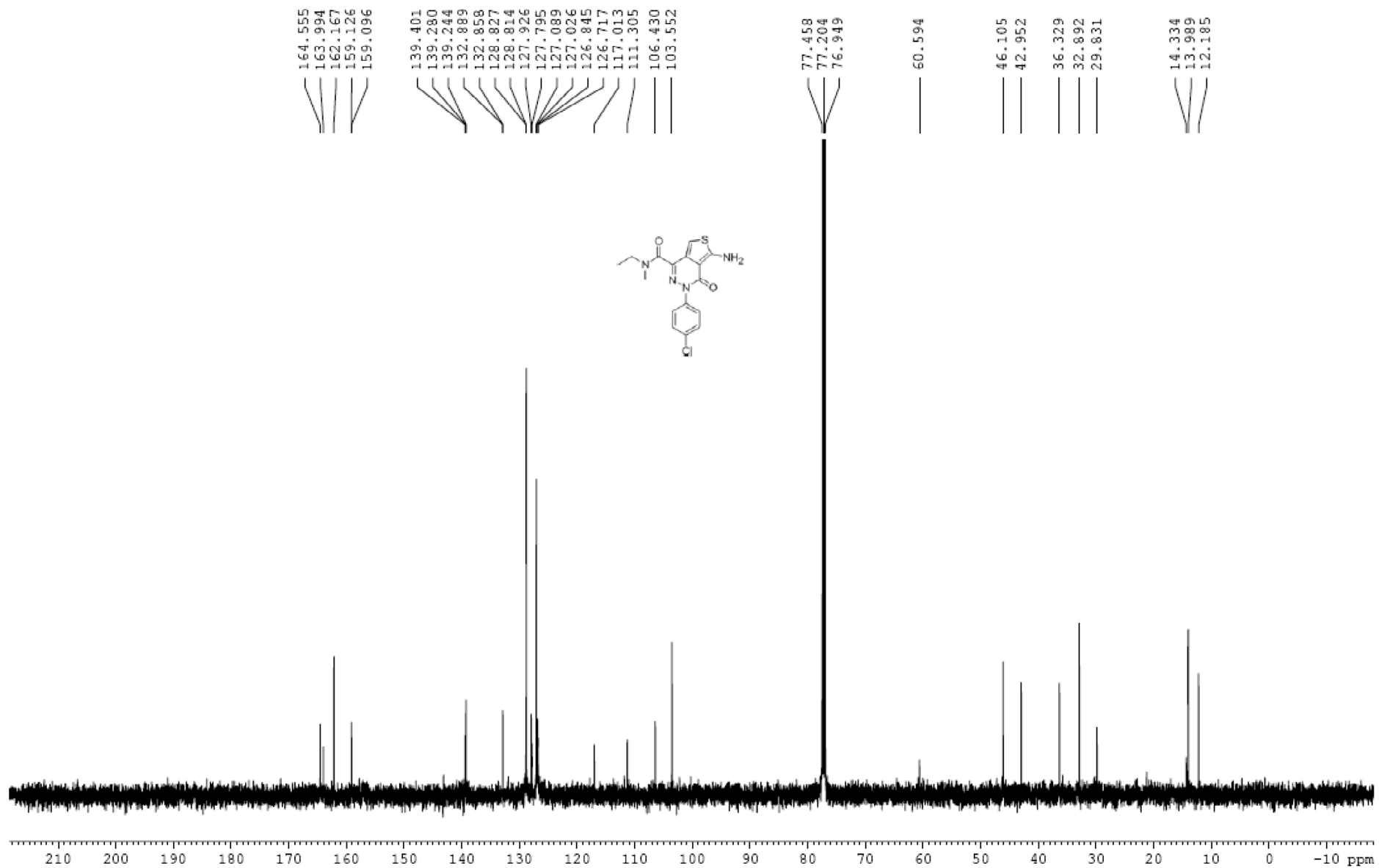
No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
1	3409.05	85.8594	2	3290.45	86.4172	3	3175.22	91.0245	4	2929.82	93.966	5	1635.34	75.4437
6	1488.78	80.6619	7	1406.33	88.4414	8	1350.41	88.9996	9	1302.2	86.3198	10	1112.24	87.2591
11	1090.07	86.701	12	1013.89	92.8232	13	903.487	95.1366	14	830.205	91.9005	15	780.547	95.3769
16	675.446	95.1657												

<sup>1</sup>H NMR spectrum of compound **18**

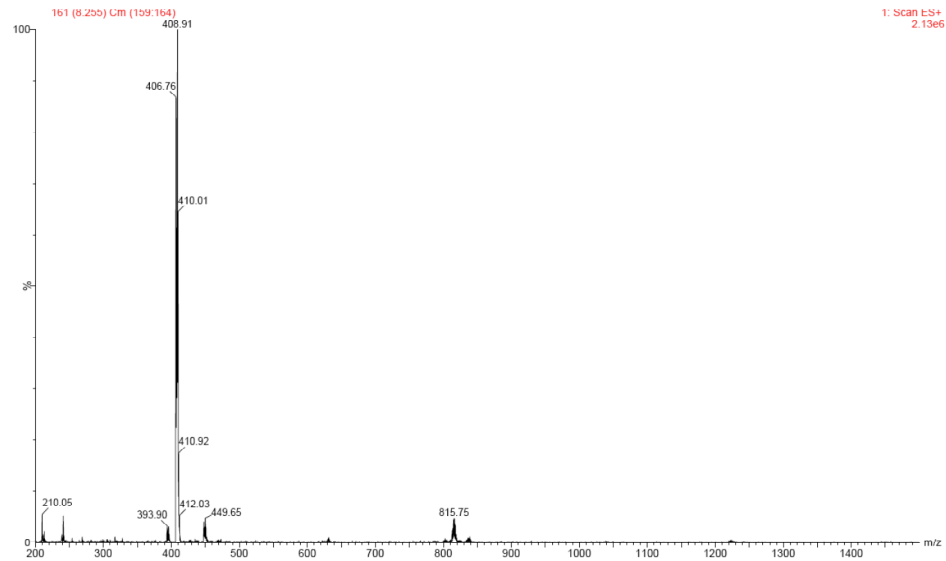
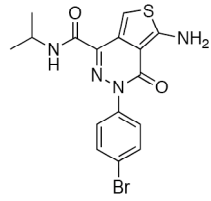
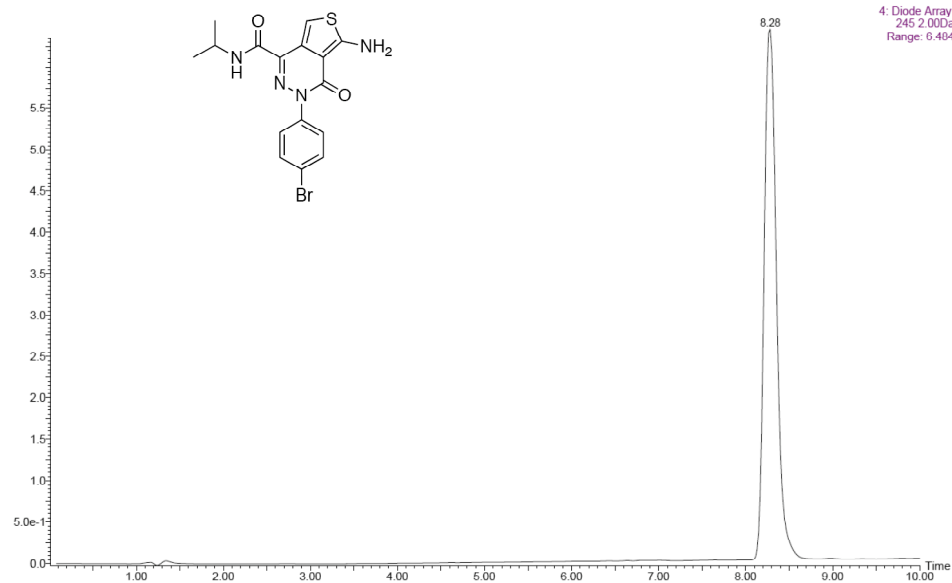




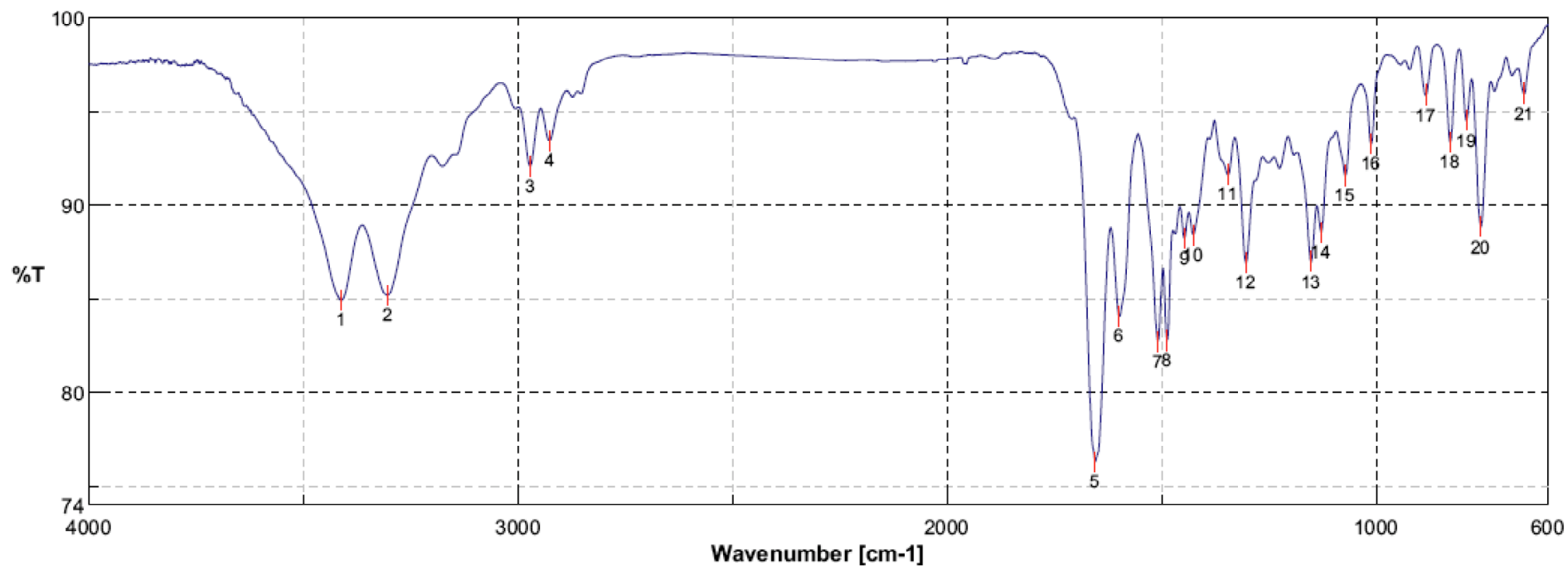
<sup>13</sup>C NMR spectrum of compound **18**



# HPLC chromatogram and mass spectrum of compound **19**

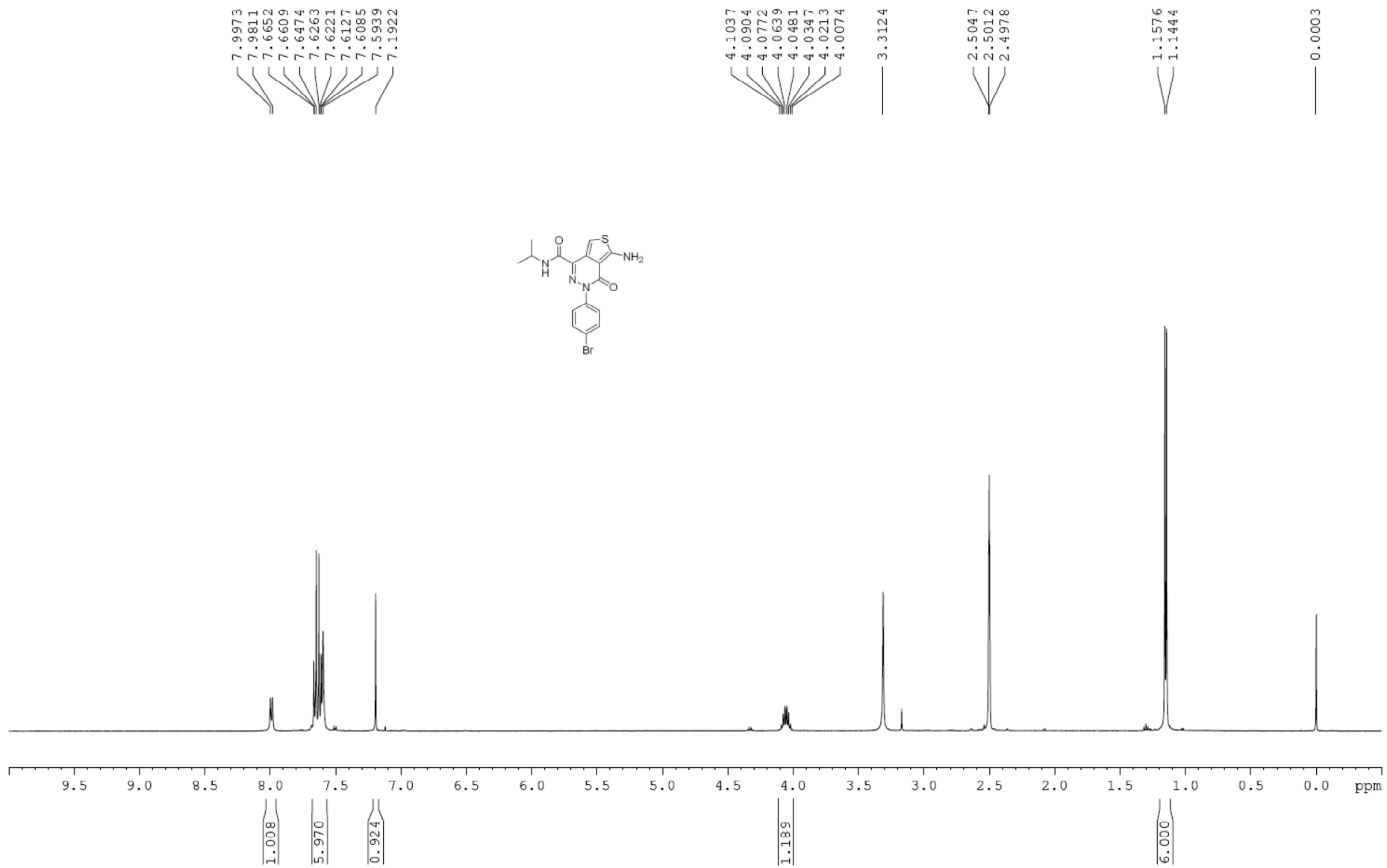


### IR spectrum of compound 19

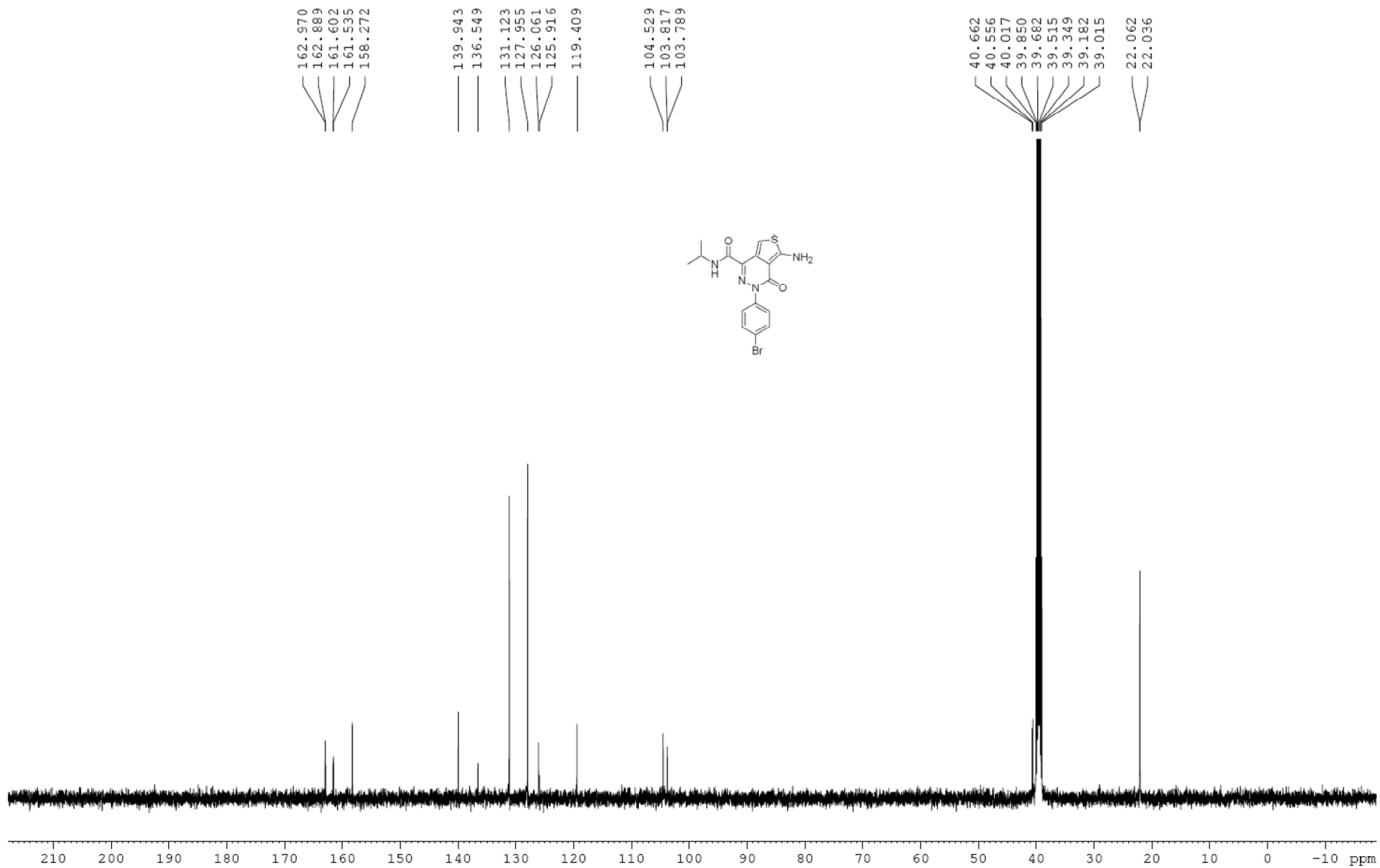


No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T	No.	cm-1	%T
1	3412.9	84.9446	2	3305.39	85.1939	3	2972.73	92.0681	4	2927.41	93.4445	5	1655.11	76.2975
6	1598.7	84.0554	7	1509.03	82.7186	8	1487.33	82.7598	9	1447.31	88.2256	10	1426.58	88.4209
11	1345.59	91.6544	12	1303.64	86.9387	13	1151.78	86.99	14	1128.15	88.5842	15	1071.75	91.6053
16	1011.96	93.2589	17	884.684	95.8745	18	827.312	93.3565	19	789.707	94.5184	20	755.959	88.8349
21	655.197	95.9571												

<sup>1</sup>H NMR spectrum of compound **19**



<sup>13</sup>C NMR spectrum of compound **19**



# MT-Assembly Assay

