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APPENDICES

APPENDIX A

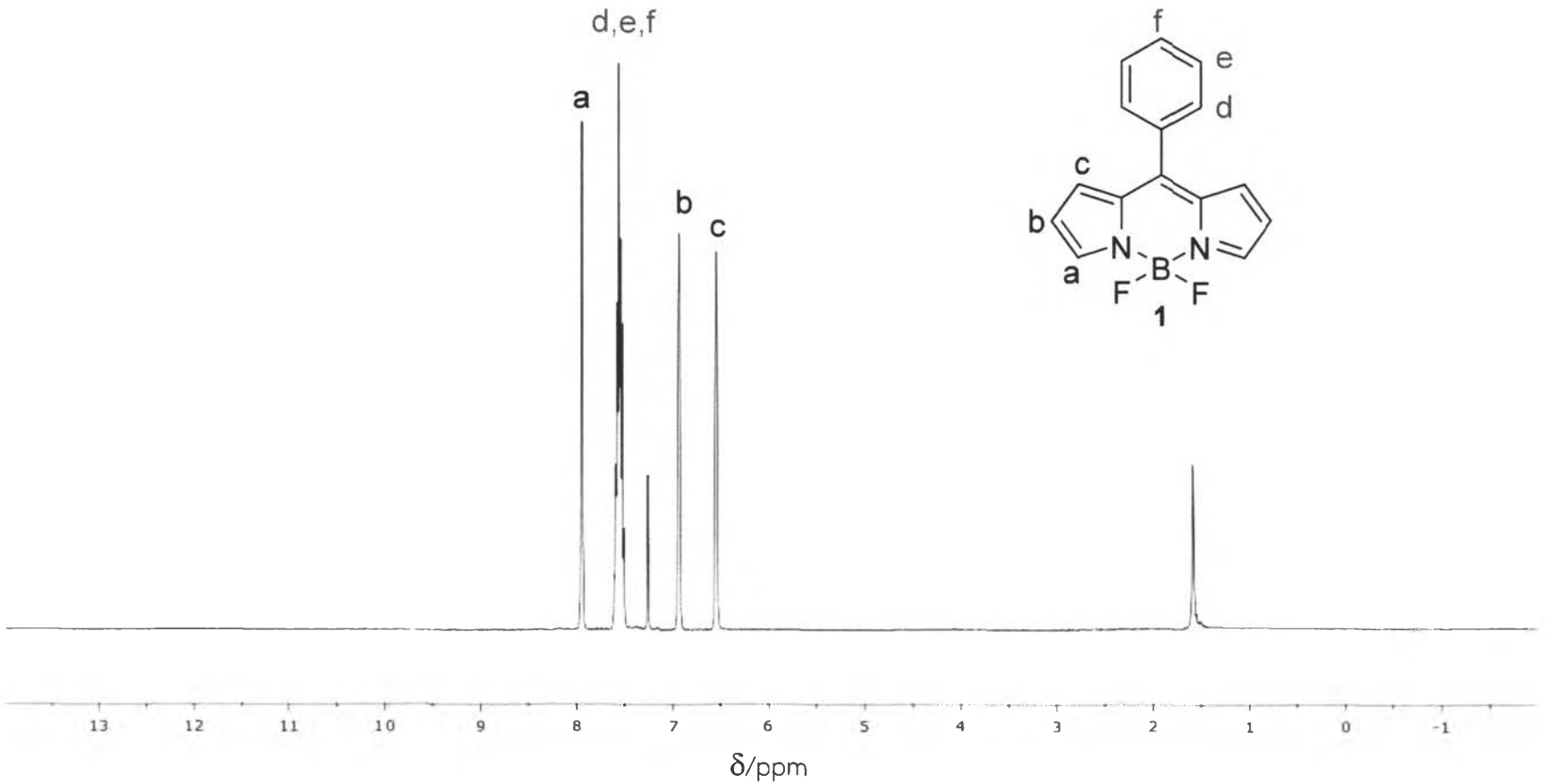


Figure A-1: ^{1}H-NMR spectrum of compound 1

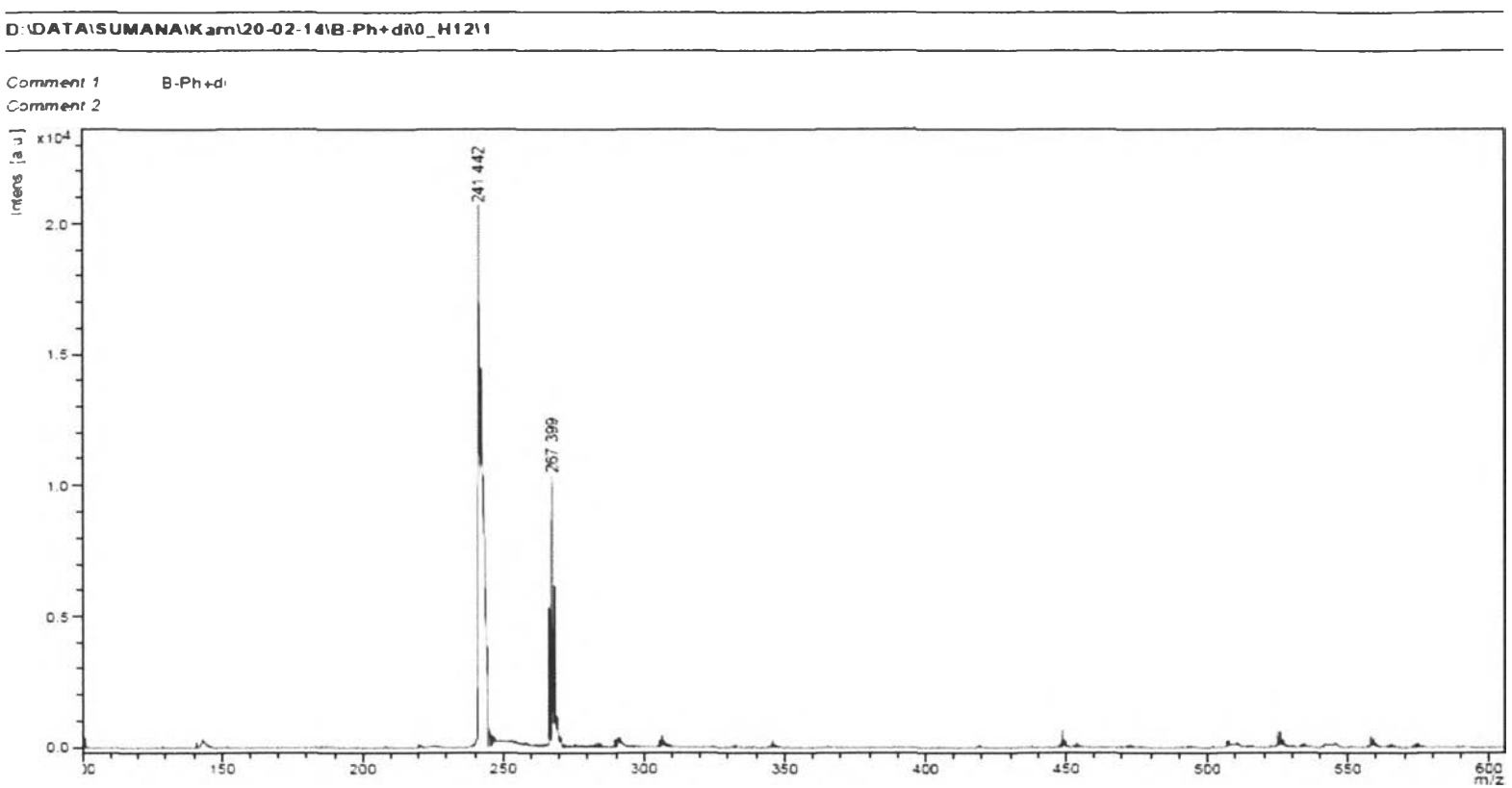


Figure A-2: MALDI-TOF-mass spectrum of compound **1**

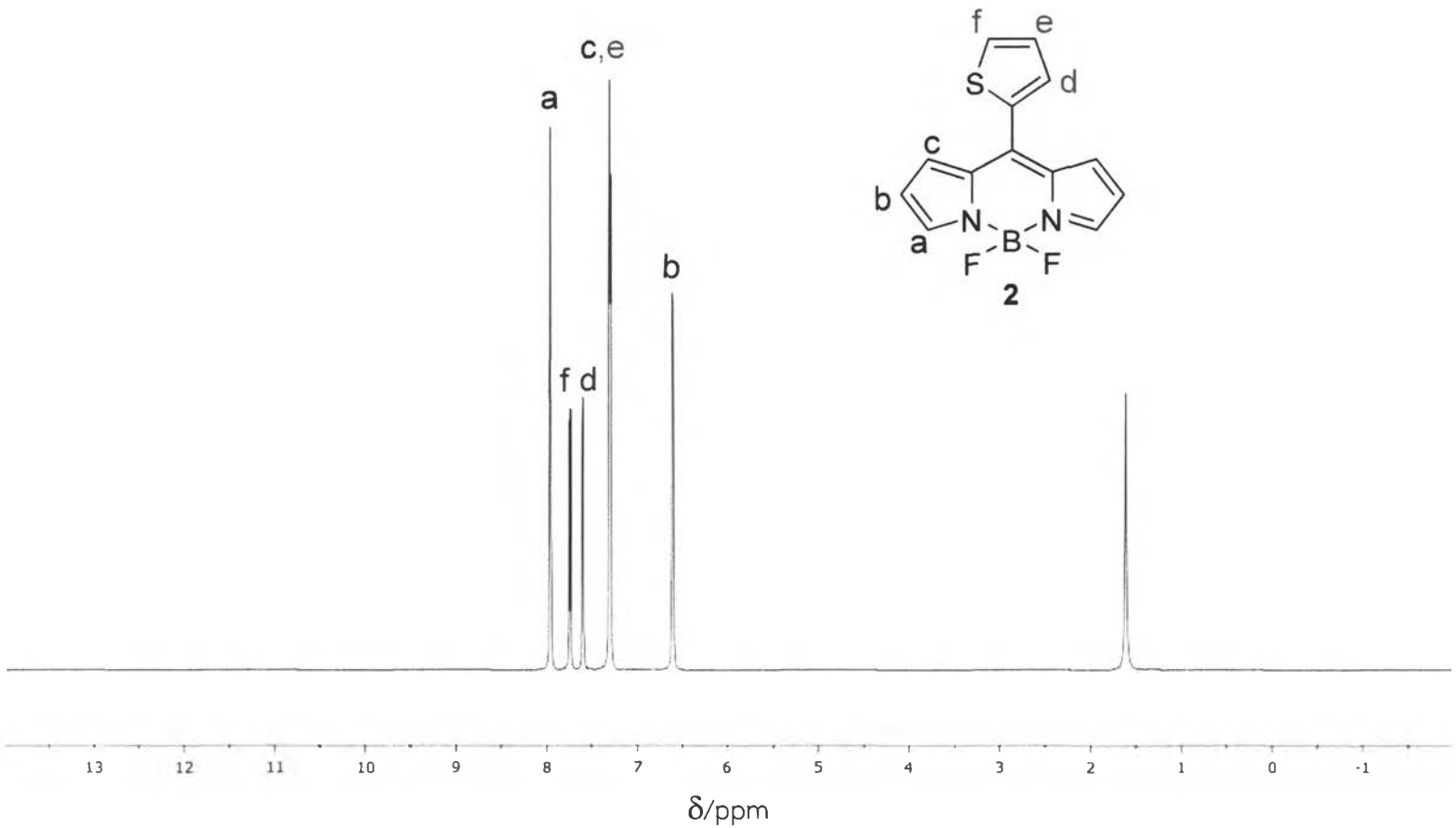


Figure A-3: ^{1}H-NMR spectrum of compound **2**

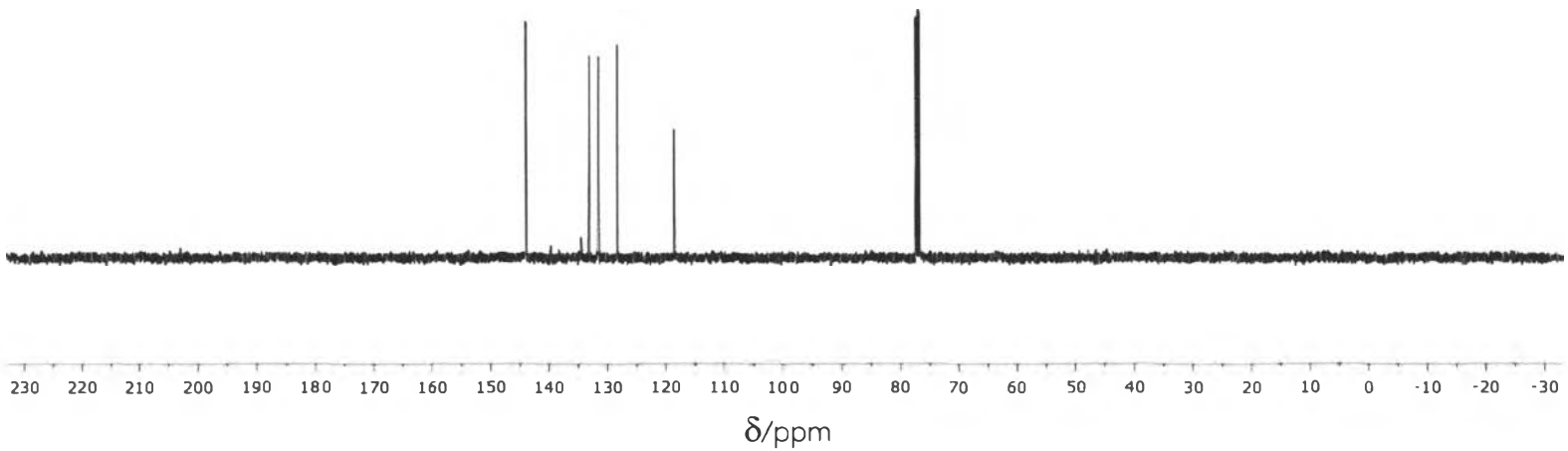


Figure A-4: ^{13}C-NMR spectrum of compound **2**

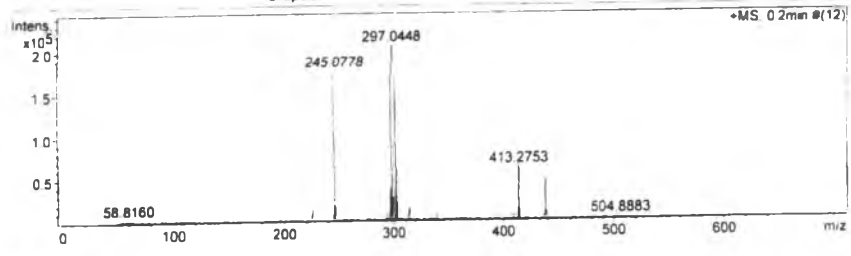
Mass Spectrum List Report

Analysis Info

Analysis Name	OSGK56071003.d	Acquisition Date	7/10/2013 6:30:58 PM
Method	Tune_wide_POS_Natee20130403.m	Operator	Administrator
Sample Name	B-T1	*Instrument*	*micr*OTOF 72
	B-T1		

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Corrector Fill	33 V
Scan Range	n/a	Capillary Exit	130.0 V	Set Pulsar Pull	386 V
Scan Begin	50 m/z	Hexapole RF	120.0 V	Set Pulsar Push	368 V
Scan End	3000 m/z	Skimmer 1	45.0 V	Set Reflector	1300 V
		Hexapole 1	24.3 V	Set Flight Tube	9000 V
				Set Detector TOF	2450 V



#	m/z	I	I %	S/N	FWHM	Res.
1	56.3731	5155	2.5	19.4	0.0071	7974
2	58.8160	5451	2.6	20.5	0.0058	10155
3	225.1090	14700	7.1	51.0	0.0431	5220
4	245.0778	177431	85.8	606.0	0.0497	4934
5	246.0814	17240	8.3	58.6	0.0444	5543
6	277.1578	4540	2.2	14.7	0.0543	5102
7	293.2412	7116	3.4	22.9	0.0521	5625
8	296.0477	37115	18.0	120.4	0.0620	4778
9	297.0448	206765	100.0	671.2	0.0619	4799
10	298.0489	27425	13.3	88.7	0.0611	4877
11	299.0433	7191	3.5	23.0	0.0548	5460
12	301.1418	168245	81.4	544.0	0.0598	5035
13	302.1456	21212	10.3	68.3	0.0553	5465
14	304.2629	8799	4.3	28.1	0.0490	6203
15	313.1809	15403	7.4	49.0	0.0588	5325
16	335.1324	4759	2.3	14.6	0.0692	4843
17	337.1143	4235	2.0	12.9	0.0665	5073
18	339.1776	8089	3.9	25.0	0.0825	4113
19	357.0642	4277	2.1	13.4	0.0232	15362
20	357.1093	4670	2.3	14.7	0.0171	20938
21	363.2094	5829	2.8	18.6	0.0376	9659
22	365.1463	5130	2.5	16.4	0.0656	5570
23	393.3032	4697	2.3	15.8	0.0857	4590
24	409.1870	6714	3.2	23.5	0.0763	5362
25	413.2753	63049	30.5	225.2	0.0715	5783
26	414.2781	12175	5.9	43.3	0.0775	5344
27	421.2438	4281	2.1	15.2	0.0888	4744
28	437.2067	49117	23.8	184.4	0.0765	5715
29	438.2066	9994	4.8	37.3	0.0805	5443
30	2352.2180	4395	2.1	20.2	0.0383	61345

Bruker Daltonics DataAnalysis 3.3 printed: 7/11/2013 10:36:34 AM Page 1 of 1

Figure A-5: HR-ESI-mass spectrum of compound **2**

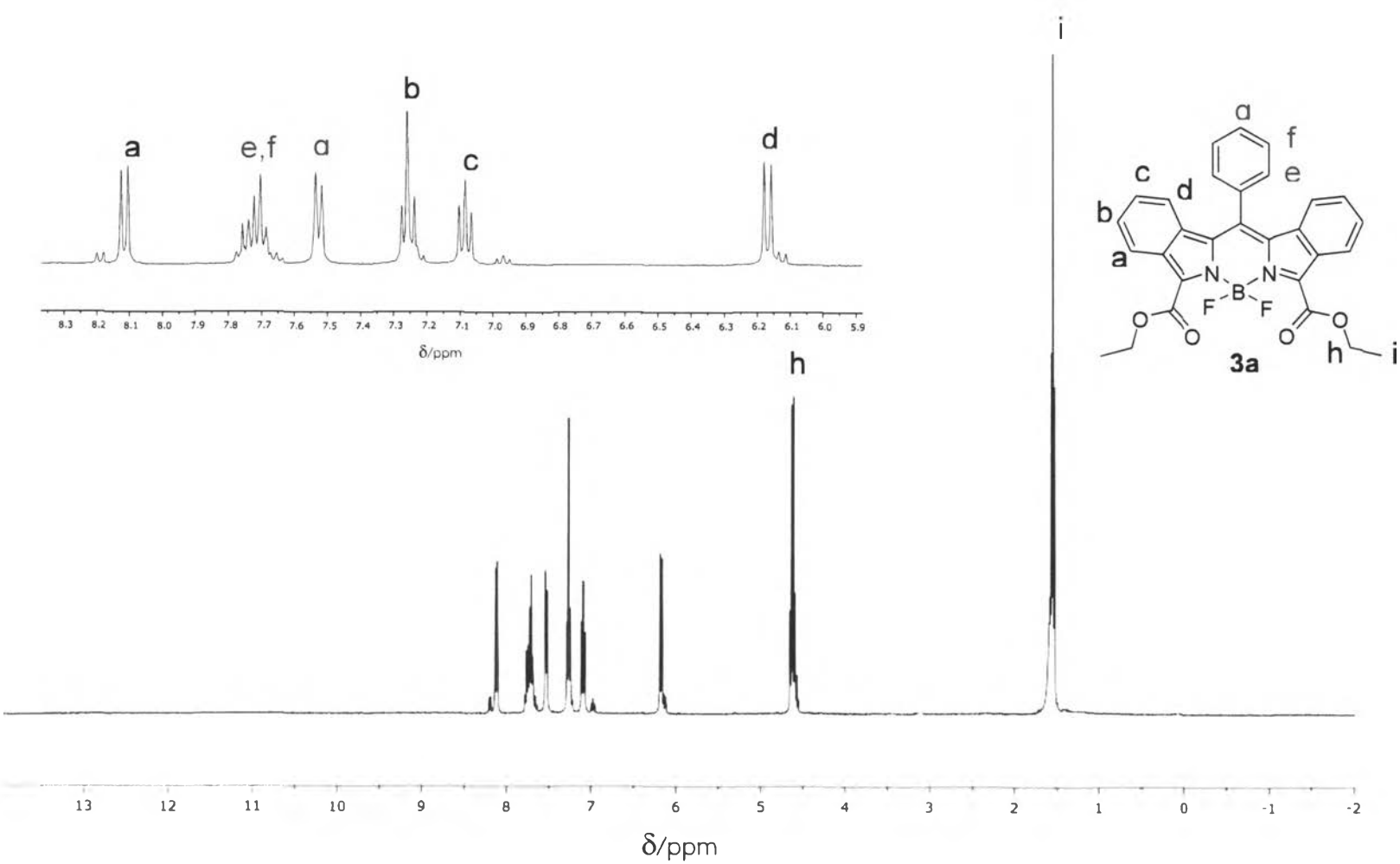


Figure A-6: ^{1}H-NMR spectrum of compound **3a**

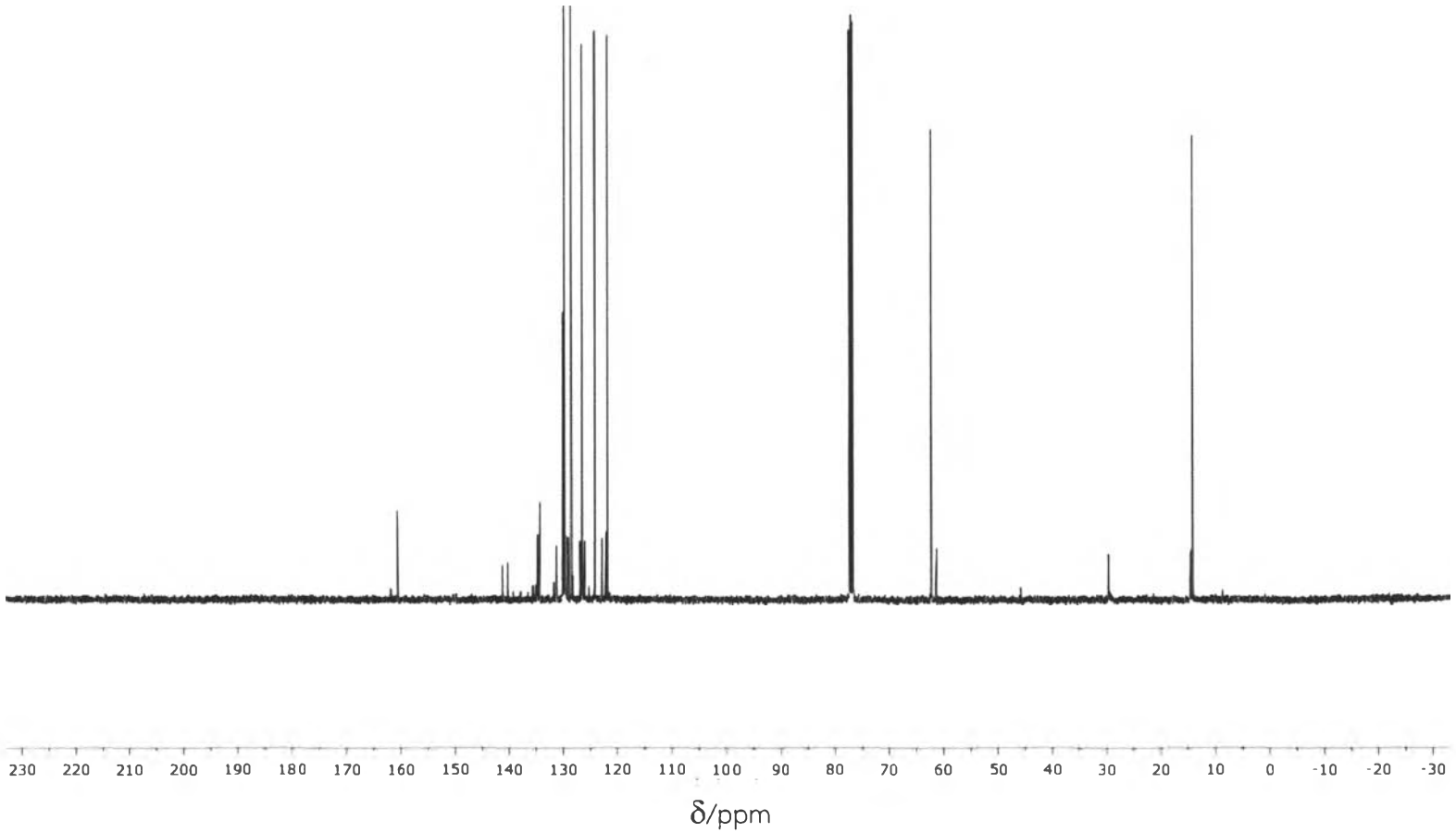


Figure A-7: ^{13}C-NMR spectrum of compound **3a**

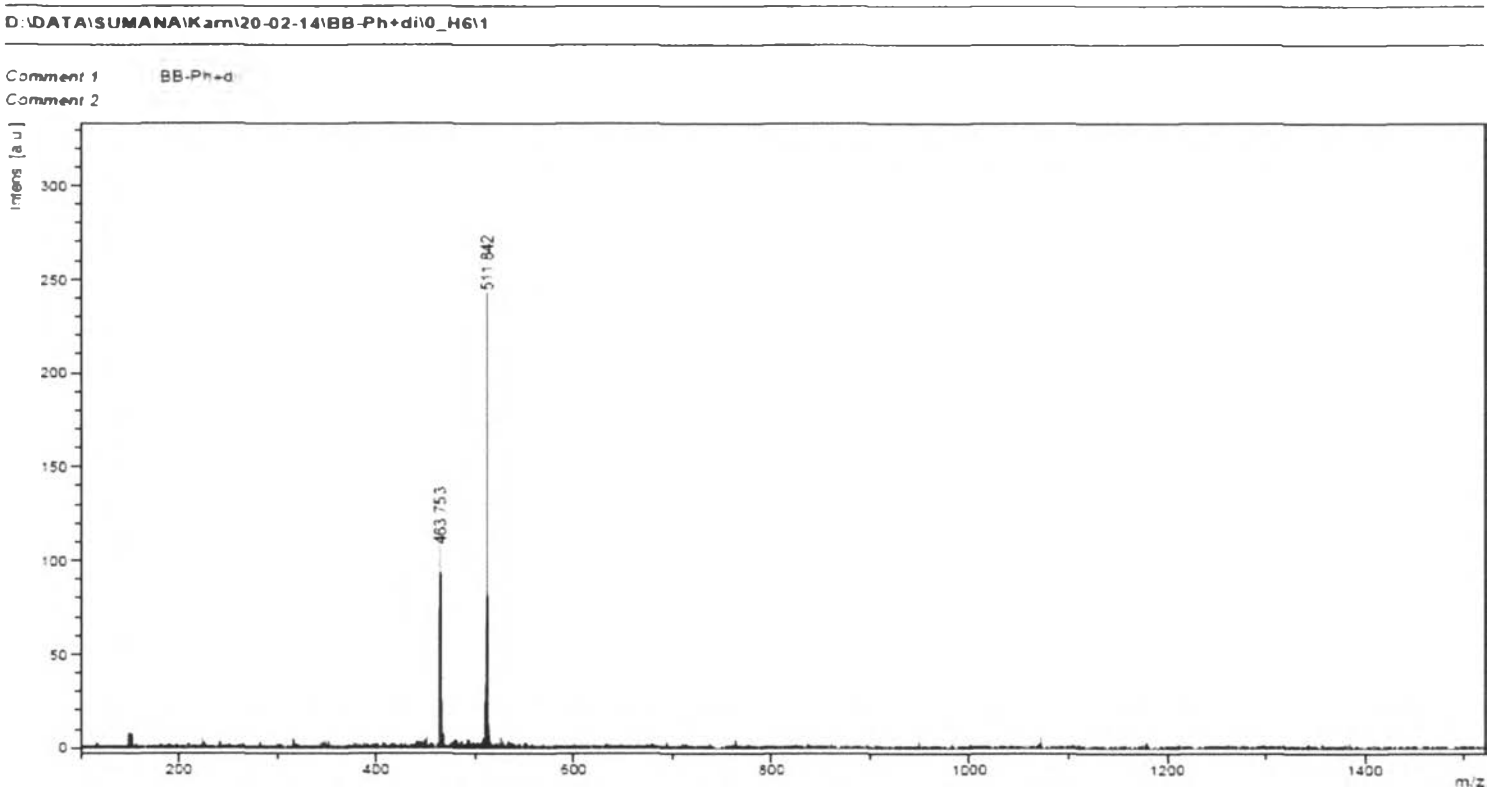


Figure A-8: MALDI-TOF-MS spectrum of compound **3a**

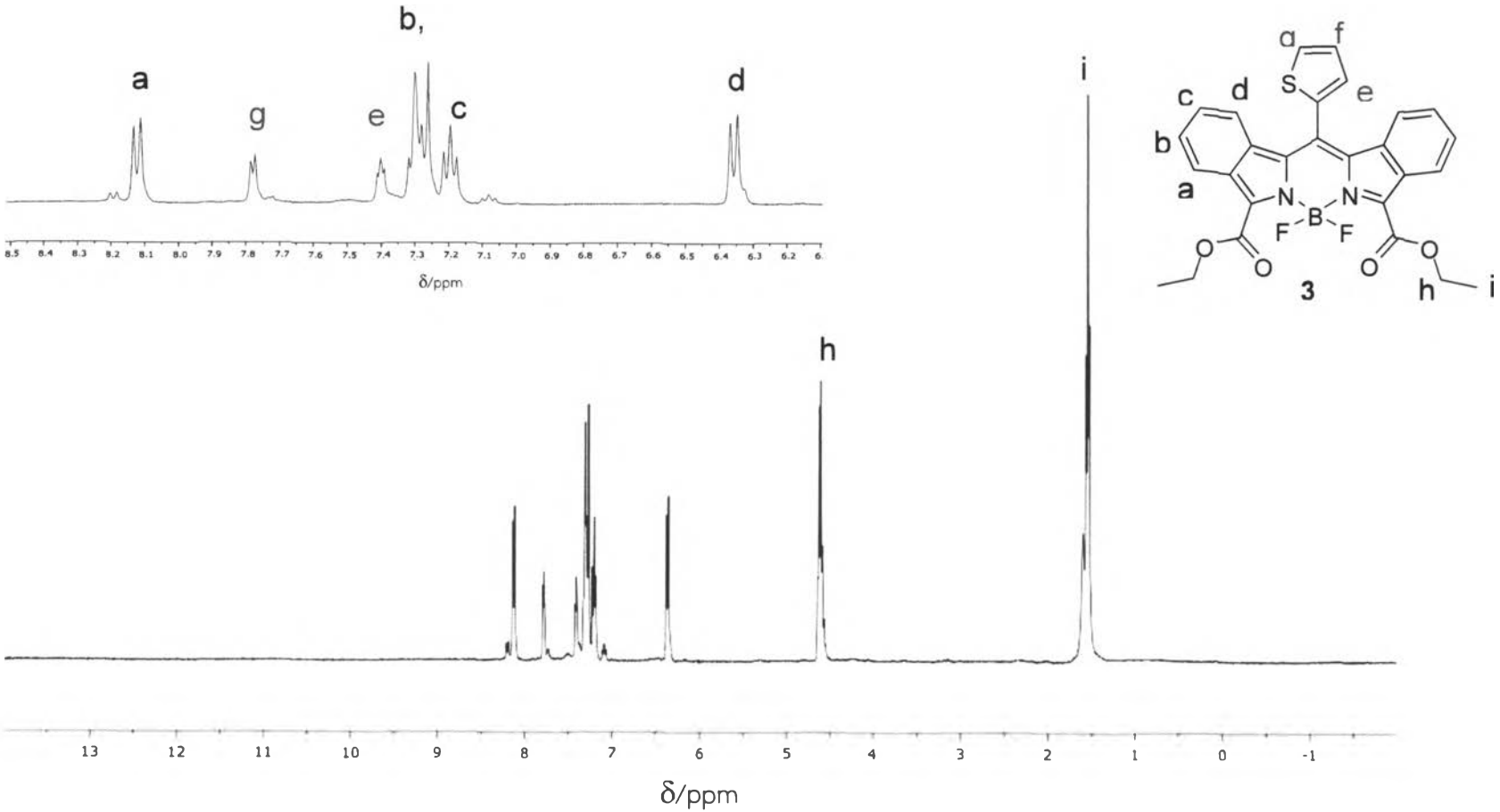


Figure A-9: ^{1}H-NMR spectrum of compound **3b**

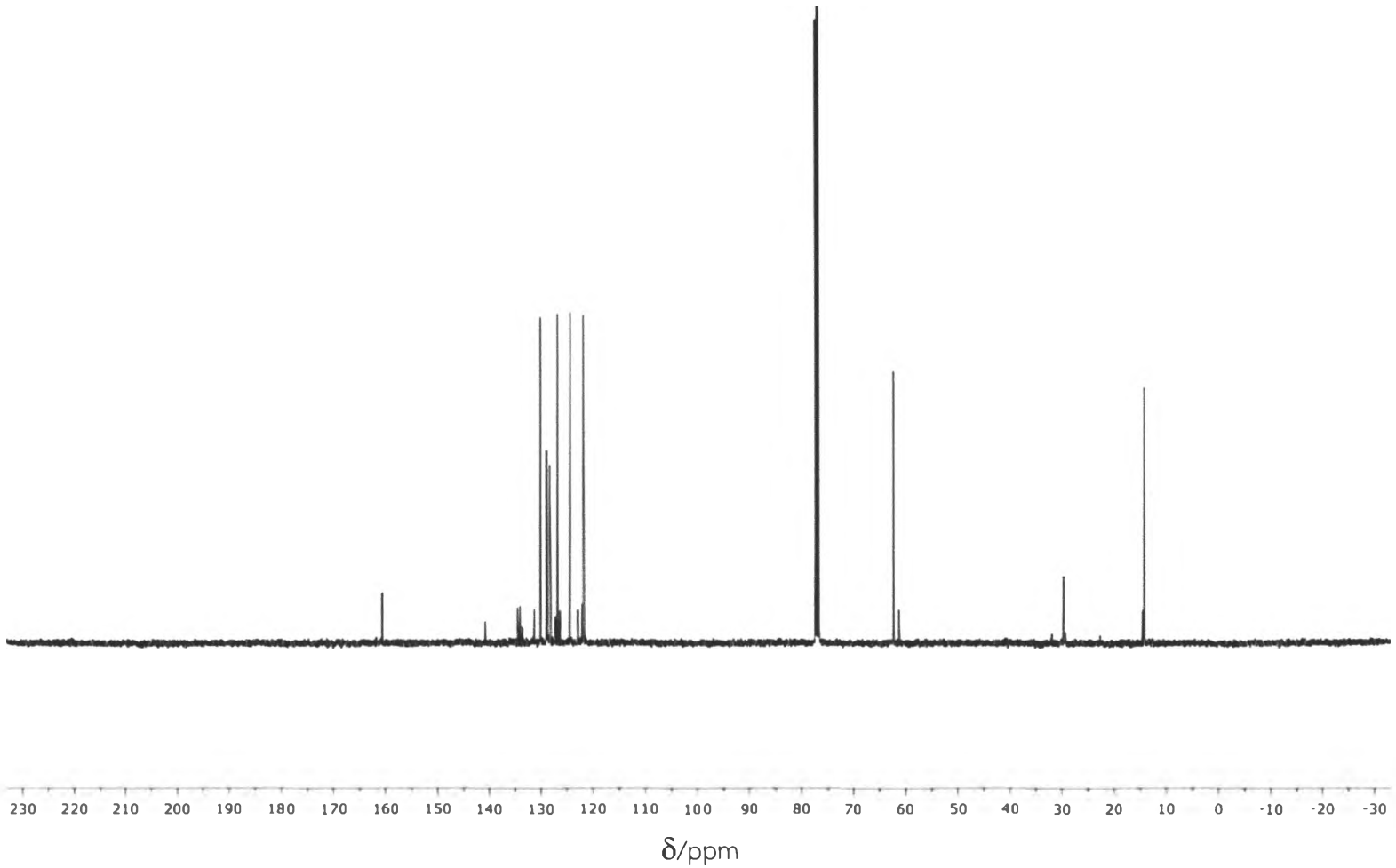


Figure A-10: ^{13}C-NMR spectrum of compound **3b**

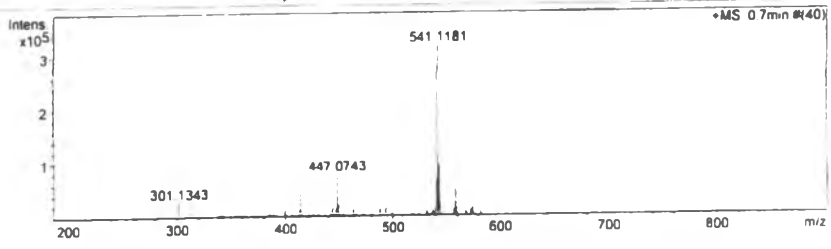
Mass Spectrum List Report

Analysis Info

Analysis Name	OSCUJS560924003.d	Acquisition Date	9/24/2013 4:13:02 PM
Method	MKE_tune_wide_20130204.m	Operator	Administrator
Sample Name	B-Ox-DPM-thio B-Ox-DPM-thio	Instrument	micrOTOF 72

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Corrector Fill	75 V
Scan Range	n/a	Capillary Exit	150.0 V	Set Pulsar Pull	398 V
Scan Begin	50 m/z	Hexapole RF	300.0 V	Set Pulsar Push	380 V
Scan End	3000 m/z	Skimmer 1	45.0 V	Set Reflector	1300 V
		Hexapole 1	25.0 V	Set Flight Tube	9000 V
				Set Detector TOF	1910 V



#	m/z	I	I %	S/N	FWHM	Res.
1	301.1343	28239	8.9	537.2	0.0402	7493
2	313.1687	10384	3.3	184.7	0.0434	7218
3	339.1729	11098	3.5	173.3	0.0511	6639
4	385.2866	10763	3.4	129.2	0.0545	7073
5	399.3020	15615	4.9	175.2	0.0537	7439
6	413.2629	43146	13.6	455.0	0.0560	7386
7	414.2669	11020	3.5	115.3	0.0560	7401
8	425.0934	9244	2.9	92.2	0.0546	7780
9	429.3114	9852	3.1	96.6	0.0575	7471
10	443.3288	17960	5.6	166.8	0.0556	7974
11	447.0743	78086	24.5	716.8	0.0558	8012
12	448.0771	21128	6.6	192.8	0.0560	7995
13	449.2828	9891	3.1	89.5	0.0663	6774
14	463.0478	12610	4.0	108.5	0.0581	7964
15	487.3570	13488	4.2	106.7	0.0830	7737
16	493.1173	16755	5.3	130.2	0.0637	7741
17	493.3158	13367	4.2	103.7	0.0793	6218
18	499.1274	10340	3.2	78.5	0.0648	7728
19	523.2813	9616	3.0	67.7	0.0869	6018
20	531.3831	9614	3.0	66.1	0.0709	7497
21	537.3362	11761	3.7	79.7	0.0760	7073
22	540.1204	69019	21.7	473.4	0.0723	7471
23	541.1181	318197	100.0	2194.6	0.0753	7189
24	542.1203	92941	29.2	643.6	0.0731	7412
25	543.1189	25829	8.1	179.3	0.0722	7527
26	556.0962	11478	3.6	84.5	0.0759	7322
27	557.0928	51467	16.2	382.8	0.0743	7502
28	558.0949	15503	4.9	115.5	0.0765	7294
29	572.1425	10770	3.4	86.1	0.0812	7042
30	573.1468	17034	5.4	137.4	0.0837	6851

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Figure A-11: HR-ESI-mass spectrum of compound **3b**

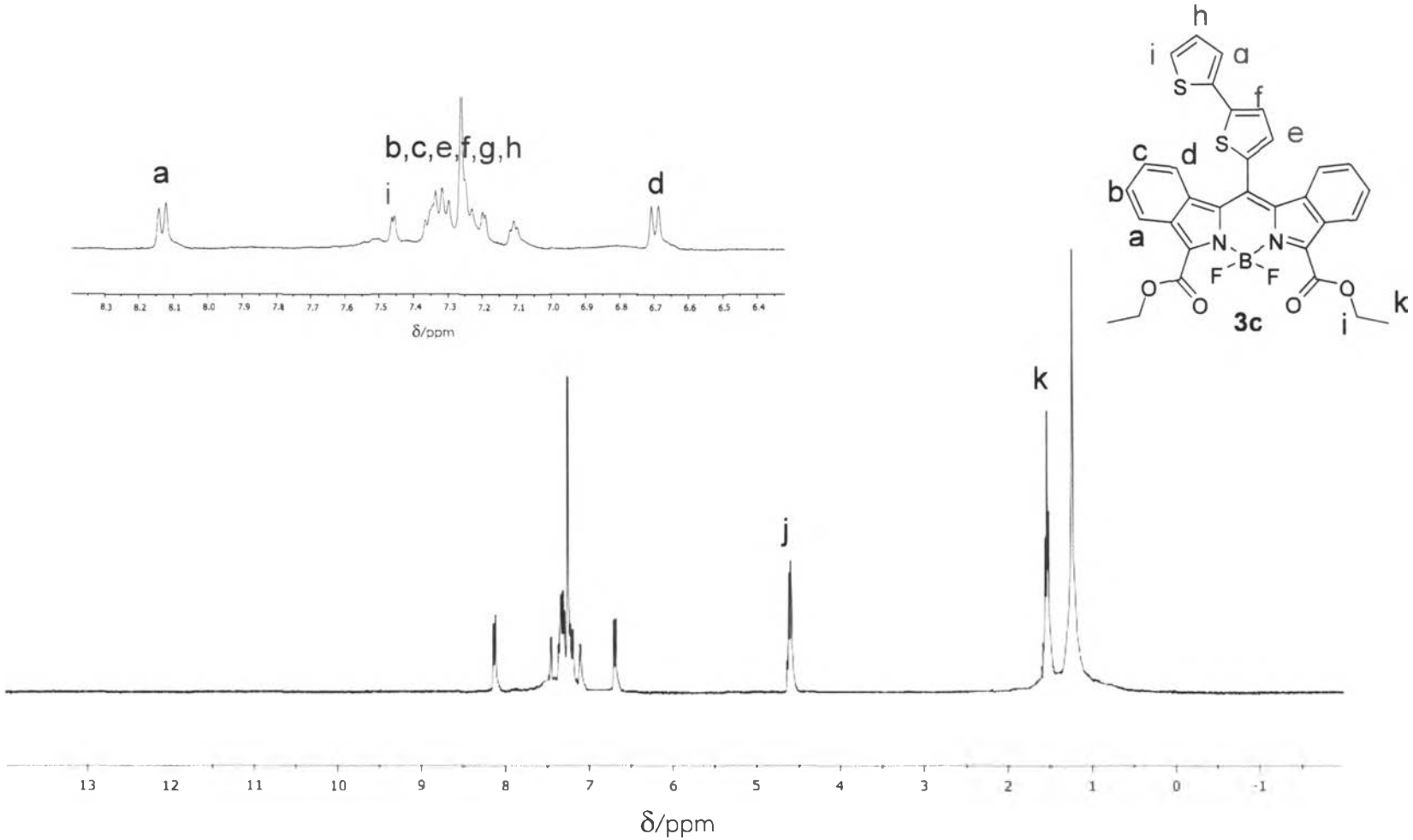


Figure A-12: ^{1}H-NMR spectrum of compound **3c**

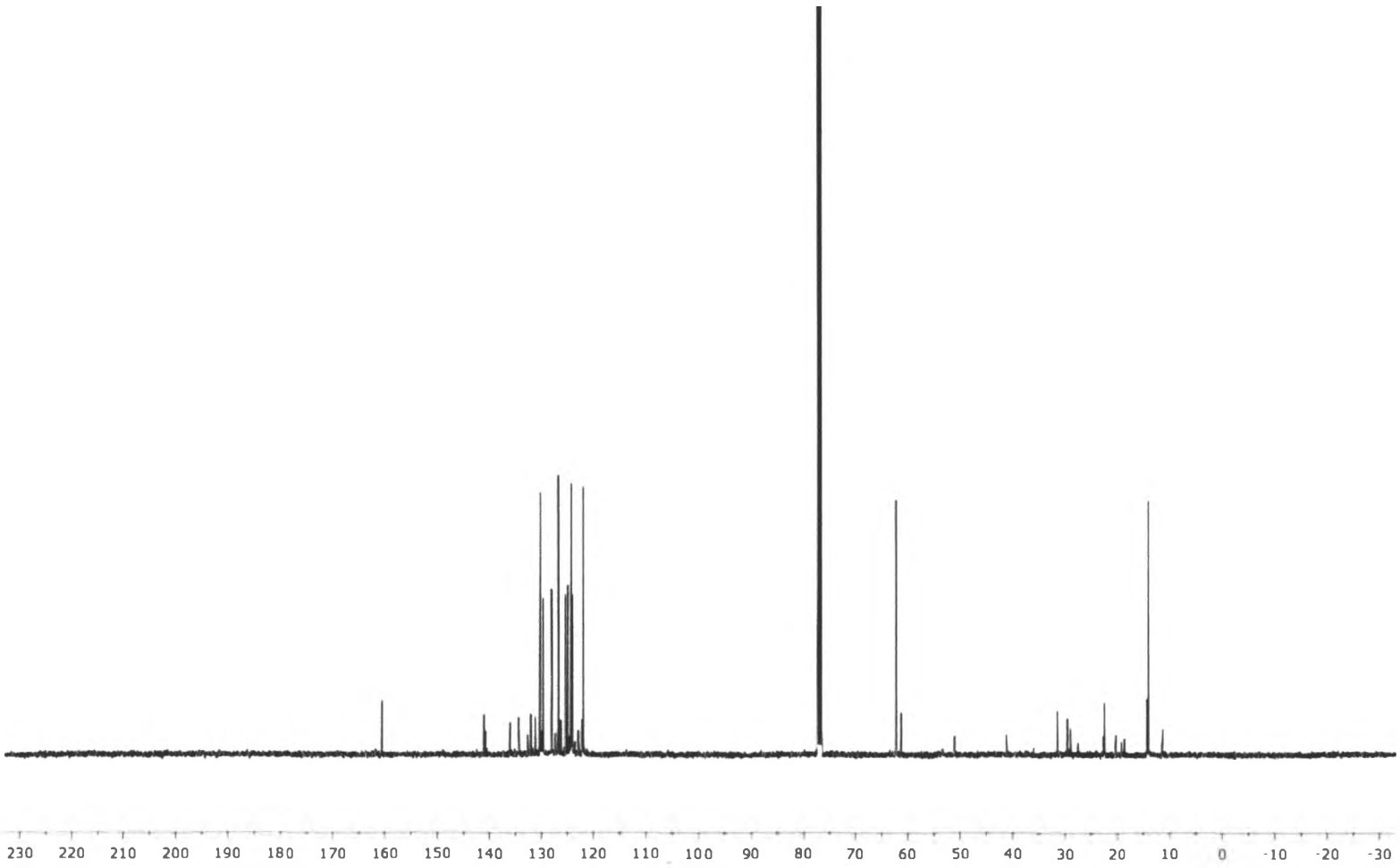


Figure A-13: ^{13}C-NMR spectrum of compound **3c**

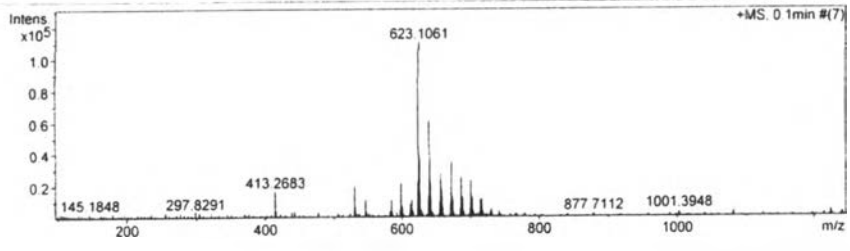
Mass Spectrum List Report

Analysis Info

Analysis Name	OSCUJK570107001.d	Acquisition Date	1/9/2014 11:13:42 AM
Method	Natee20130403.m	Operator	Administrator
Sample Name	B-Ox-DPM-2T	Instrument	micrOTOF 72
	B-Ox-DPM-2T		

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Corrector Fill	75 V
Scan Range	n/a	Capillary Exit	140.0 V	Set Pulsar Pull	398 V
Scan Begin	50 m/z	Hexapole RF	400.0 V	Set Pulsar Push	380 V
Scan End	3000 m/z	Skimmer 1	54.4 V	Set Reflector	1300 V
		Hexapole 1	21.4 V	Set Flight Tube	9000 V
				Set Detector TOF	1910 V



#	m/z	I	I %	S/N	FWHM	Res.
1	413.2683	16909	15.3	45.7	0.0600	6890
2	529.0661	19645	17.8	51.8	0.0768	6892
3	545.0398	11202	10.1	29.2	0.0755	7221
4	583.0761	11179	10.1	29.1	0.0864	6749
5	597.0908	21420	19.4	56.3	0.0893	6689
6	613.0786	11444	10.4	29.8	0.1213	5056
7	622.1101	22287	20.2	58.7	0.0913	6816
8	623.1061	110519	100.0	293.7	0.0922	6757
9	624.1088	36663	33.2	97.0	0.0924	6757
10	625.1068	15897	14.4	41.6	0.0940	6649
11	638.0860	13282	12.0	34.7	0.0958	6662
12	639.0813	61091	55.3	162.0	0.0973	6570
13	640.0852	22123	20.0	58.2	0.0979	6541
14	641.0833	12934	11.7	33.7	0.0984	6516
15	654.1277	10279	9.3	26.7	0.0977	6692
16	655.1317	27107	24.5	71.5	0.0999	6558
17	656.1279	13121	11.9	34.2	0.1099	5970
18	657.1197	18728	16.9	49.2	0.1189	5526
19	670.1222	9429	8.5	24.4	0.1151	5820
20	671.1229	34873	31.6	92.2	0.1083	6195
21	672.1226	13972	12.6	36.5	0.1061	6333
22	673.0997	10872	9.8	28.3	0.1169	5760
23	685.1436	26662	24.1	70.4	0.1004	6826
24	686.1392	11838	10.7	30.8	0.1075	6381
25	687.1136	13474	12.2	35.2	0.1173	5859
26	699.1590	23039	20.8	60.7	0.1102	6343
27	700.1540	11209	10.1	29.2	0.1081	6477
28	701.1282	13414	12.1	35.1	0.1134	6185
29	713.1675	11801	10.7	30.8	0.1071	6661
30	715.1382	11863	10.7	30.9	0.1145	6246

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Figure A-14: HR-ESI-mass spectrum of compound **3c**

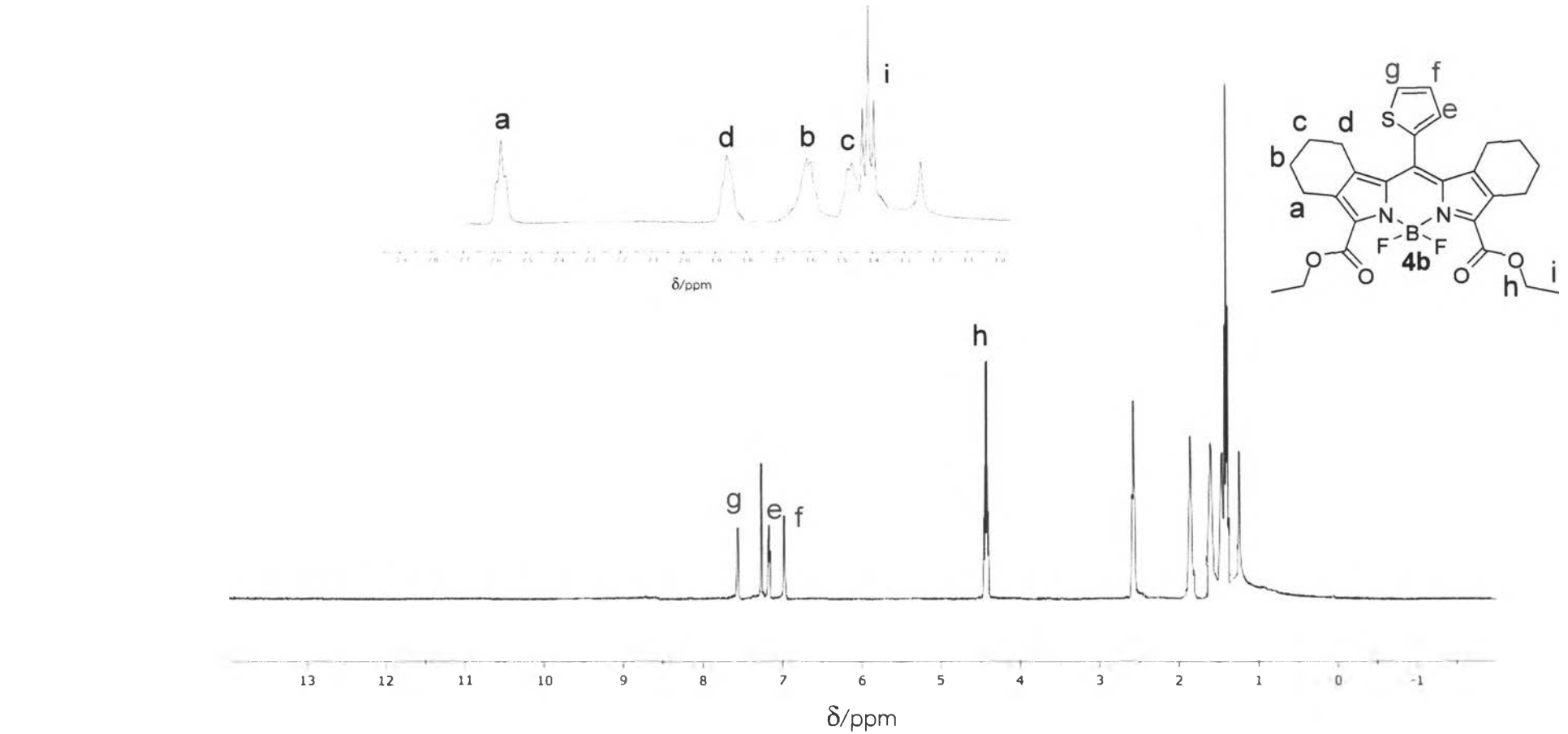


Figure A-15: ^{1}H-NMR spectrum of compound **4b**

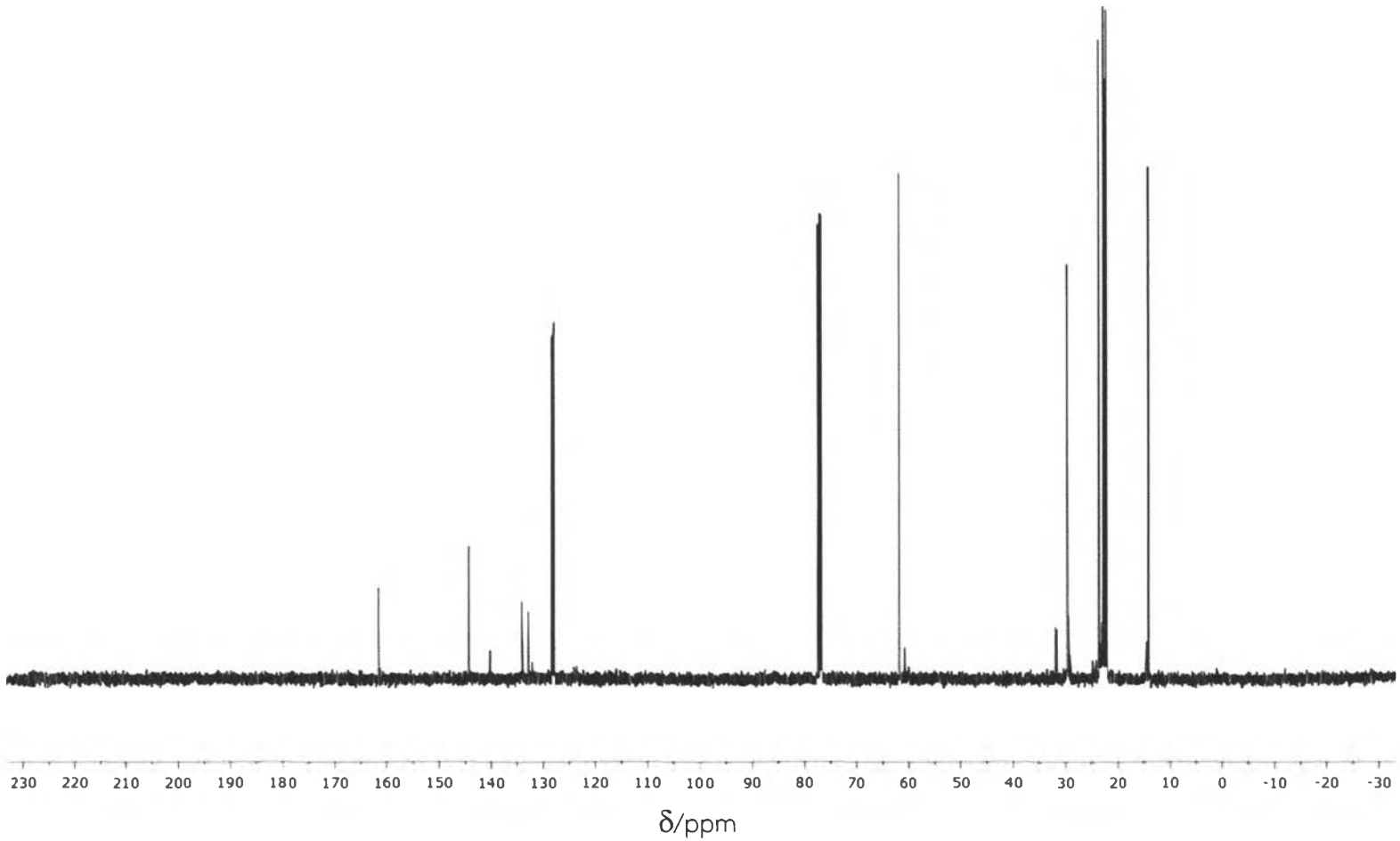


Figure A-16: ^{13}C-NMR spectrum of compound **4b**

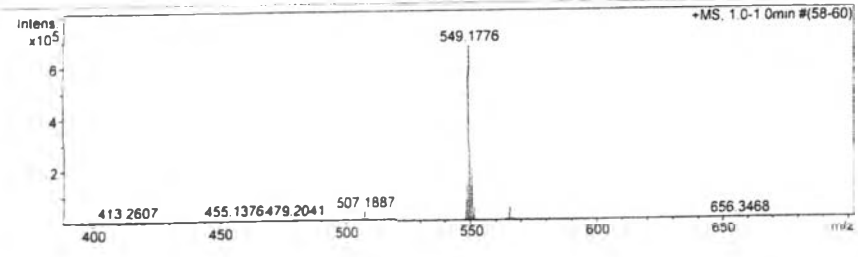
Mass Spectrum List Report

Analysis Info

Analysis Name	OSCUJS5609240021 d	Acquisition Date	9/24/2013 4:08:29 PM
Method	*MKE_tune_wide_20130204.m*	Operator	Administrator
Sample Name	B-DPM-Thio	Instrument	micrOTOF 72
	B-DPM-Thio		

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Corrector Fill	75 V
Scan Range	n/a	Capillary Exit	150.0 V	Set Pulsar Pull	398 V
Scan Begin	50 *m/z*	Hexapole RF	300.0 V	Set Pulsar Push	380 V
Scan End	3000 *m/z*	Skimmer 1	45.0 V	Set Reflector	1300 V
		Hexapole 1	25.0 V	Set Flight Tube	9000 V
				Set Detector TOF	1910 V



#	m/z	I	I %	S/N	FWHM	Res.
1	413.2607	11056	1.6	177.5	0.0532	7765
2	443.3285	7081	1.0	88.8	0.0520	8531
3	455.1376	13033	1.9	150.9	0.0549	8284
4	479.2041	11519	1.7	114.8	0.0693	6911
5	487.3557	8551	1.3	81.3	0.0584	8348
6	493.3108	7154	1.1	65.8	0.0735	6712
7	506.1921	8794	1.3	75.8	0.0607	8342
8	507.1887	39055	5.8	336.4	0.0613	8278
9	508.1916	12090	1.8	103.3	0.0585	8686
10	523.2602	6879	1.0	54.5	0.0853	6132
11	527.1954	8306	1.2	64.8	0.0842	8215
12	531.3814	7277	1.1	55.6	0.0633	8390
13	537.3325	8328	1.2	62.1	0.0687	7825
14	544.2209	6722	1.0	51.2	0.0629	8649
15	548.1801	153156	22.6	1195.8	0.0664	8254
16	549.1776	678909	100.0	5309.8	0.0692	7941
17	550.1794	203054	30.0	1599.6	0.0664	8285
18	551.1777	56498	8.3	446.7	0.0658	8372
19	552.1789	10658	1.6	84.3	0.0637	8668
20	564.1537	10761	1.6	89.9	0.0670	8421
21	565.1507	50917	7.5	429.2	0.0680	8308
22	566.1527	16498	2.4	139.4	0.0657	8620
23	567.1530	8107	1.2	68.6	0.0664	8547
24	567.2808	8659	1.3	73.4	0.0812	6986
25	572.2519	8677	1.3	75.3	0.0681	8399
26	581.3575	7890	1.2	71.6	0.0708	8216
27	611.3108	6513	1.0	69.8	0.0904	6766
28	625.3845	6237	0.9	73.1	0.0784	7976
29	655.3427	6234	0.9	91.3	0.0919	7134
30	656.3468	8356	1.2	123.7	0.0847	7753

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Figure A-17: HR-ESI-mass spectrum of compound **4b**

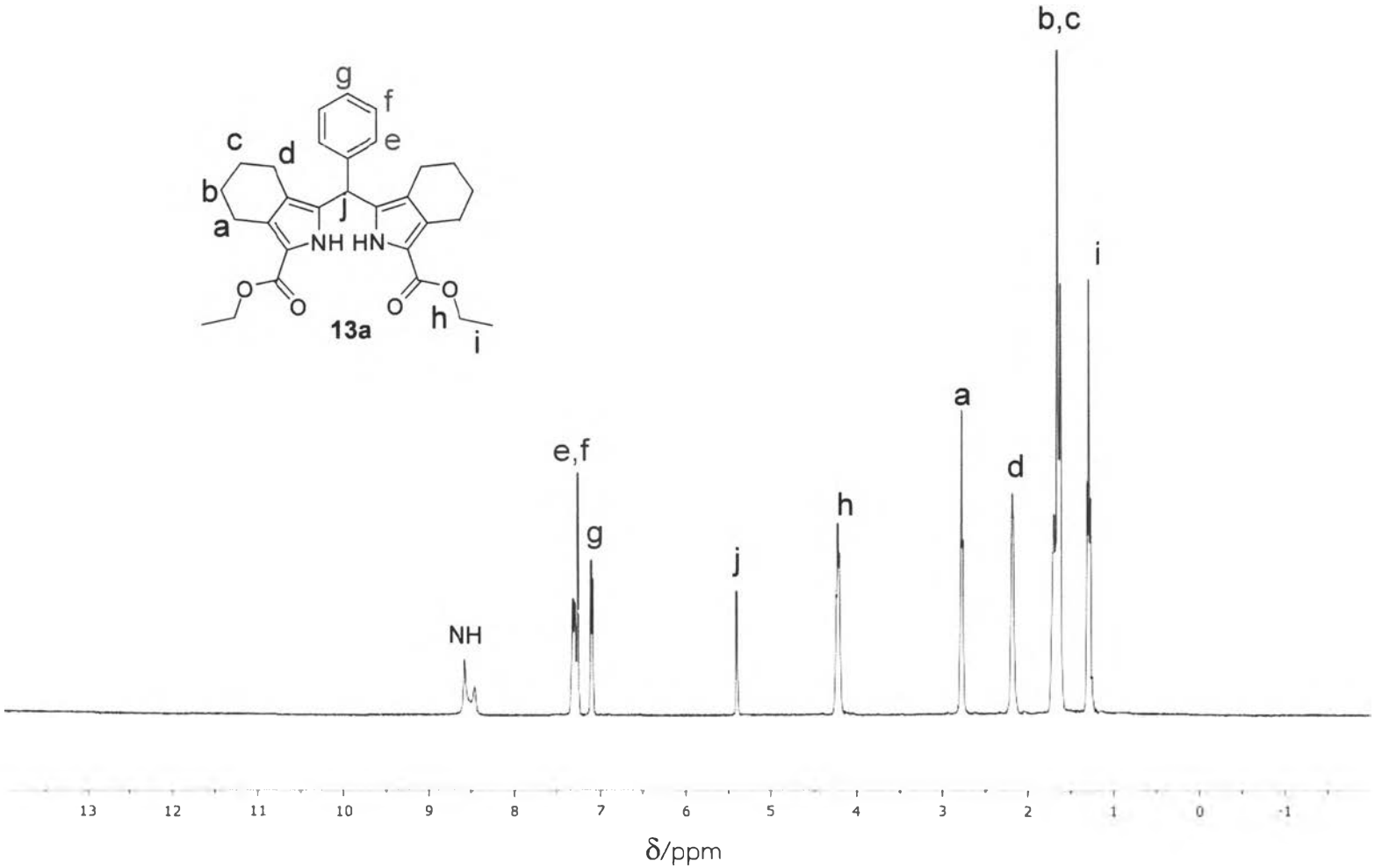


Figure A-18: ^{1}H-NMR spectrum of compound **13a**

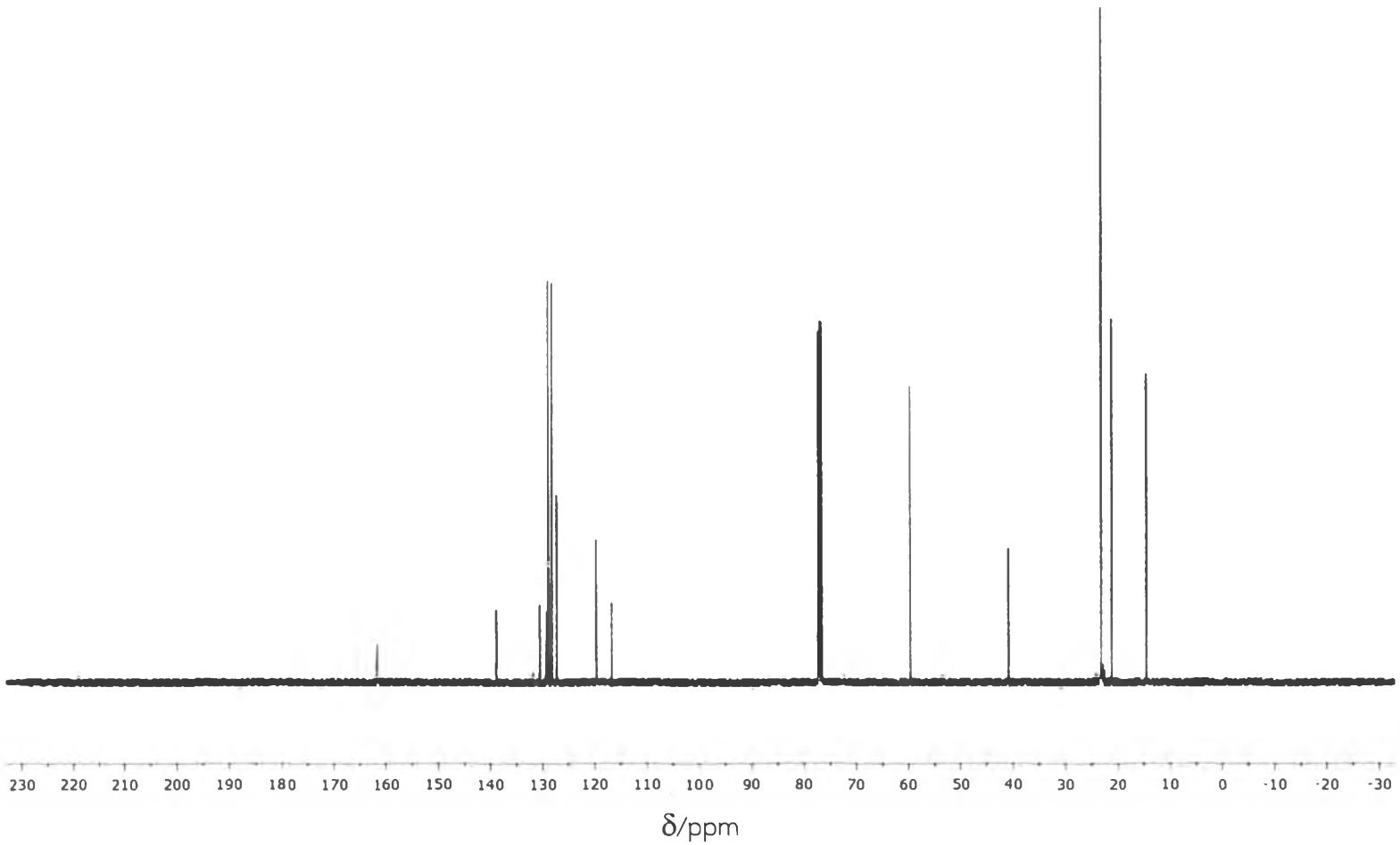


Figure A-19: ^{13}C-NMR spectrum of compound **13a**

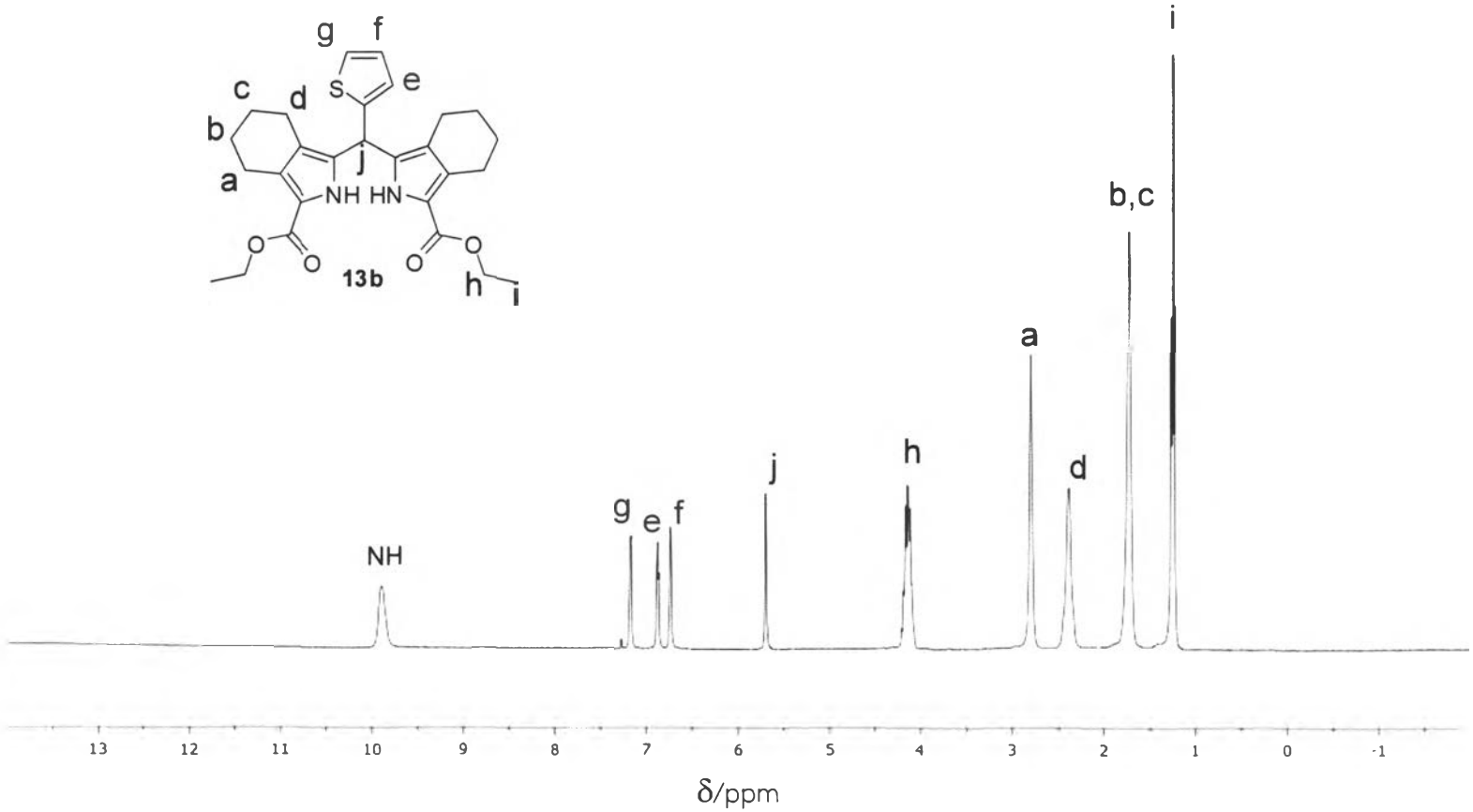


Figure A-20: ^{1}H-NMR spectrum of compound **13b**

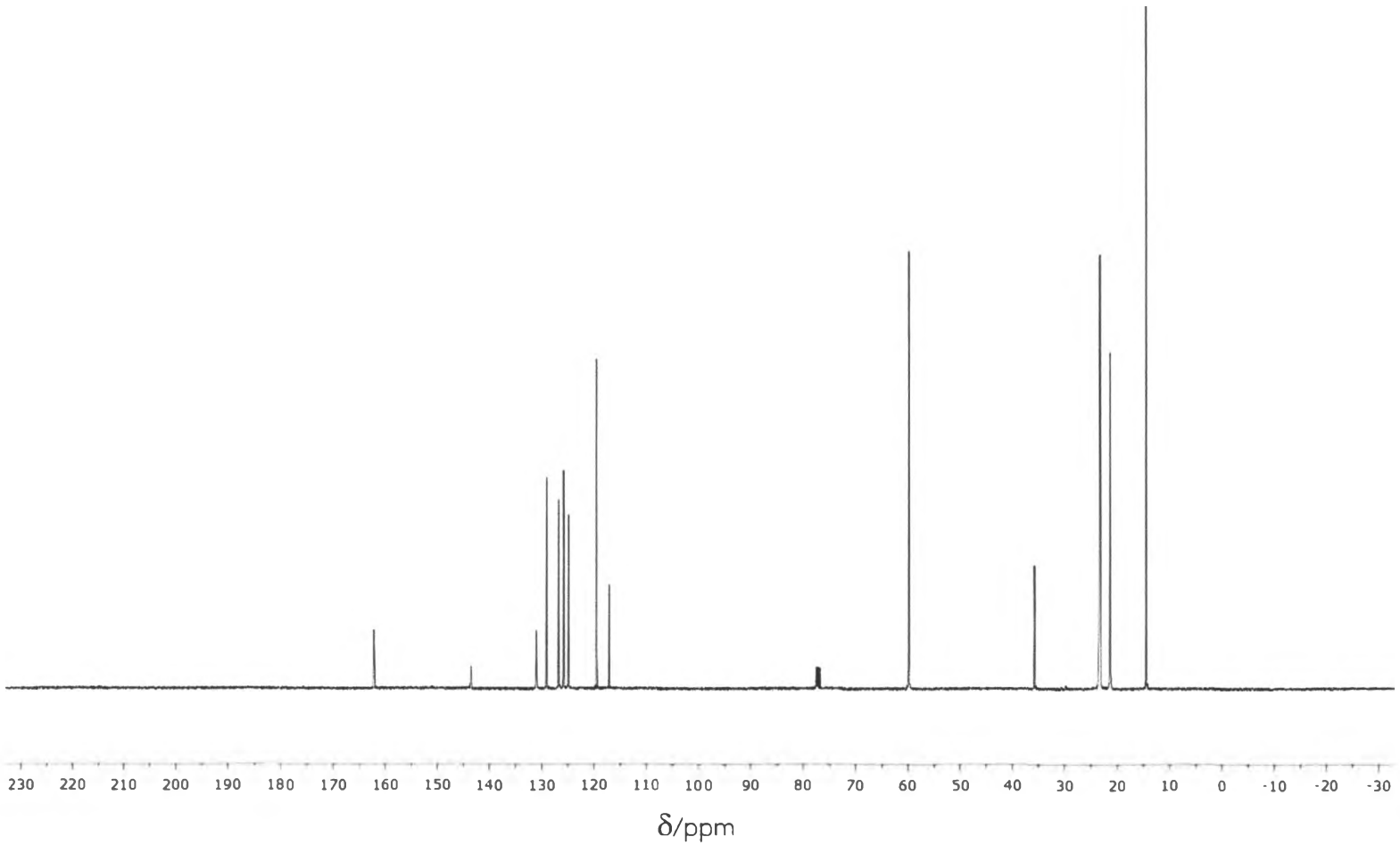


Figure A-21: ^{13}C-NMR spectrum of compound **13b**

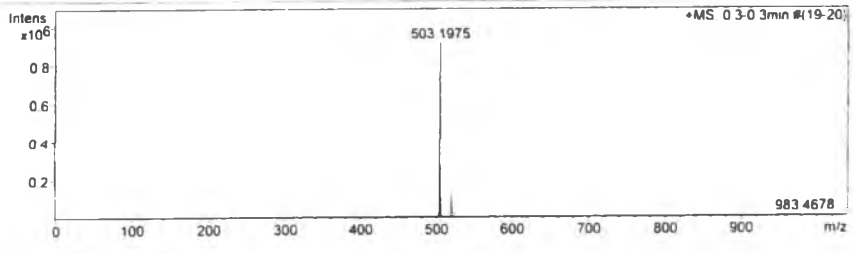
Mass Spectrum List Report

Analysis Info

Analysis Name	OSCUJK570107003.d	Acquisition Date	1/9/2014 11:24:34 AM
Method	Natee20130403.m	Operator	Administrator
Sample Name	DPM-Thio	Instrument	micrOTOF 72
	DPM-Thio		

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Corrector Fill	75 V
Scan Range	n/a	Capillary Exit	150.0 V	Set Pulsar Pull	398 V
Scan Begin	50 m/z	Hexapole RF	400.0 V	Set Pulsar Push	380 V
Scan End	3000 m/z	Skimmer 1	54.4 V	Set Reflector	1300 V
		Hexapole 1	21.4 V	Set Flight Tube	9000 V
				Set Detector TOF	1910 V



#	m/z	I	I %	S/N	FWHM	Res.
1	145.1842	3681	0.4	9.5	0.0144	10099
2	413.2663	7306	0.8	21.0	0.0619	6674
3	435.1746	15649	1.7	45.2	0.0689	6314
4	436.1774	4771	0.5	13.5	0.0670	6514
5	457.1562	9351	1.0	26.8	0.0707	6466
6	479.2014	13424	1.5	38.6	0.0791	6061
7	480.2041	4490	0.5	12.6	0.0753	6379
8	481.2144	24773	2.7	71.6	0.0740	6499
9	482.2183	7394	0.8	21.1	0.0766	6295
10	501.1836	6365	0.7	18.1	0.0761	6584
11	503.1975	920239	100.0	2675.2	0.0791	6364
12	504.2007	275983	30.0	802.0	0.0741	6804
13	505.1983	74029	8.0	214.8	0.0759	6658
14	506.1995	13248	1.4	38.1	0.0766	6612
15	519.1706	128507	14.0	373.0	0.0774	6708
16	520.1734	36770	4.0	106.4	0.0765	6802
17	521.1707	18845	2.0	54.3	0.0741	7031
18	522.1732	4521	0.5	12.7	0.0757	6894
19	535.1372	6946	0.8	19.7	0.0895	5978
20	537.1380	3761	0.4	10.4	0.0884	6078
21	585.1850	3692	0.4	10.6	0.0813	7195
22	983.4678	13323	1.4	39.4	0.2011	4891
23	984.4683	8412	0.9	24.8	0.1948	5053
24	985.4678	4307	0.5	12.6	0.1964	5017
25	1450.6518	4386	0.5	12.8	0.0277	52398
26	1450.8922	4030	0.4	11.8	0.0808	17949
27	2352.6152	5813	0.6	16.3	0.0329	71550
28	2352.8200	5171	0.6	14.5	0.0567	41495
29	2352.8849	3906	0.4	10.9	0.0886	26542
30	2884.9694	3782	0.4	10.9	0.0380	75937

Figure A-22: HR-ESI-mass spectrum of compound **13b**

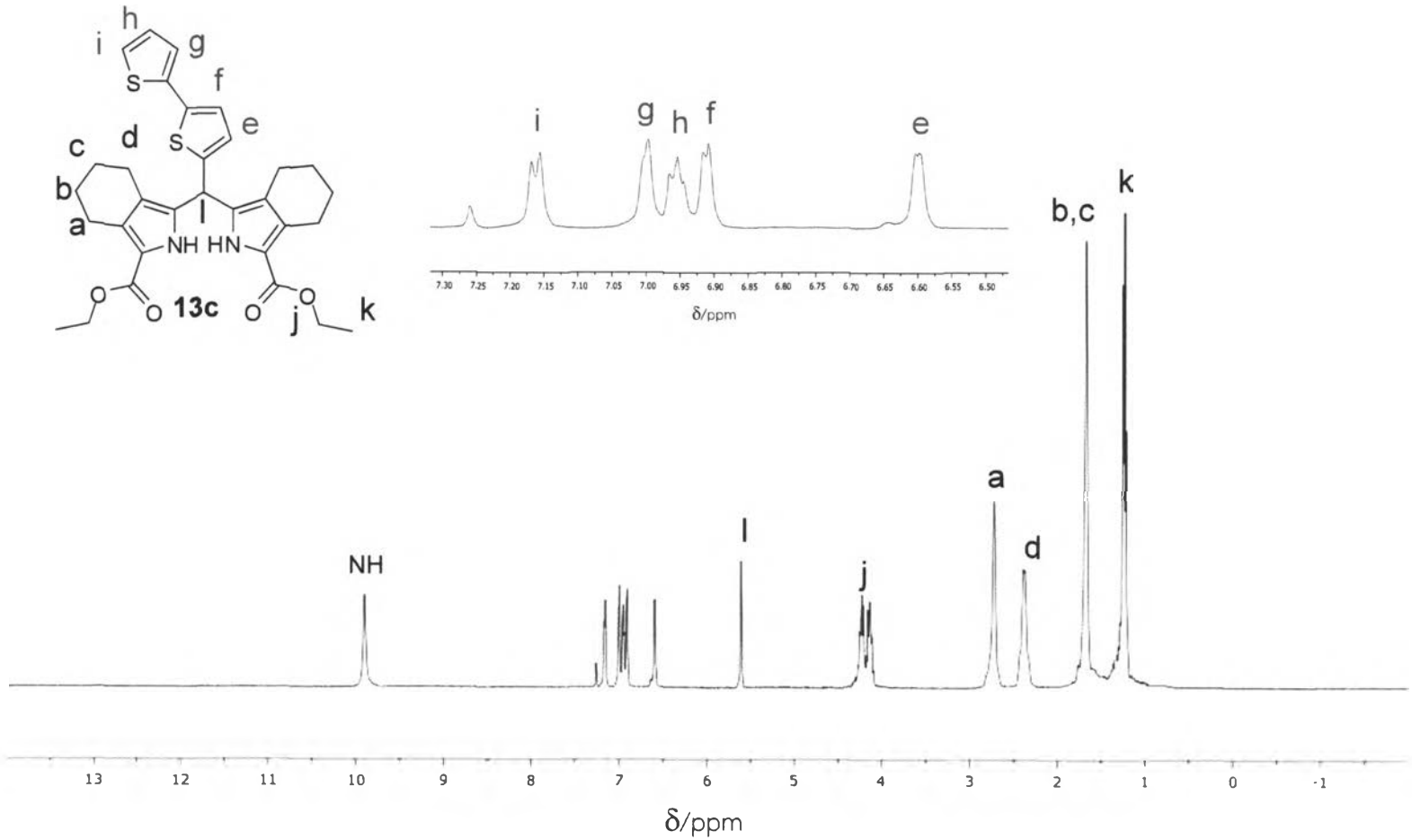


Figure A-23: ^{1}H-NMR spectrum of compound **13c**

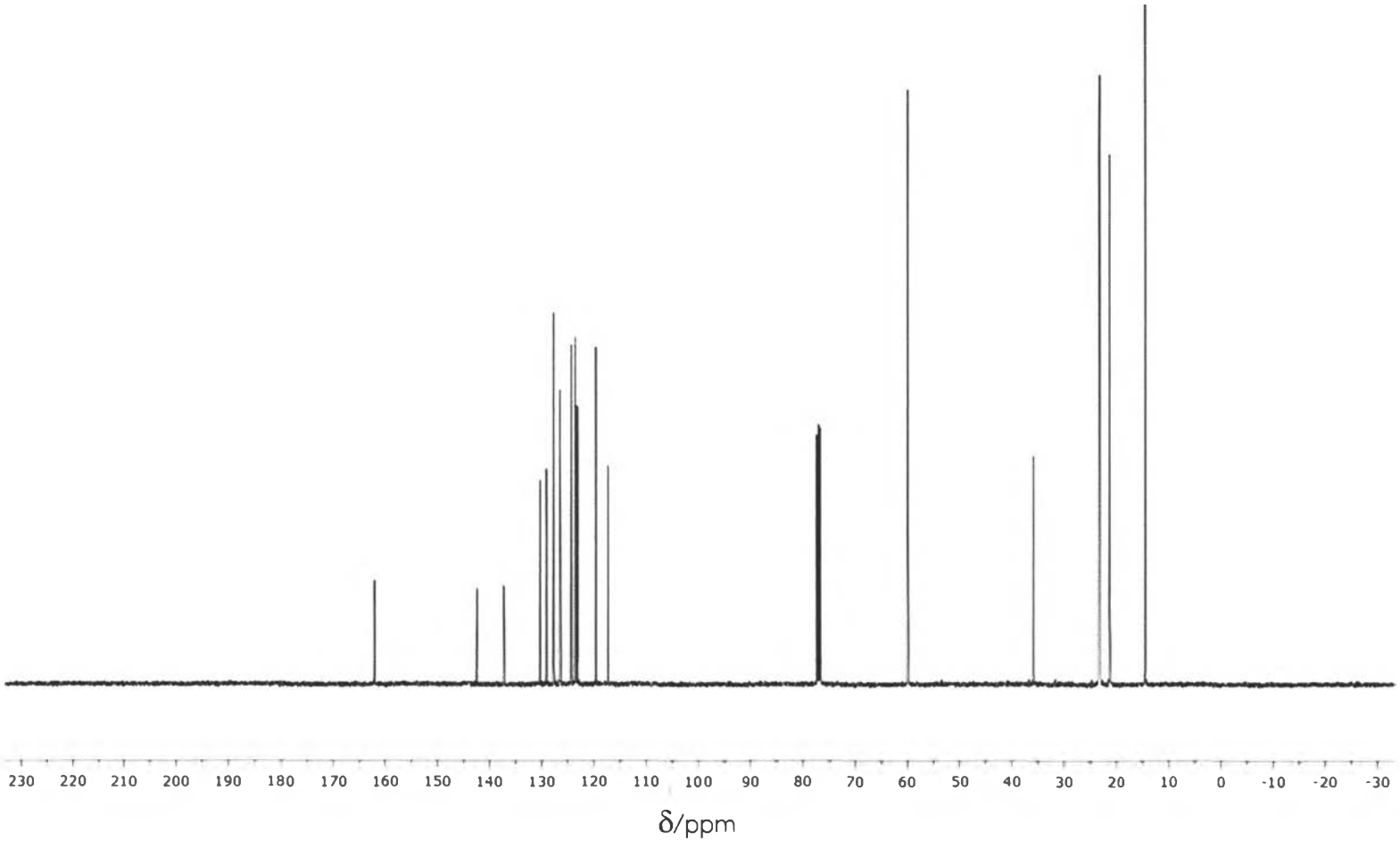


Figure A-24: ^{13}C-NMR spectrum of compound **13c**

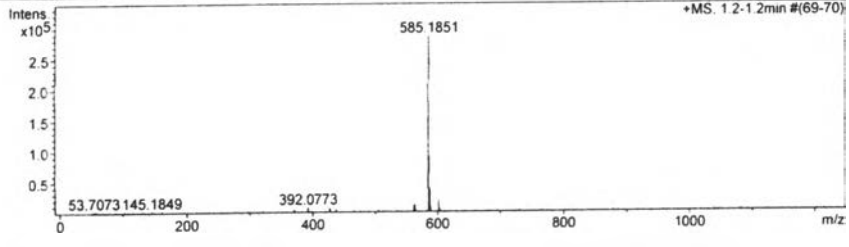
Mass Spectrum List Report

Analysis Info

Analysis Name	OSCUJK570107002.d	Acquisition Date	1/9/2014 11:19:46 AM
Method	Natee20130403.m	Operator	Administrator
Sample Name	DPM-2T	Instrument	micrOTOF 72
	DPM-2T		

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Corrector Fill	75 V
Scan Range	n/a	Capillary Exit	150.0 V	Set Pulsar Pull	398 V
Scan Begin	50 m/z	Hexapole RF	400.0 V	Set Pulsar Push	380 V
Scan End	3000 m/z	Skimmer 1	54.4 V	Set Reflector	1300 V
		Hexapole 1	21.4 V	Set Flight Tube	9000 V
				Set Detector TOF	1910 V



#	m/z	I	I %	S/N	FWHM	Res.
1	53.7073	3451	1.2	9.8	0.0087	6175
2	145.1849	3517	1.2	10.0	0.0131	11078
3	297.7101	3485	1.2	10.9	0.0137	21757
4	297.8308	3227	1.1	10.1	0.0268	11117
5	370.0945	5244	1.8	16.8	0.0546	6775
6	392.0773	8268	2.9	26.5	0.0618	6348
7	427.1871	7250	2.5	23.0	0.0645	6620
8	437.1940	4976	1.7	15.7	0.0684	6395
9	504.5857	3114	1.1	9.5	0.0175	28901
10	504.7206	3341	1.2	10.2	0.0312	16174
11	561.1876	10978	3.8	34.7	0.0845	6644
12	562.1910	4972	1.7	15.5	0.0825	6818
13	563.2011	13786	4.8	43.8	0.0806	6984
14	564.2030	4886	1.7	15.3	0.0821	6874
15	585.1851	286224	100.0	929.3	0.0872	6711
16	586.1877	91014	31.8	295.4	0.0871	6730
17	587.1844	36697	12.8	119.0	0.0875	6708
18	588.1867	8884	3.1	28.5	0.0935	6292
19	601.1603	19810	6.9	64.6	0.0895	6715
20	602.1638	6634	2.3	21.4	0.0931	6466
21	603.1578	4072	1.4	13.0	0.0945	6383
22	1081.2490	3248	1.1	10.8	0.0369	29340
23	1450.8951	4006	1.4	13.2	0.1900	7636
24	1500.8299	3211	1.1	10.8	0.0302	49635
25	1709.1762	3152	1.1	10.0	0.0349	48992
26	1874.5095	3472	1.2	11.5	0.0311	60201
27	2352.6021	4995	1.7	16.0	0.0336	69958
28	2352.8191	4785	1.7	15.3	0.0510	46176
29	2884.9657	3461	1.2	11.8	0.0401	71961
30	2885.2850	3293	1.2	11.2	0.0512	56309

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Figure A-25: HR-ESI-mass spectrum of compound **13c**

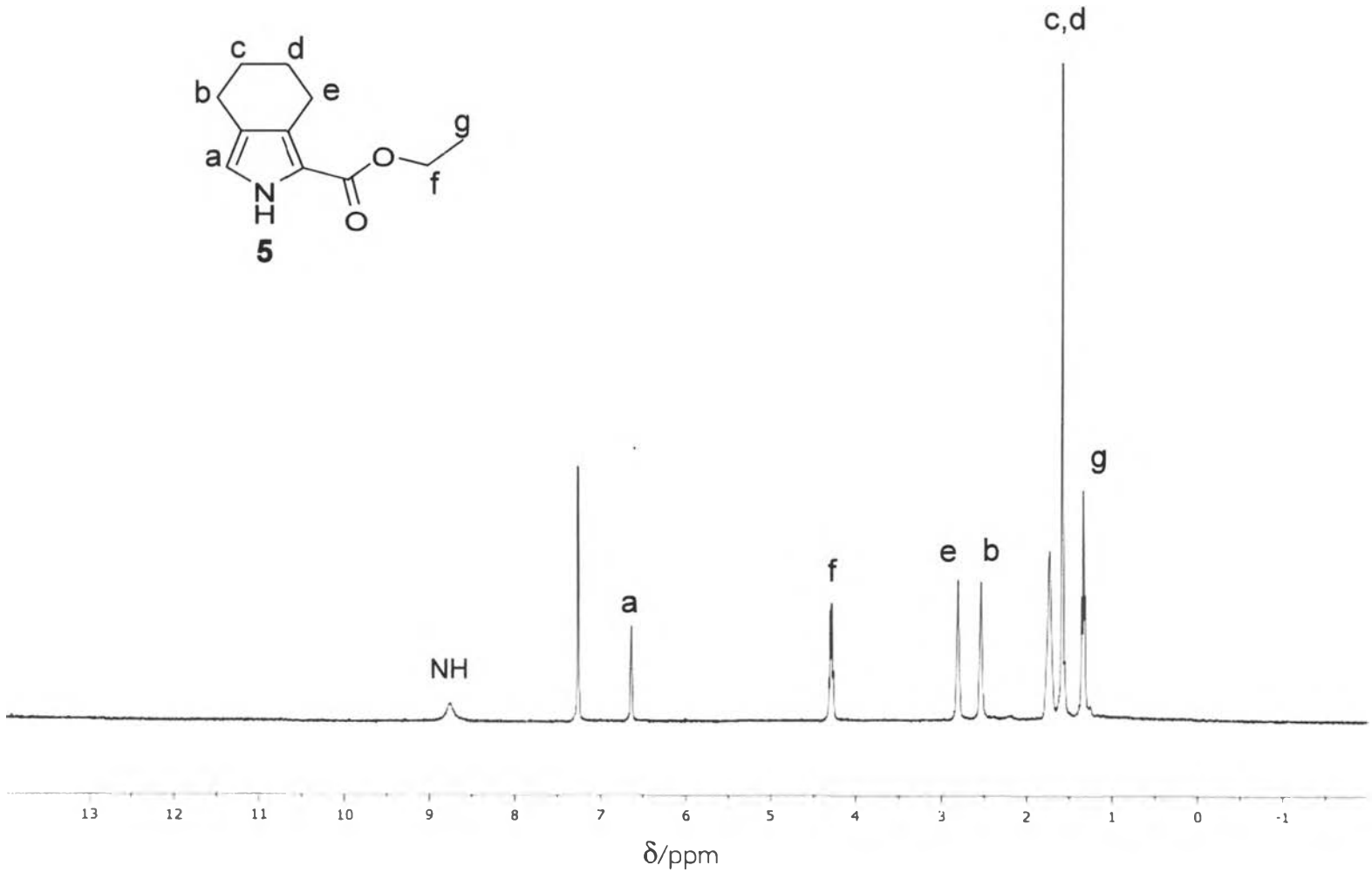


Figure A-26: ^{1}H-NMR spectrum of compound **5**

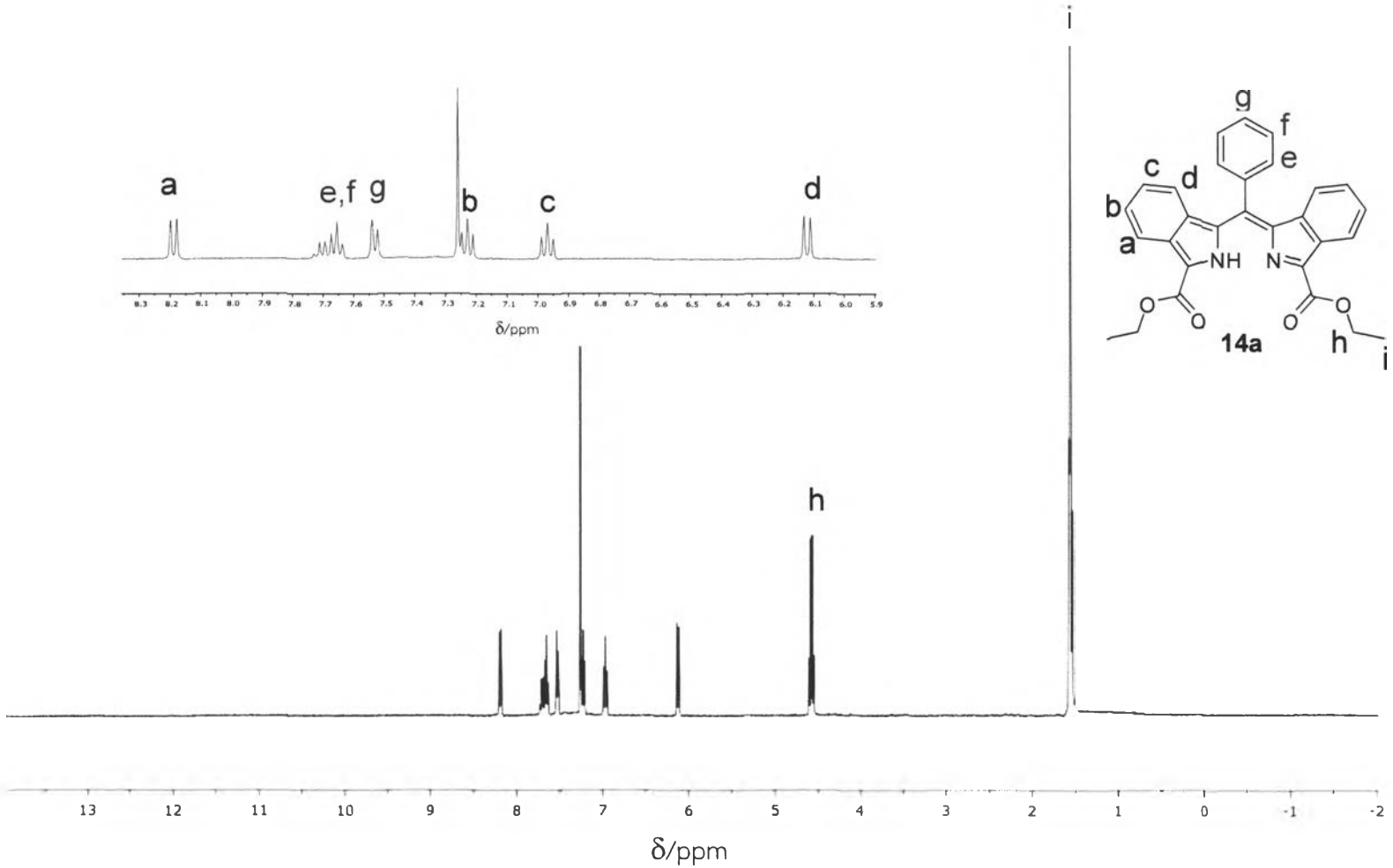


Figure A-27: ^{1}H-NMR spectrum of compound **14a**

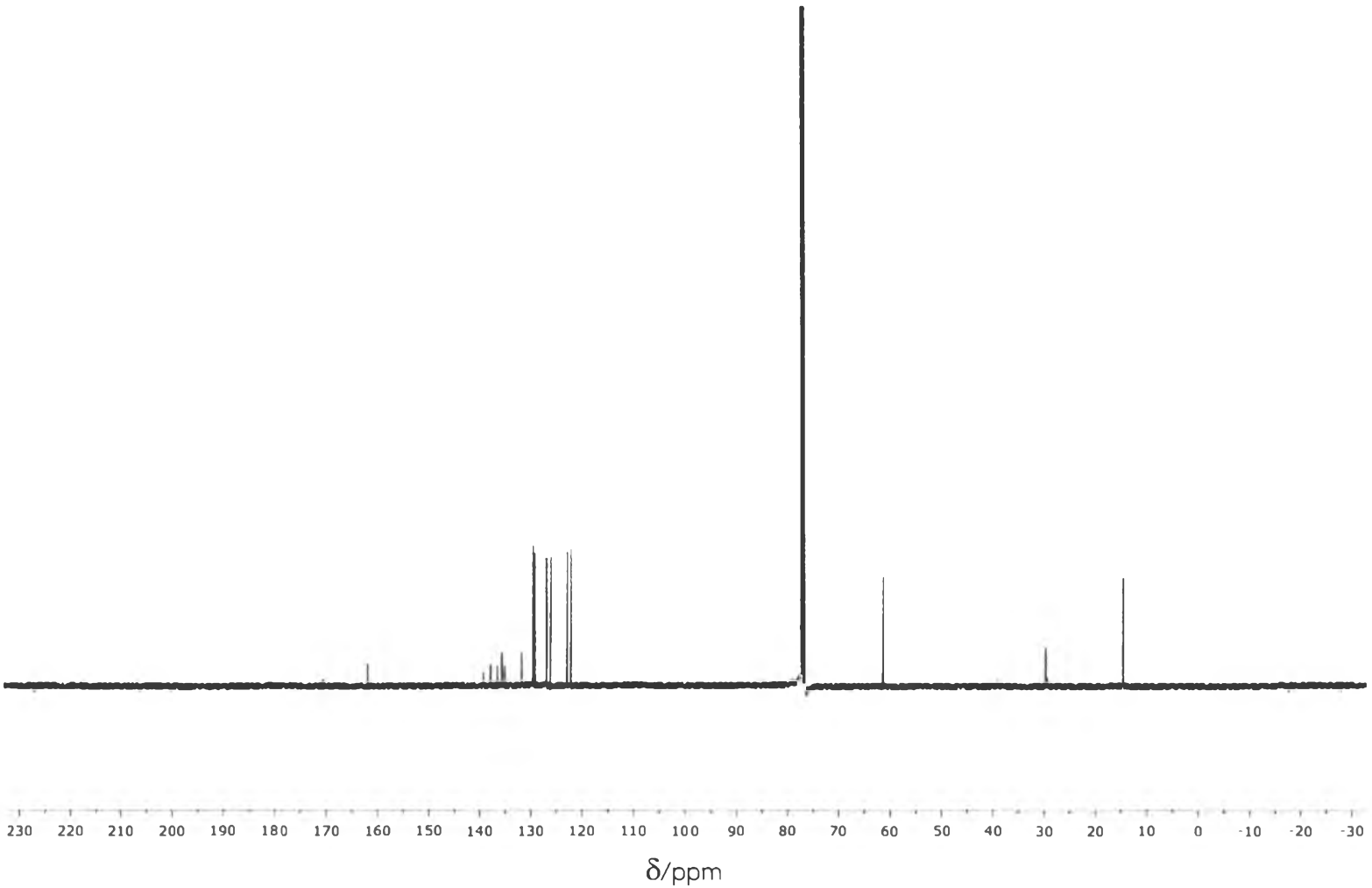


Figure A-28: ^{13}C-NMR spectrum of compound **14a**

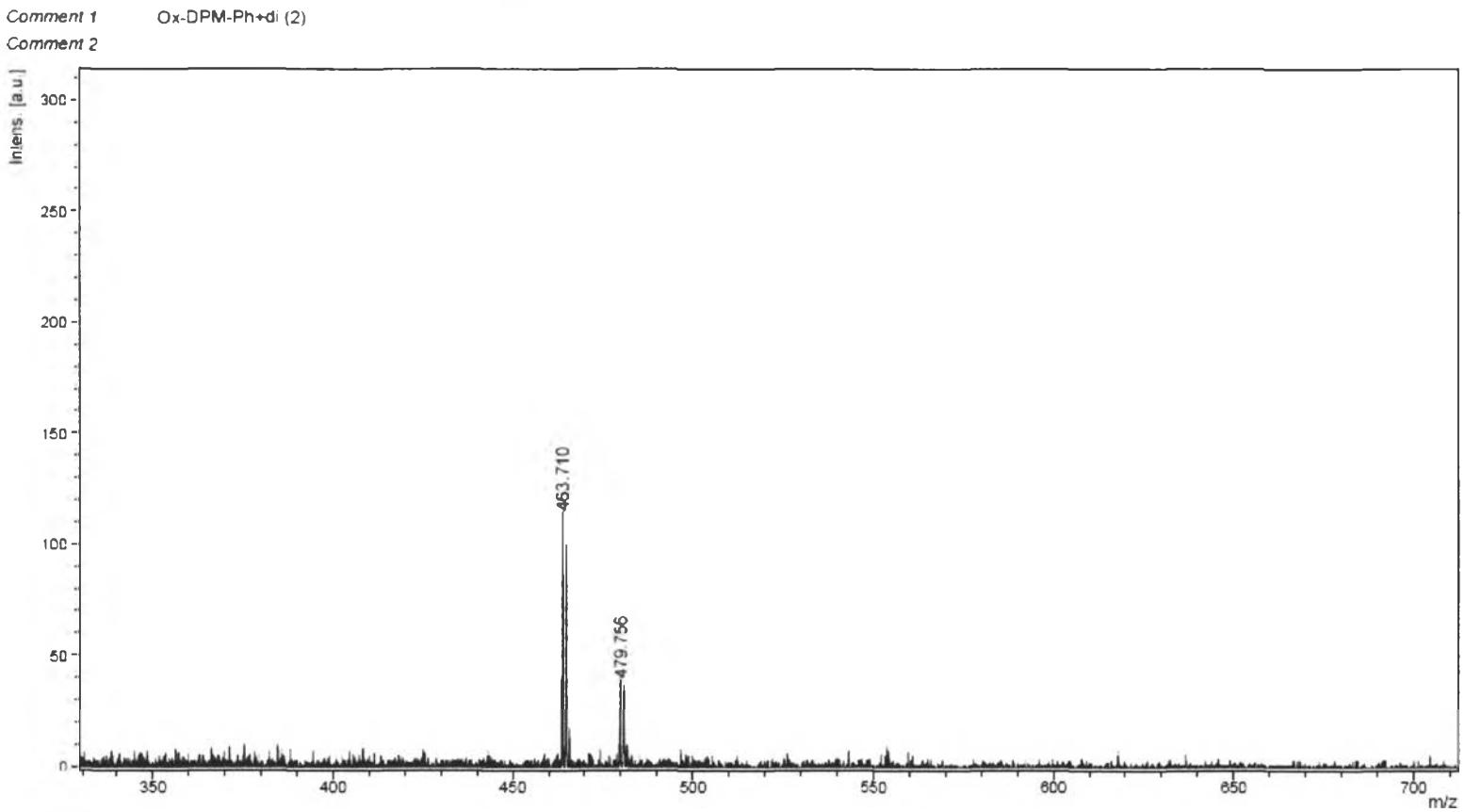


Figure A-29: MALDI-TOF-mass spectrum of compound **14a**

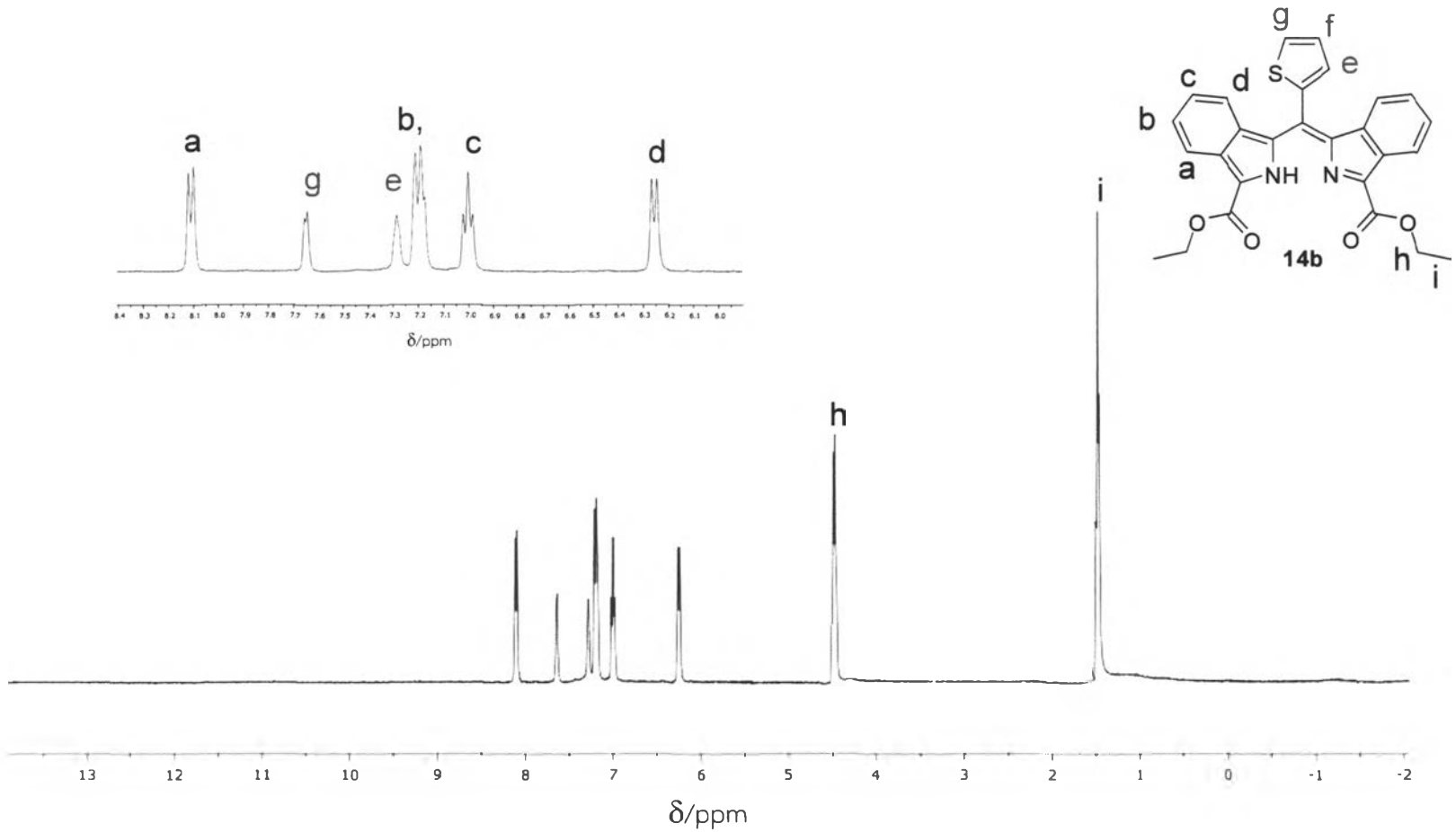


Figure A-30: ^{1}H-NMR spectrum of compound **14b**

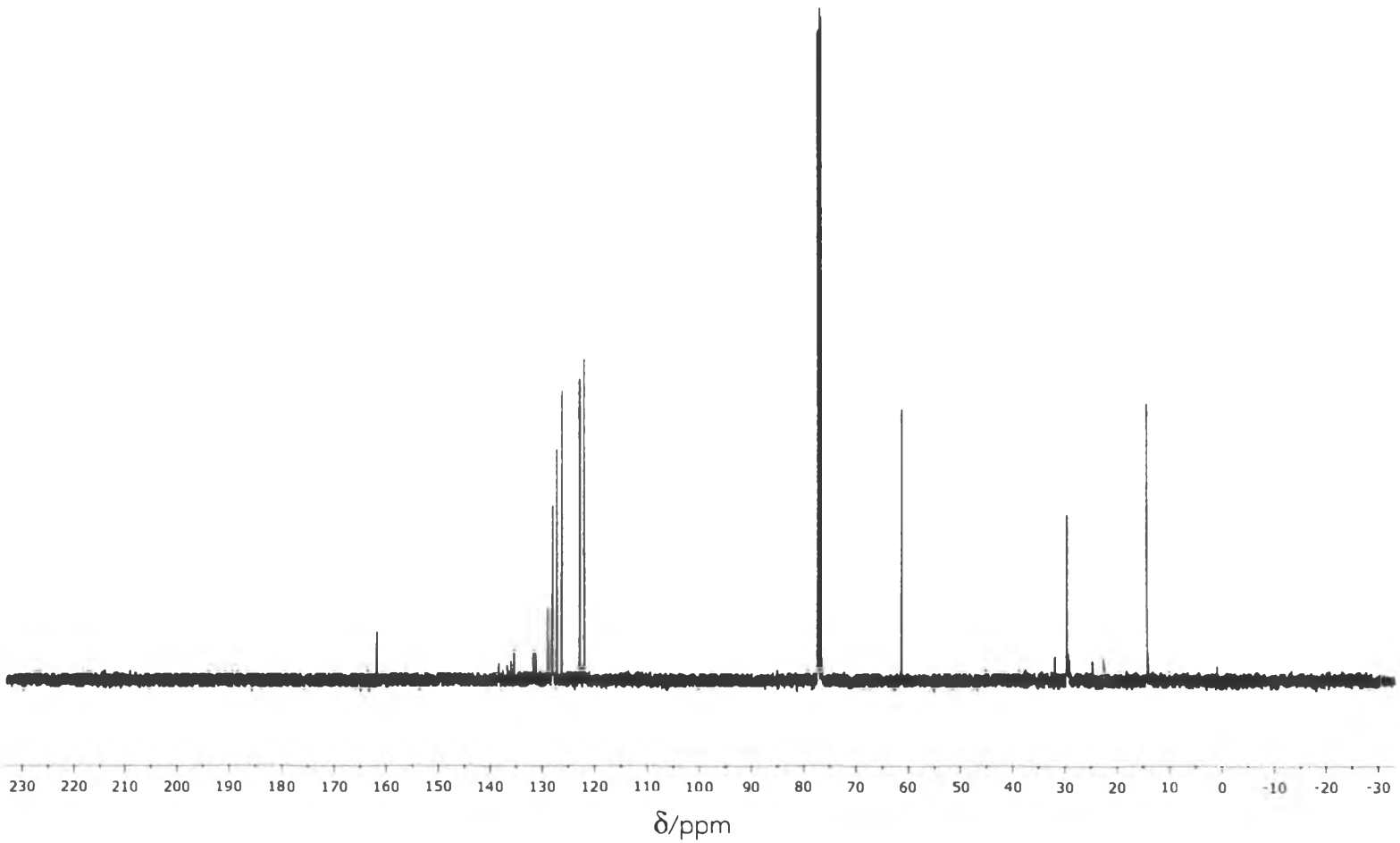


Figure A-31: ^{13}C-NMR spectrum of compound **14b**

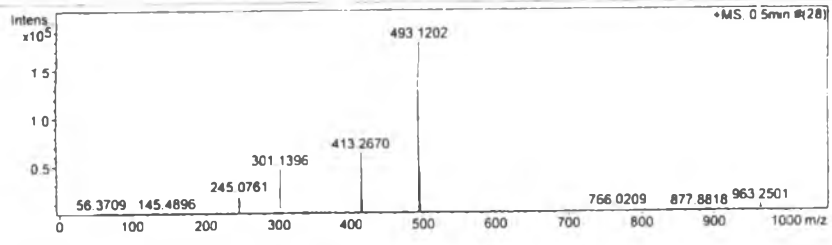
Mass Spectrum List Report

Analysis Info

Analysis Name	OSGK56071001.d	Acquisition Date	7/10/2013 6:23:20 PM
Method	Tune_wide_POS_Natee20130403.m	Operator	Administrator
Sample Name	*B-Ox-ester*	Instrument	micrOTOF 72
	B-Ox-ester		

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Corrector Fill	33 V
Scan Range	n/a	*Capillary Exit*	150.0 V	Set Pulsar Pull	386 V
Scan Begin	50 m/z	Hexapole RF	250.0 V	Set Pulsar Push	368 V
Scan End	3000 m/z	Skimmer 1	45.0 V	Set Reflector	1300 V
		Hexapole 1	24.3 V	Set Flight Tube	9000 V
				Set Detector TOF	2450 V



#	m/z	I	I %	S/N	FWHM	Res
1	56.3709	2914	1.6	12.3	0.0097	5840
2	245.0761	19815	11.1	85.7	0.0456	5375
3	301.1396	47601	26.6	207.5	0.0535	5625
4	302.1433	6310	3.5	27.2	0.0497	6074
5	313.1787	4701	2.6	20.2	0.0544	5759
6	332.8953	2929	1.6	12.5	0.0150	22151
7	339.1761	3887	2.2	16.7	0.0670	5065
8	363.2035	2986	1.7	13.0	0.0634	5730
9	393.2982	4049	2.3	18.1	0.0756	5204
10	413.2670	64330	35.9	296.4	0.0680	6079
11	414.2695	13285	7.4	61.0	0.0678	6111
12	421.2353	4321	2.4	19.7	0.0787	5349
13	447.0785	3749	2.1	17.4	0.0671	6667
14	448.0817	2994	1.7	13.8	0.0222	20209
15	471.1397	5136	2.9	24.3	0.0806	5845
16	476.2397	3222	1.8	15.2	0.0175	27259
17	493.1202	179038	100.0	876.1	0.0917	5375
18	494.1233	43066	24.1	210.6	0.0911	5426
19	495.1234	9617	5.4	46.8	0.0886	5585
20	505.1577	3228	1.8	15.6	0.1167	4330
21	766.0209	3693	2.1	21.2	0.0230	33334
22	963.2501	7631	4.3	42.4	0.1436	6709
23	964.2485	4546	2.5	25.1	0.1295	7444
24	1124.4580	3054	1.7	16.5	0.0276	40774
25	1213.5620	3106	1.7	16.0	0.0345	35156
26	1450.7508	3956	2.2	19.6	0.1533	9464
27	1450.8012	3320	1.9	16.4	0.0242	59945
28	2351.8355	5577	3.1	27.1	0.0337	69837
29	2352.1233	2970	1.7	14.3	0.0921	25527
30	2884.1160	3345	1.9	15.8	0.0808	35686

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Figure A-32: HR-ESI-mass spectrum of compound **14b**

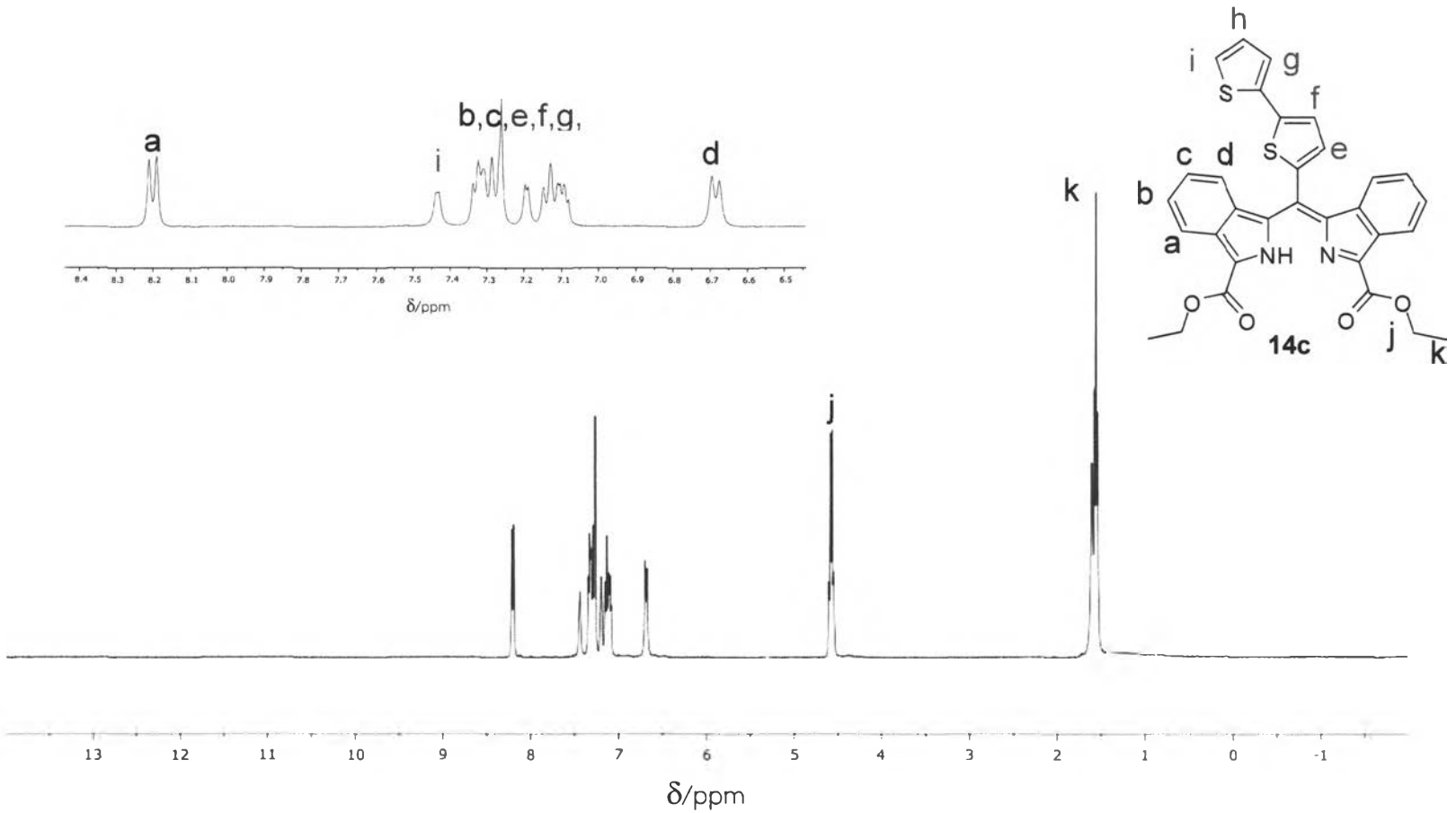


Figure A-33: ^{1}H-NMR spectrum of compound **14c**

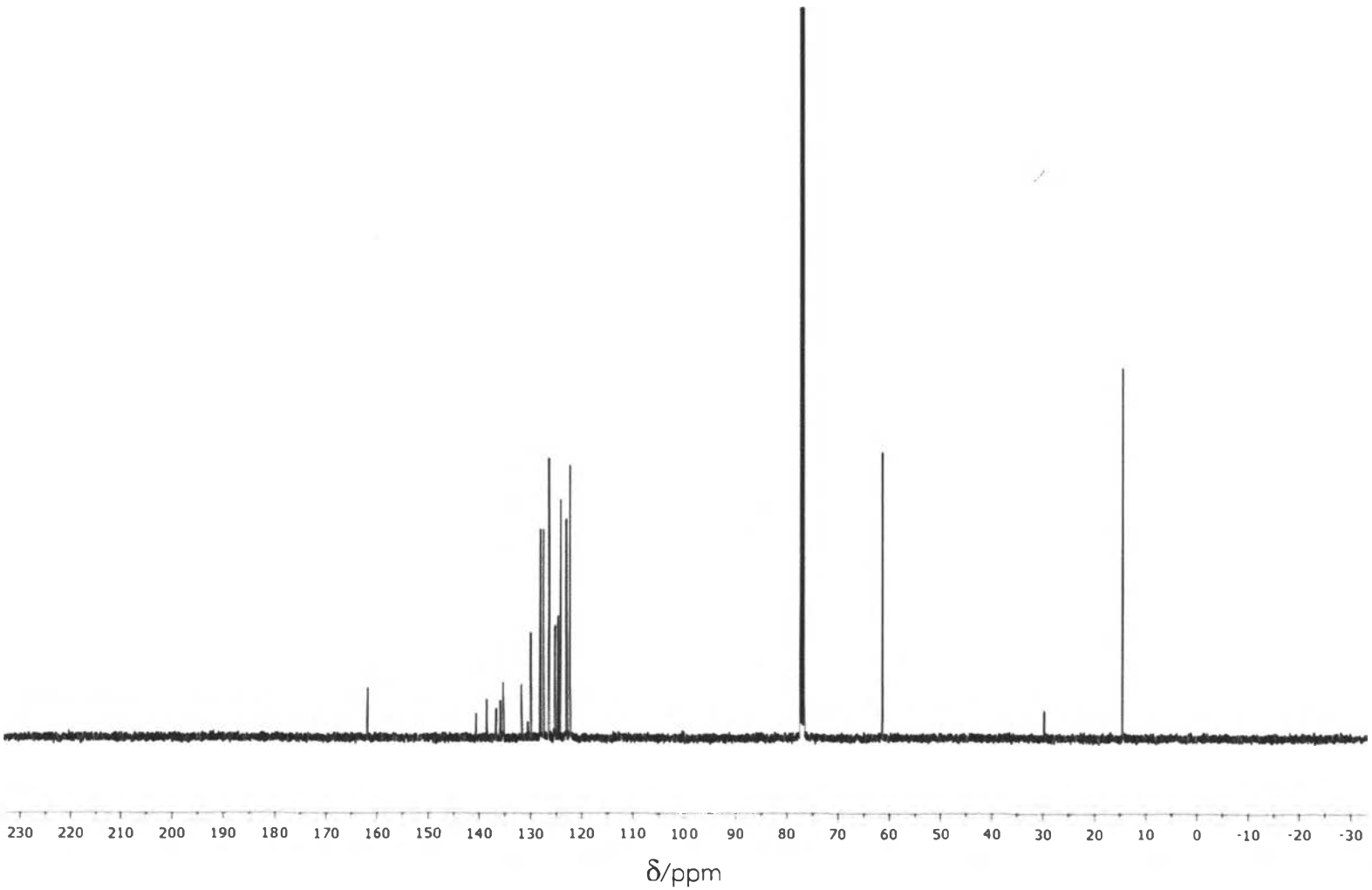


Figure A-34: ^{13}C-NMR spectrum of compound **14c**

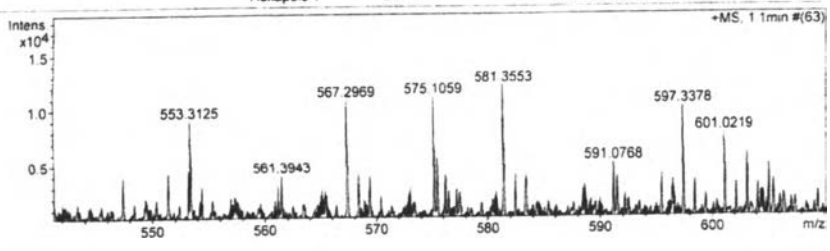
Mass Spectrum List Report

Analysis Info

Analysis Name	OSCUJS561105001.d	Acquisition Date	11/5/2013 12:21:39 PM
Method	Natee20130403.m	Operator	Administrator
Sample Name	Ox-DPM-2T	Instrument	micrOTOF 72
	Ox-DPM-2T		

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Corrector Fill	75 V
Scan Range	n/a	Capillary Exit	200.0 V	Set Pulsar Pull	398 V
Scan Begin	50 m/z	Hexapole RF	400.0 V	Set Pulsar Push	380 V
Scan End	3000 m/z	Skimmer 1	54.4 V	Set Reflector	1300 V
		Hexapole 1	21.4 V	Set Flight Tube	9000 V
				Set Detector TOF	1910 V



#	m/z	I	I %	S/N	FWHM	Res.
1	413.2654	24955	28.0	39.0	0.0609	6787
2	414.2648	8089	9.1	12.3	0.0812	5100
3	437.1931	89224	100.0	140.5	0.0638	6872
4	438.1965	22127	24.8	34.5	0.0647	6773
5	453.1691	14337	16.1	22.2	0.0663	6833
6	493.3066	9975	11.2	15.2	0.0794	6215
7	537.3296	10890	12.2	16.6	0.0894	6011
8	553.3125	9042	10.1	13.7	0.0847	6530
9	567.2969	10824	12.1	16.7	0.1070	5302
10	575.1059	11068	12.4	17.1	0.0833	6905
11	581.3553	12108	13.6	18.9	0.0948	6133
12	597.3378	10103	11.3	15.7	0.0882	6775
13	611.3248	9762	10.9	15.3	0.1184	5162
14	615.0385	83846	94.0	136.9	0.0910	6760
15	616.0413	30789	34.5	49.8	0.0910	6772
16	617.0385	59593	66.8	97.2	0.0879	7019
17	618.0375	24087	27.0	38.9	0.0912	6777
18	619.0355	38759	43.4	63.0	0.0893	6932
19	620.0372	12660	14.2	20.1	0.0948	6539
20	625.3851	11209	12.6	17.8	0.1014	6170
21	641.3647	9758	10.9	15.5	0.0995	6444
22	647.0659	24443	27.4	40.0	0.0930	6954
23	648.0687	8667	9.7	13.7	0.0950	6824
24	649.0611	18458	20.7	30.0	0.0951	6824
25	650.0638	8126	9.1	12.8	0.0903	7198
26	651.0578	11817	13.2	19.0	0.1042	6251
27	655.3564	8730	9.8	13.9	0.1299	5045
28	669.4128	10391	11.6	16.8	0.0988	6773
29	685.4024	9668	10.8	15.7	0.1112	6166
30	713.4370	8601	9.6	14.1	0.1069	6673

Figure A-35: HR-ESI-mass spectrum of compound **14c**

APPENDIX B

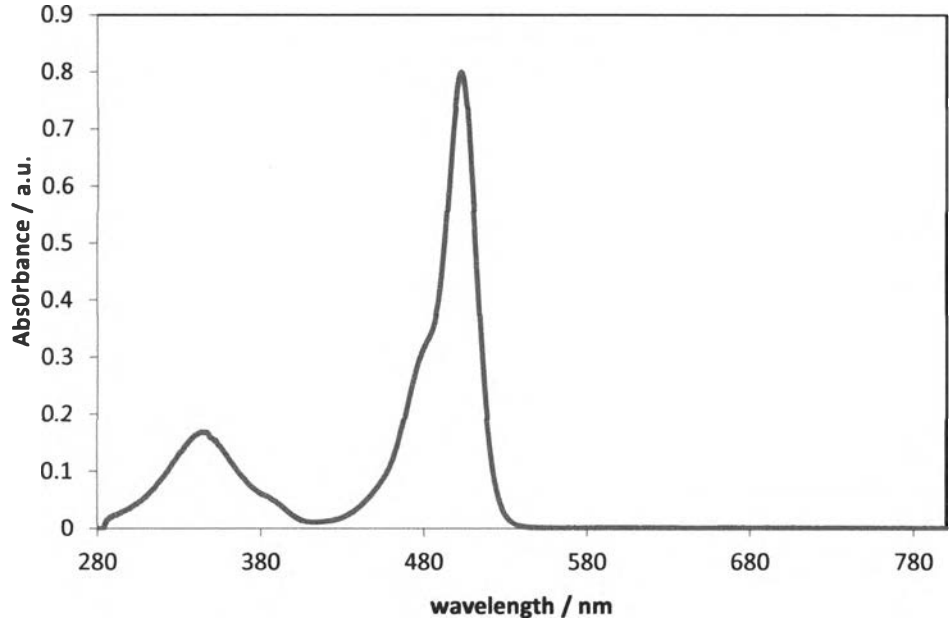


Figure B-1: Absorption spectrum of compound **1** in toluene

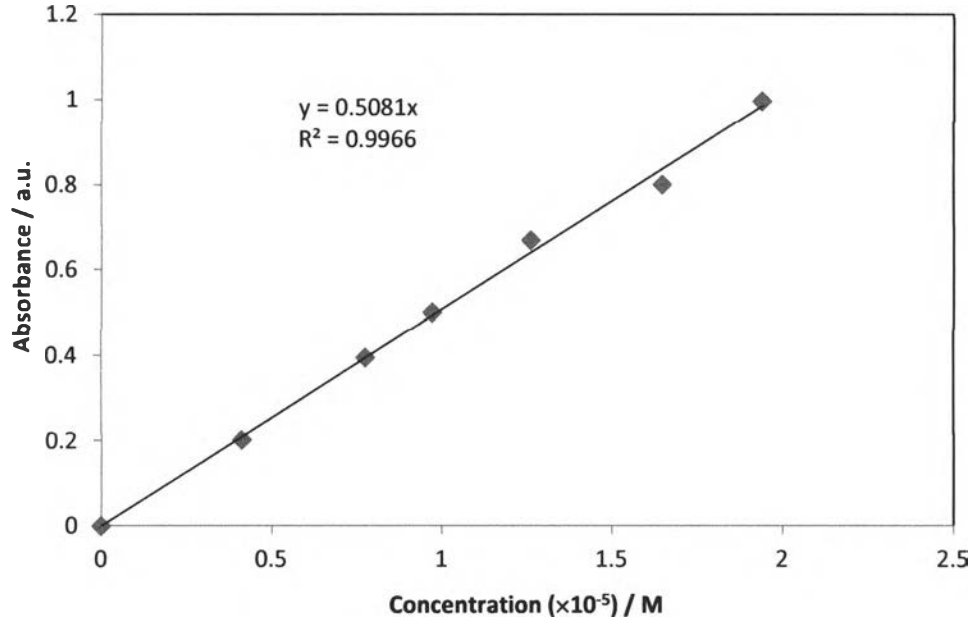


Figure B-2: Calibration curve for determining a molar absorptivity of compound **1** in toluene (λ_{abs} = 503 nm)

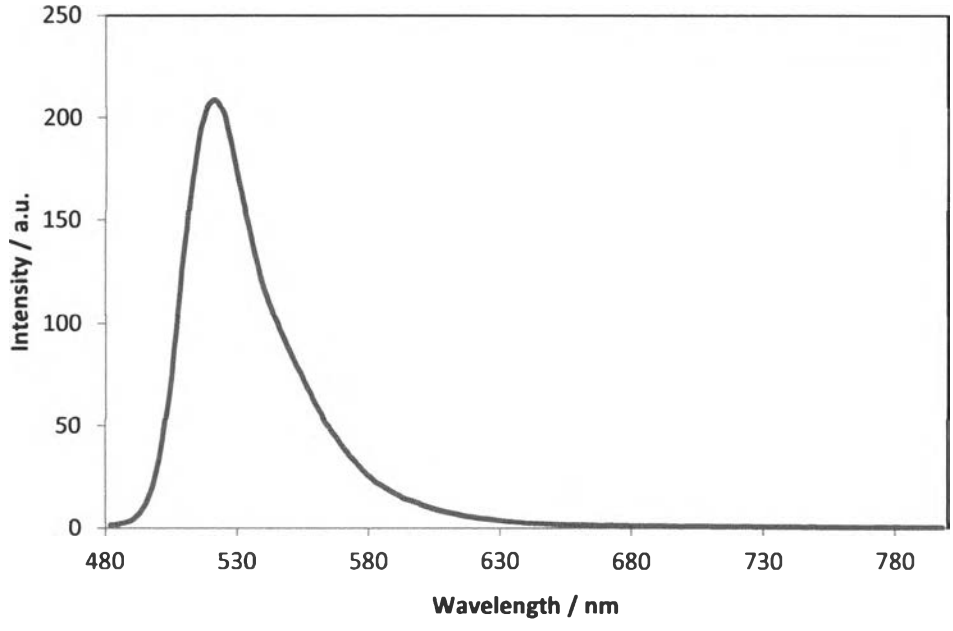


Figure B-3: Emission spectrum of compound **1** in toluene (λ_{ex} = 470 nm)

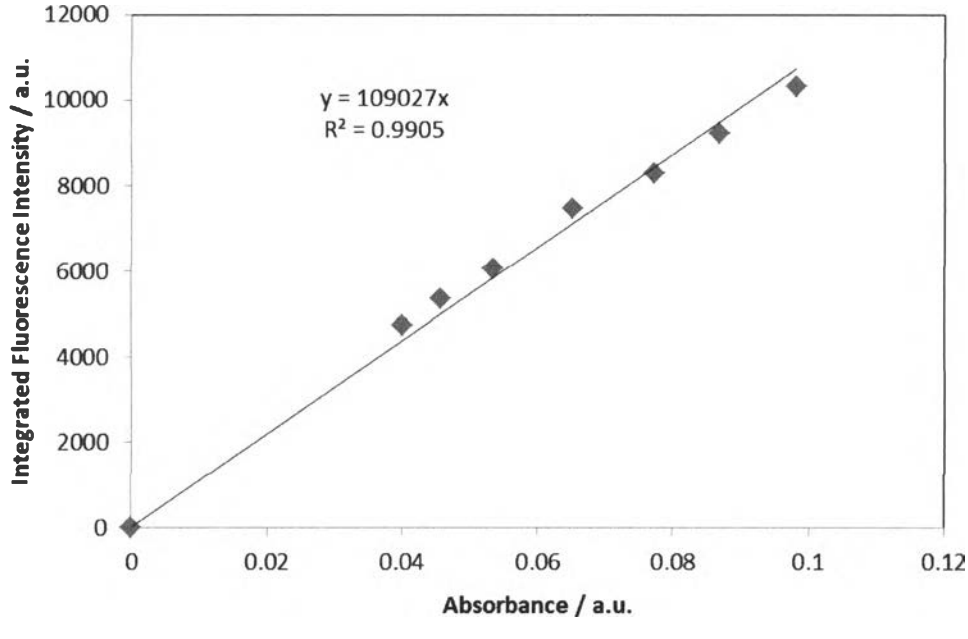


Figure B-4: *Relationship between absorbance and integrated intensity* of compound **1** in toluene

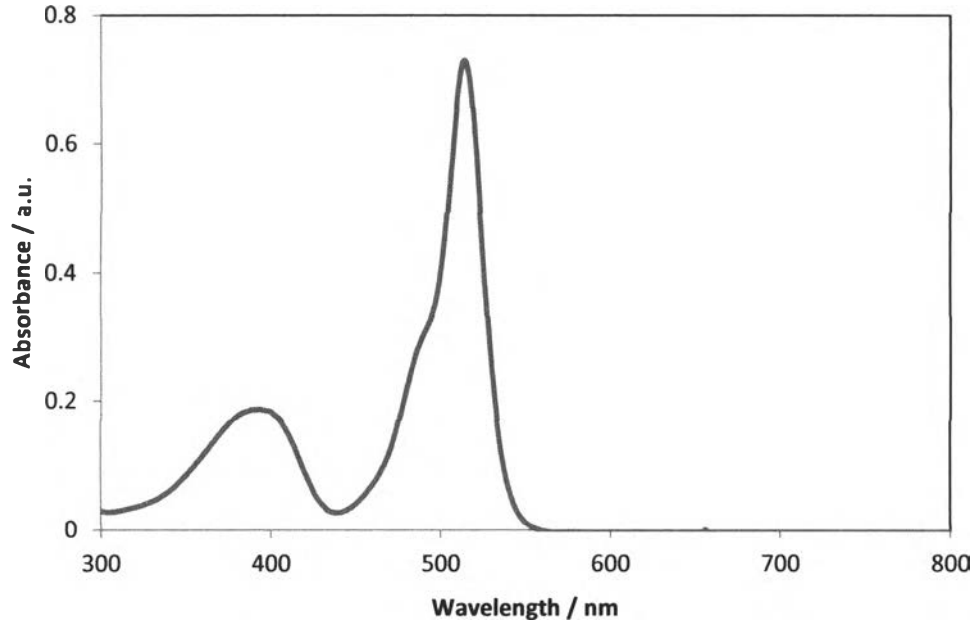


Figure B-5: Absorption spectrum of compound **2** in toluene

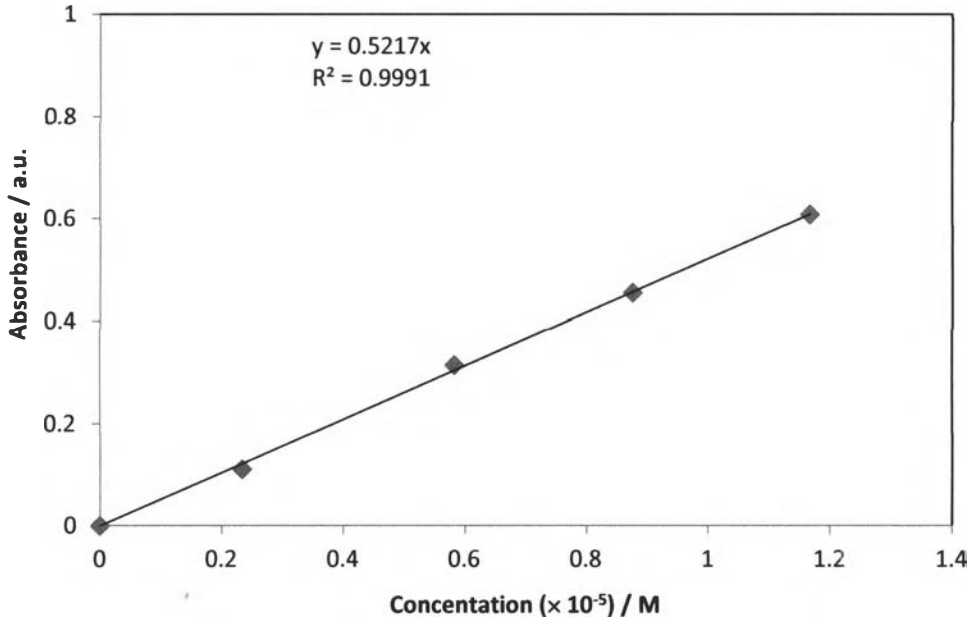


Figure B-6: Calibration curve for determining a molar absorptivity of compound **2** in toluene (λ_{abs} = 514 nm)

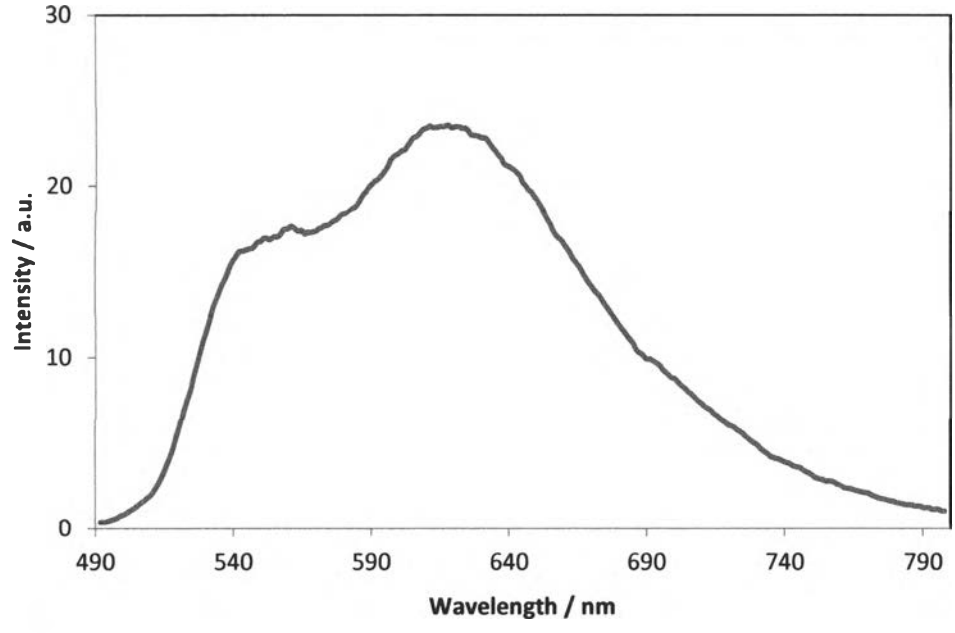


Figure B-7: Emission spectrum of compound **2** in toluene (λ_{ex} = 480 nm)

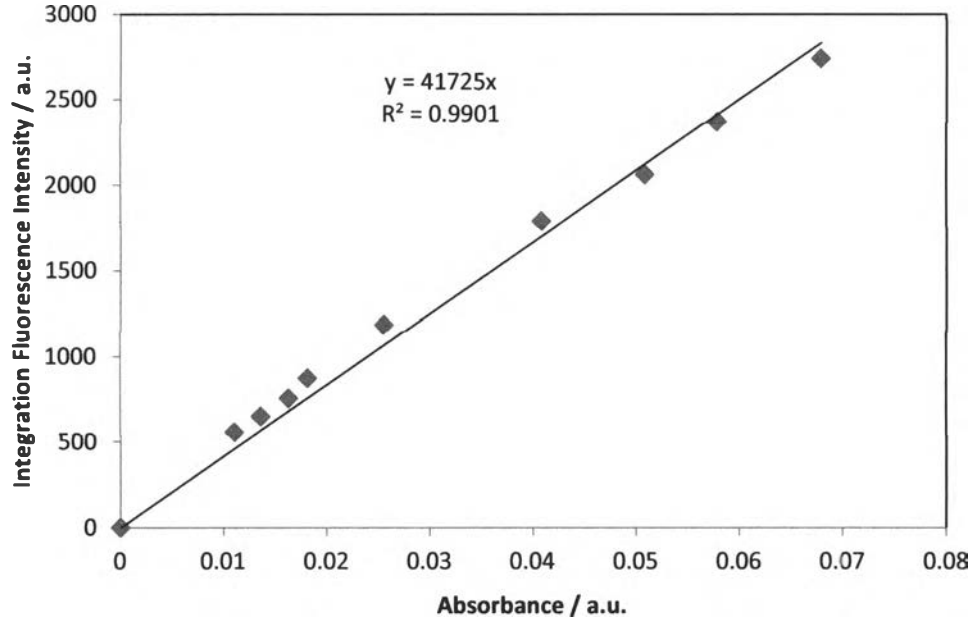


Figure B-8: Relationship between absorbance and integrated intensity of compound **2** in toluene

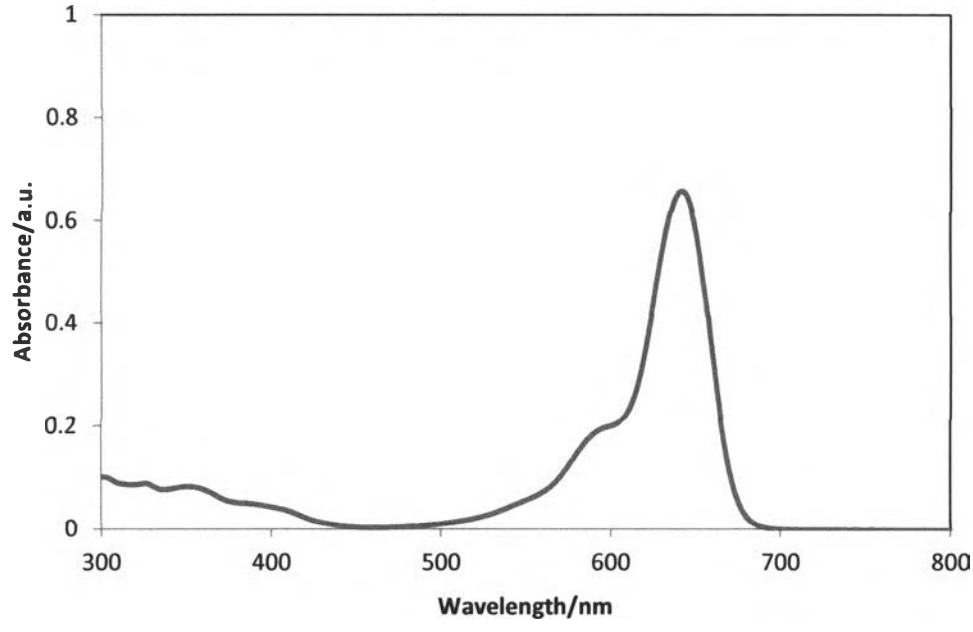


Figure B-9: Absorption spectrum of compound **3a** in toluene

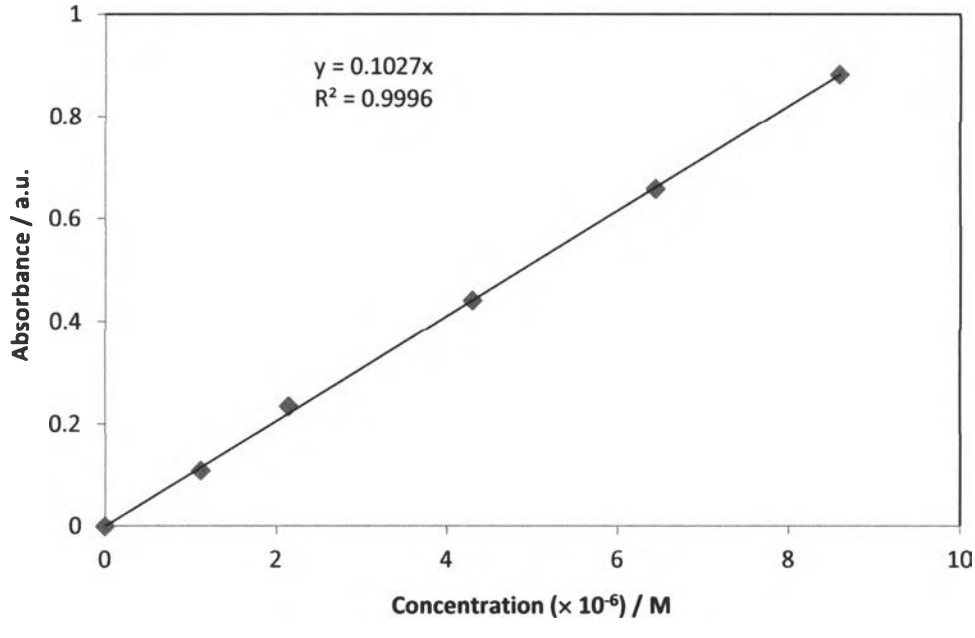


Figure B-10: Calibration curve for determining a molar absorptivity of compound **3a** in toluene (λ_{abs} = 642 nm)

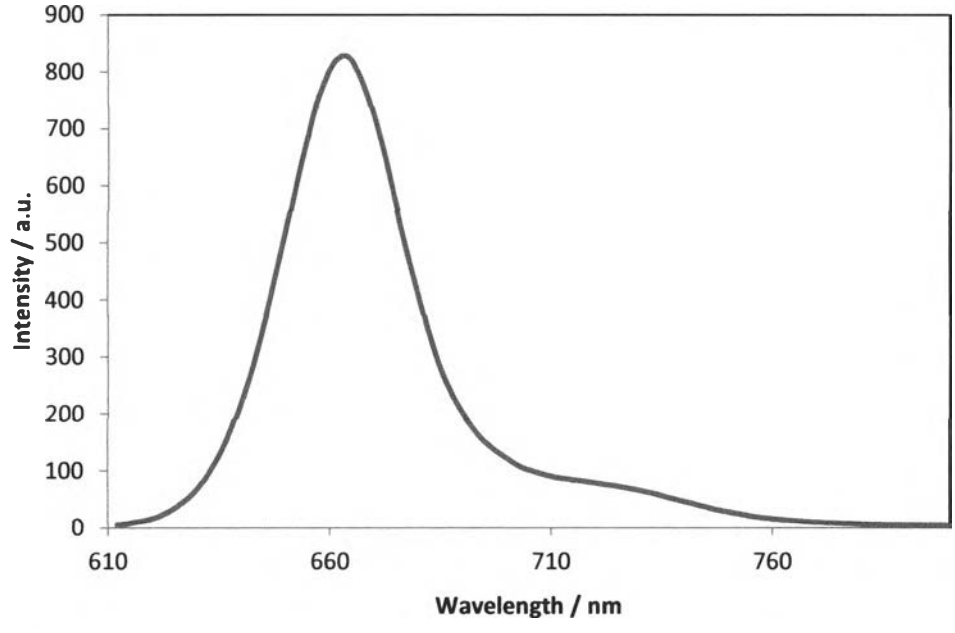


Figure B-11: Emission spectrum of compound **3a** in toluene (λ_{ex} = 600 nm)

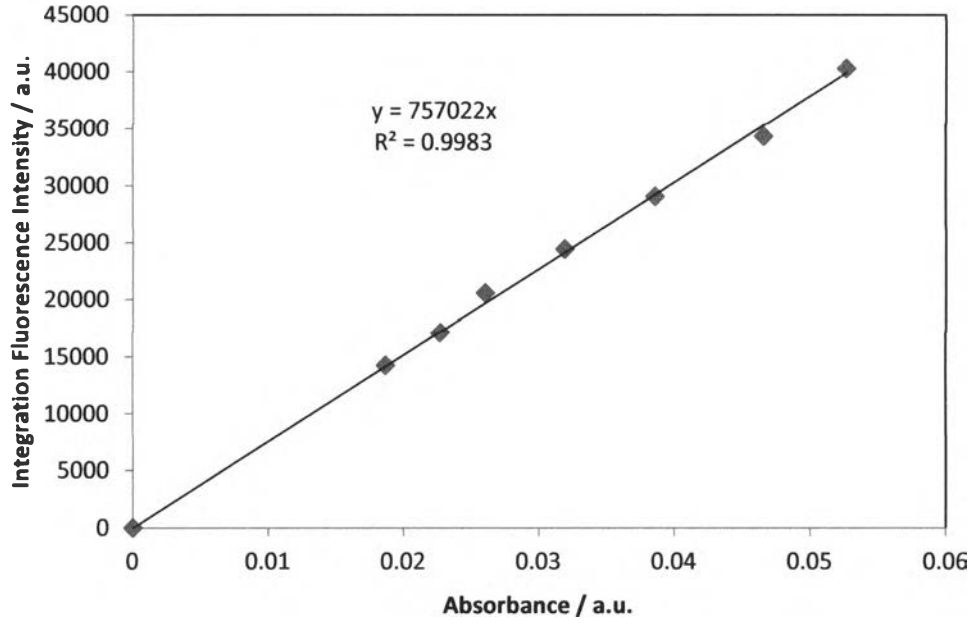


Figure B-12: Relationship between absorbance and integrated intensity of compound **3a** in toluene

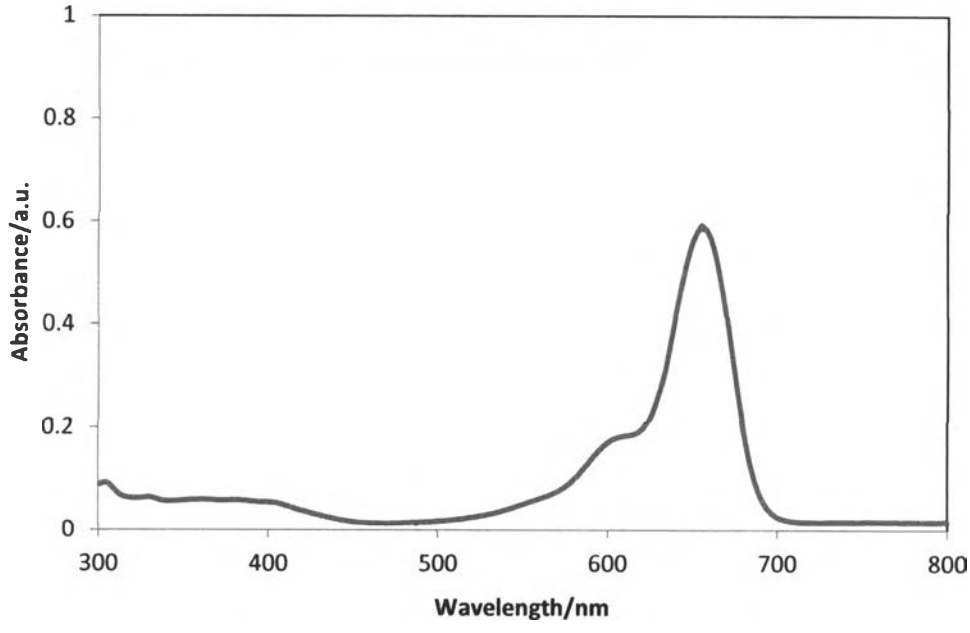


Figure B-13: Absorption spectrum of compound **3b** in toluene

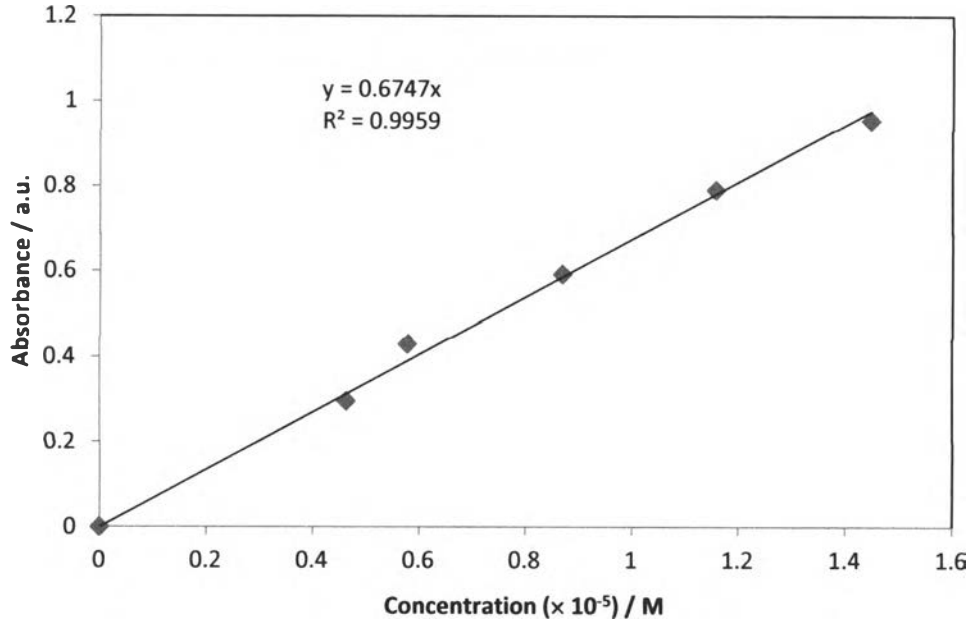


Figure B-14: Calibration cure for determining a molar absorptivity of compound **3b** in toluene (λ_{abs} = 656 nm)

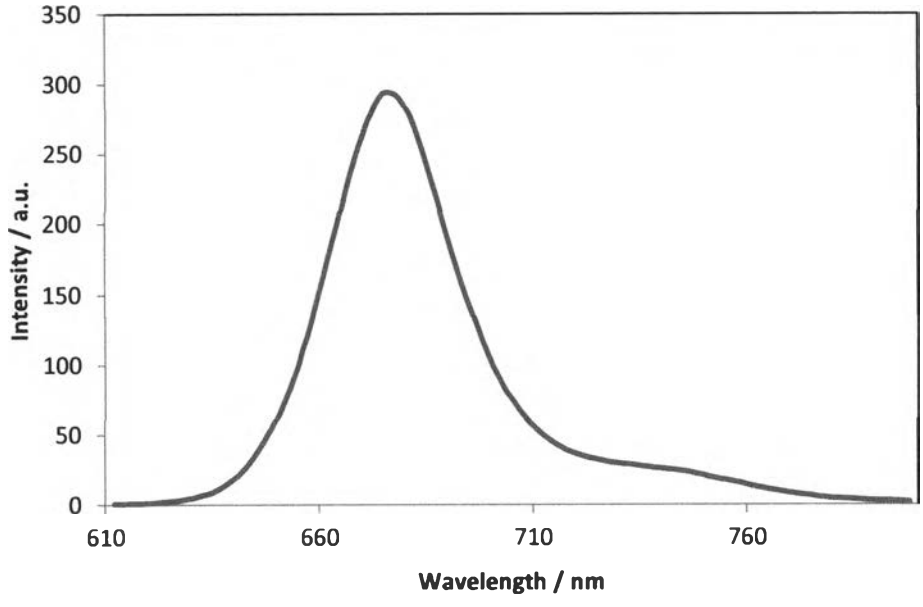


Figure B-15: Emission spectrum of compound **3b** in toluene (λ_{ex} = 600 nm)

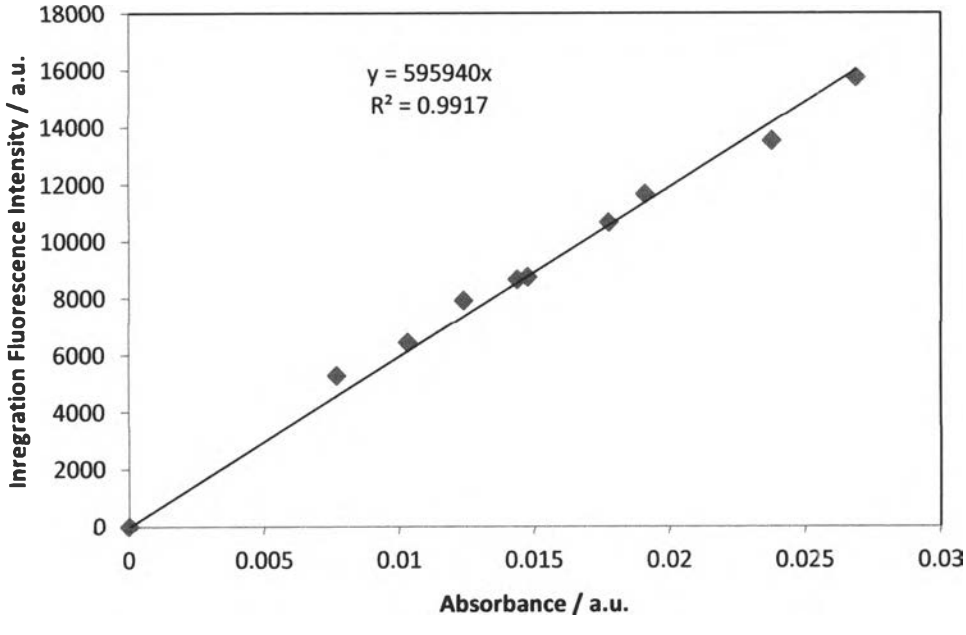


Figure B-16: Relationship between absorbance and integrated intensity of compound **3b** in toluene

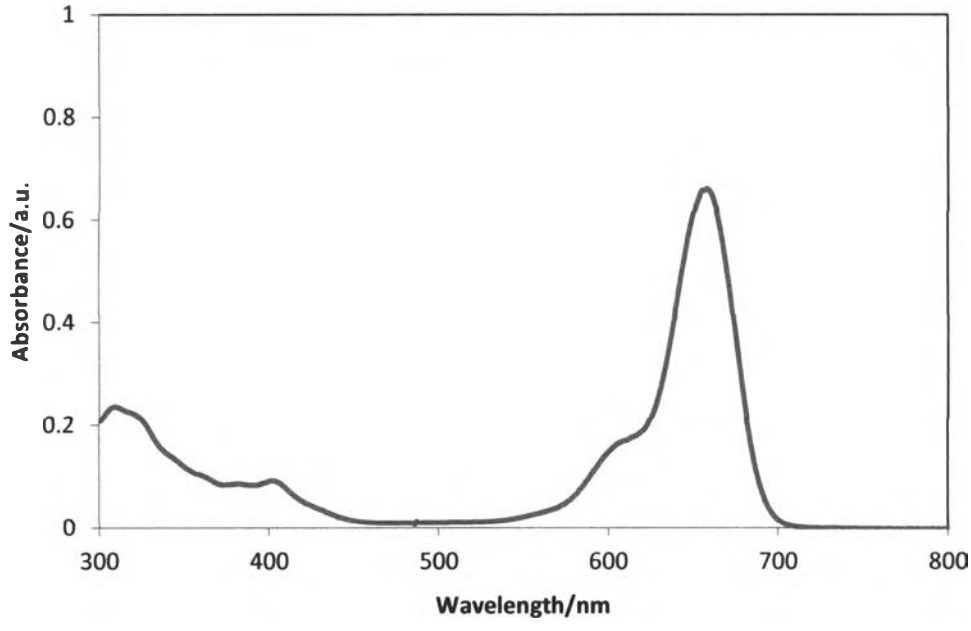


Figure B-17: Absorption spectrum of compound **3c** in toluene

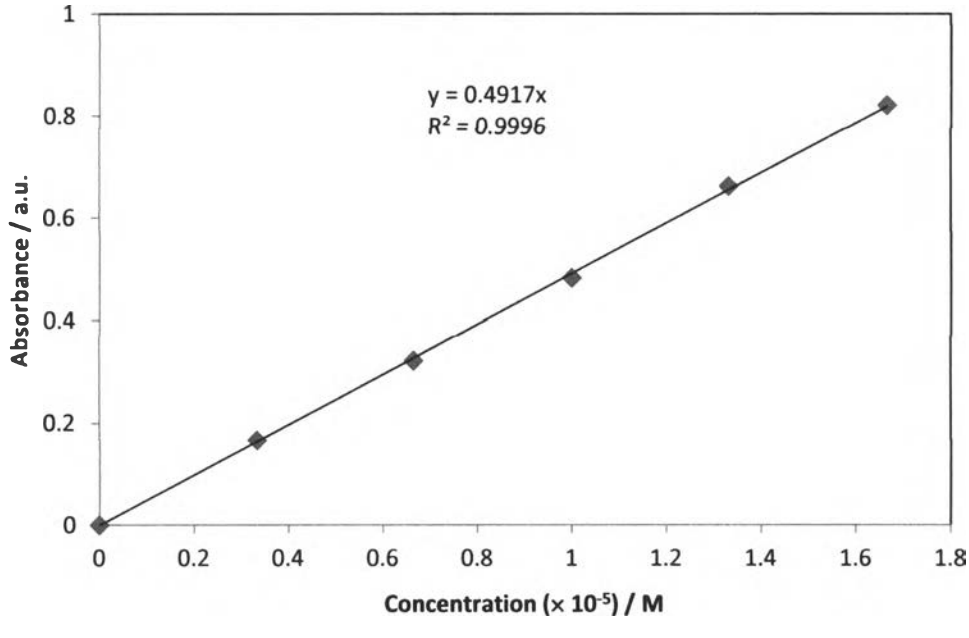


Figure B-18: Calibration curve for determining a molar absorptivity of compound 3c in toluene (λ_{abs} = 658 nm)

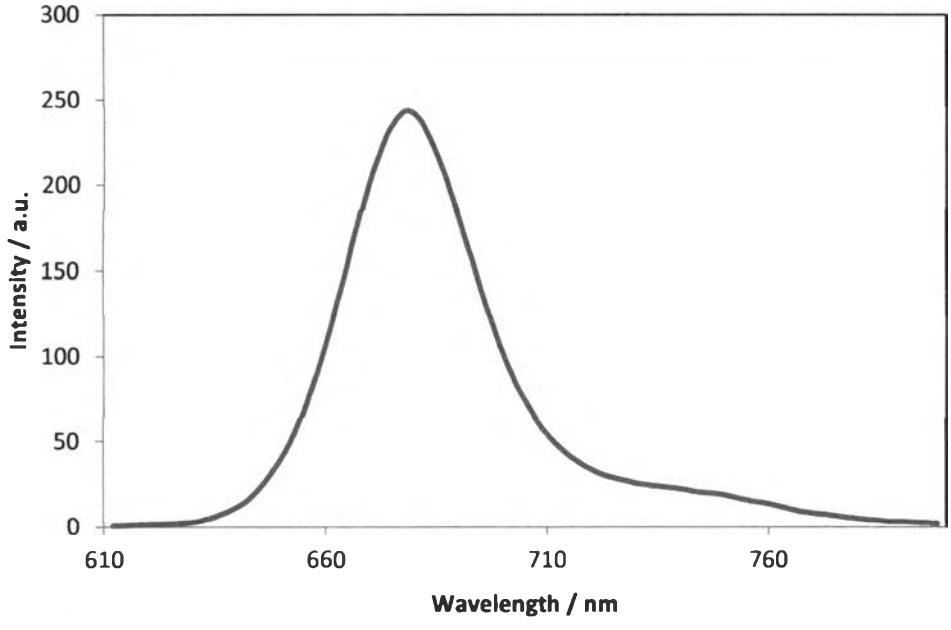


Figure B-19: Emission spectrum of compound **3c** in toluene (λ_{ex} = 600 nm)

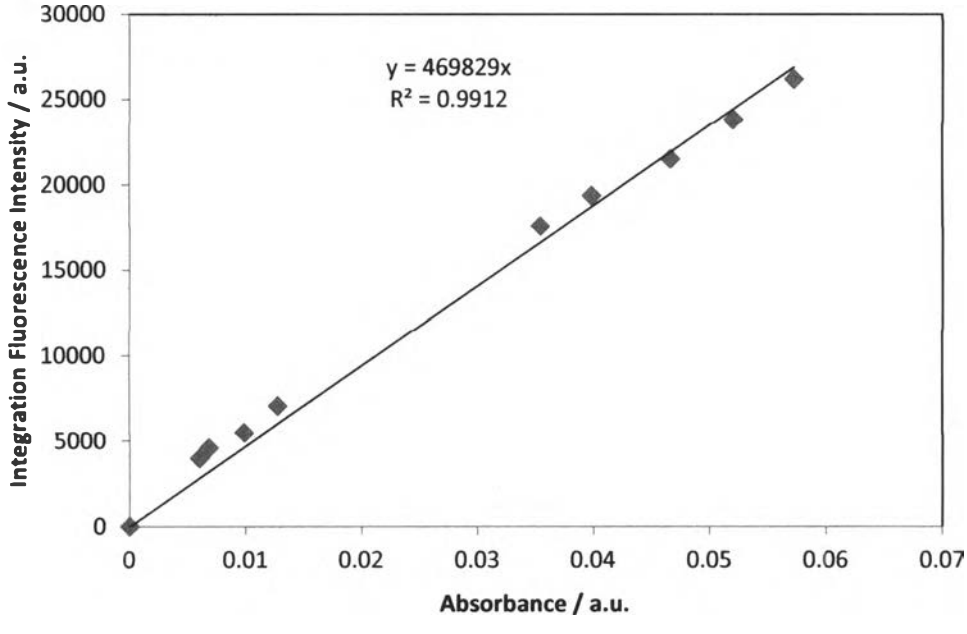


Figure B-20: Relationship between absorbance and integrated intensity of compound **3c** in toluene

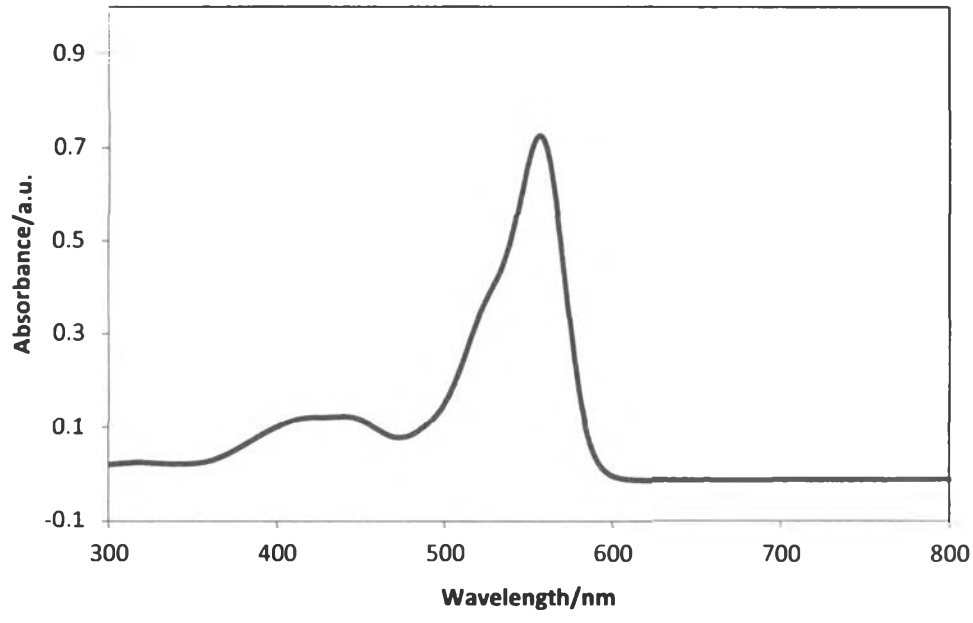


Figure B-21: Absorption spectrum of compound **4b** in toluene

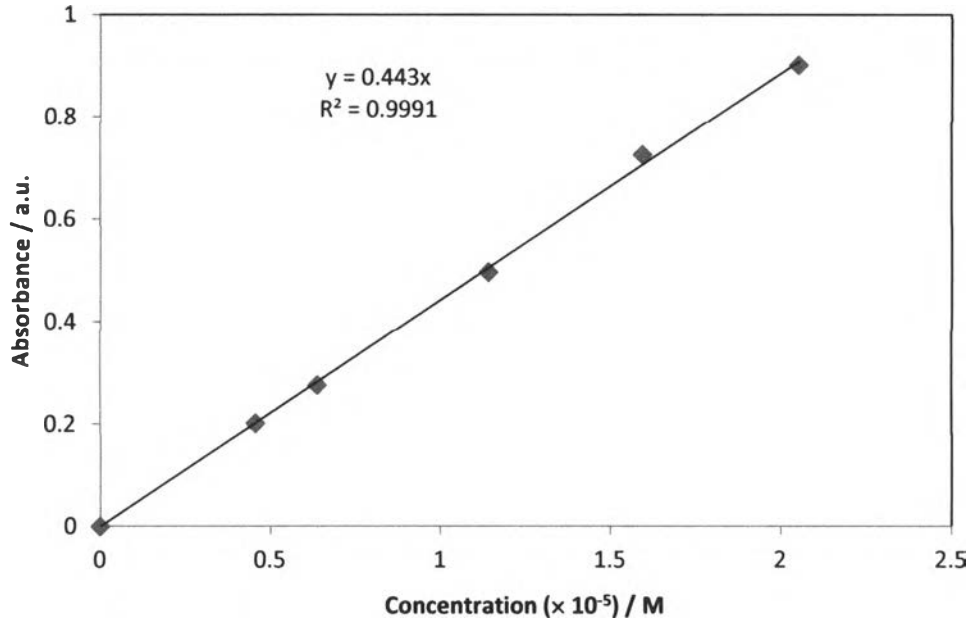


Figure B-22: Calibration curve for determining a molar absorptivity of compound **4b** in toluene (λ_{abs} = 556 nm)

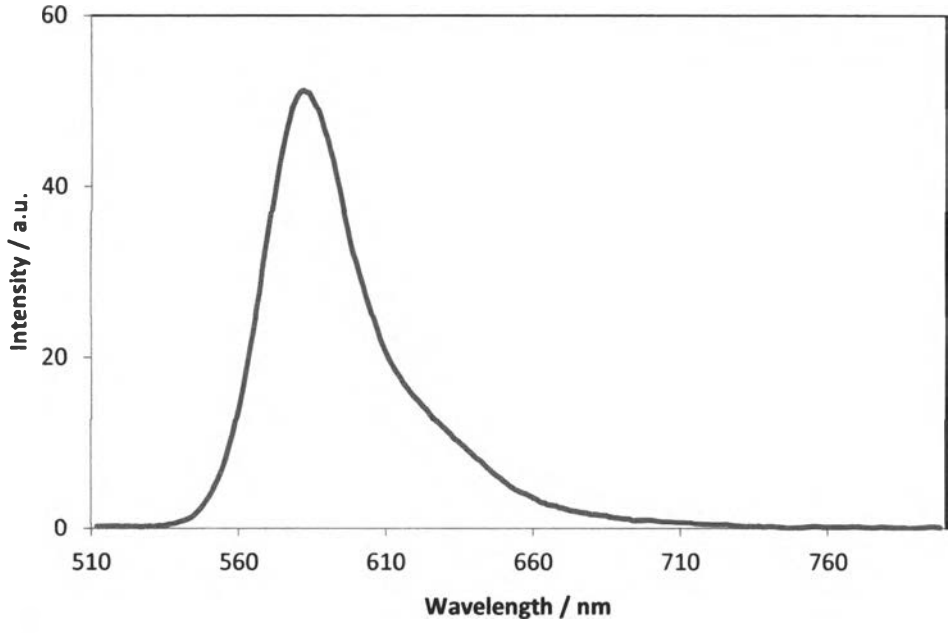


Figure B-23: Emission spectrum of compound **4b** in toluene (λ_{ex} = 500 nm)

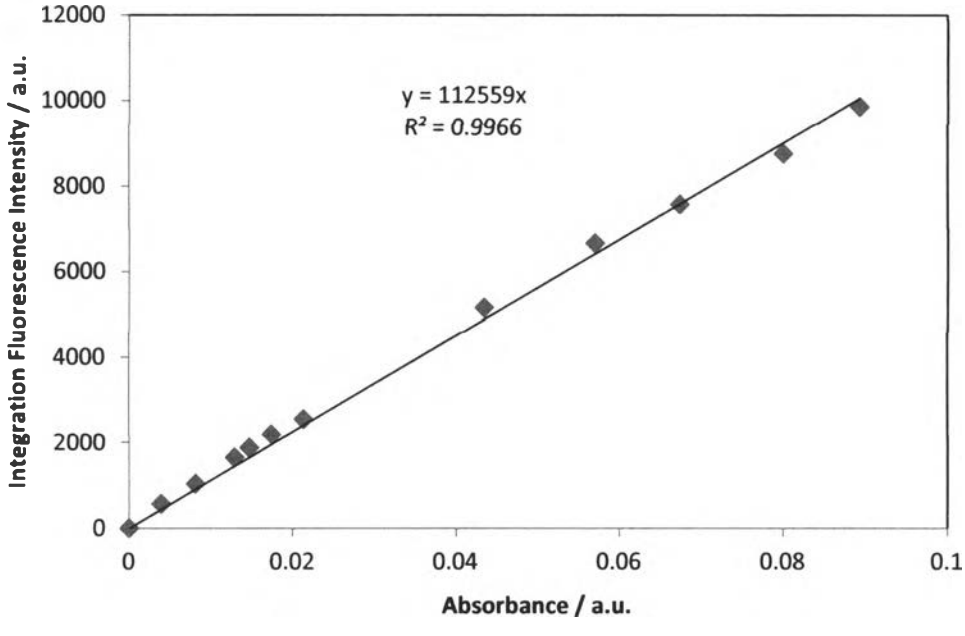


Figure B-24: Relationship between absorbance and integrated intensity of compound **4b** in toluene

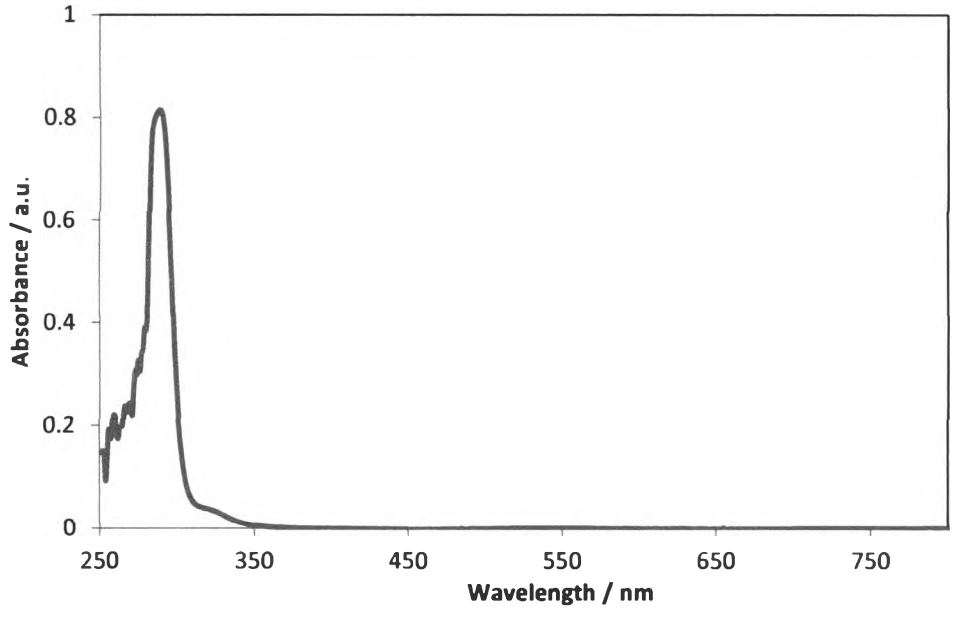


Figure B-25: Absorption spectrum of compound **13a** in toluene

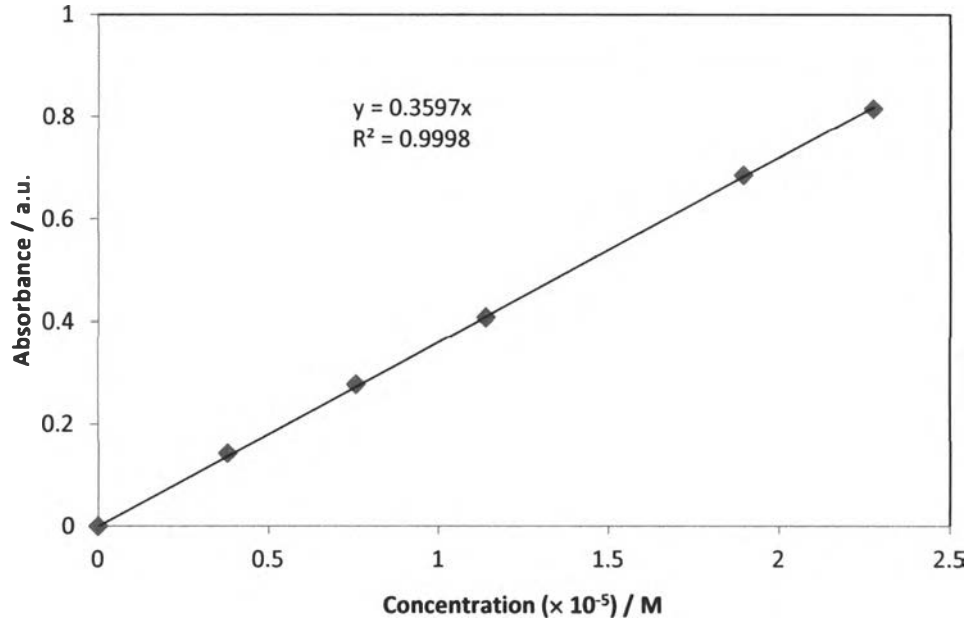


Figure B-26: Calibration curve for determining a molar absorptivity of compound **13a** in toluene (λ_{abs} = 289 nm)

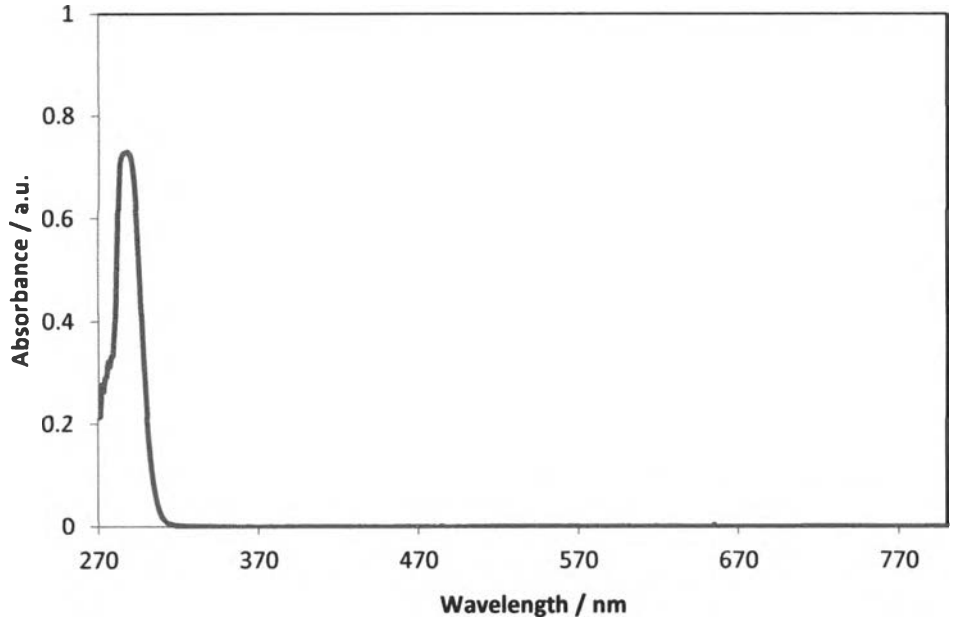


Figure B-27: Absorption spectrum of compound **13b** in toluene

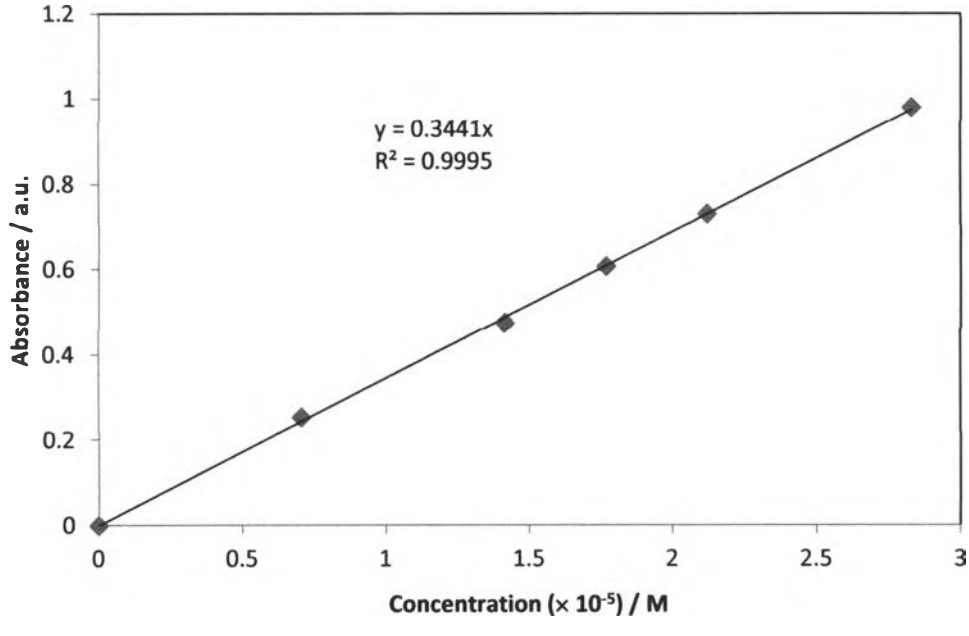


Figure B-28: Calibration cure for determining a molar absorptivity of compound **13b** in toluene (λ_{abs} = 288 nm)

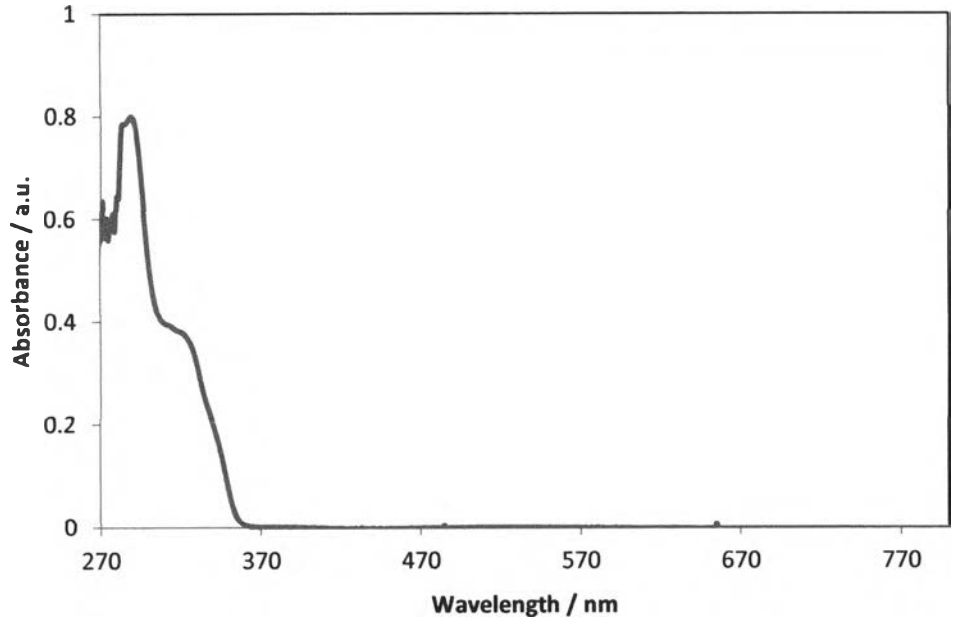


Figure B-29: Absorption spectrum of compound **13c** in toluene

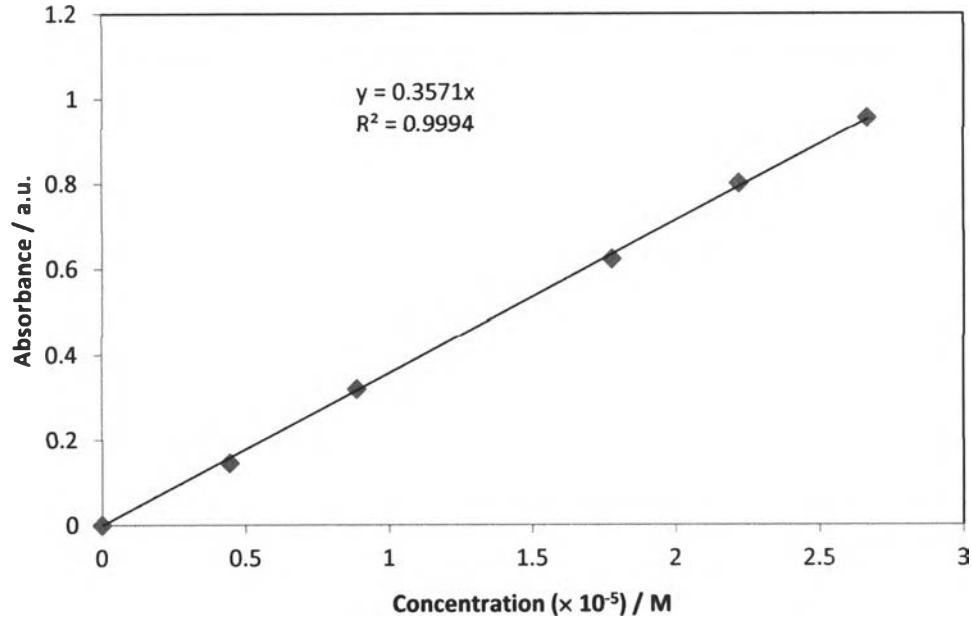


Figure B-30: Calibration curve for determining a molar absorptivity of compound **13c** in toluene (λ_{abs} = 289 nm)

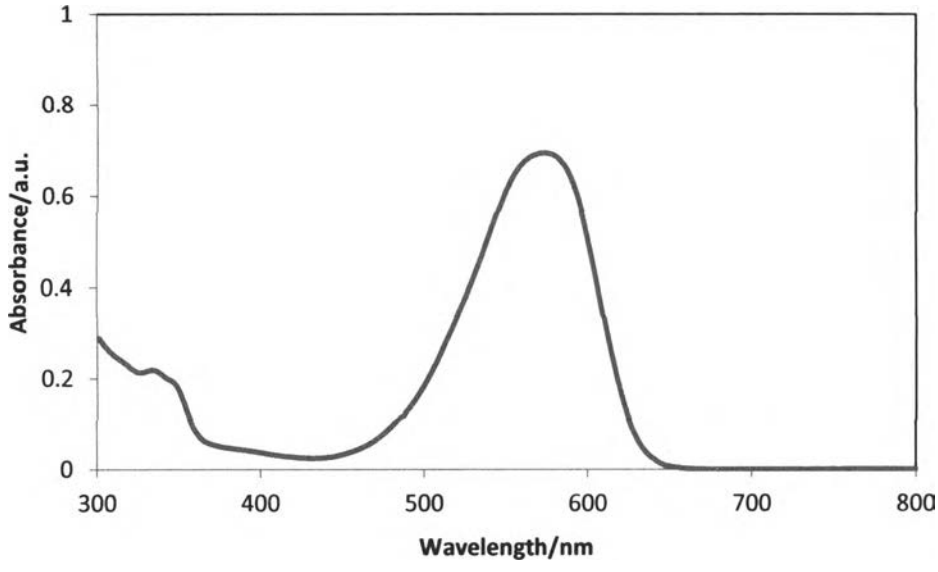


Figure B-31: *Absorption spectrum of compound* **14a** *in toluene*

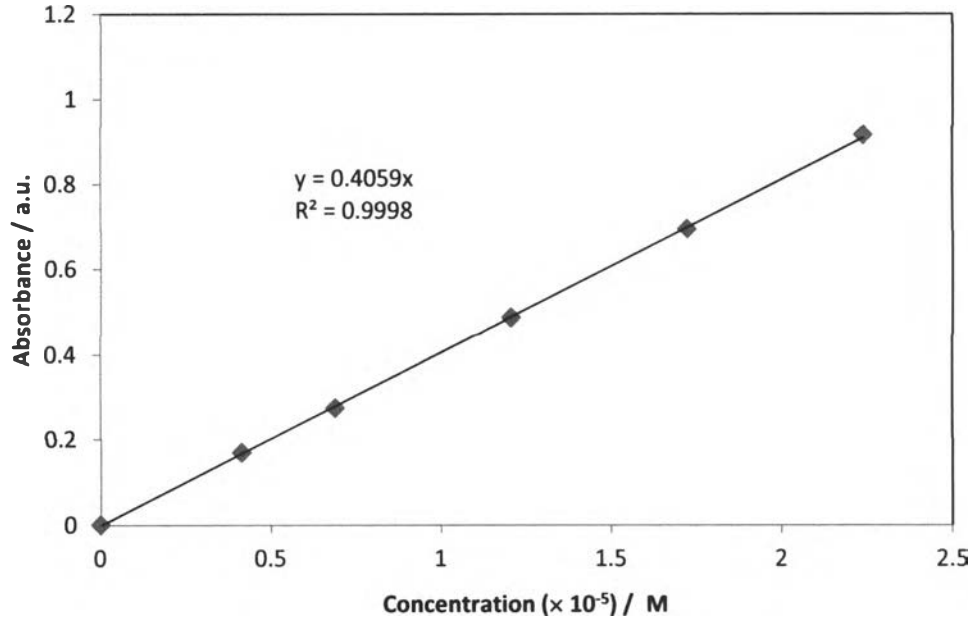


Figure B-32: Calibration cure for determining a molar absorptivity of compound **14a** in toluene (λ_{abs} = 574 nm)

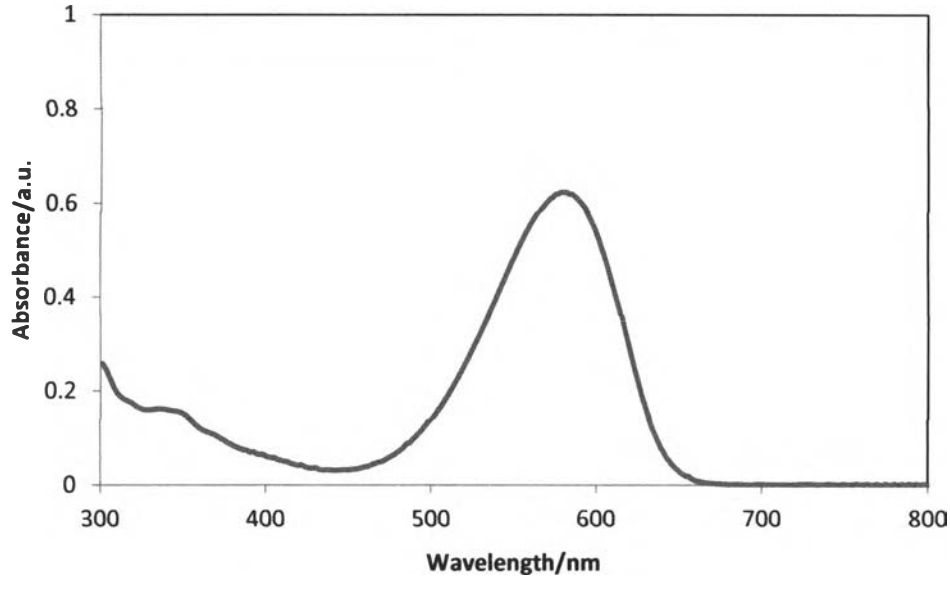


Figure B-33: Absorption spectrum of compound **14b** in toluene

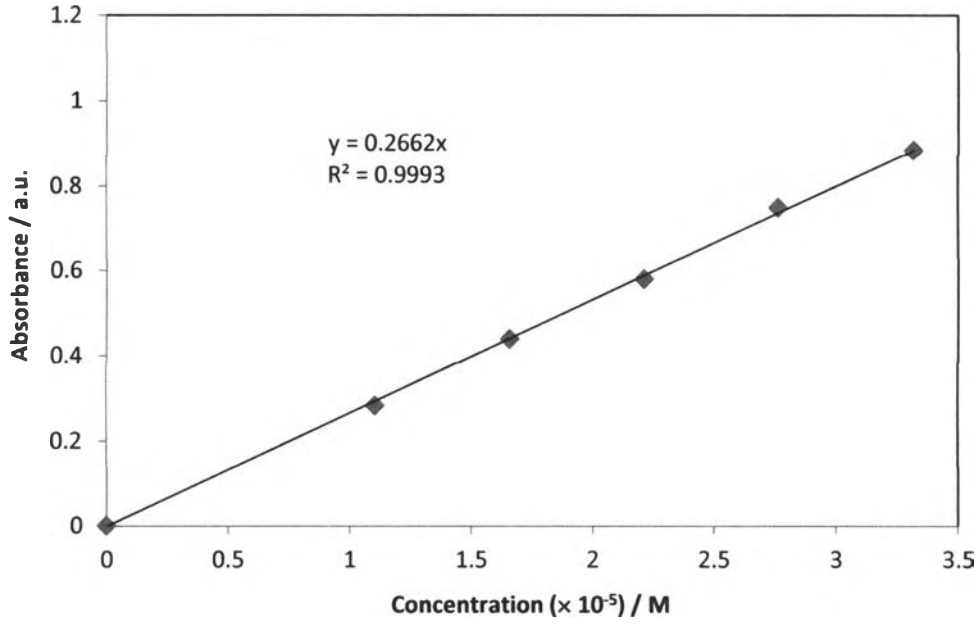


Figure B-34: Calibration curve for determining a molar absorptivity of compound **14b** in toluene (λ_{abs} = 579 nm)

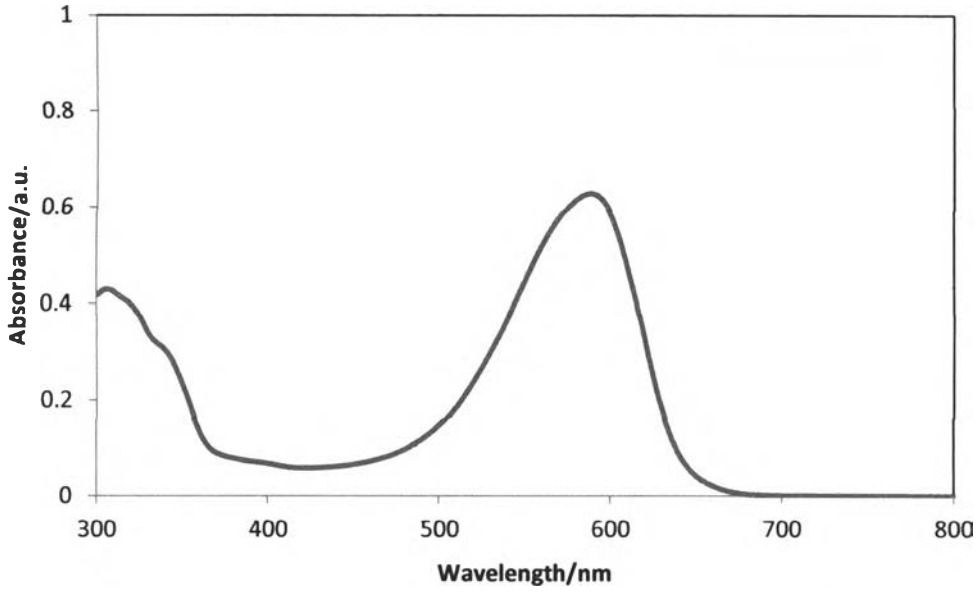


Figure B-35: Absorption spectrum of compound **14c** in toluene

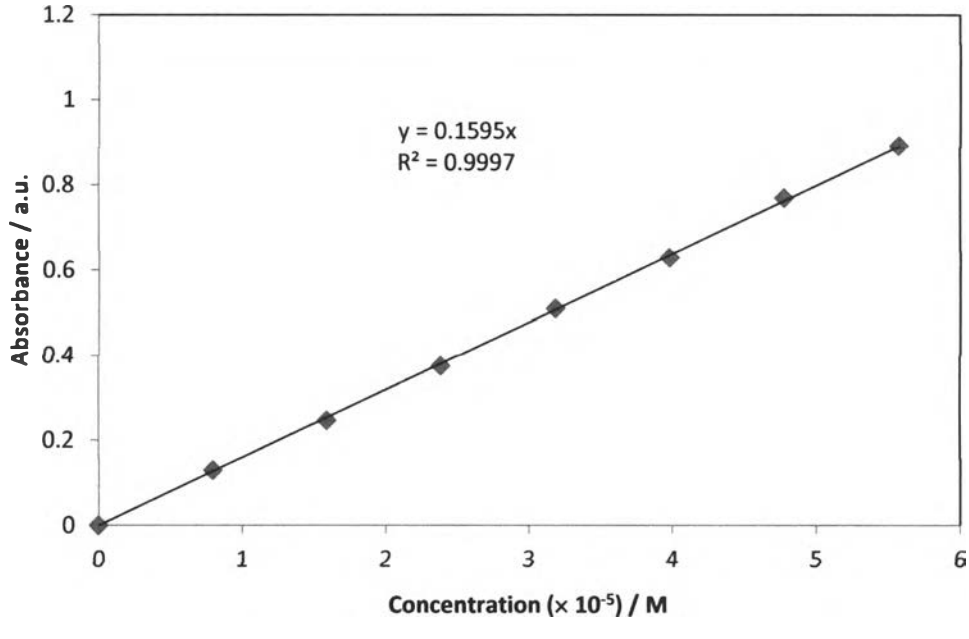


Figure B-36: Calibration curve for determining a molar absorptivity of compound **14c** in toluene (λ_{abs} = 589 nm)

VITA

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