

Linear Free Energy Relationship and Rate Study on a Silylation-Based Kinetic Resolution:

Mechanistic Insights

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Conversion and selectivity factor calculation:

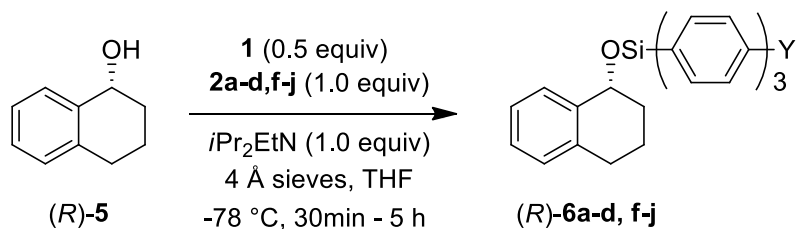
The enantiomeric excess (*ee*) was determined from HPLC. Conversion and selectivity factor for kinetic resolution was calculated based on following equations.

ee_s = *ee* of the recovered starting material

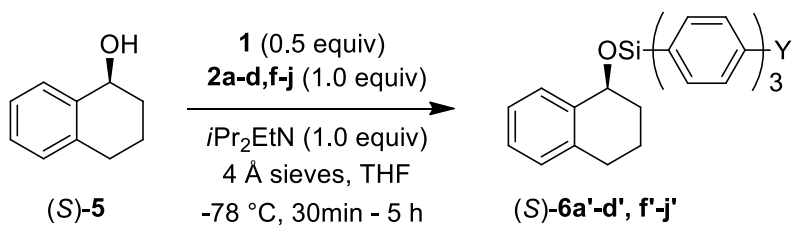
ee_p = *ee* of the product.

$$C = \frac{ee_s}{ee_s + ee_p} \qquad s = \frac{\ln[(1-C)(1-ee_s)]}{\ln[(1-C)(1+ee_s)]}$$

Rate data (Fast and slow enantiomer)



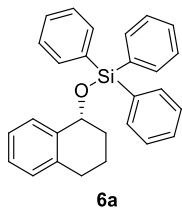
Entry	X	Trial 1 (mmol/min)	Trial 2 (mmol/min)	Average (mmol/min)
1	H	13.1	10.8	11.9
2	Br	66.3	66.2	66.3
3	Cl	70.4	64.6	67.5
4	F	32.1	31.1	31.6
5	OMe	0.10	0.08	0.09
6	Me	0.71	0.73	0.73
7	Et	0.38	0.34	0.36
8	<i>i</i> Pr	0.80	1.2	1.0
9	<i>t</i> Bu	0.25	0.33	0.29



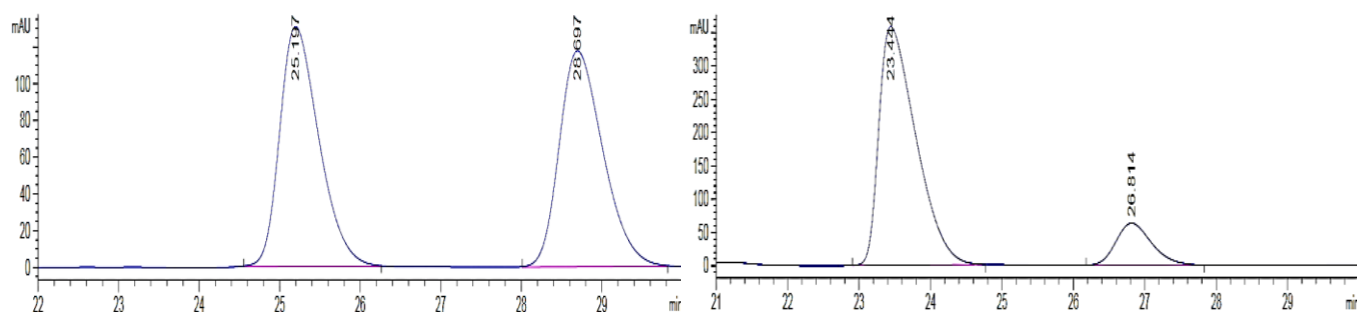
Entry	X	Trial 1 (mmol/min)	Trial 2 (mmol/min)	Average (mmol/min)
1	H	1.2	-	1.2
2	Br	9.5	-	9.5
3	<i>i</i> Pr	0.056	-	0.056
4	OMe	0.015	0.018	0.017

HPLC traces of silylated tetralol product

Kinetic Resolution for Table 2, Entry 1:

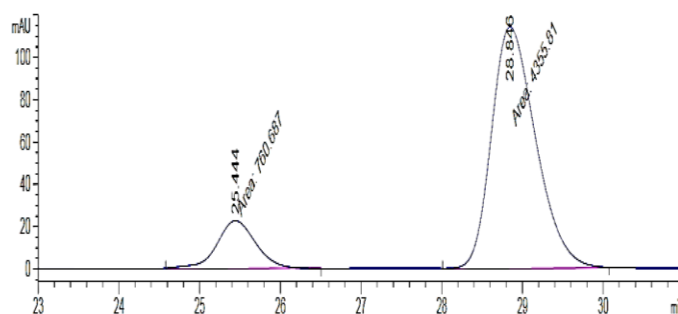


Starting material:



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %	Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	25.196	BB	0.5511	6.89224e4	1951.44873	49.8380	1	23.444	BB	0.5480	1.29037e4	358.46704	85.2557
2	28.698	BB	0.5992	6.93704e4	1797.63550	50.1620	2	26.814	BB	0.5395	2231.59790	63.42804	14.7443

Product:

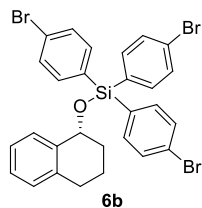


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	25.444	MM	0.5601	760.68744	22.63615	14.8673
2	28.846	MM	0.6356	4355.80957	114.22256	85.1327

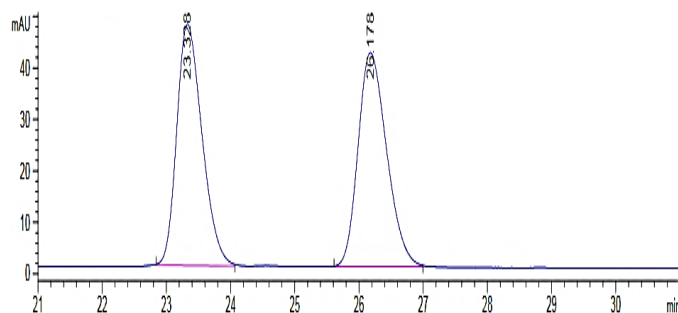
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	85:15	15:85	50.1	11.9	11
2	91:9	19:81	57	10.9	

er_{PR}% is of deprotected and purified product.

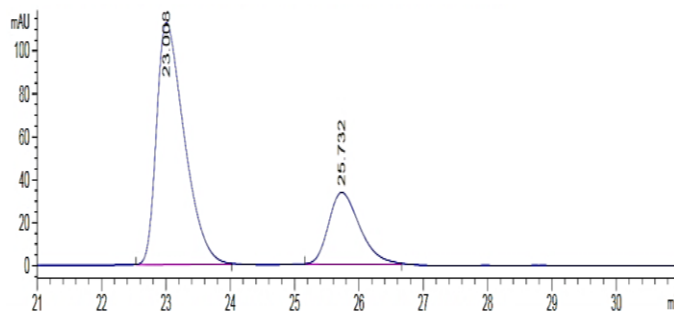
Kinetic Resolution for Table 2, Entry 2:



Starting material:

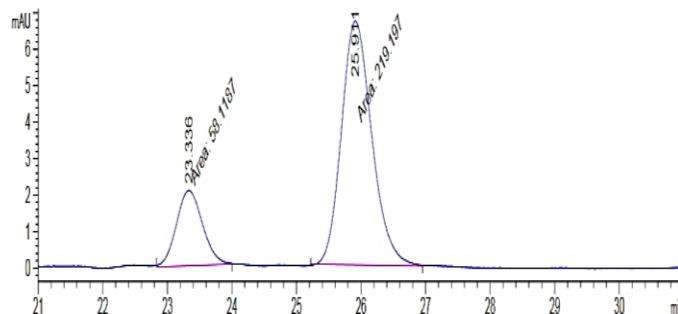


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.328	BB	0.4238	1285.45569	46.88860	49.9413
2	26.178	BB	0.4755	1288.47522	41.58698	50.0587



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.008	BB	0.4518	3378.60352	112.68031	74.9964
2	25.732	BB	0.5144	1126.41492	33.40834	25.0036

Product:

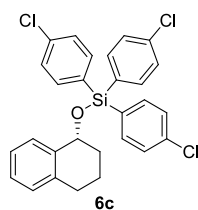


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.336	MM	0.4681	58.11871	2.06940	20.9576
2	25.911	MM	0.5463	219.19681	6.68709	79.0424

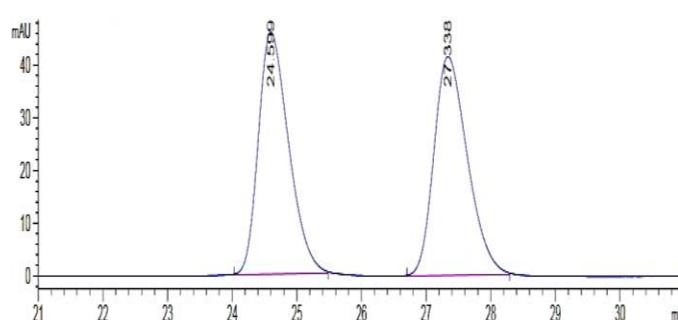
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	75:25	21:79	46.3	6.1	6.0
2	77:23	21:79	48	6.4	

er_{PR}% is of deprotected and purified product.

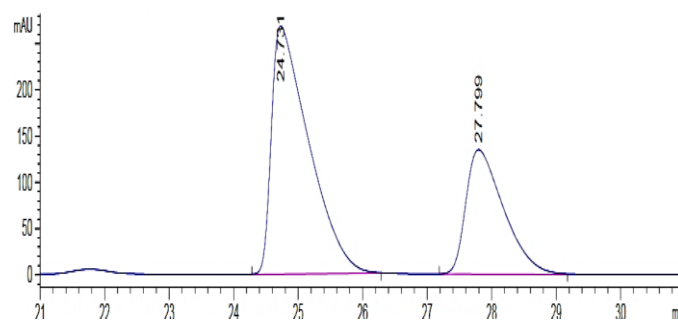
Kinetic Resolution for Table 2, Entry 3:



Starting material:

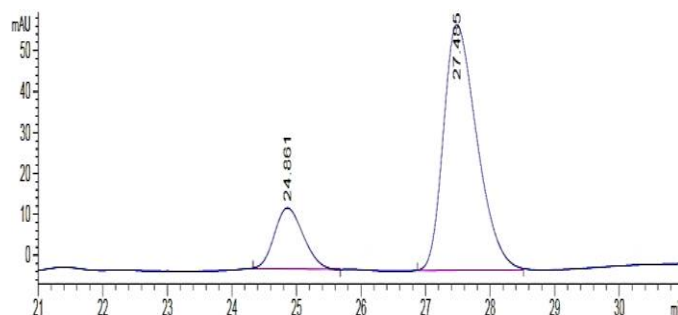


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.599	BB	0.4972	1497.35193	45.94353	50.0023
2	27.338	BB	0.5546	1497.21570	41.52792	49.9977



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.731	BB	0.5749	1.08043e4	268.26465	66.4400
2	27.799	BB	0.6103	5457.45361	134.53041	33.5600

Product:

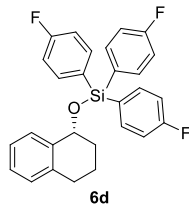


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.861	BB	0.4719	465.16849	14.91185	17.7226
2	27.485	BB	0.5540	2159.54883	59.99412	82.2774

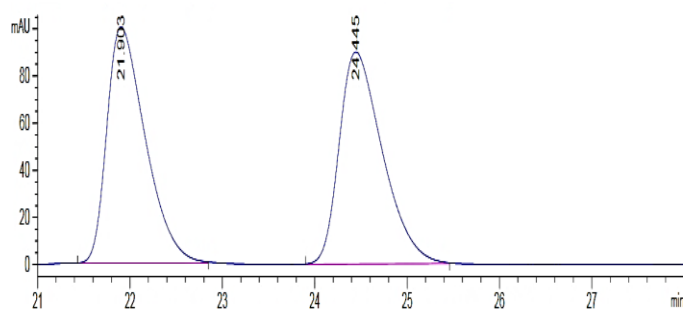
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	66:34	18:82	33.7	6.4	7.0
2	67:33	16:84	32.3	8.1	

er_{PR}% is of deprotected and purified product.

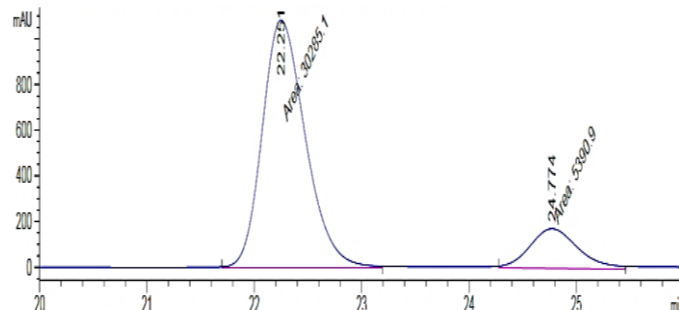
Kinetic Resolution for Table 2, Entry 4:



Starting material:

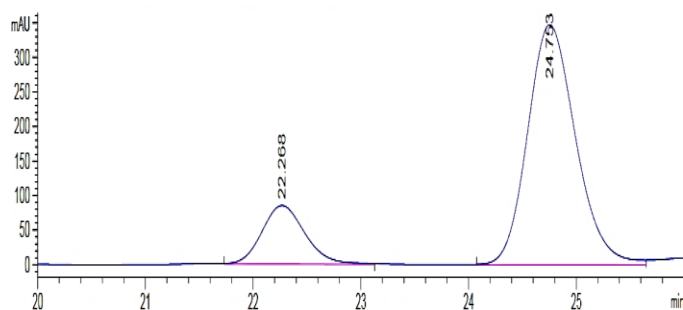


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	21.903	BB	0.4375	2900.34766	100.25016	49.7657
2	24.445	BB	0.4967	2927.65820	89.94560	50.2343



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	22.251	MM	0.4655	3.02851e4	1084.32898	84.8893
2	24.774	MM	0.5193	5390.89893	173.01578	15.1107

Product:

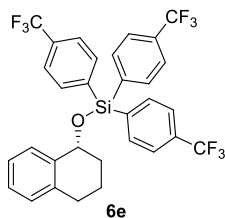


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	22.268	BB	0.4306	2341.05737	84.67052	17.8993
2	24.753	BB	0.4768	1.07380e4	347.25287	82.1007

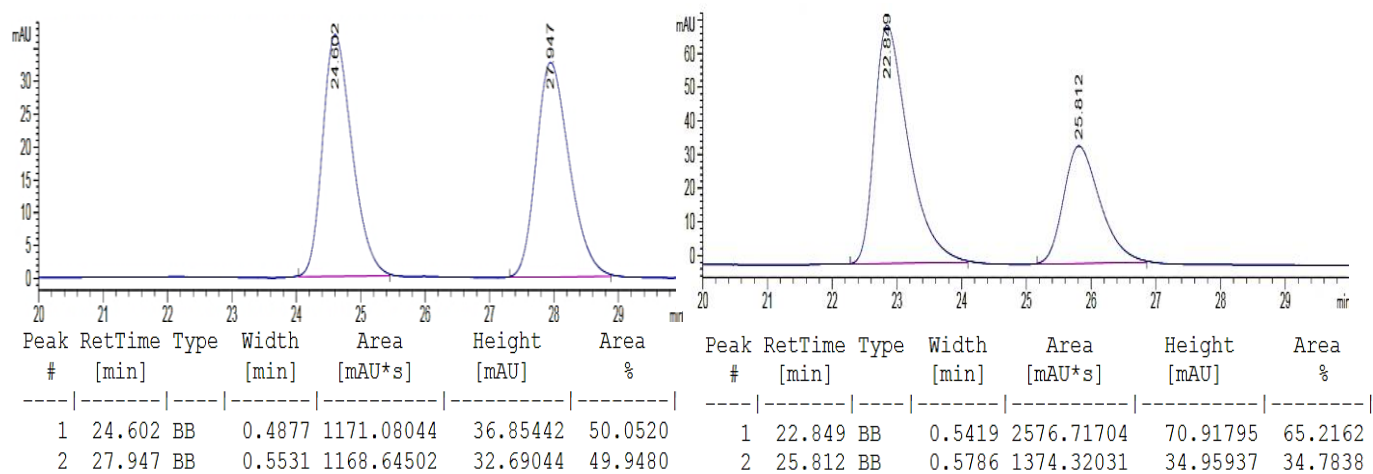
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	85:15	18:82	52.1	9.4	9.0
2	85:15	20:80	53.4	8.2	

er_{PR}% is of deprotected and purified product.

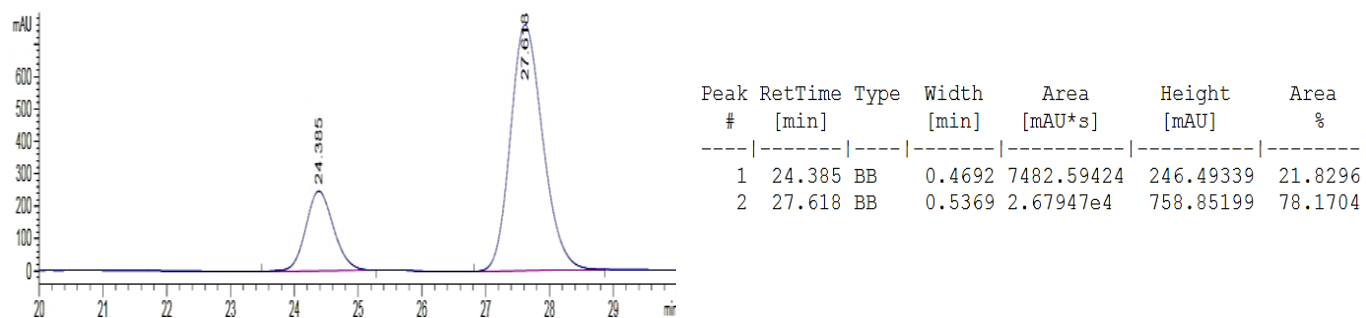
Kinetic Resolution for Table 2, Entry 5:



Starting material:



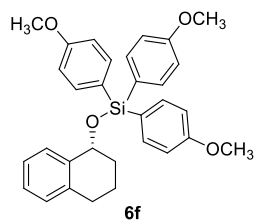
Product:



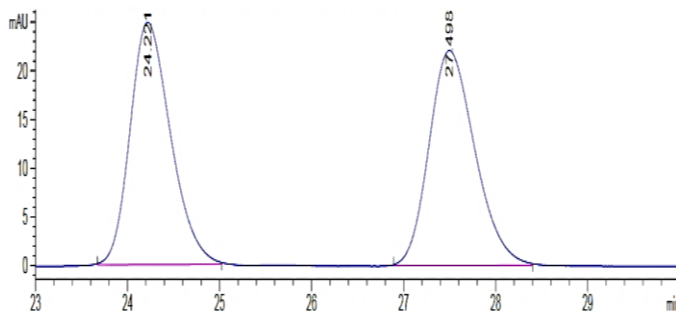
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	65:35	22:78	35	4.8	5.0
2	56:44	18:82	14.9	5.1	

er_{PR}% is of deprotected and purified product.

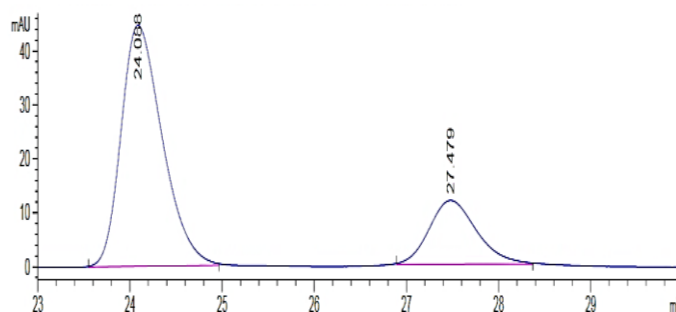
Kinetic Resolution for Table 2, Entry 6:



Starting material:

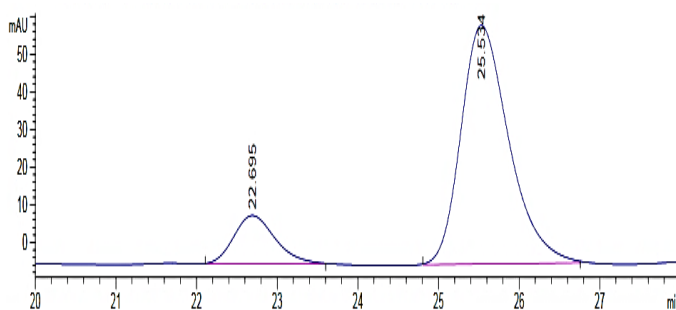


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.221	BB	0.4694	761.57214	24.86336	49.9692
2	27.498	BB	0.5259	762.51105	22.02779	50.0308



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.088	BB	0.4737	1385.41150	44.69129	76.6641
2	27.479	BB	0.5418	421.70688	11.83313	23.3359

Product:

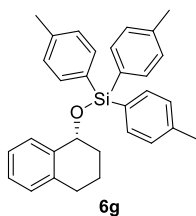


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	22.695	BB	0.5466	460.11896	12.85459	14.9280
2	25.534	BB	0.6326	2622.14087	63.38381	85.0720

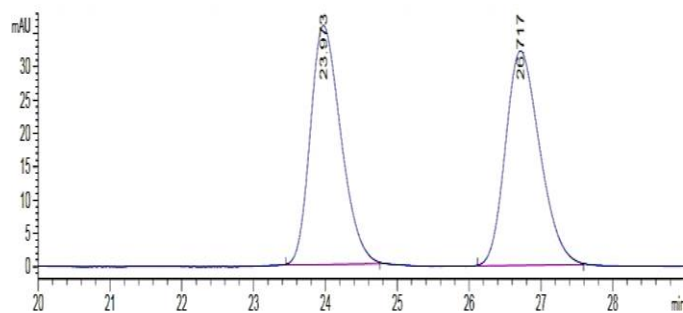
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	77:23	15:85	42.8	9.6	10
2	73:27	13:87	37.9	10.4	

er_{PR}% is of deprotected and purified product.

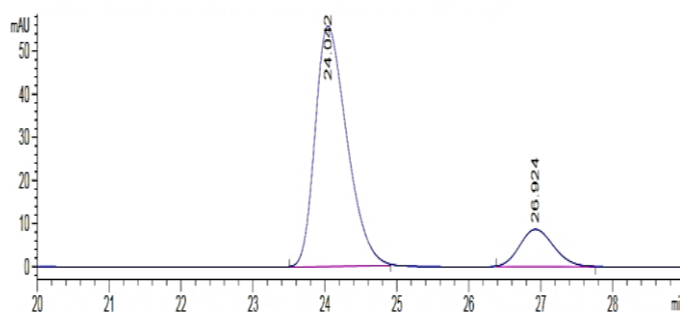
Kinetic Resolution for Table 2, Entry 7:



Starting material:

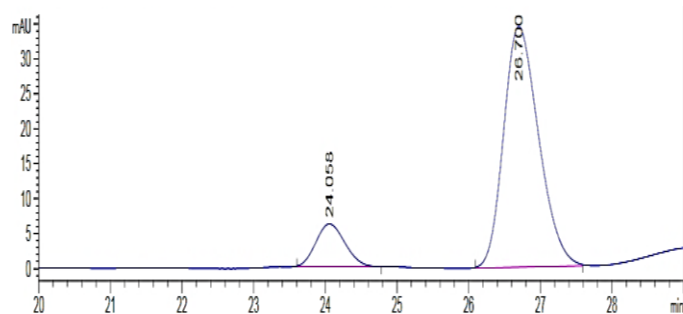


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.973	BB	0.4554	1062.05627	35.87169	49.7407
2	26.717	BB	0.5140	1073.12903	32.18402	50.2593



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.042	BB	0.4707	1710.02869	55.76970	85.6442
2	26.924	BB	0.4866	286.63739	8.67298	14.3558

Product:

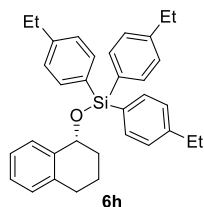


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.058	BB	0.4072	173.25452	6.12108	12.9085
2	26.700	BB	0.5239	1168.91602	34.44674	87.0915

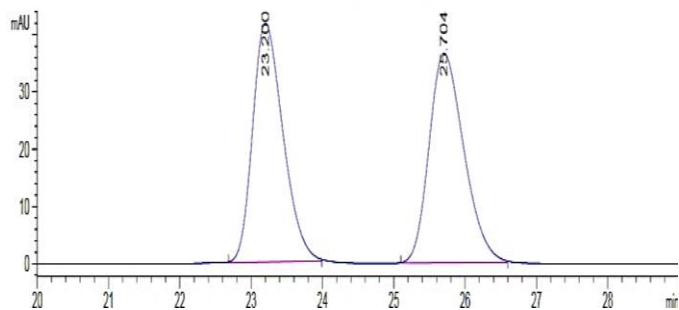
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	86:14	13:87	49	14.1	14
2	84:16	13:87	47.7	13.4	

er_{PR}% is of deprotected and purified product.

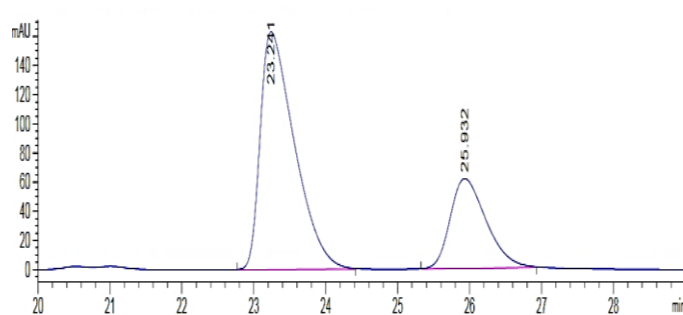
Kinetic Resolution for Table 2, Entry 8:



Starting material:

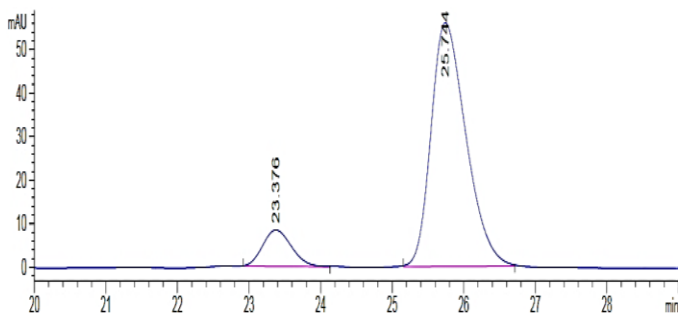


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.200	BB	0.4605	1232.85583	41.74864	49.8073
2	25.704	BB	0.5217	1242.39514	36.63096	50.1927



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.241	BB	0.4964	5386.88281	163.05943	71.5111
2	25.932	BB	0.5362	2146.04639	61.64501	28.4889

Product:

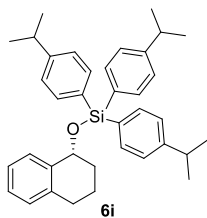


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.376	BB	0.4374	231.43410	8.32419	10.8600
2	25.744	BB	0.5167	1899.63208	56.00121	89.1400

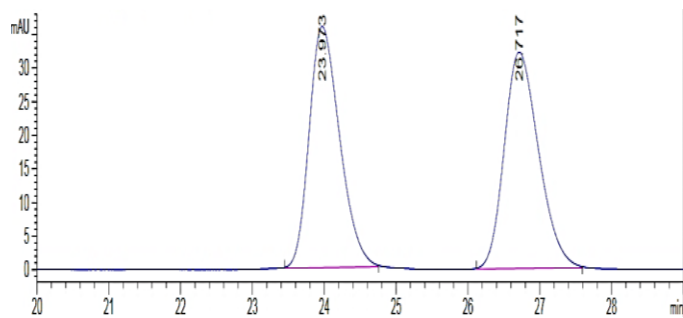
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	72:29	11:89	35.5	12.3	13
2	76:24	11:89	40.4	13.0	

er_{PR}% is of deprotected and purified product.

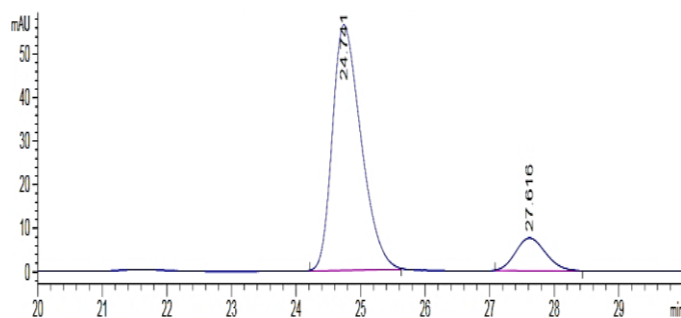
Kinetic Resolution for Table 2, Entry 9:



Starting material:

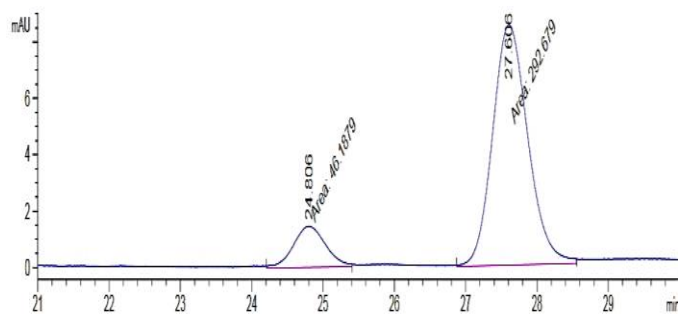


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.973	BB	0.4554	1062.05627	35.87169	49.7407
2	26.717	BB	0.5140	1073.12903	32.18402	50.2593



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.741	BB	0.4747	1745.42871	56.44801	87.6518
2	27.616	BB	0.4730	245.89313	7.52944	12.3482

Product:

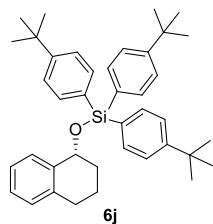


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.806	MM	0.5265	46.18794	1.46206	13.6301
2	27.606	MM	0.5719	292.67941	8.52933	86.3699

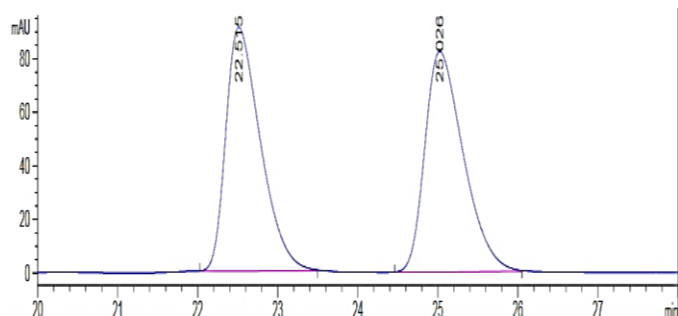
#	erSM%	erPR%	C%	S	S _{Avg}
1	88:12	14:86	50.9	14.1	14
2	84:16	12:88	47.5	14.3	

erPR% is of deprotected and purified product.

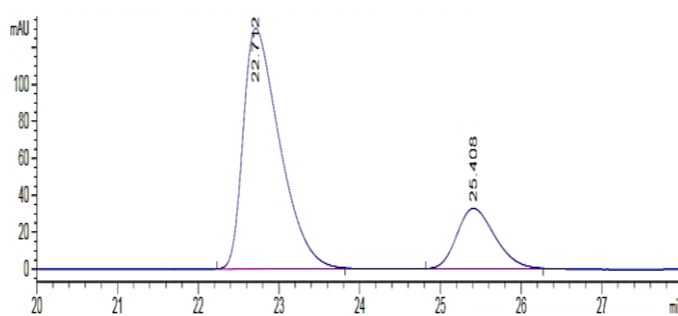
Kinetic Resolution for Table 2, Entry 10:



Starting material:

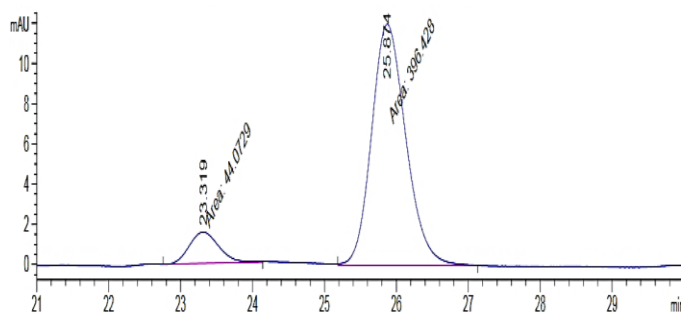


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	22.515	BB	0.4597	2746.33325	91.11377	49.8636
2	25.026	BB	0.5082	2761.35474	82.35869	50.1364



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	22.712	BB	0.4767	4084.23120	130.28459	79.1682
2	25.408	BB	0.5089	1074.69482	32.74330	20.8318

Product:

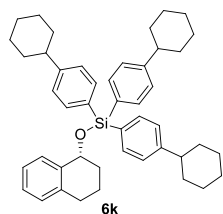


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.319	MM	0.4740	44.07293	1.54968	10.0052
2	25.874	MM	0.5513	396.42795	11.98468	89.9948

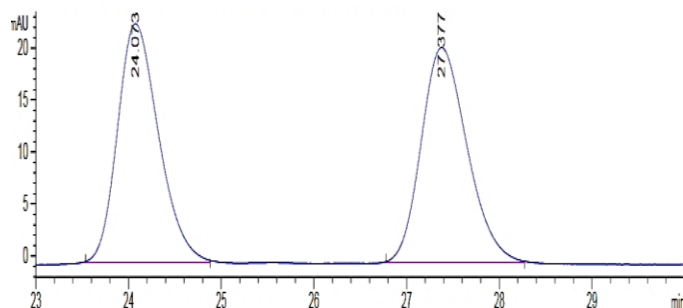
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	79:21	10:90	42.2	16.1	16
2	78:22	10:90	41.3	15.6	

er_{PR}% is of deprotected and purified product.

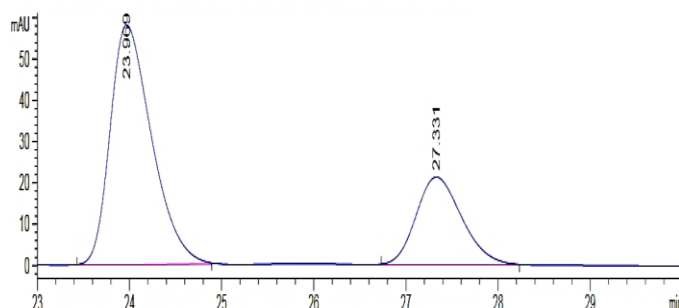
Kinetic Resolution for Table 2, Entry 11:



Starting material:

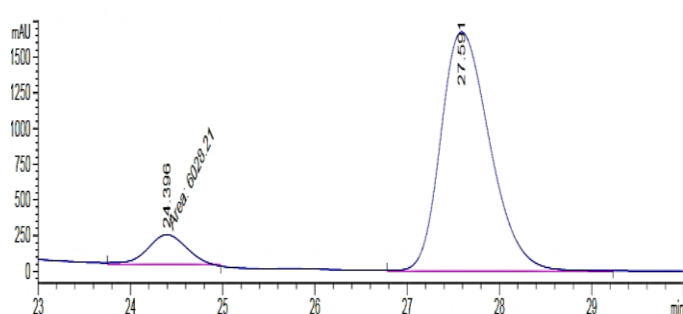


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.073	BB	0.4675	708.52136	22.99536	49.8138
2	27.377	BB	0.5272	713.81854	20.70691	50.1862



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.969	BB	0.4734	1816.81763	58.01082	71.2819
2	27.331	BB	0.5259	731.96112	21.19515	28.7181

Product:

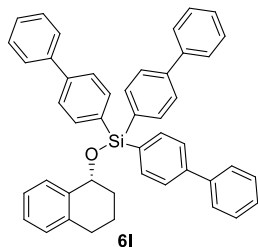


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.396	MM	0.4852	6028.20850	207.08231	8.9051
2	27.591	VB	0.5699	6.16653e4	1673.56921	91.0949

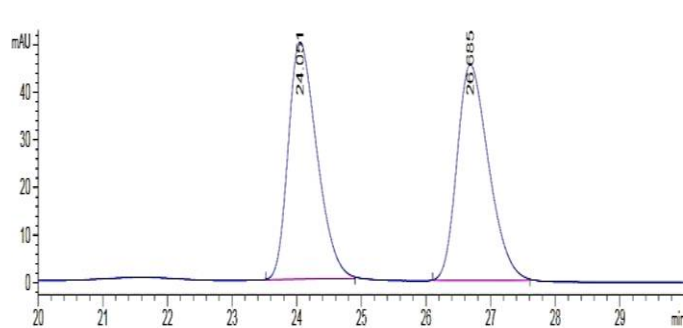
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	71:29	9:91	34.1	15.6	15
2	70:30	9:91	32.8	15.2	

er_{PR}% is of deprotected and purified product.

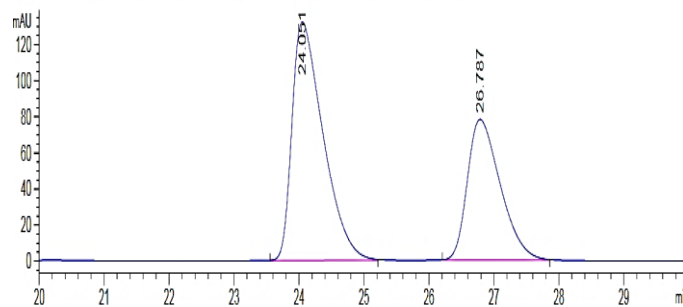
Kinetic Resolution for Table 2, Entry 12:



Starting material:

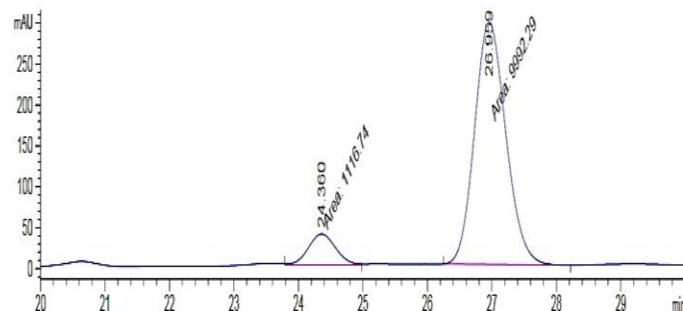


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.051	BB	0.4717	1538.06506	49.88721	49.8336
2	26.685	BB	0.5199	1548.33691	45.39346	50.1664



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.051	BB	0.5050	4396.58887	132.19112	61.4537
2	26.787	BB	0.5371	2757.72681	78.07044	38.5463

Product:



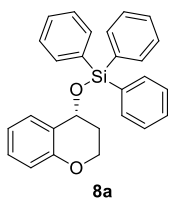
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.360	MM	0.4921	1116.74475	37.82162	10.0526
2	26.959	MM	0.5620	9992.28906	296.30511	89.9474

#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	62:38	10:90	22.4	11	11
2	59:41	11:89	18.8	10	

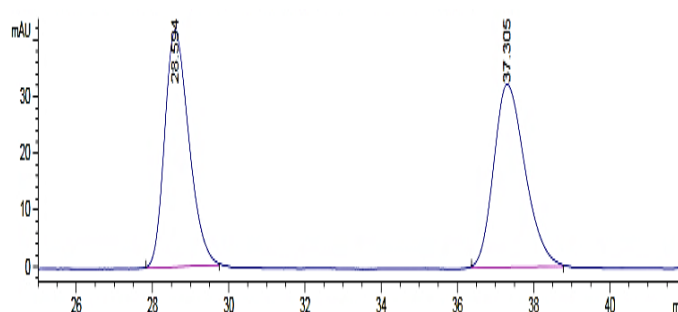
er_{PR}% is of deprotected and purified product.

HPLC traces of silylated 4-chromanol product

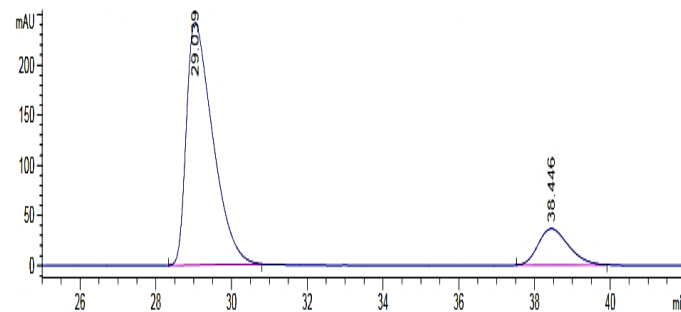
Kinetic Resolution for Table 2, Entry 13:



Starting material:

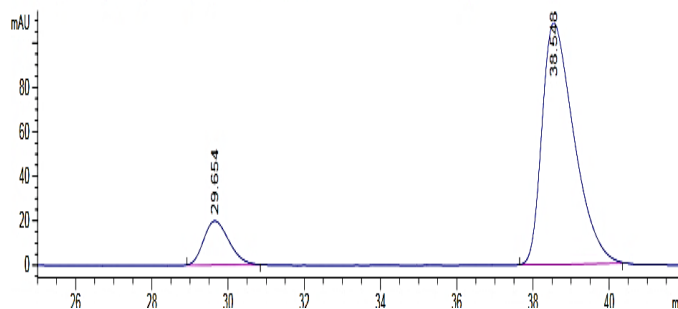


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	28.594	BB	0.6676	1845.14832	41.67368	50.0238
2	37.305	BB	0.8028	1843.39307	32.20224	49.9762



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	29.039	BB	0.7230	1.17290e4	242.62204	85.1534
2	38.446	BB	0.8090	2044.96082	36.36743	14.8466

Product:

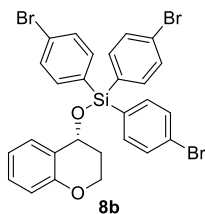


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	29.654	BB	0.6983	922.76477	19.88767	12.7022
2	38.548	BB	0.8782	6341.85596	108.61580	87.2978

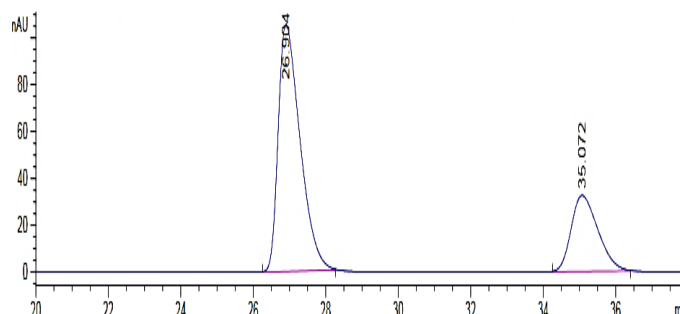
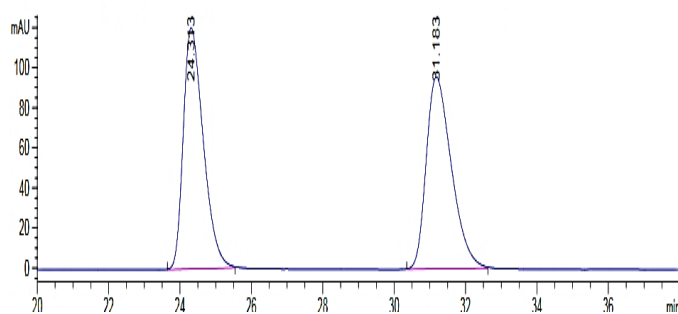
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	85:15	13:87	48.6	14.2	15
2	89:11	12:88	50.5	16.6	

er_{PR}% is of deprotected and purified product.

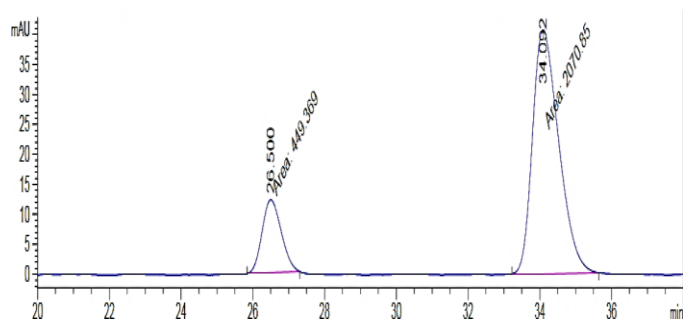
Kinetic Resolution for Table 2, Entry 14:



Starting material:



Product:

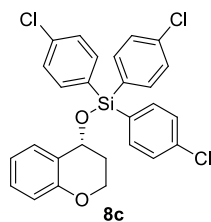


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	26.500	MM	0.6182	449.36865	12.11589	17.8306
2	34.092	MM	0.8471	2070.84839	40.74231	82.1694

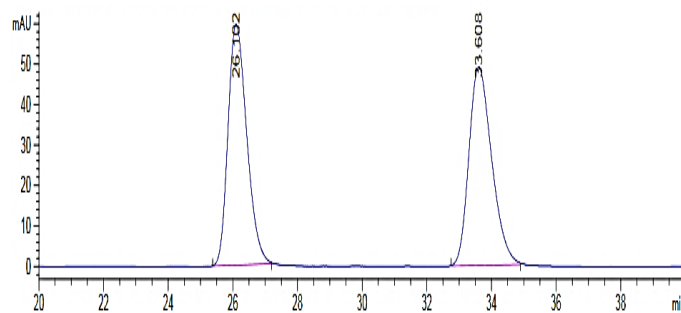
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	73:27	18:82	41.3	7.2	8.0
2	72:28	15.5:84.5	38.8	8.4	

er_{PR}% is of deprotected and purified product.

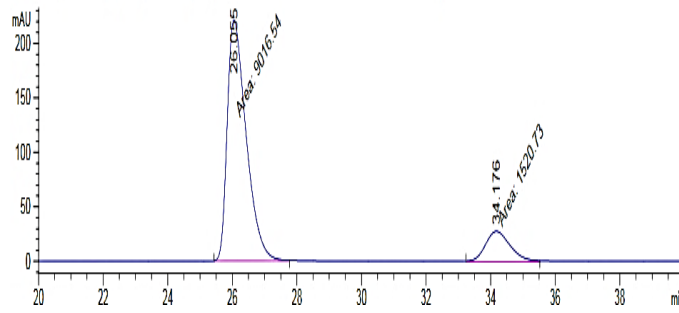
Kinetic Resolution for Table 2, Entry 15:



Starting material:

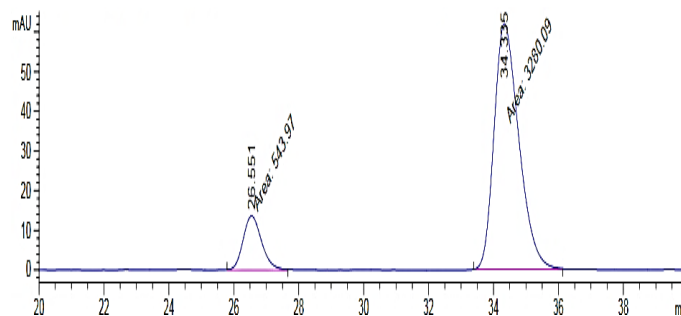


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	26.102	BB	0.6225	2405.43286	59.64131	50.0136
2	33.608	BB	0.7234	2404.12354	49.08302	49.9864



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	26.055	MM	0.6790	9016.53809	221.32947	85.5681
2	34.176	MM	0.9037	1520.73340	28.04610	14.4319

Product:

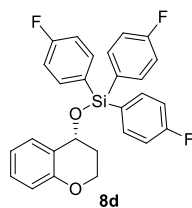


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	26.551	MM	0.6641	543.97046	13.65088	14.2249
2	34.335	MM	0.8825	3280.09106	61.94839	85.7751

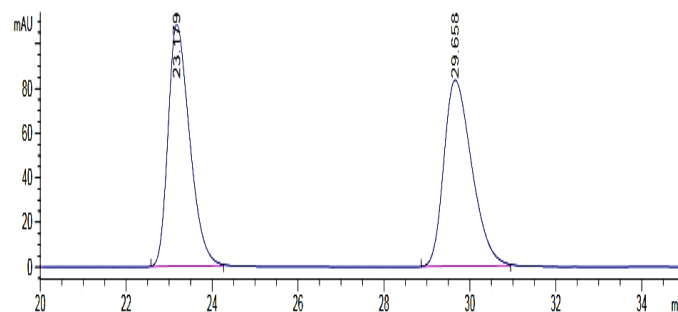
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	86:14	14:86	49.9	12.6	11
2	73:27	15:85	39.7	8.8	

er_{PR}% is of deprotected and purified product.

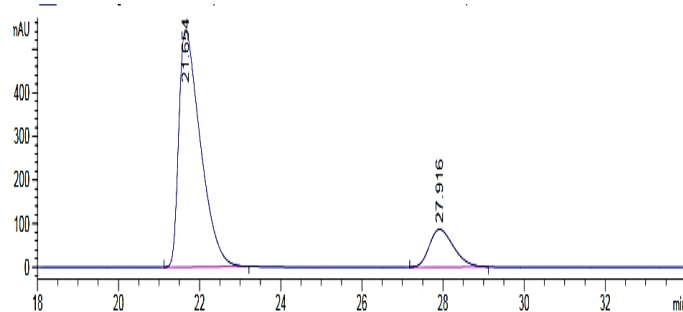
Kinetic Resolution for Table 2, Entry 16:



Starting Material:

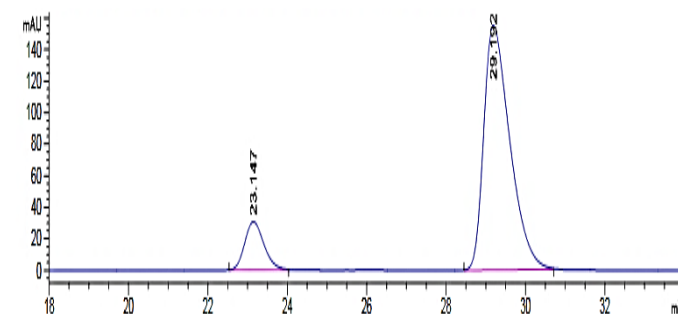


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.179	BB	0.5345	3787.28882	108.41888	50.0741
2	29.658	BB	0.7022	3776.07495	83.40014	49.9259



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	21.654	BB	0.5537	2.00529e4	544.48273	84.6786
2	27.916	BB	0.6462	3628.30103	86.87737	15.3214

Product:

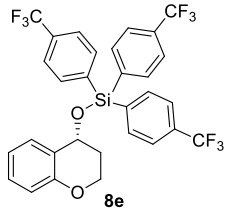


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.147	BB	0.5129	1035.21985	30.66269	12.7364
2	29.192	BB	0.6893	7092.83008	155.46700	87.2636

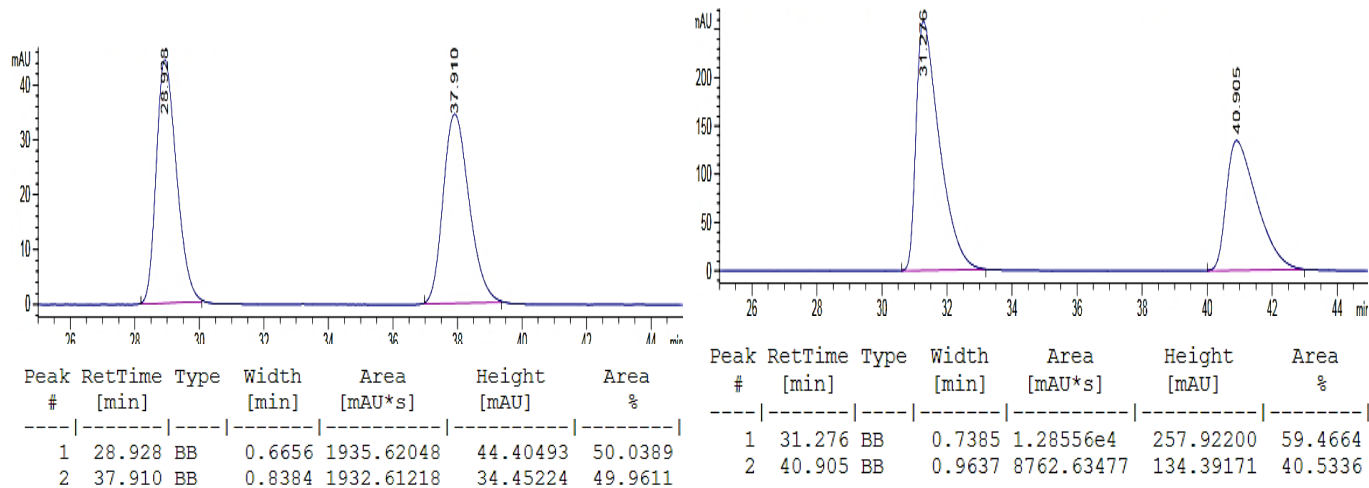
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	85:15	13:87	48.2	14	13
2	79:21	13:87	43.9	12.1	

er_{PR}% is of deprotected and purified product.

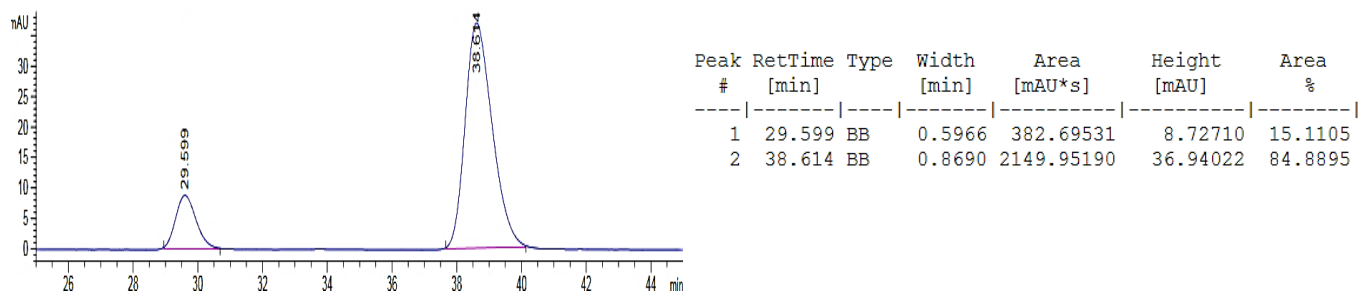
Kinetic Resolution for Table 2, Entry 17:



Starting material:



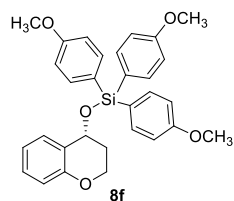
Product:



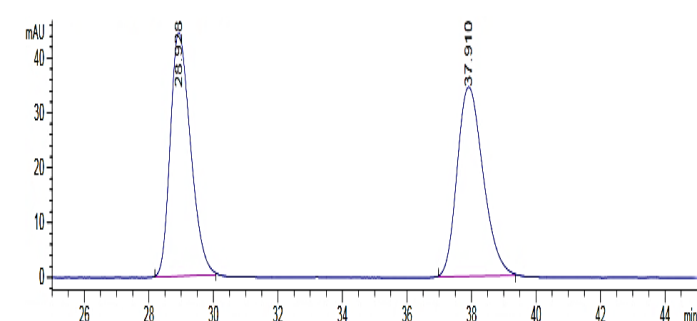
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	59.5:40.5	15:85	21.4	6.8	7.0
2	59:41	14:86	19.6	7.1	

er_{PR}% is of deprotected and purified product.

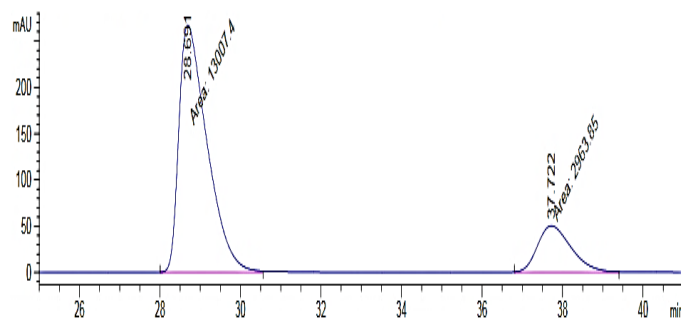
Kinetic Resolution for Table 2, Entry 18:



Starting material:

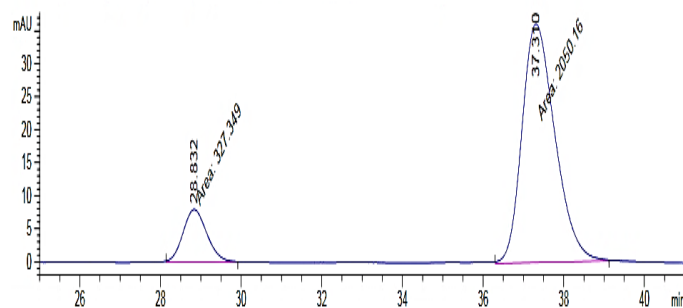


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	28.928	BB	0.6656	1935.62048	44.40493	50.0389
2	37.910	BB	0.8384	1932.61218	34.45224	49.9611



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	28.691	MM	0.8103	1.30074e4	267.53583	81.4426
2	37.722	MM	0.9767	2963.84570	50.57402	18.5574

Product:



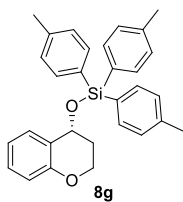
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	28.832	MM	0.6836	327.34897	7.98074	13.7686
2	37.310	MM	0.9459	2050.15527	36.12521	86.2314

#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	81:19	14:86	46.4	11.8	11
2*	80:20	16:84	47.4	9.3	

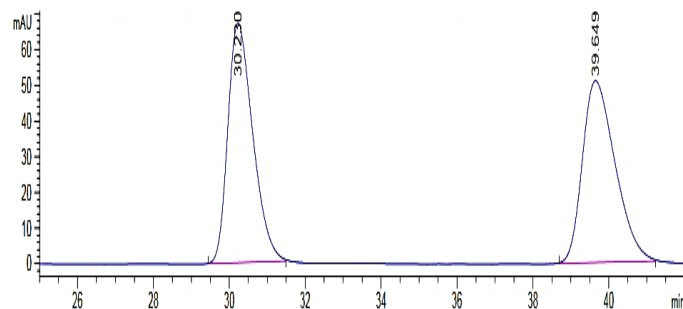
* 40 h reaction

er_{PR}% is of deprotected and purified product.

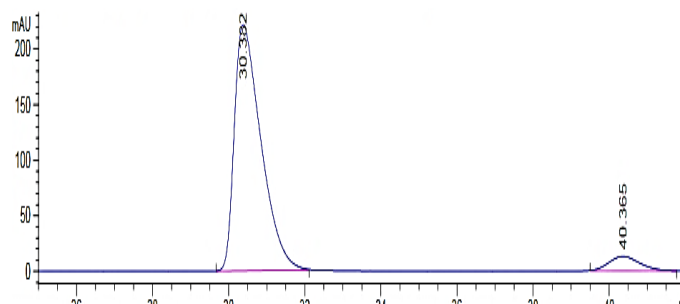
Kinetic Resolution for Table 2, Entry 19:



Starting material:

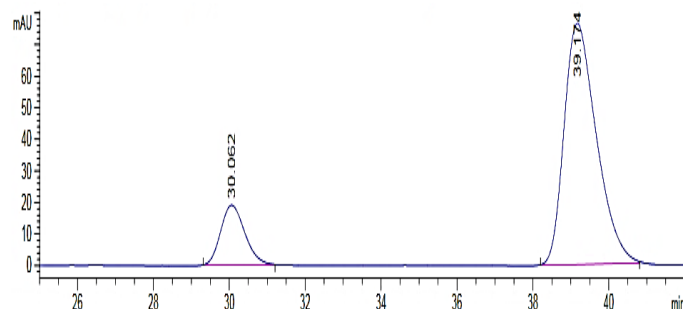


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	30.230	BB	0.6895	3069.04297	67.23933	50.1204
2	39.649	BB	0.8731	3054.29736	50.90057	49.8796



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	30.382	BB	0.7272	1.07789e4	221.69273	93.5911
2	40.365	BB	0.7079	738.11200	13.10895	6.4089

Product:

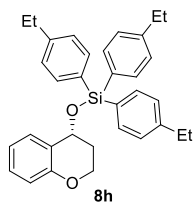


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	30.062	BB	0.6320	841.64185	18.99343	15.7159
2	39.174	BB	0.8665	4513.70215	76.37865	84.2841

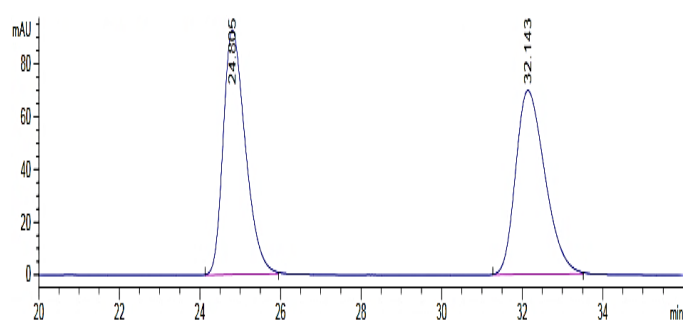
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	94:6	16:84	56	14.8	14
2	77:23	11:89	40.9	14	

er_{PR}% is of deprotected and purified product.

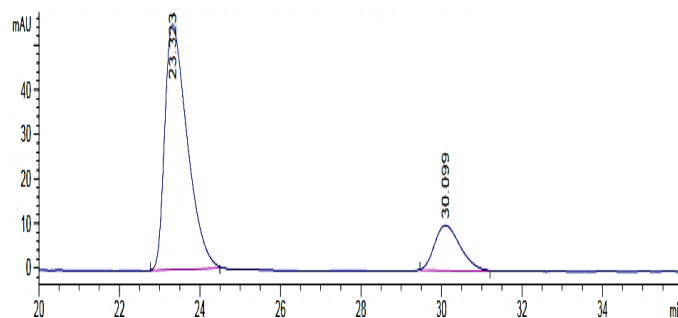
Kinetic Resolution for Table 2, Entry 20:



Starting material:

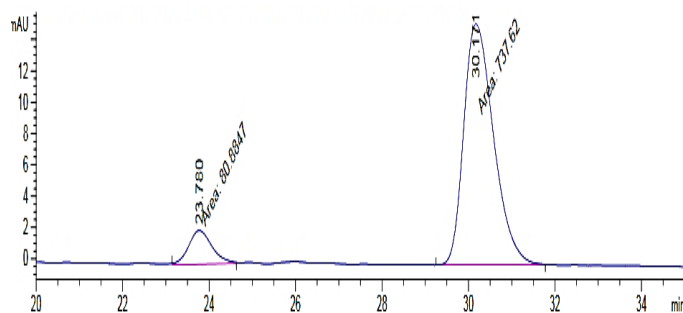


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.805	BB	0.5863	3532.36816	92.76186	50.0403
2	32.143	BB	0.7911	3526.67871	69.73063	49.9597



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.323	BB	0.5854	2134.74121	55.04796	82.6028
2	30.099	BB	0.6369	449.60410	10.12738	17.3972

Product:

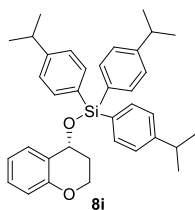


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.780	MM	0.6280	80.88467	2.14667	9.8820
2	30.171	MM	0.8005	737.61975	15.35674	90.1180

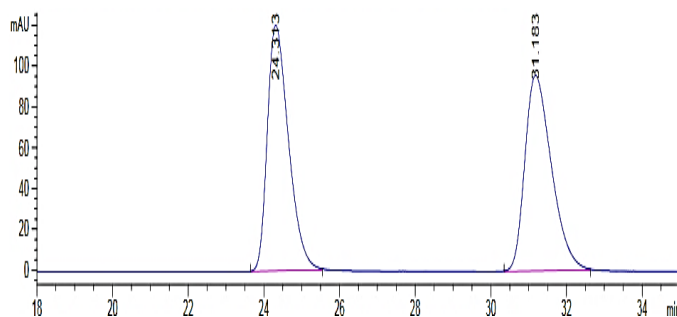
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	83:17	10:90	44.8	17.8	17
2	81:19	10:90	43.9	16.4	

er_{PR}% is of deprotected and purified product.

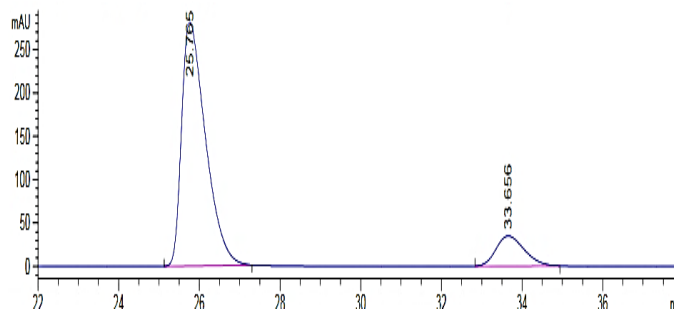
Kinetic Resolution for Table 2, Entry 21:



Starting material:

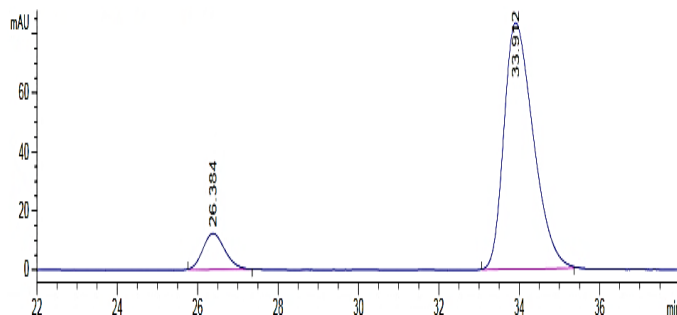


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	24.313	BB	0.5980	4688.11182	120.48248	49.9782
2	31.183	BB	0.7577	4692.20166	95.75735	50.0218



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	25.765	BB	0.6192	1.15898e4	281.01532	87.0823
2	33.656	BB	0.7361	1719.22607	34.87418	12.9177

Product:

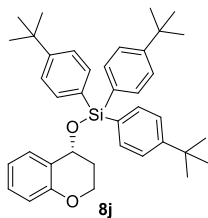


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	26.384	BB	0.5695	469.57892	12.29648	9.9706
2	33.912	BB	0.7723	4240.03857	83.51304	90.0294

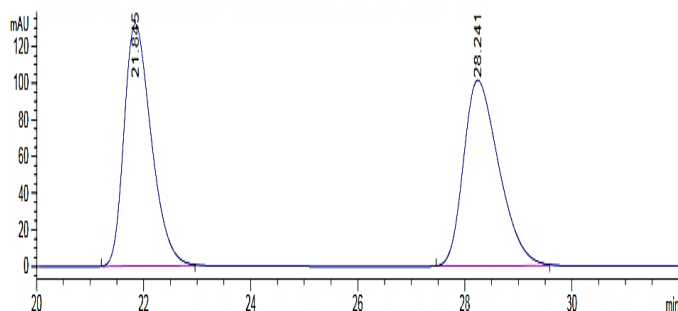
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	87:13	10:90	48.1	19.9	20
2	87.5:12.5	10:90	48.4	19.7	

er_{PR}% is of deprotected and purified product.

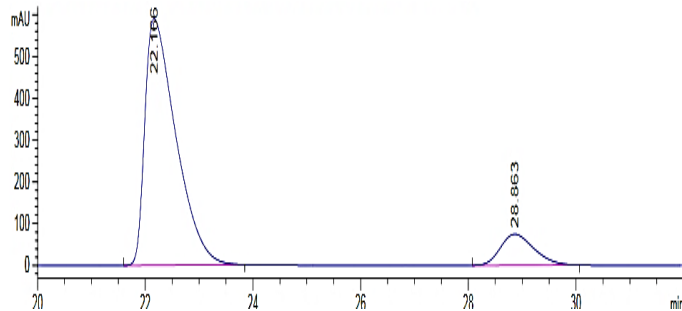
Kinetic Resolution for Table 2, Entry 22:



Starting material:

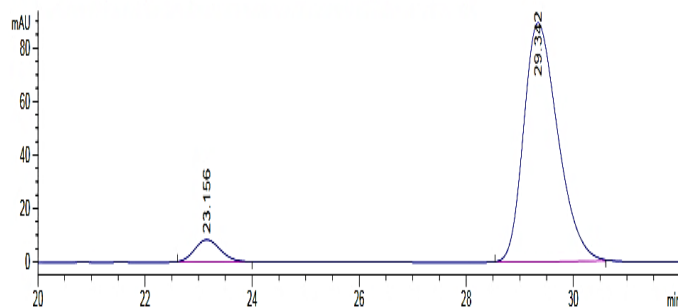


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	21.845	BB	0.5413	4654.38037	132.02983	50.0094
2	28.241	BB	0.7012	4652.62695	101.23067	49.9906



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	22.166	BB	0.6057	2.36285e4	589.44574	87.8898
2	28.863	BB	0.6597	3255.73462	74.66200	12.1102

Product:

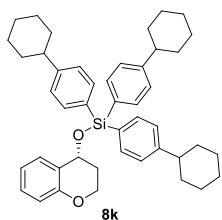


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.156	BB	0.5048	281.15024	8.32920	6.6369
2	29.342	BB	0.6835	3955.01782	89.34119	93.3631

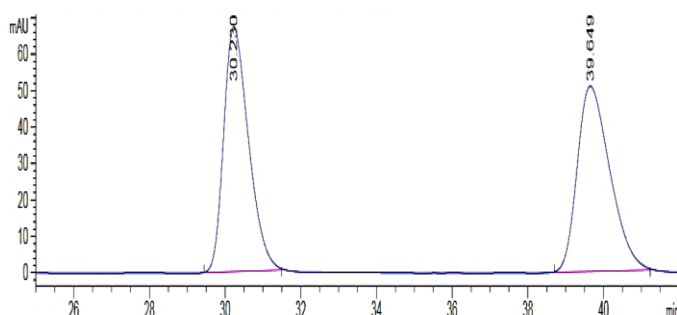
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	88:12	7:93	46.6	32.3	28
2	76:24	6:94	37.4	23.4	

er_{PR}% is of deprotected and purified product.

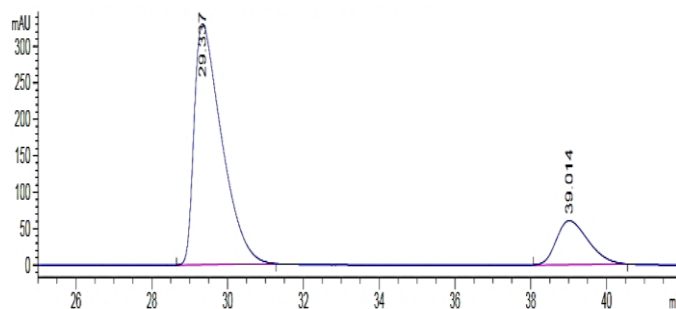
Kinetic Resolution for Table 2, Entry 23:



Starting material:

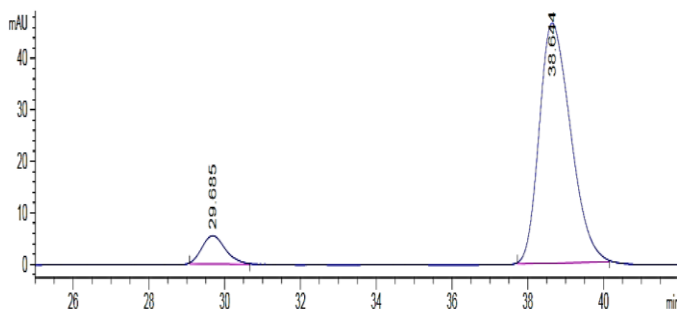


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	30.230	BB	0.6895	3069.04297	67.23933	50.1204
2	39.649	BB	0.8731	3054.29736	50.90057	49.8796



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	29.337	BB	0.7383	1.67045e4	330.71002	82.5578
2	39.014	BB	0.8592	3529.19458	60.35896	17.4422

Product:

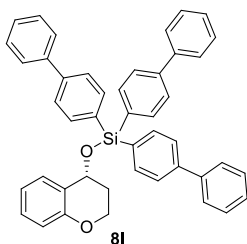


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	29.685	BB	0.5272	233.63982	5.46070	8.0111
2	38.644	BB	0.8281	2682.80103	46.63719	91.9889

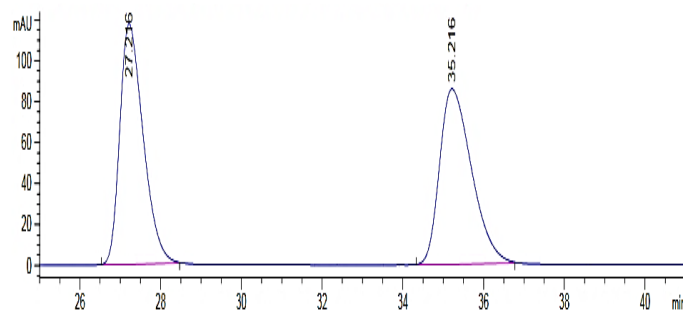
#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	83:17	8:92	43.7	22.4	21
2	78:22	8:92	40.3	20	

er_{PR}% is of deprotected and purified product.

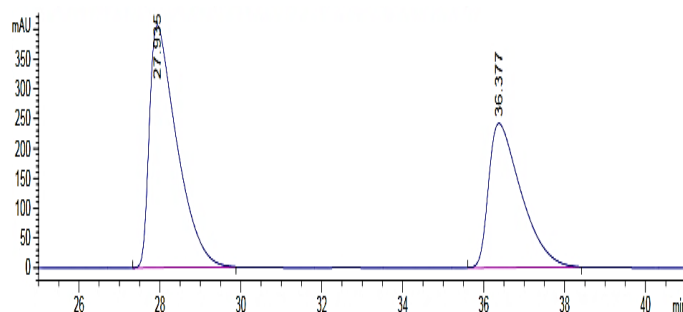
Kinetic Resolution for Table 2, Entry 24:



Starting material:

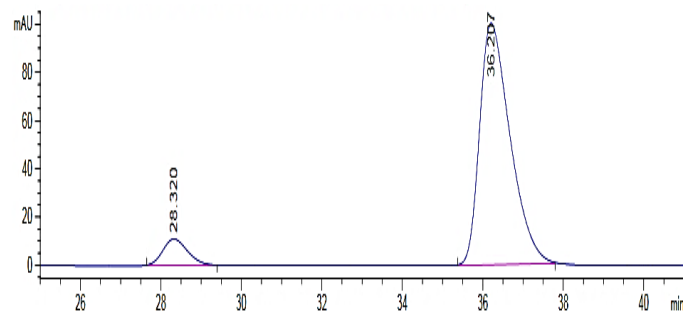


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	27.216	BB	0.6116	4742.80518	117.57014	50.1441
2	35.216	BB	0.8305	4715.54932	85.63223	49.8559



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	27.935	BB	0.6925	1.91269e4	406.12192	58.6083
2	36.377	BB	0.8218	1.35082e4	241.41364	41.3917

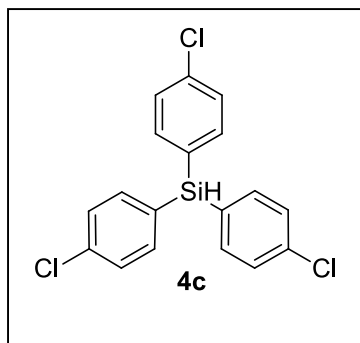
Product:



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	28.320	BB	0.6259	462.26917	10.89825	8.0647
2	36.207	BB	0.7970	5269.71191	100.13103	91.9353

#	er _{SM} %	er _{PR} %	C%	S	S _{Avg}
1	59:41	8:92	17	13.5	13
2	59:41	7:93	17.9	12.4	

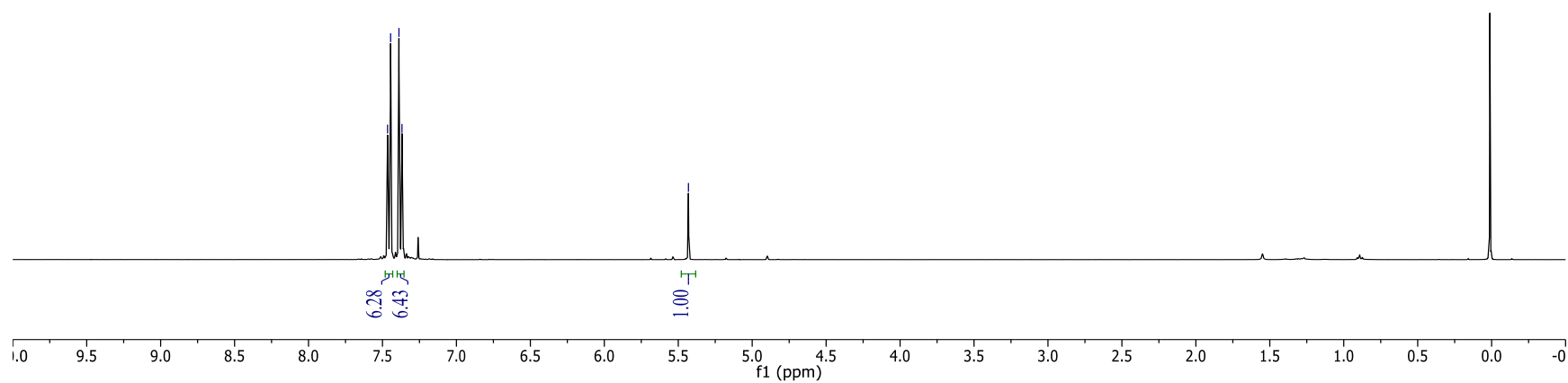
er_{PR}% is of deprotected and purified product.

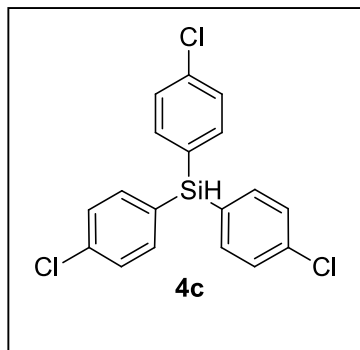


**^1H and ^{13}C NMR Spectra of *p*-Substituted
triphenyl silane and silyl chlorides**

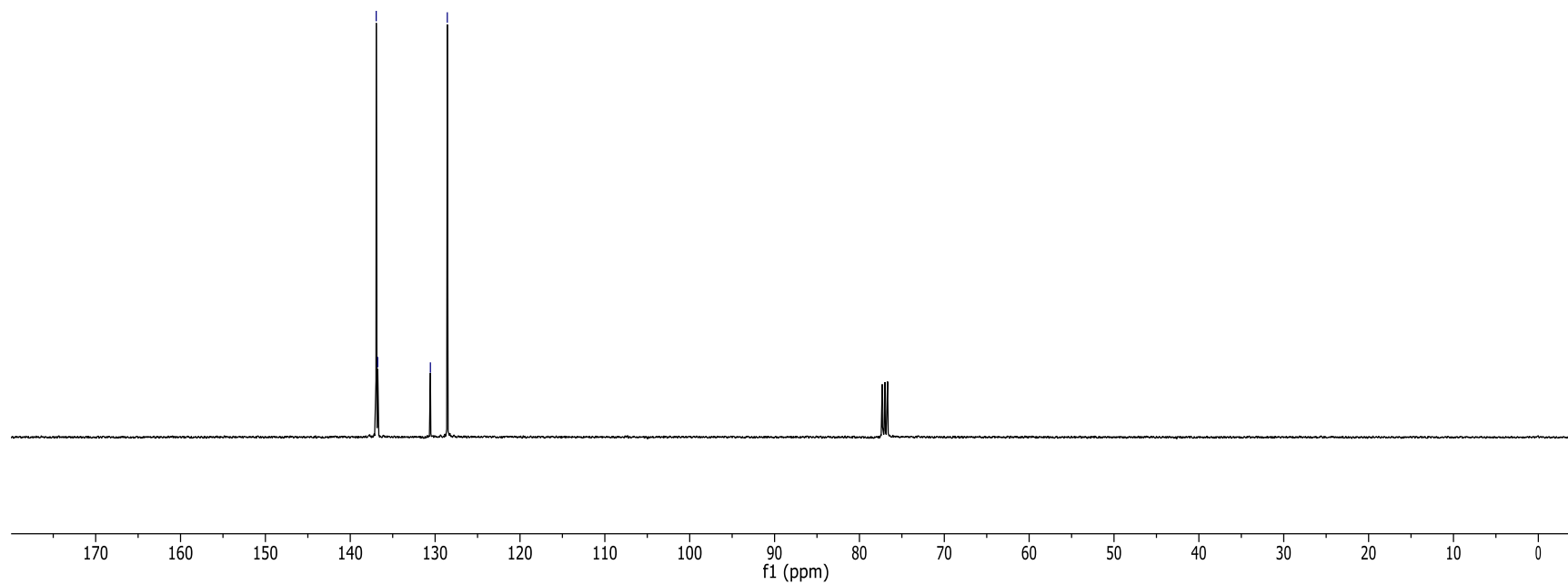
7.47
7.44
7.39
7.37

5.43

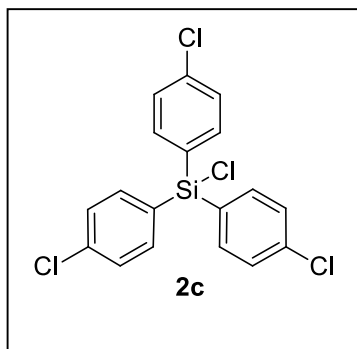




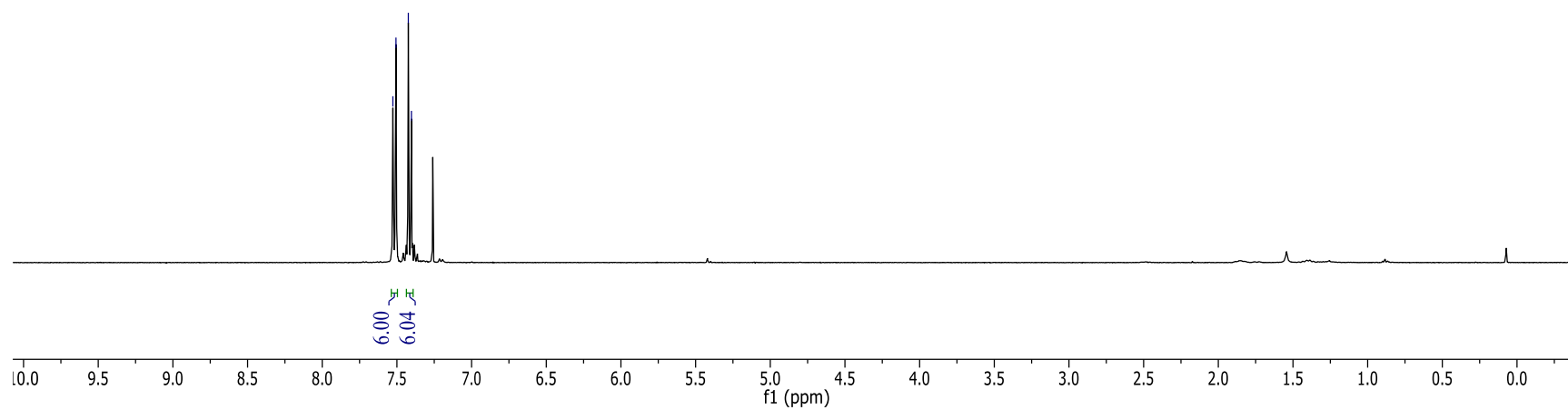
136.9
136.8
130.6
128.6



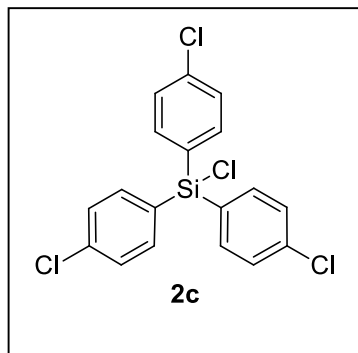
S29



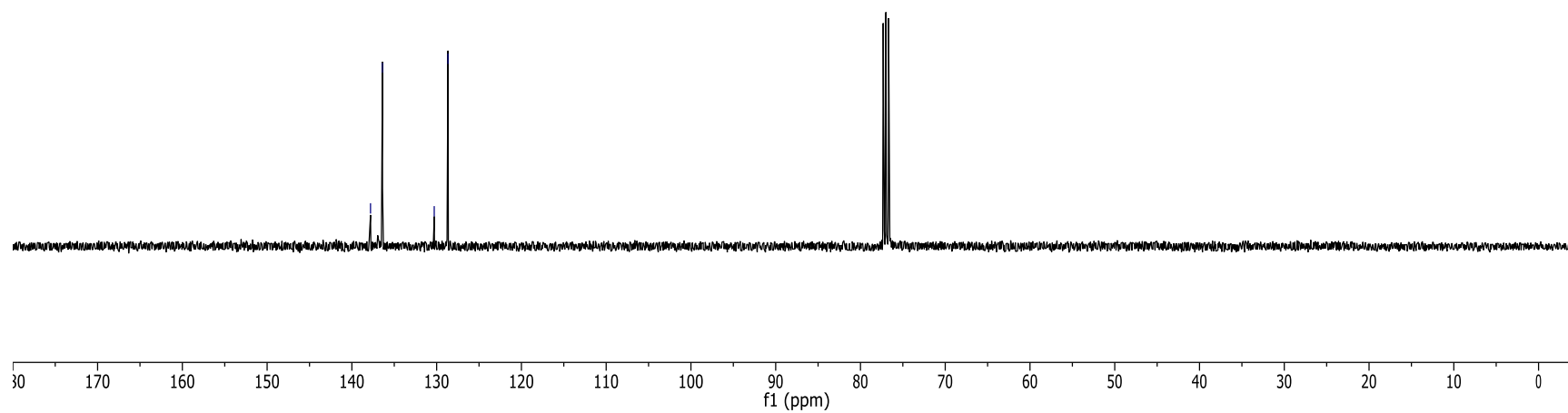
7.53
7.51
7.42
7.40



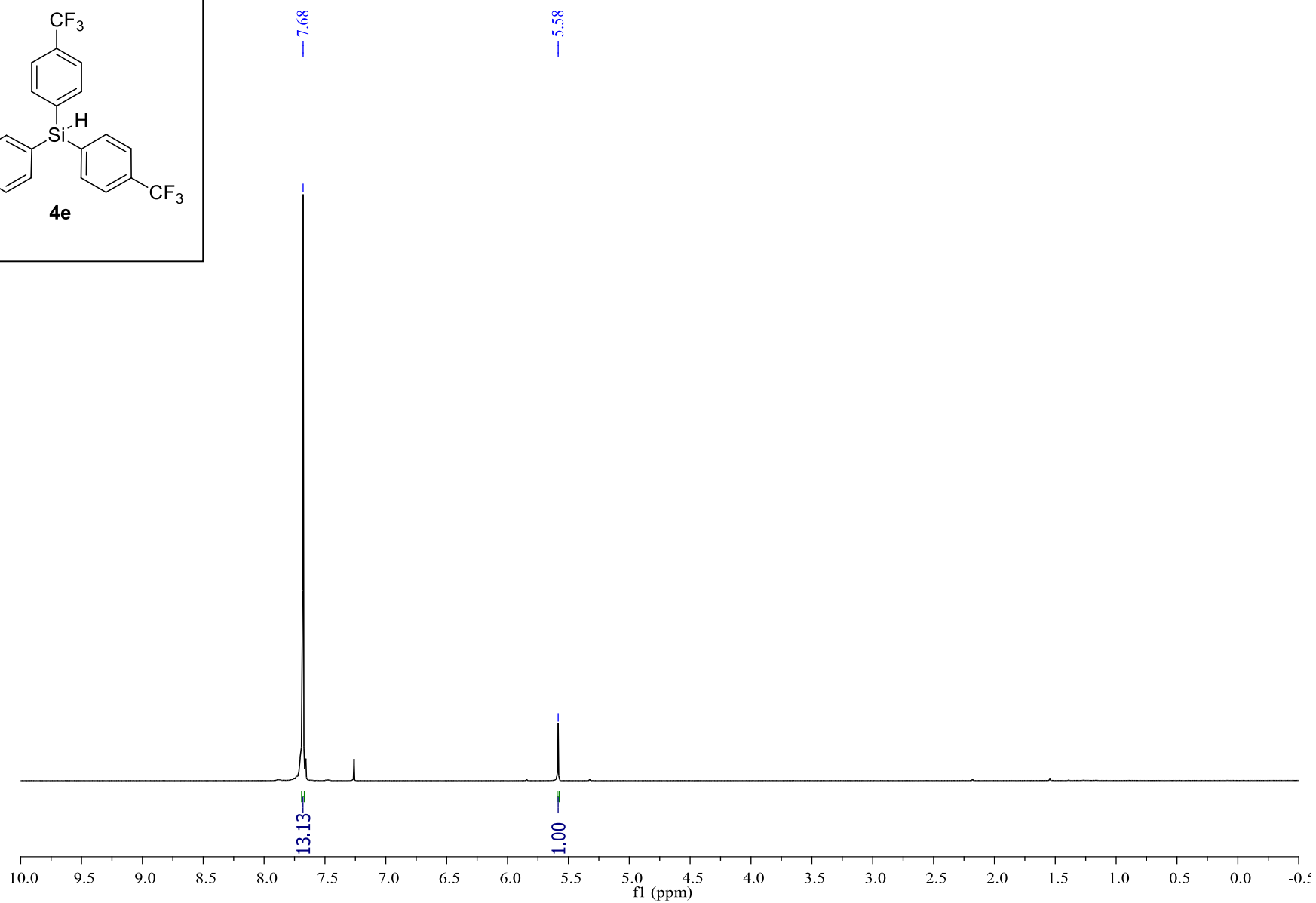
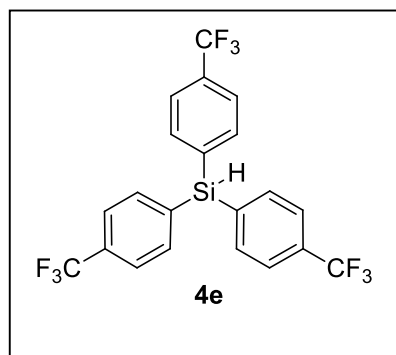
S30

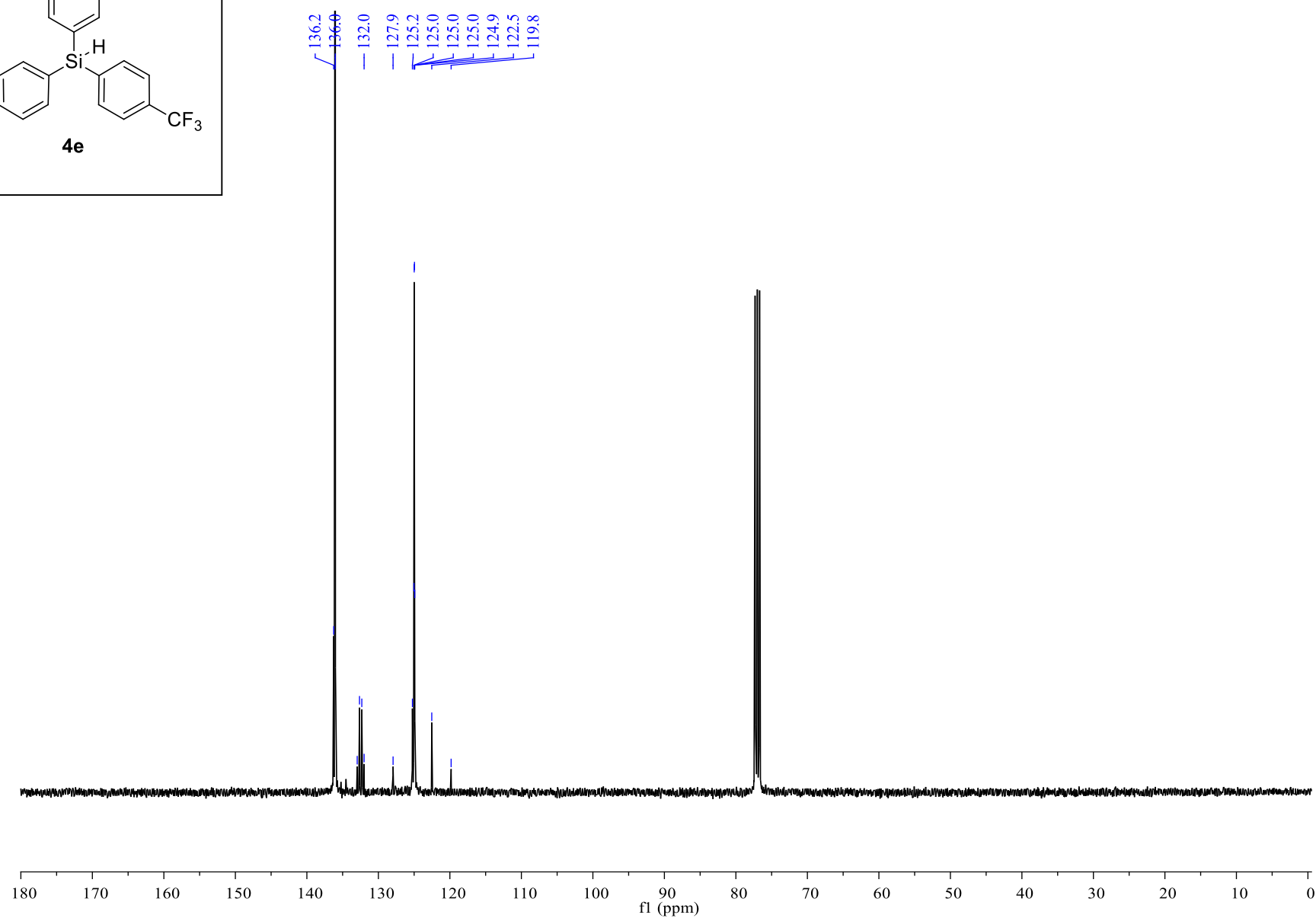
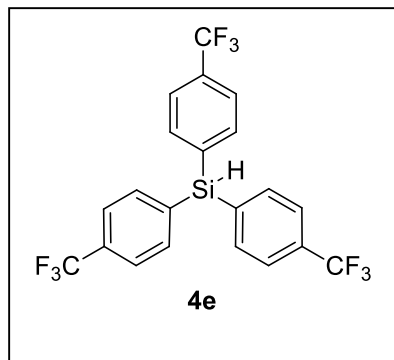


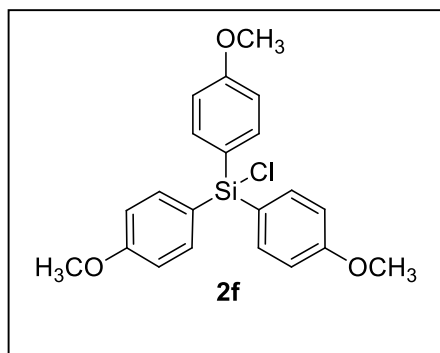
137.8
136.4
130.3
128.7



S31



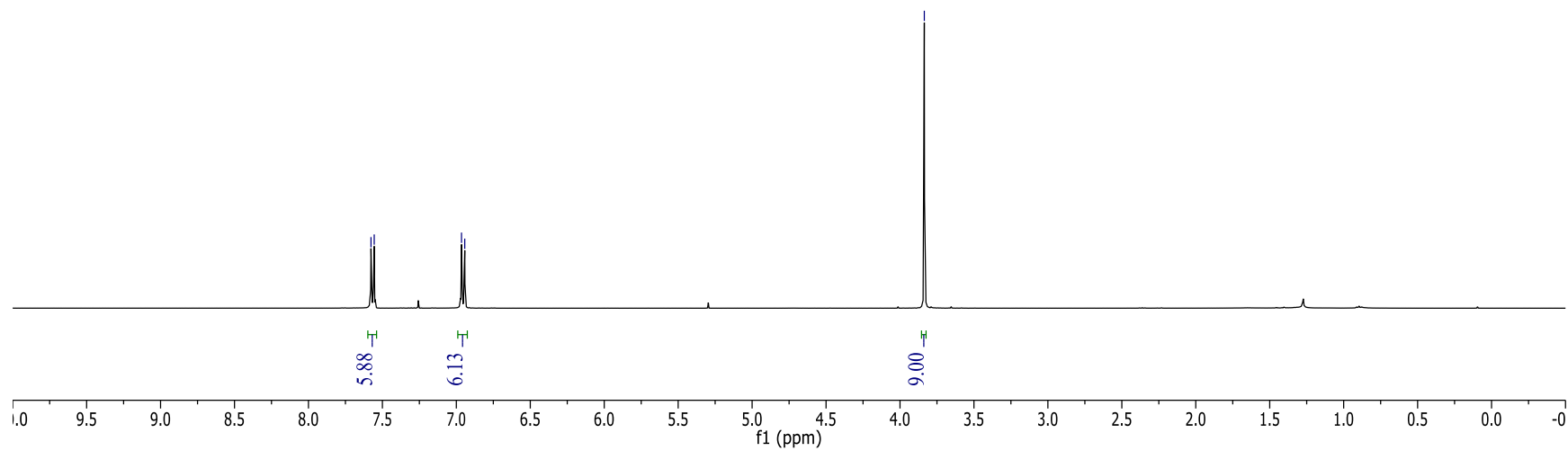


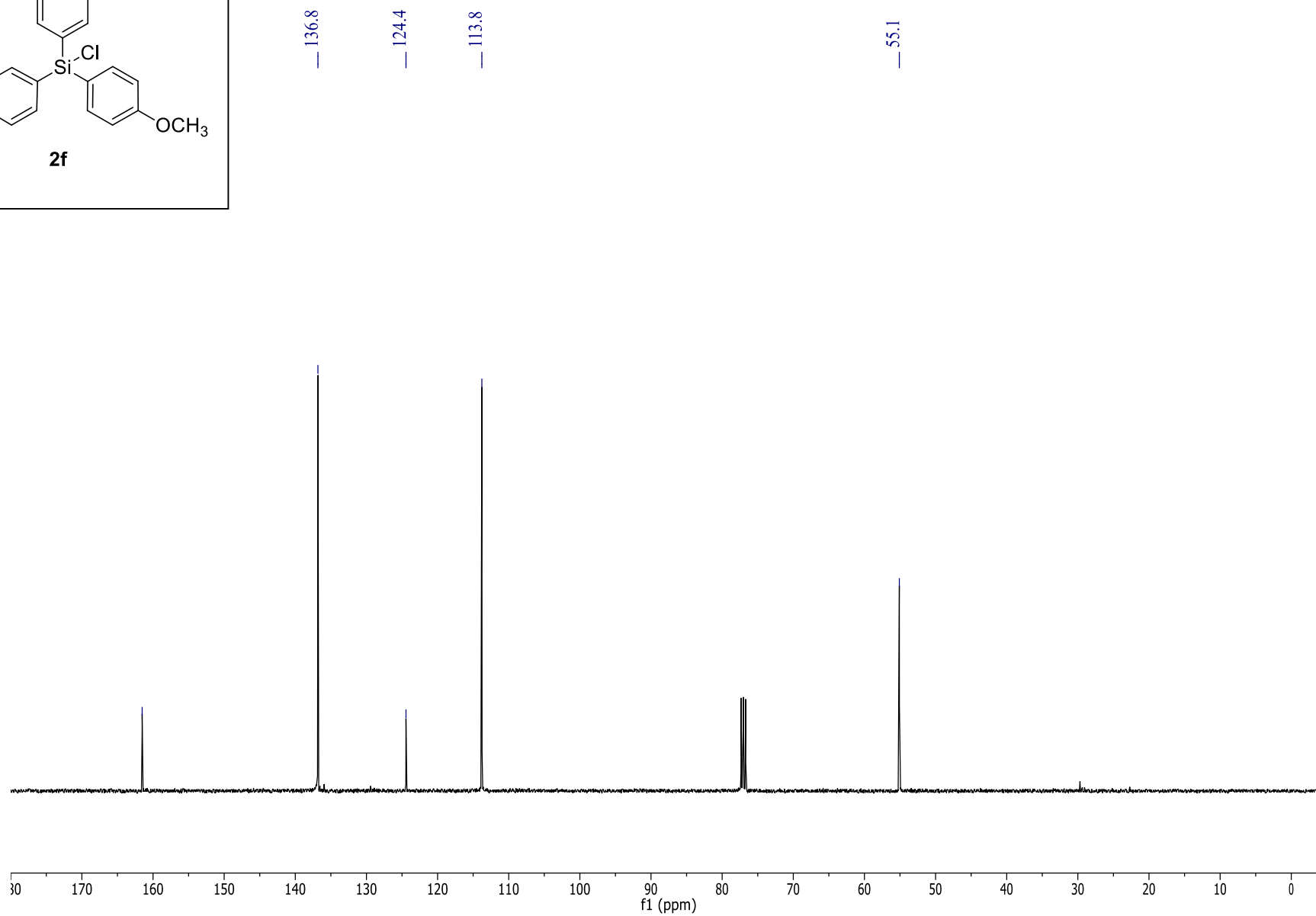
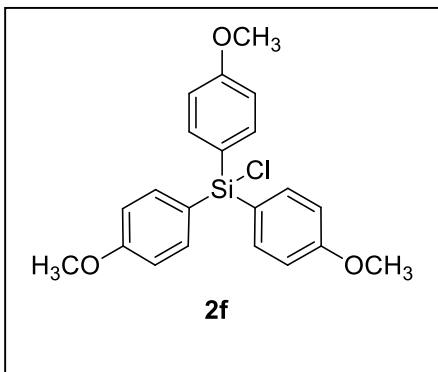


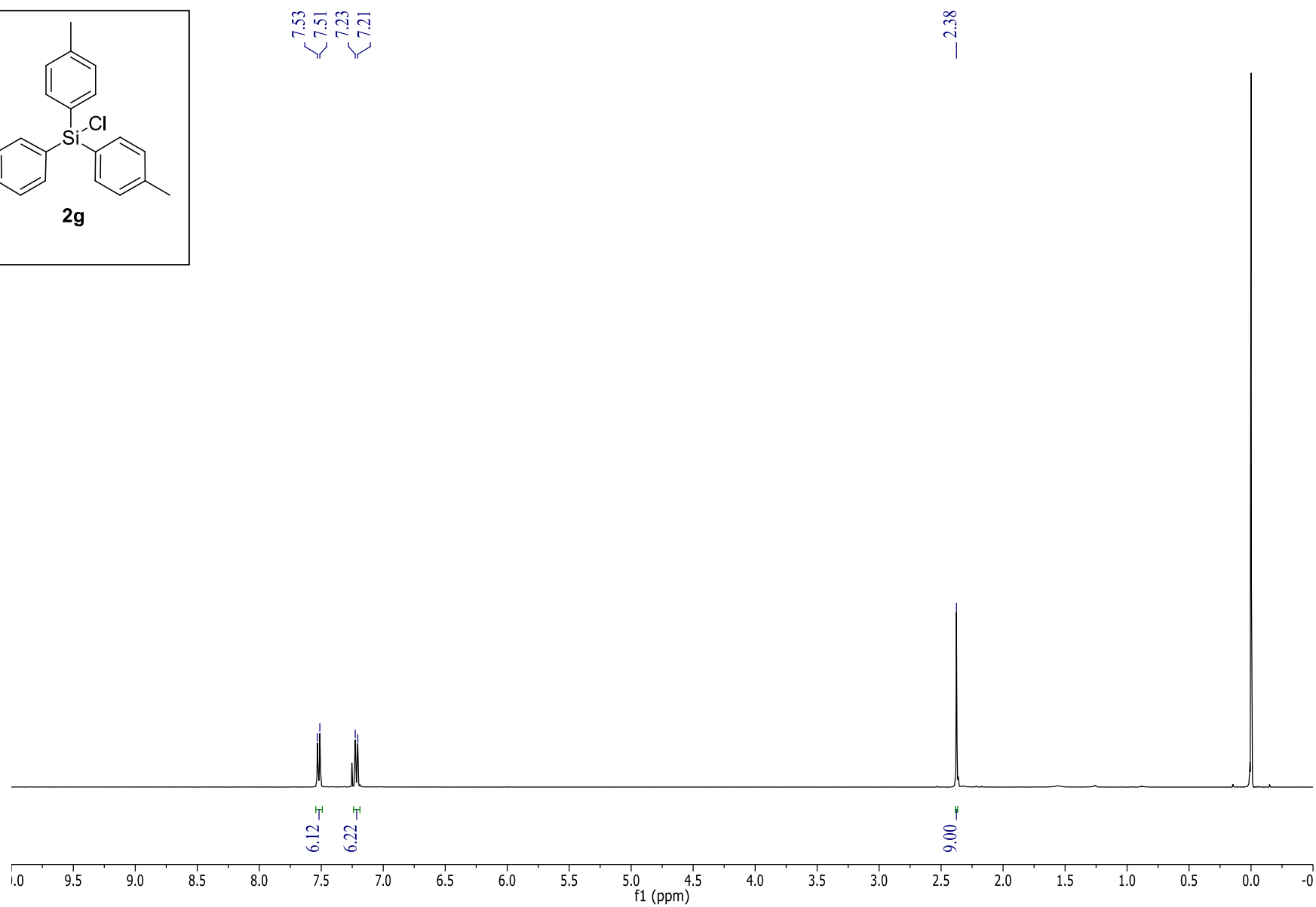
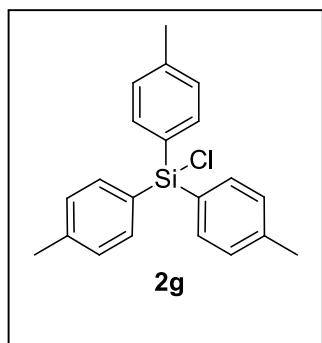
7.58
7.56

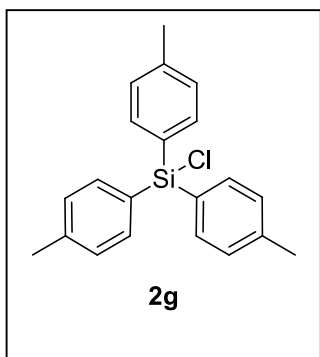
6.96
6.94

3.84



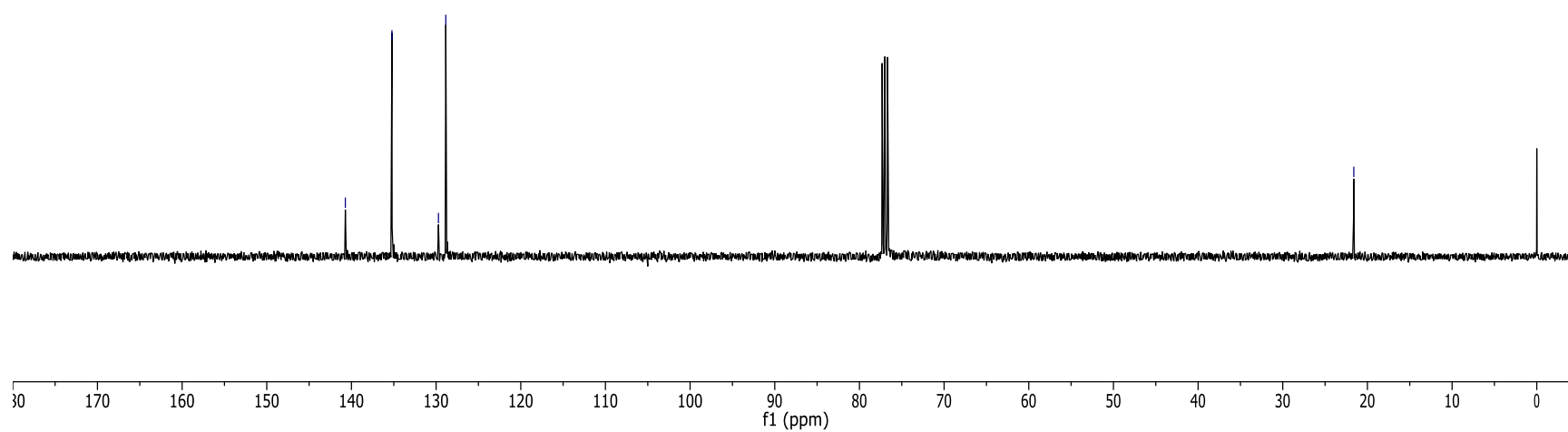




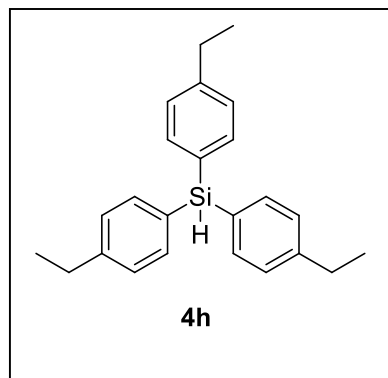


140.7
135.2
129.7
128.9

21.6



S37

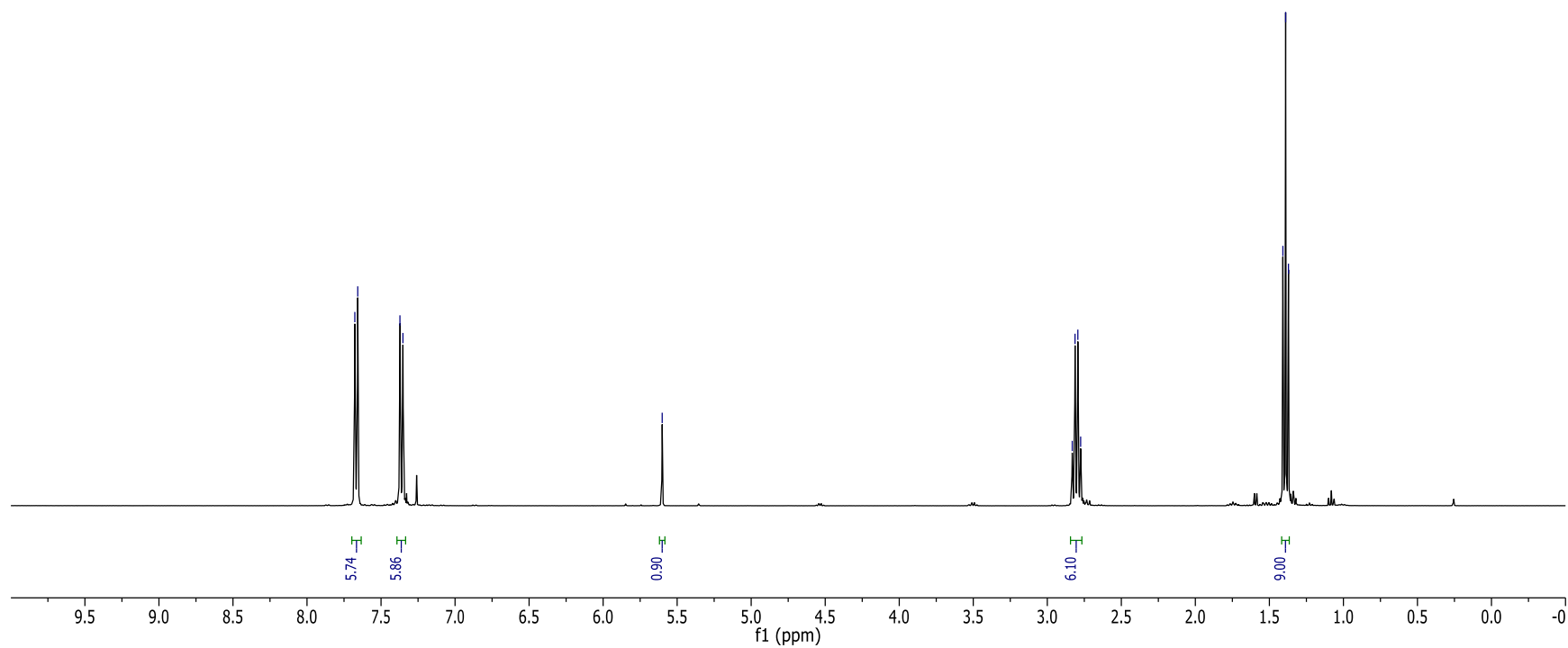


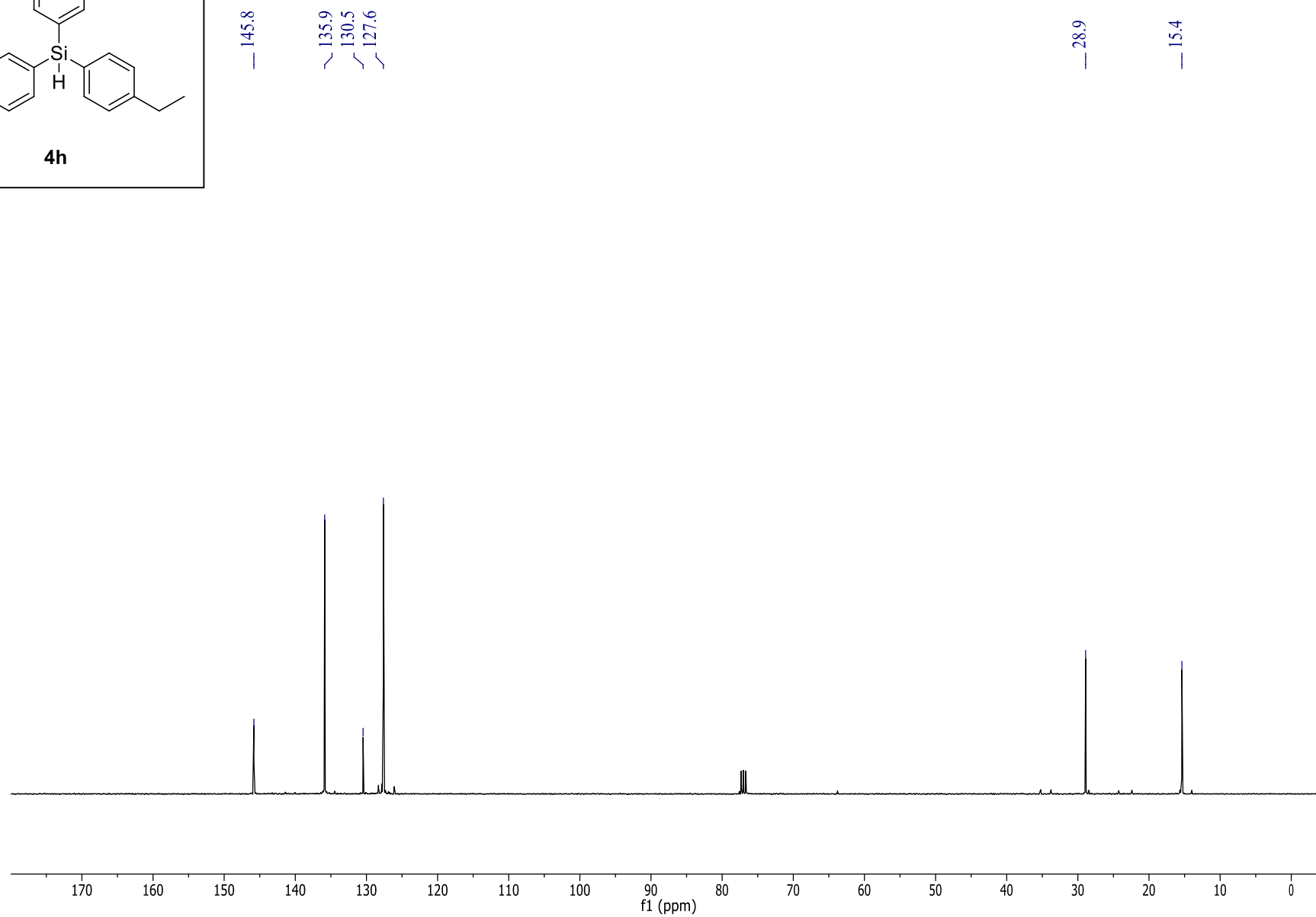
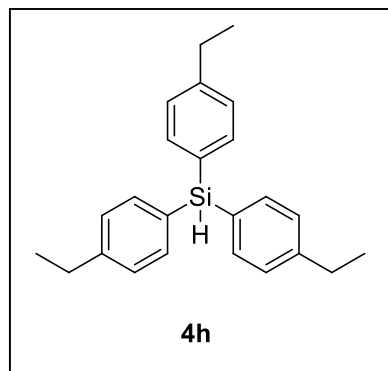
7.68
7.66
7.37
7.35

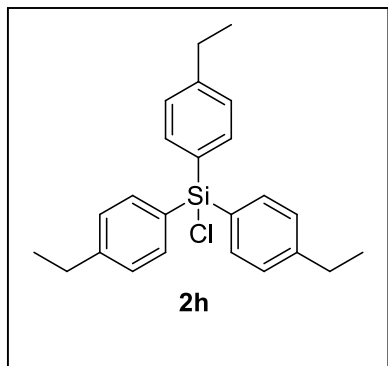
5.60

2.83
2.81
2.79
2.77

1.41
1.39
1.37



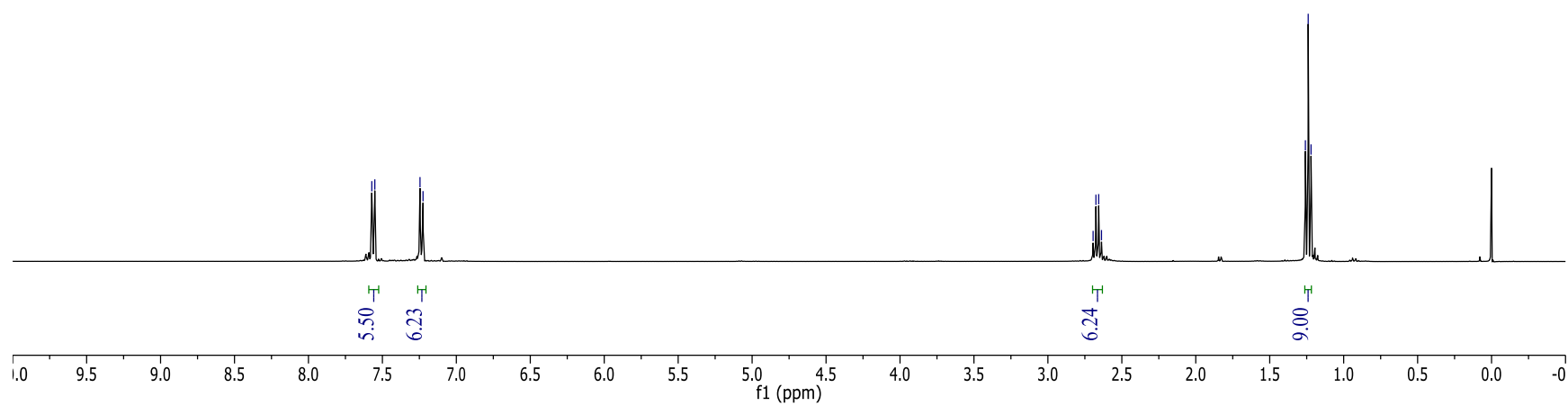




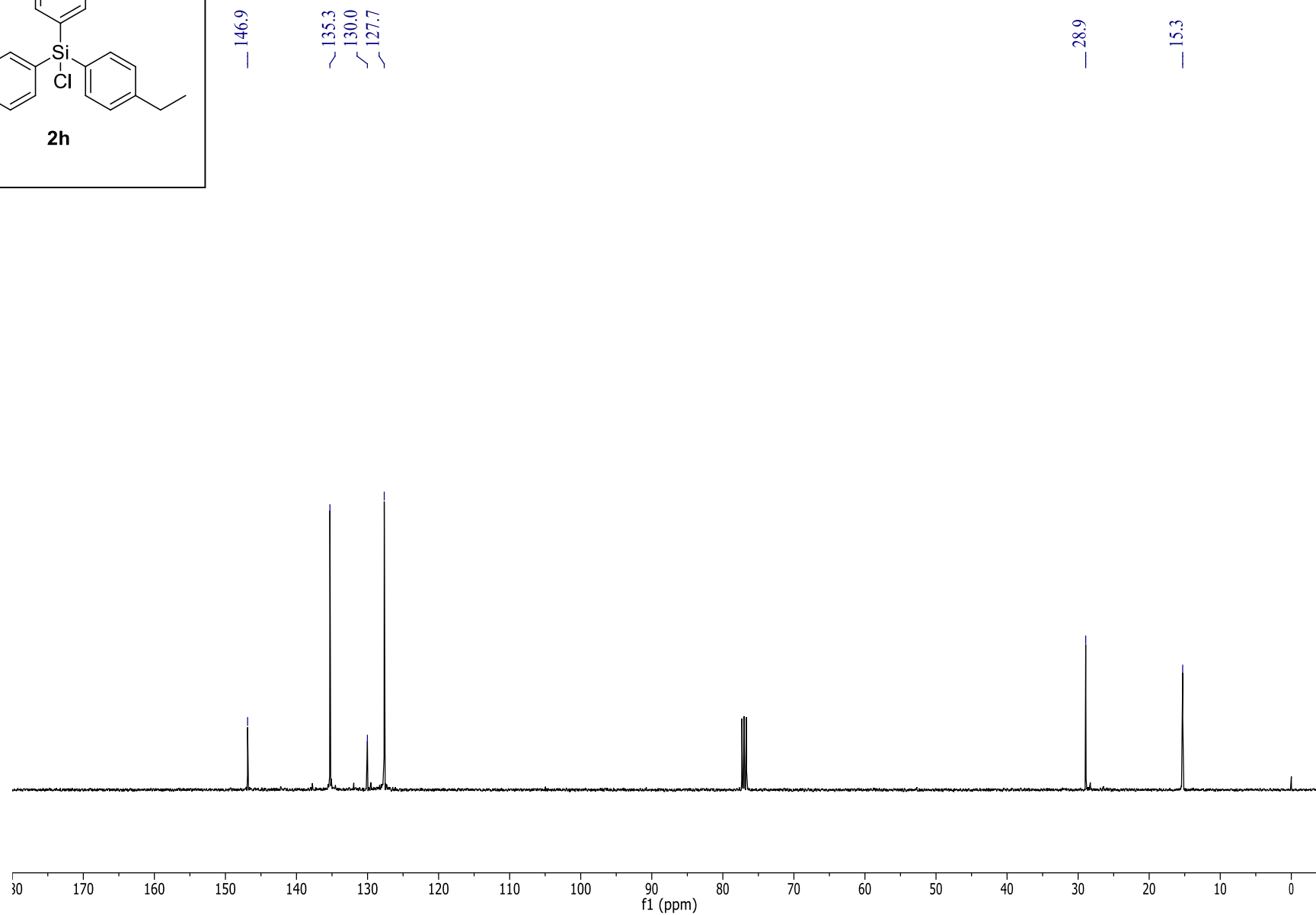
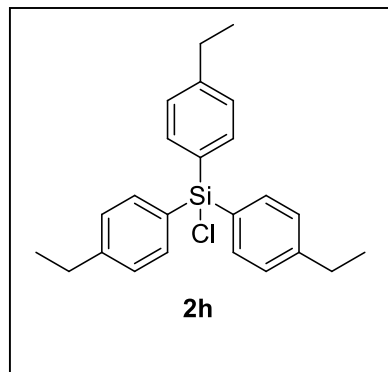
7.57
7.55
7.25
7.23

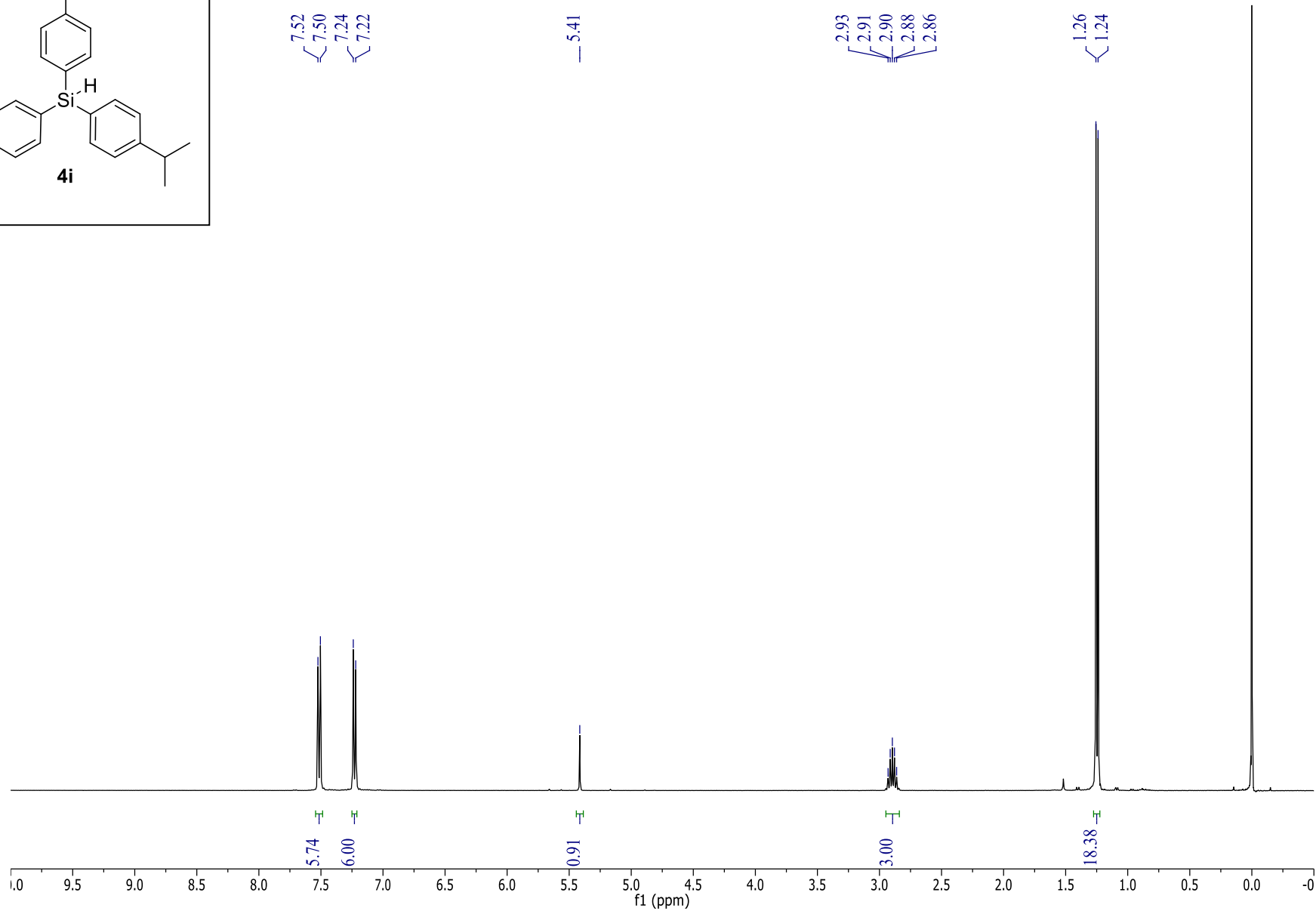
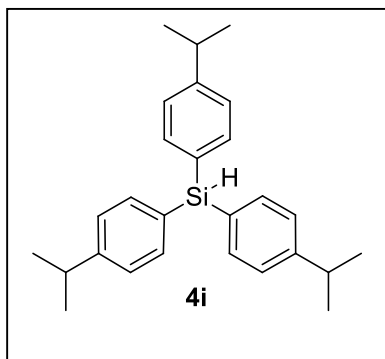
2.69
2.68
2.66
2.64

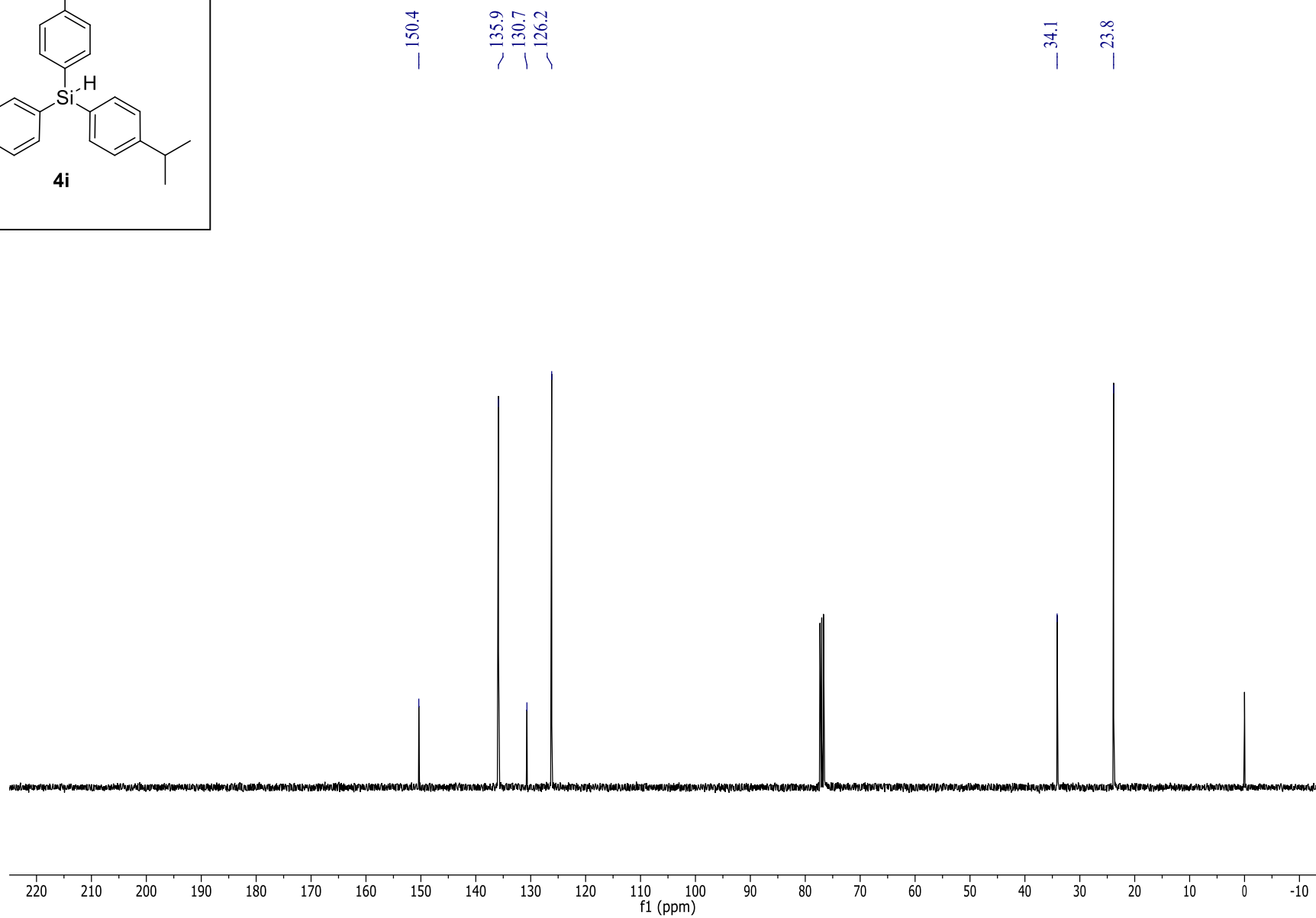
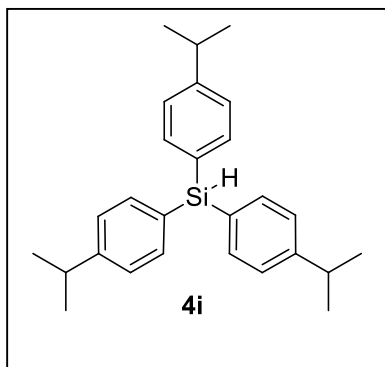
1.26
1.24
1.22

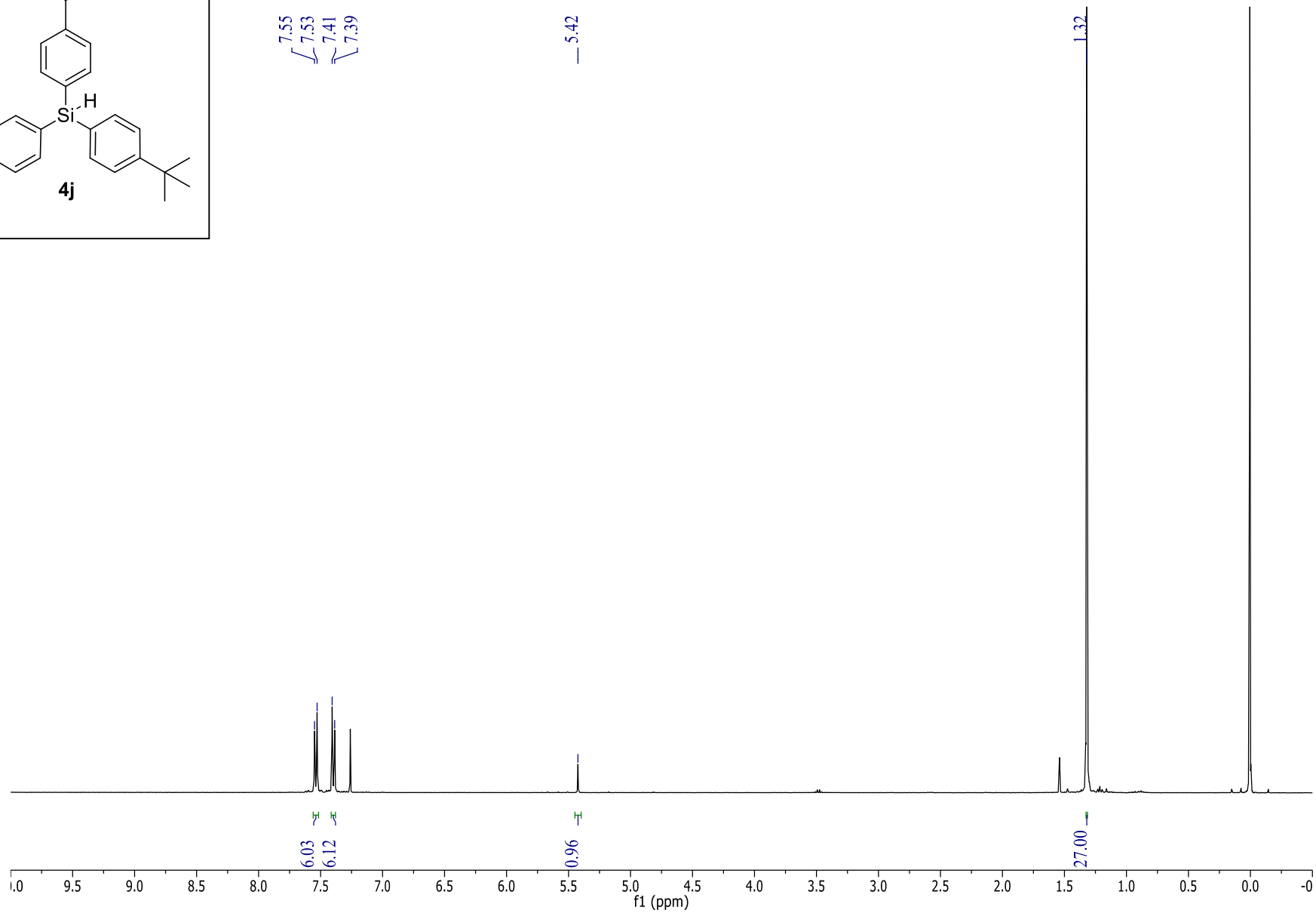
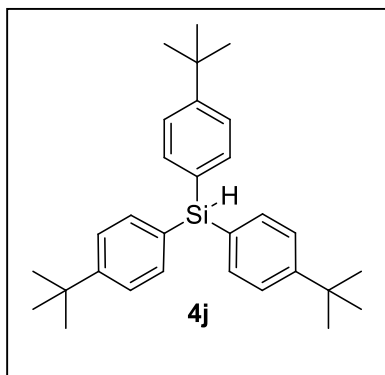


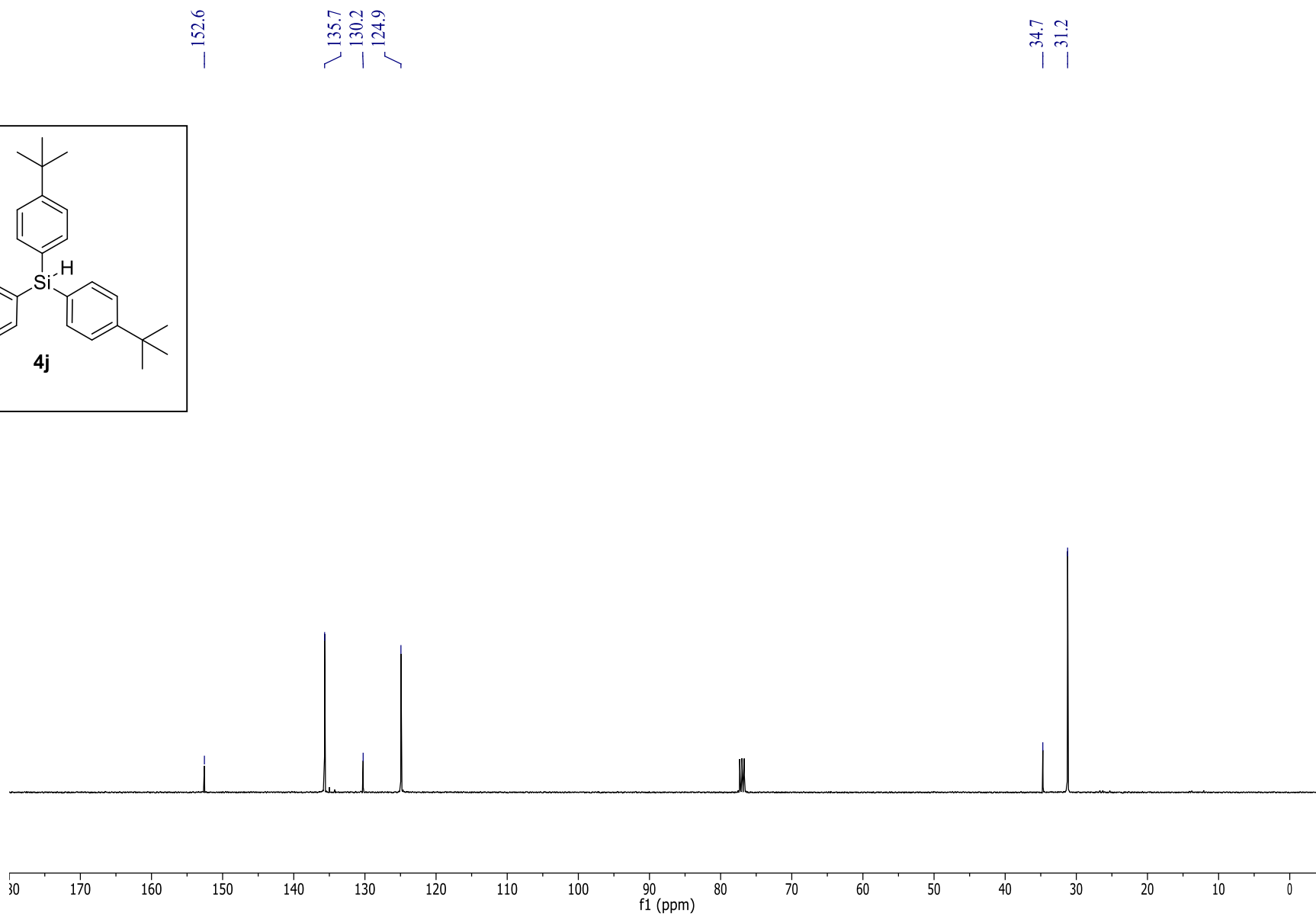
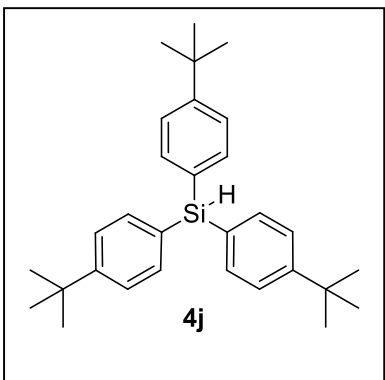
S40

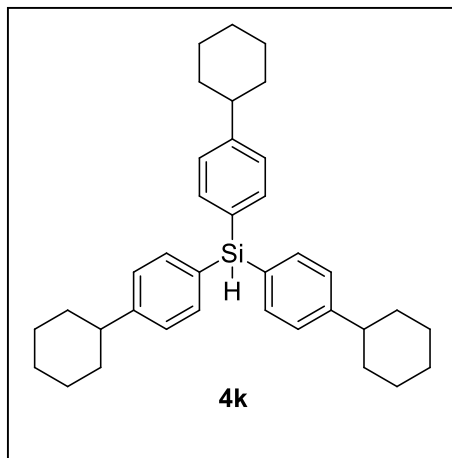








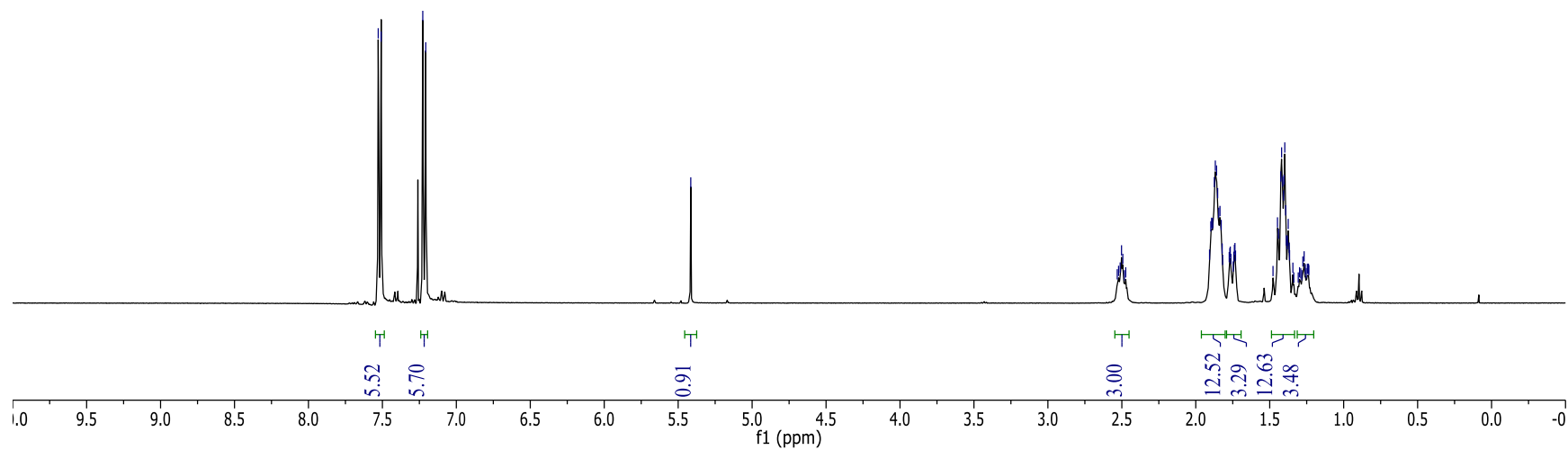


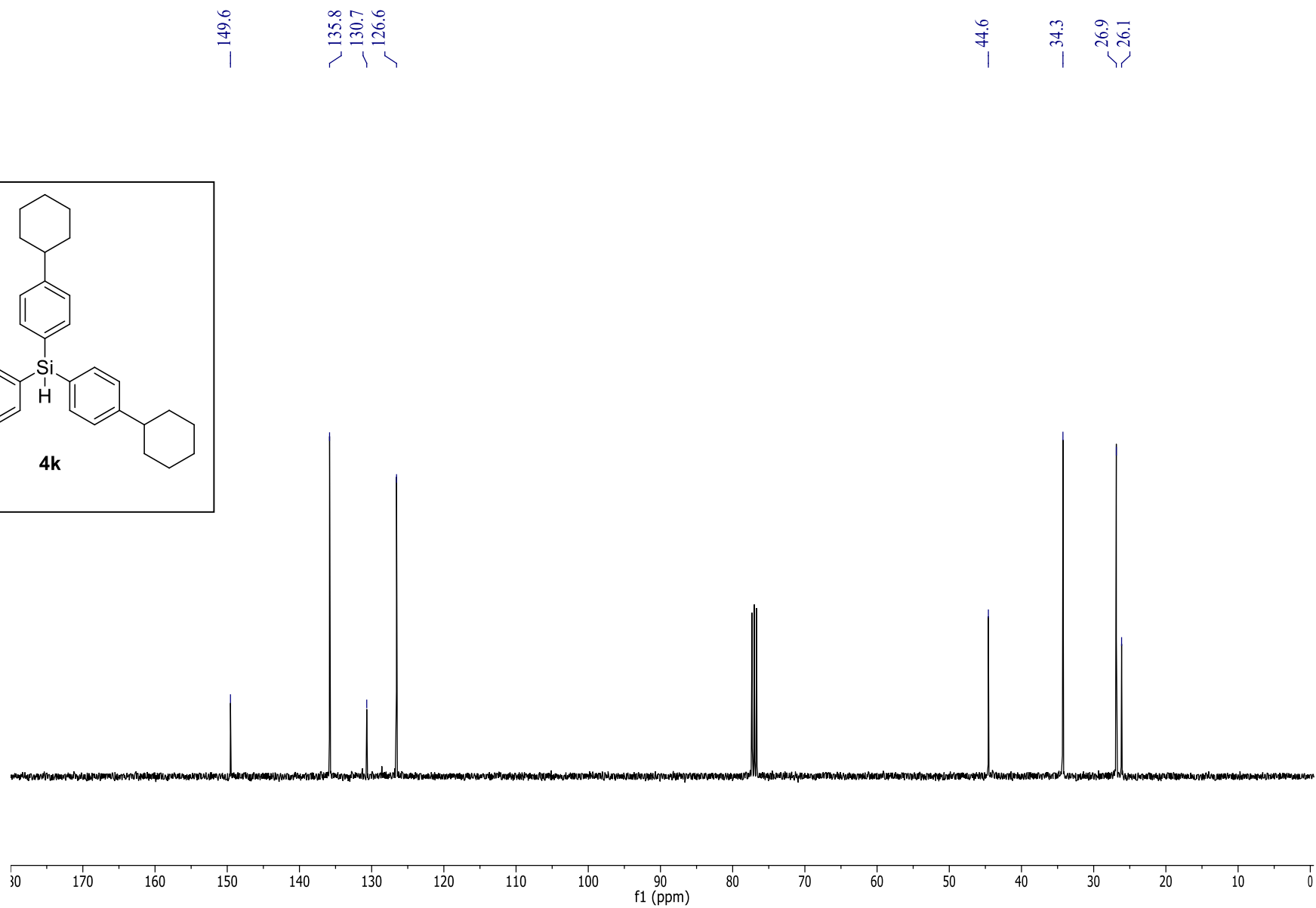
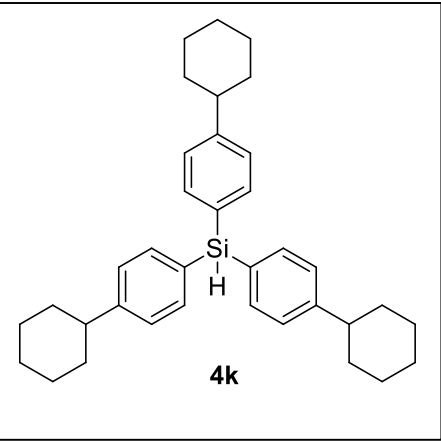


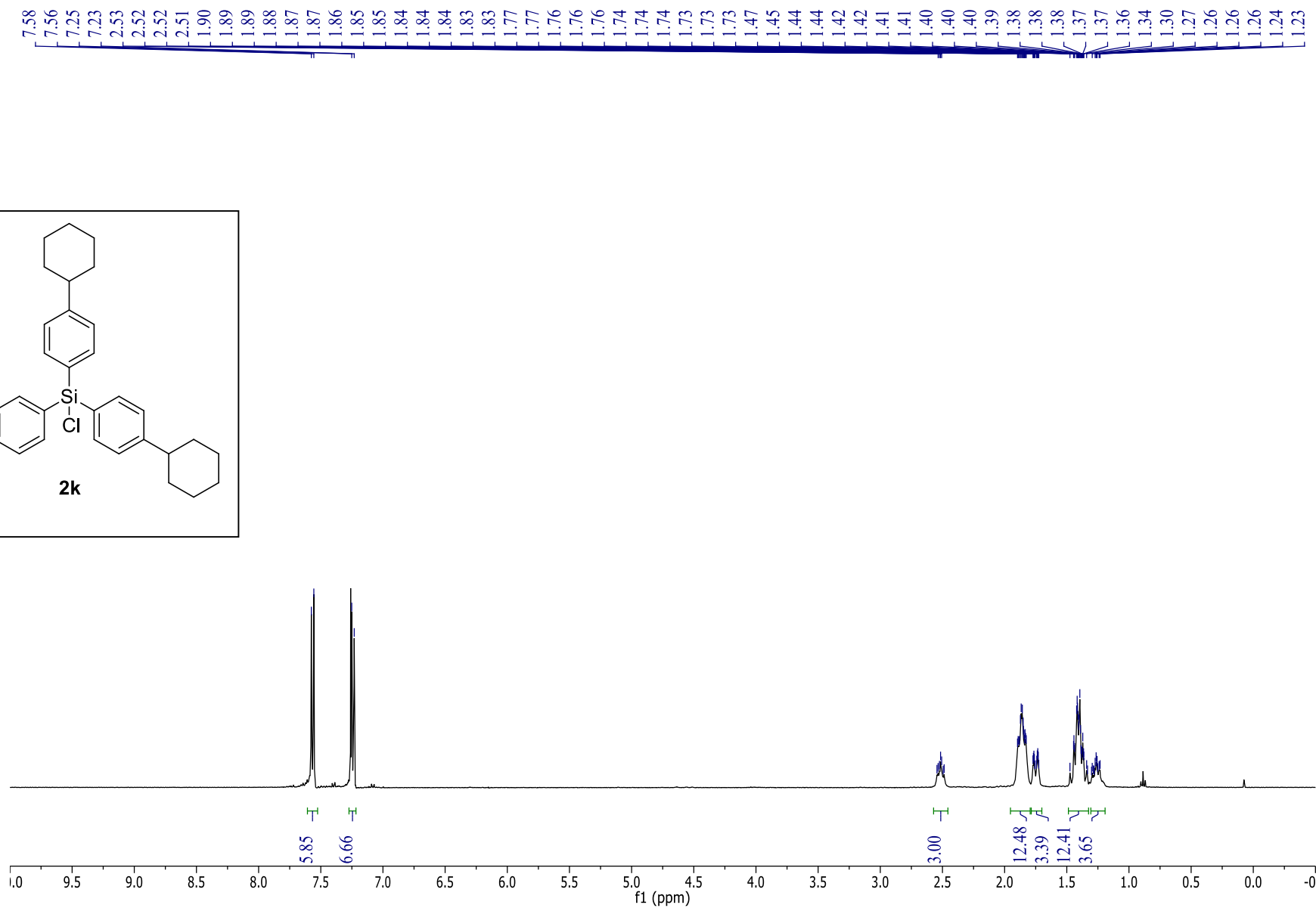
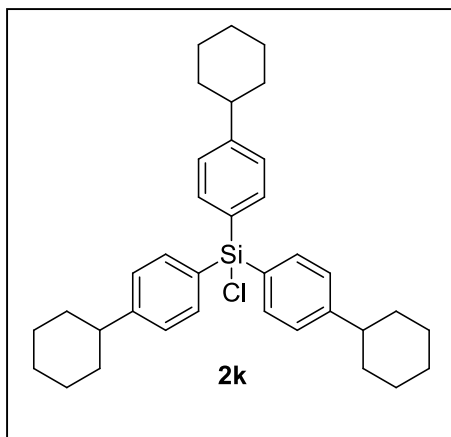
7.53
7.51
7.23
7.21

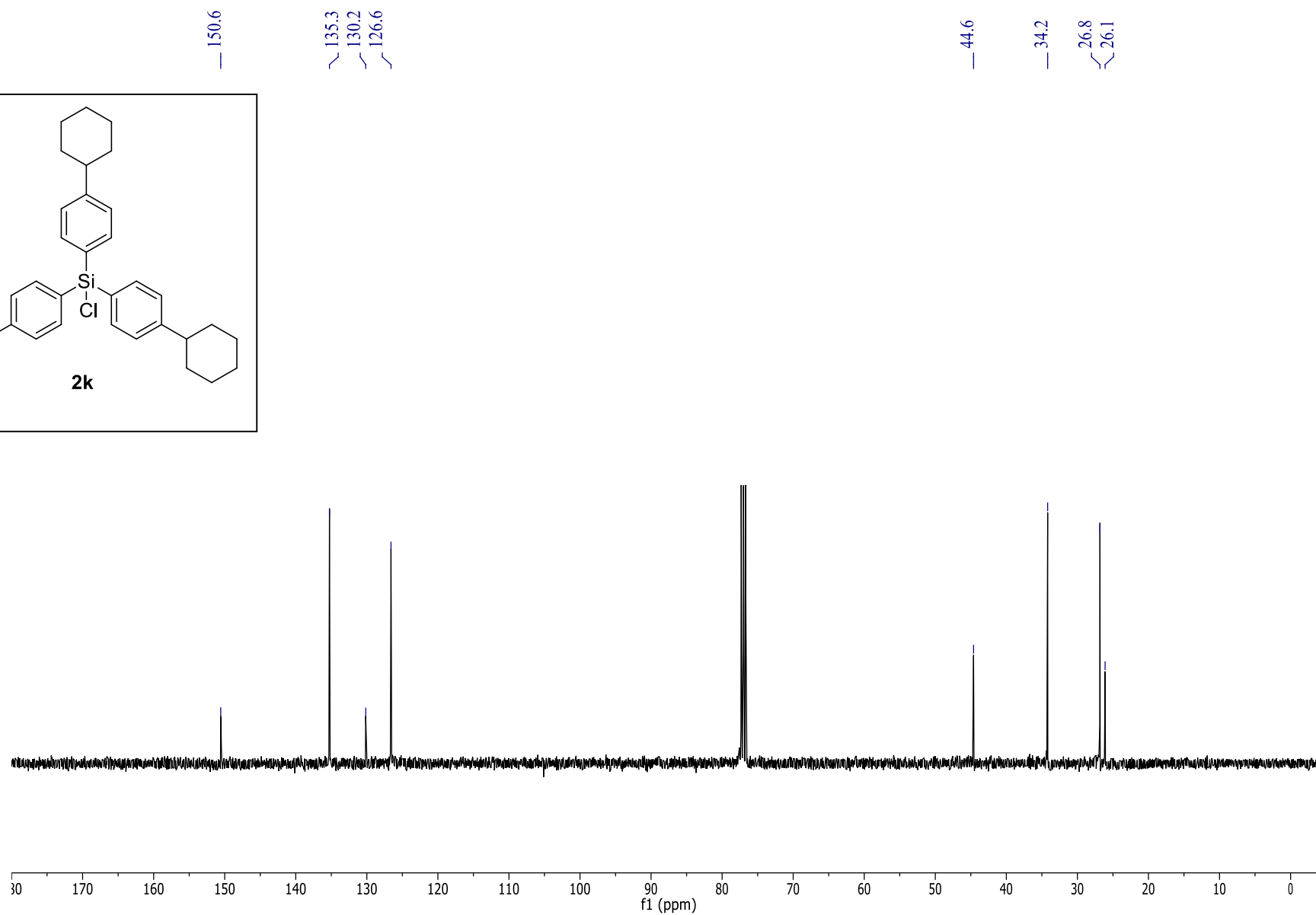
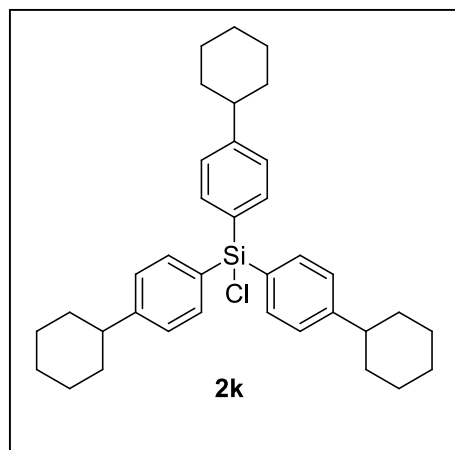
5.41

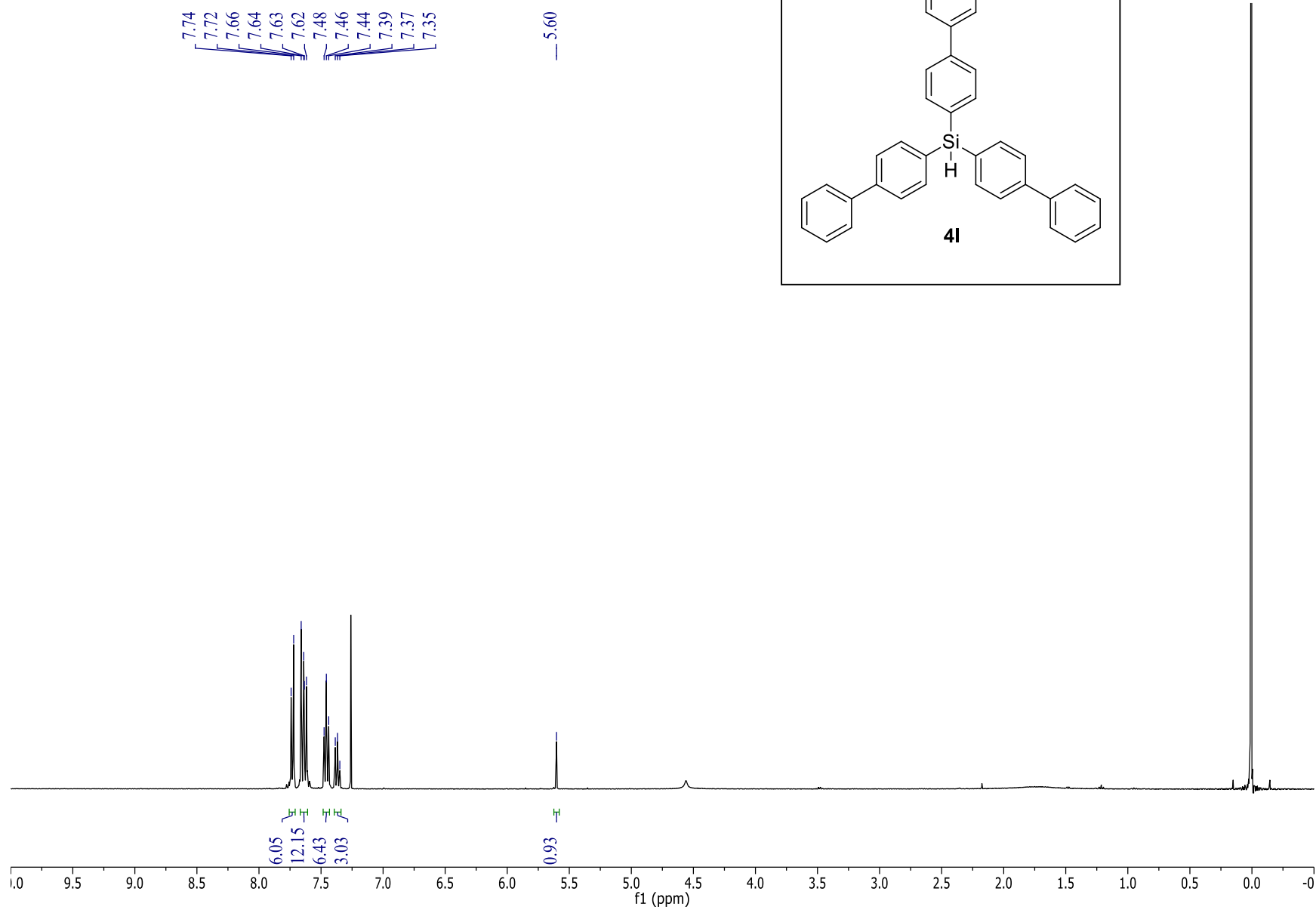
2.53
2.52
2.51
2.50
2.49
2.48
2.47
1.91
1.90
1.89
1.89
1.89
1.87
1.86
1.85
1.84
1.83
1.82
1.82
1.77
1.77
1.76
1.75
1.74
1.74
1.73
1.45
1.44
1.43
1.42
1.41
1.41
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1.40
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1.39
1.38
1.38
1.37
1.37
1.28
1.27





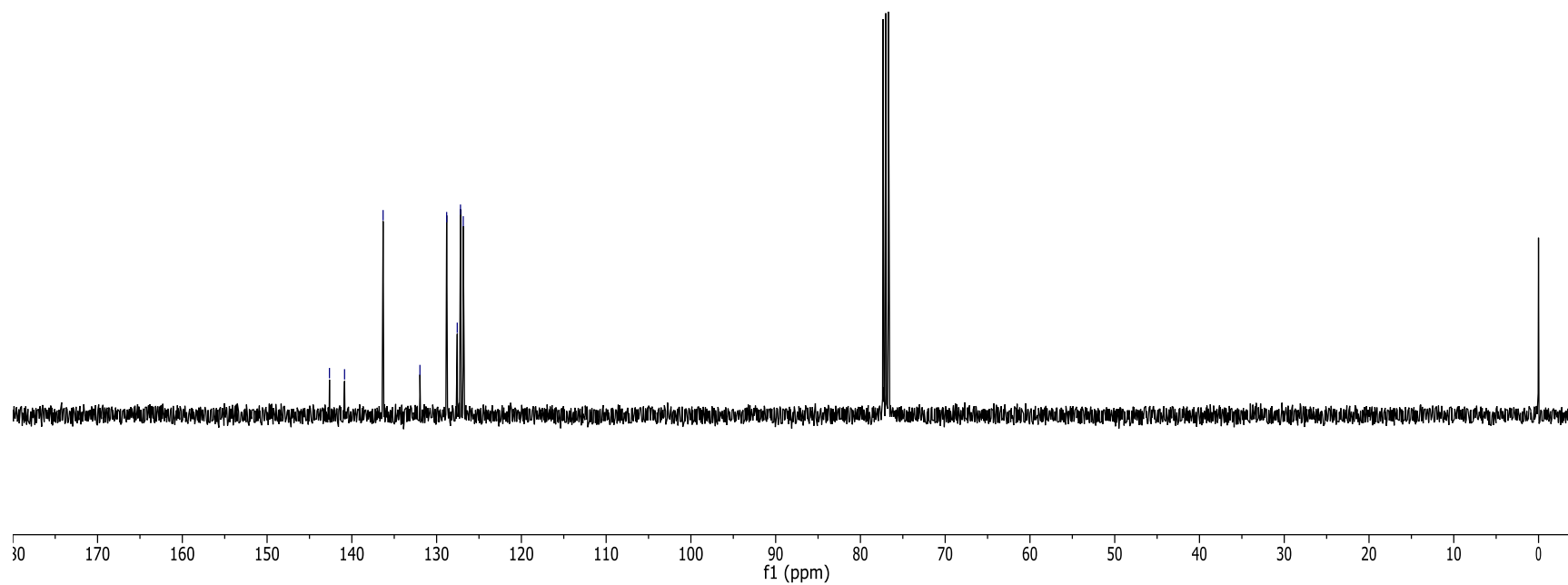
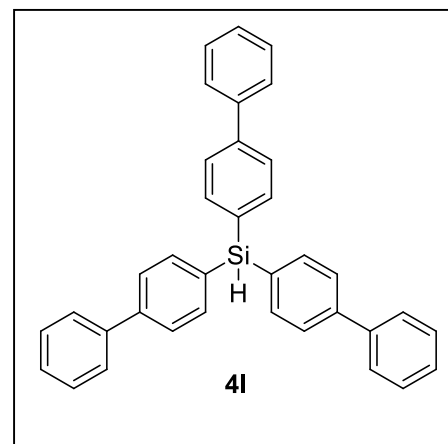




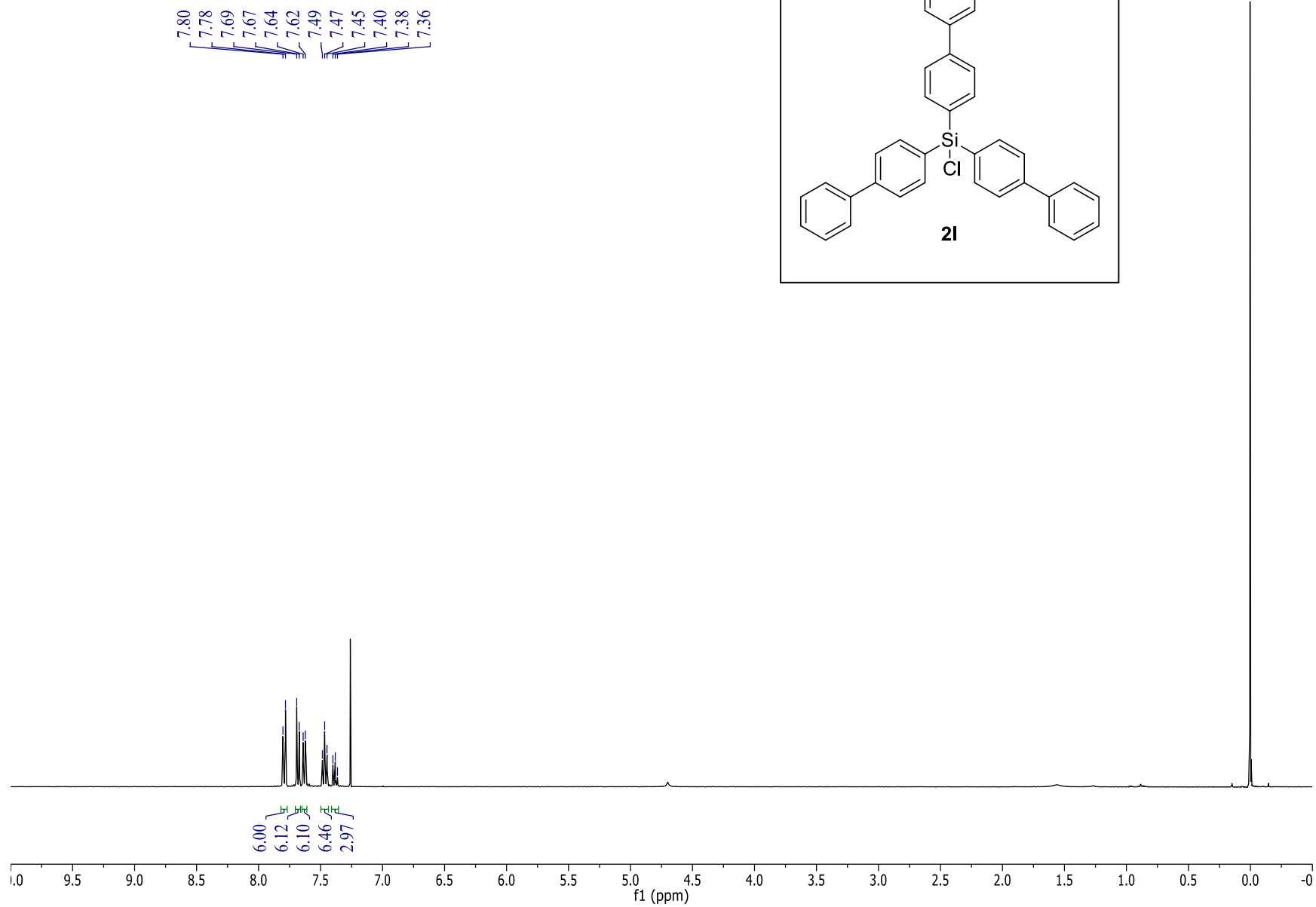


S50

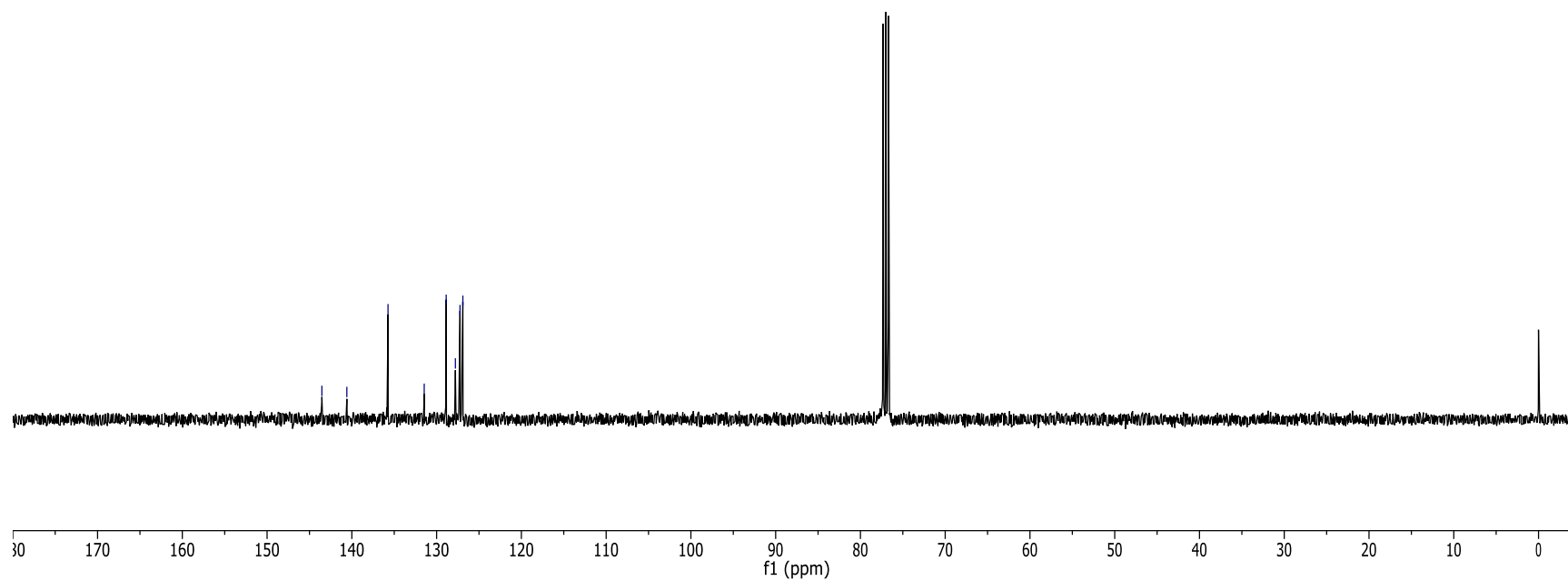
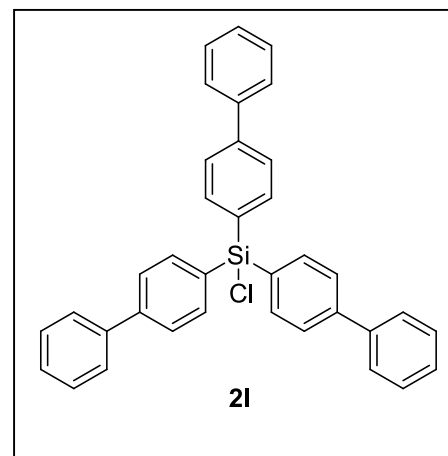
142.6
140.9
136.3
132.0
128.8
127.6
127.2
126.9



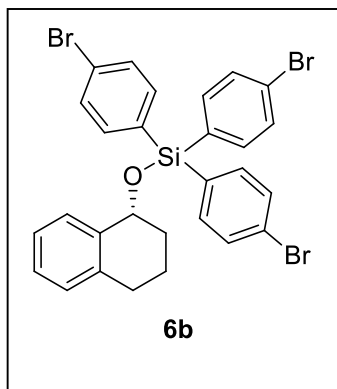
S51



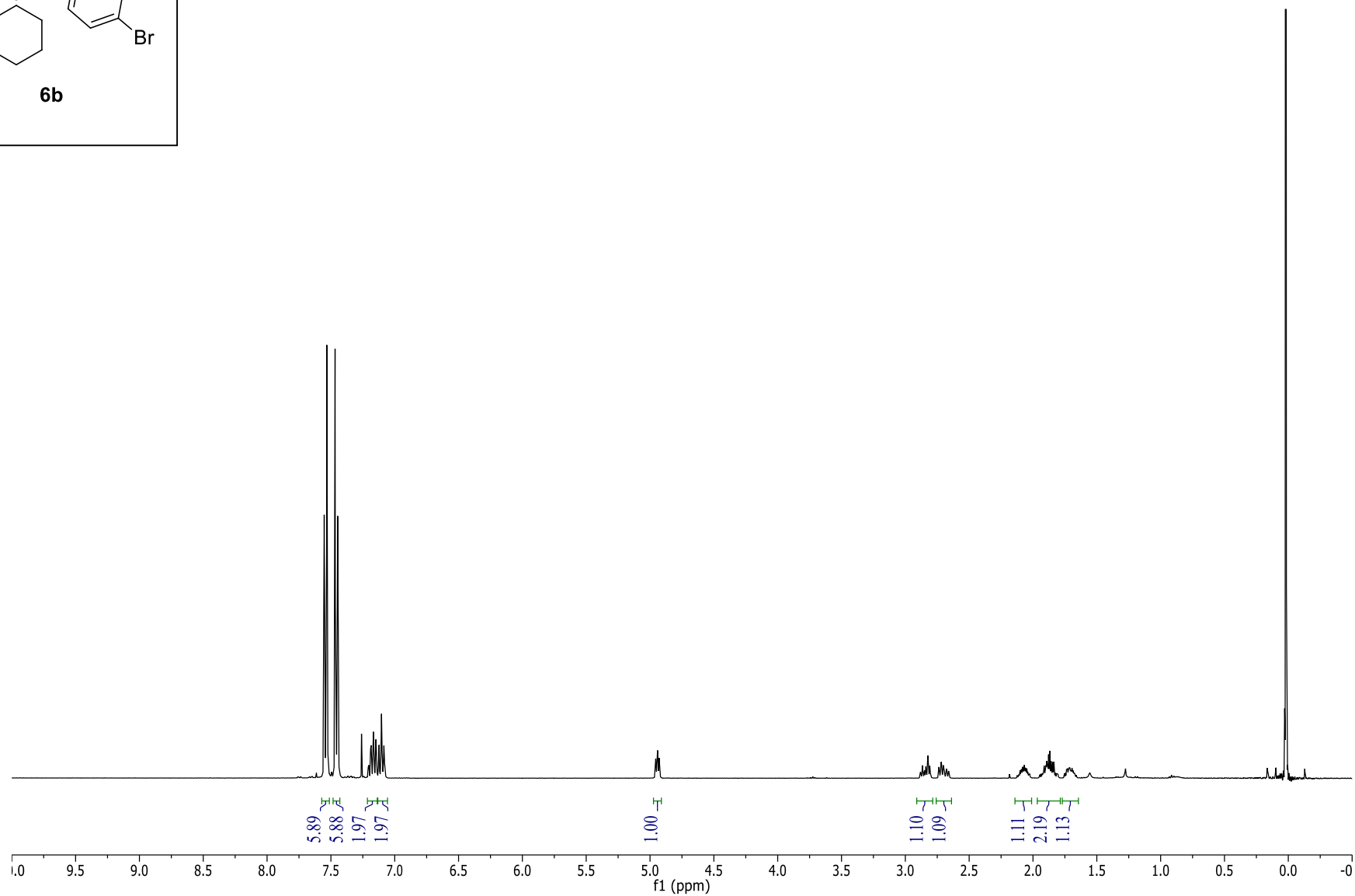
143.5
140.6
135.7
131.5
128.9
127.8
127.2
126.9

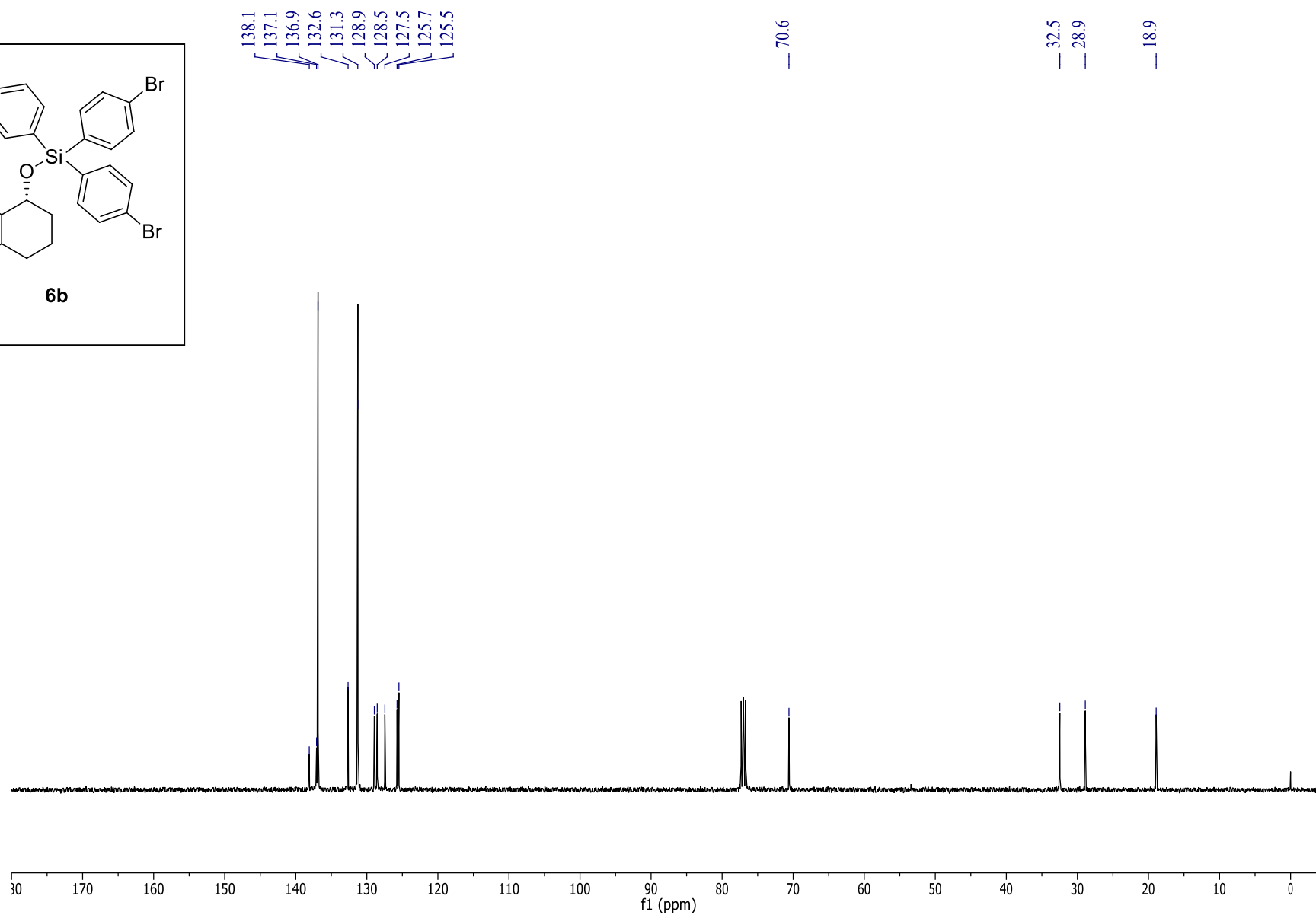
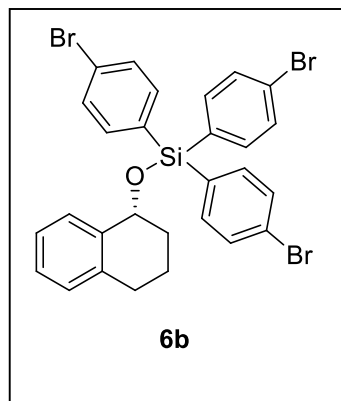


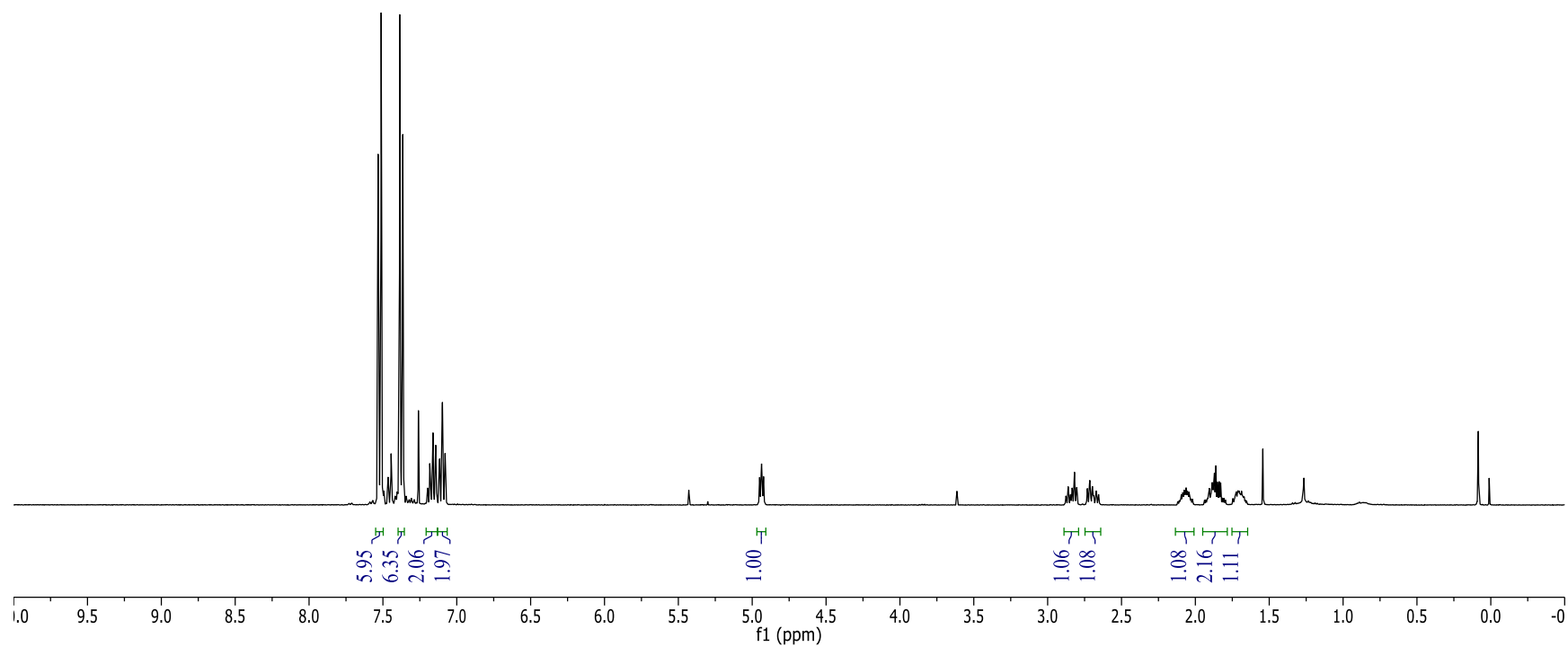
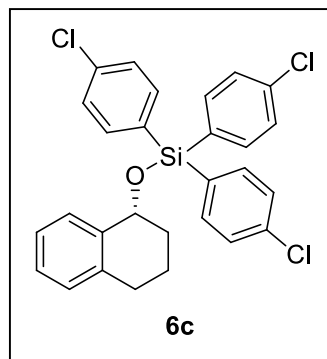
S53

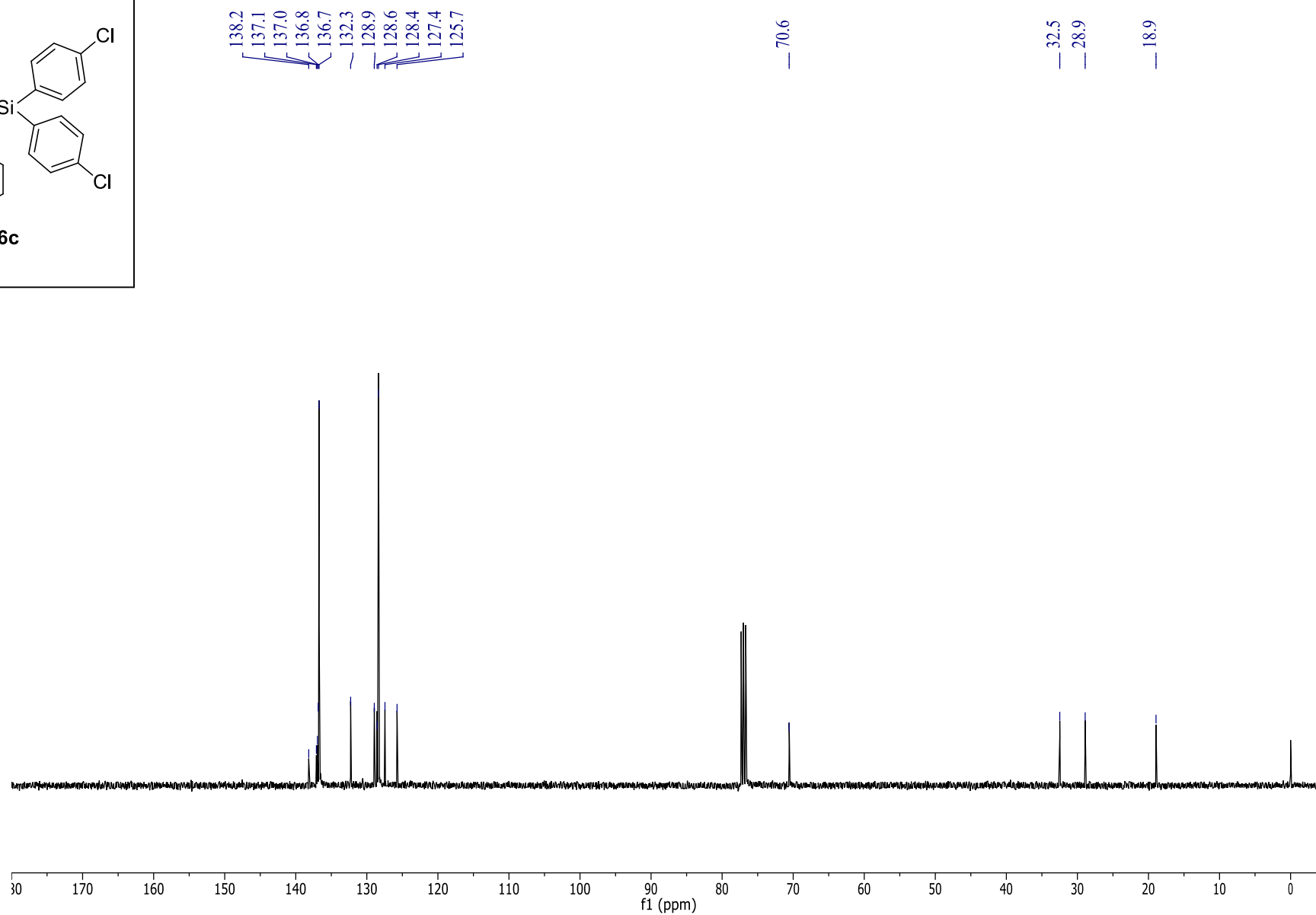
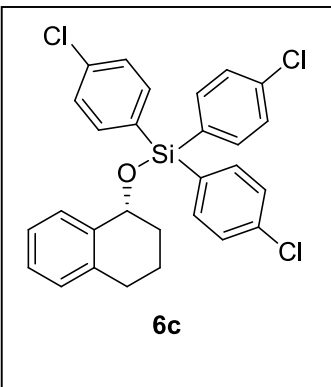


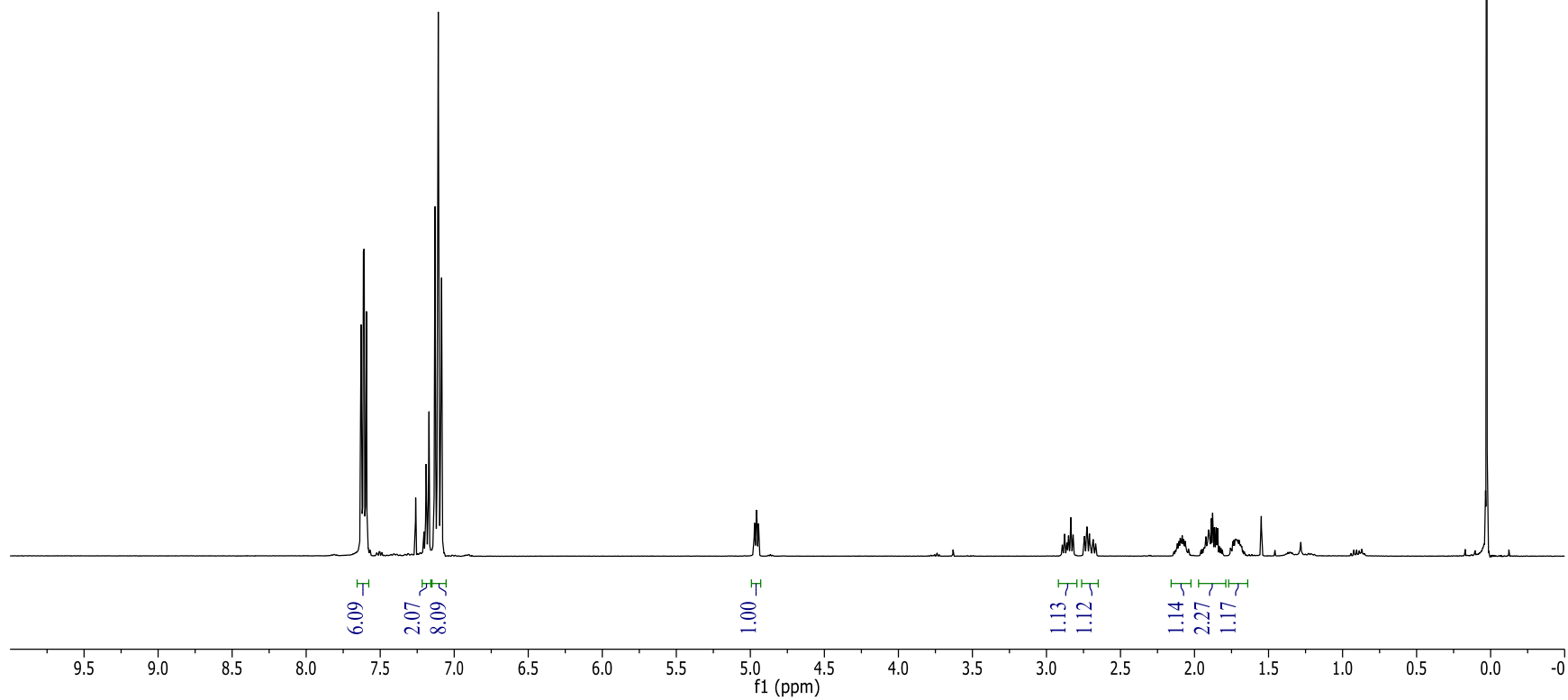
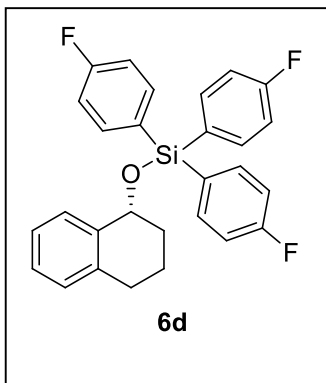
^1H and ^{13}C NMR Spectra of *p*-Substituted TPS-tetralol Products

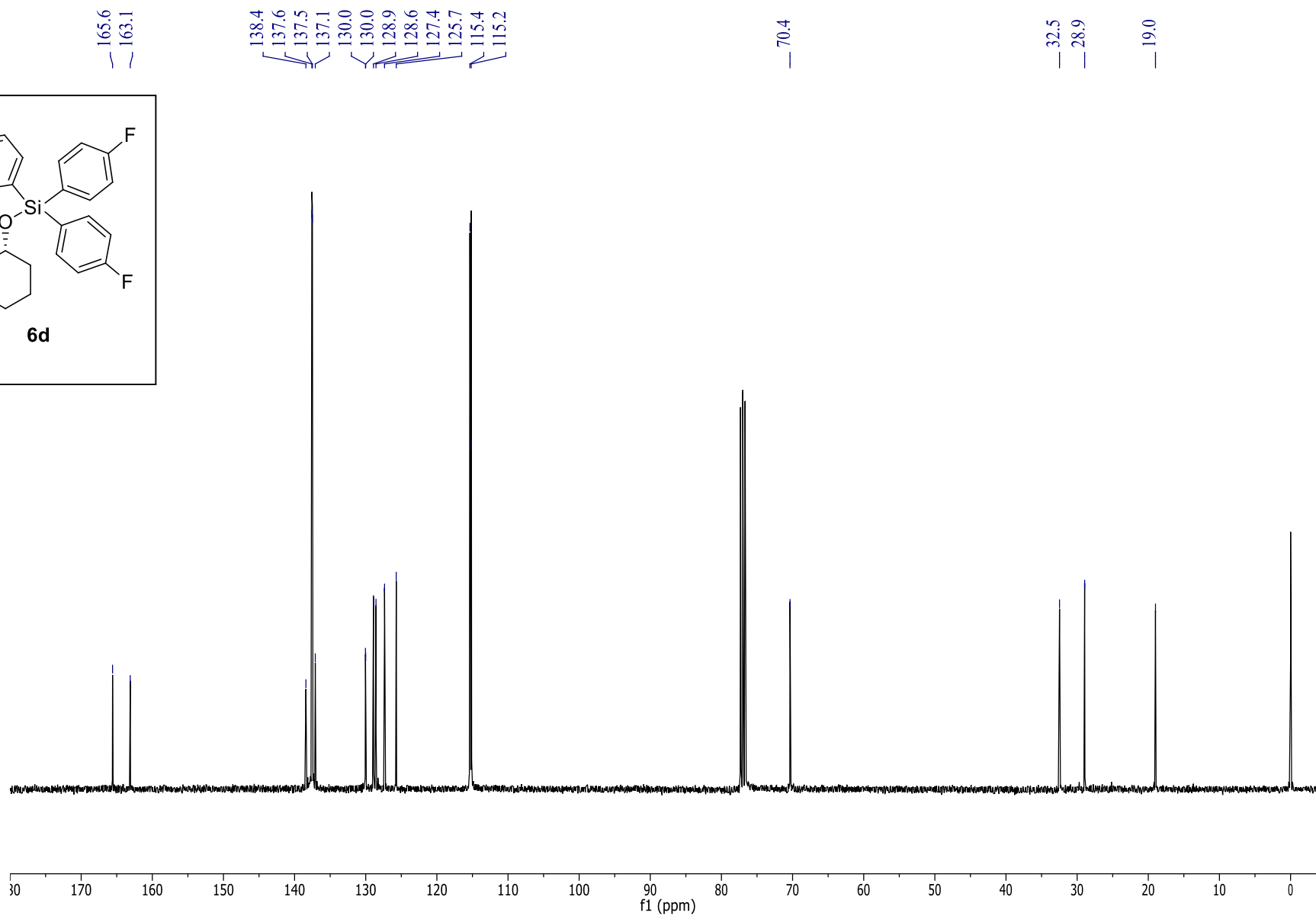
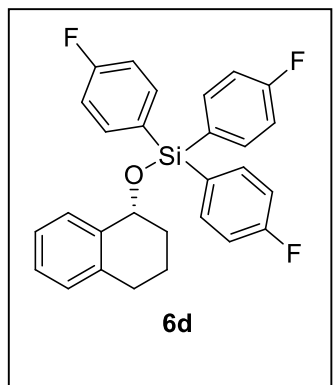


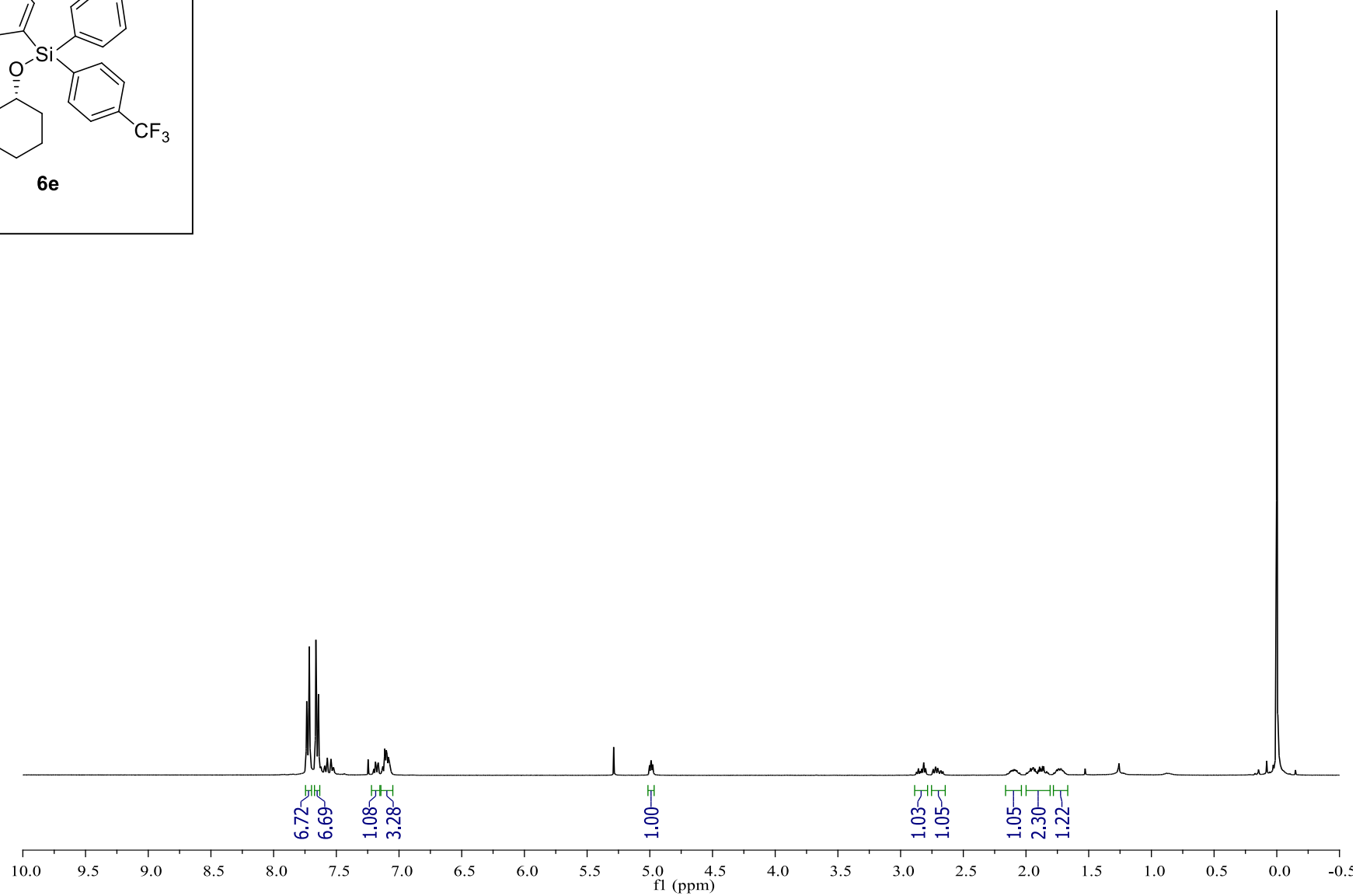
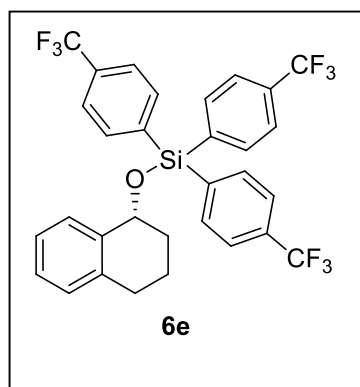


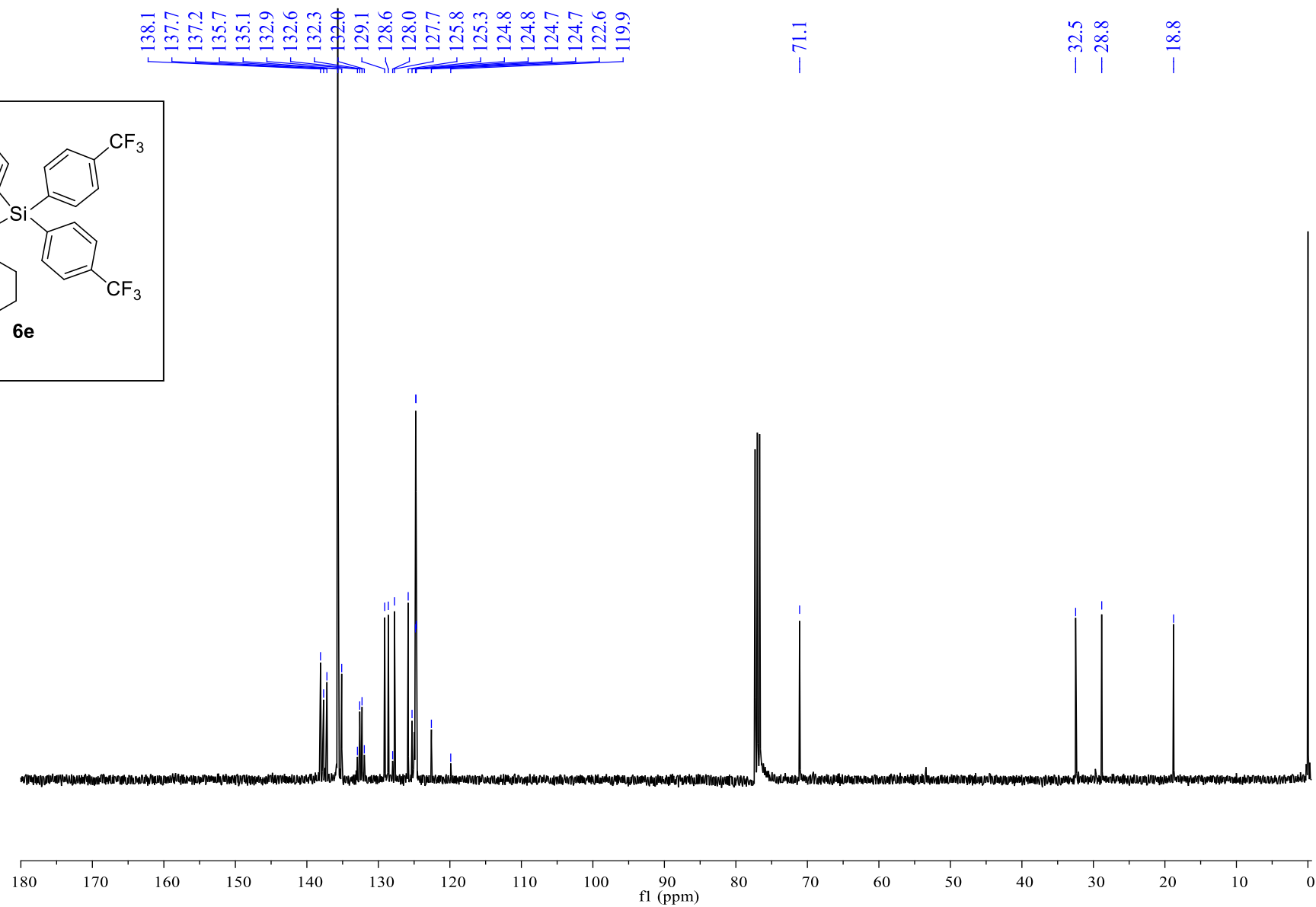
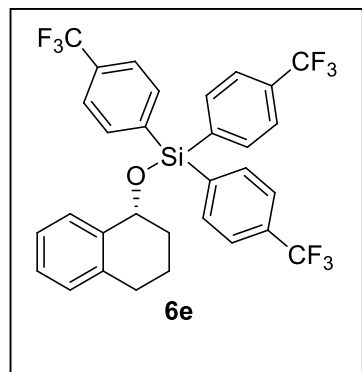


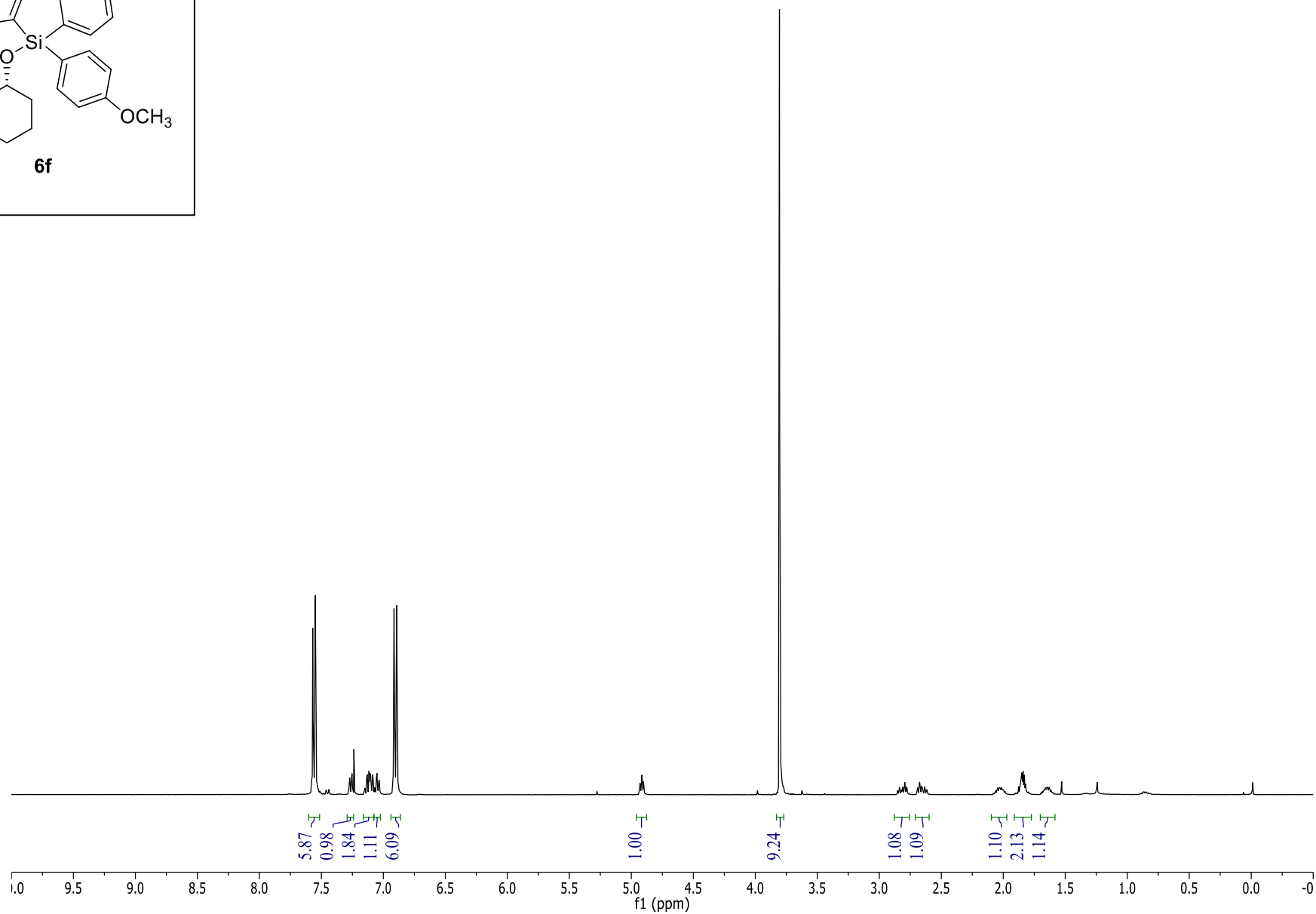
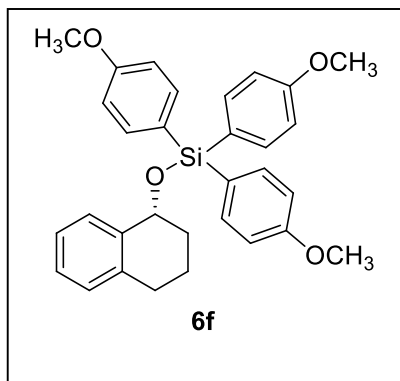


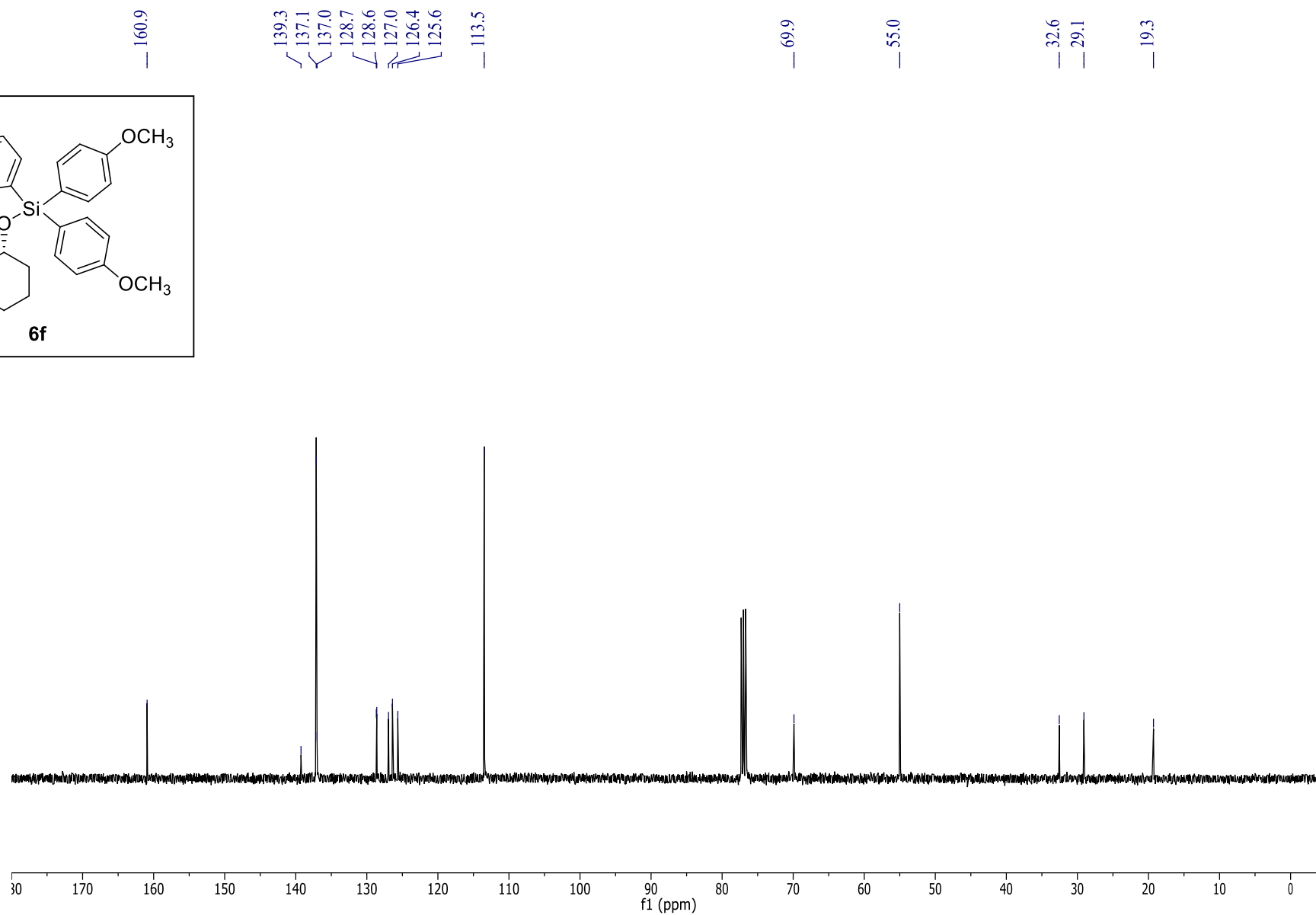
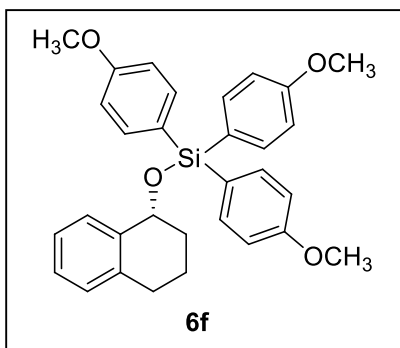


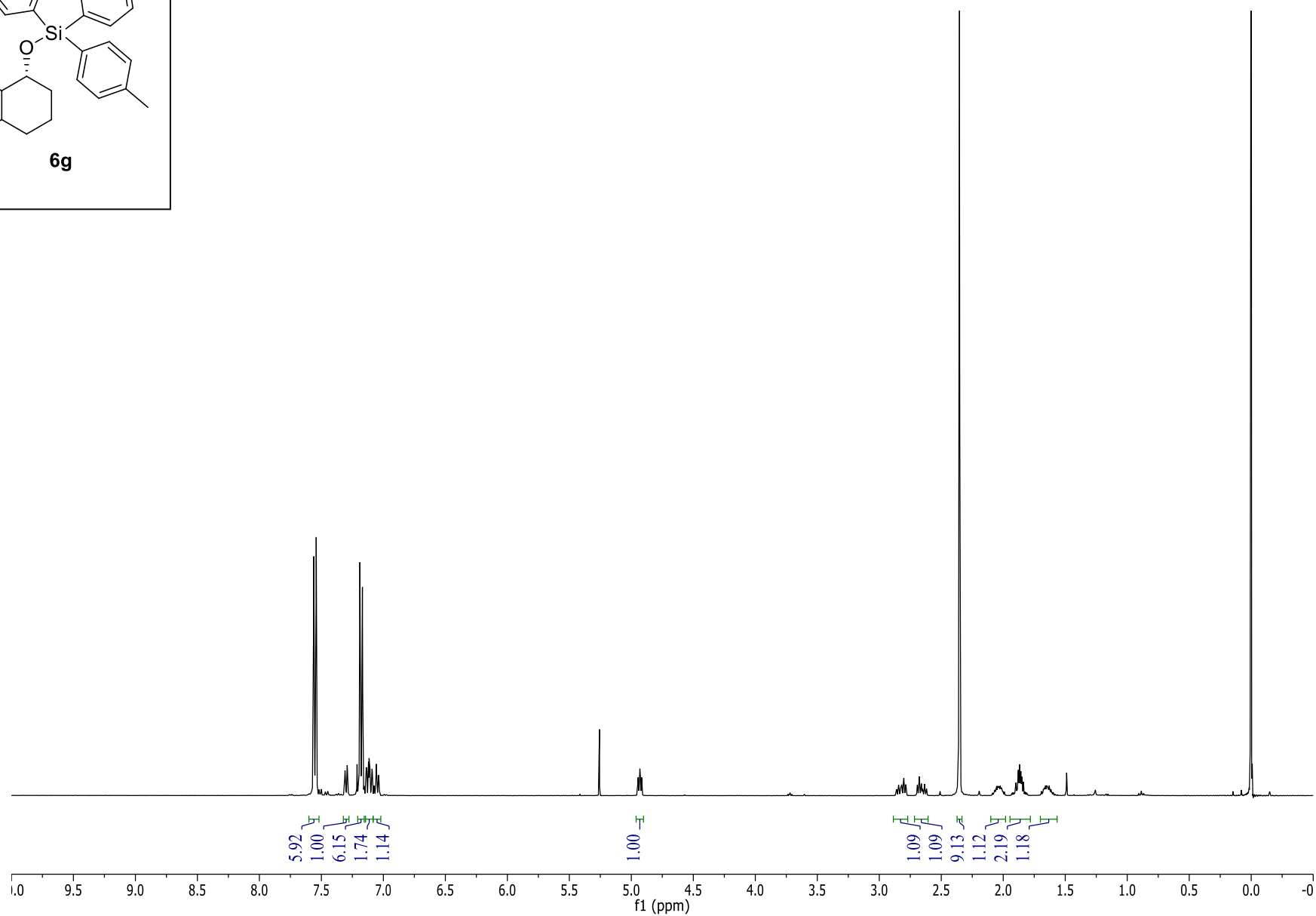
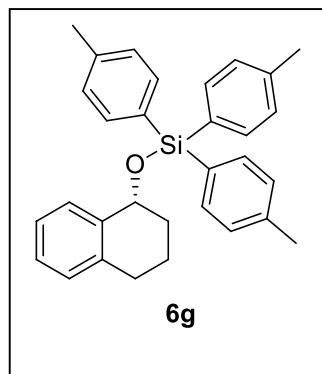


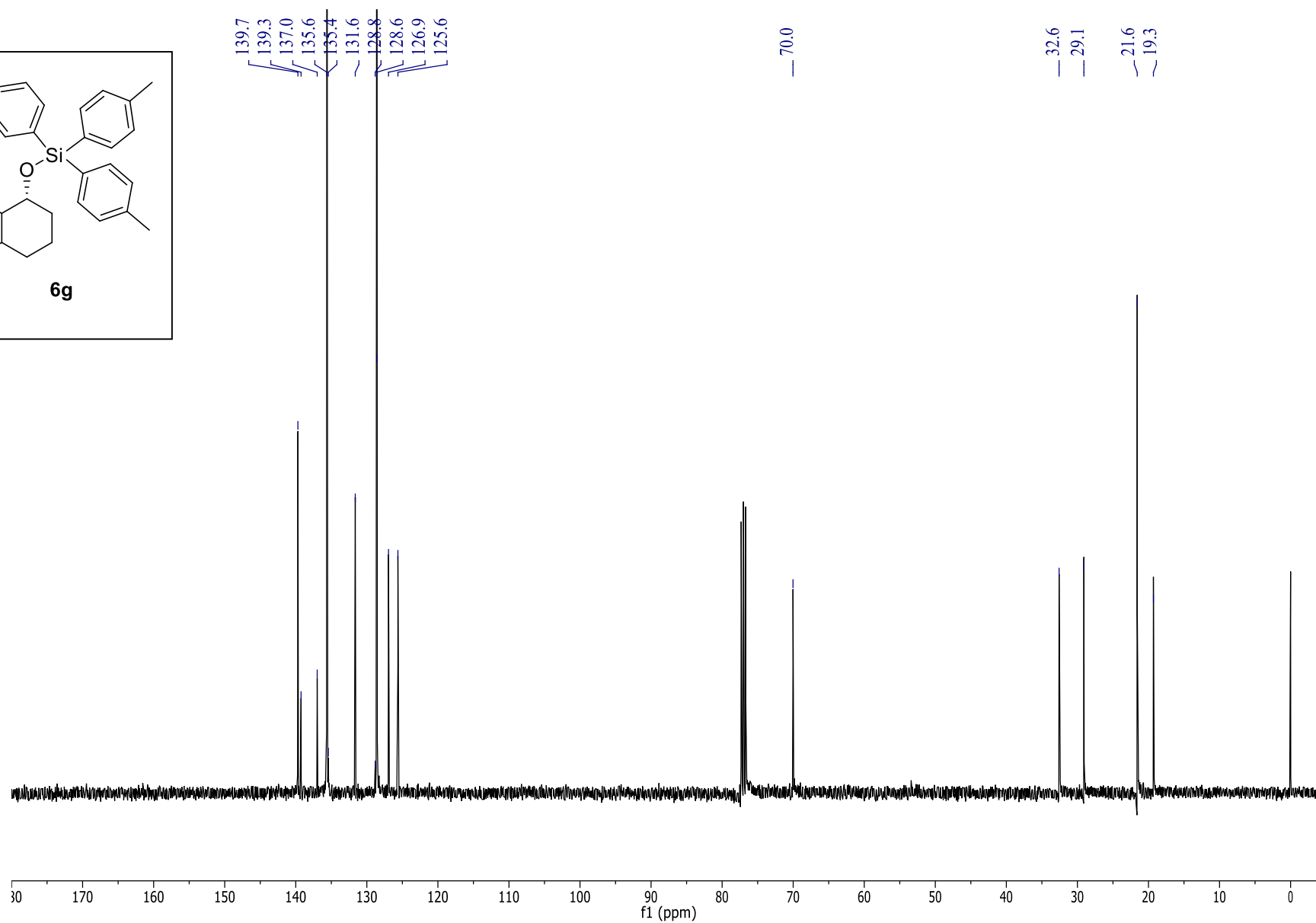
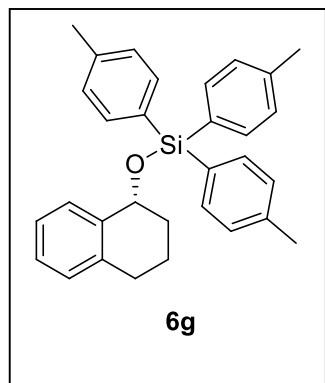


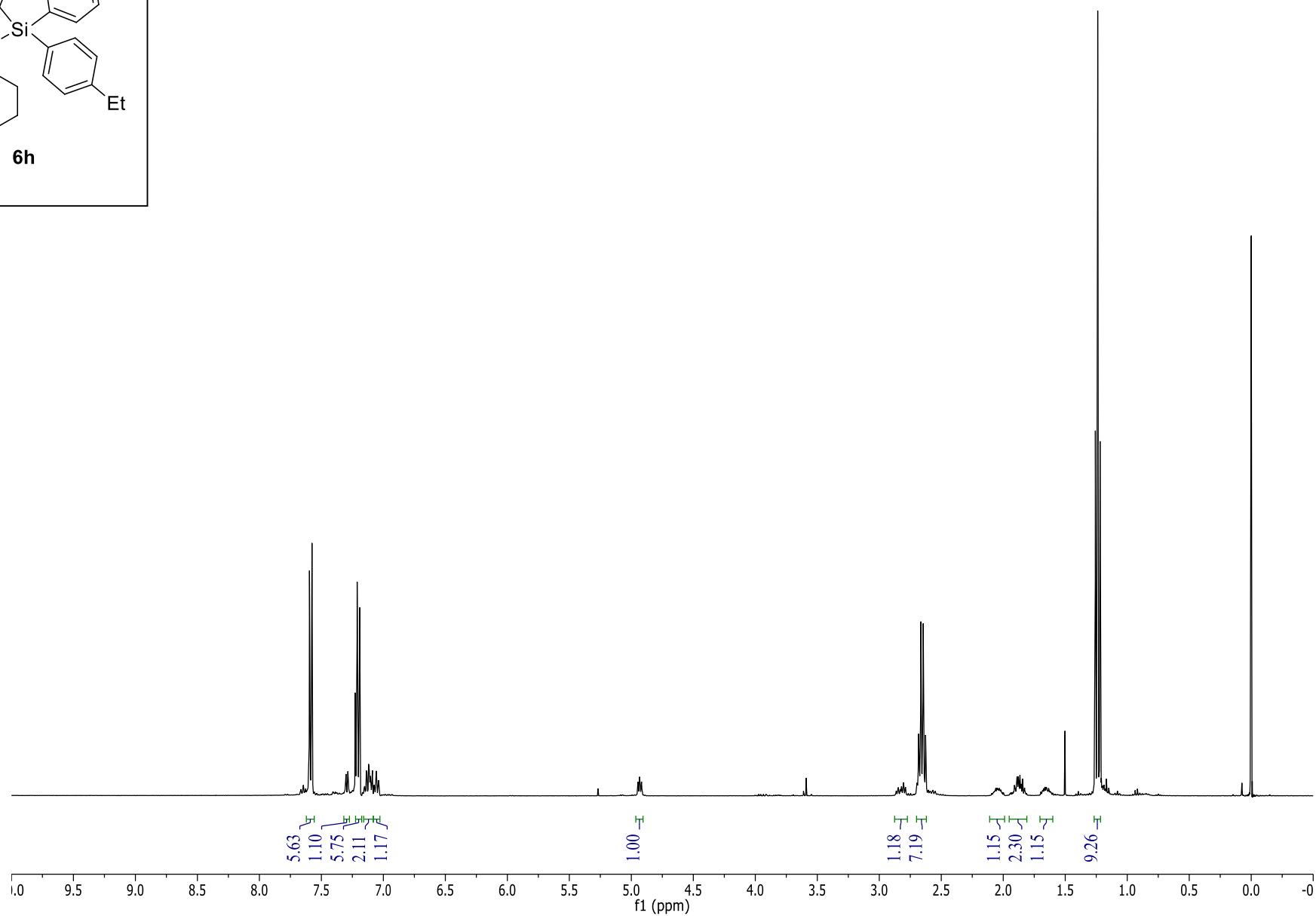
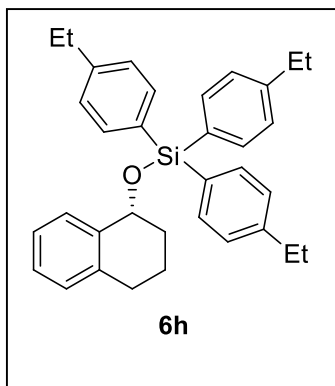


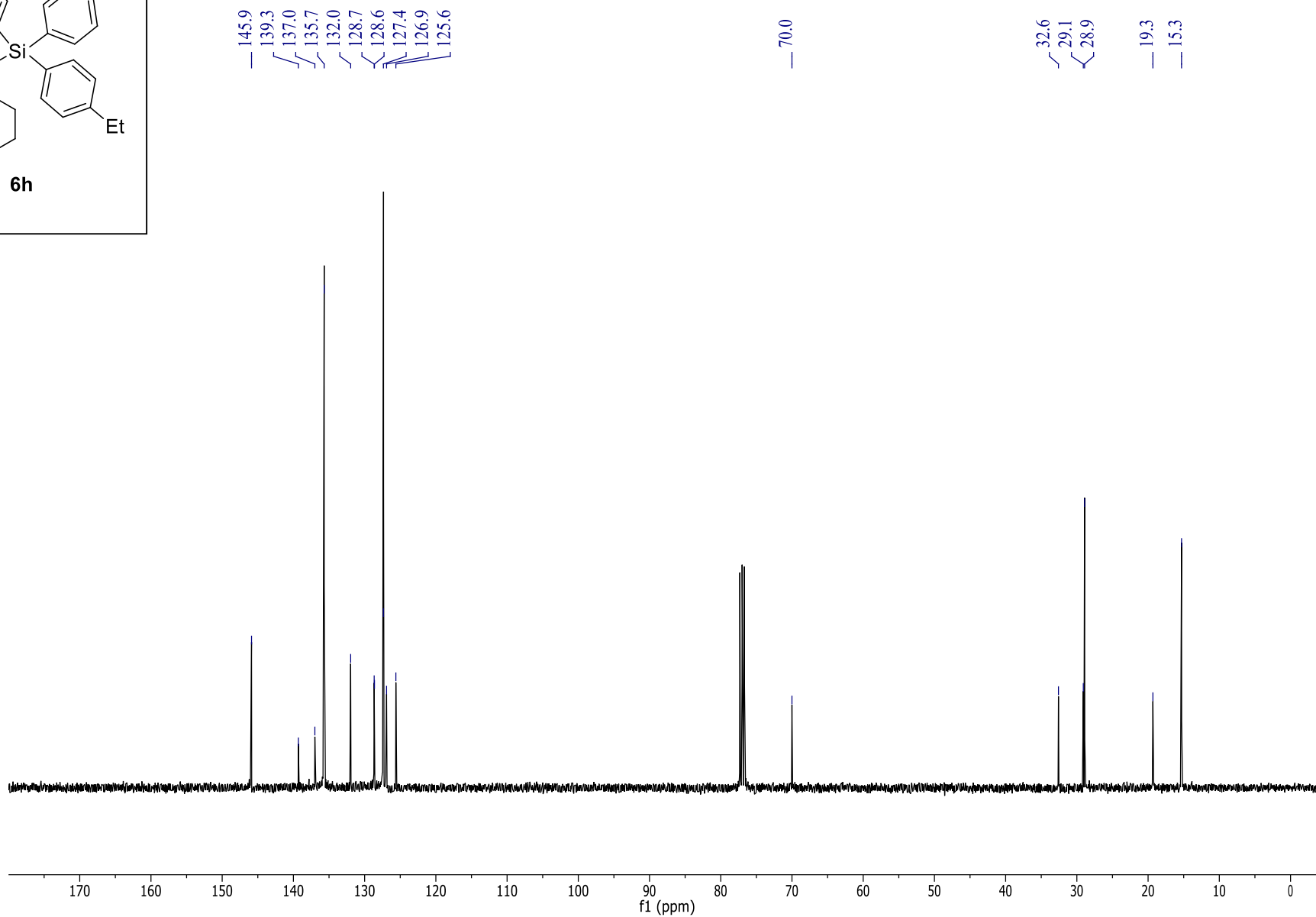
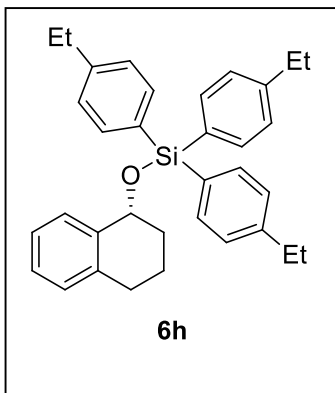


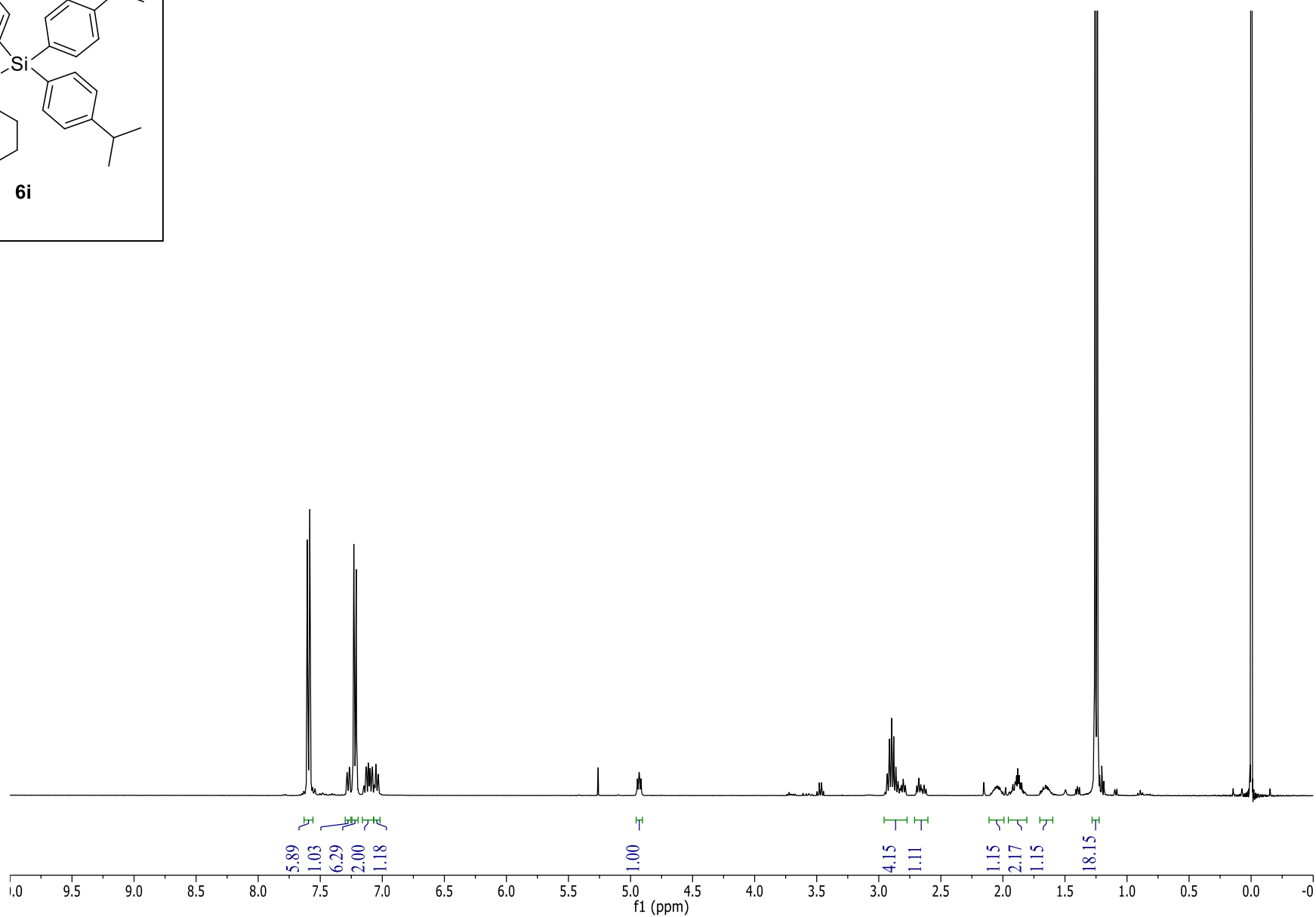
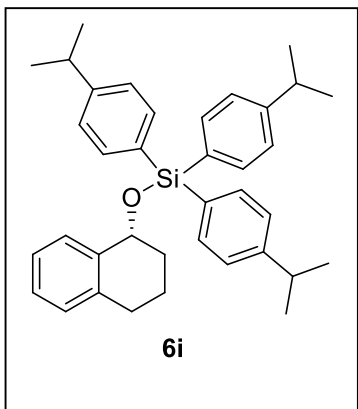


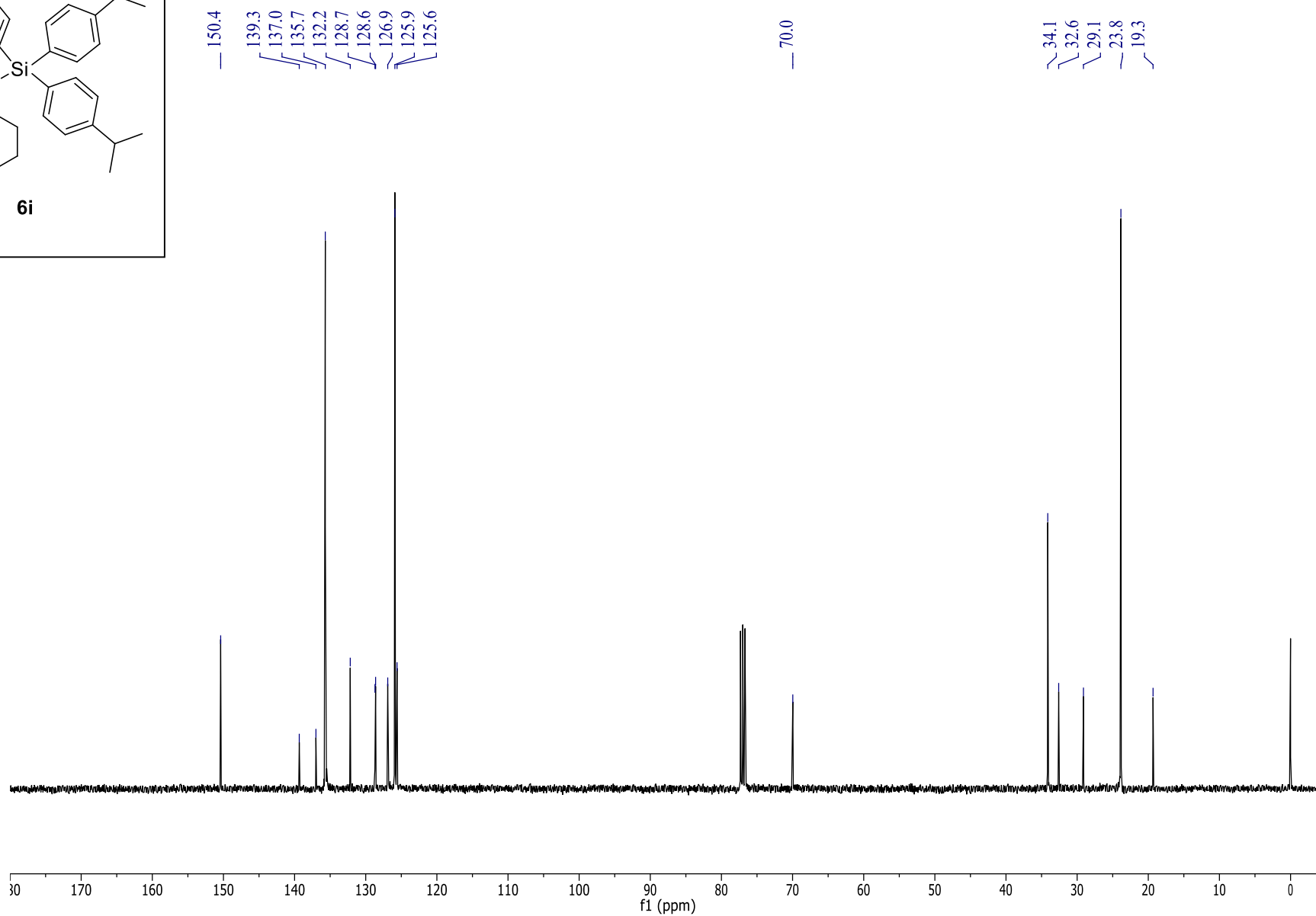
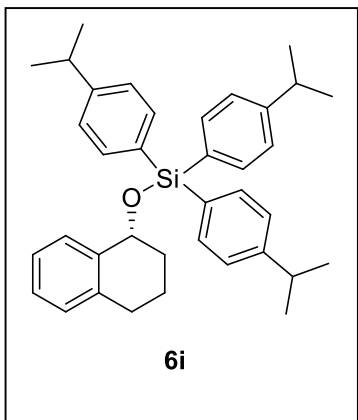


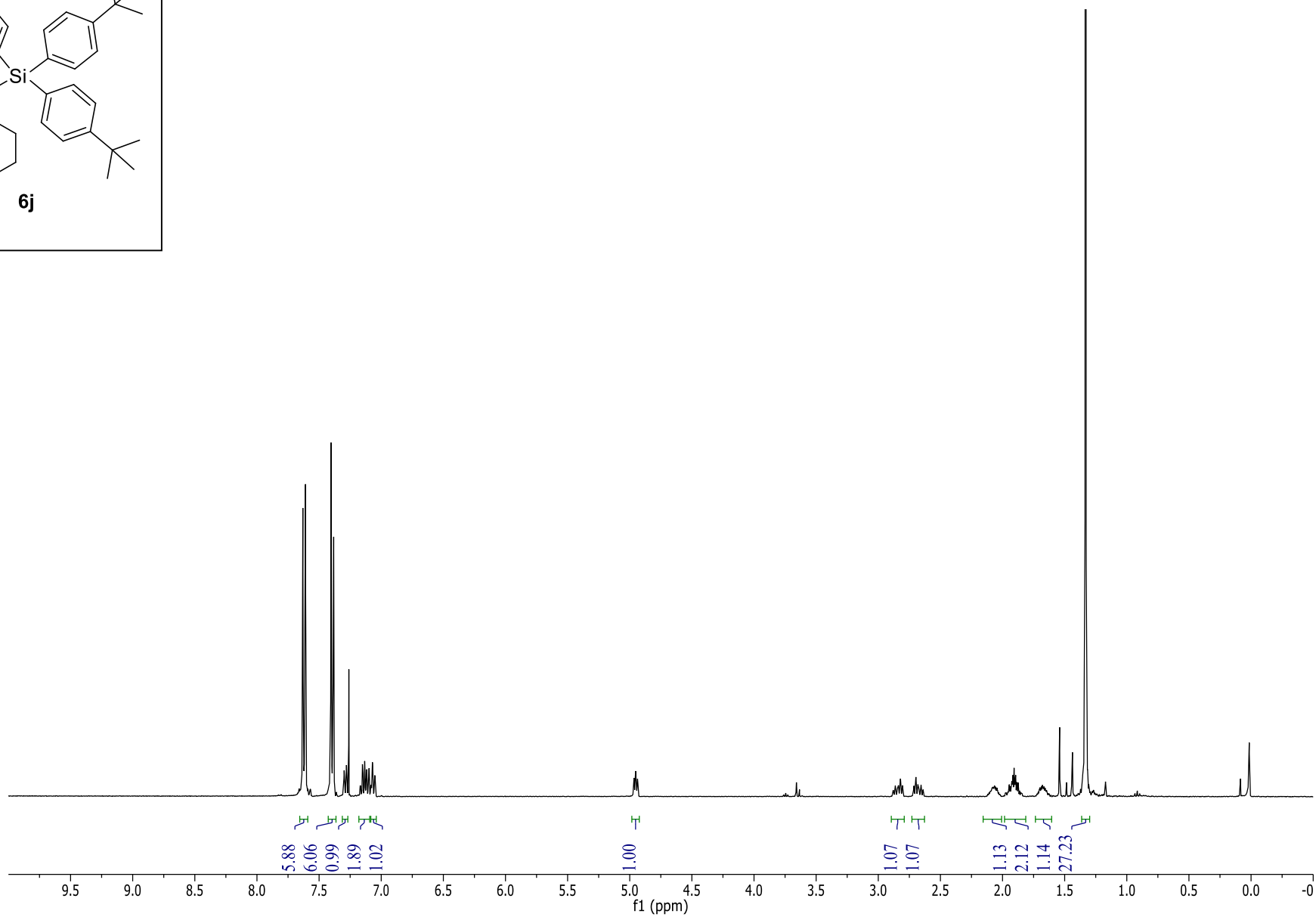
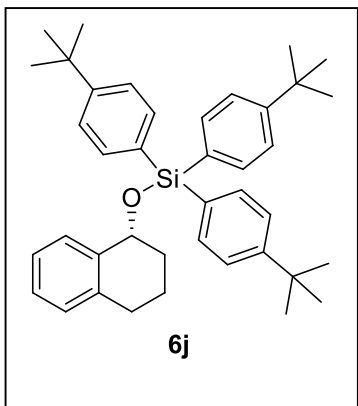




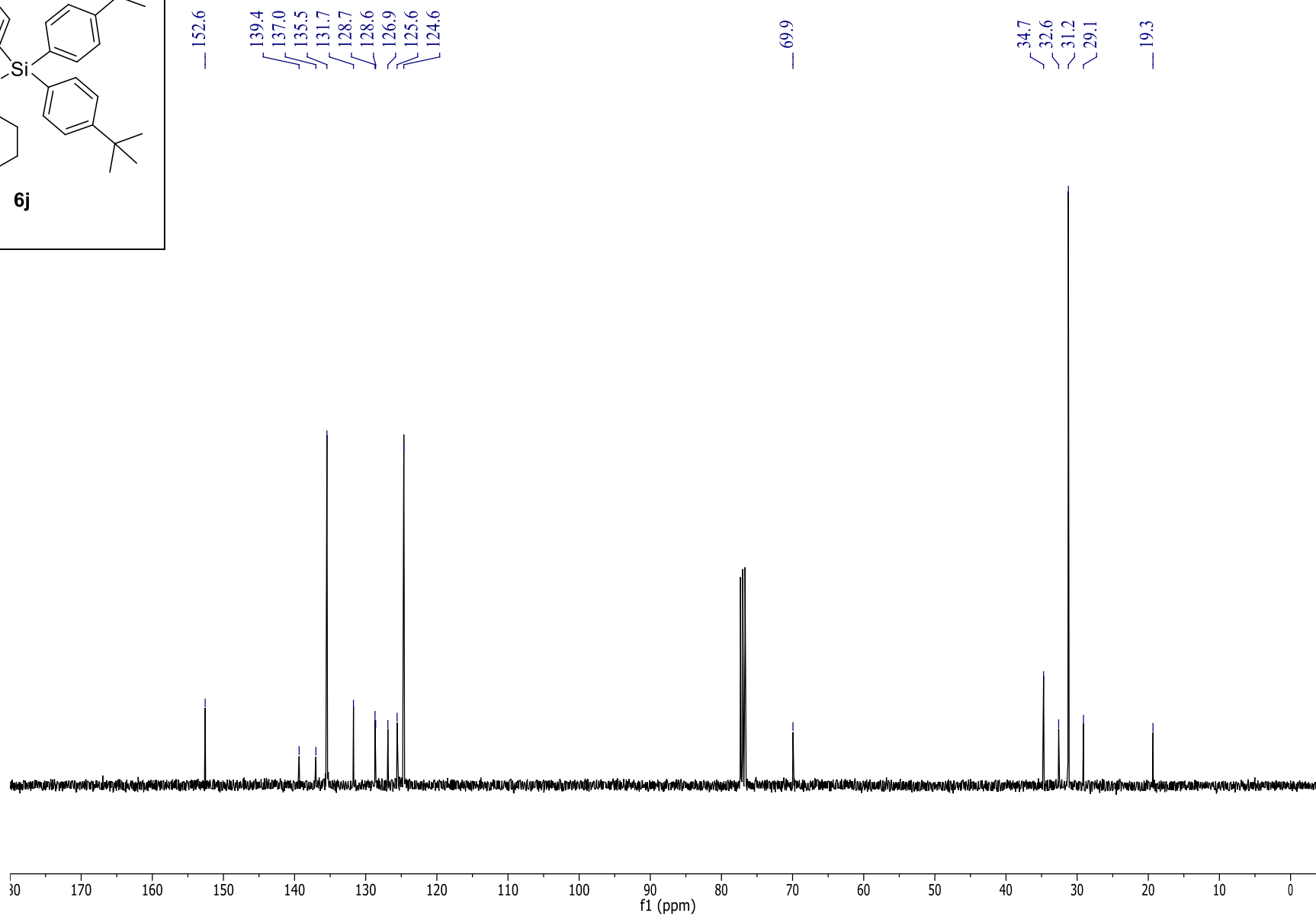
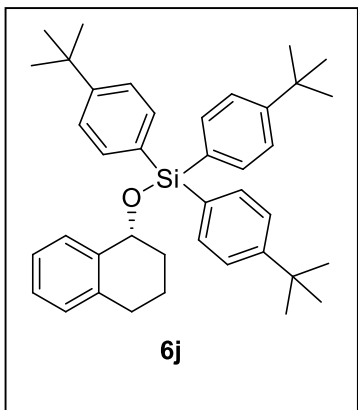


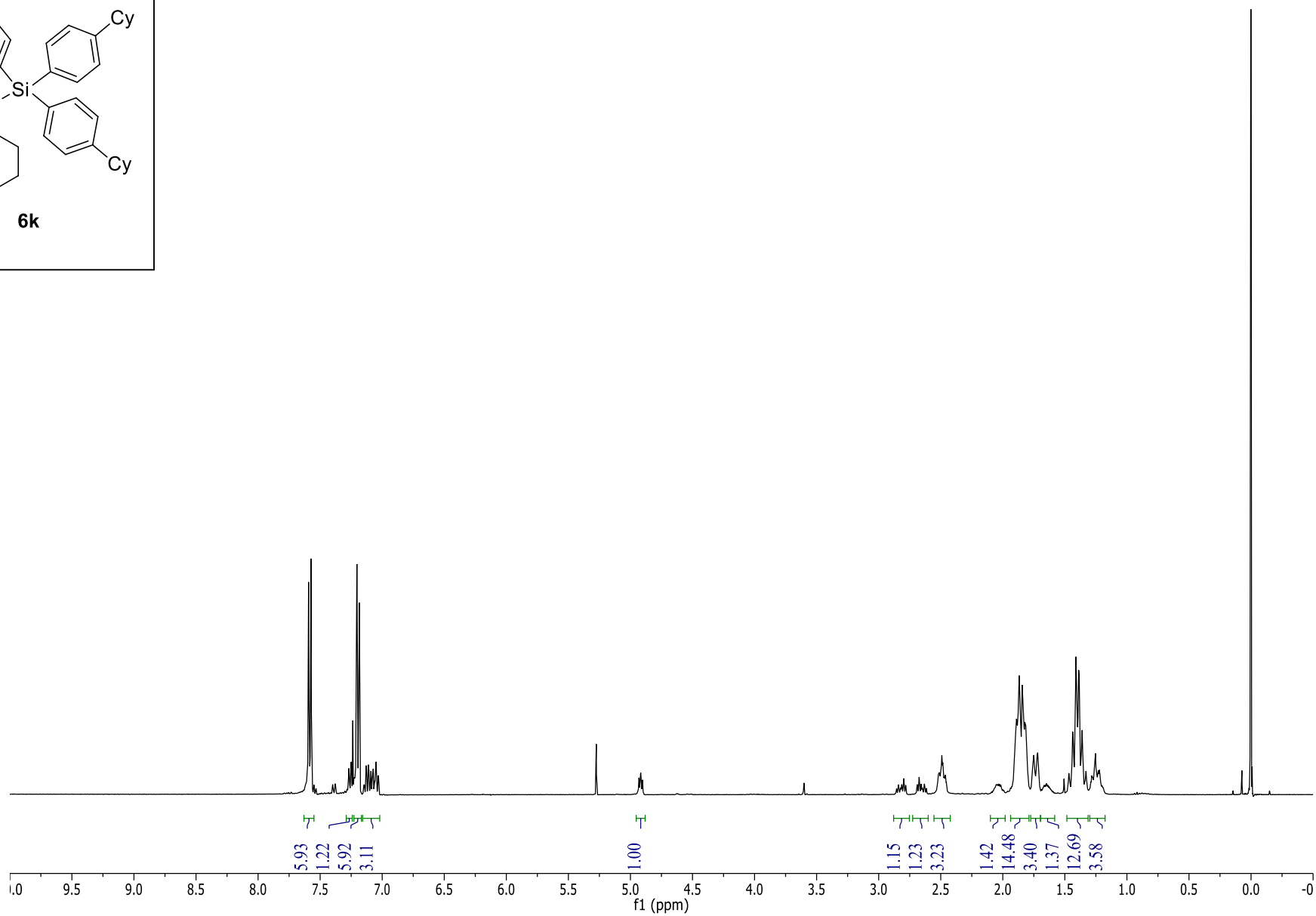
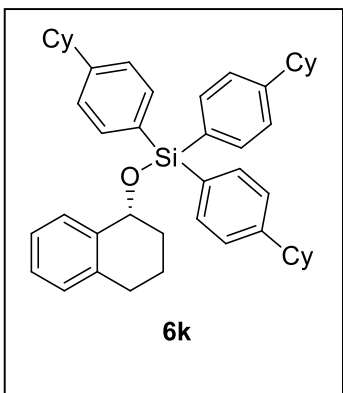


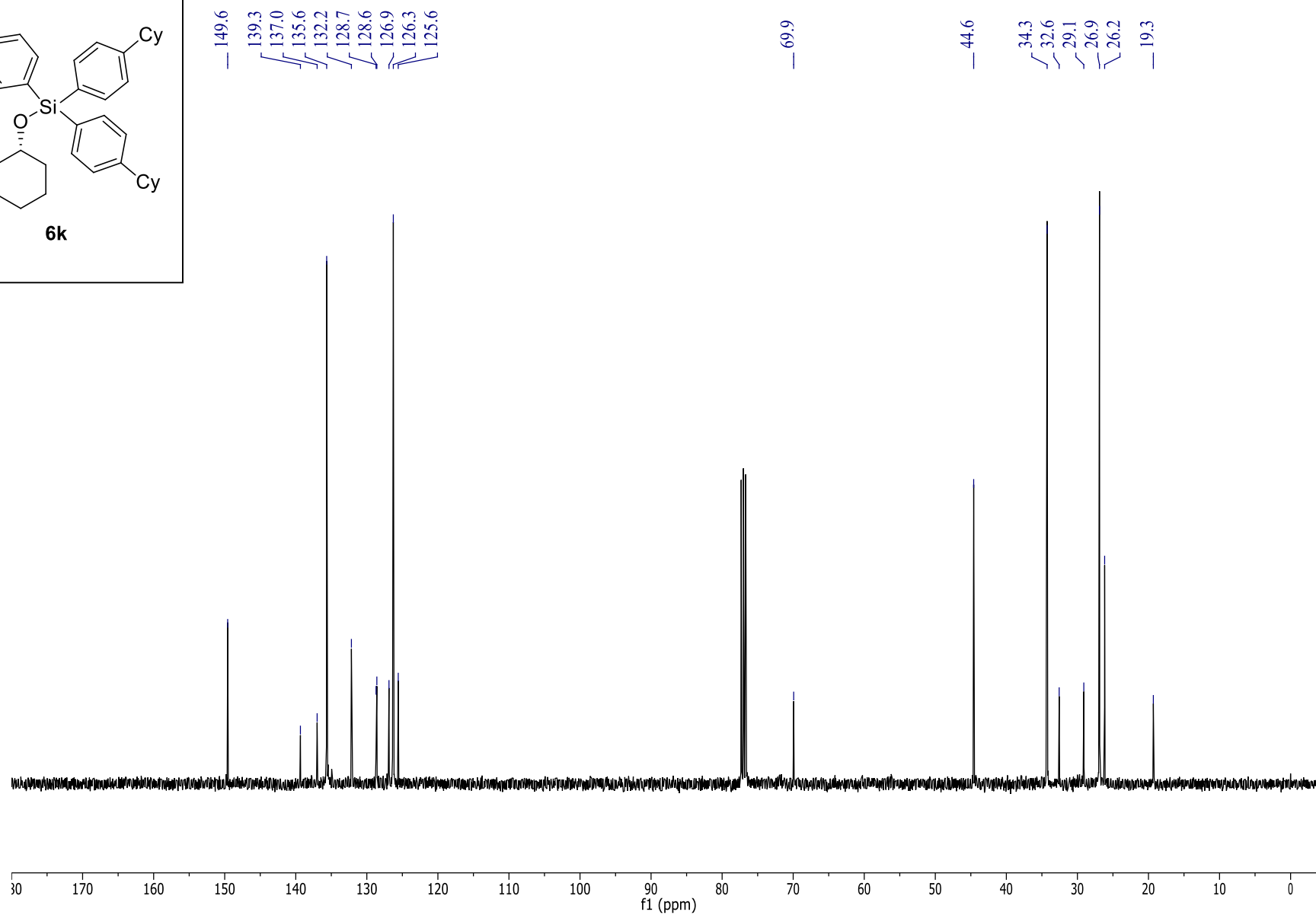
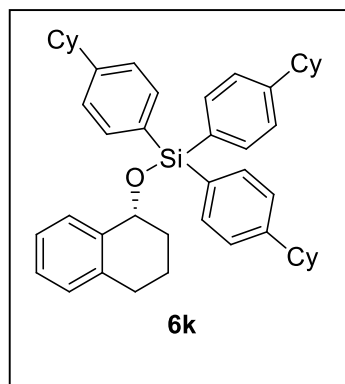


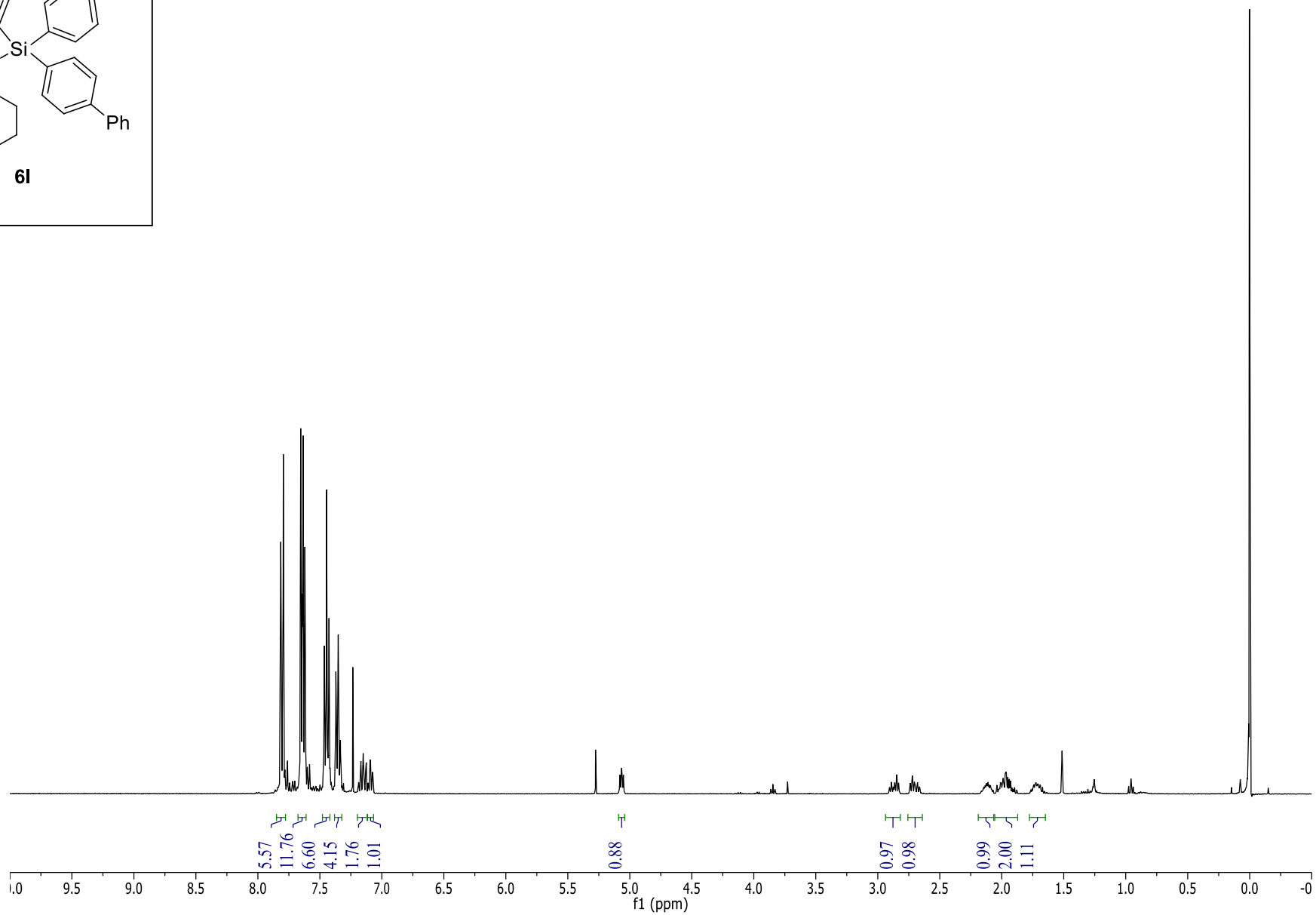
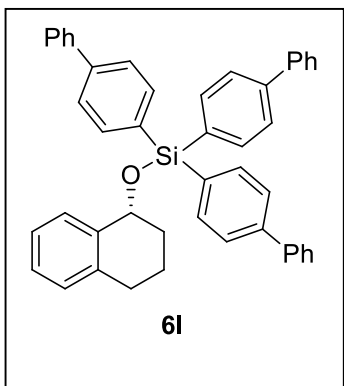


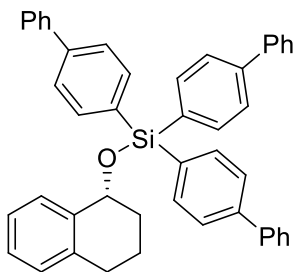
S70











6l

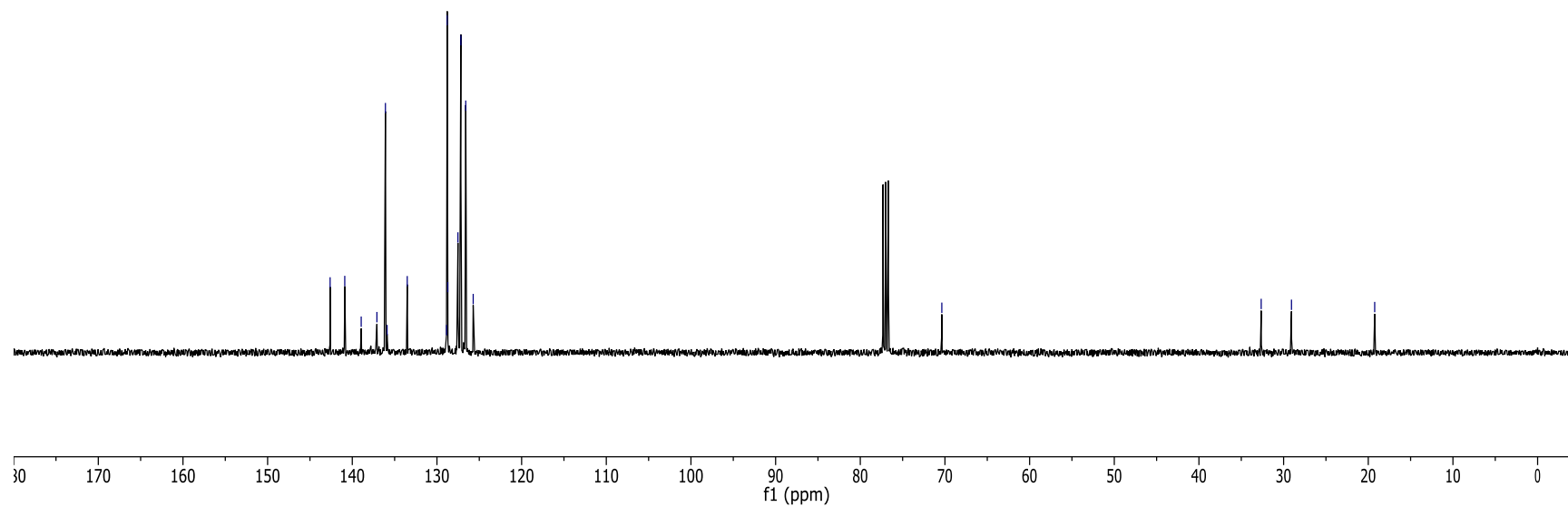


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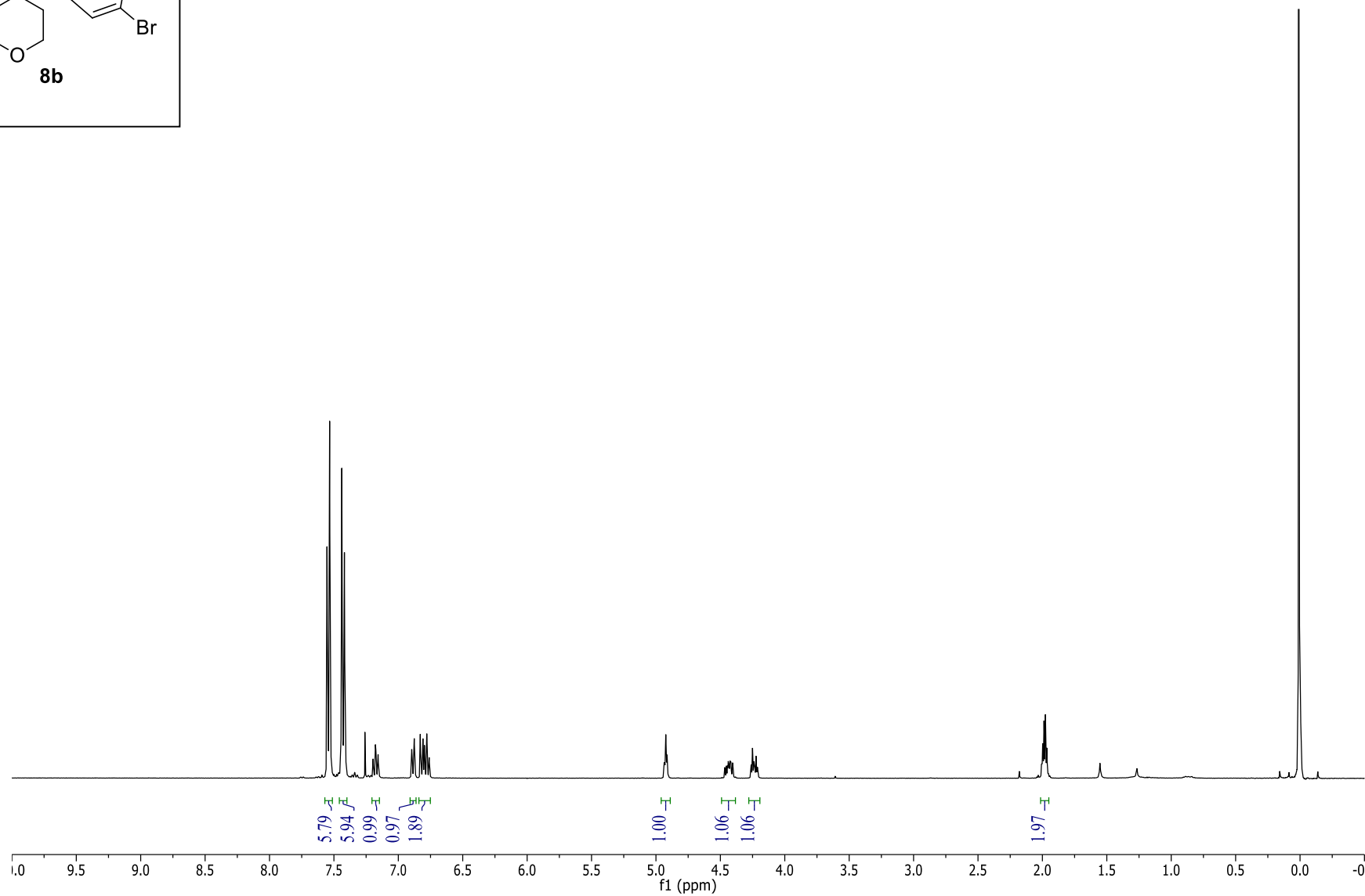
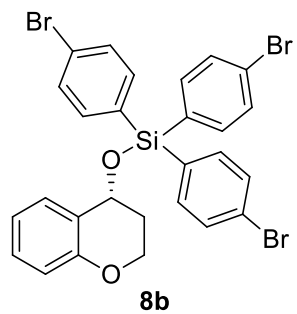
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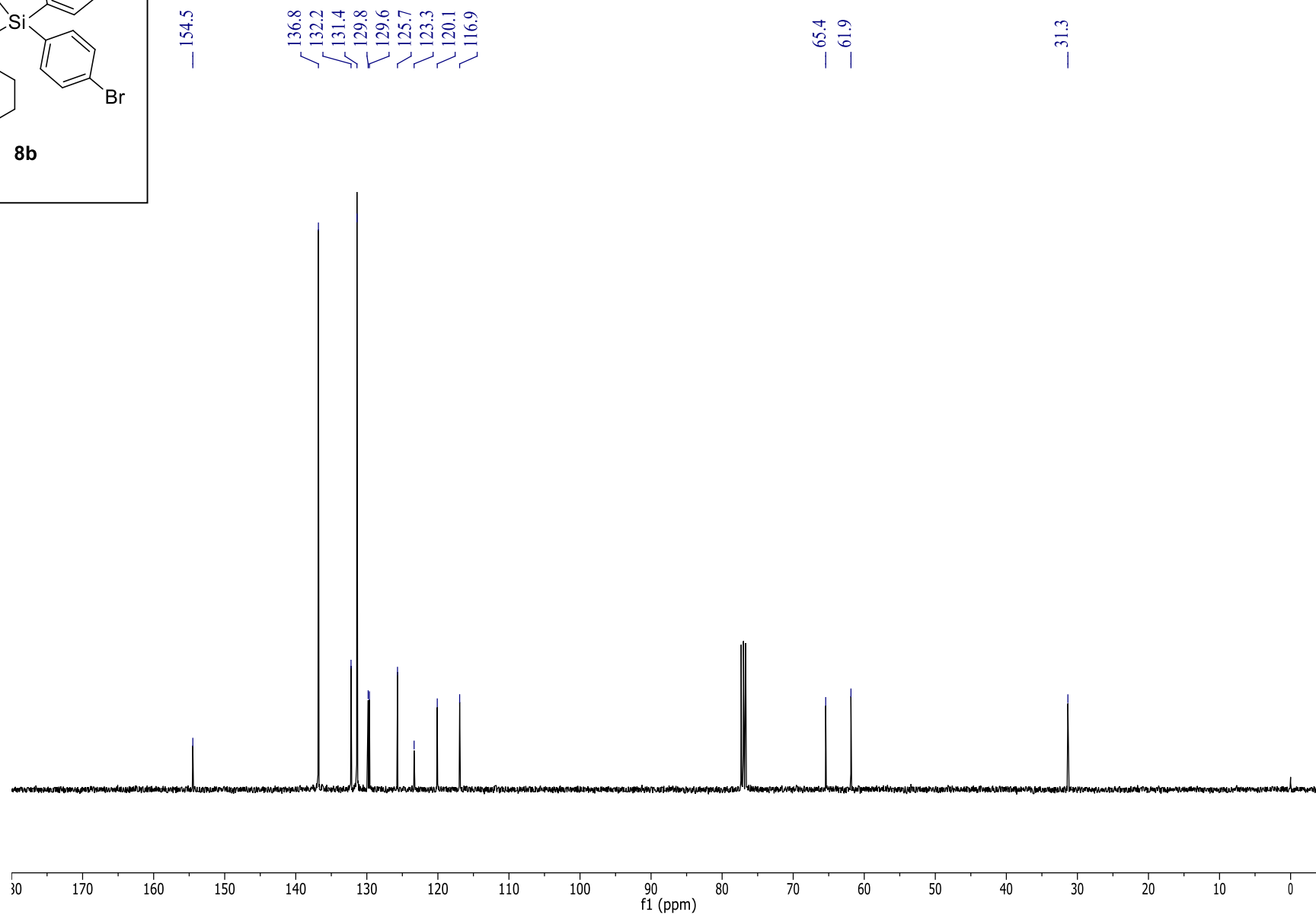
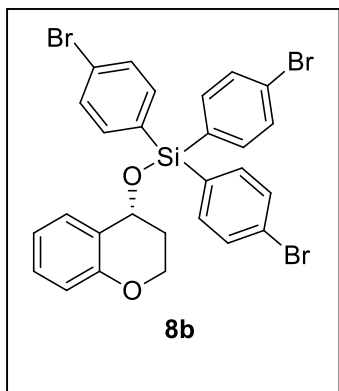
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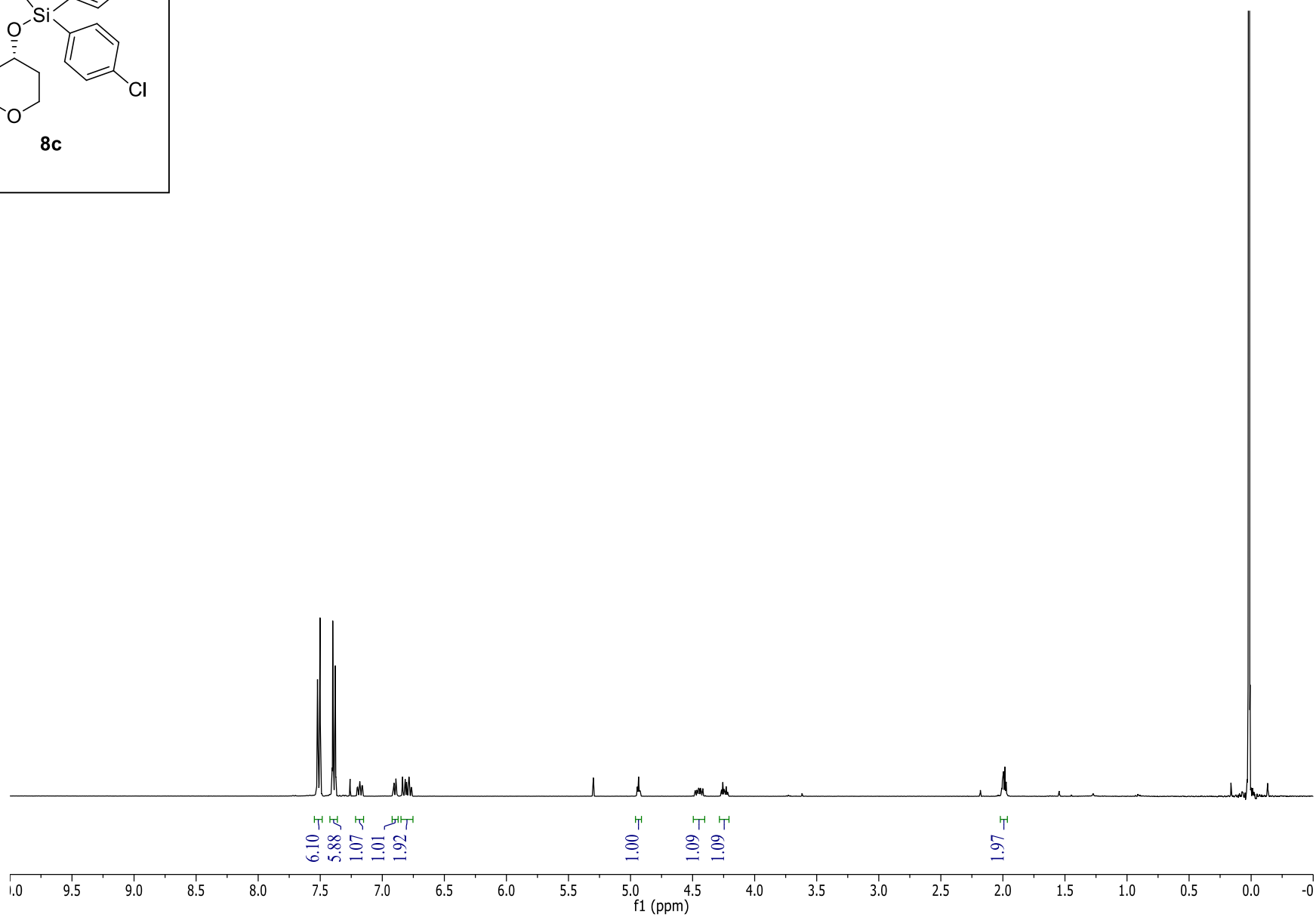
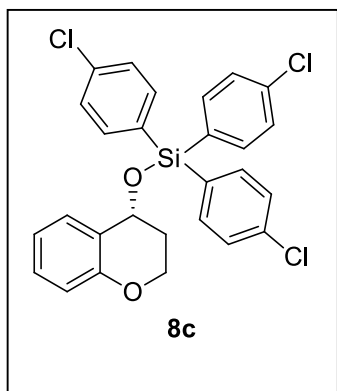
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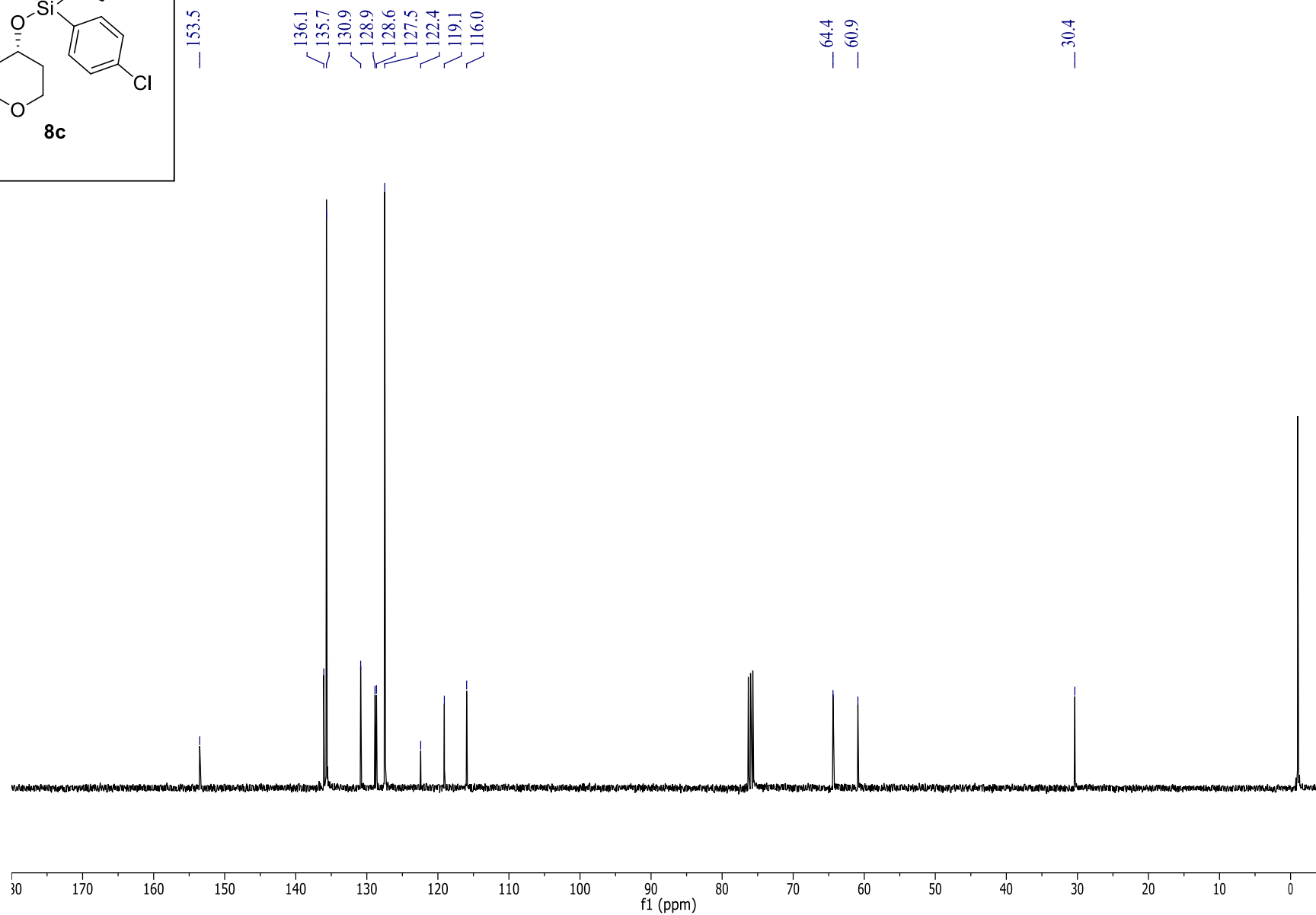
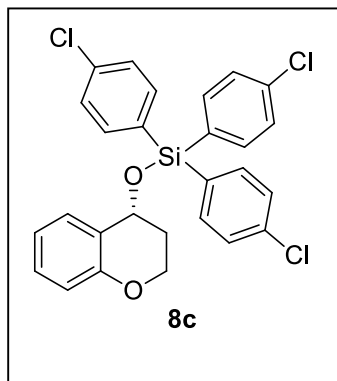
^1H and ^{13}C NMR Spectra of *p*-Substituted TPS-chromanol Products

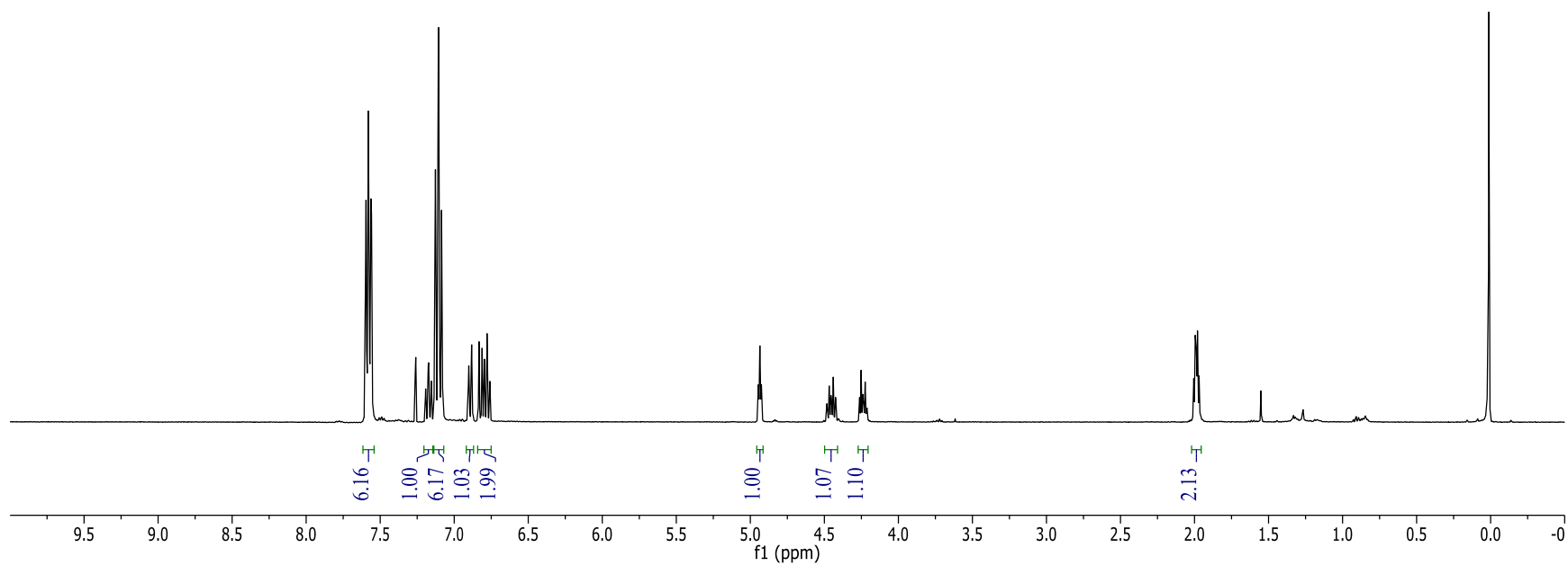
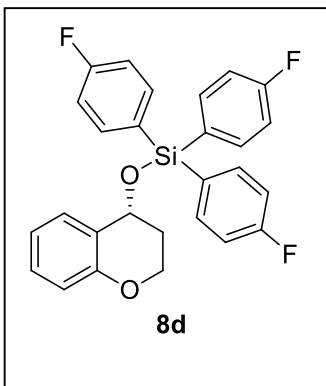




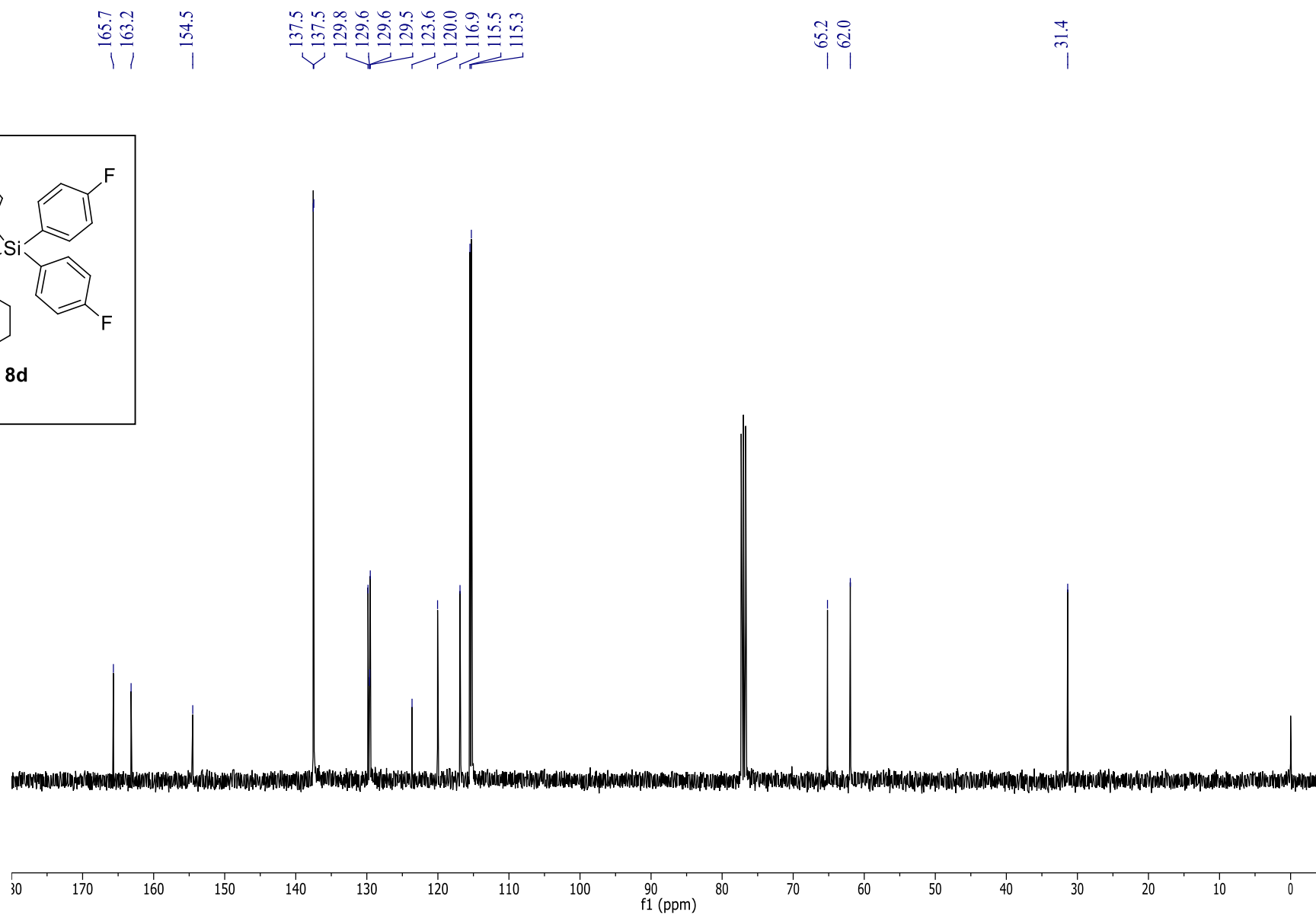
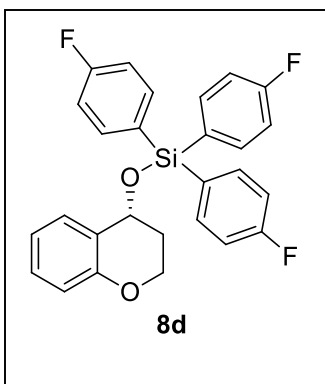


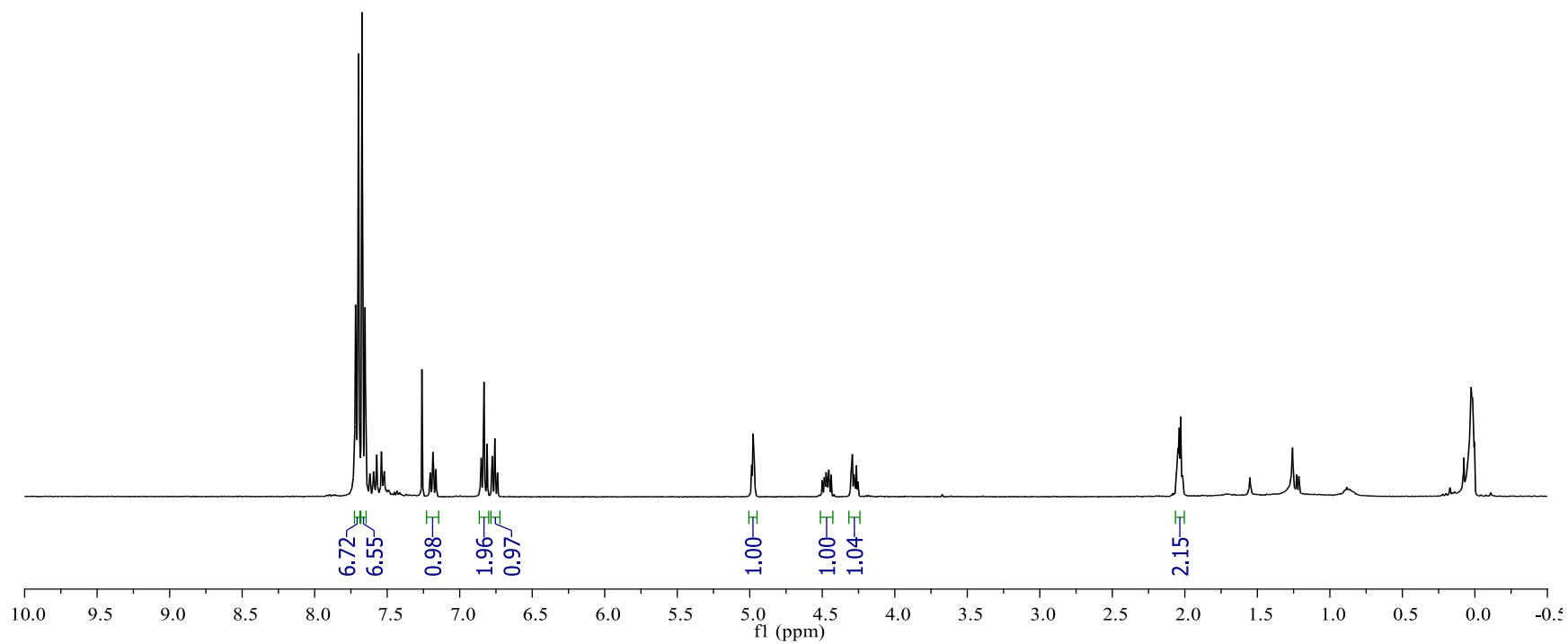
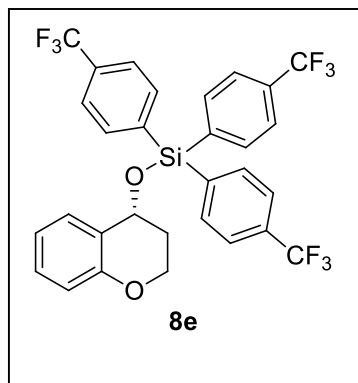
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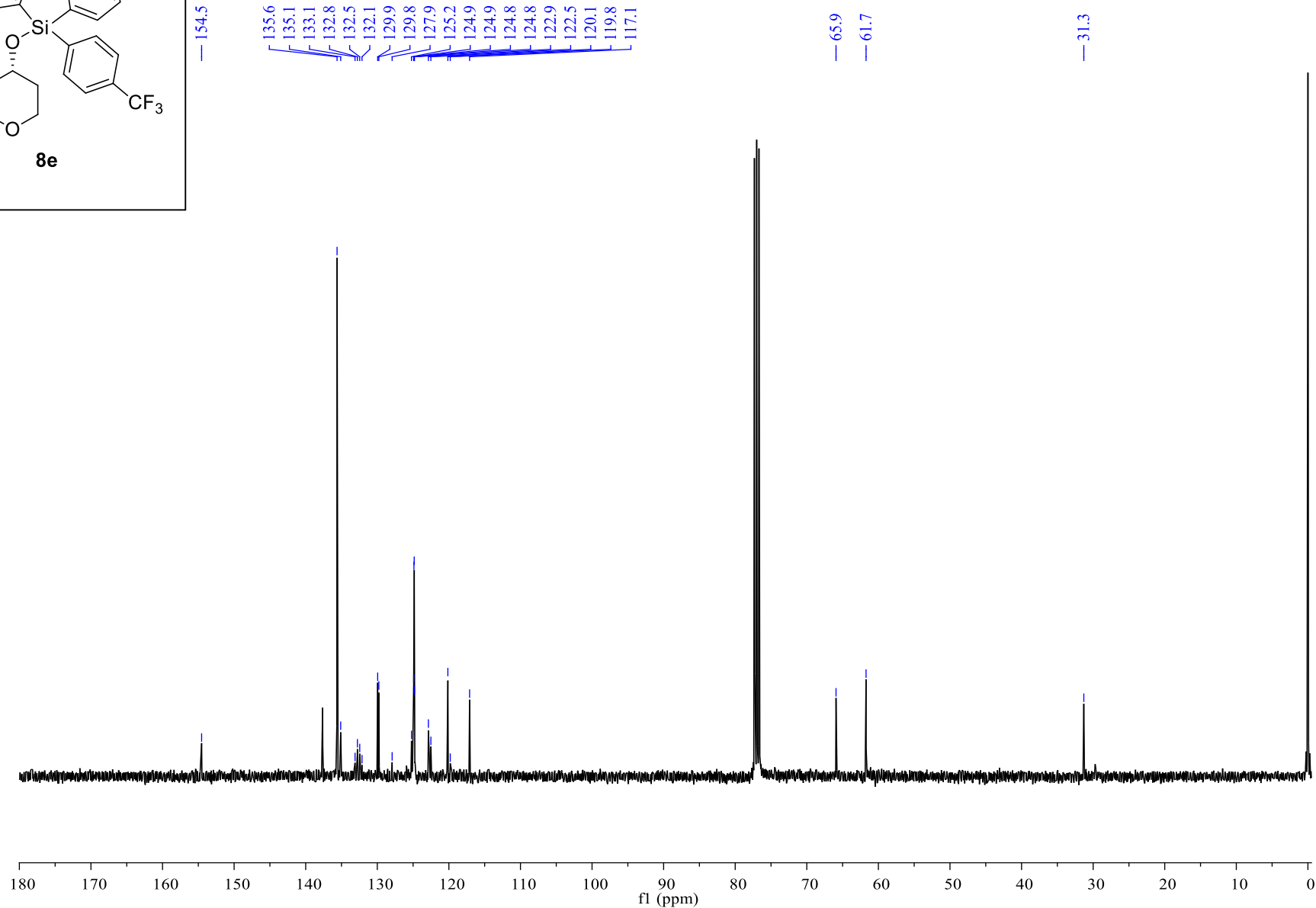
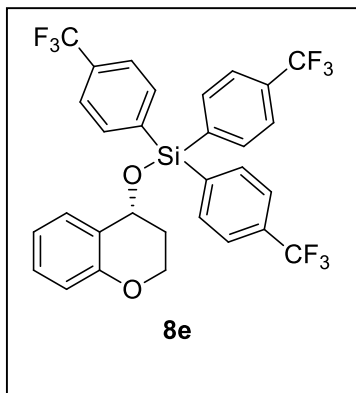


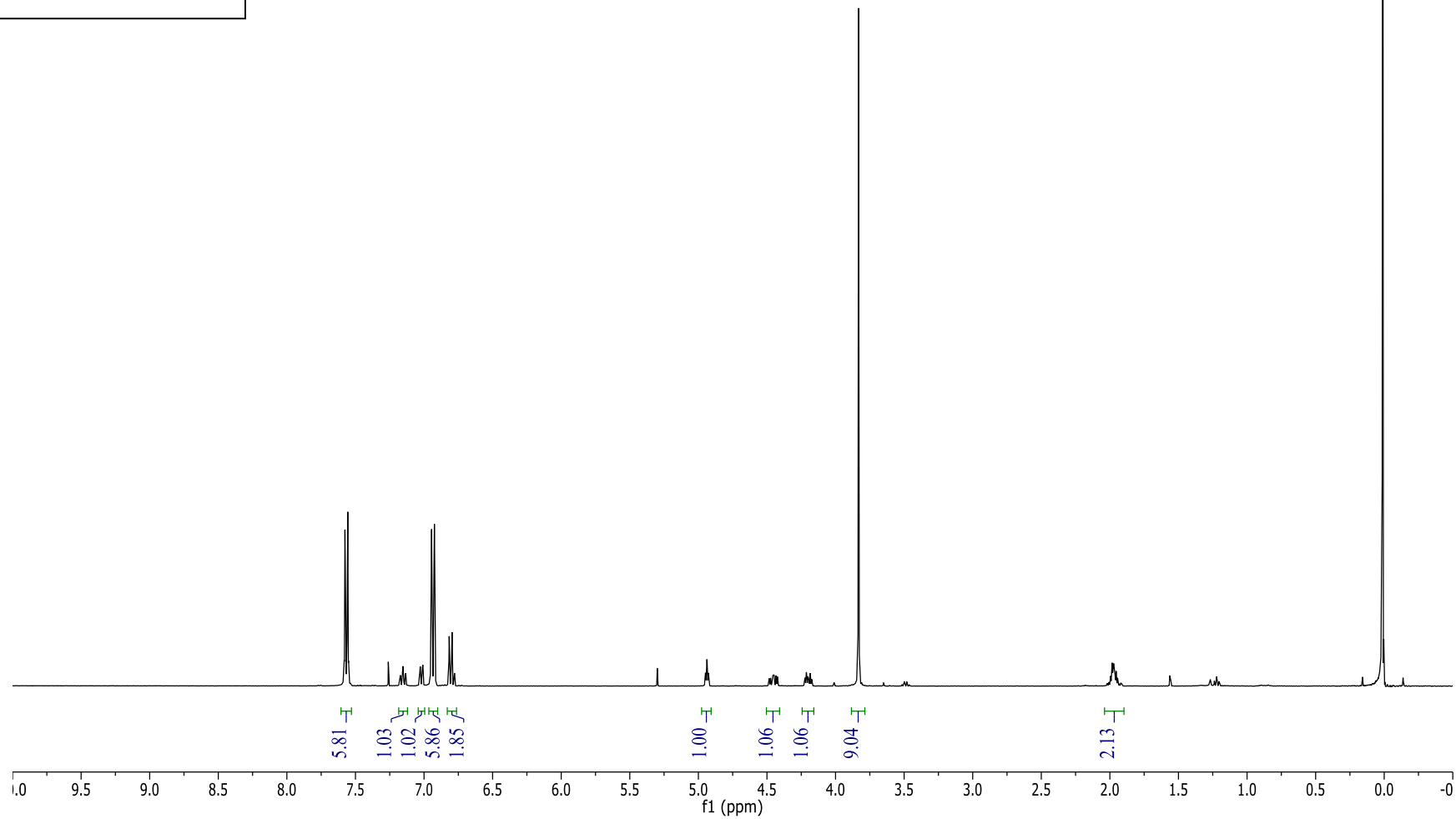
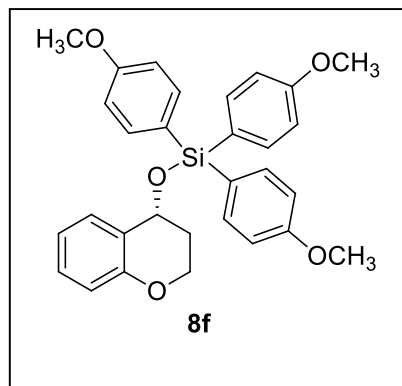


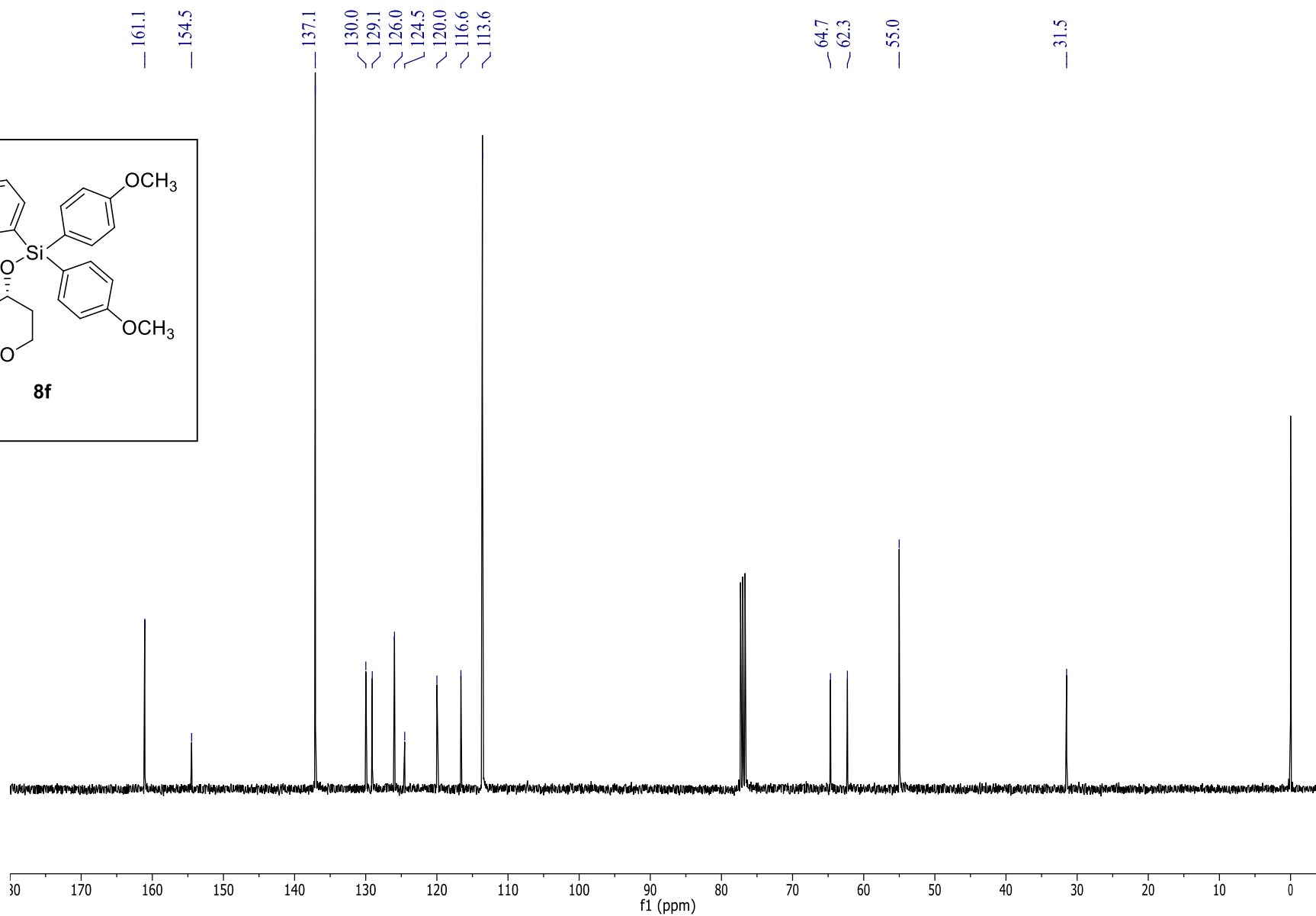
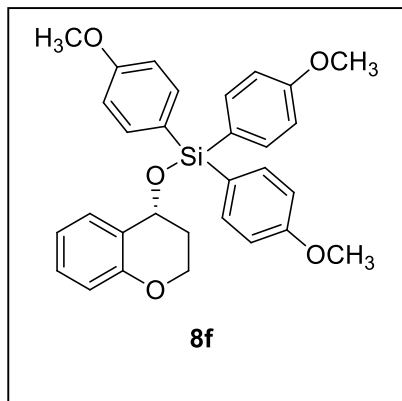
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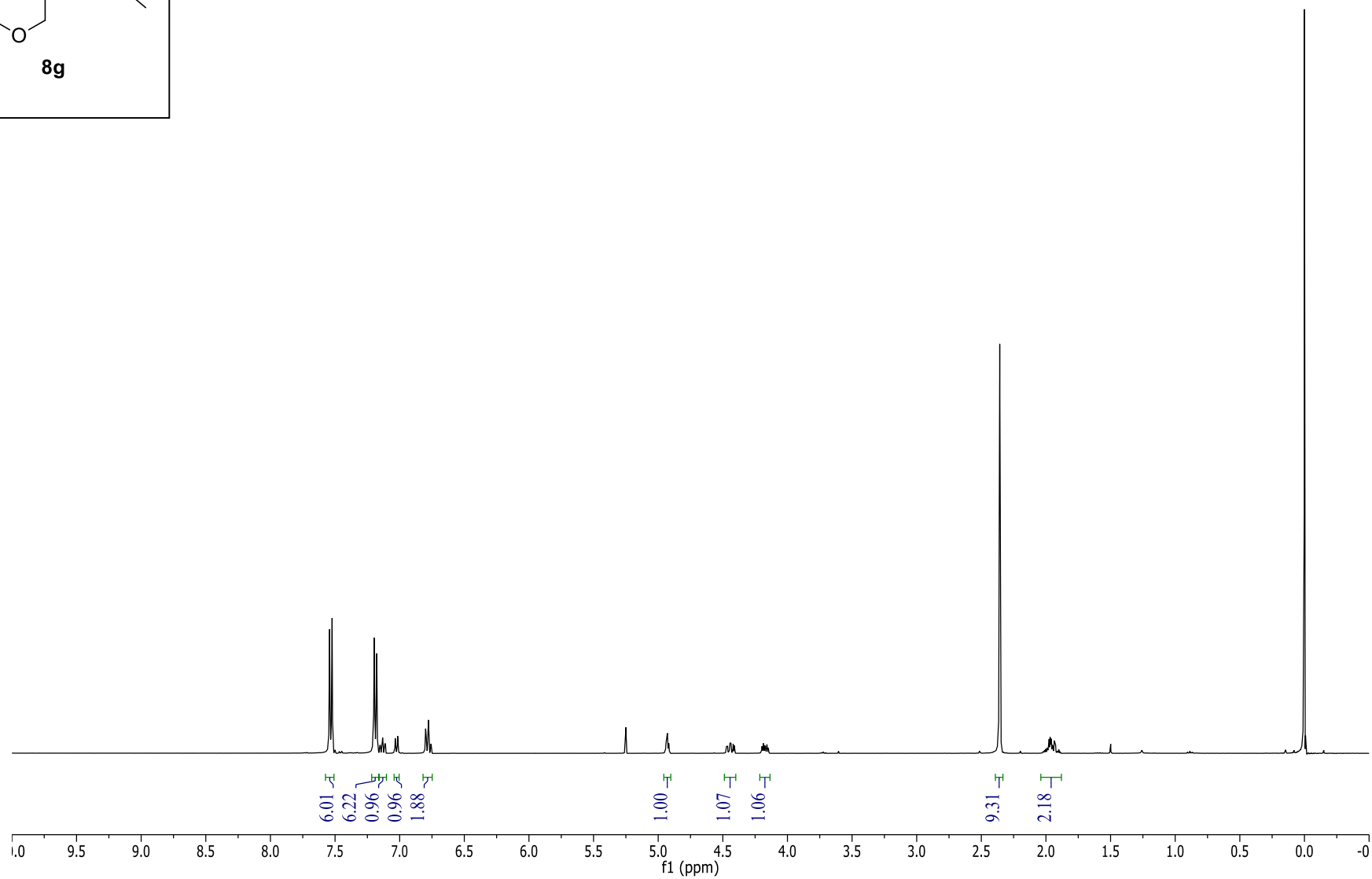
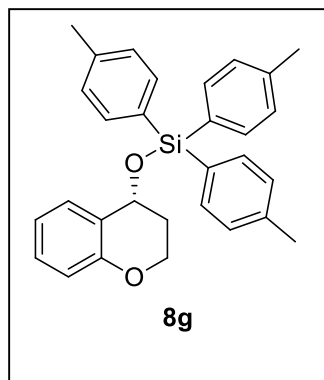




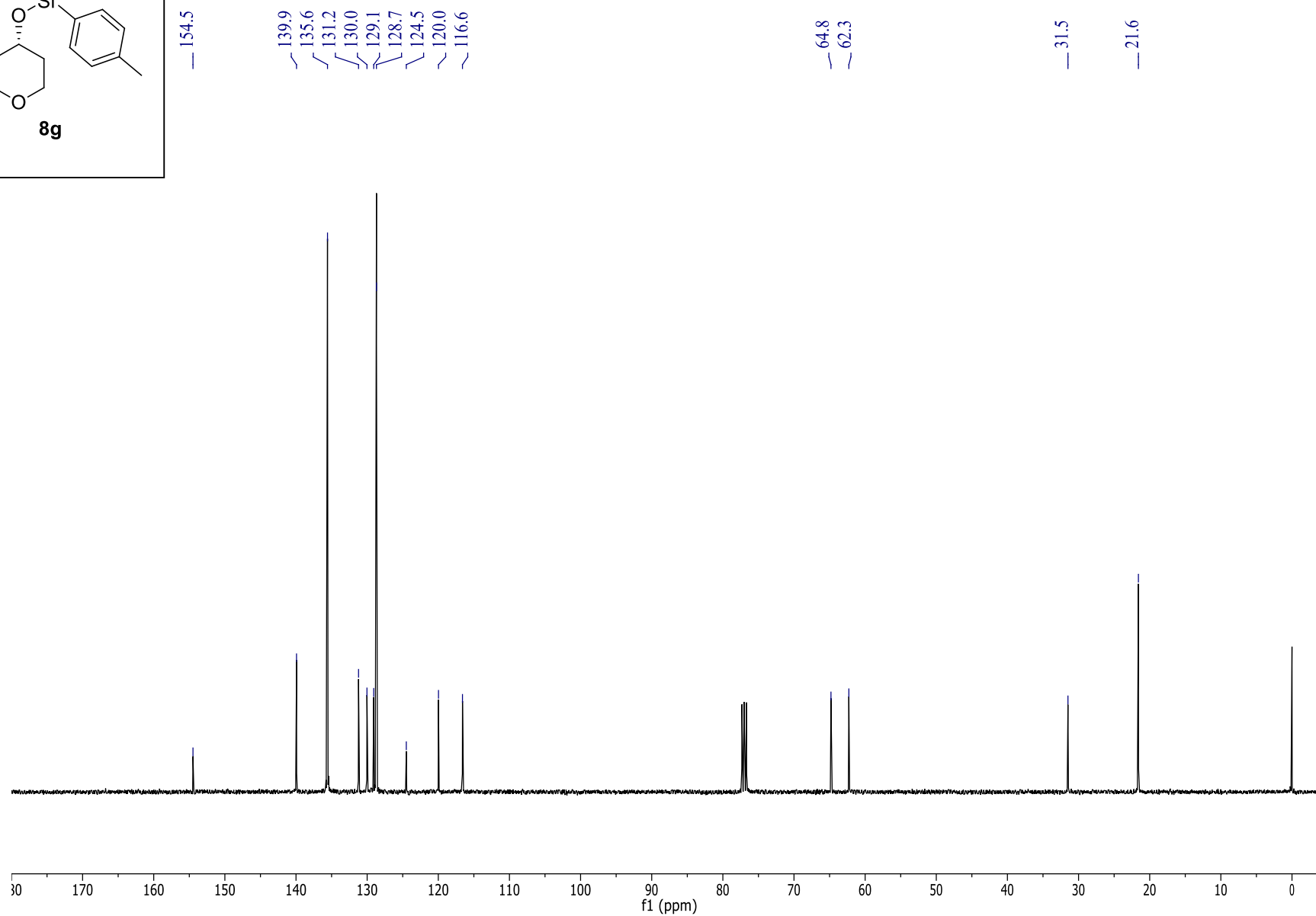
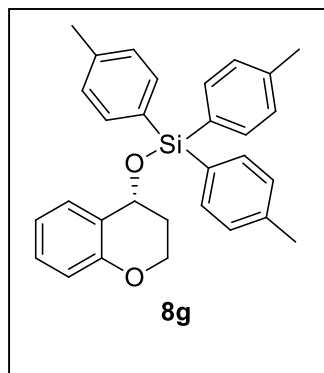


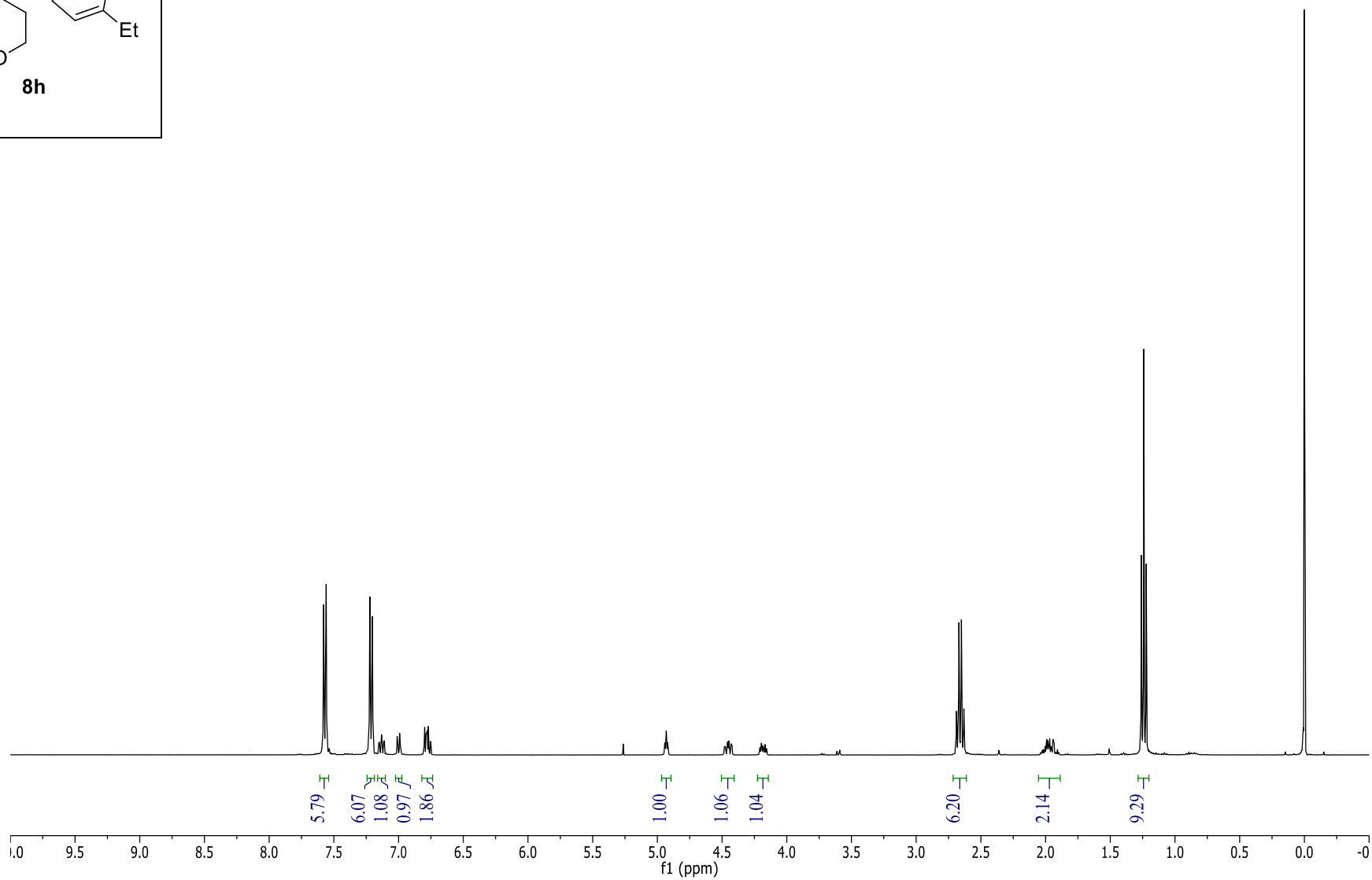
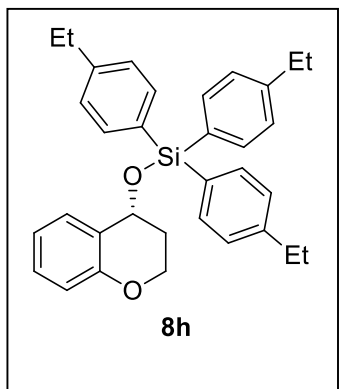




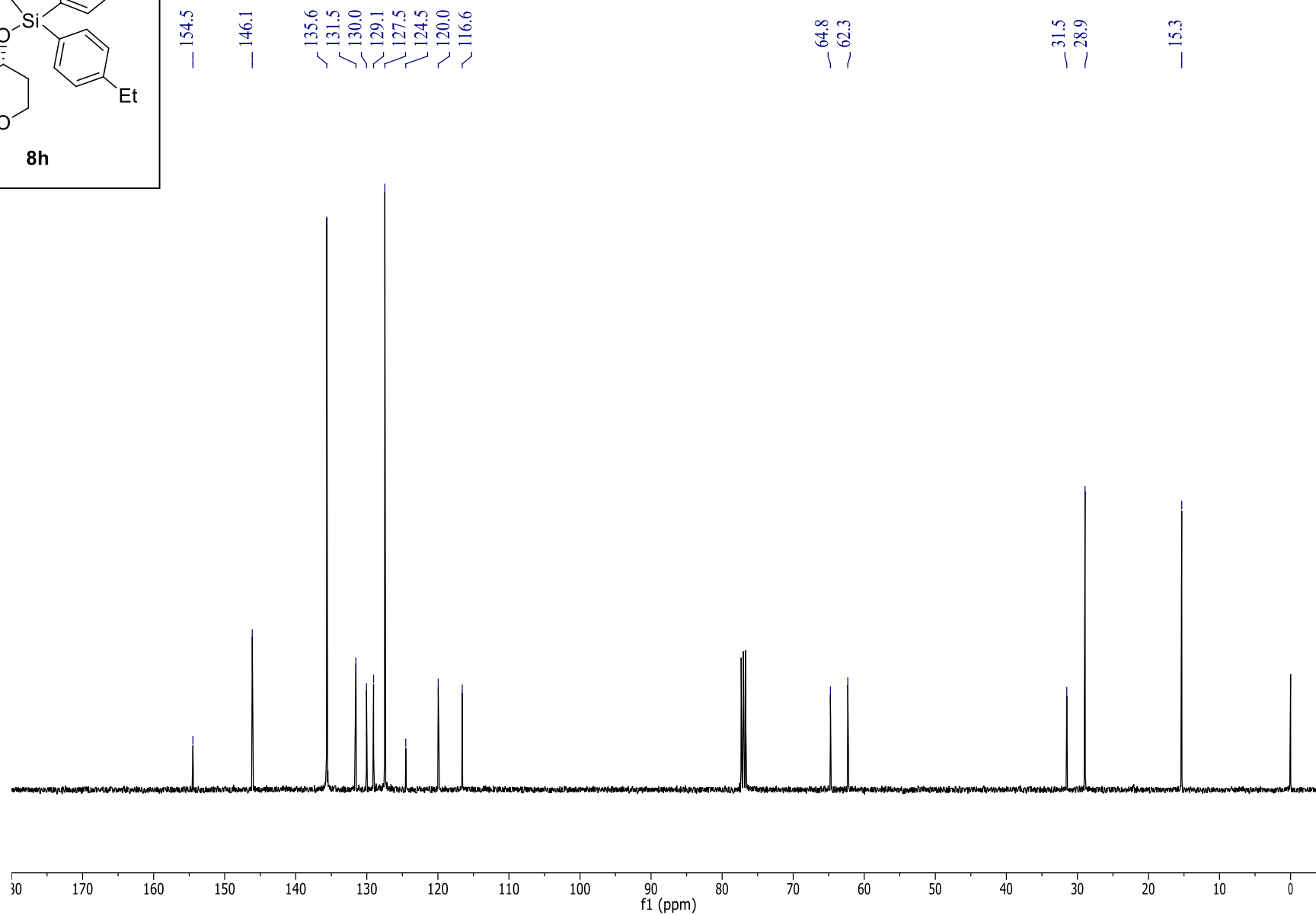
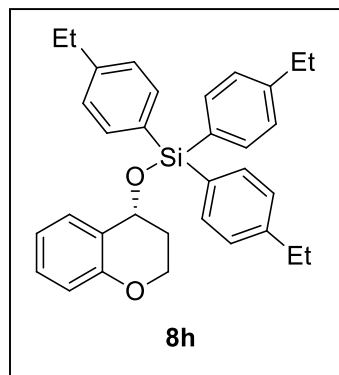


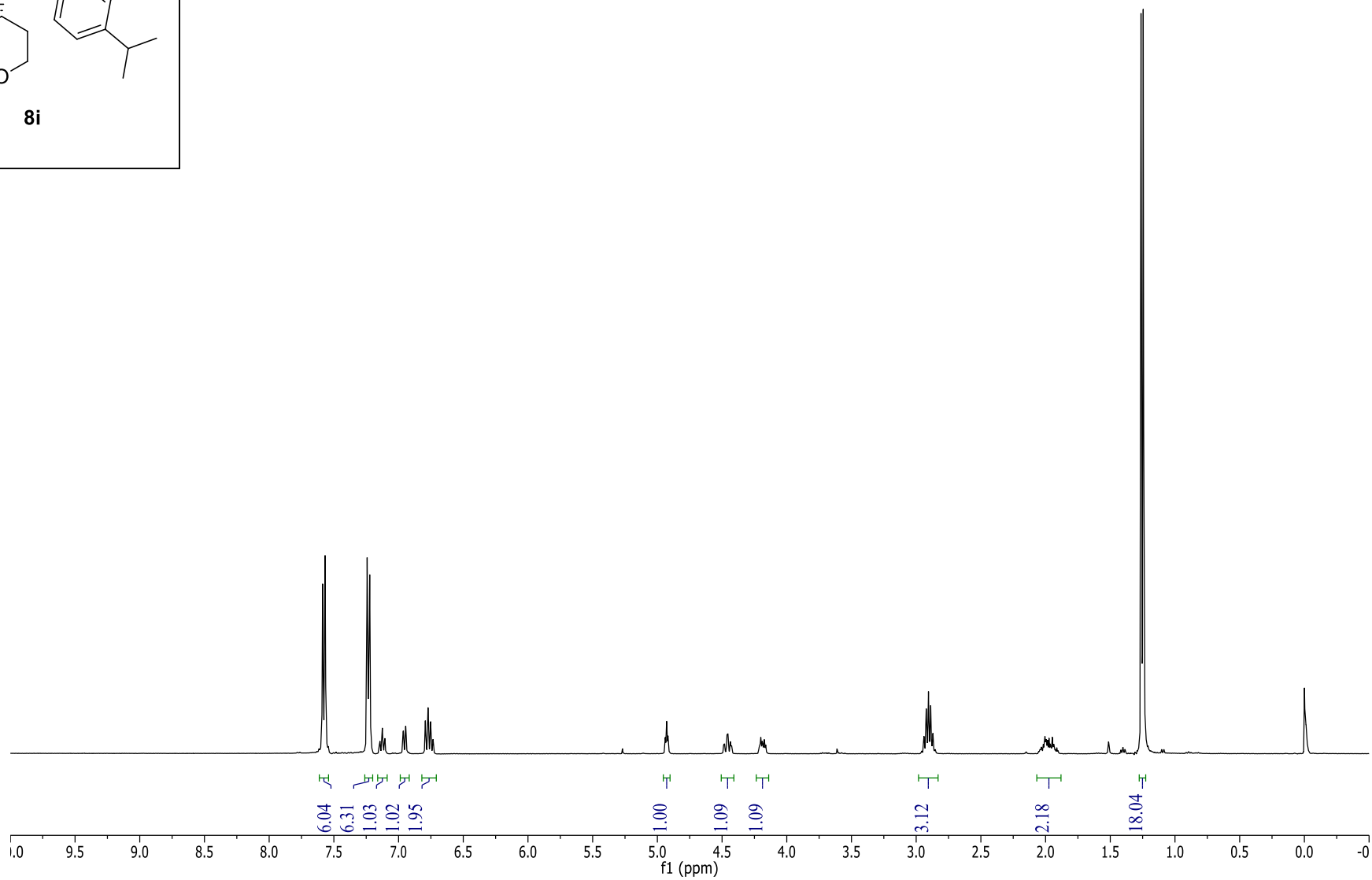
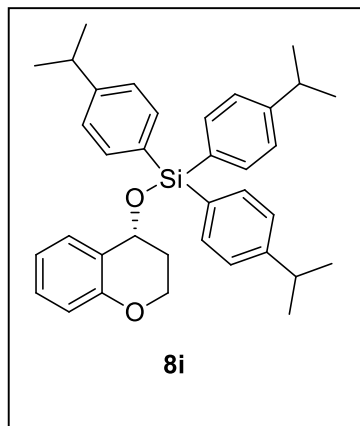
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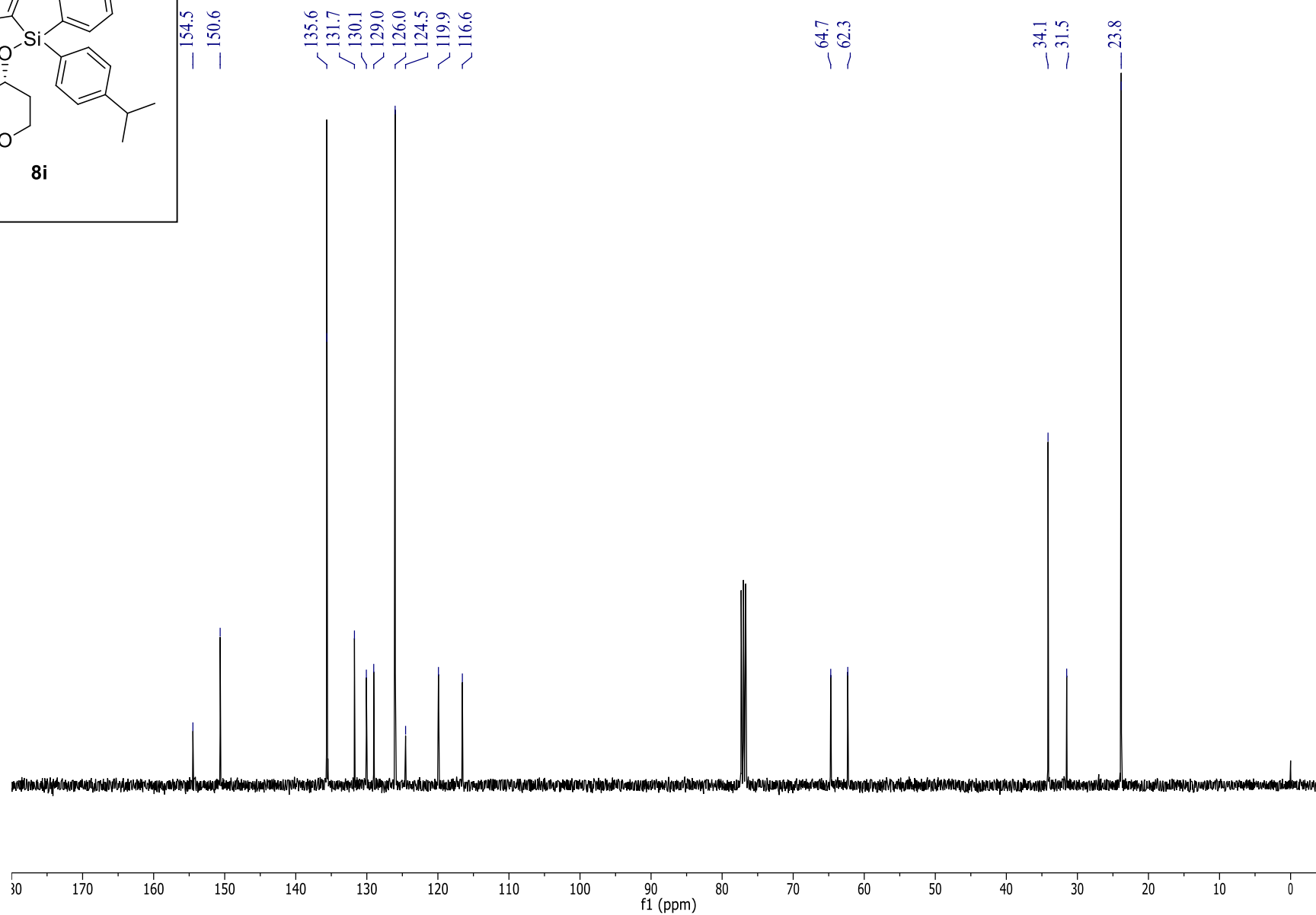
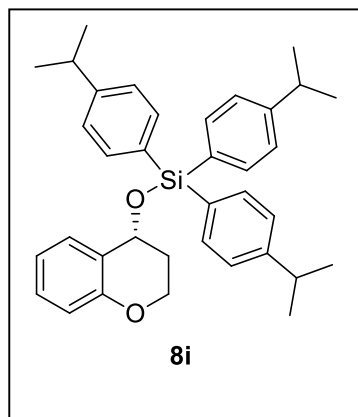


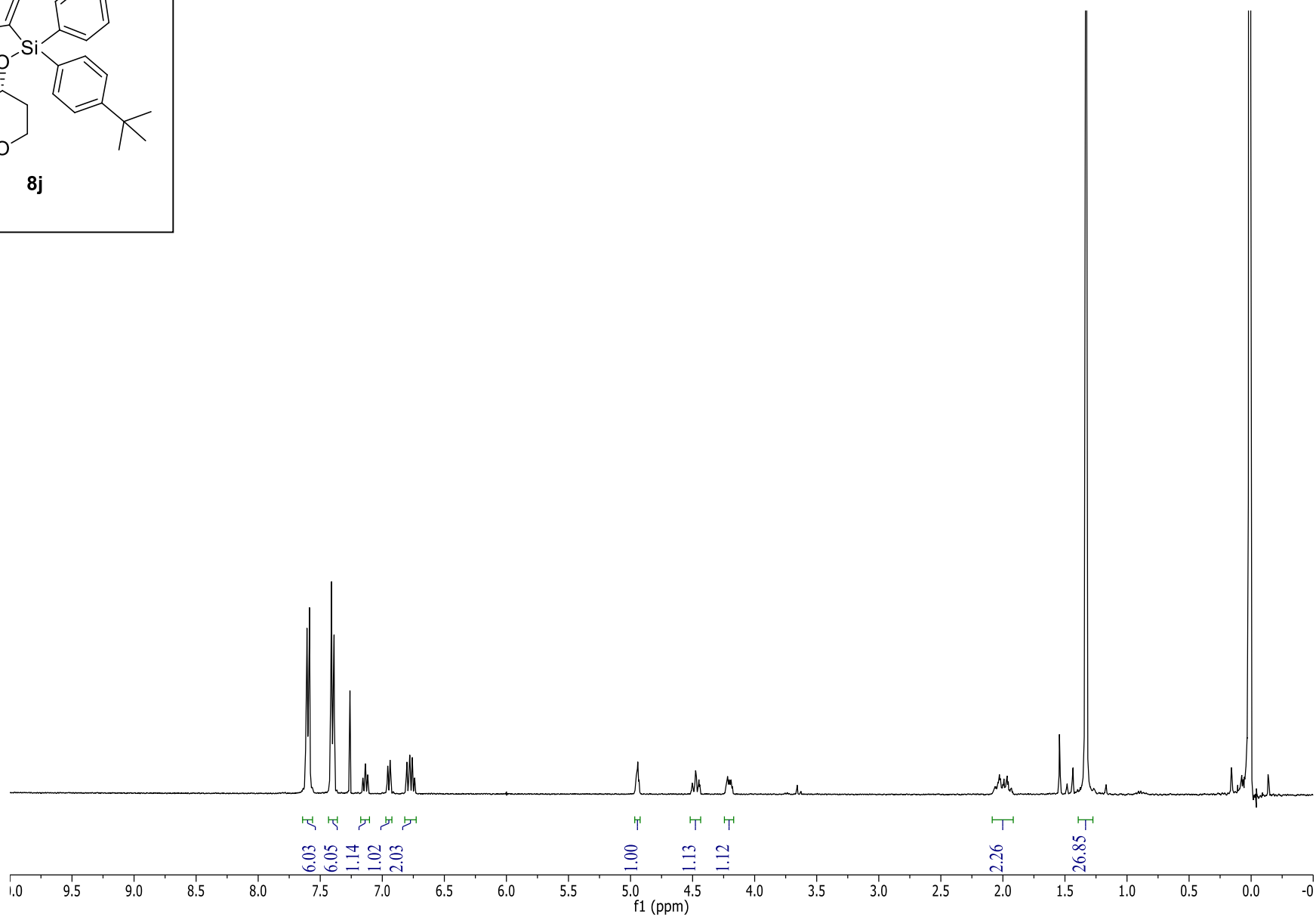
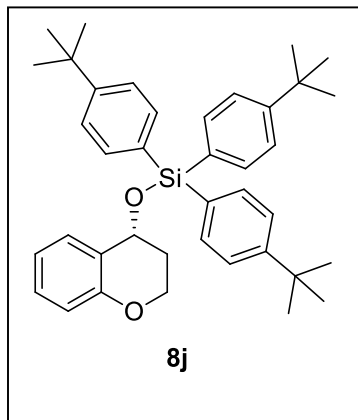
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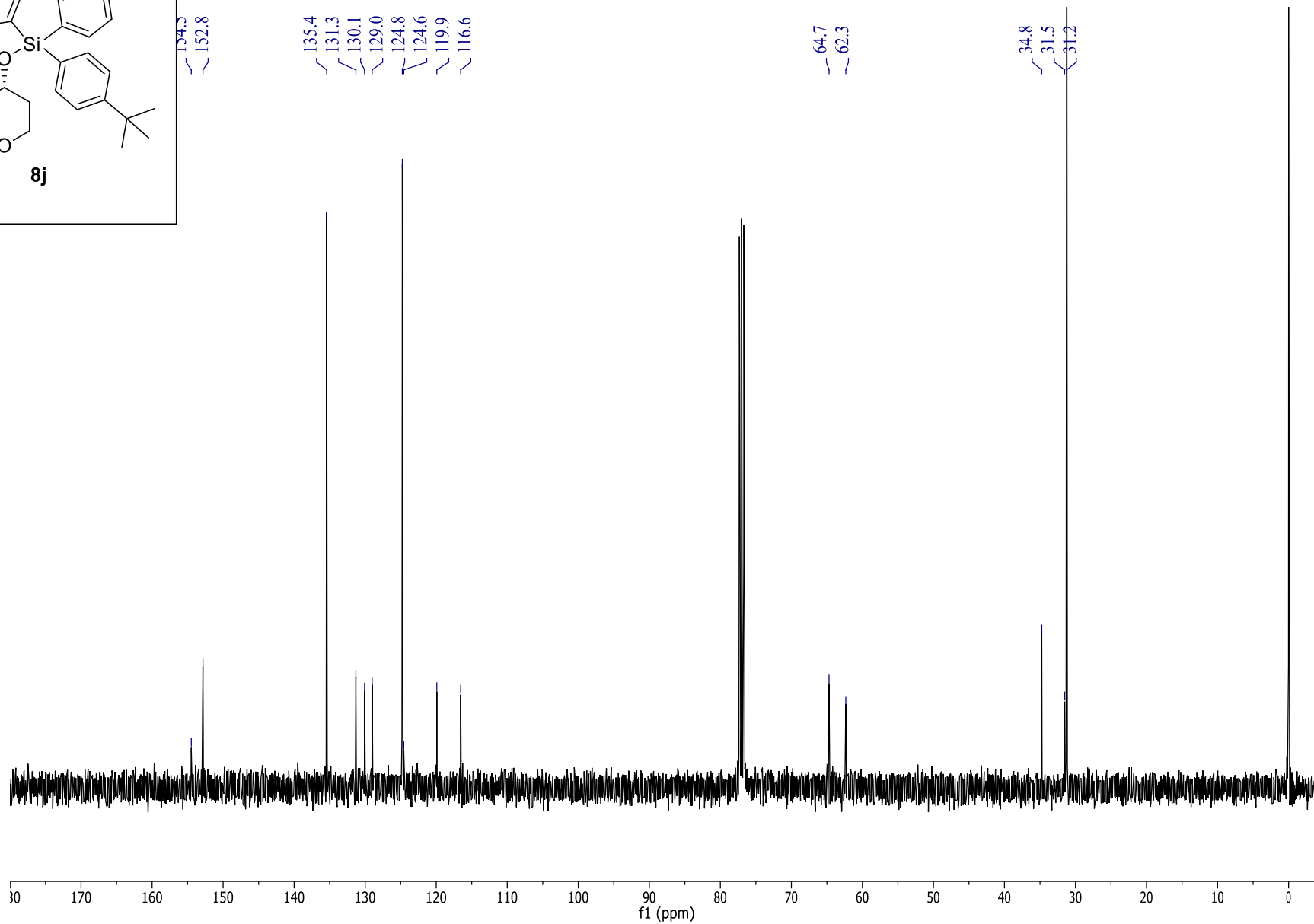
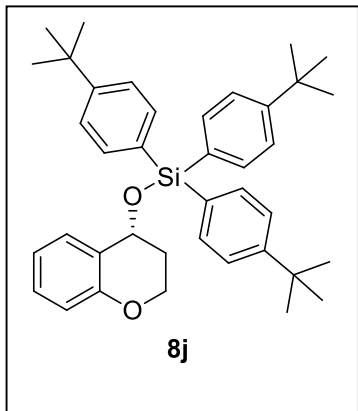


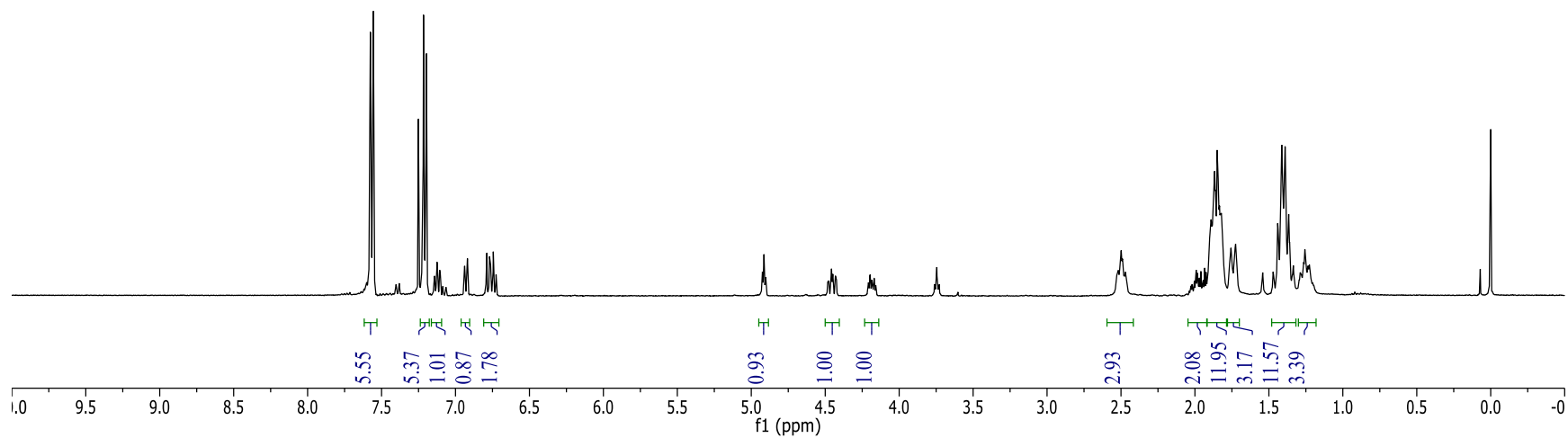
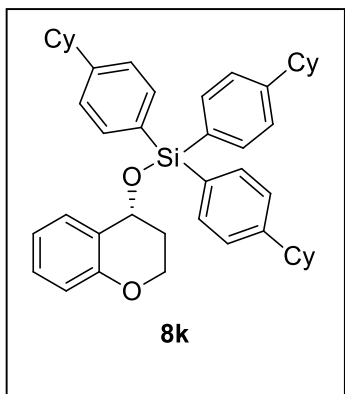


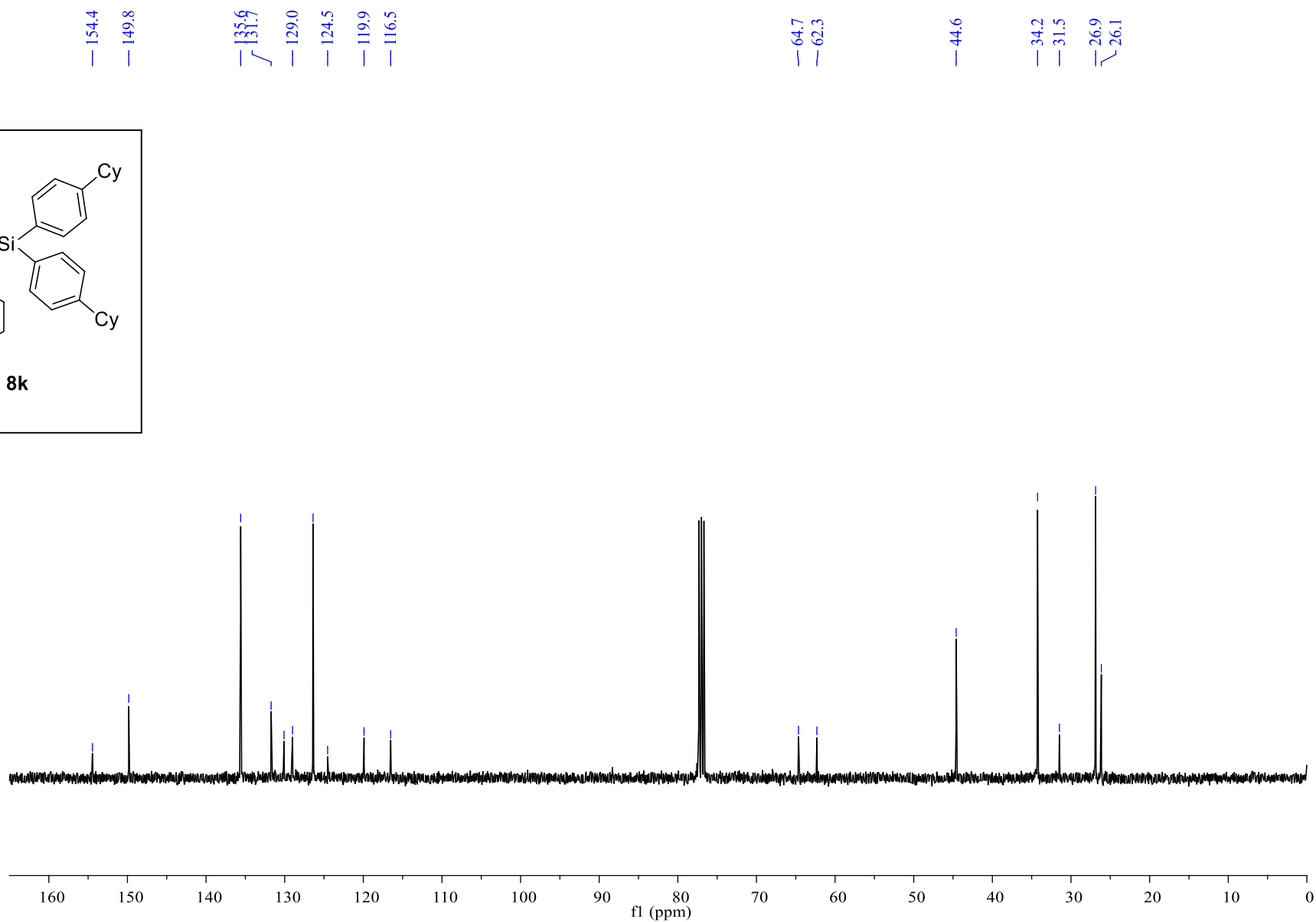
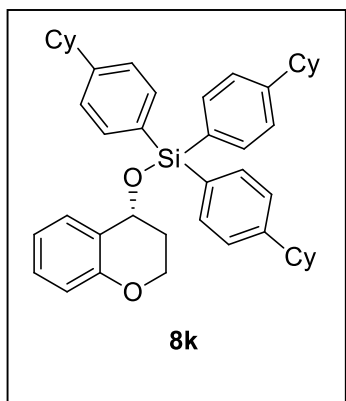
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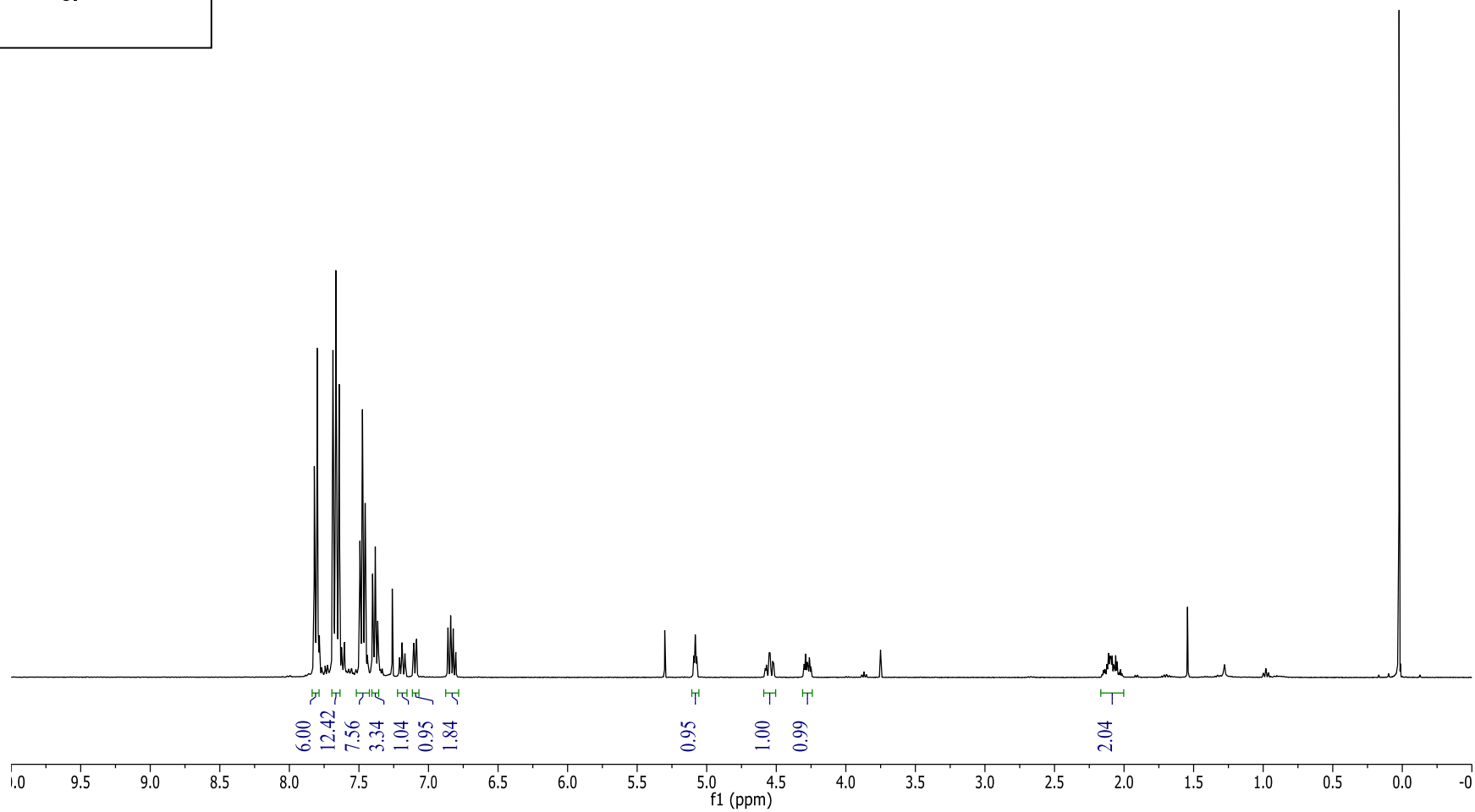
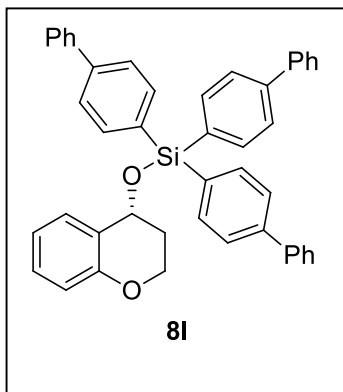


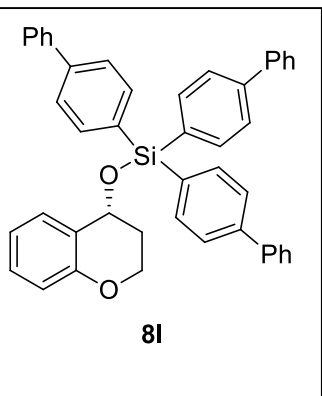






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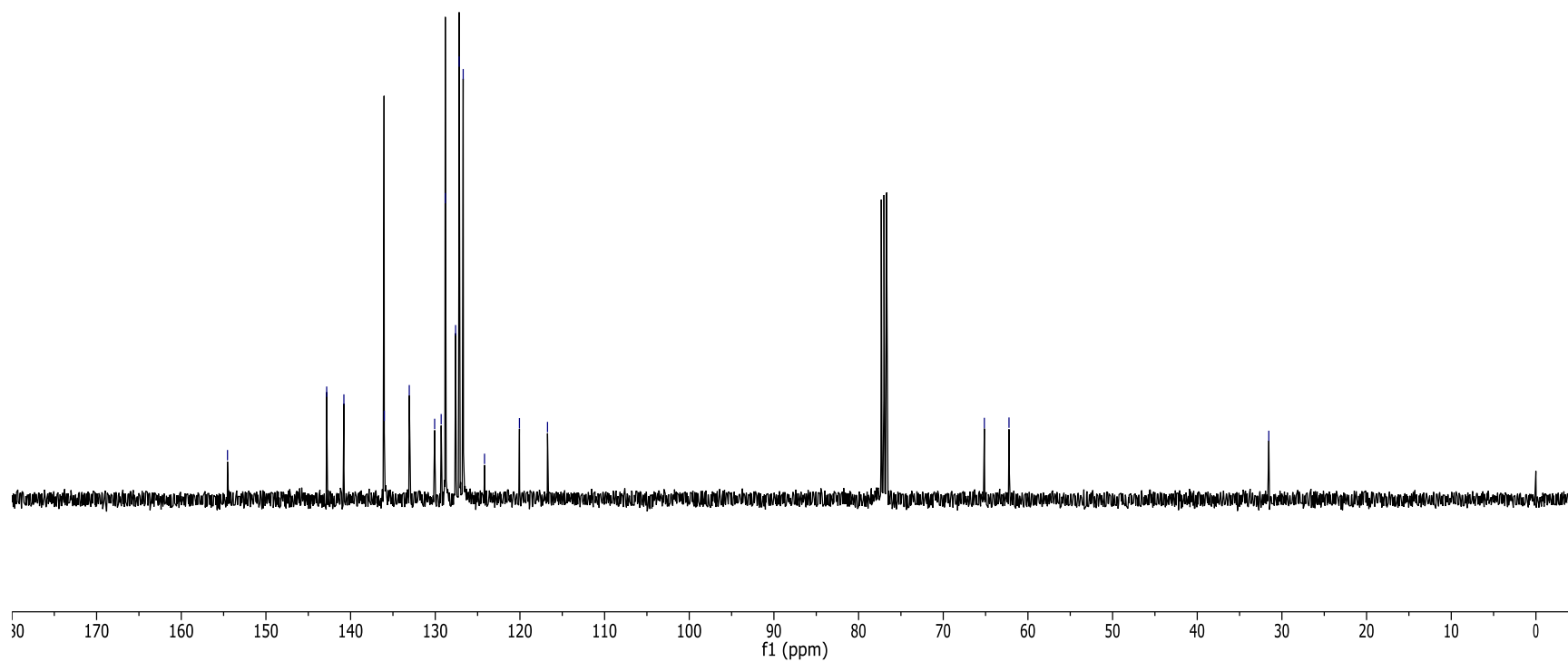




— 154.5
 — 142.8
 — 140.8
 — 136.0
 — 133.1
 — 130.1
 — 129.3
 — 128.8
 — 127.6
 — 127.2
 — 126.7
 — 124.2
 — 120.1
 — 116.7

— 65.1
 — 62.2

— 31.5



S97