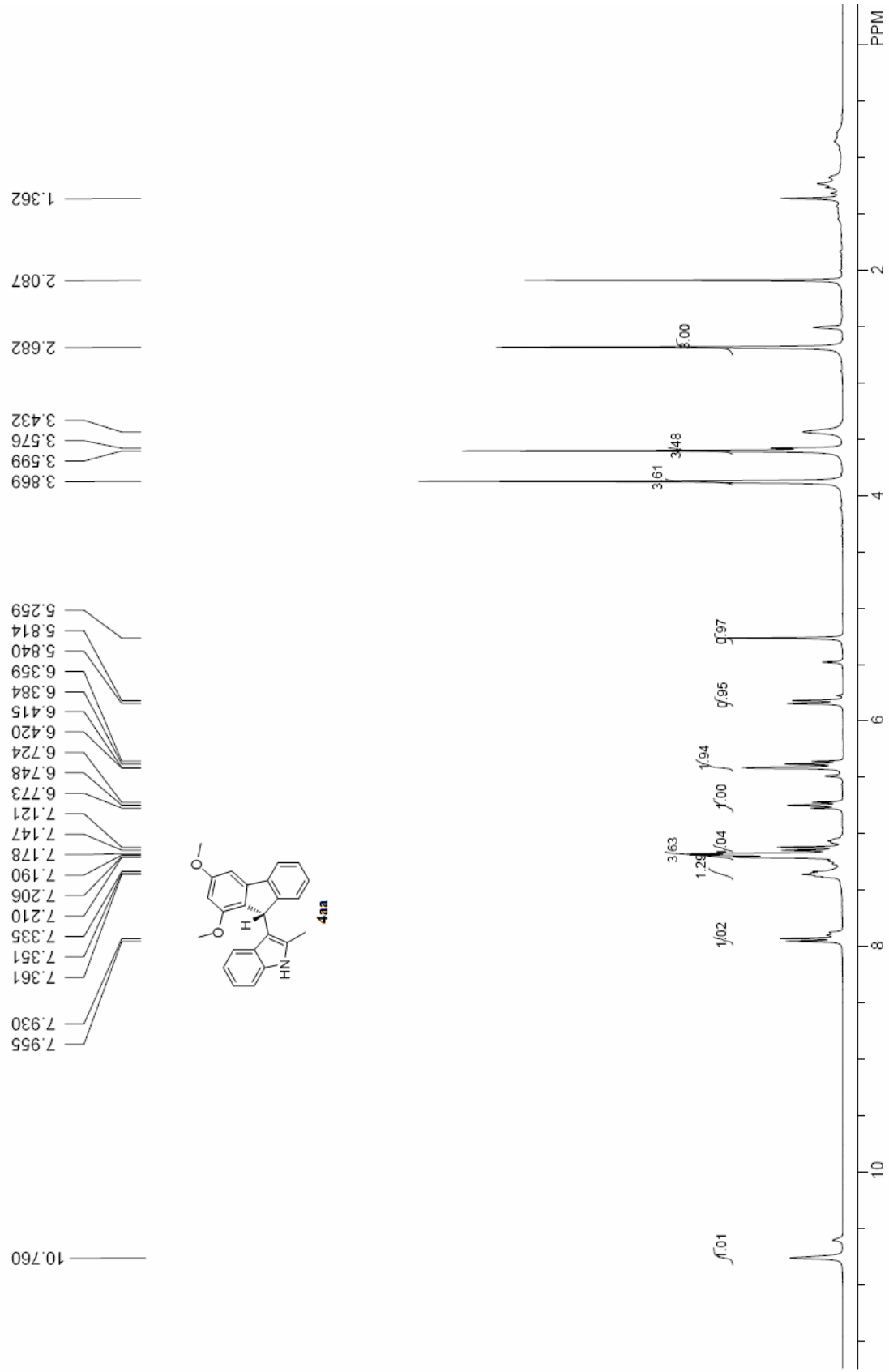


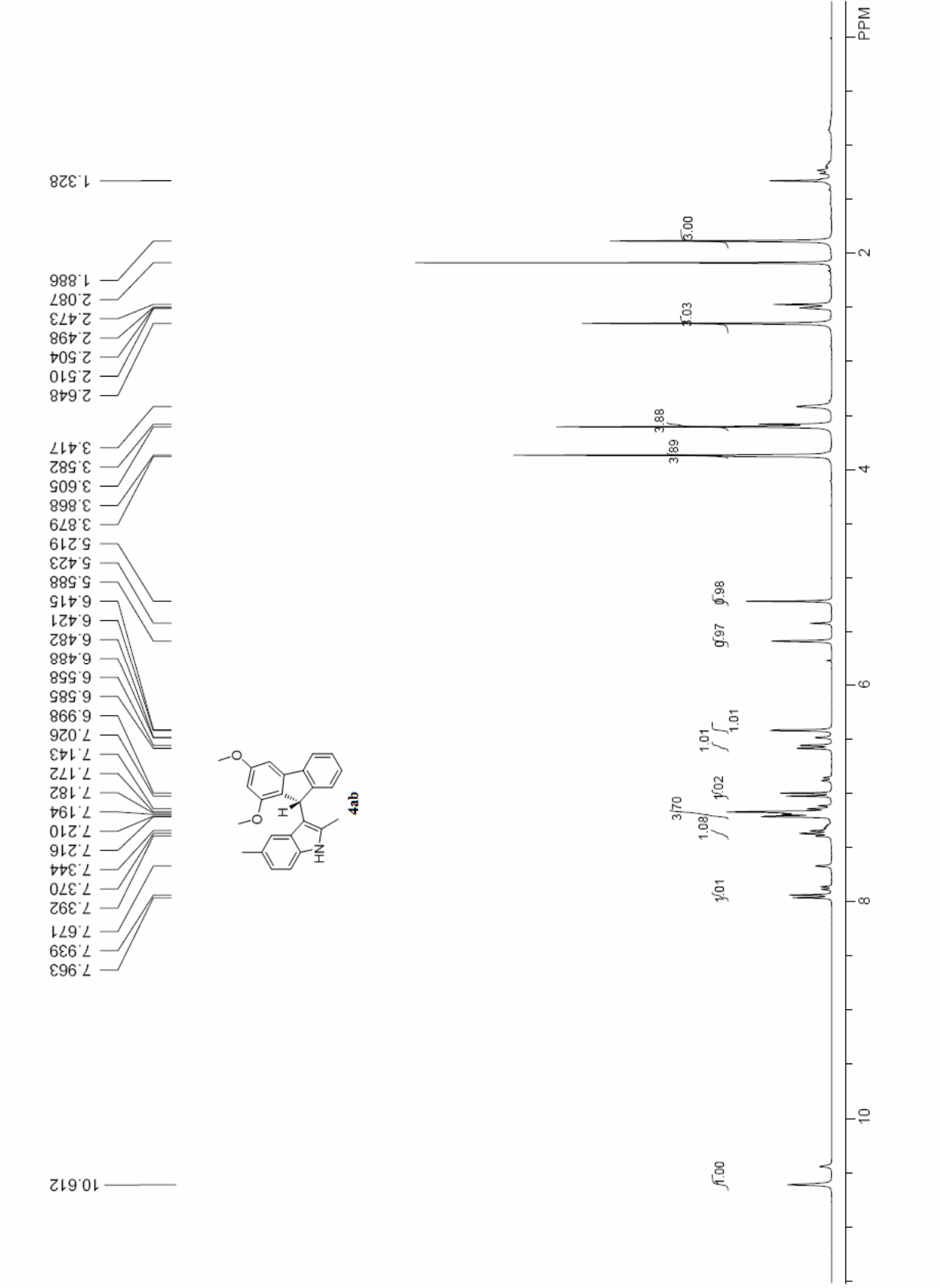
Supporting Information for

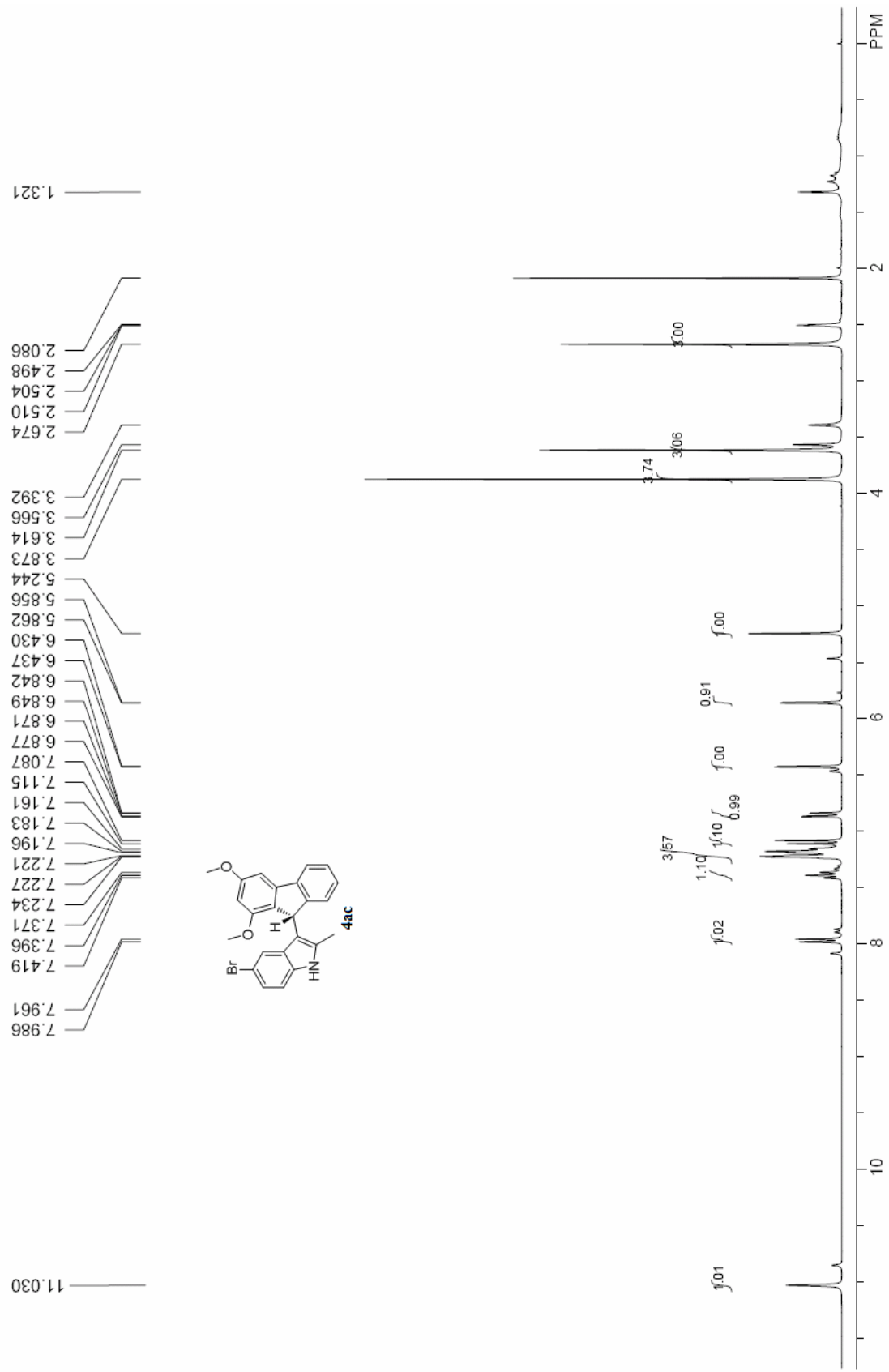
**Enantioselective Synthesis of Fluorene Derivatives Catalyzed by
Chiral *N*-Triflyl Phosphoramidate via Double Friedel-Crafts Reaction**

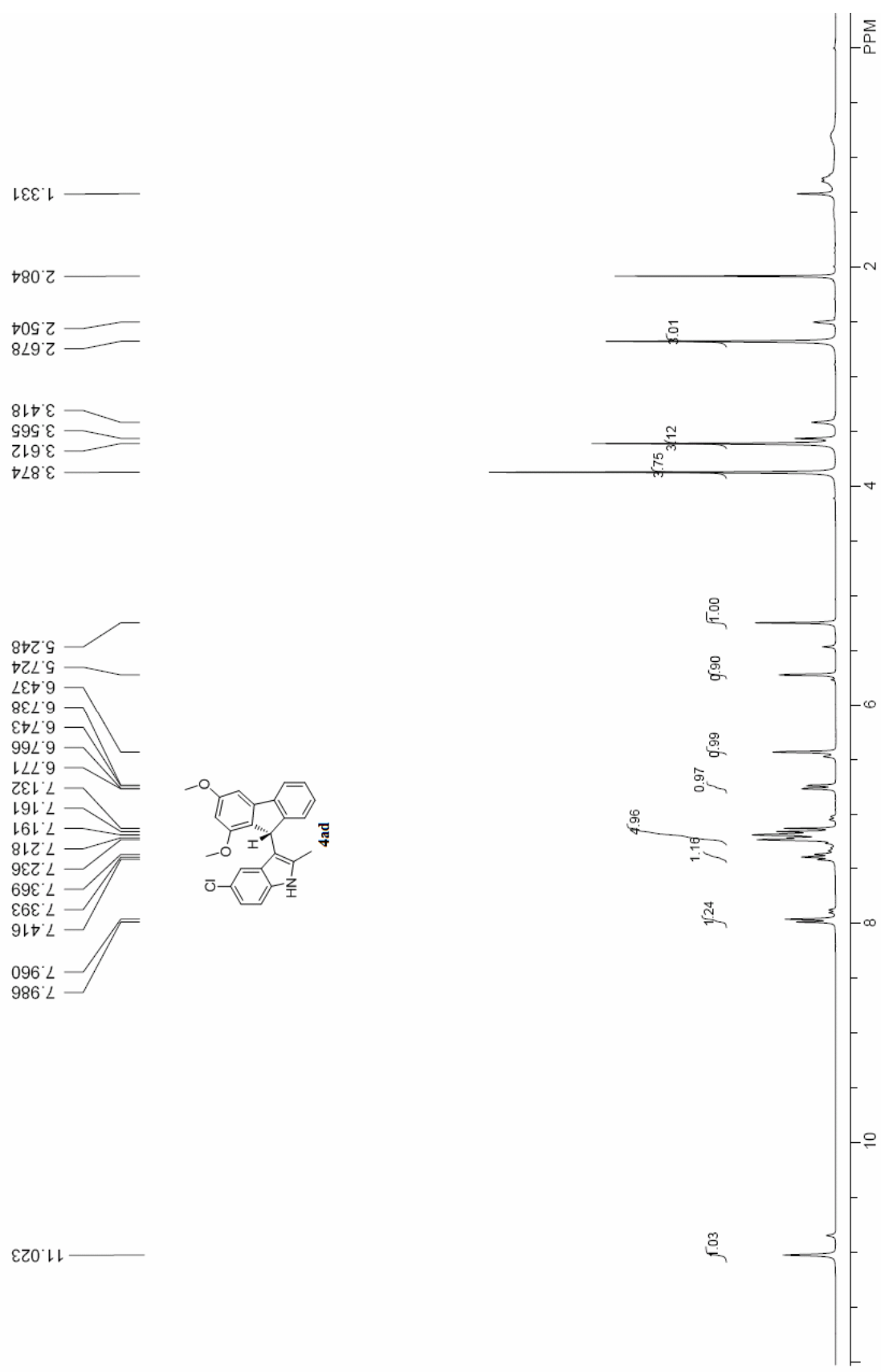
*Shou-Guo Wang, Long Han, Mi Zeng, Feng-Lai Sun, Wei Zhang and Shu-Li You**

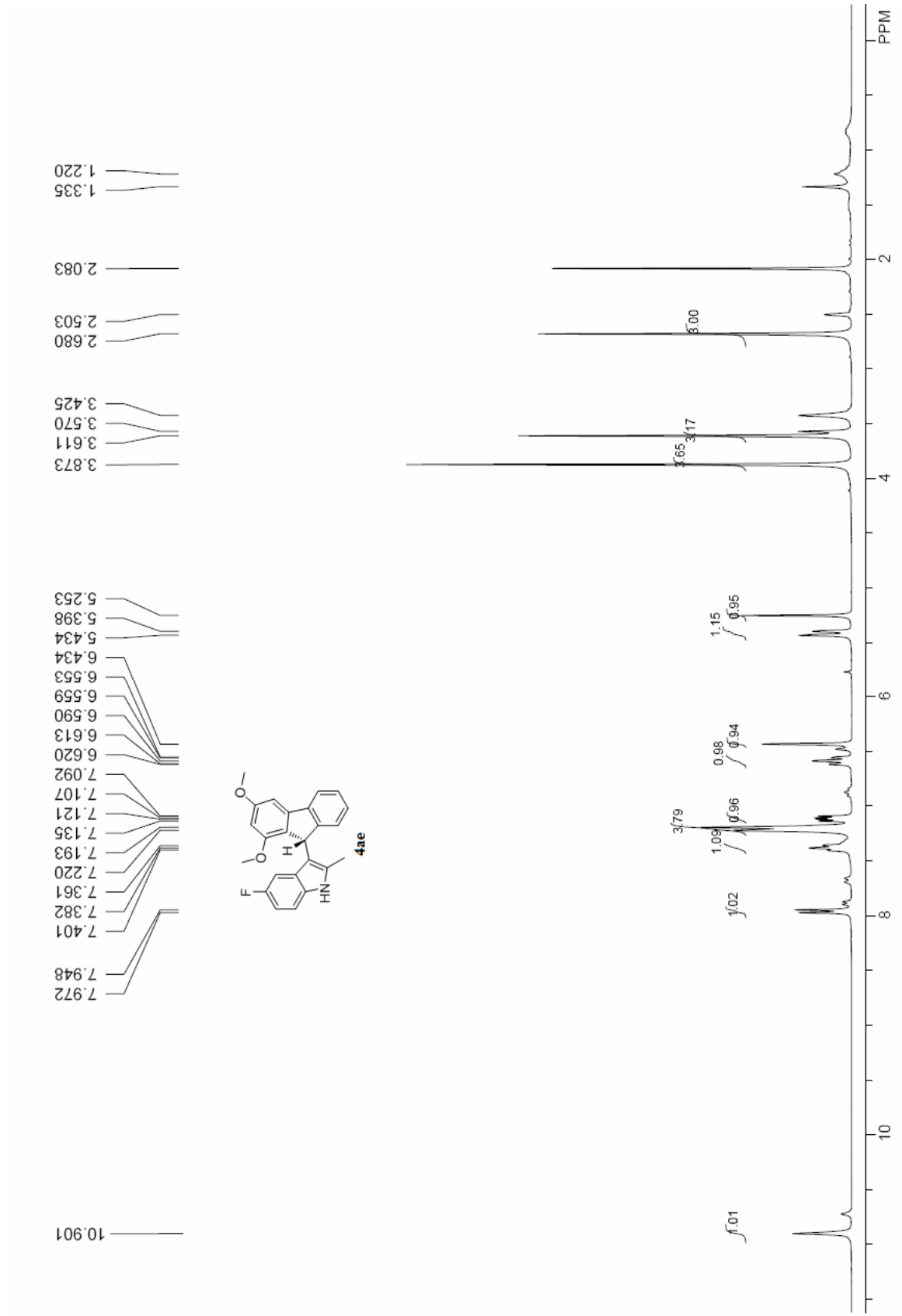
State Key Laboratory of Organometallic Chemistry
Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences
345 Lingling Lu, Shanghai 200032, China
Fax: (+86) 21-54925087
E-mail: slyou@sioc.ac.cn

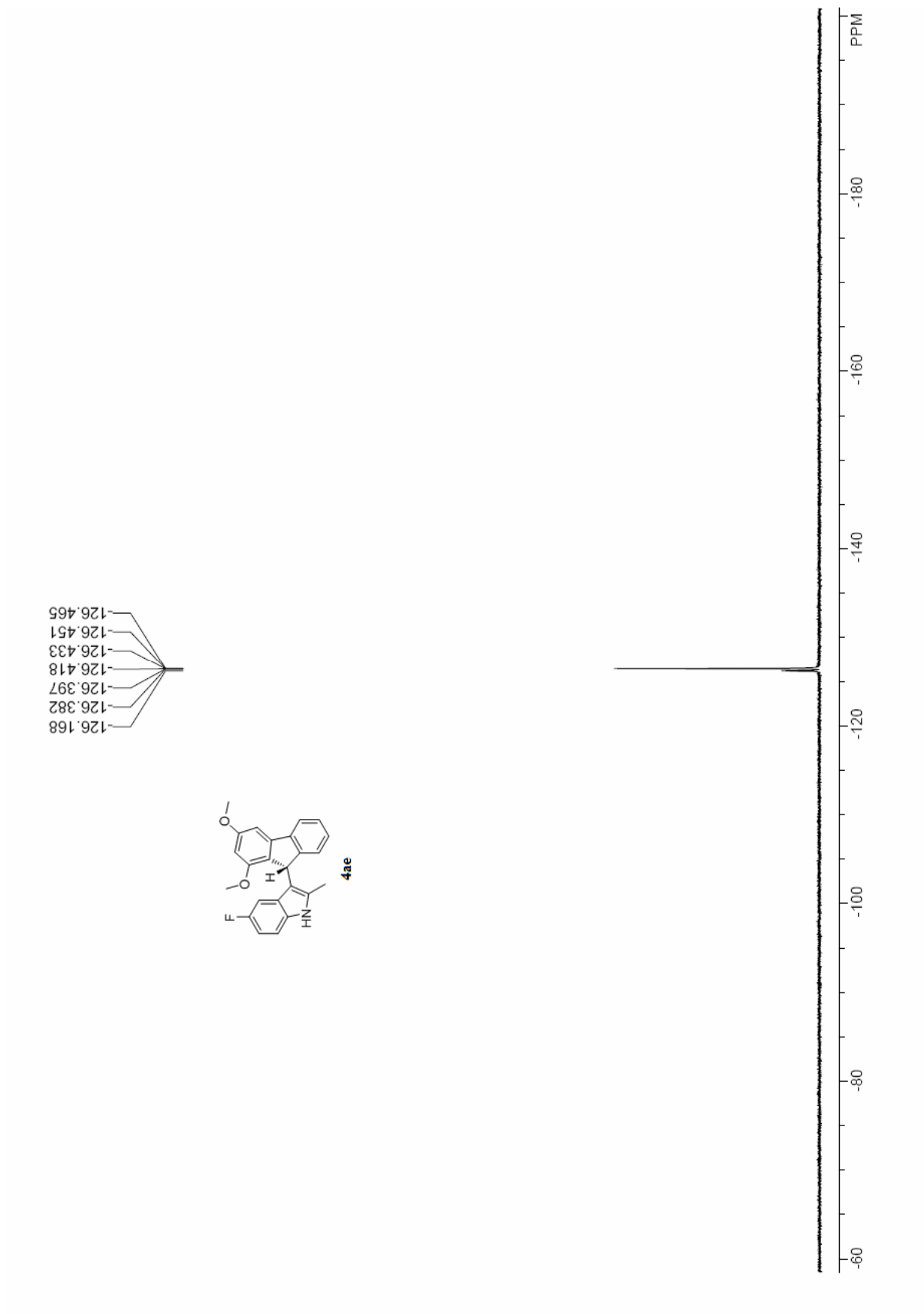


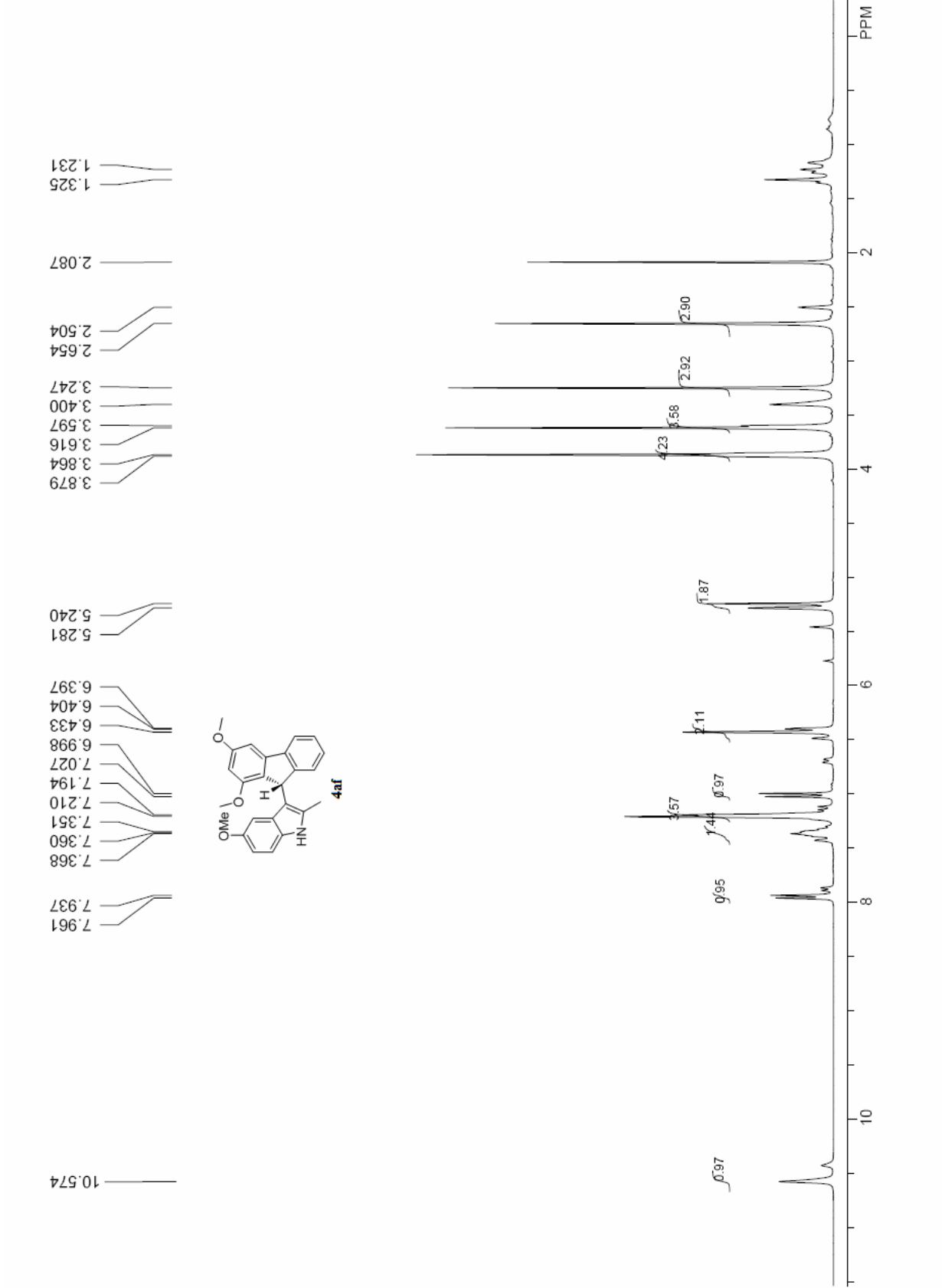


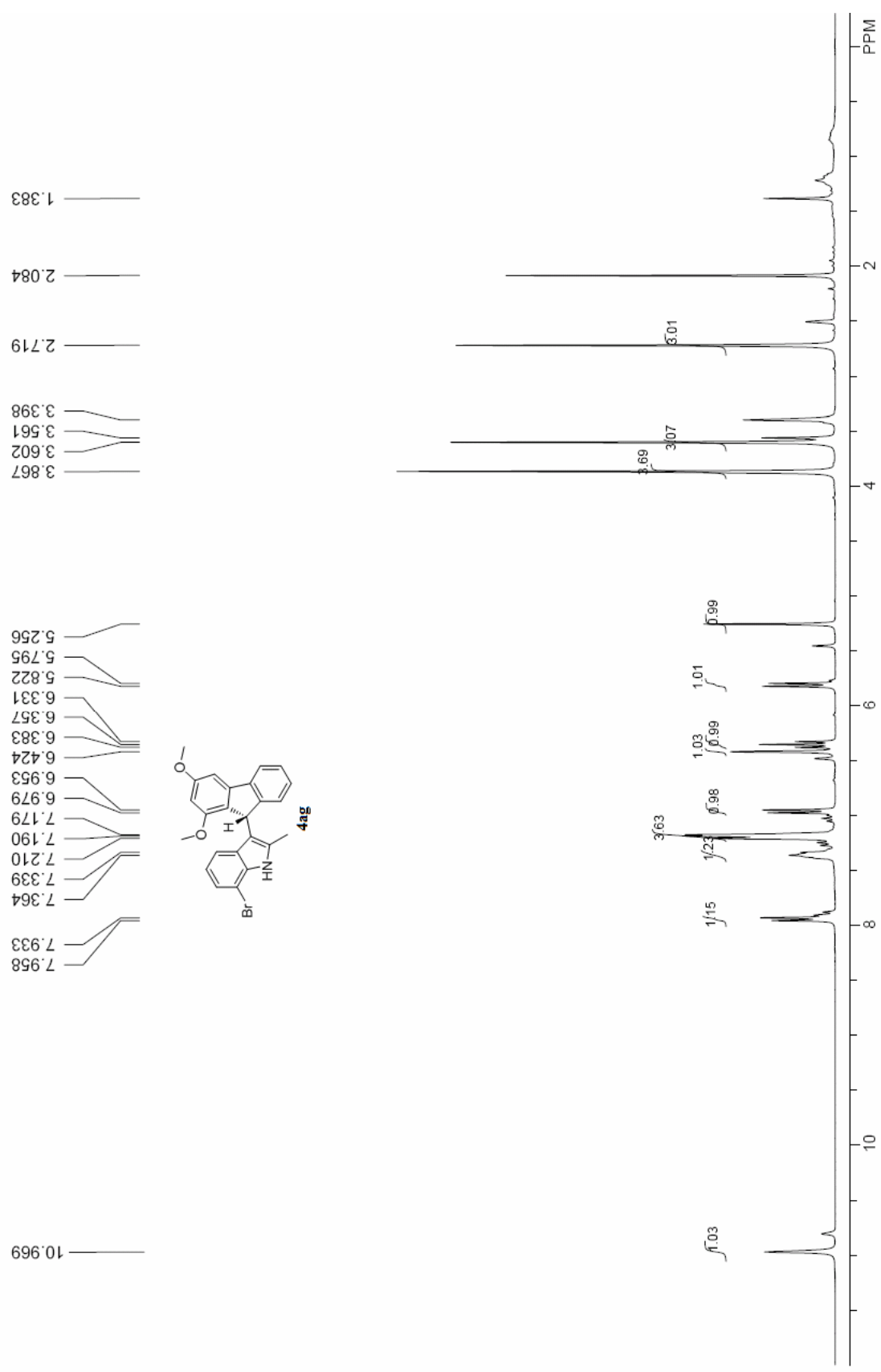


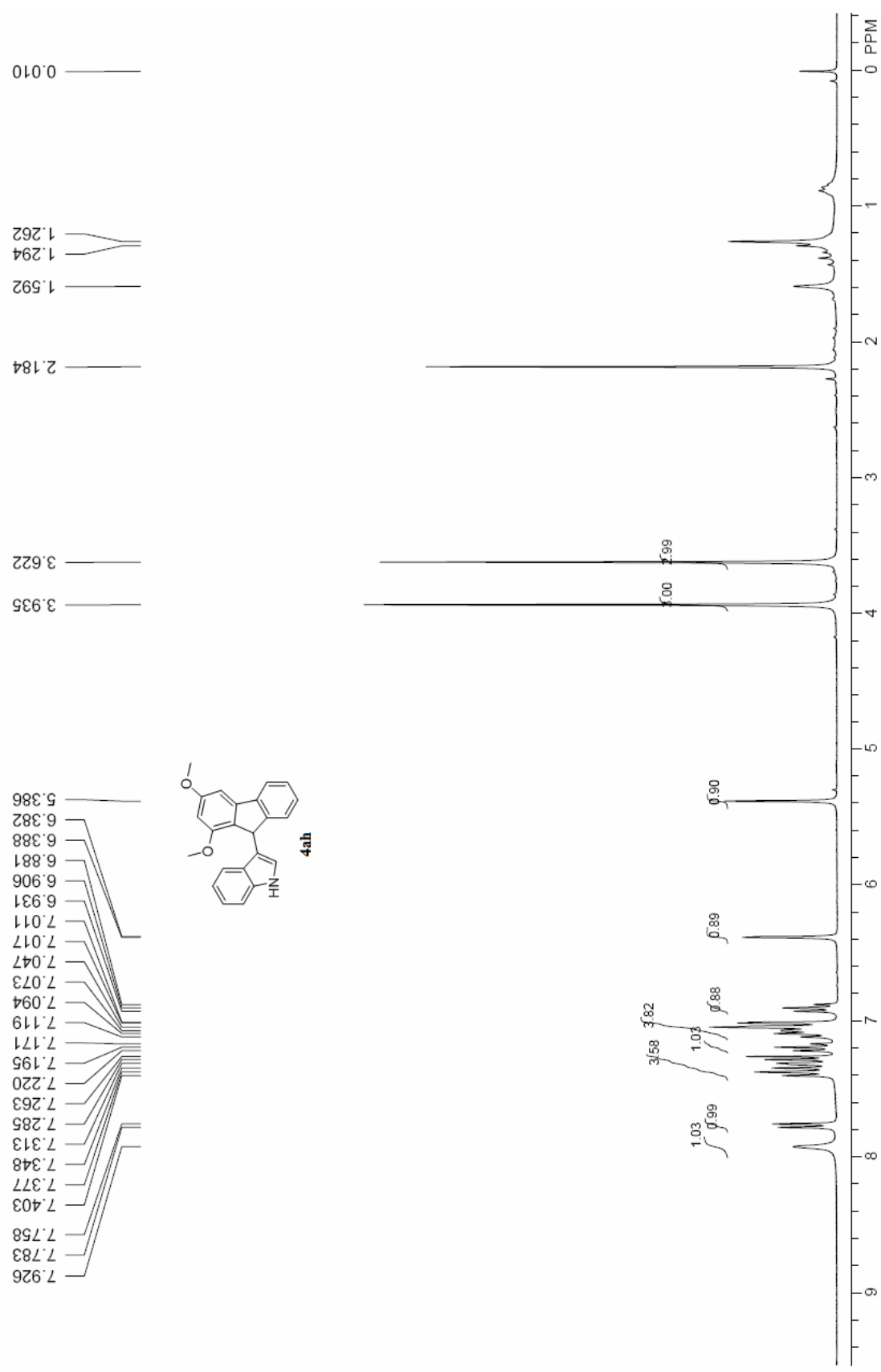


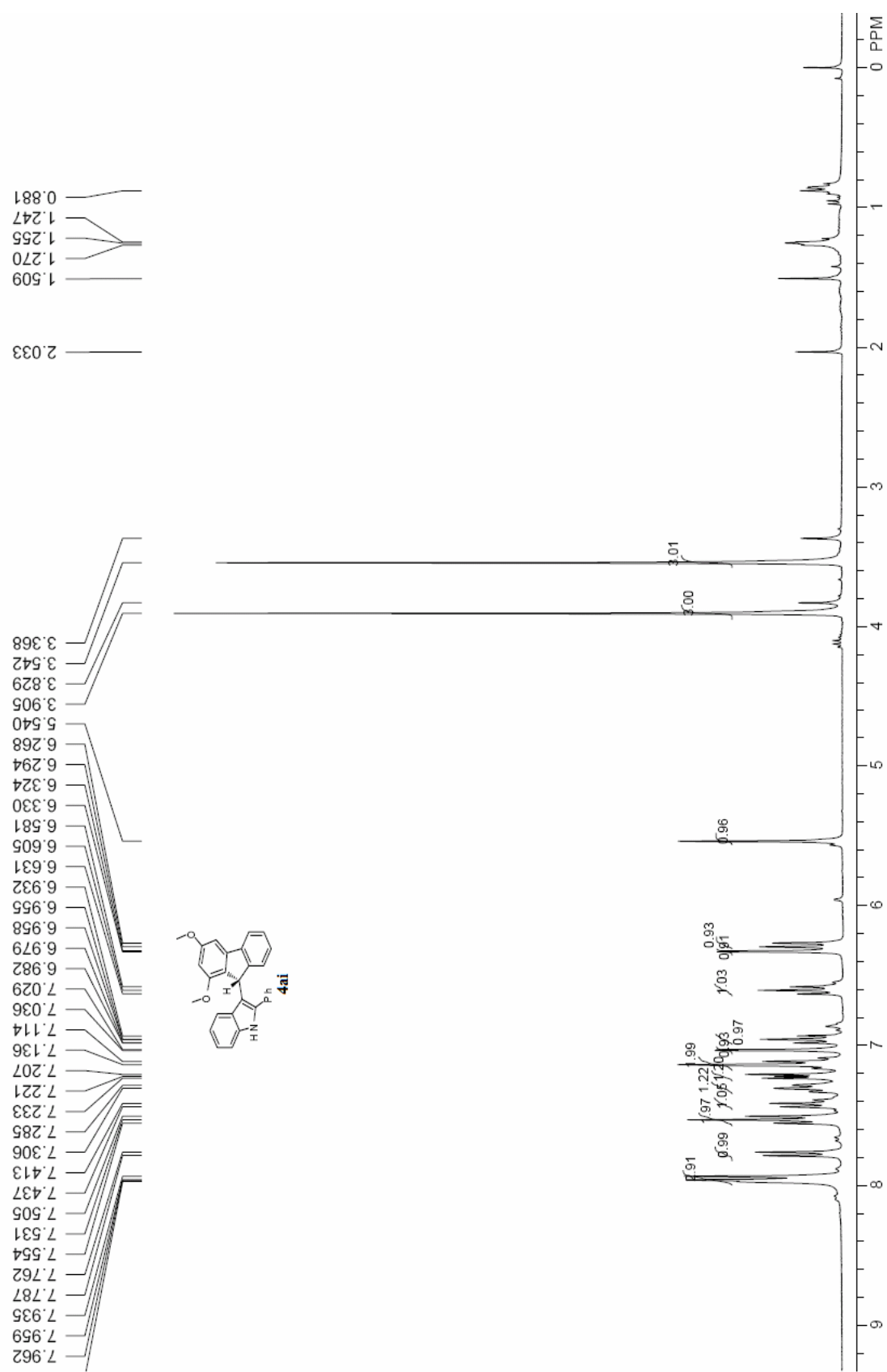


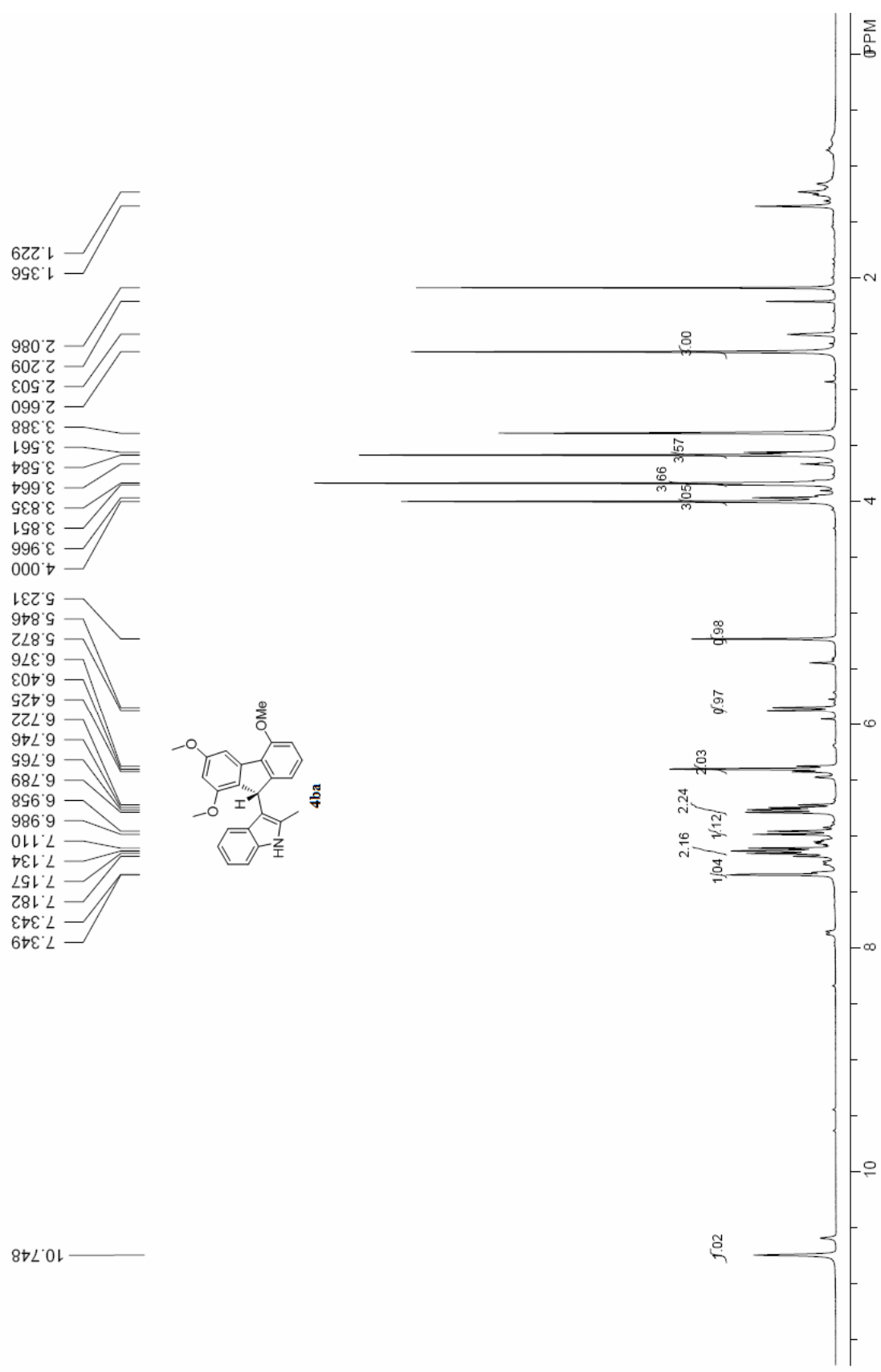


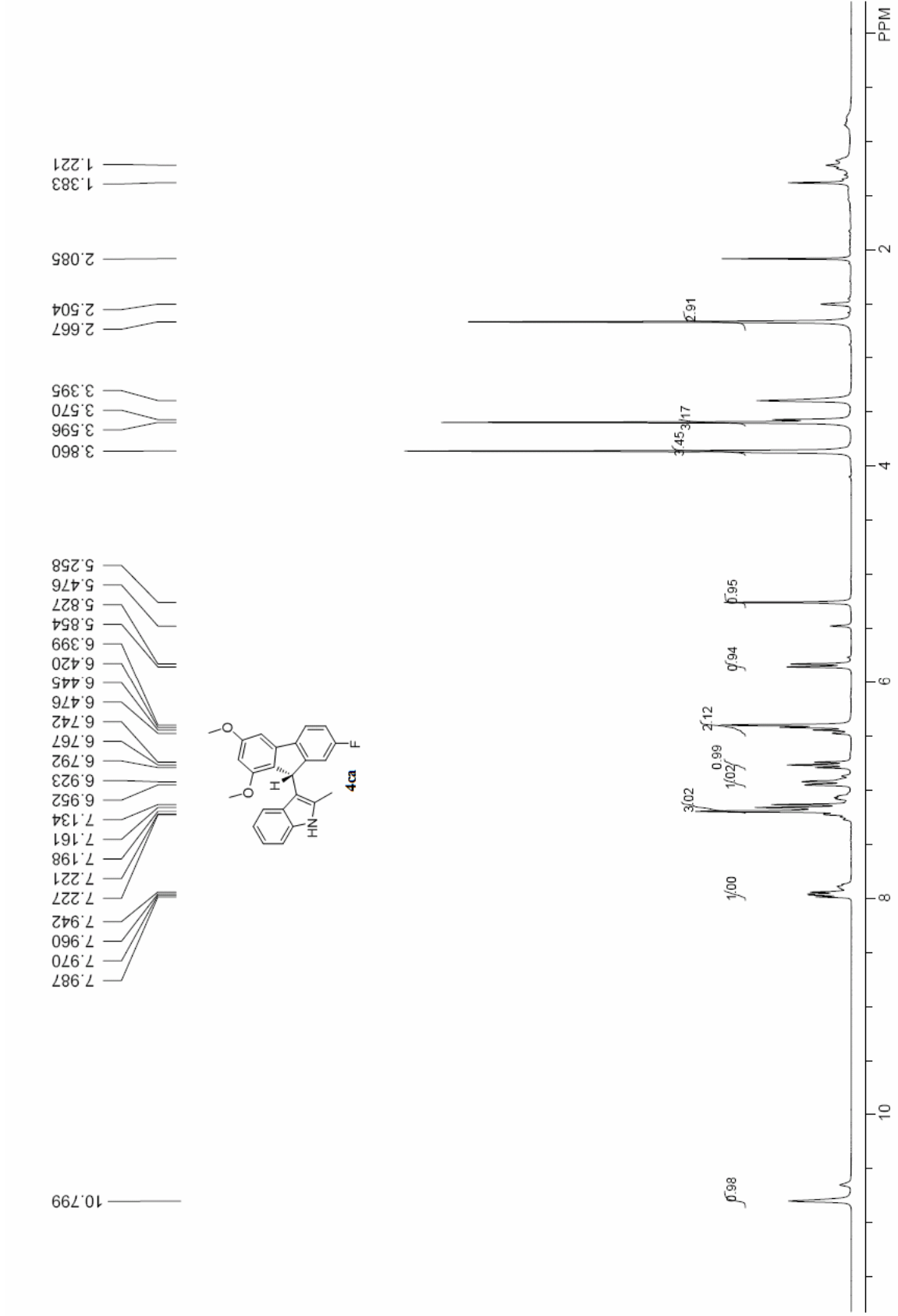


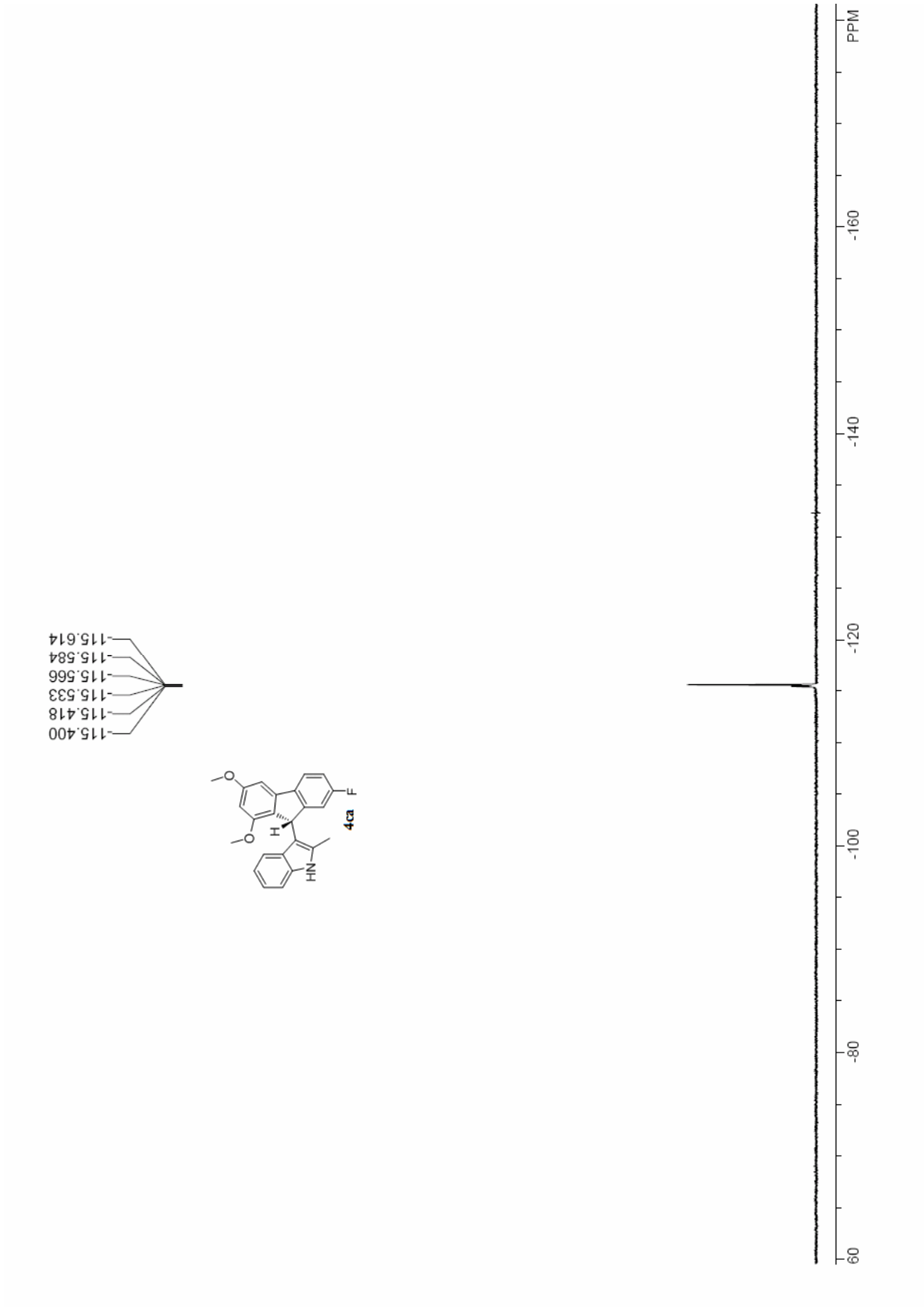


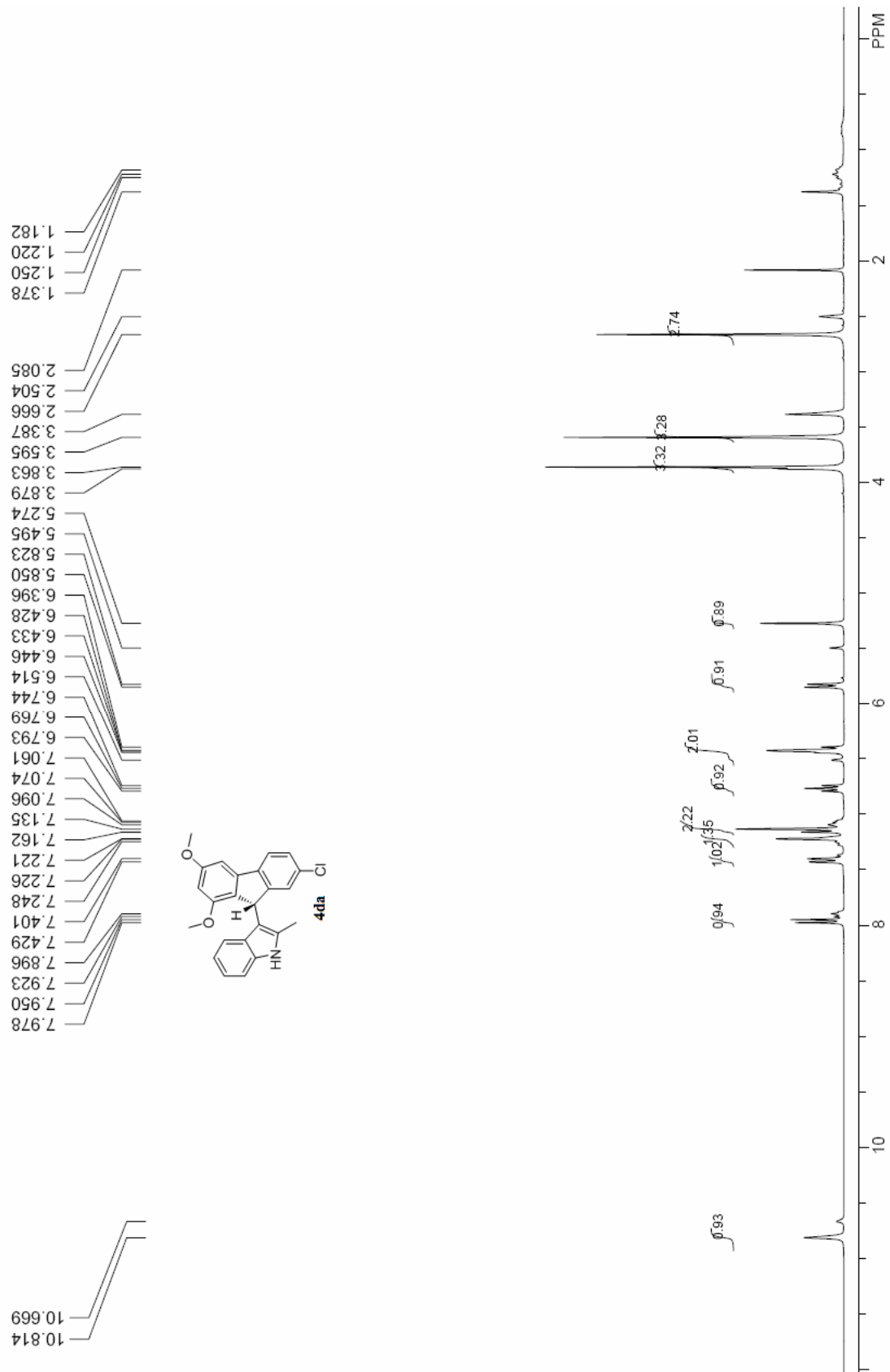


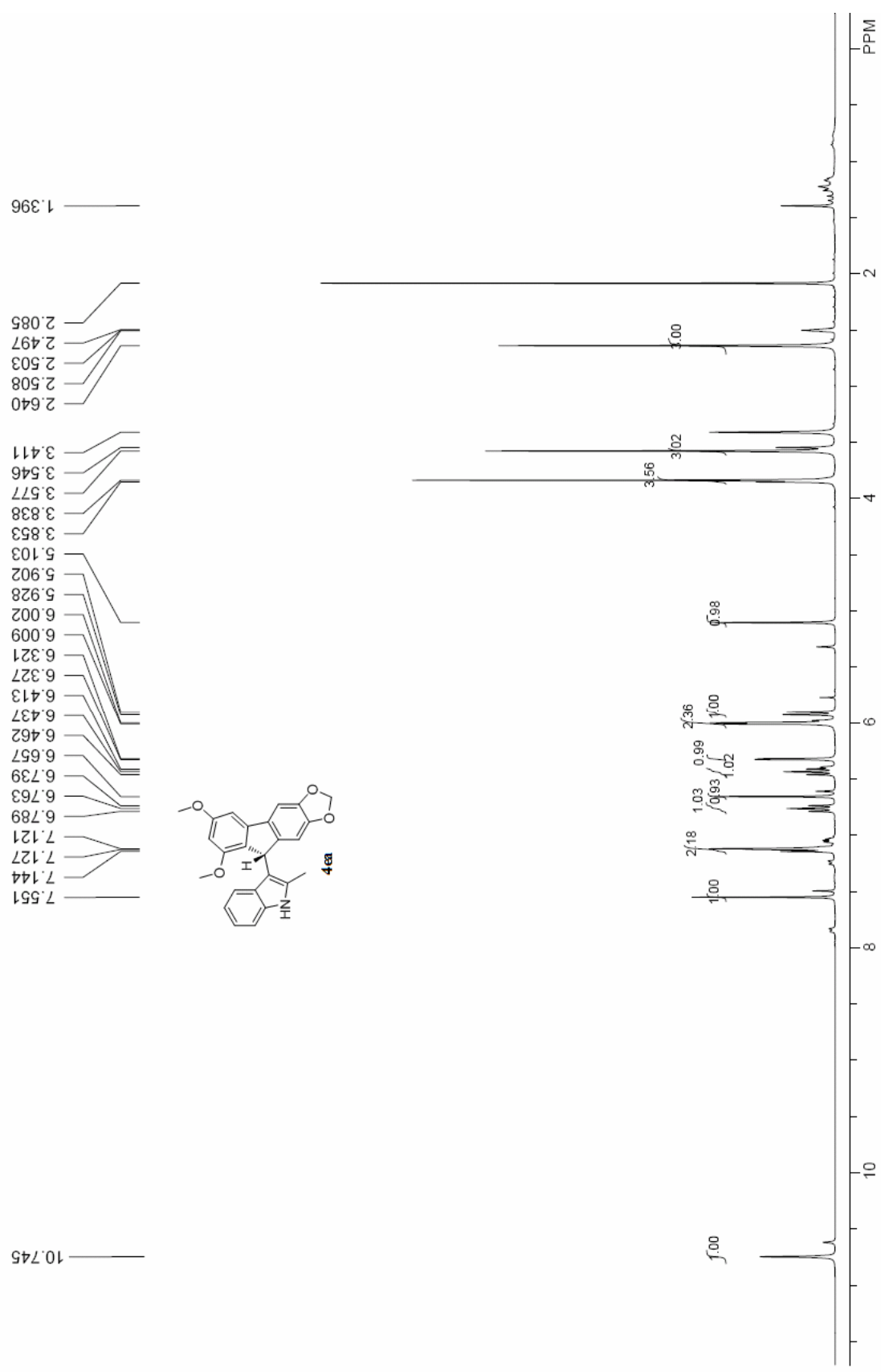


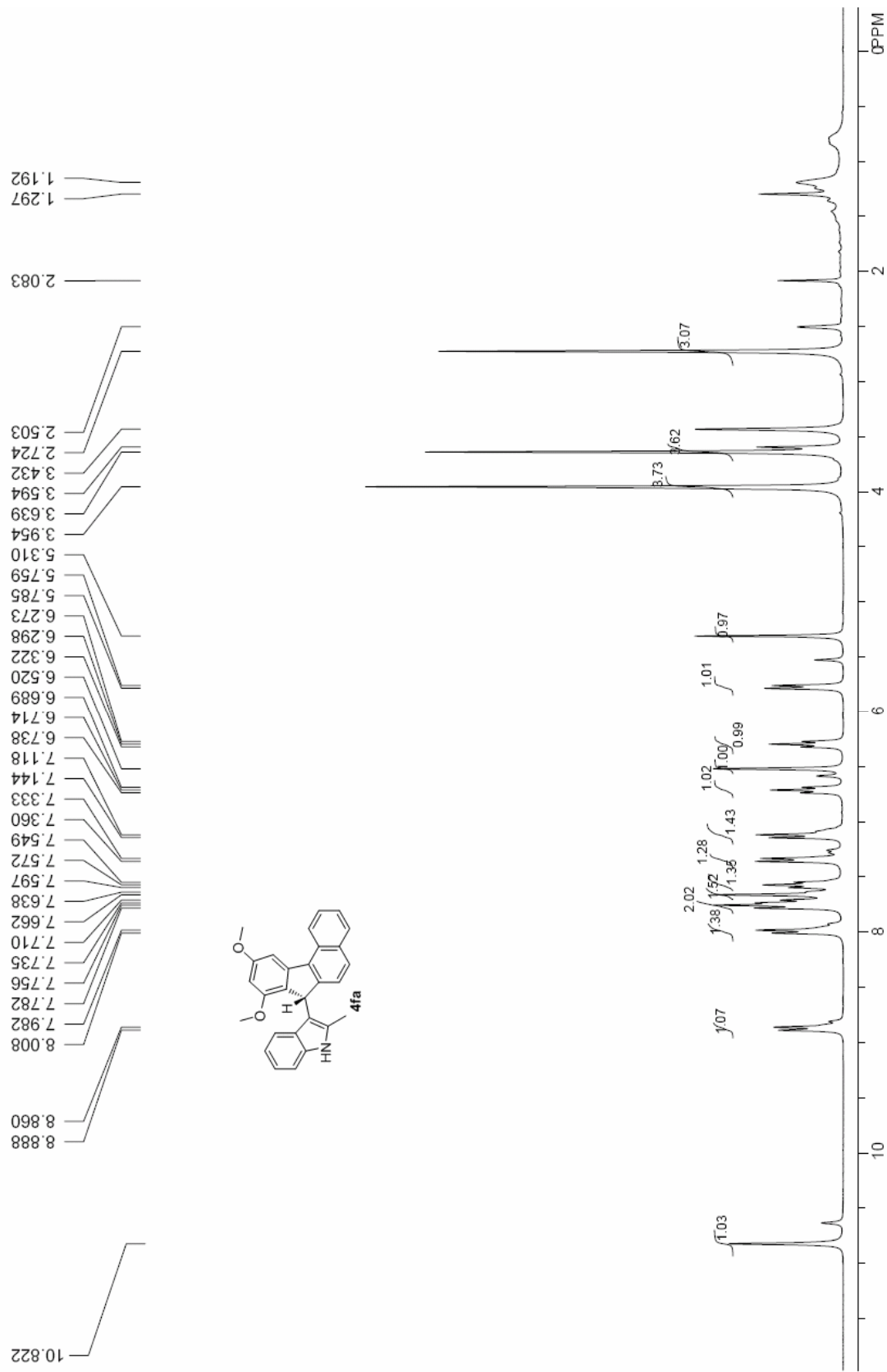


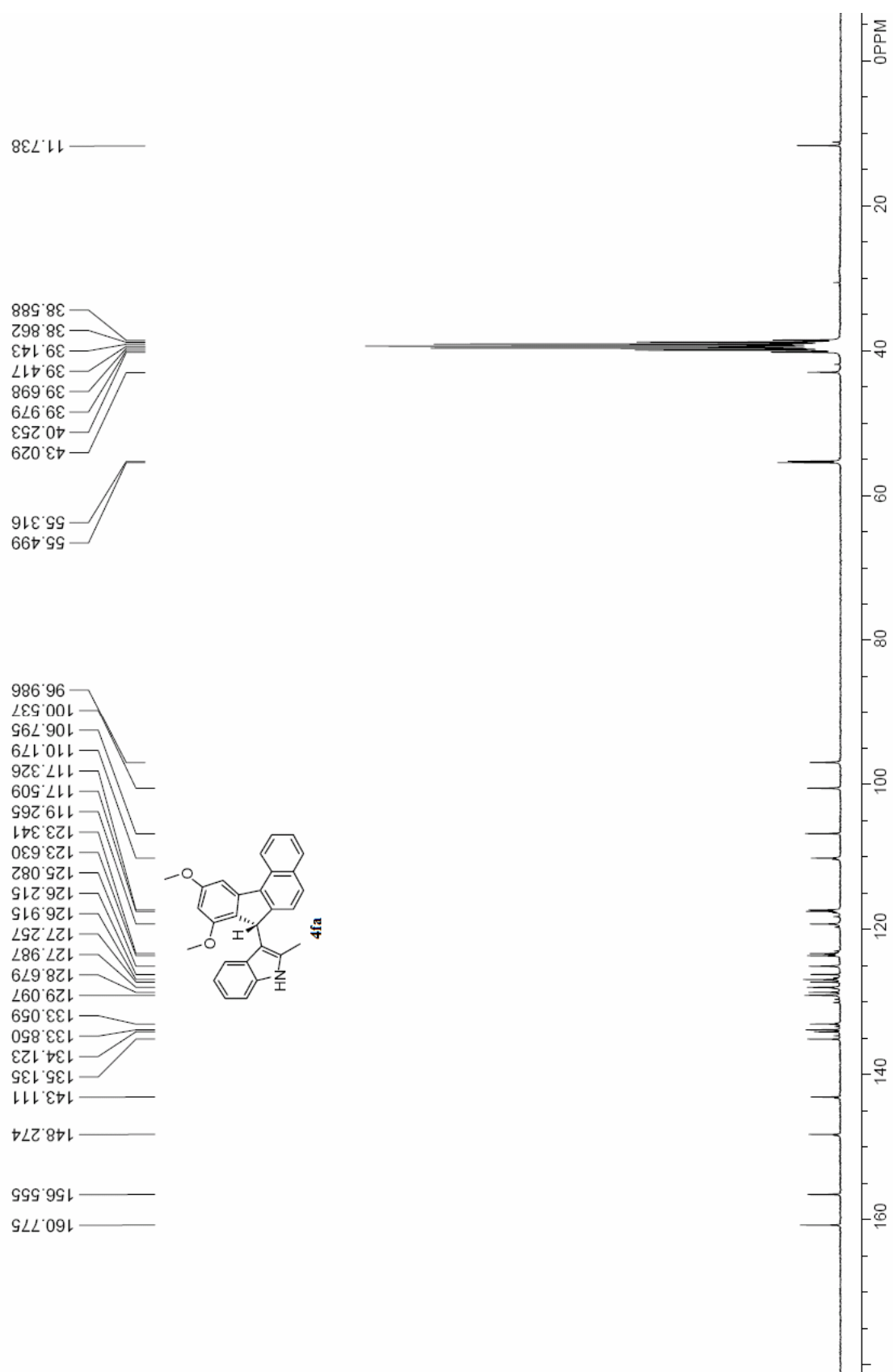


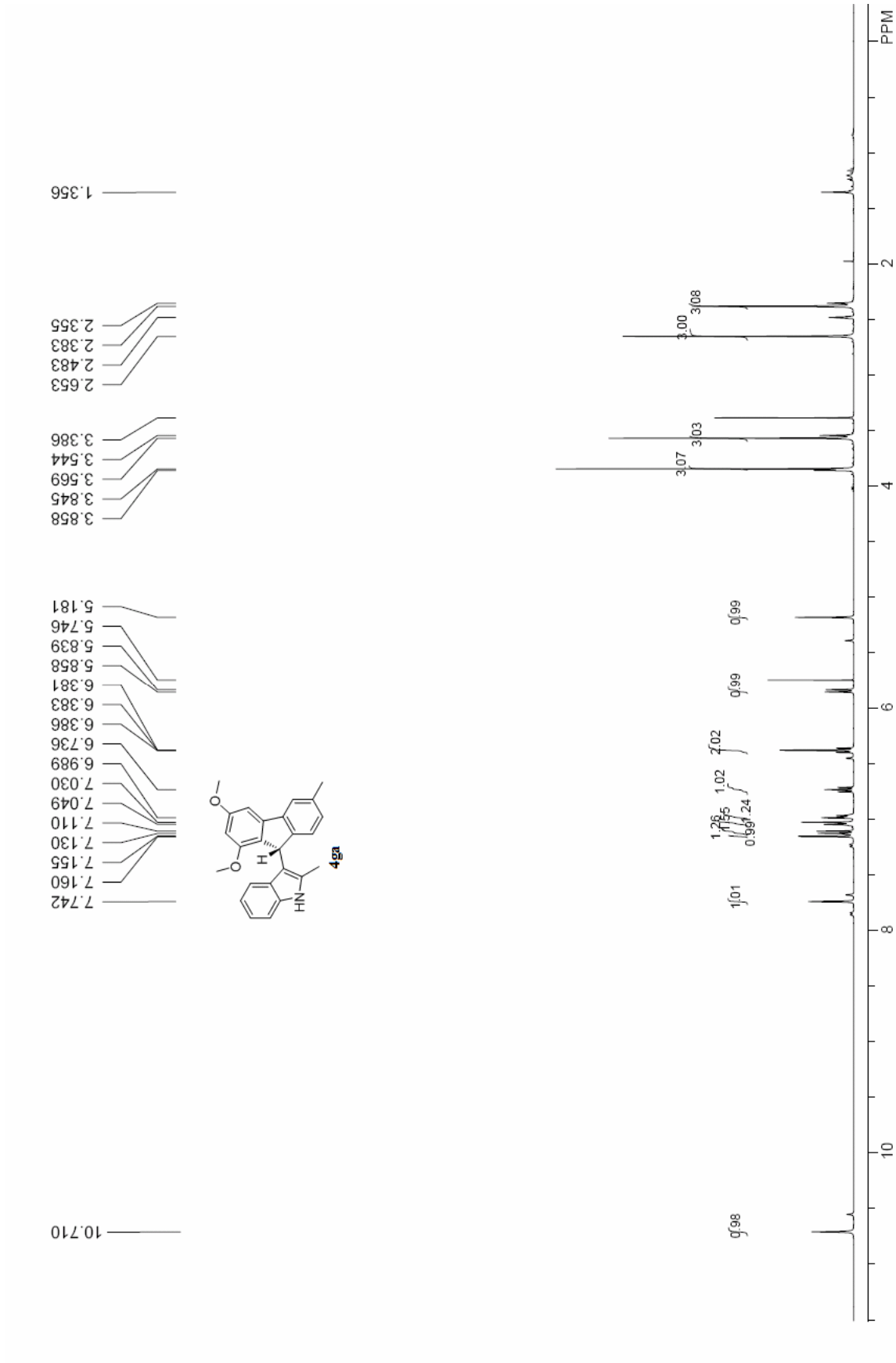


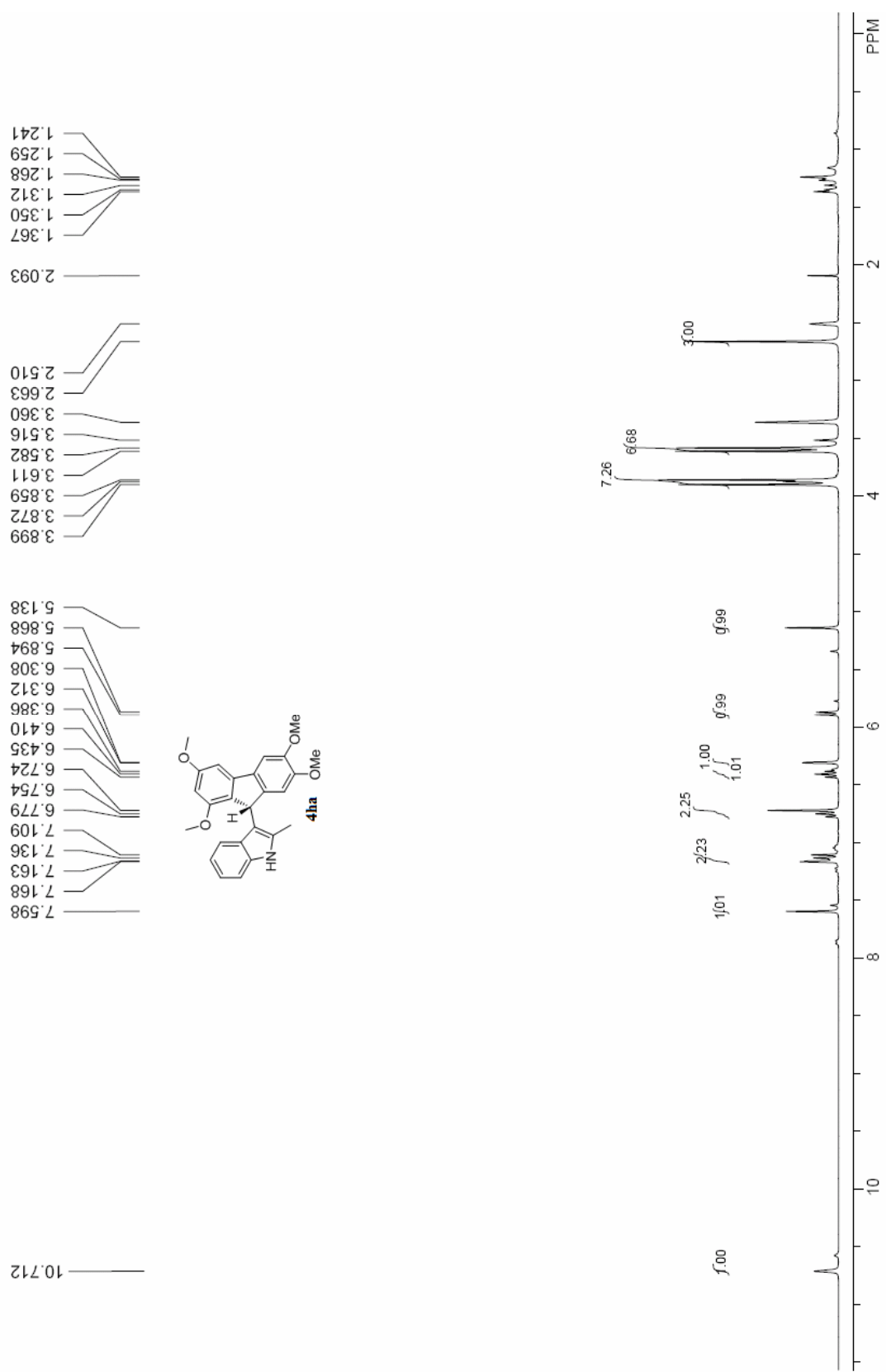


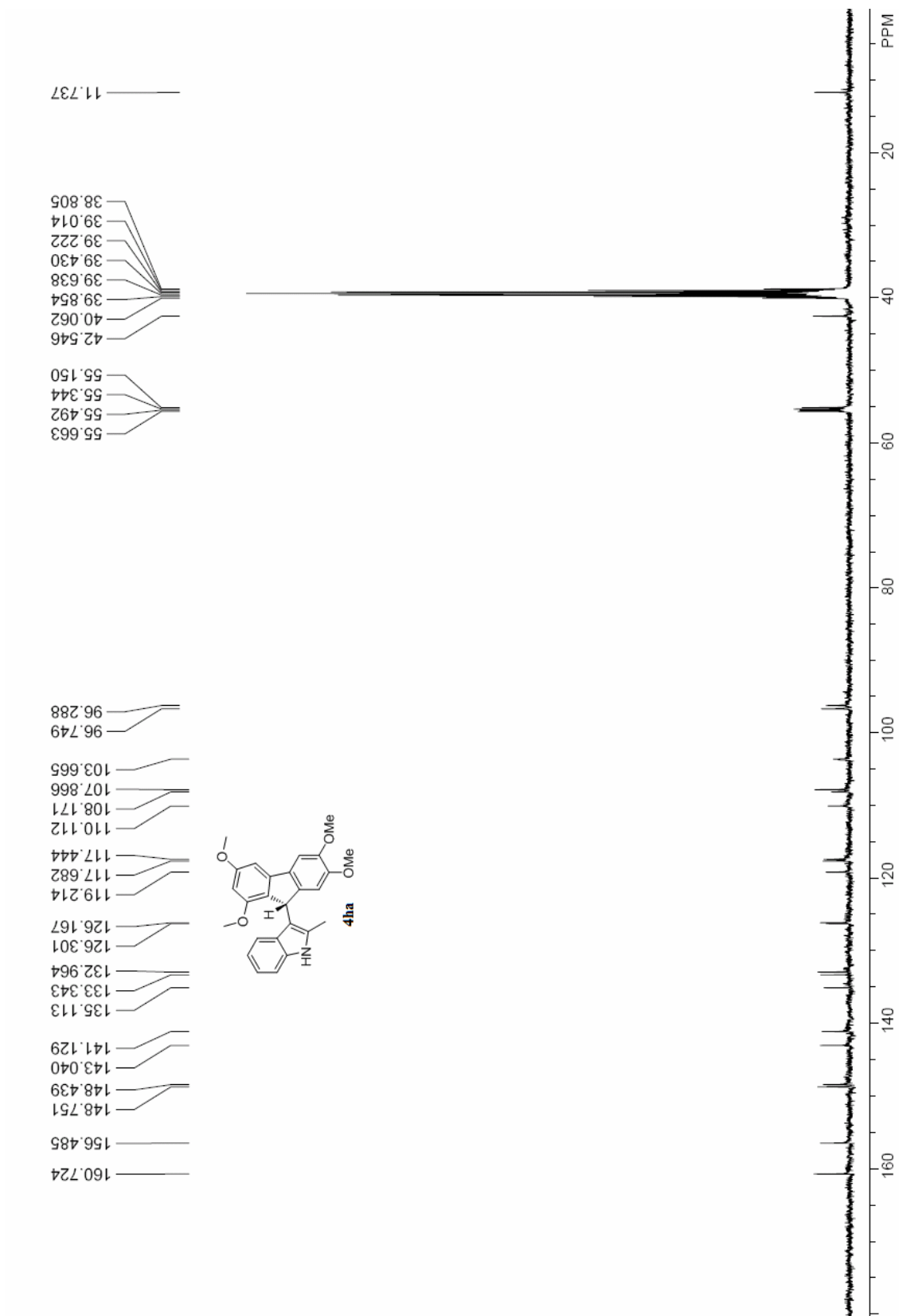


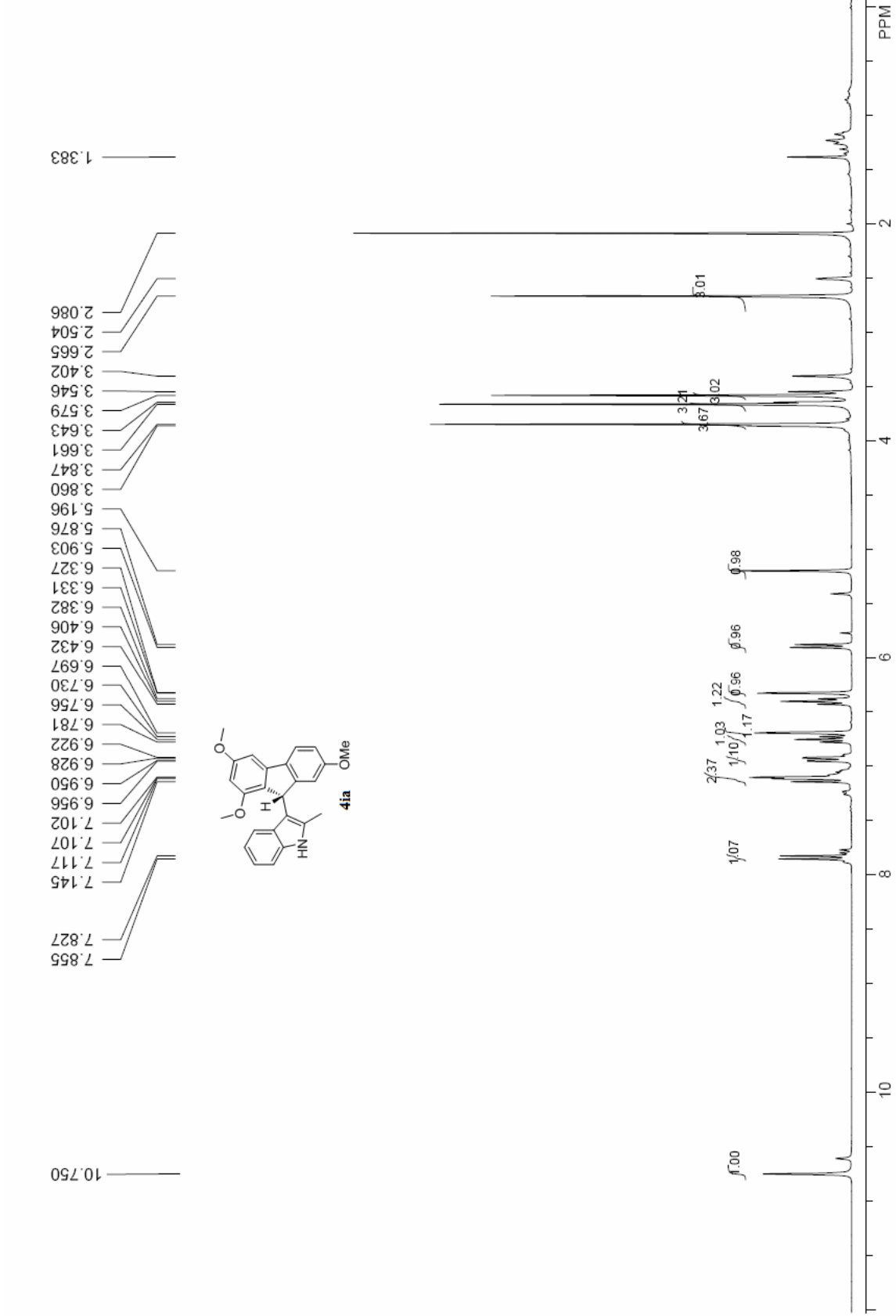


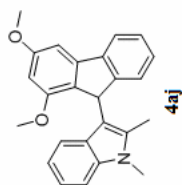


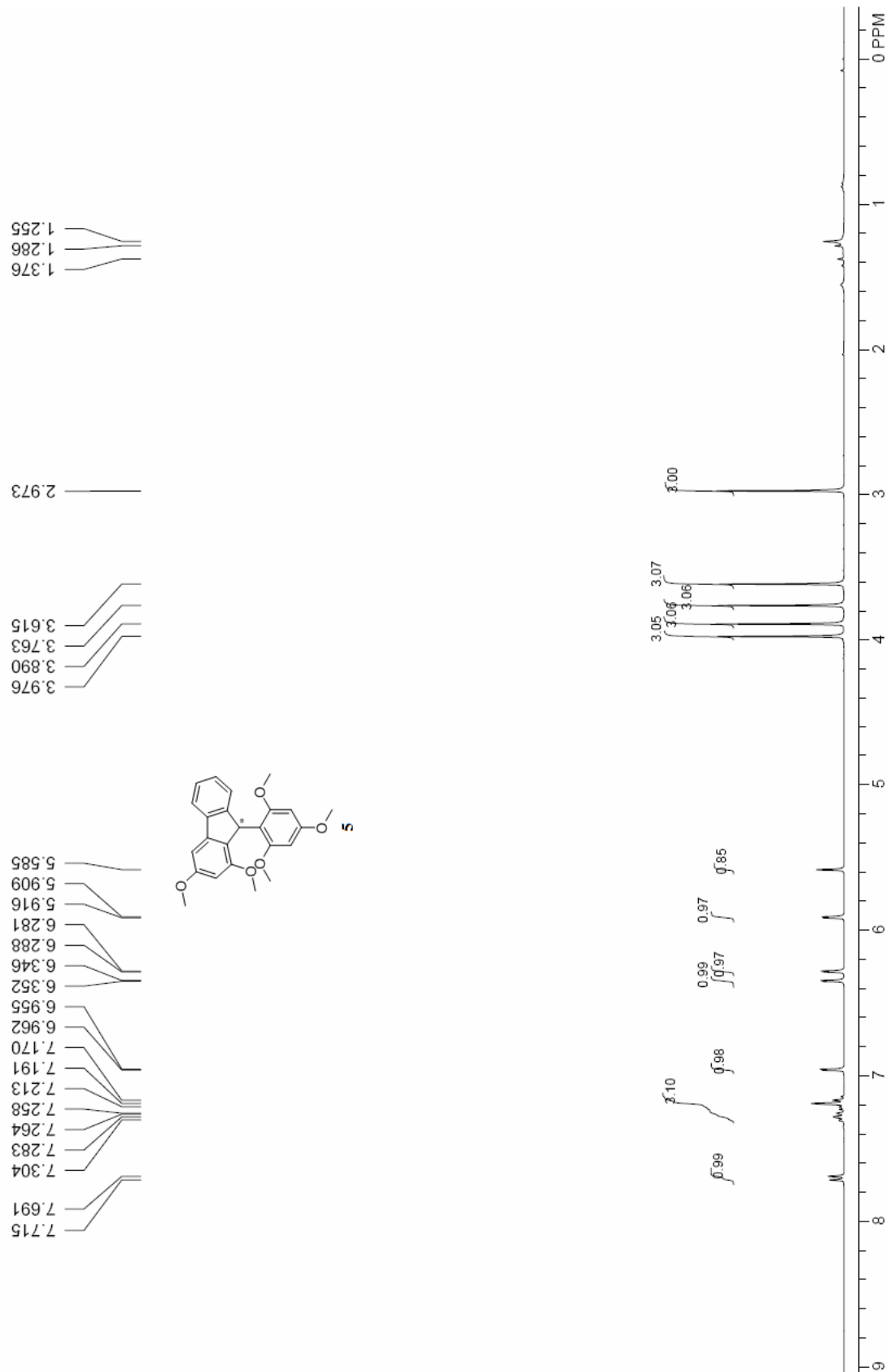


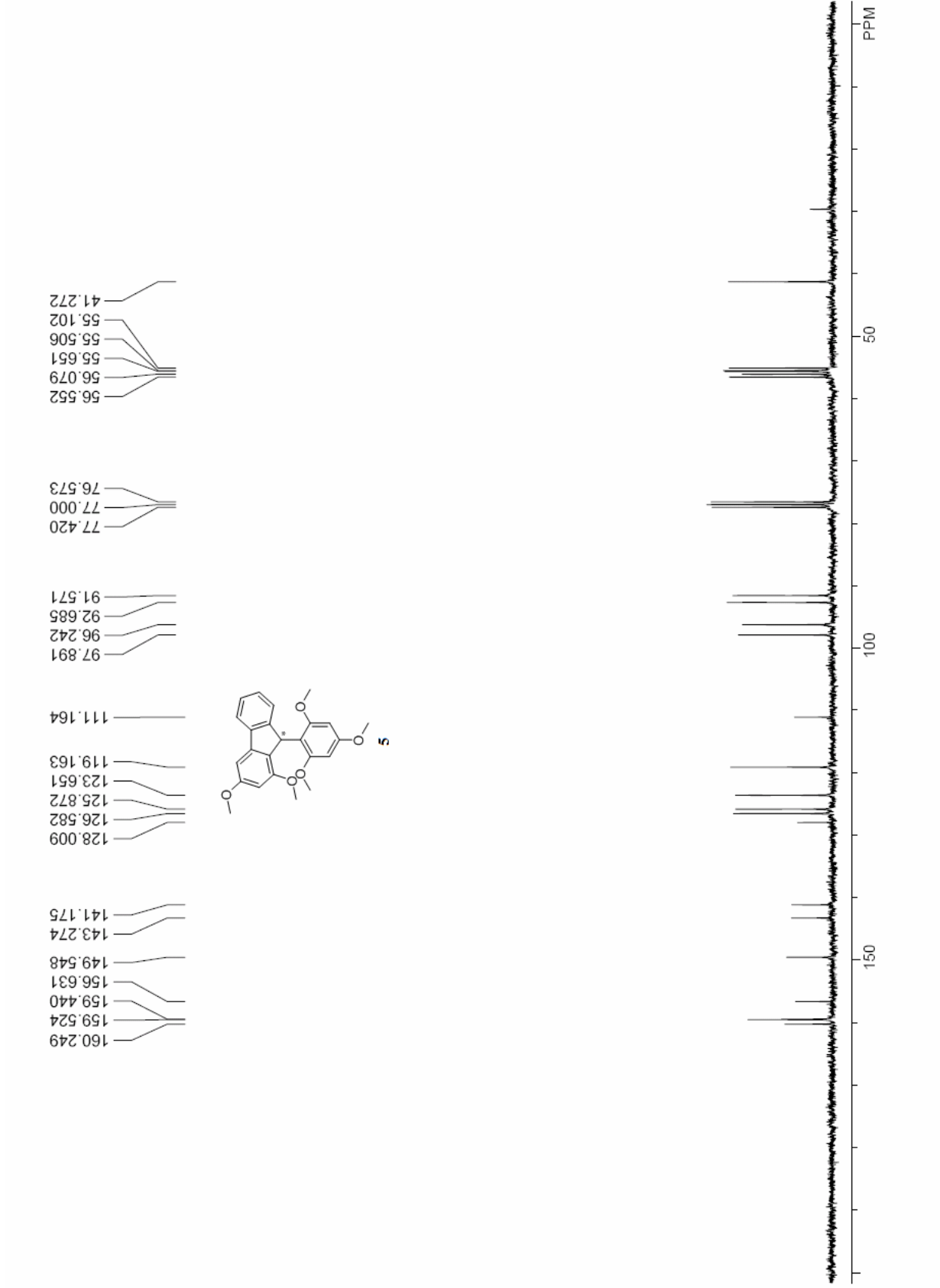


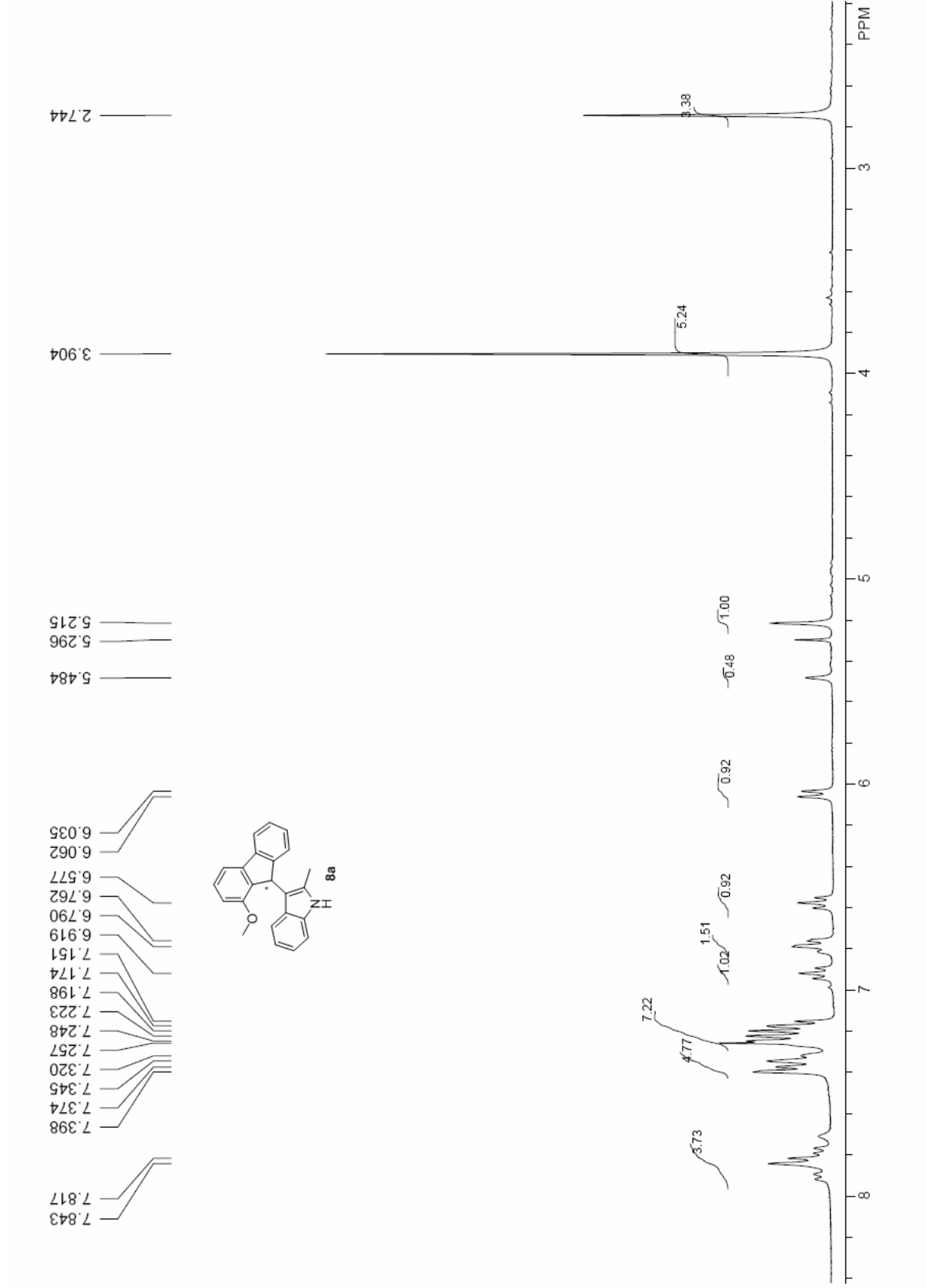


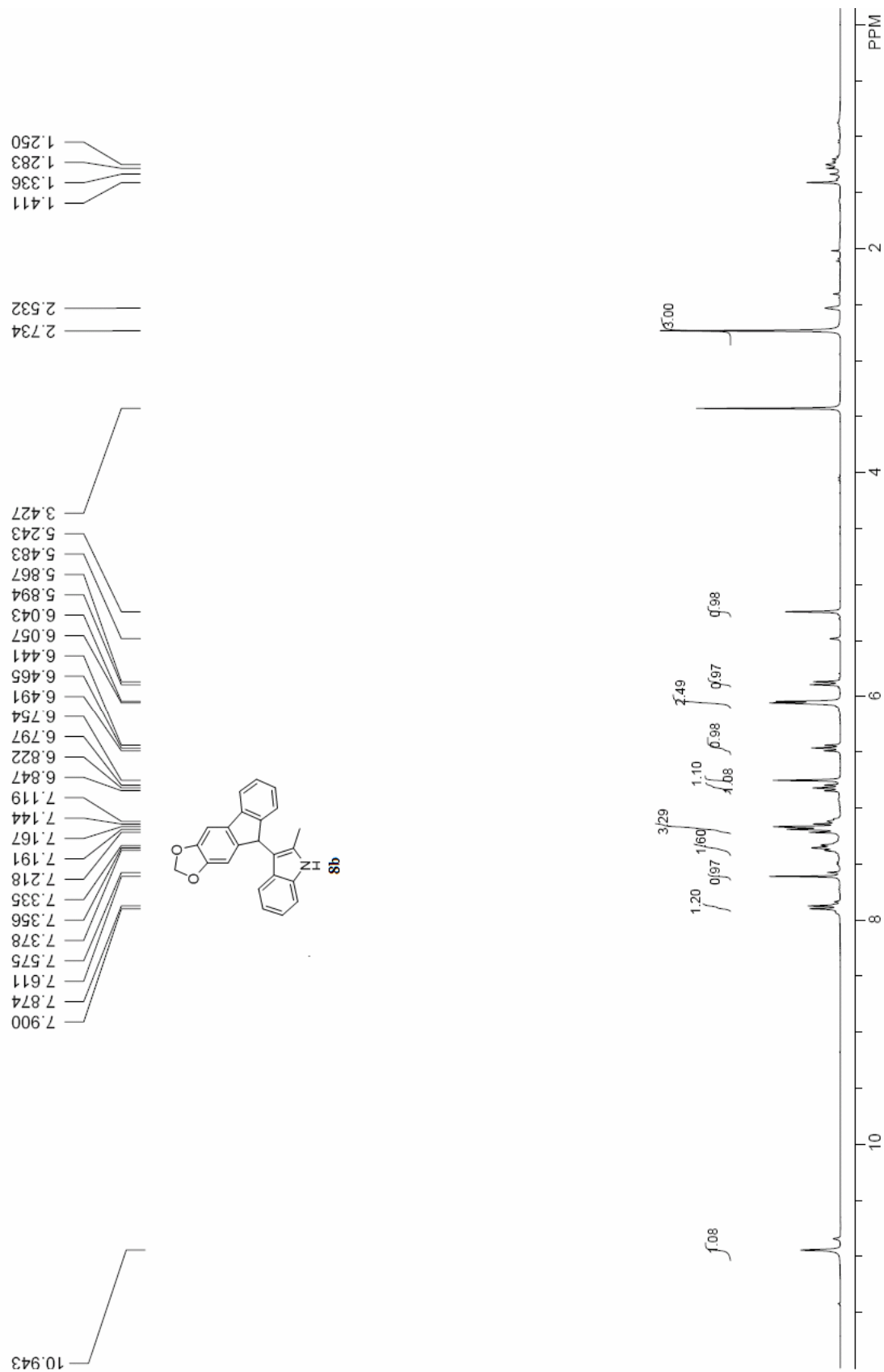


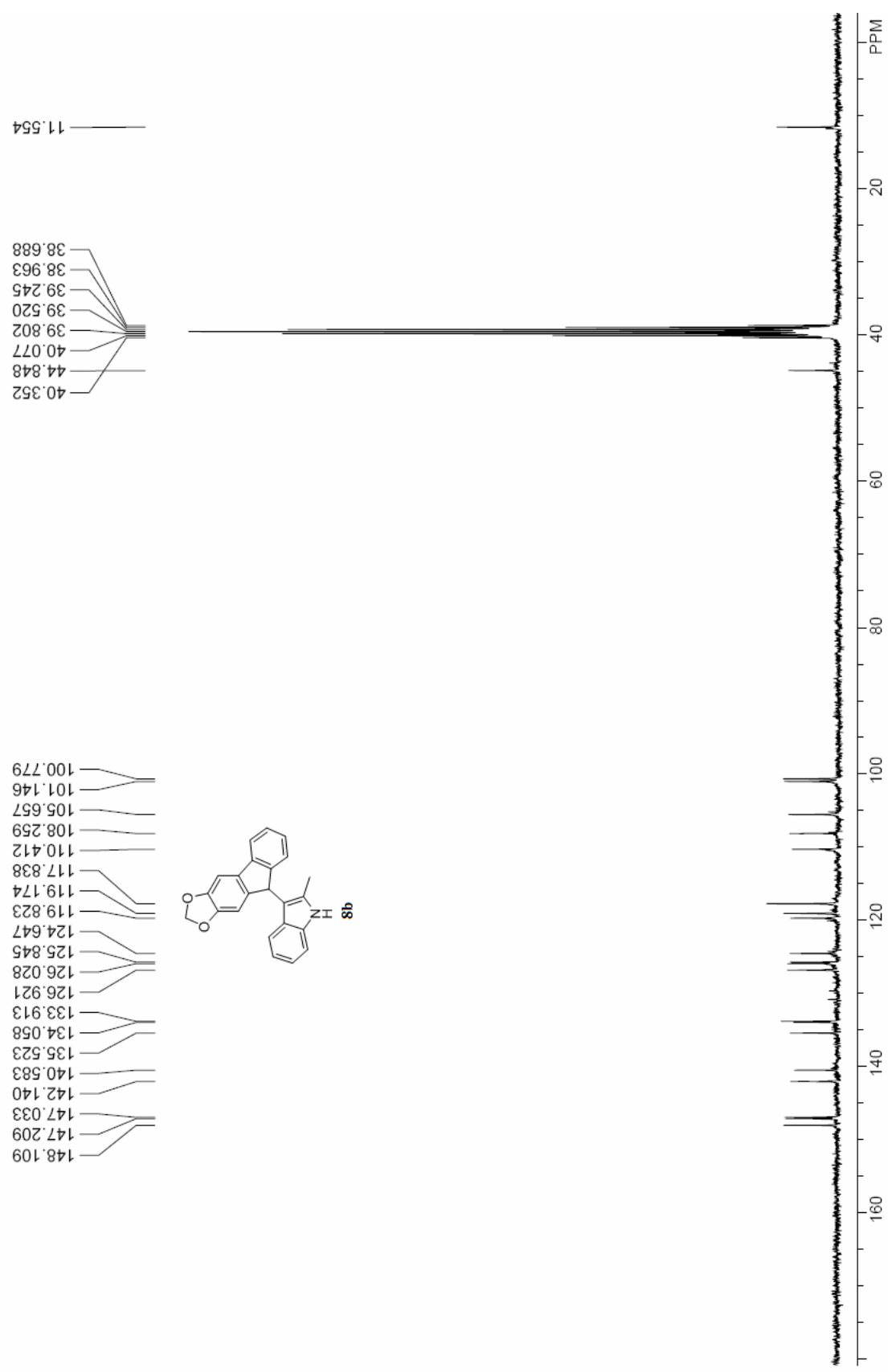


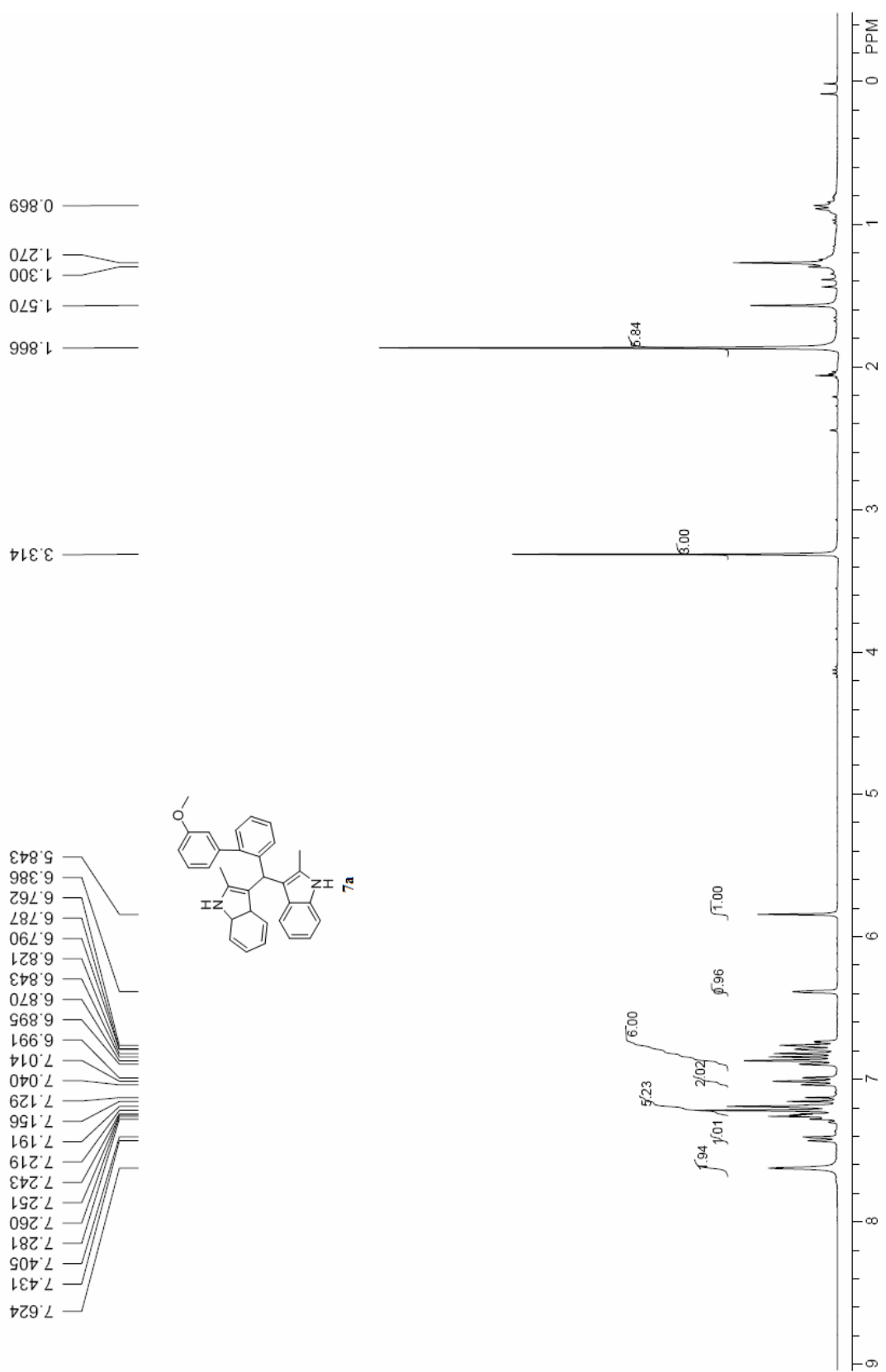


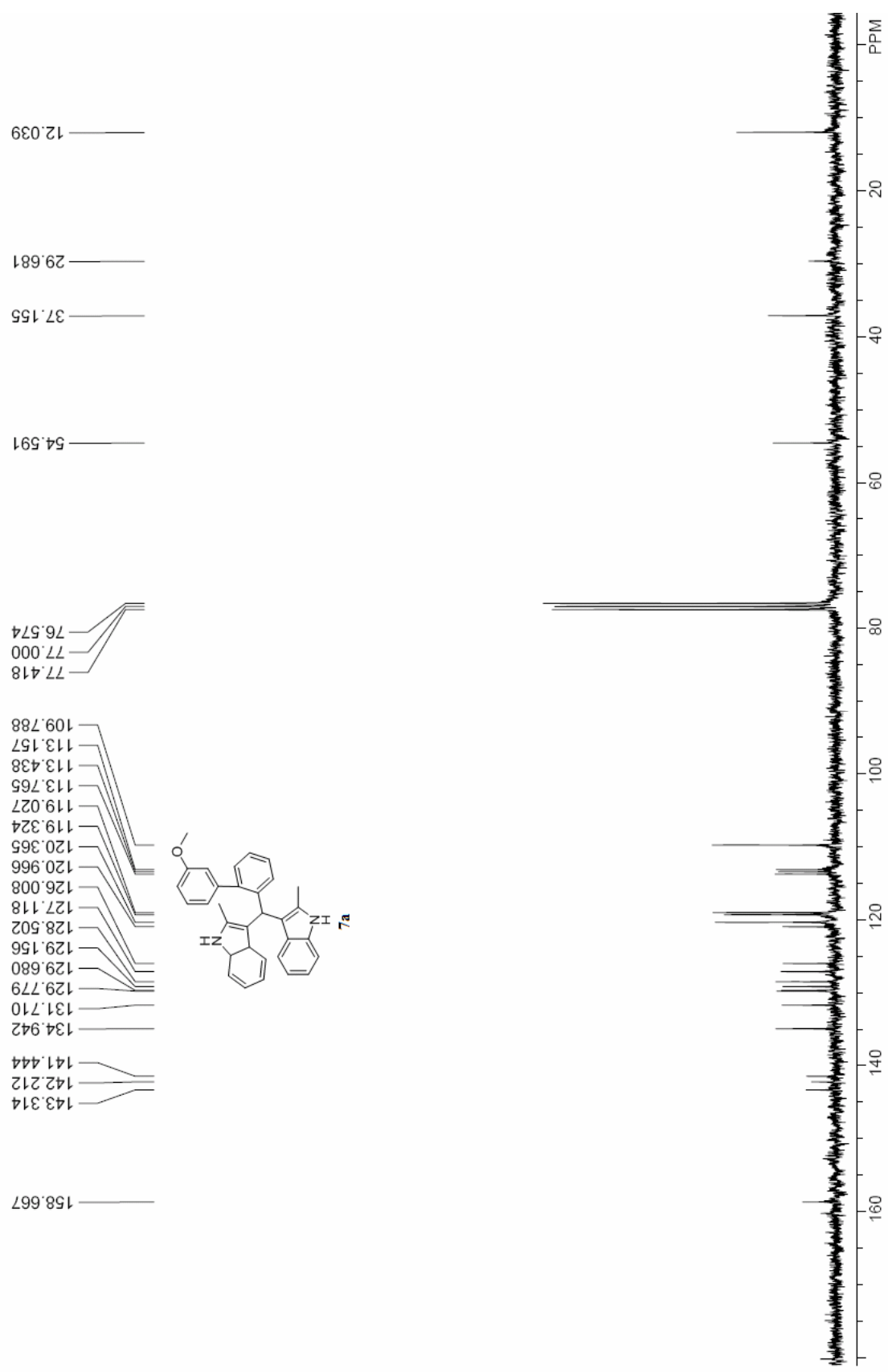


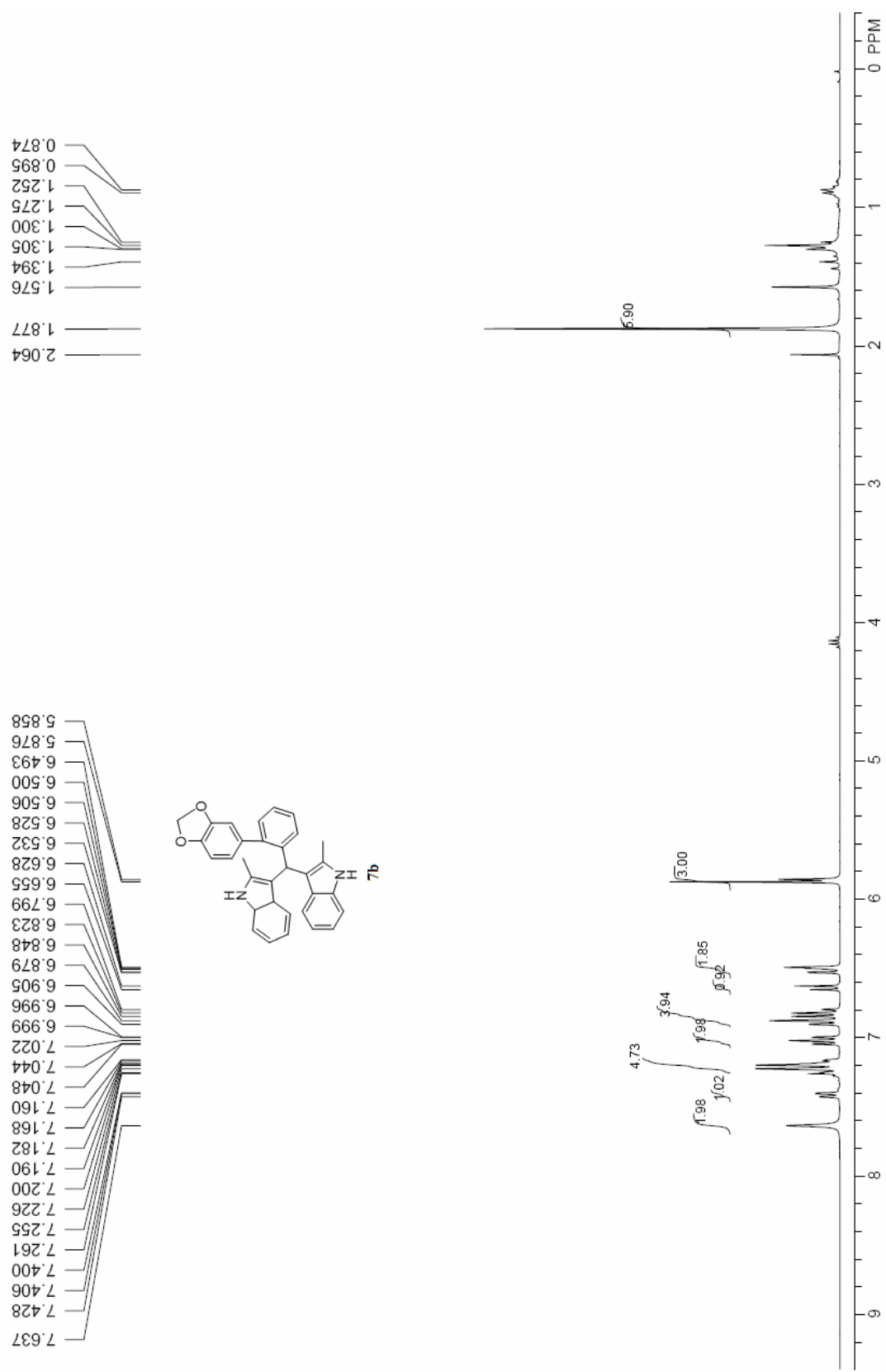


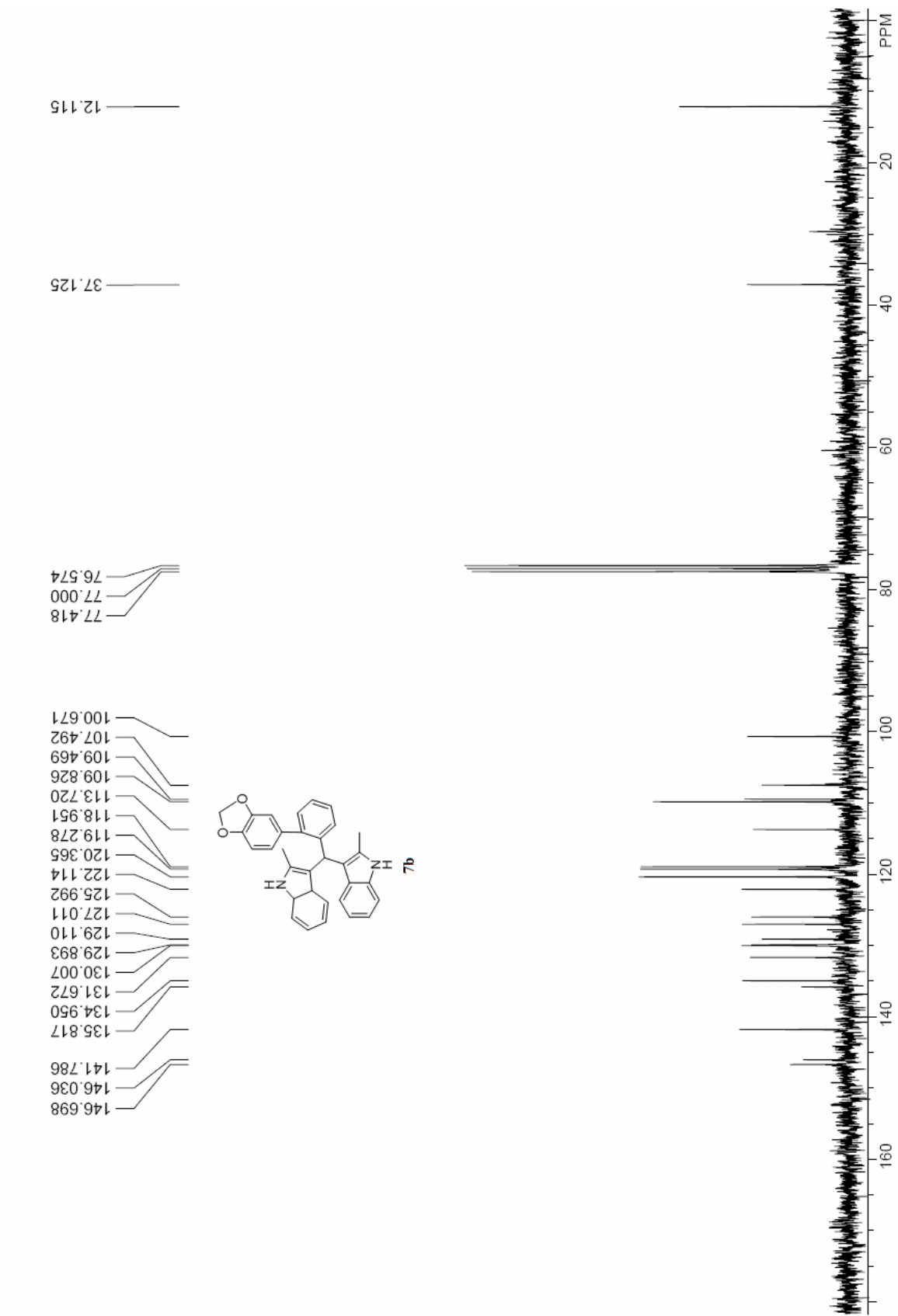


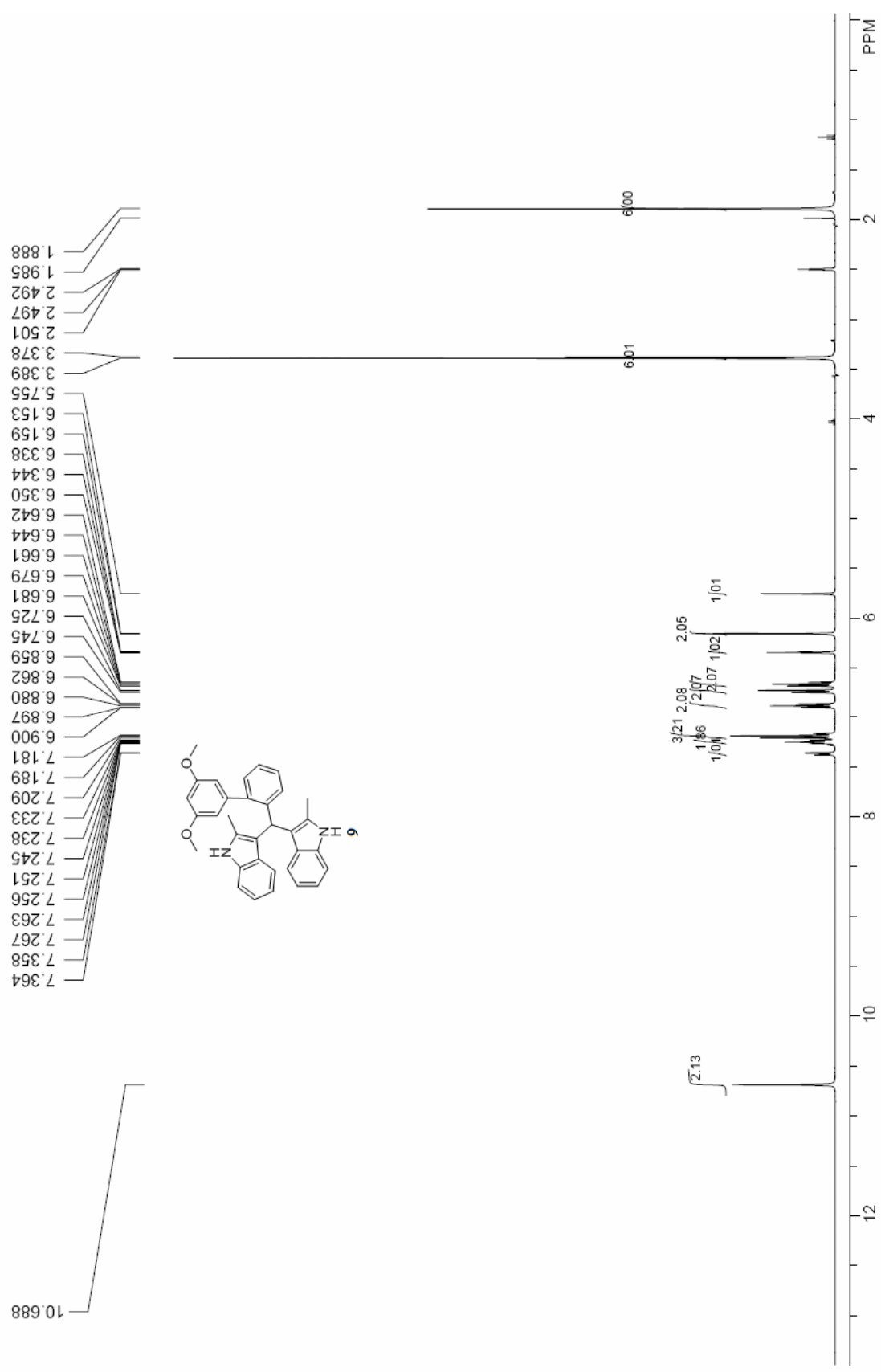


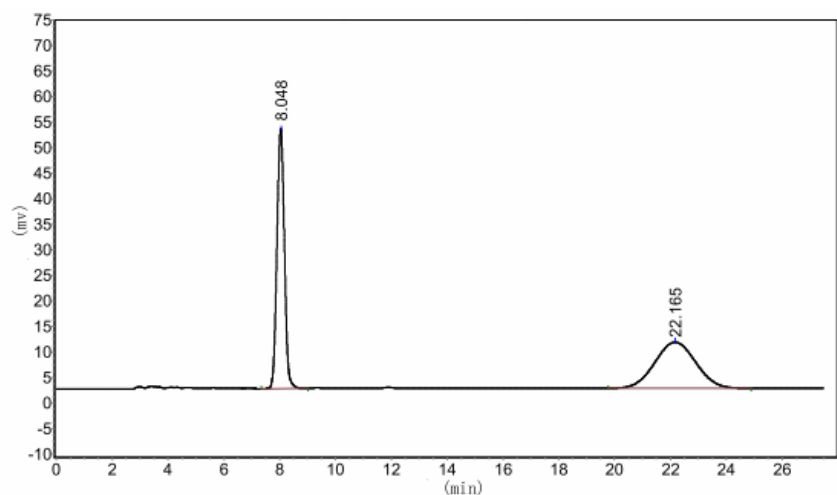
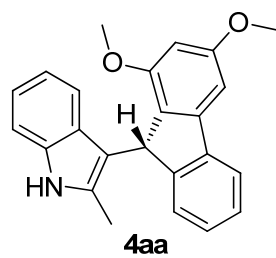




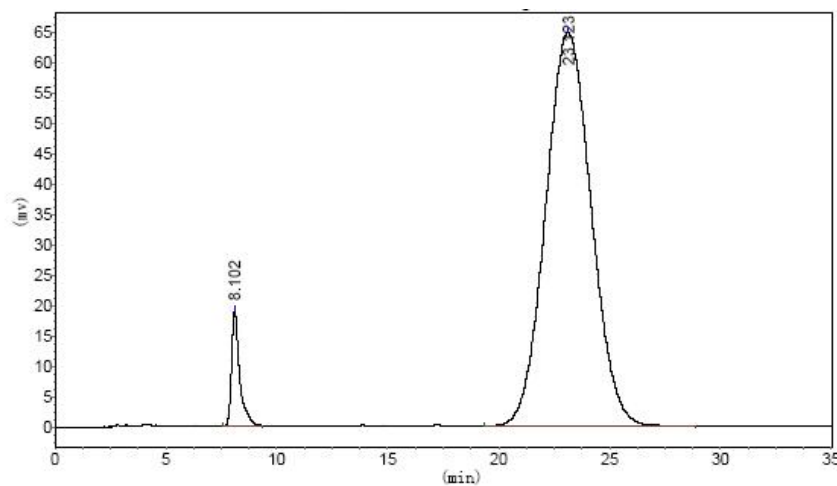




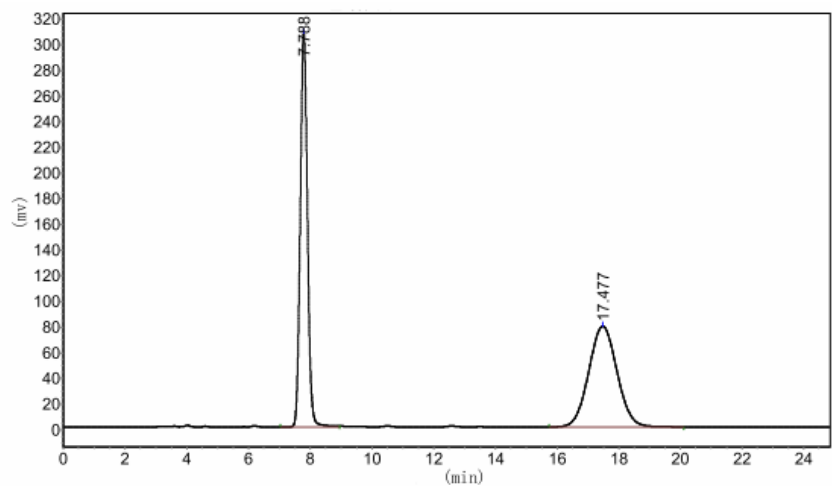
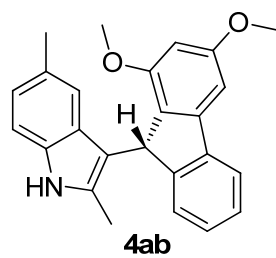




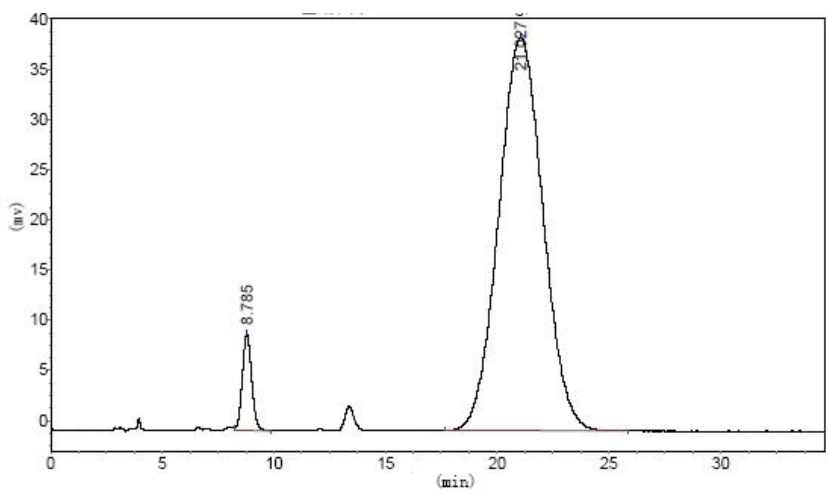
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.048	50806.668	940088.500	50.1239
2		22.165	9060.104	935441.625	49.8761
Total			59866.772	1875530.125	100.0000



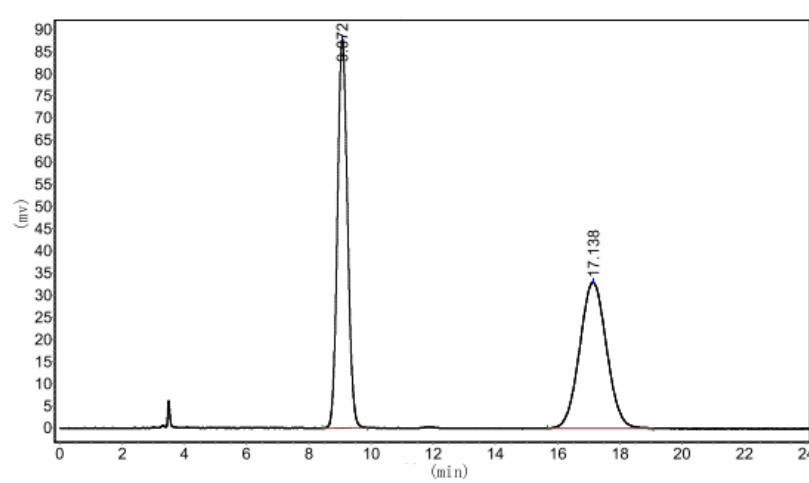
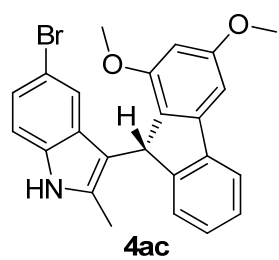
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.102	18899.072	472258.344	4.8818
2		23.123	64579.418	9201620.000	95.1182
Total			83478.490	9673878.344	100.0000



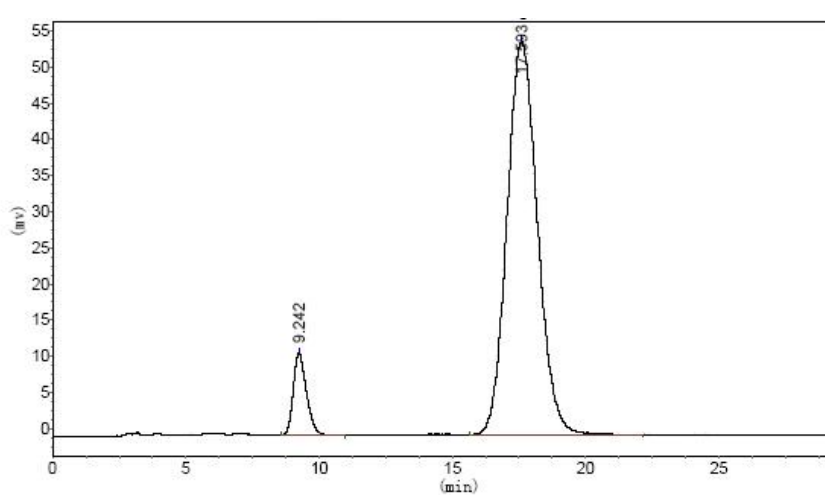
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		7.788	306870.344	4970768.000	49.9328
2		17.477	78370.195	4984152.500	50.0672
Total			385240.539	9954920.500	100.0000



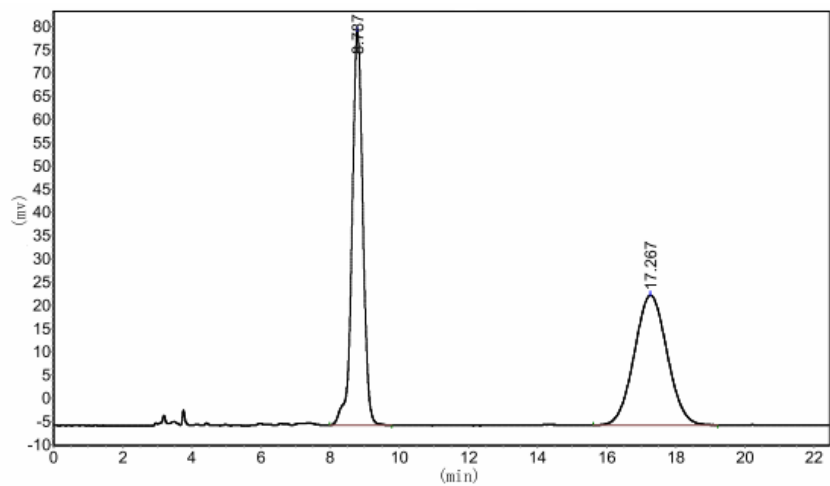
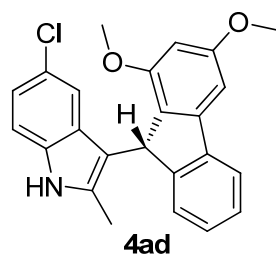
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.785	9579.979	281239.406	4.9388
2		21.027	39118.141	5413224.000	95.0612
Total			48698.120	5694463.406	100.0000



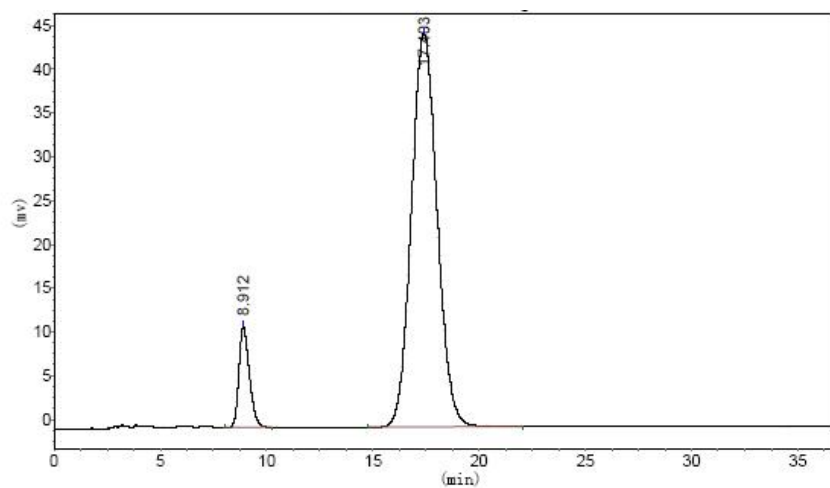
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		9. 072	87854. 445	1965966. 875	49. 8035
2		17. 138	32996. 551	1981480. 750	50. 1965
Total			120850. 996	3947447. 625	100. 0000



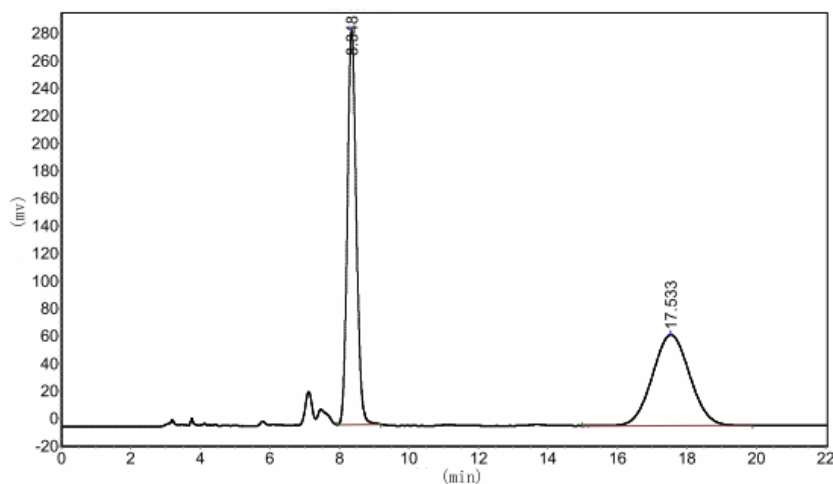
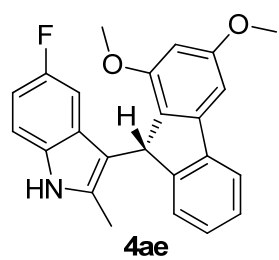
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		9. 242	11341. 472	388973. 750	8. 2531
2		17. 593	54421. 656	4324103. 000	91. 7469
Total			65763. 128	4713076. 750	100. 0000



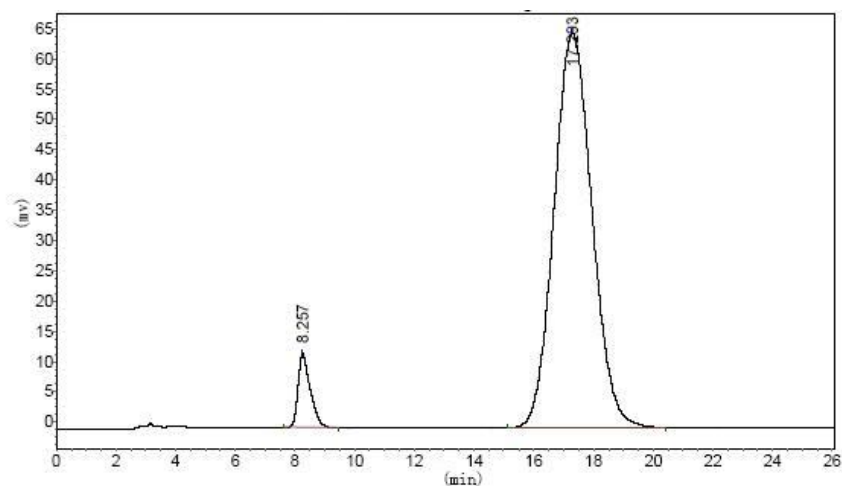
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.787	84799.680	1847126.500	50.0398
2		17.267	27914.912	1844185.375	49.9602
Total			112714.592	3691311.875	100.0000



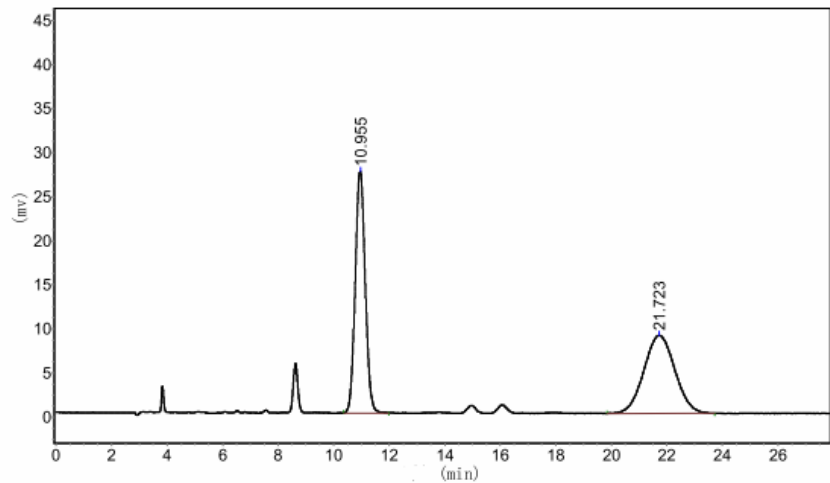
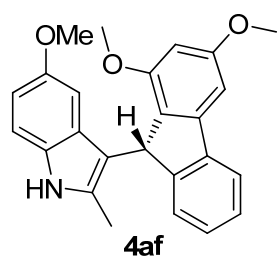
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.912	11602.447	395081.063	9.4244
2		17.403	44948.227	3797026.000	90.5756
Total			56550.674	4192107.063	100.0000



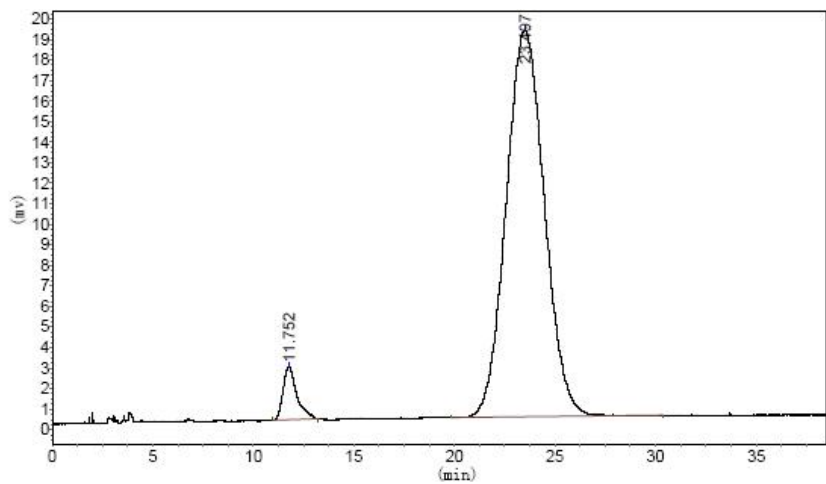
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.348	284929.031	5112401.000	50.9081
2		17.533	65987.531	4930011.000	49.0919
Total			350916.563	10042412.000	100.0000



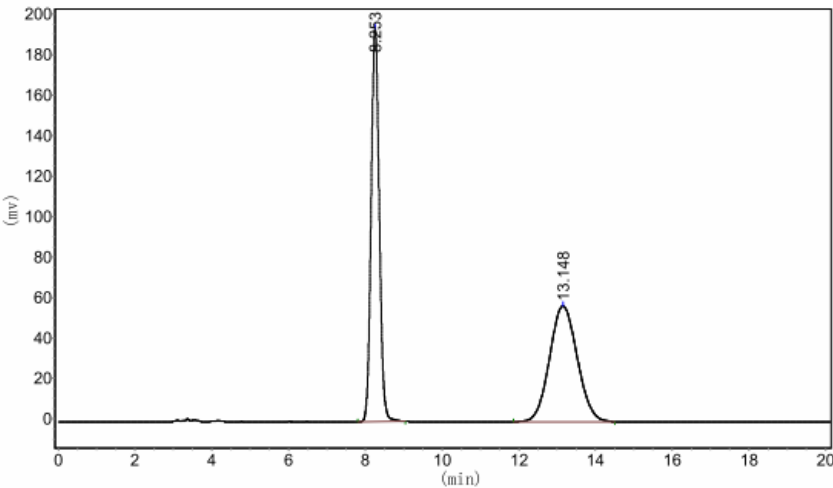
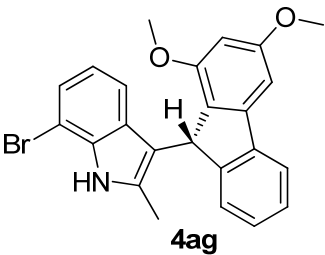
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.257	12206.007	346881.000	5.6804
2		17.293	65112.914	5759719.000	94.3196
Total			77318.921	6106600.000	100.0000



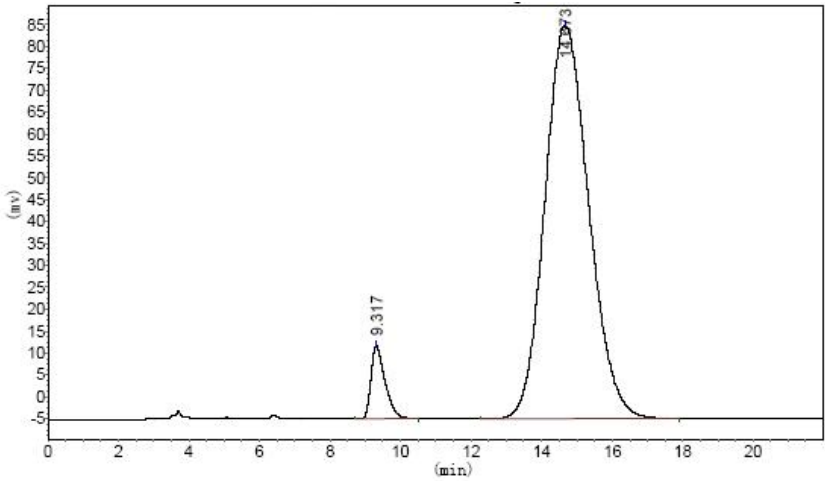
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		10.955	27401.115	686425.125	49.9065
2		21.723	8864.035	688998.063	50.0935
Total			36265.150	1375423.188	100.0000



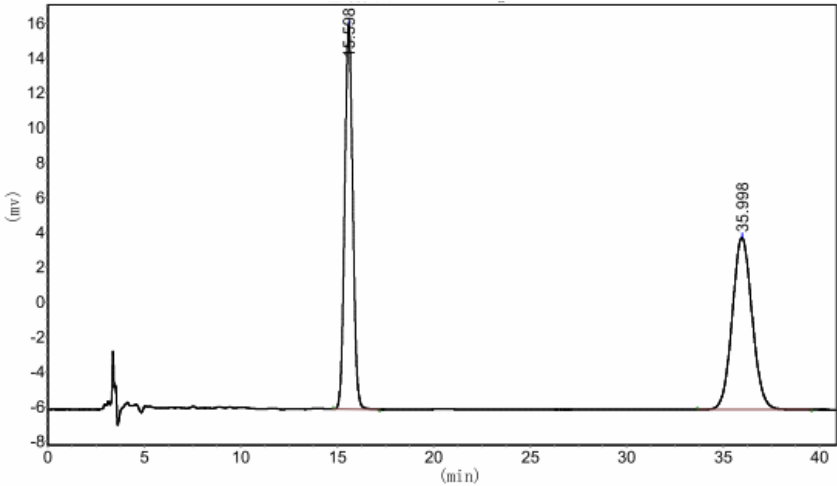
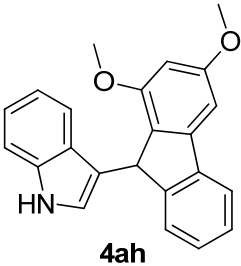
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		11.752	2601.250	123739.500	4.7128
2		23.497	18797.133	2501844.750	95.2872
Total			21398.383	2625584.250	100.0000



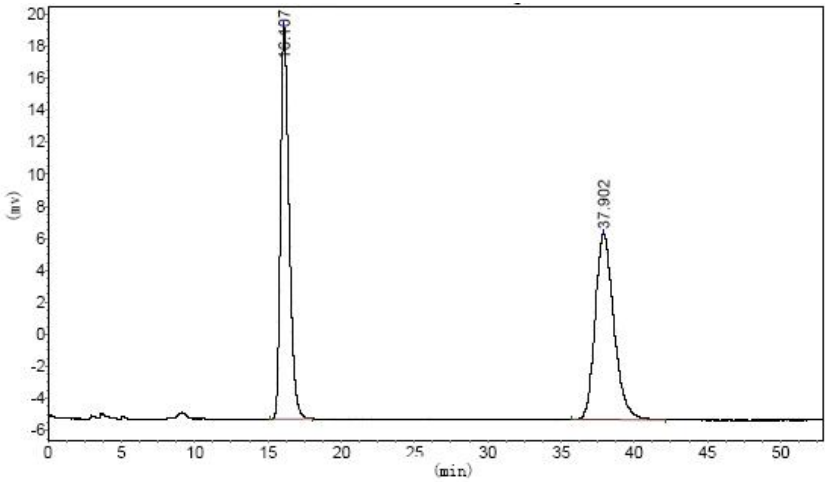
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.253	194272.625	2869642.500	50.0162
2		13.148	57226.473	2867778.000	49.9838
Total			251499.098	5737420.500	100.0000



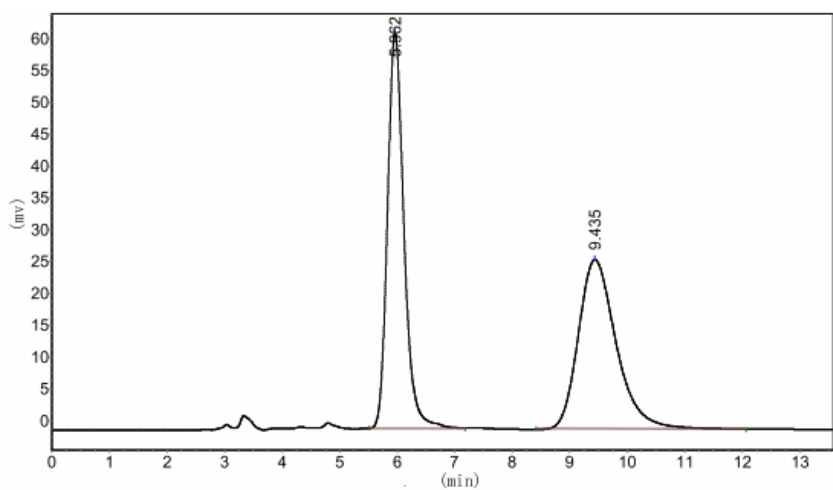
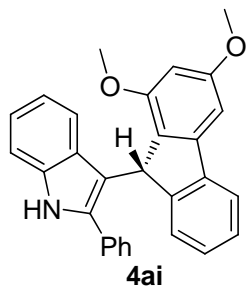
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		9.317	16707.434	460256.313	5.6052
2		14.673	89727.656	7750979.000	94.3948
Total			106435.090	8211235.313	100.0000



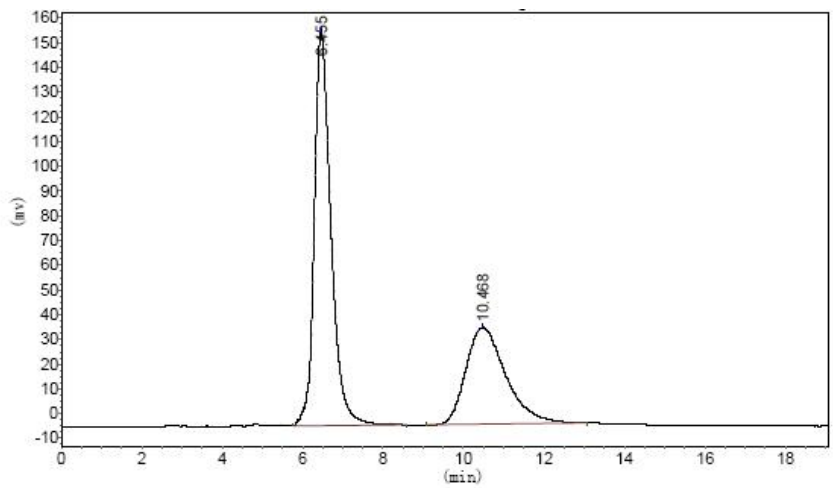
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		15.598	21987.166	639956.563	47.4133
2		35.998	9875.573	709784.875	52.5867
Total			31862.739	1349741.438	100.0000



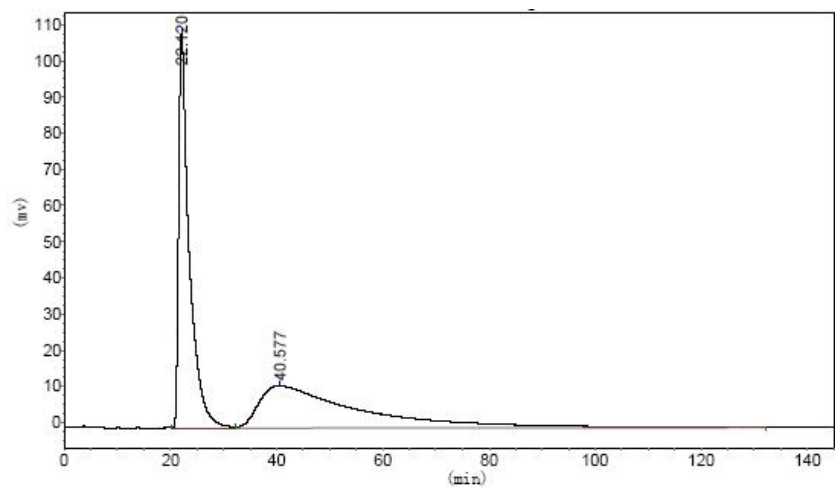
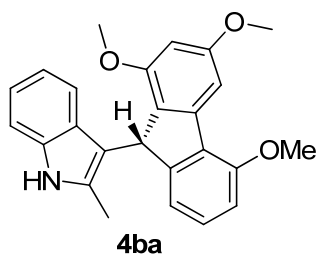
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		16.107	24522.865	1000110.750	49.1391
2		37.902	11626.085	1035152.125	50.8609
Total			36148.950	2035262.875	100.0000



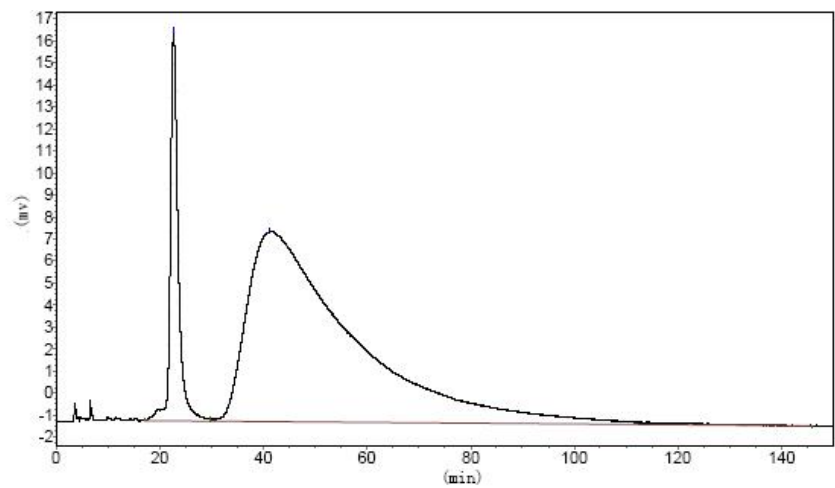
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		5.962	62018.359	1234337.625	50.4973
2		9.435	26544.973	1210027.250	49.5027
Total			88563.332	2444364.875	100.0000



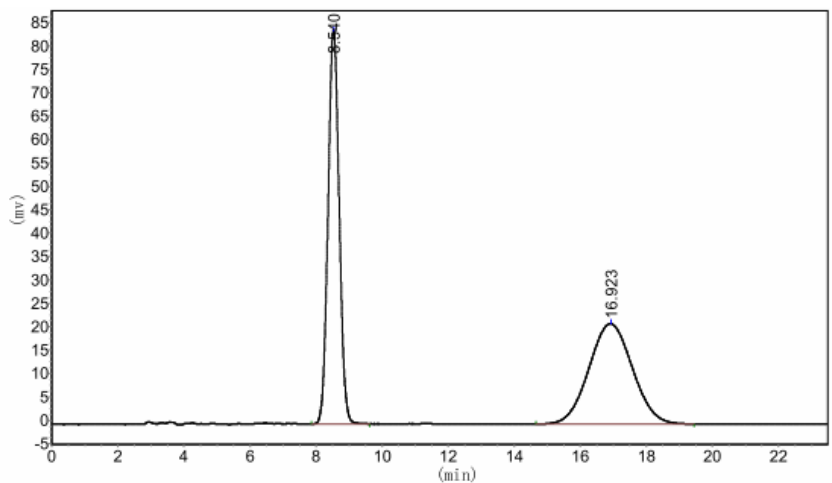
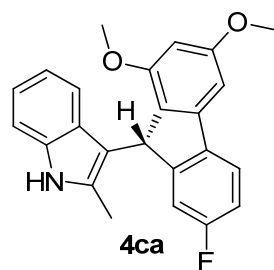
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		6.455	159001.625	4680786.500	63.4030
2		10.468	39170.934	2701811.750	36.5970
			198172.559	7382598.250	100.0000



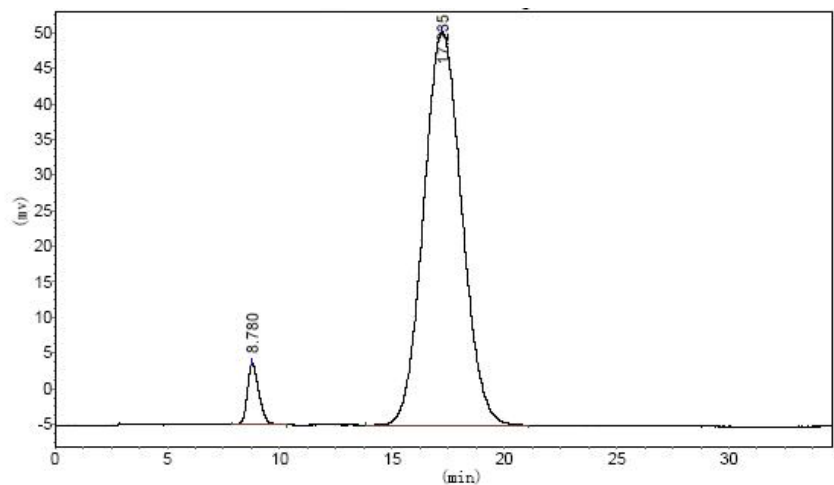
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		22.120	109333.656	15205662.000	50.2181
2		40.577	11654.870	15073587.000	49.7819
Total			120988.526	30279249.000	100.0000



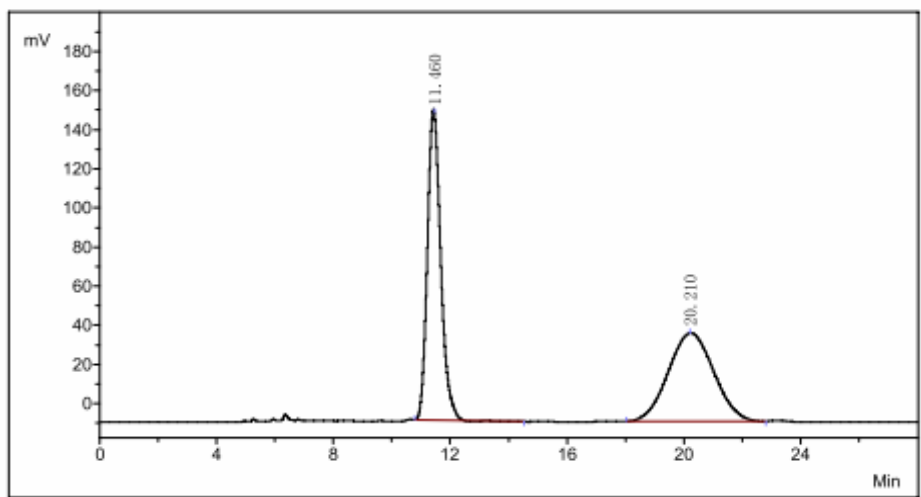
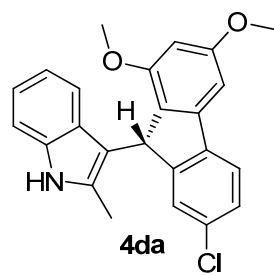
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		22.693	17698.703	1880456.125	13.3261
2		41.243	8631.114	12230623.000	86.6739
Total			26329.817	14111079.125	100.0000



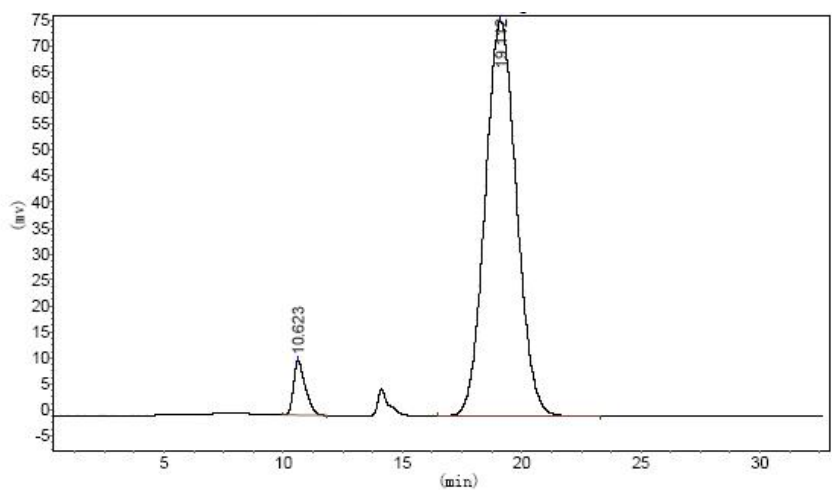
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.540	84051.367	1969217.250	50.0428
2		16.923	21450.584	1965850.000	49.9572
Total			105501.951	3935067.250	100.0000



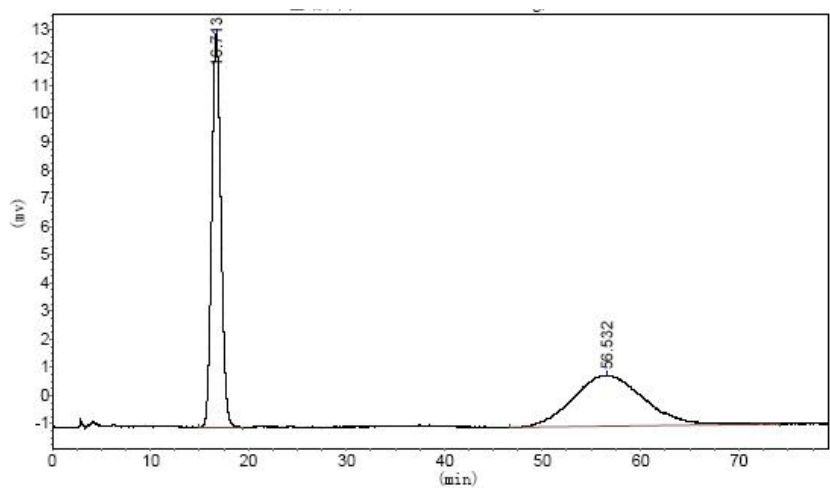
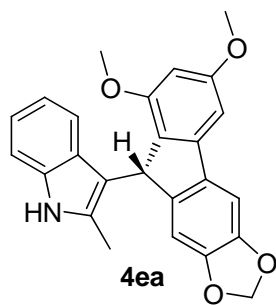
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.780	8635.133	306640.156	4.5001
2		17.235	55260.117	6507406.500	95.4999
Total			63895.250	6814046.656	100.0000



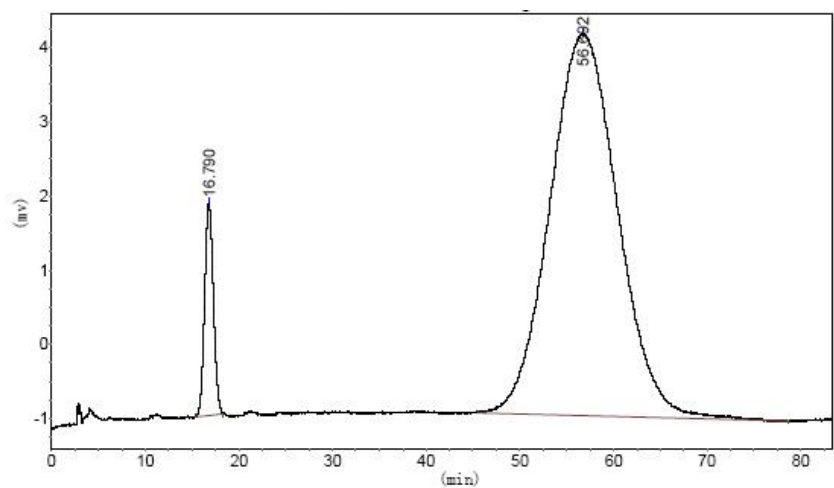
No.	PeakNo	ID. Name	R. Time	PeakHeight	PeakArea	PerCent
1	1	Unknown	11.460	157281.2	5027746.1	50.8608
2	2	Unknown	20.210	44999.6	4857559.7	49.1392
Total				202280.7	9885305.8	100.0000



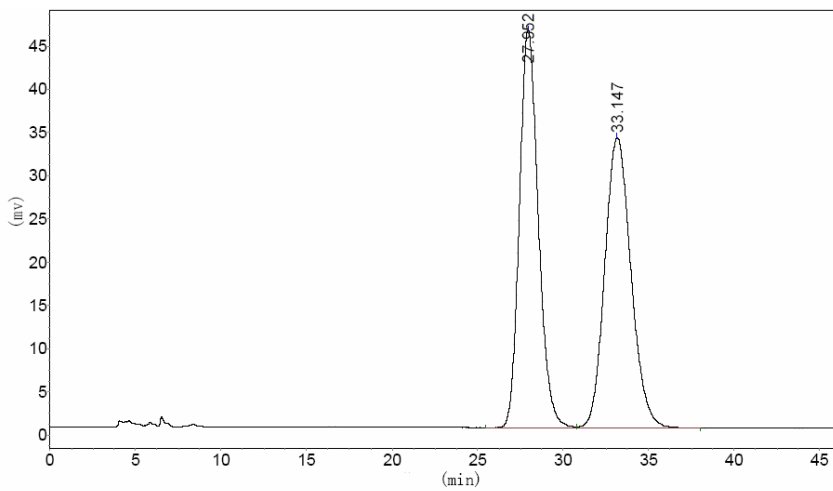
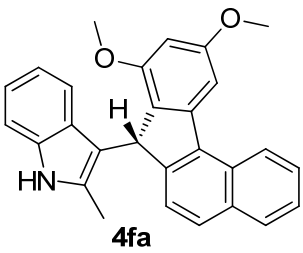
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		10.623	10579.317	360133.813	4.9261
2		19.112	75995.938	6950547.500	95.0739
Total			86575.255	7310681.313	100.0000



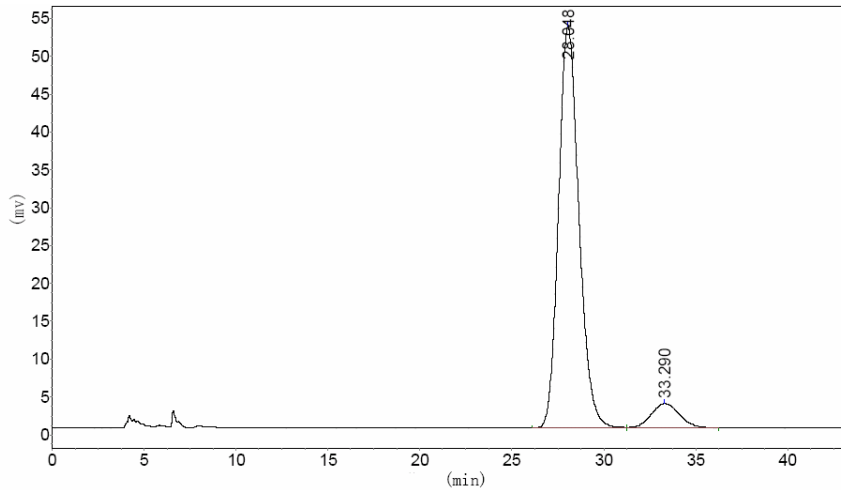
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		16.713	13959.788	911828.250	50.0030
2		56.532	1826.159	911717.500	49.9970
Total			15785.947	1823545.750	100.0000



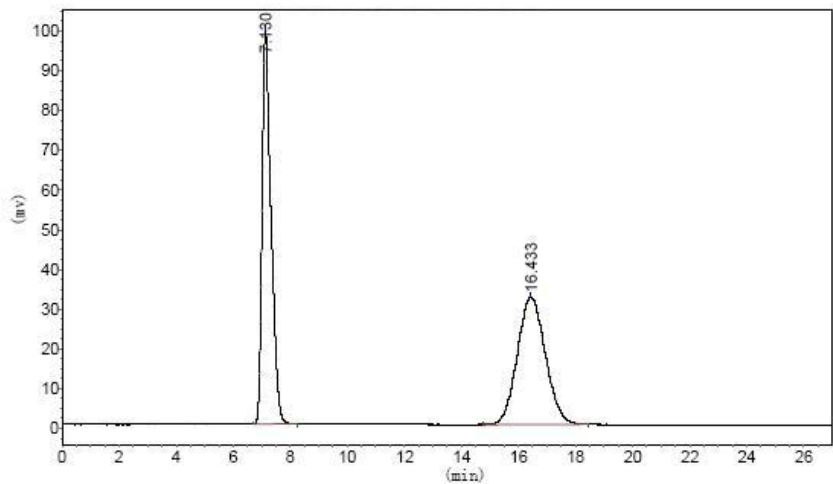
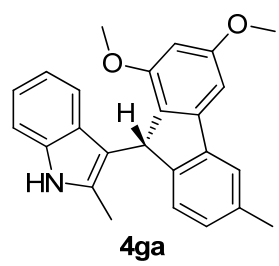
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		16.790	2866.181	186654.906	6.7291
2		56.692	5146.988	2587195.500	93.2709
Total			8013.169	2773850.406	100.0000



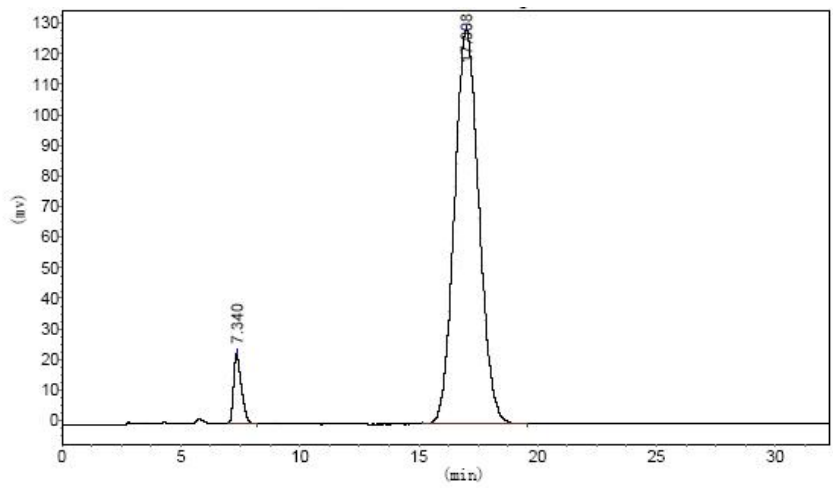
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		27.952	46015.656	3555679.250	49.8546
2		33.147	33585.824	3576415.000	50.1454
Total			79601.480	7132094.250	100.0000



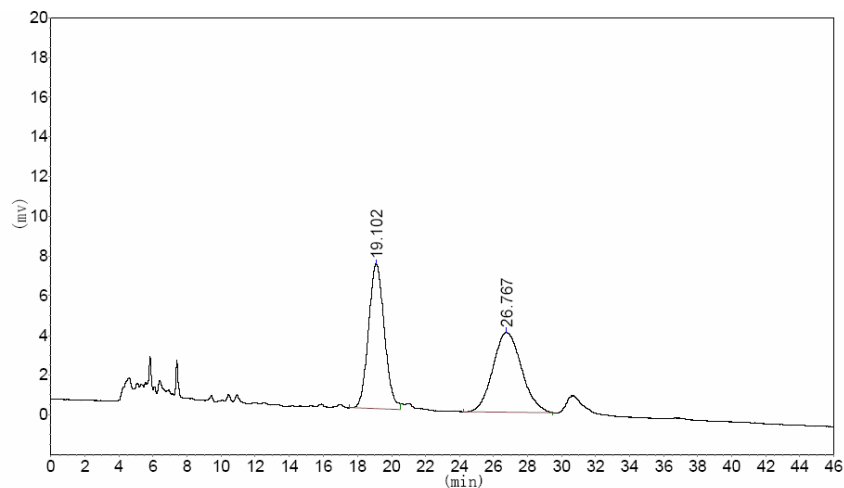
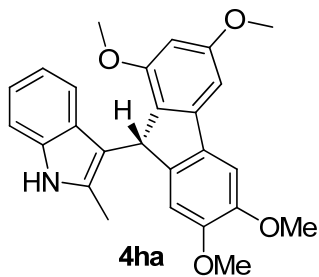
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		28.048	53113.387	4115548.250	92.2171
2		33.290	3260.416	347341.688	7.7829
Total			56373.803	4462889.938	100.0000



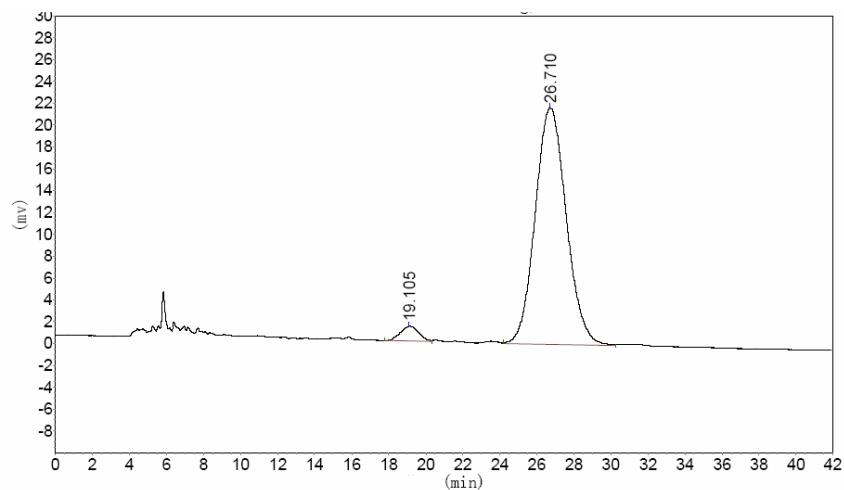
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		7.130	99387.359	2165770.750	49.6716
2		16.433	32001.842	2194407.250	50.3284
Total			131389.201	4360178.000	100.0000



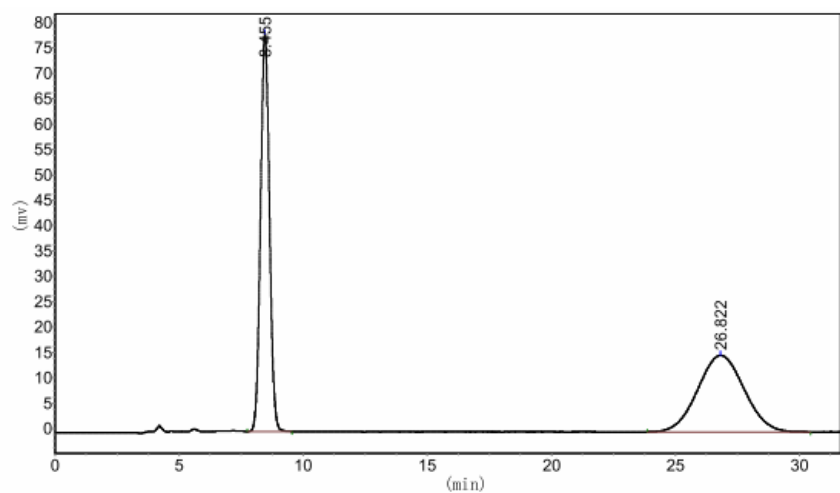
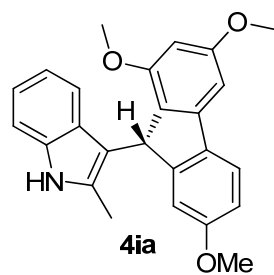
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		7.340	23214.480	525830.625	5.3882
2		17.008	128541.750	9233123.000	94.6118
Total			151756.230	9758953.625	100.0000



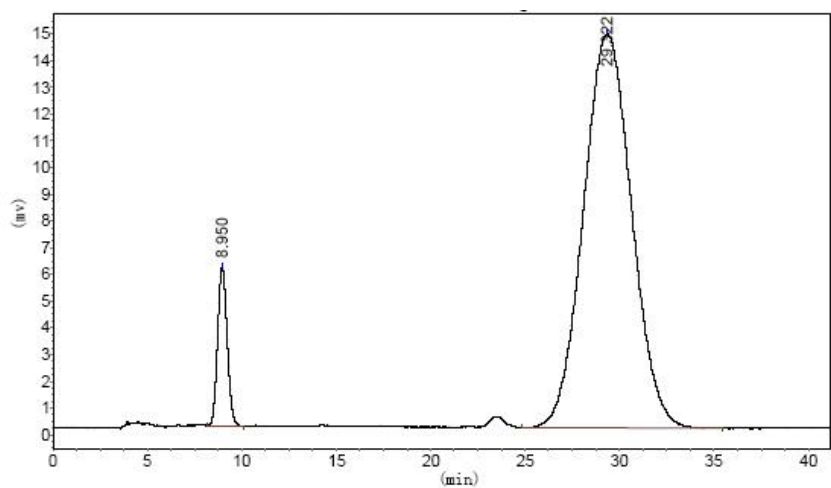
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		19.102	7261.639	471384.313	50.1553
2		26.767	4020.227	468465.813	49.8447
Total			11281.866	939850.125	100.0000



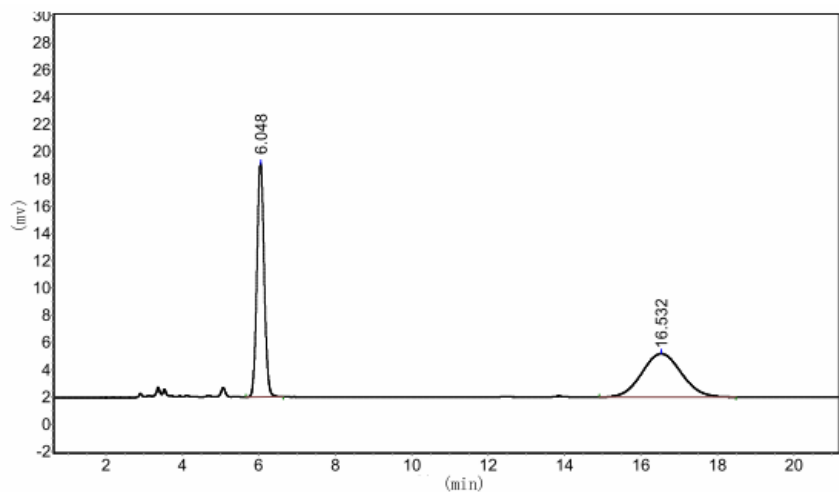
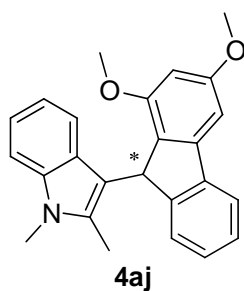
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		19.105	1352.654	95041.359	3.6283
2		26.710	21647.547	2524383.750	96.3717
Total			23000.201	2619425.109	100.0000



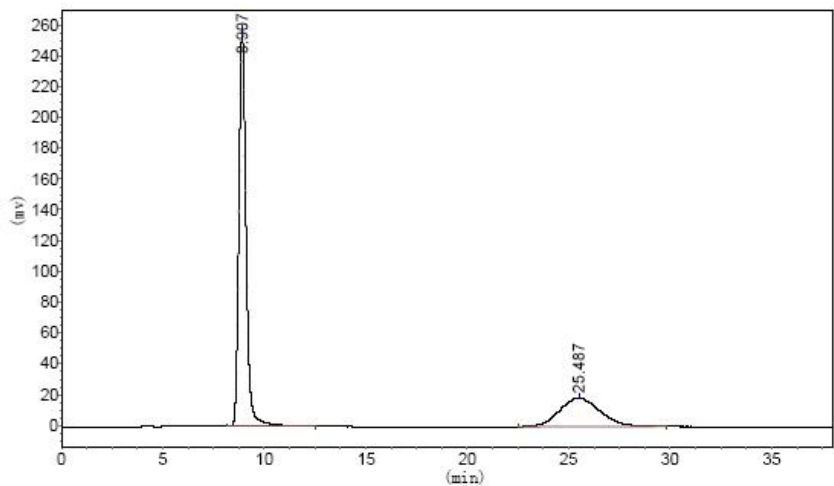
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.455	78307.414	1963594.125	49.9467
2		26.822	15102.583	1967783.250	50.0533
Total			93409.997	3931377.375	100.0000



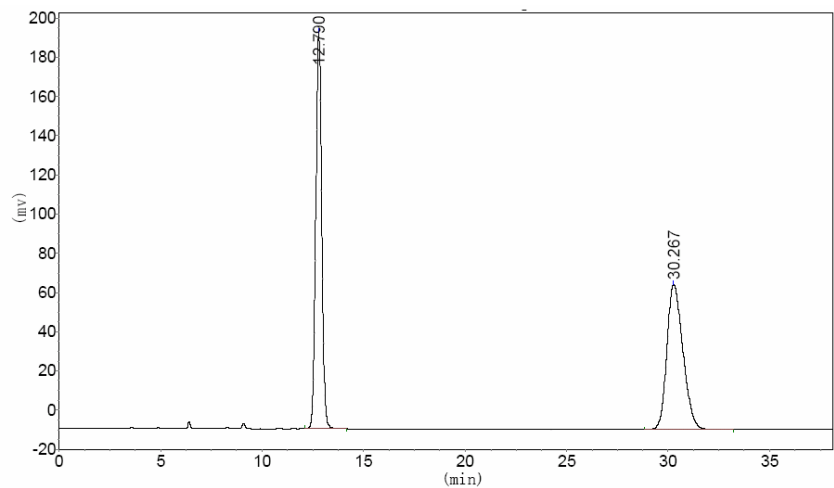
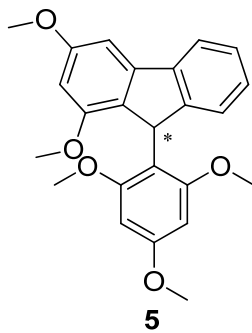
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.950	5946.061	209990.828	7.4287
2		29.322	14759.735	2616772.750	92.5713
Total			20705.796	2826763.578	100.0000



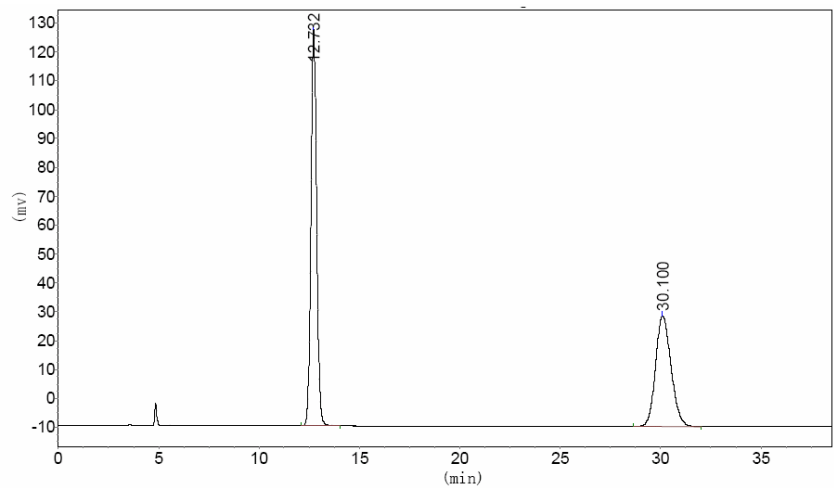
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		6.048	17103.025	225344.250	49.7525
2		16.532	3179.240	227586.125	50.2475
Total			20282.265	452930.375	100.0000



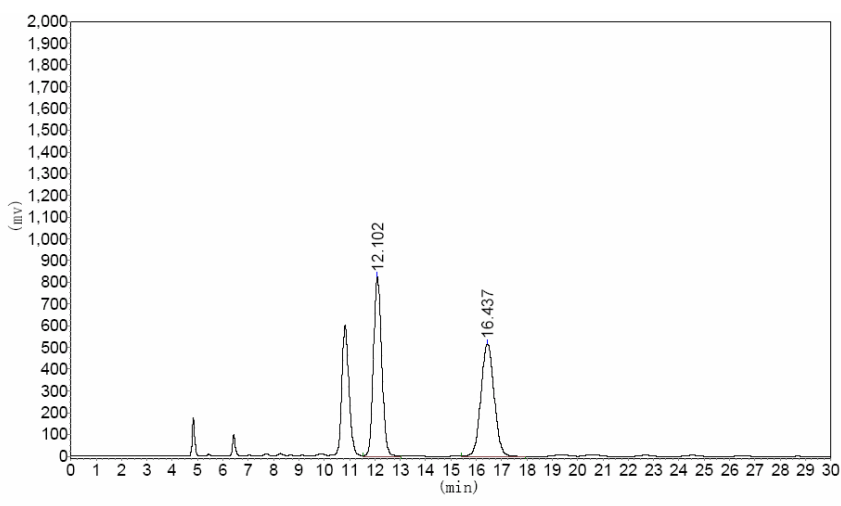
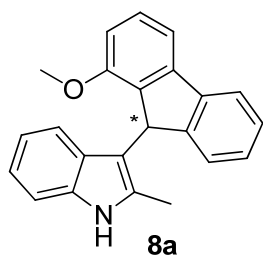
No.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		8.907	257341.422	6403337.000	71.2182
2		25.487	18455.123	2587817.750	28.7818
Total			275796.545	8991154.750	100.0000



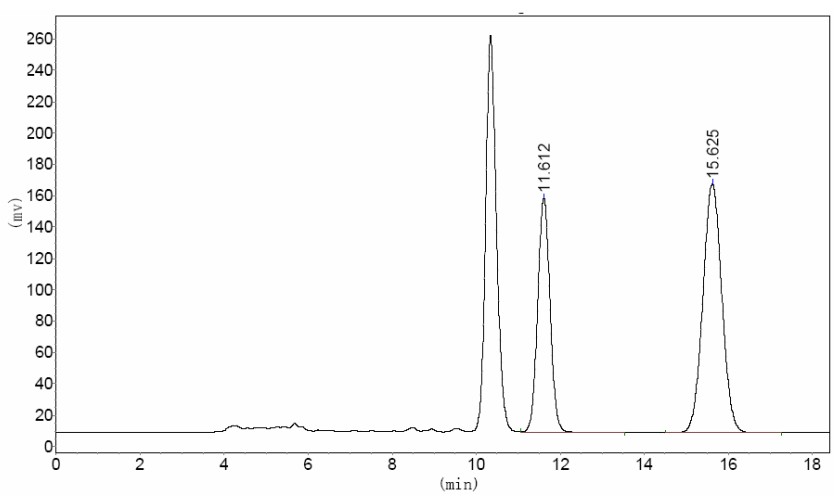
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		12.790	202241.328	4038139.500	50.0142
2		30.267	73987.258	4035851.750	49.9858
Total			276228.586	8073991.250	100.0000



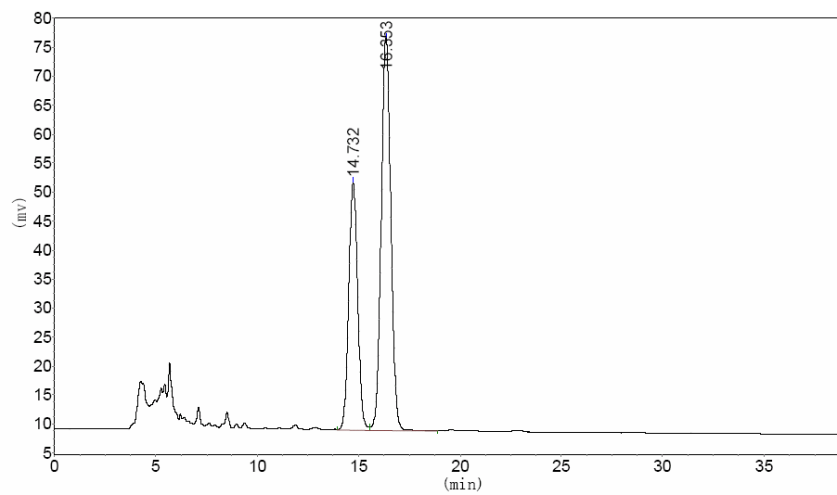
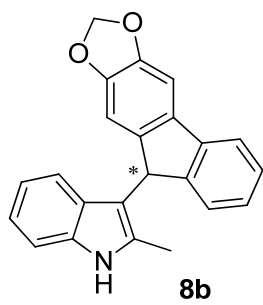
NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		12.732	137221.703	2716097.000	57.0686
2		30.100	38312.938	2043254.250	42.9314
Total			175534.641	4759351.250	100.0000



NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		12.102	824555.688	18564534.000	49.9778
2		16.437	517677.125	18581060.000	50.0222
Total			1342232.813	37145594.000	100.0000



NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		11.612	149540.406	3035081.250	37.8251
2		15.625	158999.531	4988914.500	62.1749
Total			308539.938	8023995.750	100.0000



NO.	ID.Name	R. Time	PeakHeight	PeakArea	PerCent
1		14. 732	42796. 059	1306744. 750	36. 9488
2		16. 353	67826. 836	2229889. 250	63. 0512
Total			110622. 895	3536634. 000	100. 0000