Supporting Information.

Enantioselective Friedel-Crafts Alkylation of Indoles with 2-Enoylpyridine-N-Oxides Catalyzed by *gluco*BOX-Cu(II) complex.

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1. **General Remarks.**

All the reactions were carried out under nitrogen atmosphere. Commercial reagents were used as received, unless otherwise stated. All the metal Lewis acids were purchased from commercial sources and used as such as without any further purification. Solvents used for all reaction were dried prior to use by standard procedure. Dichloromethane and chloroform were distilled from calcium hydride. THF and ether were dried over sodium. Methanol and toluene were purchased from commercial source and used as received. ^{1}H NMR was recorded on a 300 MHz or 500 MHz spectrometer using $CDCl_3$ as solvent. ^{13}C NMR were recorded on 75 MHz spectrometer using $CDCl_3$. TMS was used as reference for ^{1}H NMR analysis and $CDCl_3$ used as reference for ^{13}C NMR analysis. Ligands **1a-f** was prepared from glucosamine hydrochloride according to literature procedure.[1] All the starting materials i.e, 2-enoyl pyridine-N-oxides were prepared according to procedure reported previously.[2] All the compounds were purified by column chromatography on silica gel (60-120 mesh) using hexane - ethyl acetate mixtures as eluent. Mass analysis was carried out using ESI mass spectrometer. Optical rotations were measured using a Perkin-Elmer polarimeter. The enantiomeric excess was determined by HPLC analysis using Daicel Chiral columns. (Note - Due to high retention time of Friedel-Crafts products in chiral HPLC coloumns some of the samples run in Chiralpak AD-H column with dimension,15cm x 0.46 x 5μm) Absolute stereochemistry was determined by comparing optical rotation of compounds with literature values.= Unknown compounds absolute configuration determined by analogy.

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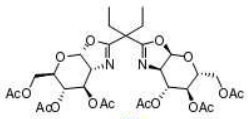
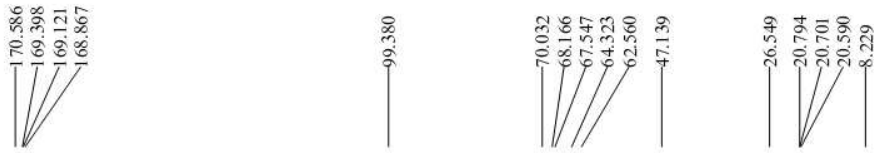
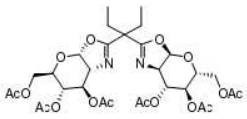
1) (a) M. Irmak, A. Groschner, M. M. K. Boysen, *Chem. Commun*. 2007, 177; (b) T. Minuth, M. Irmak, A. Groschner, T. Lehnert, M. M. K. Boysen, *Eur. J. Org. Chem.* 2009, 997.
2) (a)S. Barroso, G. Blay, J. R. Pedro, *Org. Lett.* 2007, **9**, 1983. (b) P. K. Singh, V. K. Singh, *Org. Lett.* 2008, **10**, 4121.



1b

^{1}H NMR SPECTRUM OF LIGAND 1b ($CDCl_3$, 500 MHz)





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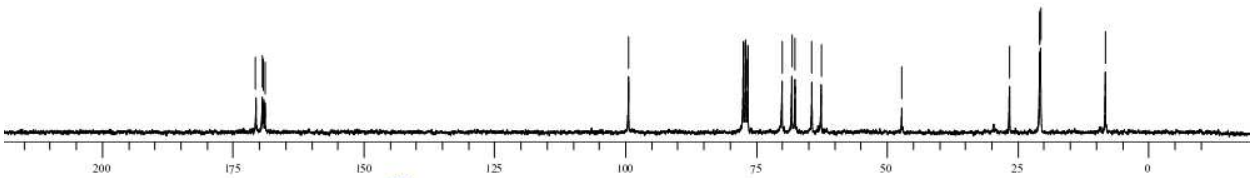
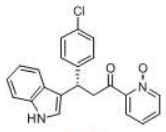
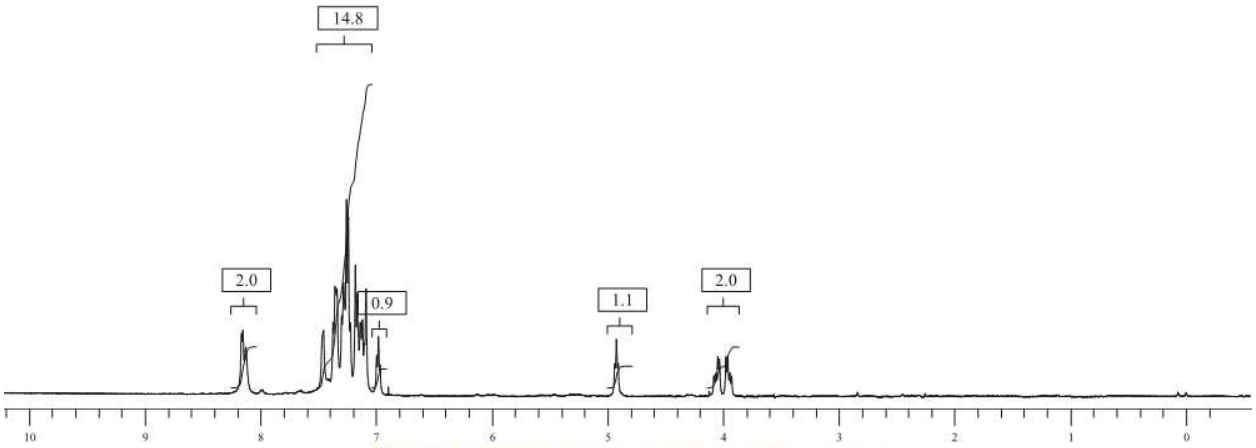


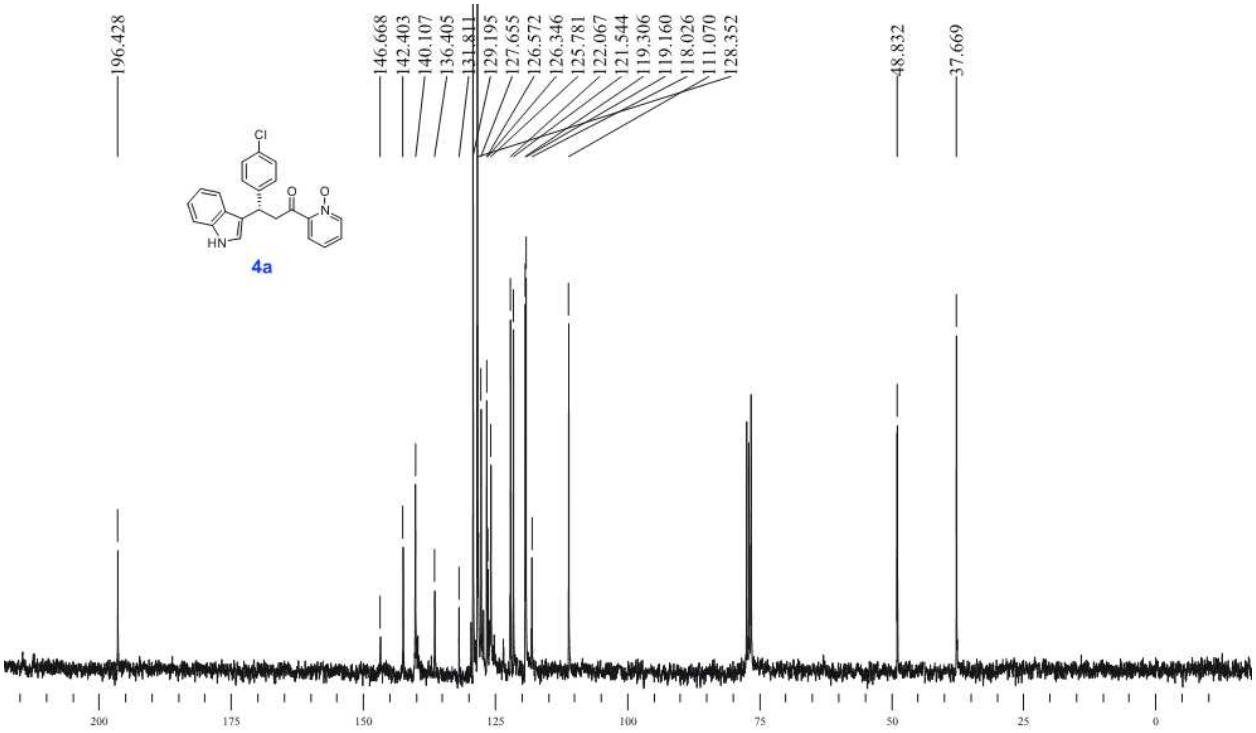
^{13}C NMR SPECTRUM OF LIGAND 1b ($CDCl_3$, 75 MHz)



4a



^{1}H NMR SPECTRUM OF COMPOUND 4a ($CDCl_3$, 500MHz)



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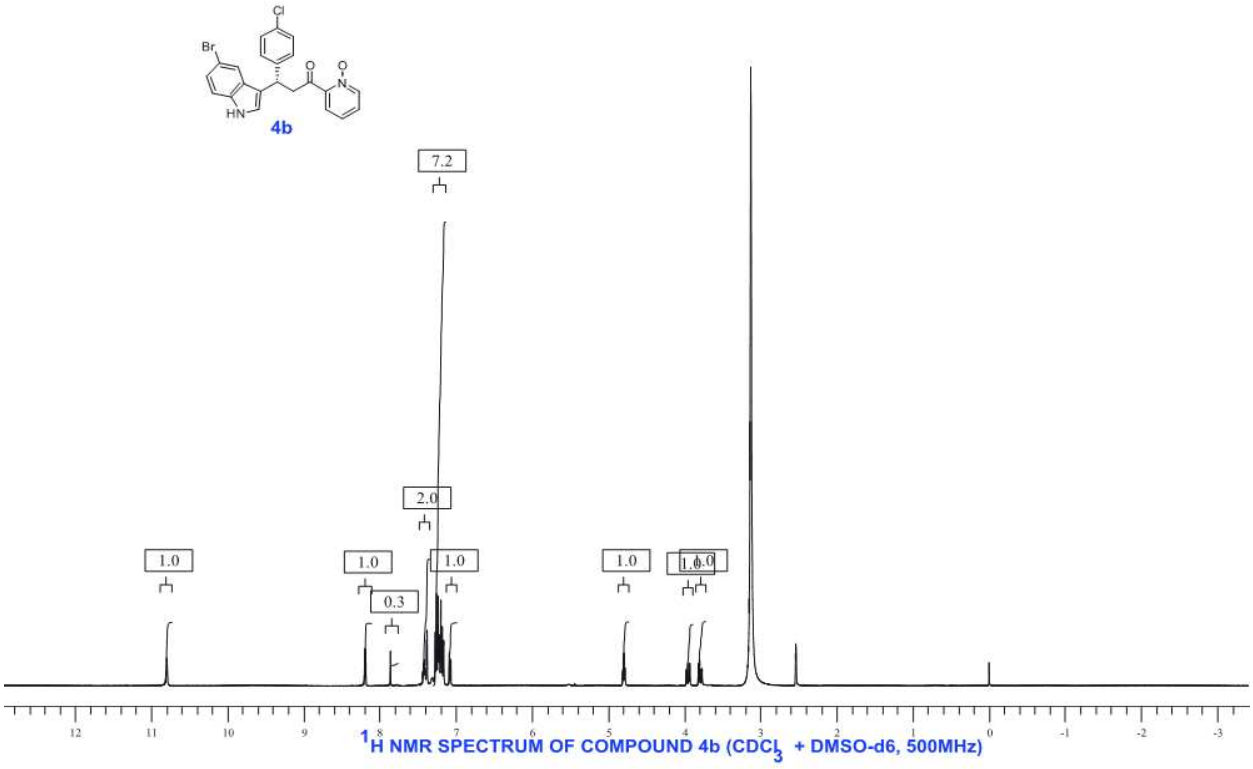

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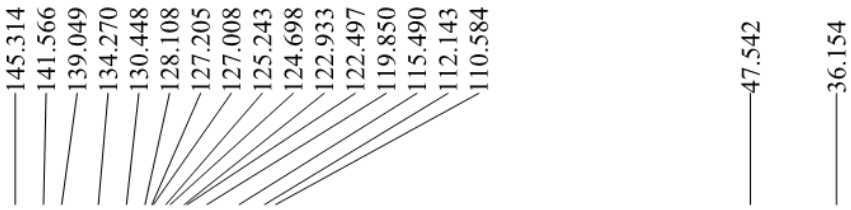

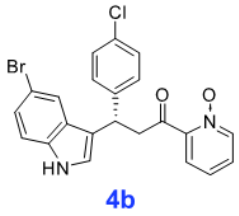

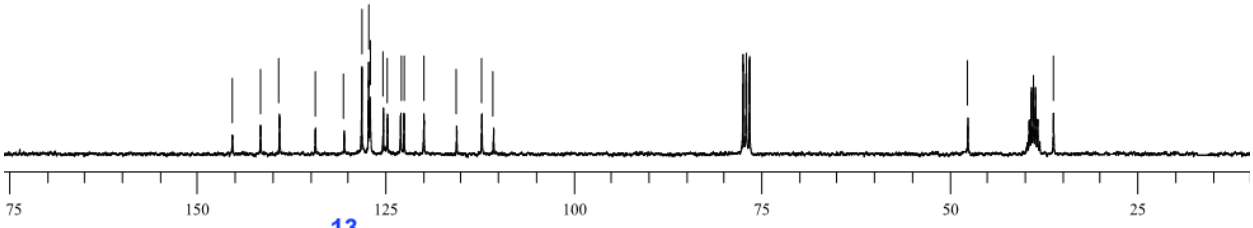

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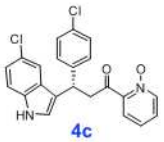
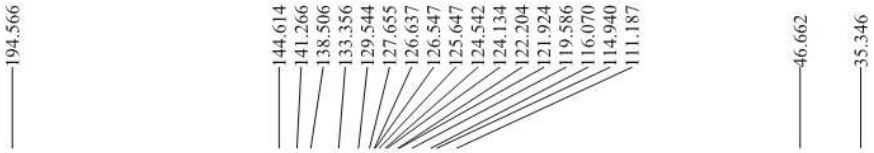
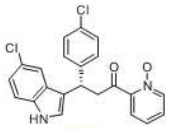


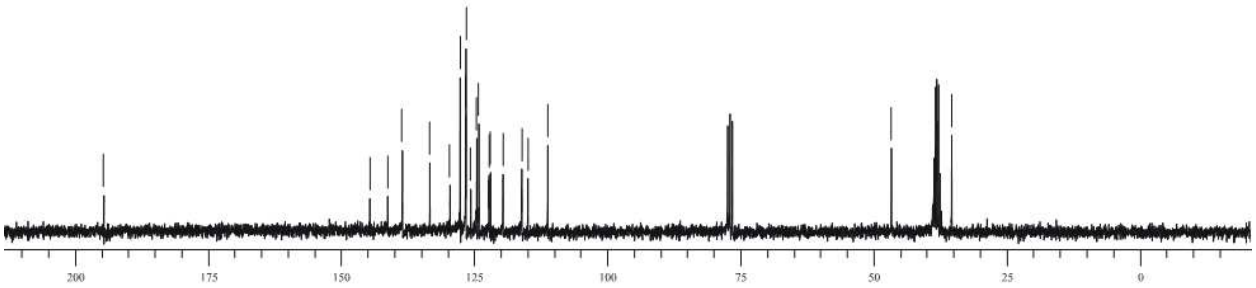
4c

^{1}H NMR SPECTRUM OF COMPOUND 4c ($CDCl_3$ + DMSO-d6, 500MHz

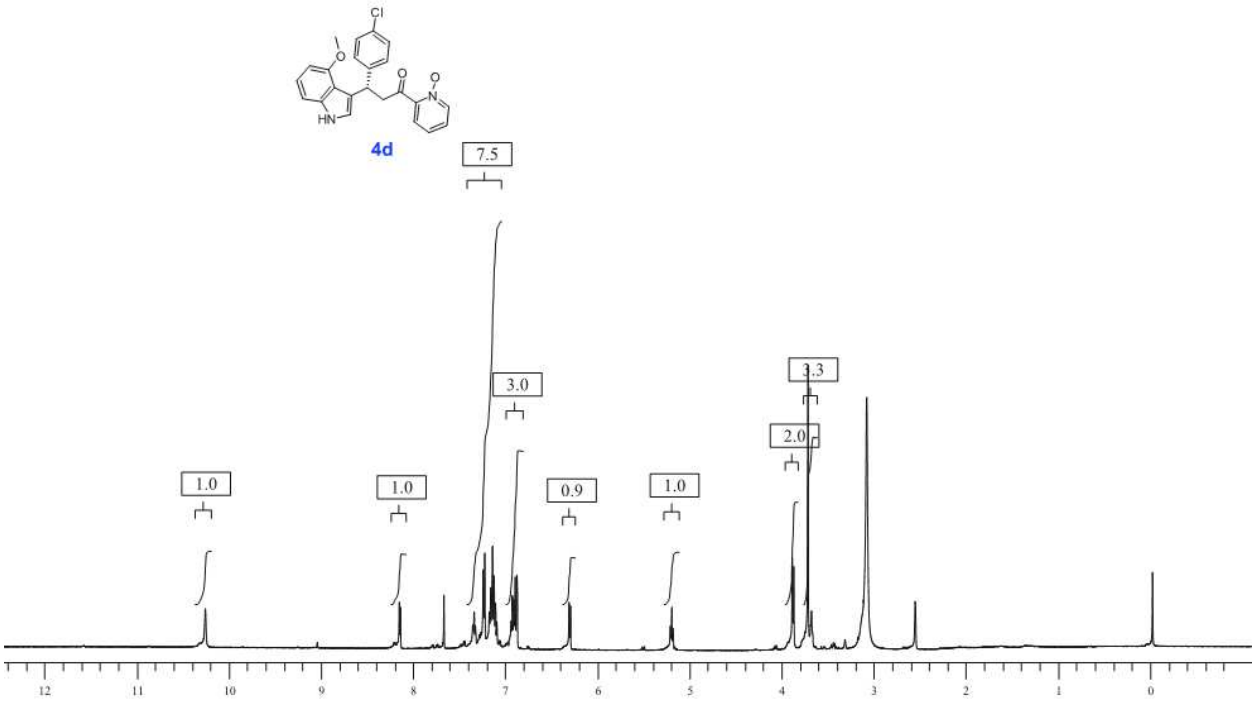




4c



^{13}C NMR SPECTRUM OF COMPOUND 4c ($CDCl_3$ + DMSO-d6, 75 MHz)



^{1}H NMR SPECTRUM OF COMPOUND 4d ($CDCl_3$ + DMSO-d6, 500MHz)

195.402
152.647
145.261
142.791
138.556
136.726
129.310
128.103
126.452
126.367
124.582
124.108
120.752
119.245
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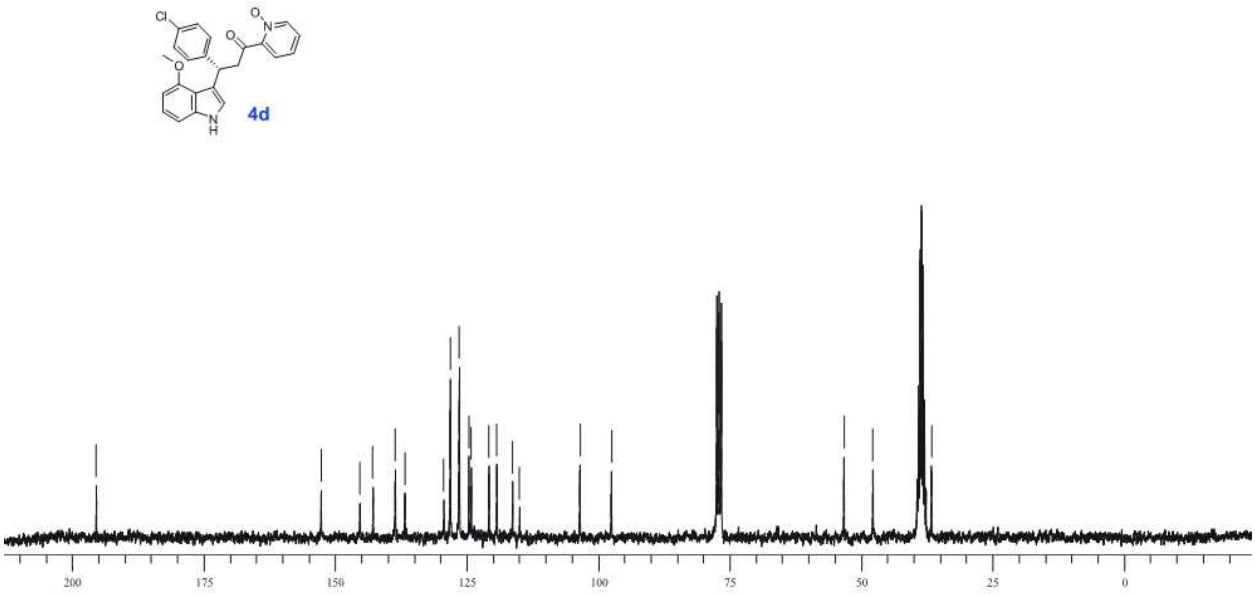
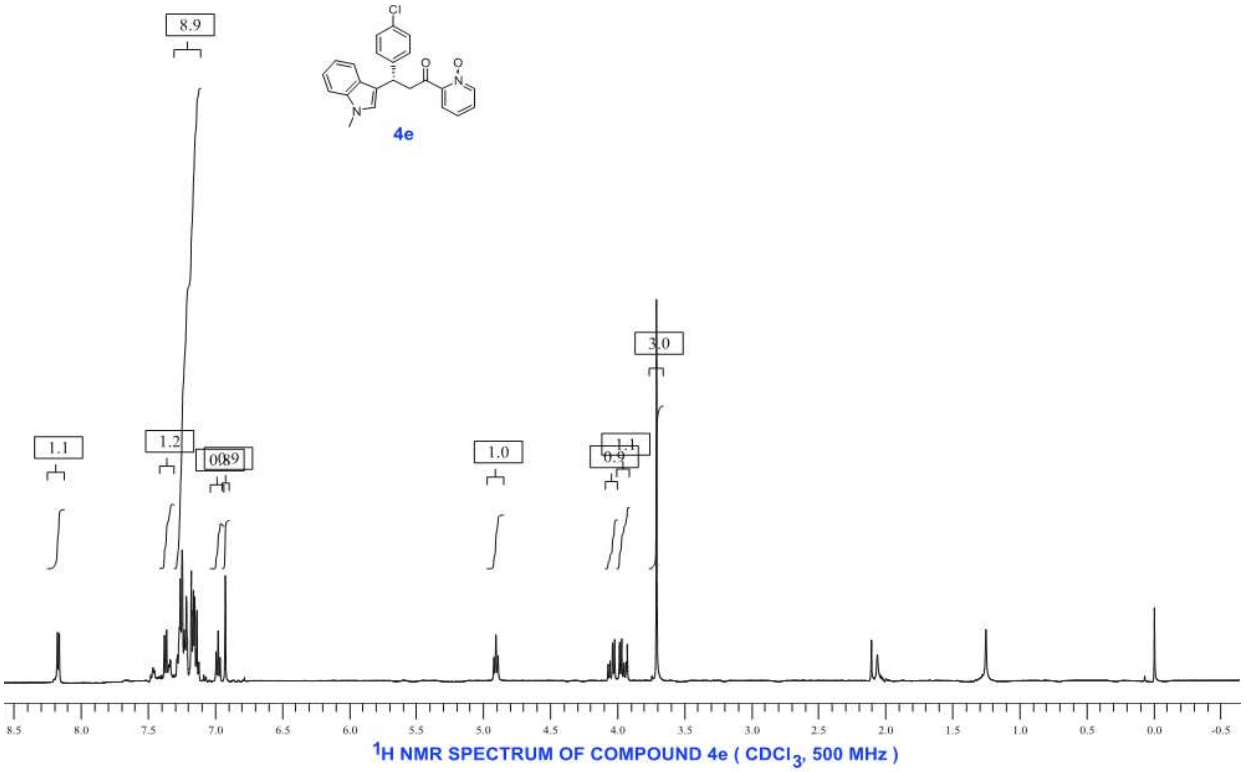
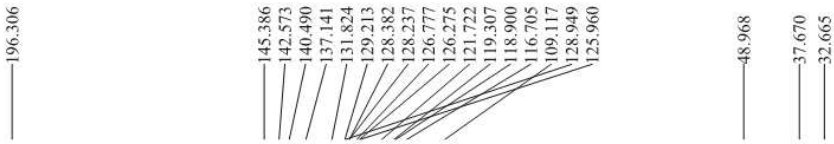
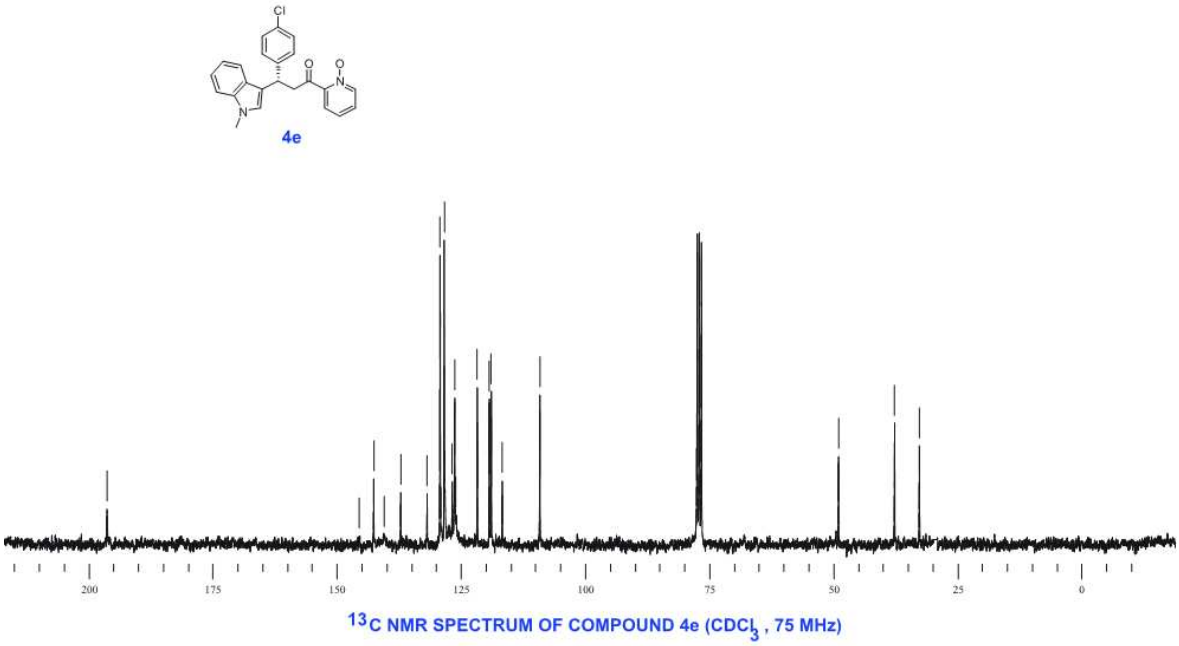


^{13}C NMR SPECTRUM OF COMPOUND 4d ($CDCl_3$ +DMSO-d6, 75 MHz)



^{1}H NMR SPECTRUM OF COMPOUND 4e ($CDCl_3$, 500 MHz)





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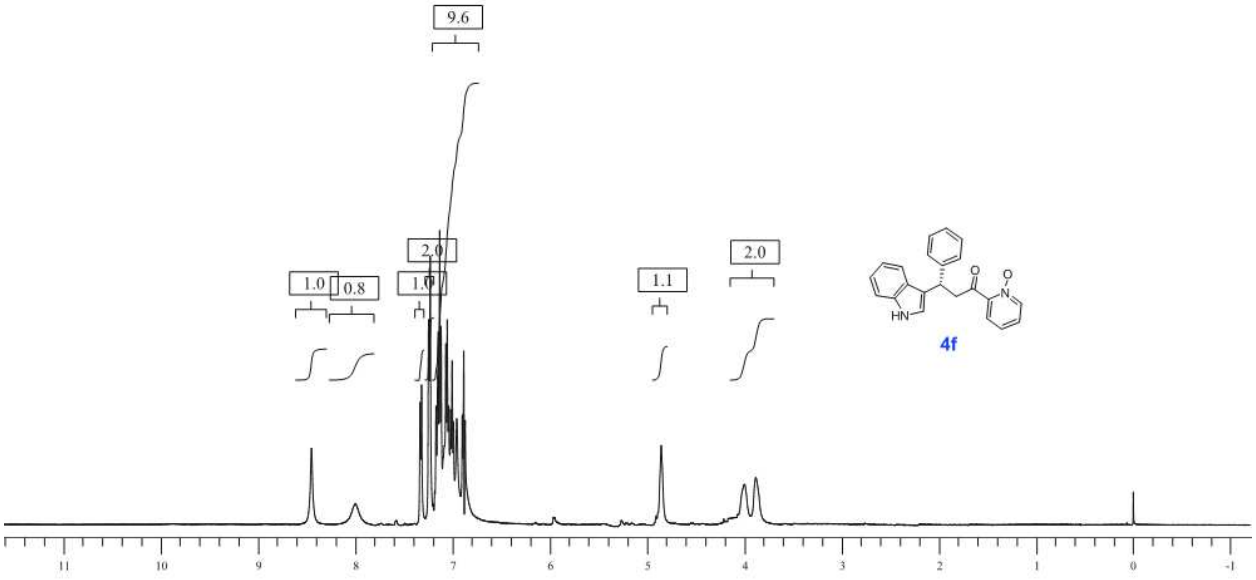
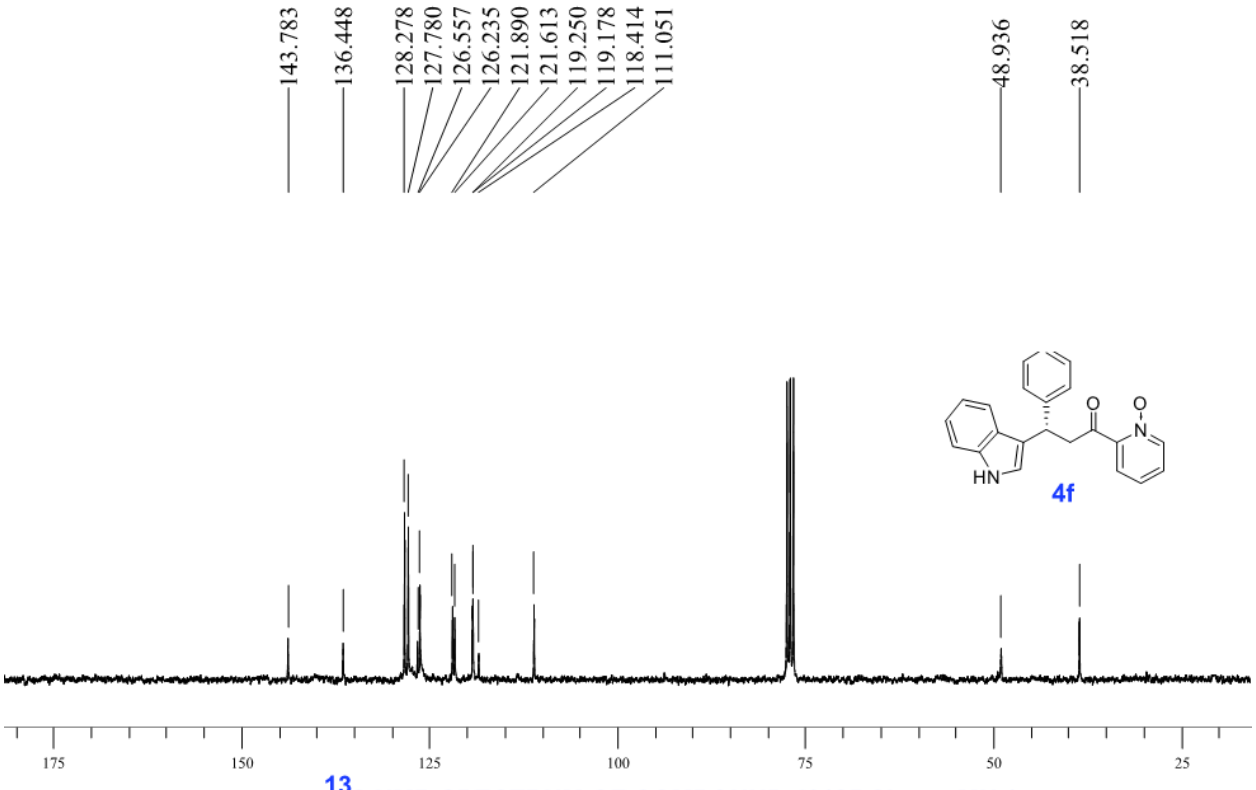
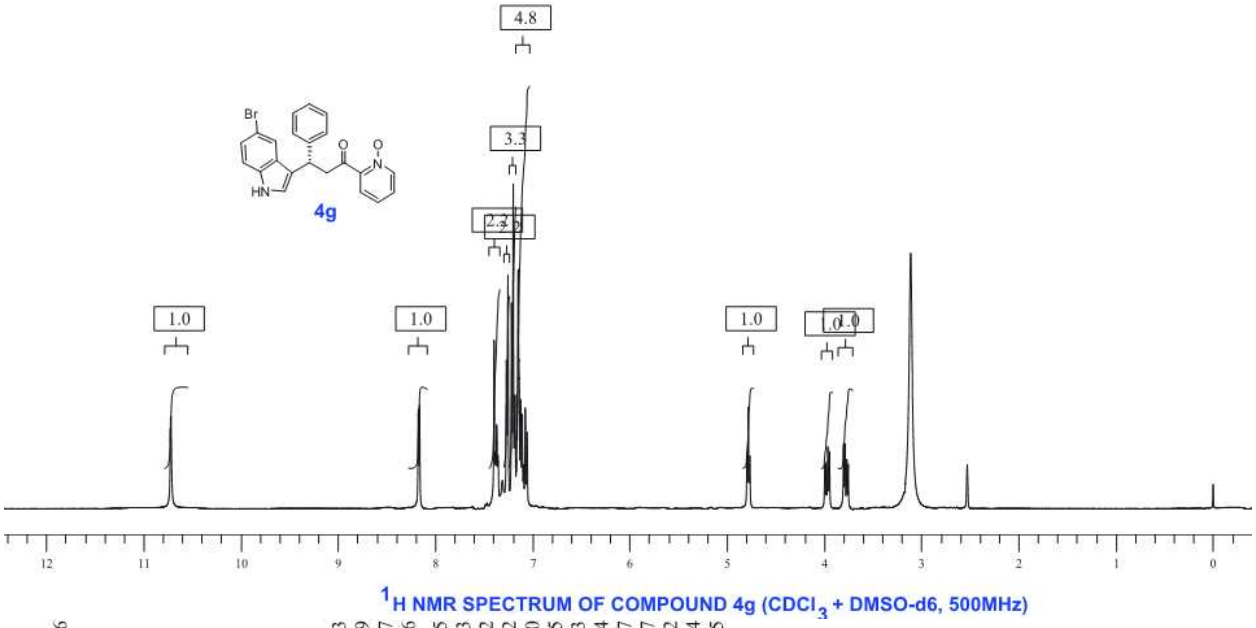


^{1}H NMR SPECTRUM OF COMPOUND 4f ($CDCl_3$, 500MHz)



^{13}C NMR SPECTRUM OF COMPOUND 4f ($CDCl_3$, 75 MHz)



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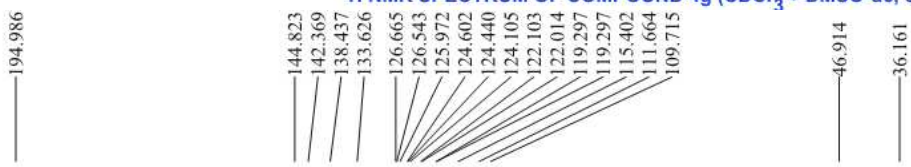
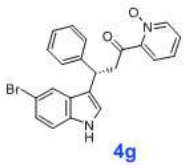
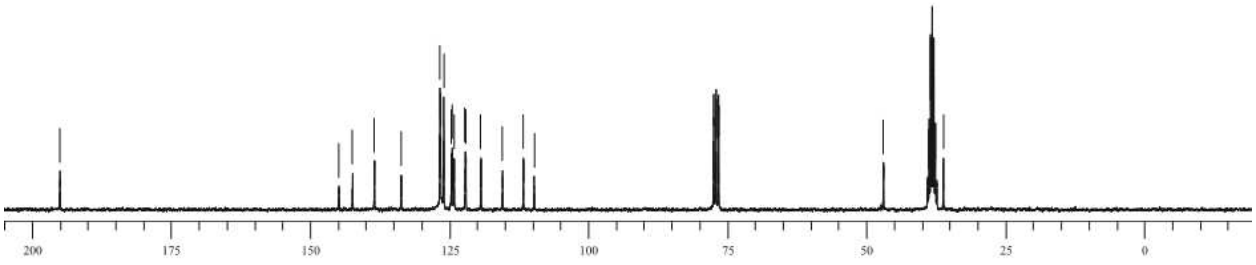
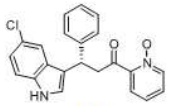


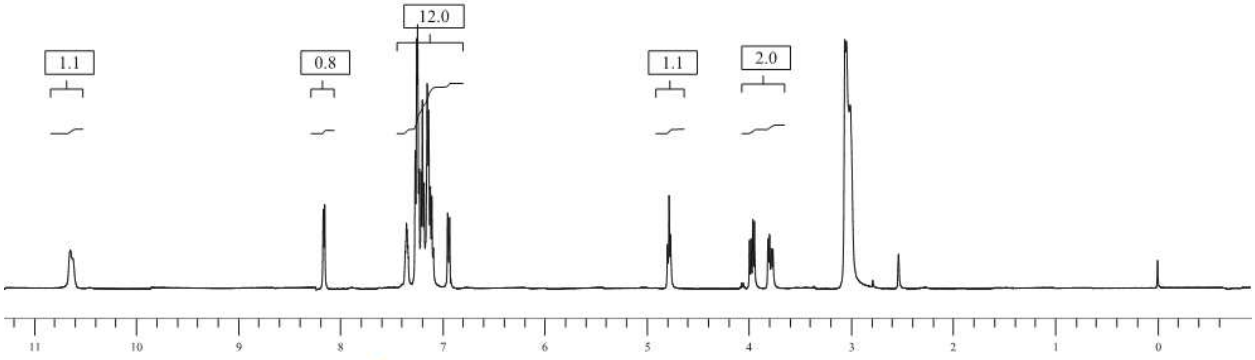




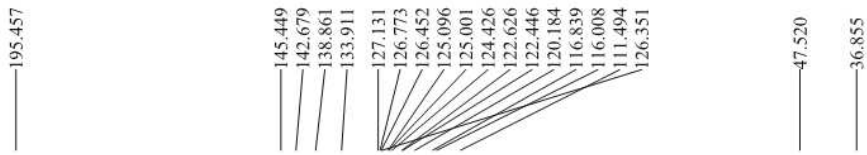
^{13}C NMR SPECTRUM OF COMPOUND 4g ($CDCl_3$ + DMSO-d6, 75 MHz)

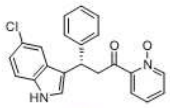


4h

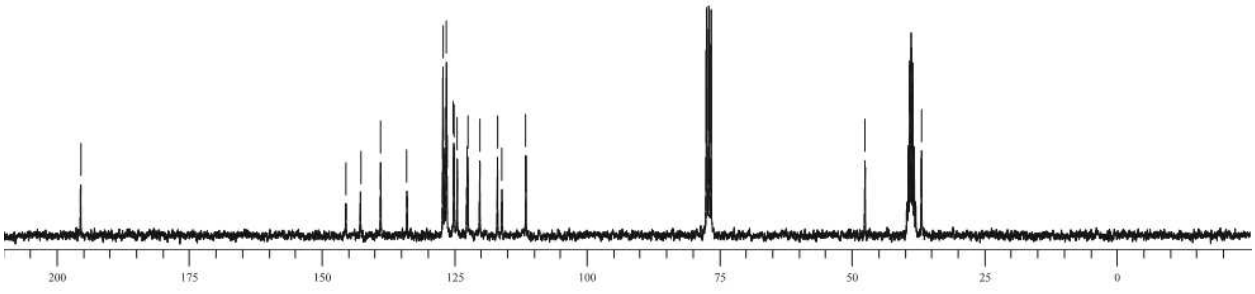


^{1}HNMR SPECTRUM OF COMPOUND 4h ($CDCl_3$ + DMSO-d6, 500MHz)

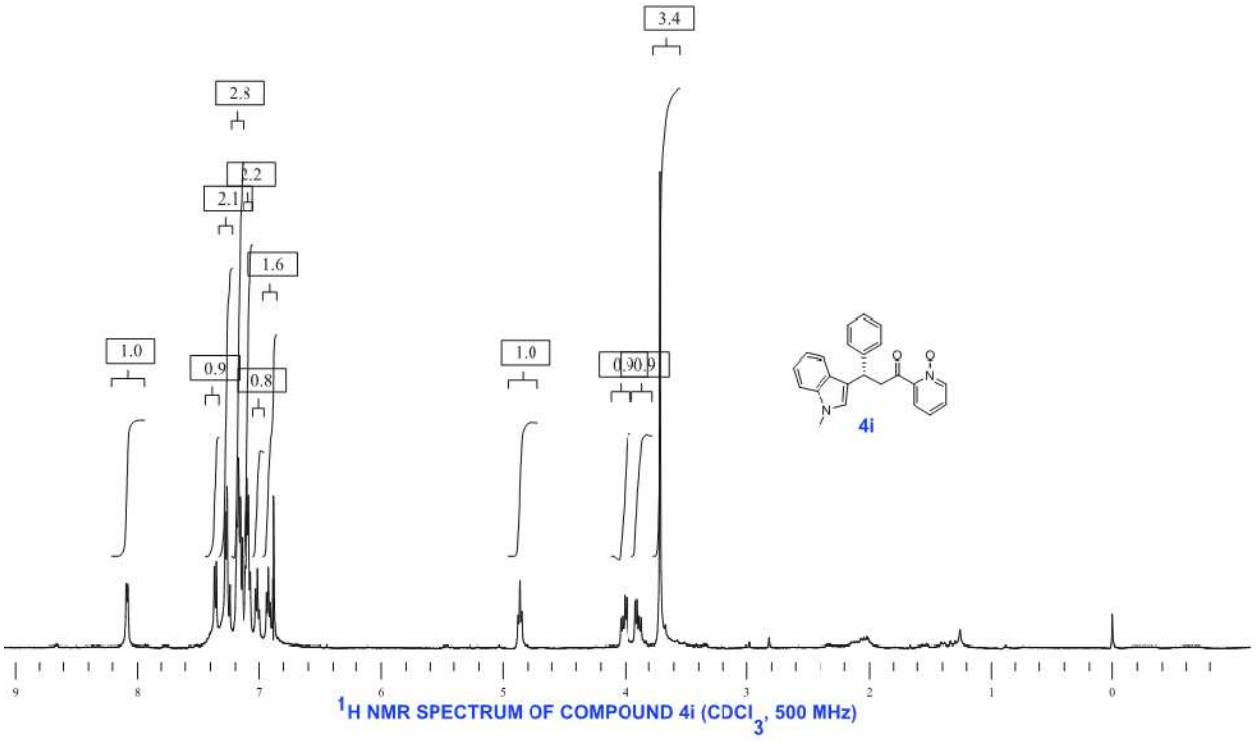




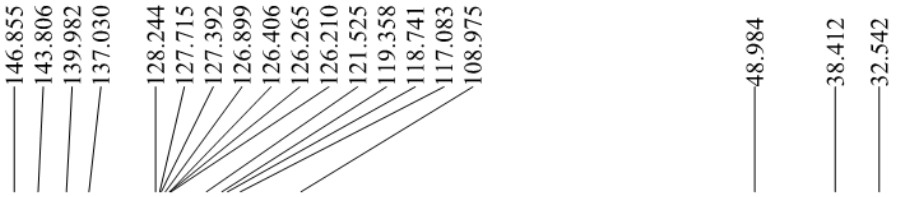
4h

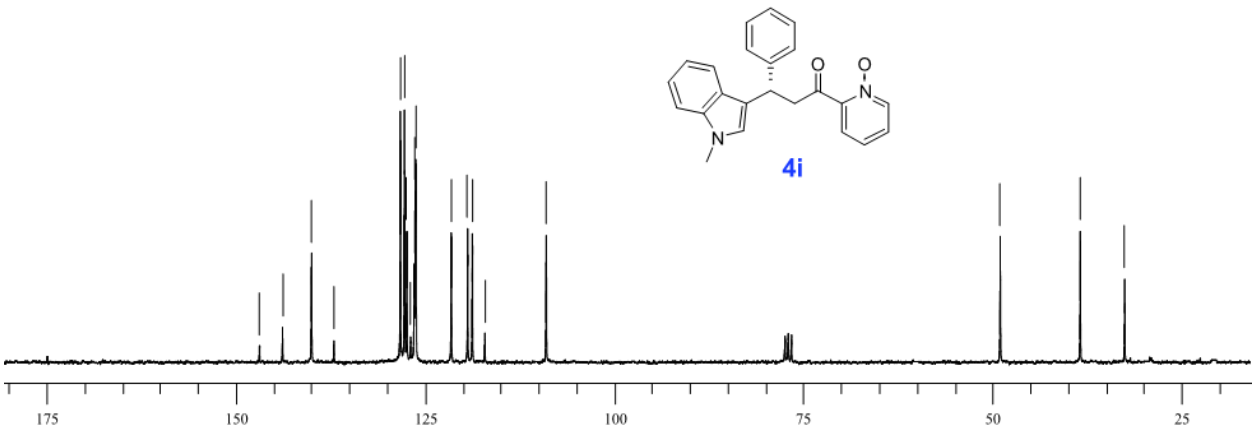


^{13}CNMR SPECTRUM OF COMPOUND 4h ($CDCl_3$ + DMSO-d6, 75 MHz)

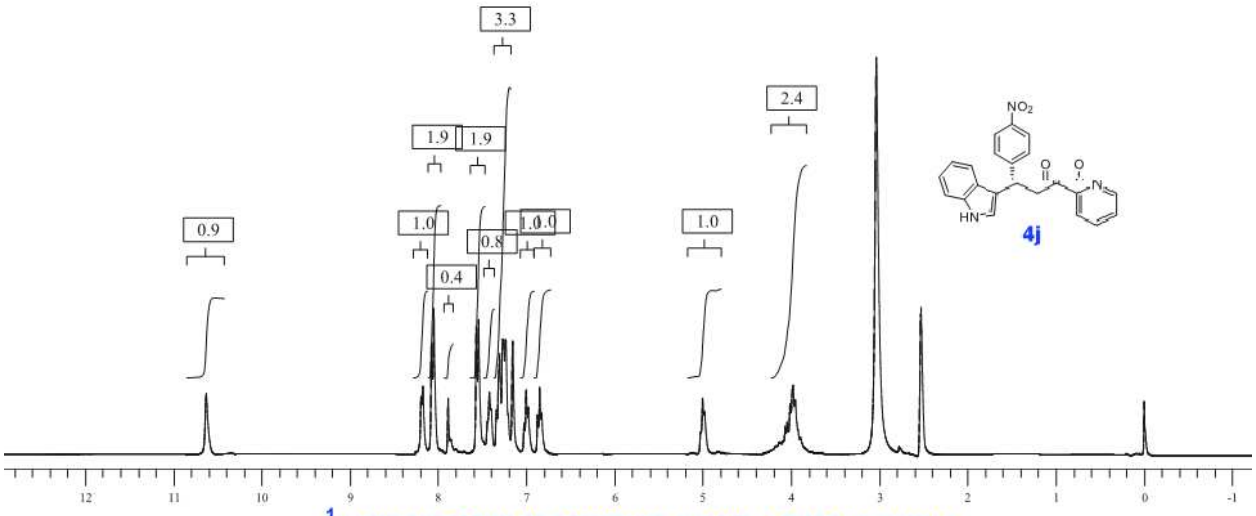


^{1}H NMR SPECTRUM OF COMPOUND 4i ($CDCl_3$, 500 MHz)





^{13}C NMR SPECTRUM OF COMPOUND 4i ($CDCl_3$, 75 MHz)



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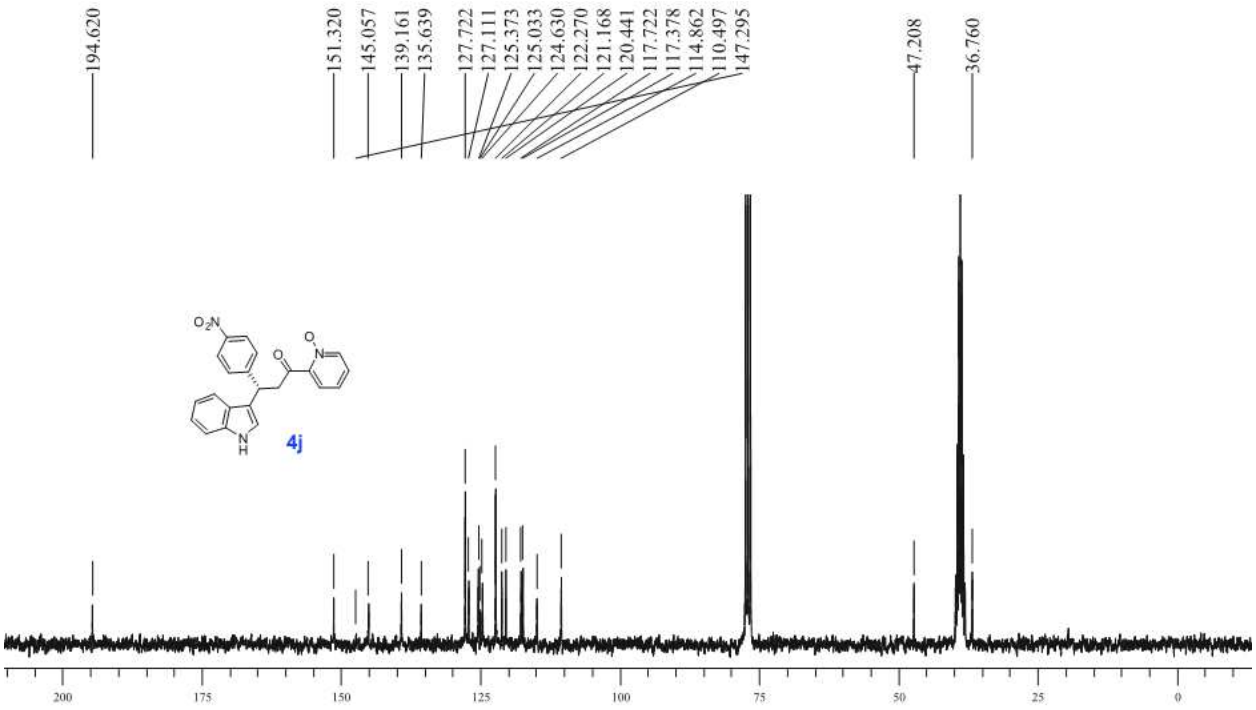

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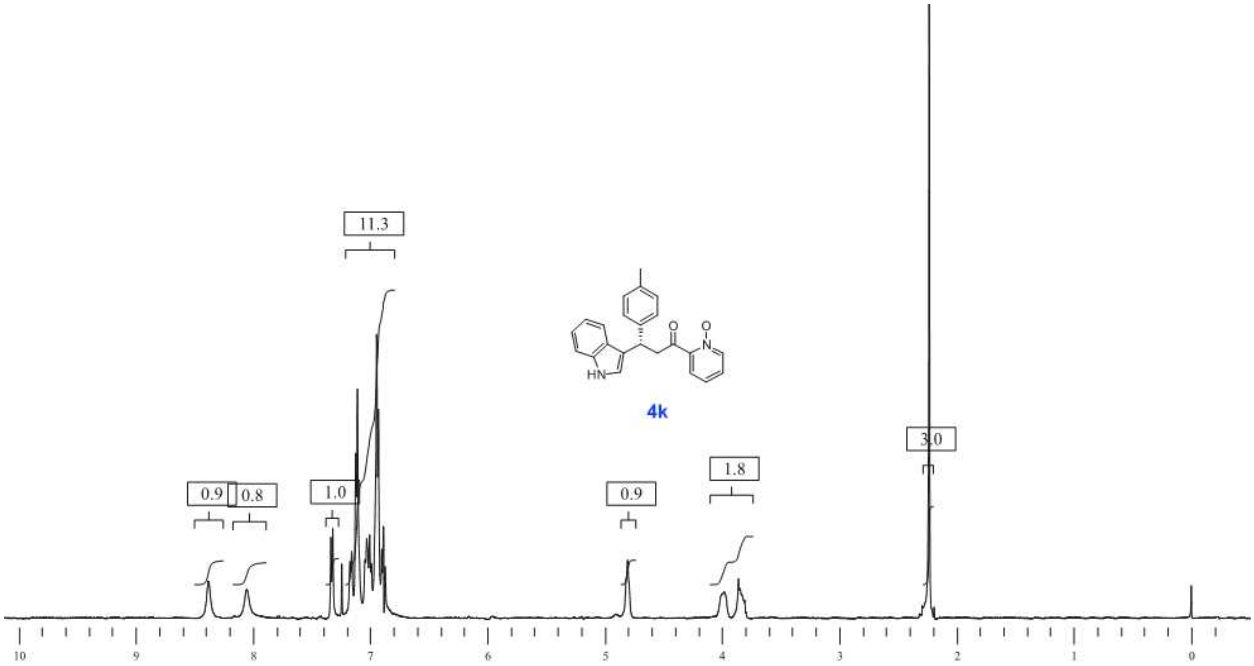
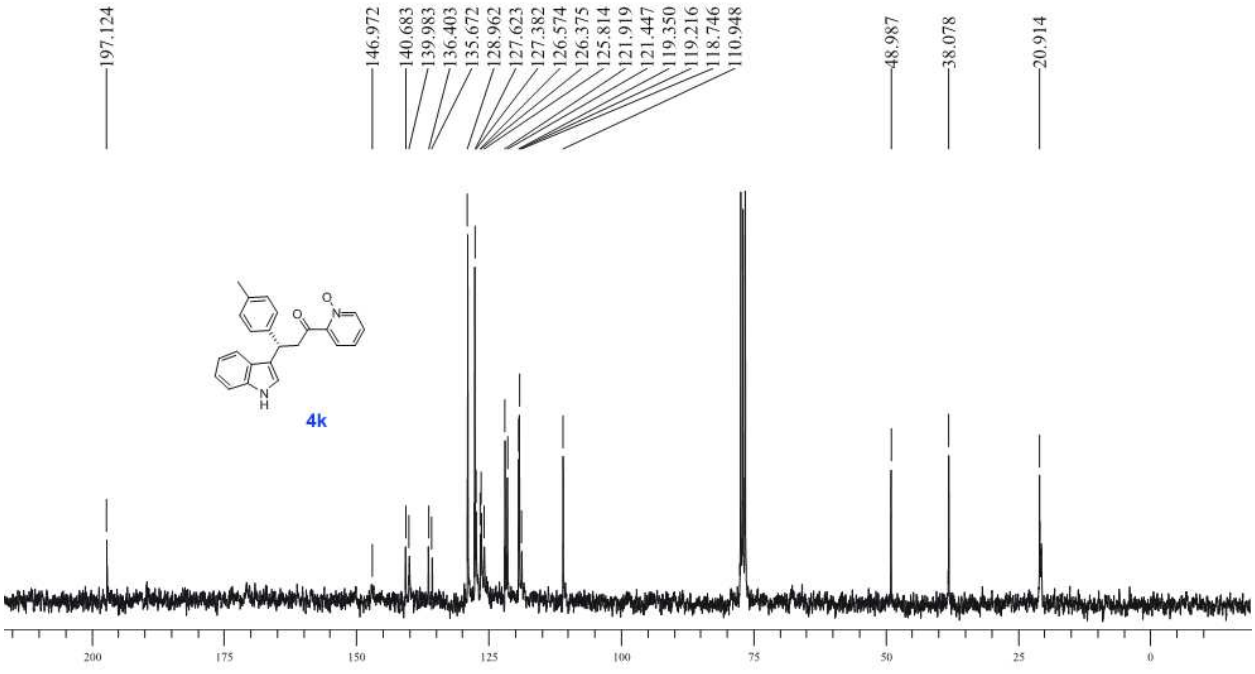
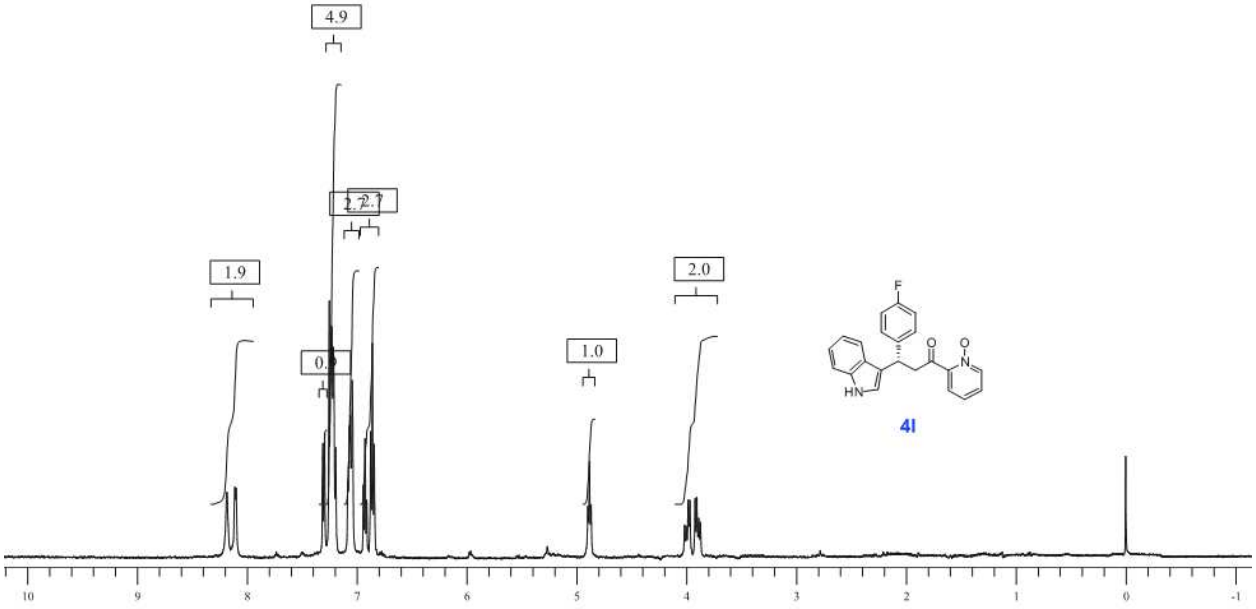


^{1}HNMR SPECTRUM OF COMPOUND 4k ($CDCl_3$, 500MHz)



^{13}CNMR SPECTRUM OF COMPOUND 4k ($CDCl_3$, 75 MHz)



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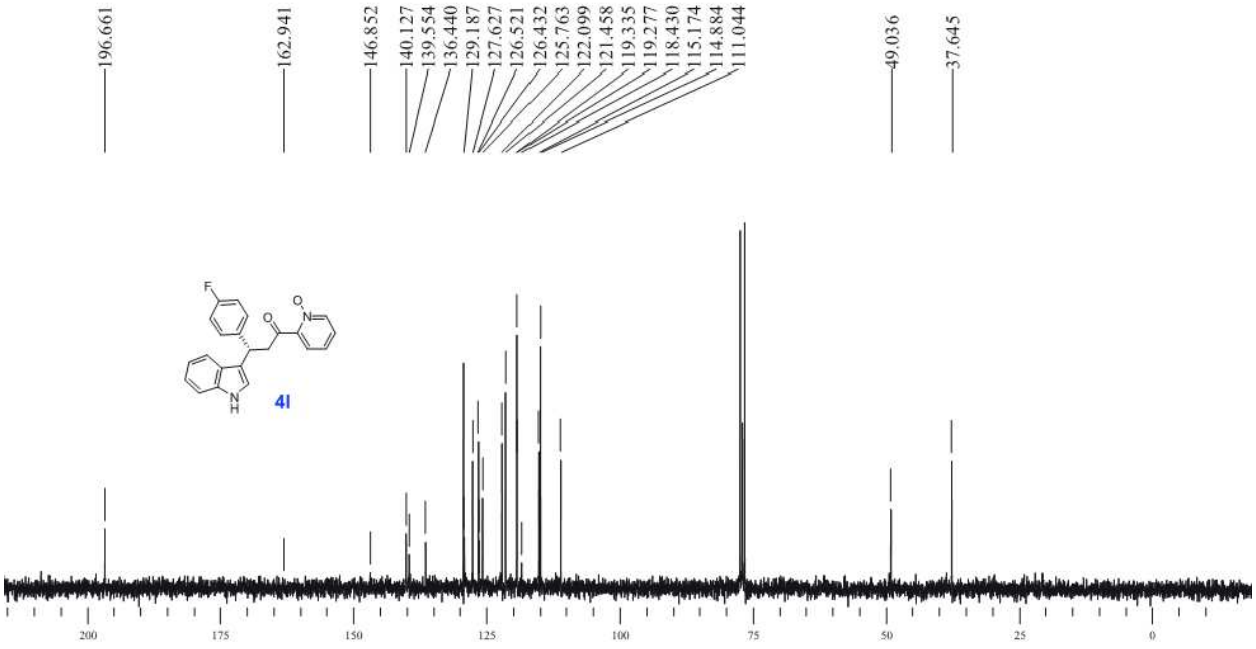
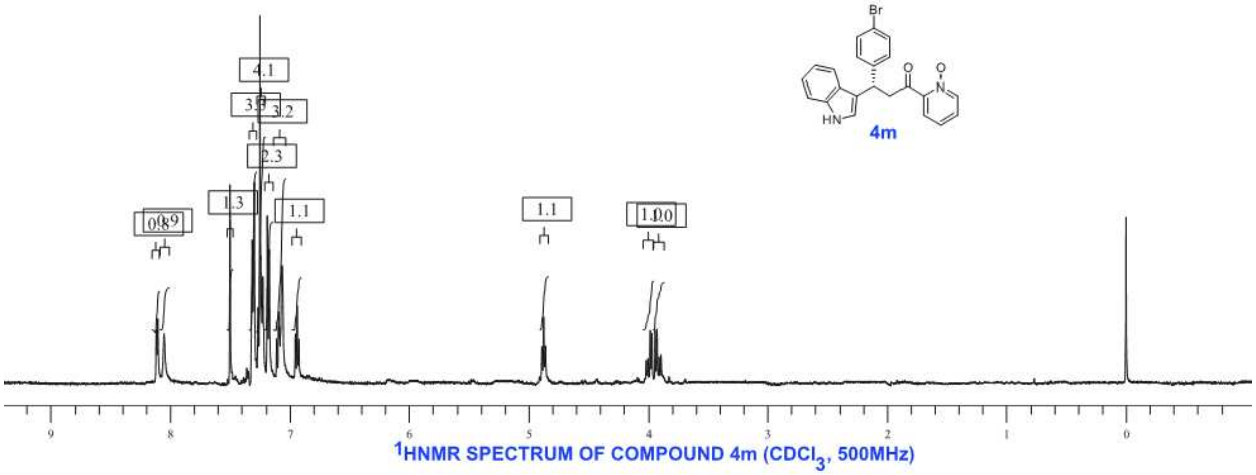
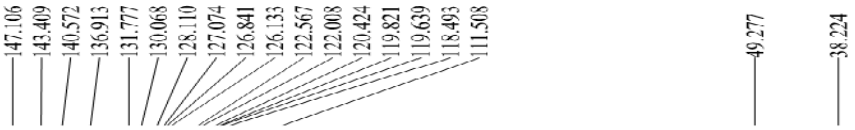
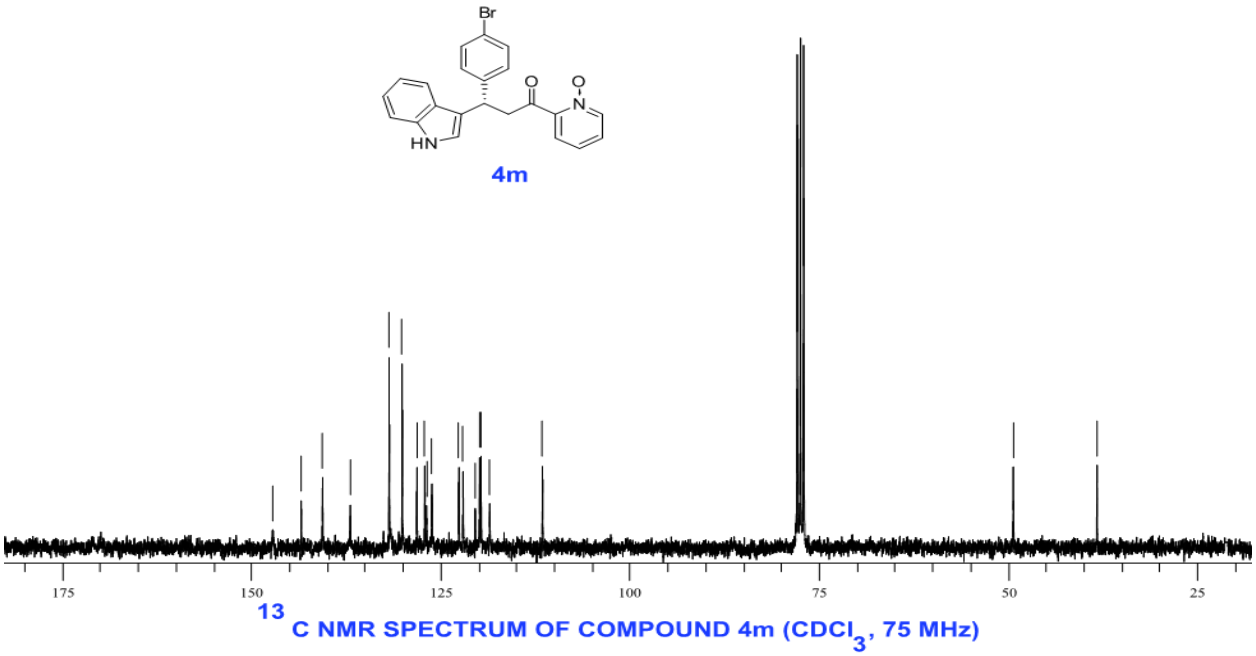


^{13}CNMR SPECTRUM OF COMPOUND 4I ($CDCl_3$, 75 MHz)



^{1}HNMR SPECTRUM OF COMPOUND 4m ($CDCl_3$, 500MHz)





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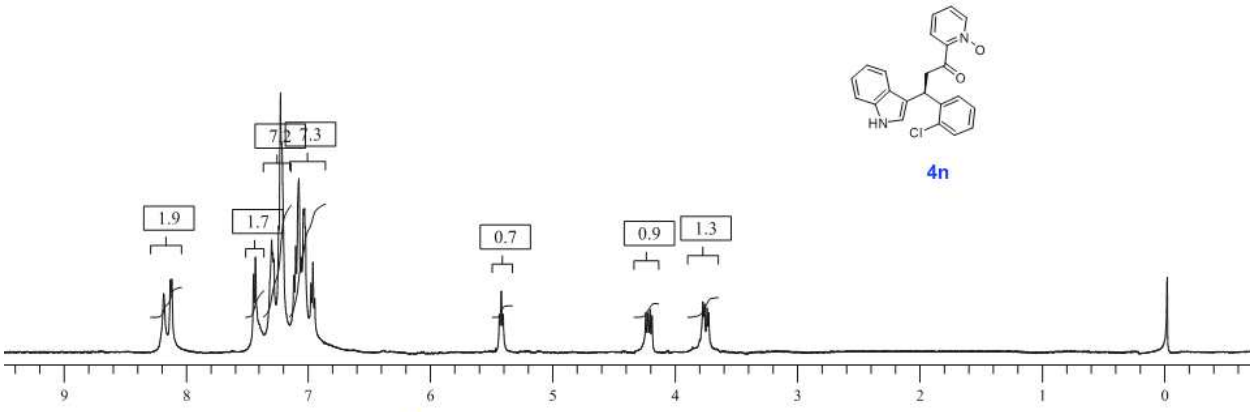
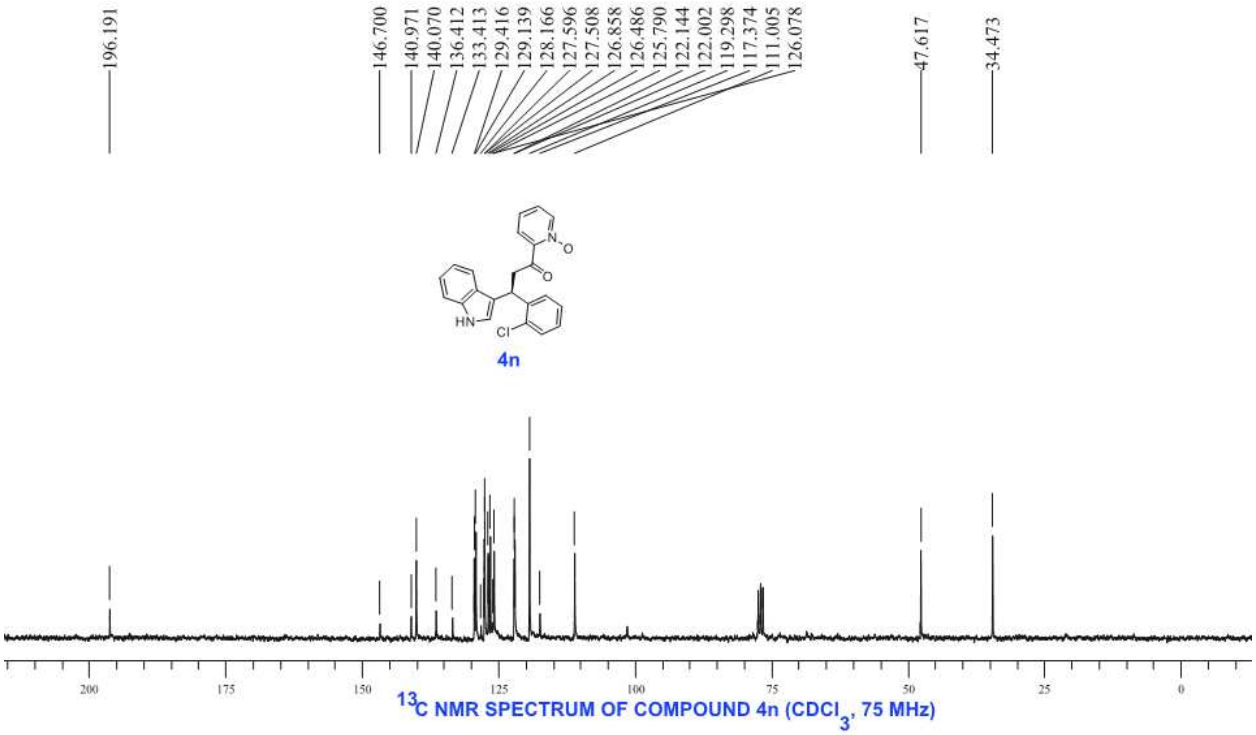


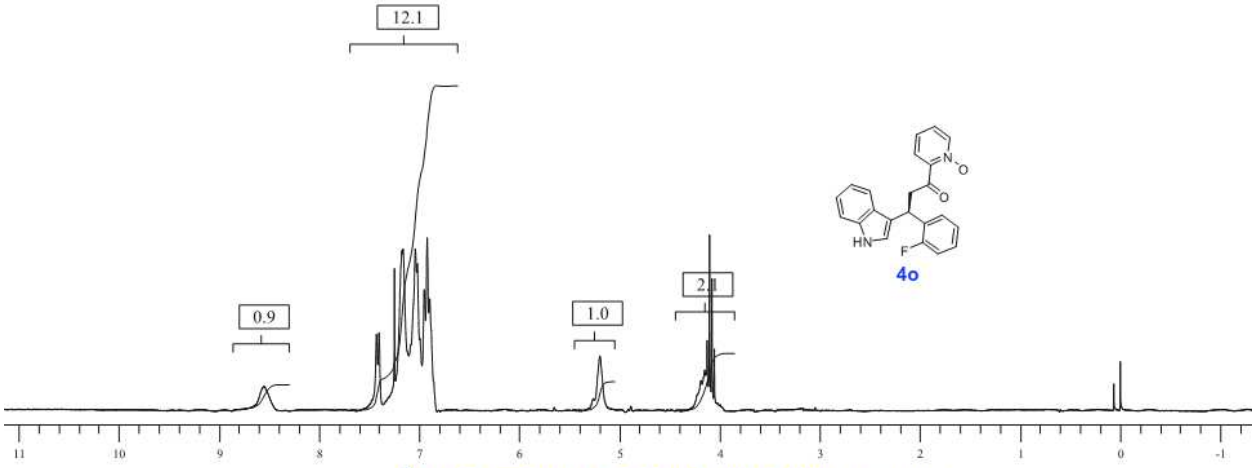
4n

^{1}H NMR SPECTRUM OF COMPOUND 4n ($CDCl_3$, 500MHz)

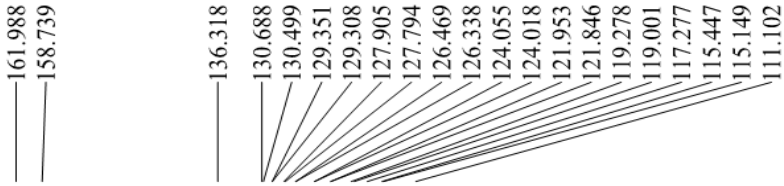


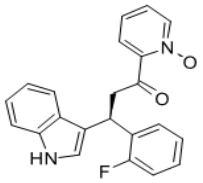
4n

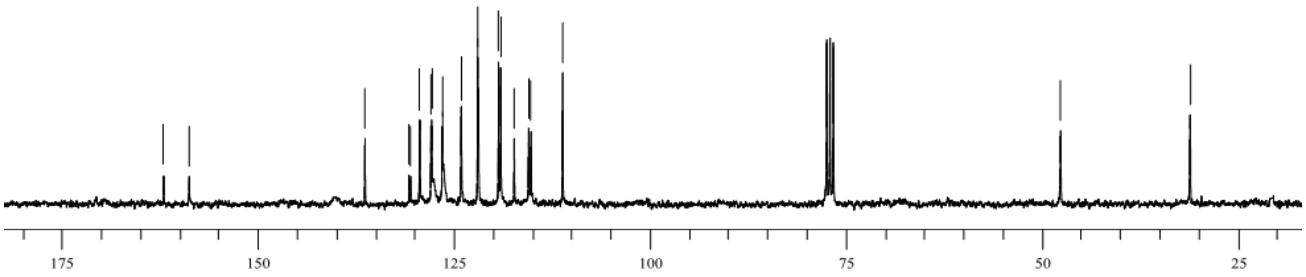
^{13}C NMR SPECTRUM OF COMPOUND 4n ($CDCl_3$, 75 MHz)



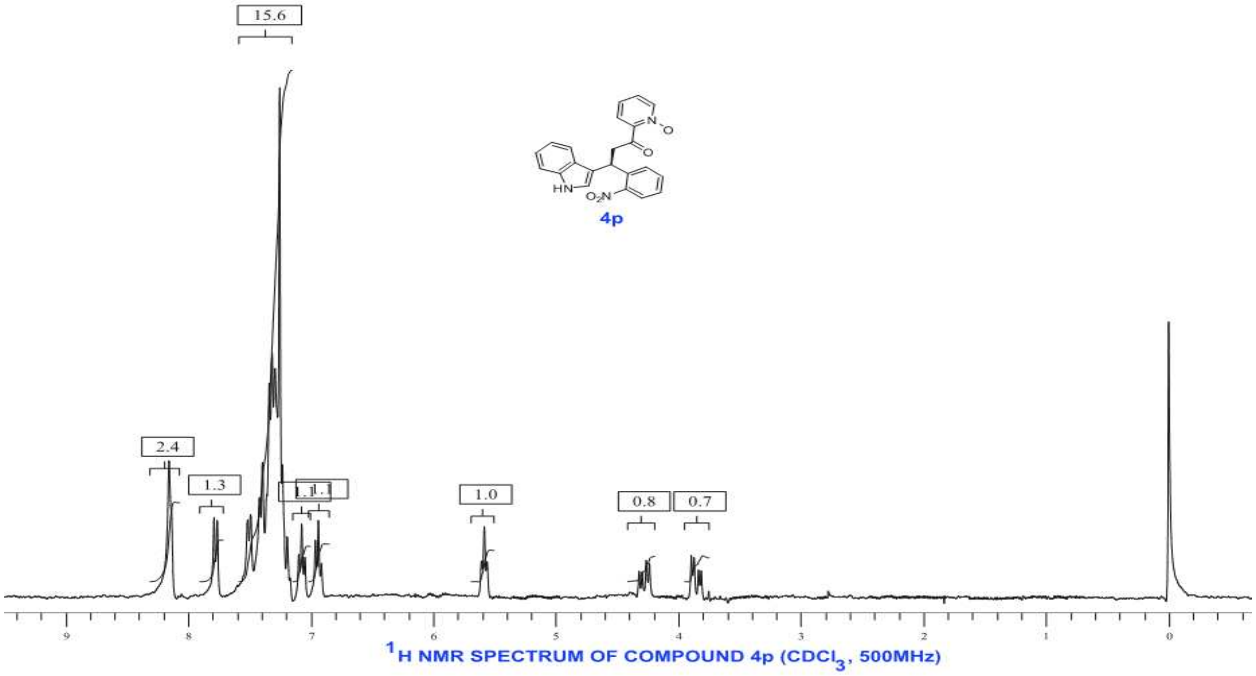
^{1}H NMR SPECTRUM OF COMPOUND 4o ($CDCl_3$, 500MHz)



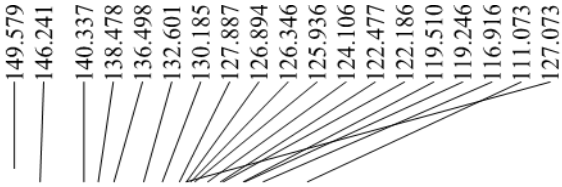


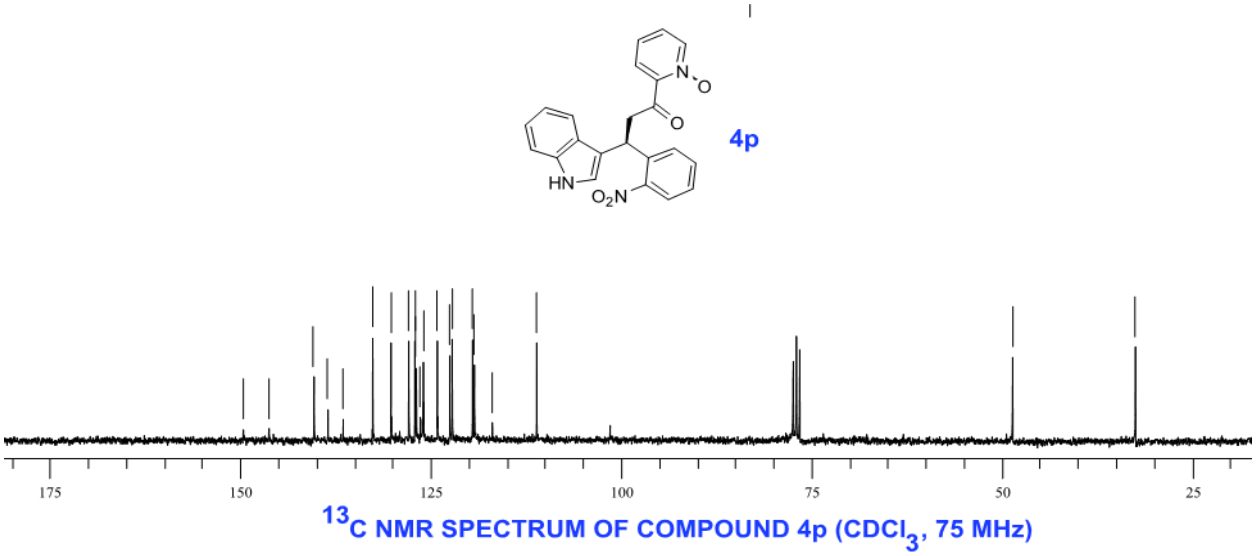


^{13}C NMR SPECTRUM OF COMPOUND 4o ($CDCl_3$, 75 MHz)

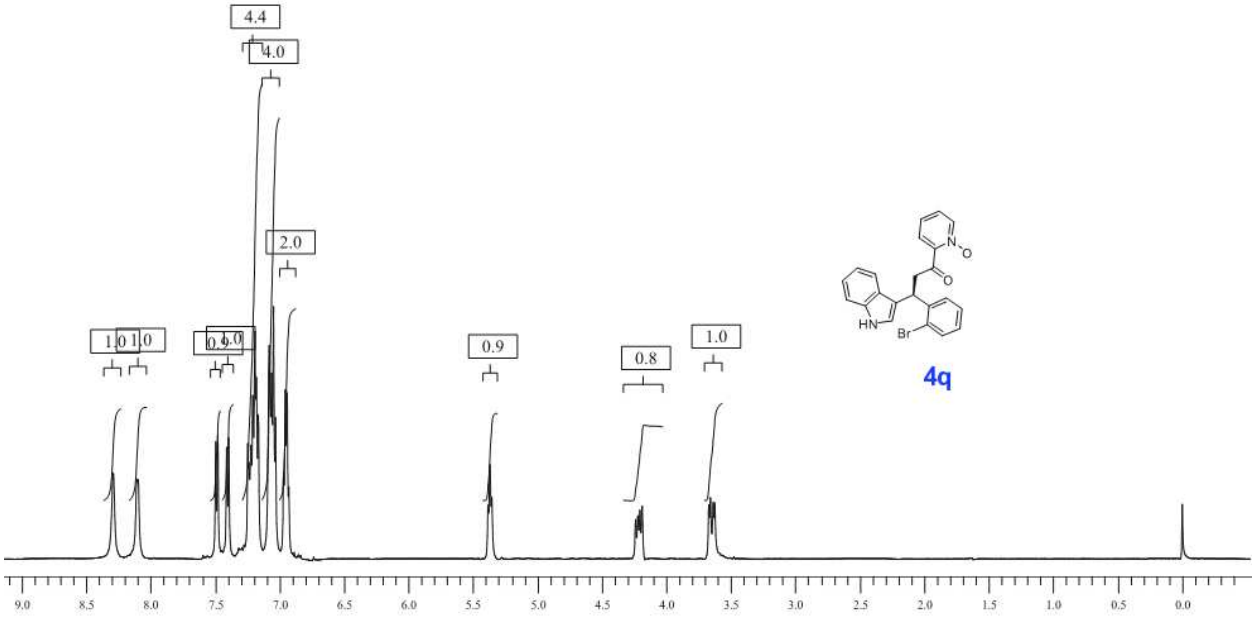


^{1}H NMR SPECTRUM OF COMPOUND 4p ($CDCl_3$, 500MHz)

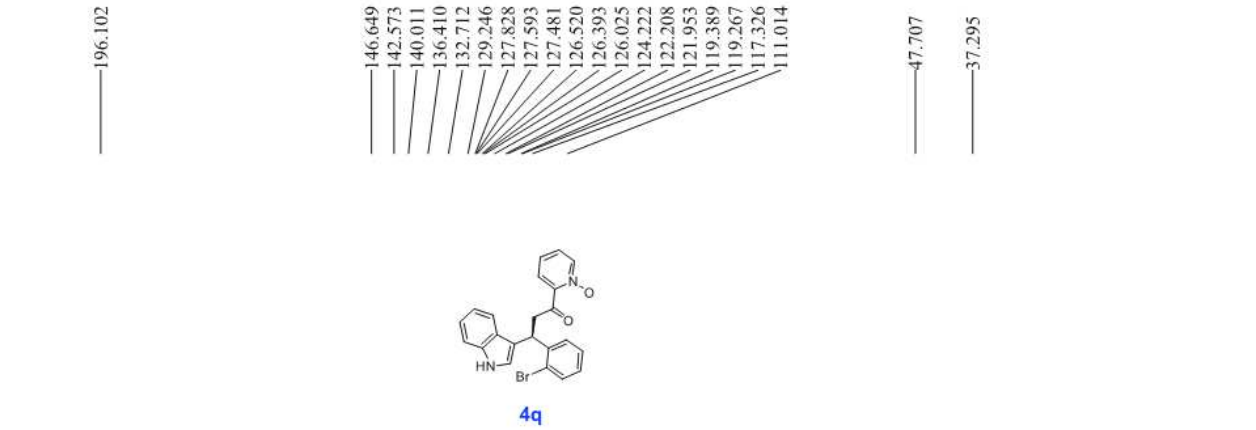




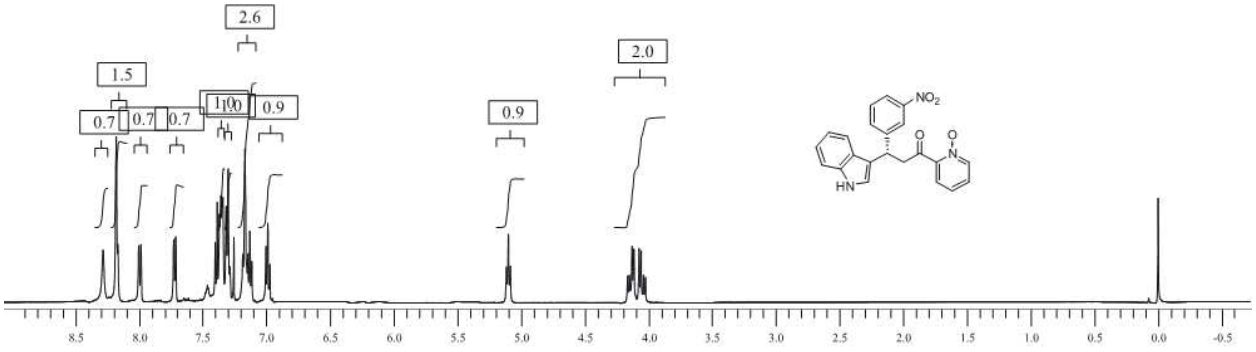
^{13}C NMR SPECTRUM OF COMPOUND 4p ($CDCl_3$, 75 MHz)



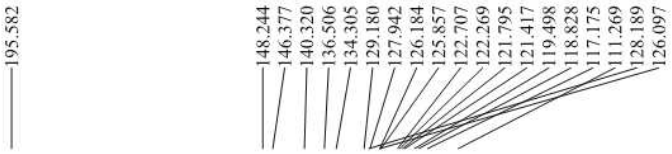
^{1}H NMR SPECTRUM OF COMPOUND 4q ($CDCl_3$, 500MHz)

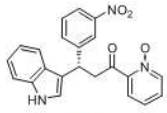


^{13}C NMR SPECTRUM OF COMPOUND 4q ($CDCl_3$, 75 MHz)

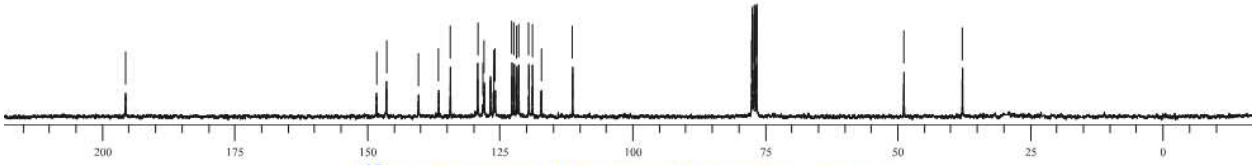


^{1}H NMR SPECTRUM OF COMPOUND 4r ($CDCl_3$, 500MHz)

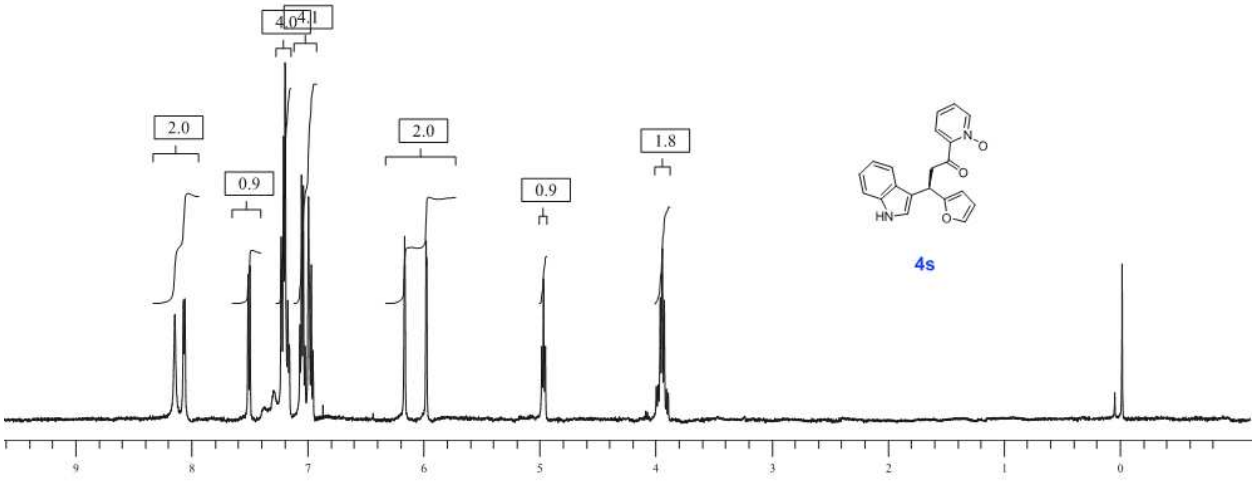




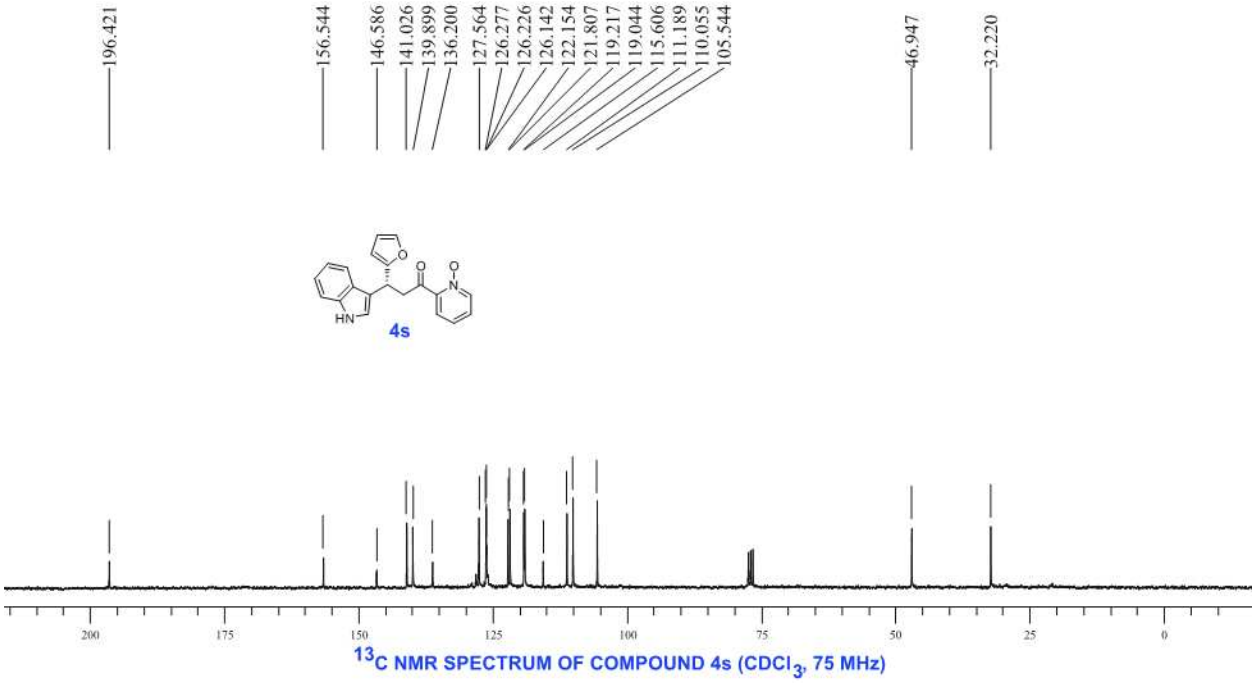
4r



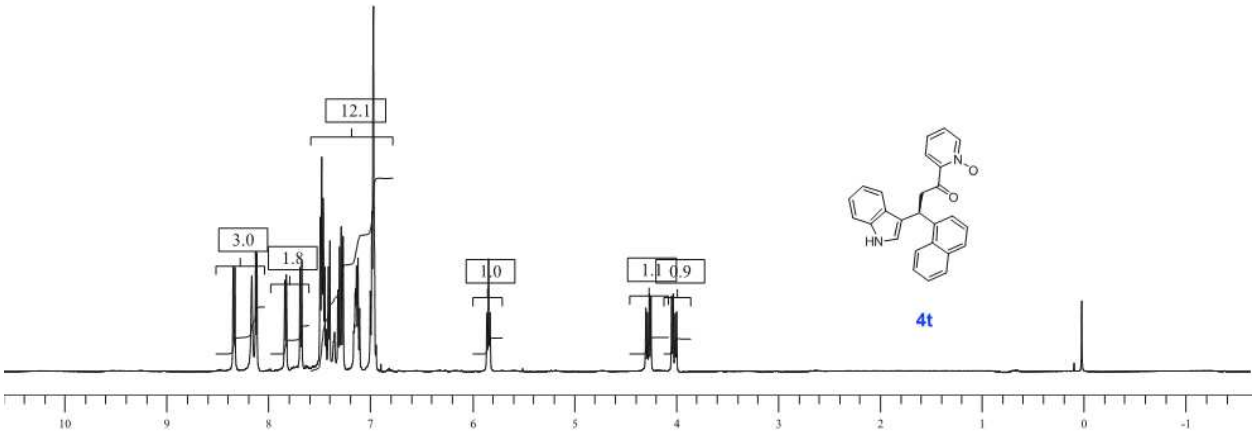
^{13}C NMR SPECTRUM OF COMPOUND 4r ($CDCl_3$, 75 MHz)



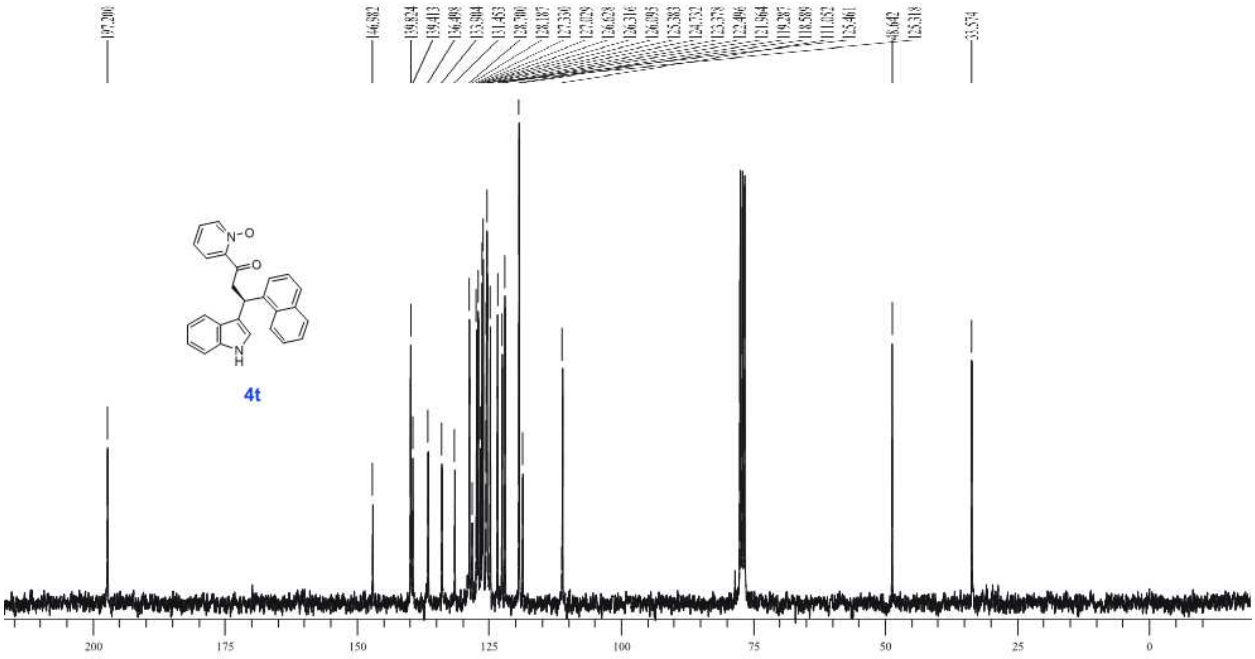
^{1}HNMR SPECTRUM OF COMPOUND 4s ($CDCl_3$, 500MHz)



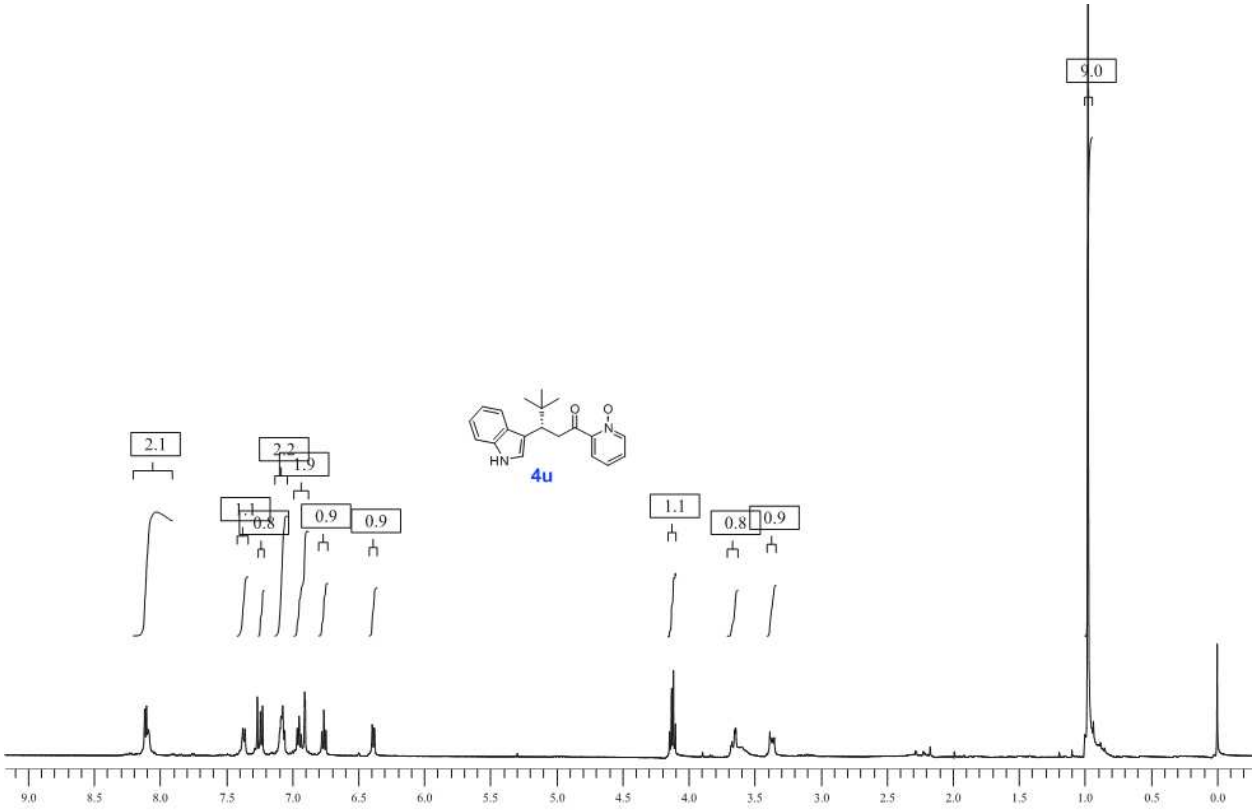
^{13}C NMR SPECTRUM OF COMPOUND 4s ($CDCl_3$, 75 MHz)



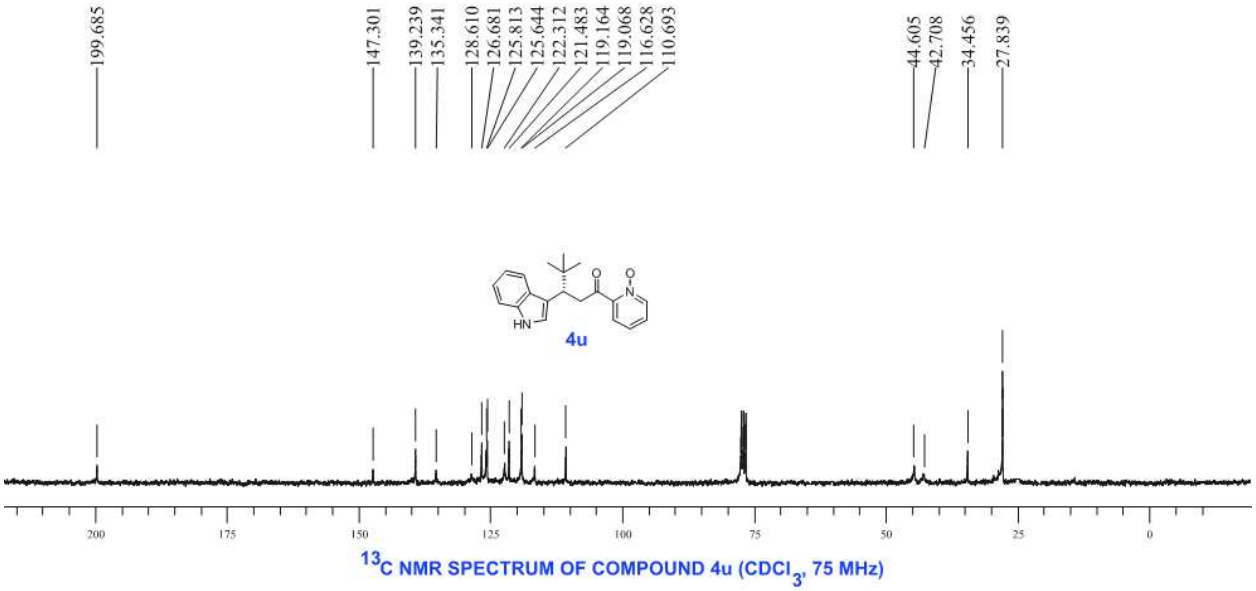
^{1}HNMR SPECTRUM OF COMPOUND 4t ($CDCl_3$, 500 MHz)



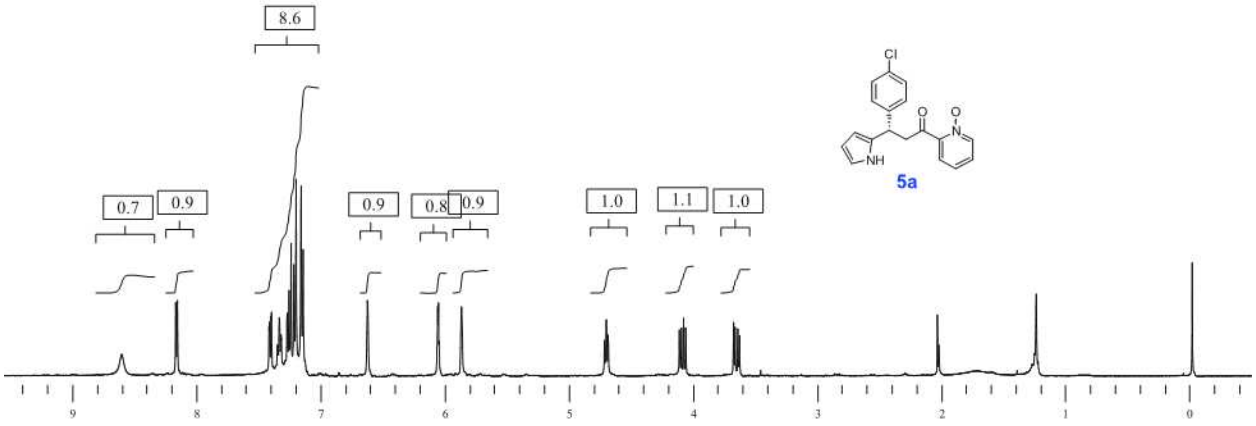
^{13}CNMR SPECTRUM OF COMPOUND 4t ($CDCl_3$, 75 MHz)



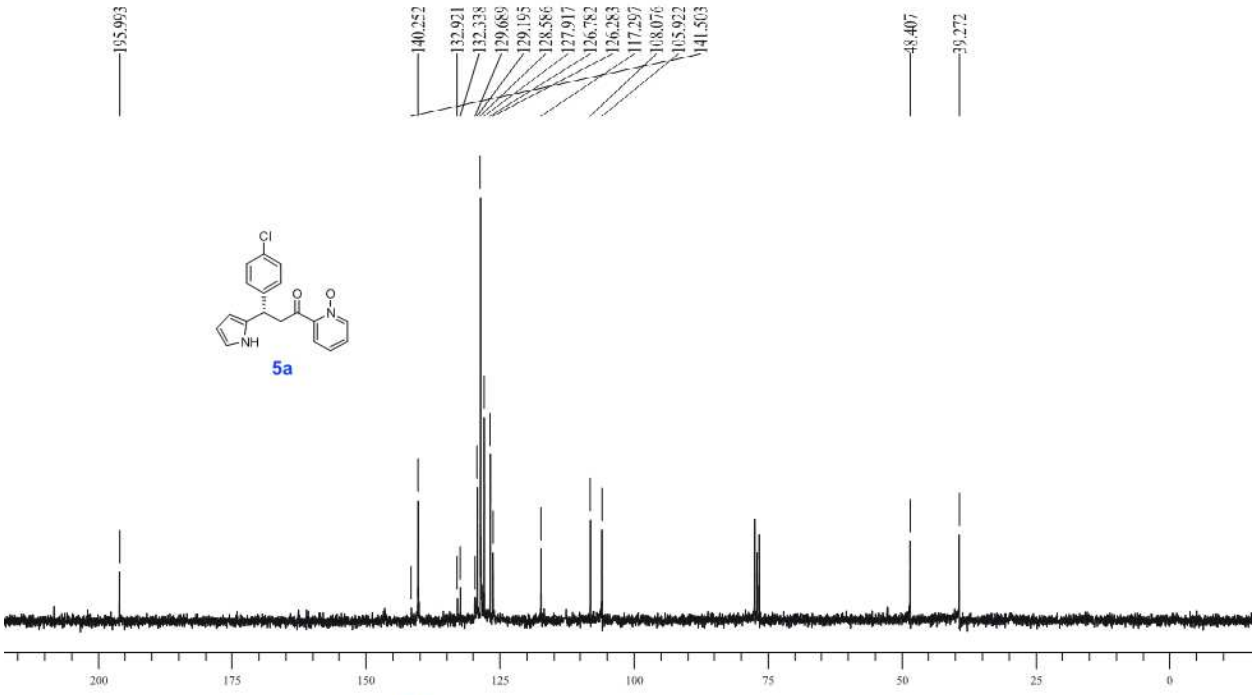
^{1}H NMR SPECTRUM OF COMPUND 4u ($CDCl_3$, 500 MHz)



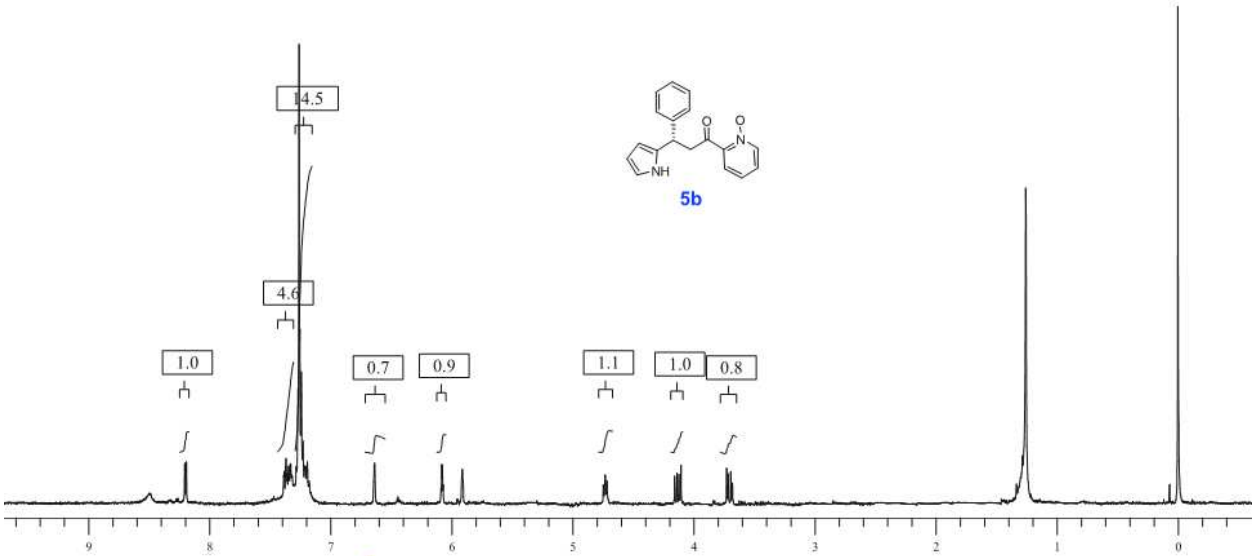
^{13}C NMR SPECTRUM OF COMPOUND 4u ($CDCl_3$, 75 MHz)



^{1}HNMR SPECTRUM OF COMPOUND 5a ($CDCl_3$, 500 MHz)

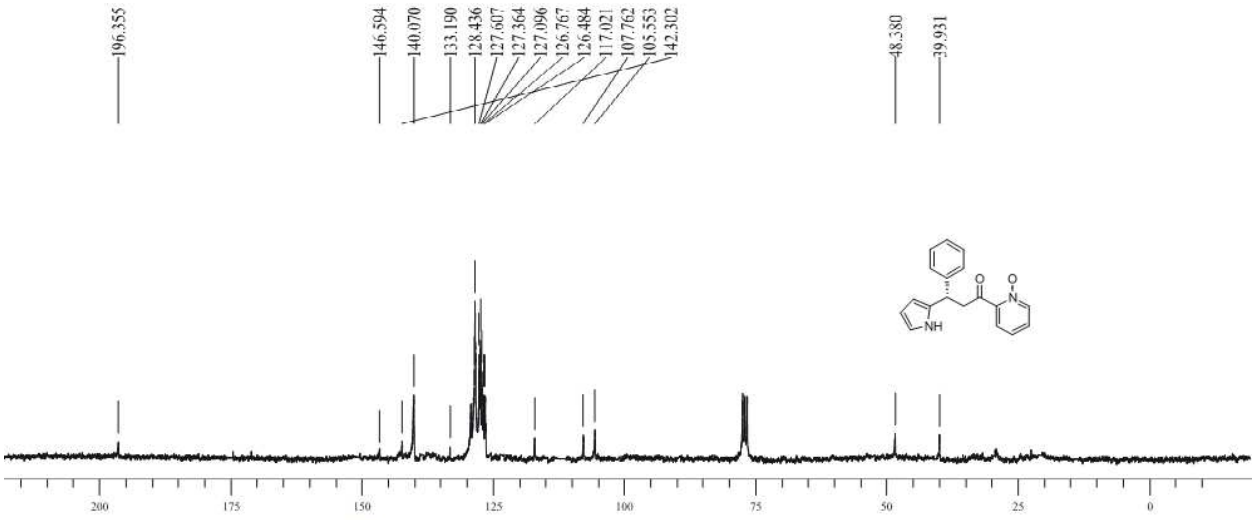


^{13}CNMR SPECTRUM OF COMPOUND 5a ($CDCl_3$, 75 MHz)



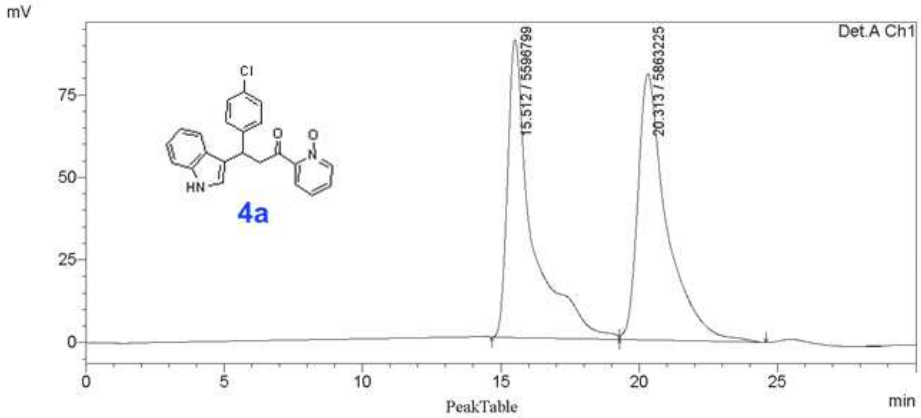
5b

^{1}H NMR SPECTRUM OF COMPOUND 5b ($CDCl_3$, 500 MHz)



^{13}C NMR SPECTRUM OF COMPOUND 5b ($CDCl_3$, 75 MHz)

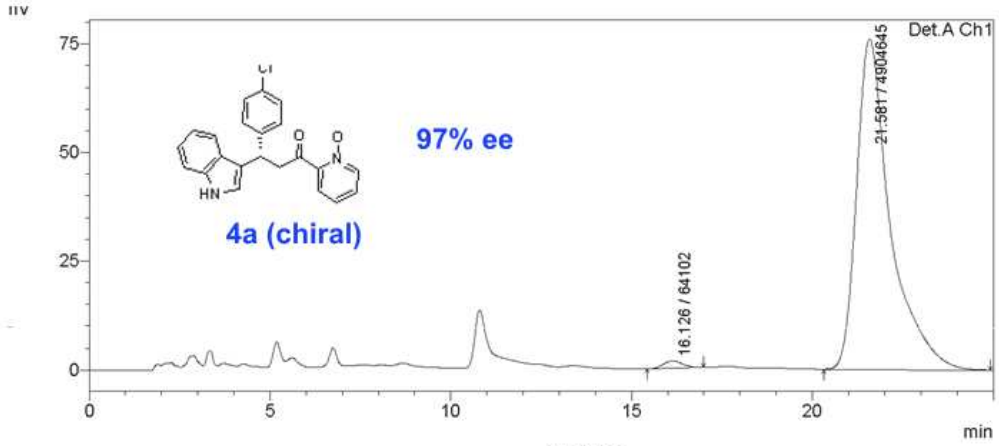
Hplc chromatogram of 4a (racemic)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.512	5596799	90288	48.838	52.825
2	20.313	5863225	80630	51.162	47.175
Total		11460025	170918	100.000	100.000

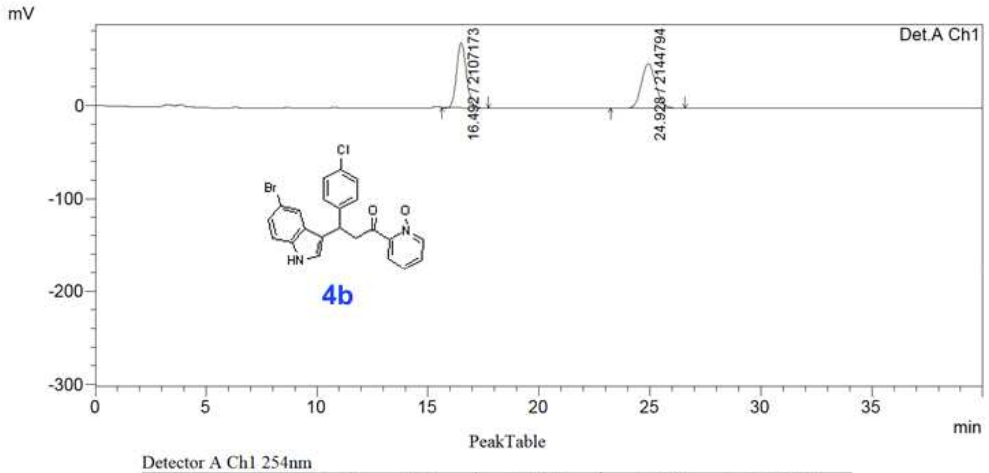
Hplc chromatogram of 4a (chiral)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.126	64102	1711	1.290	2.200
2	21.581	4904645	76036	98.710	97.800
Total		4968747	77747	100.000	100.000

Hplc chromatogram of 4b (racemic)

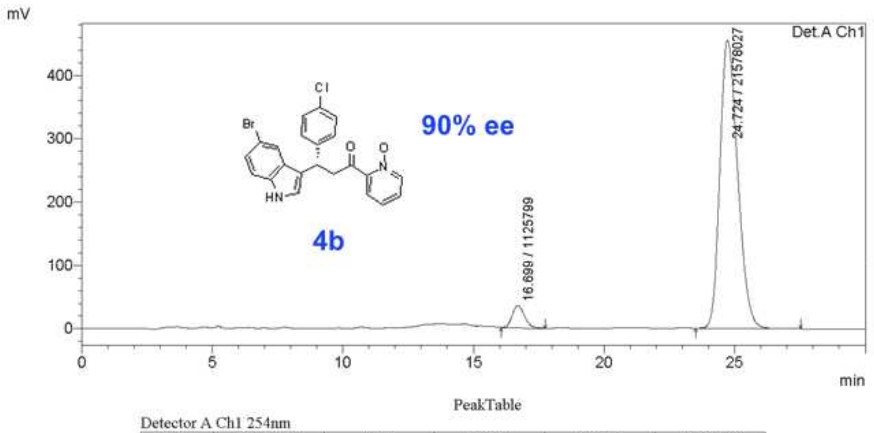


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.492	2107173	69791	49.558	59.431
2	24.928	2144794	47641	50.442	40.569
Total		4251967	117432	100.000	100.000

Hplc chromatogram of 4b (chiral)

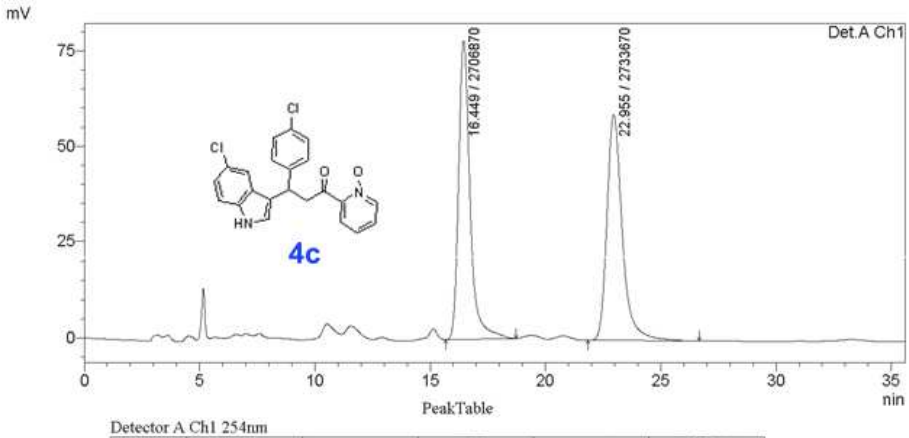


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.699	1125799	35134	4.959	7.163
2	24.724	21578027	455375	95.041	92.837
Total		22703826	490510	100.000	100.000

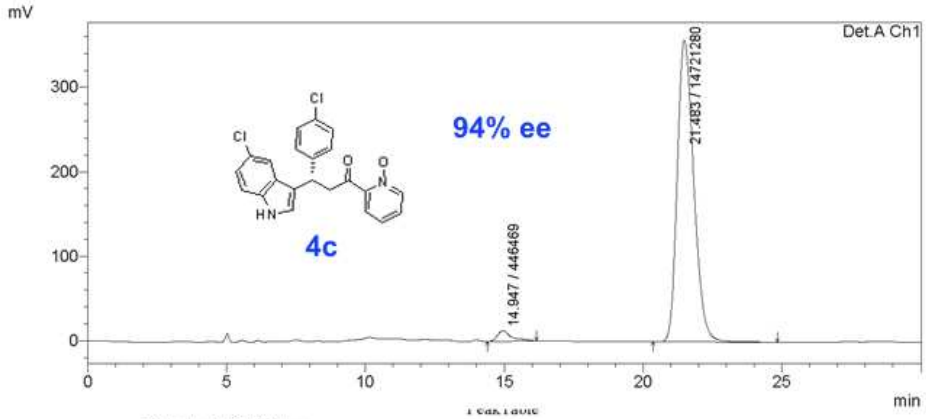
Hplc chromatogram of 4c (racemic)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.449	2706870	78046	49.754	56.968
2	22.955	2733670	58954	50.246	43.032
Total		5440541	137000	100.000	100.000

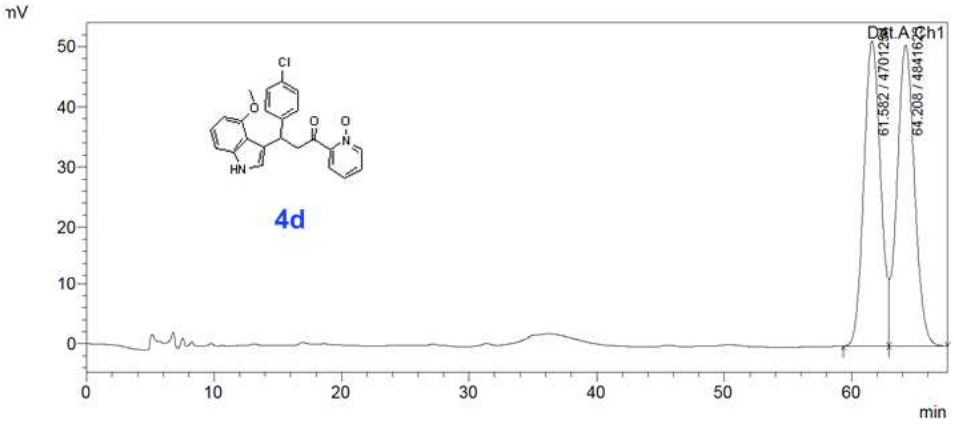
Hplc chromatogram of 4c (chiral)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	14.947	446469	12494	2.944	3.377
2	21.483	14721280	357492	97.056	96.623
Total		15167749	369986	100.000	100.000

Hplc chromatogram of 4d (racemic)

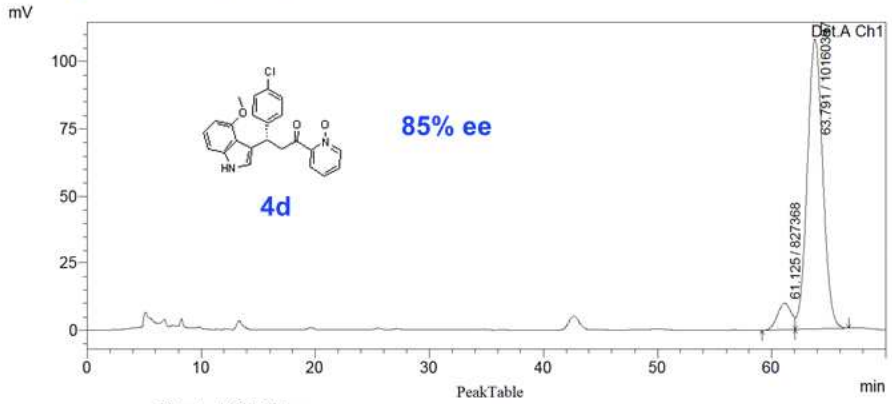


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	61.582	4701254	51351	49.265	50.363
2	64.208	4841623	50610	50.735	49.637
Total		9542877	101961	100.000	100.000

Hplc chromatogram of 4d (chiral)

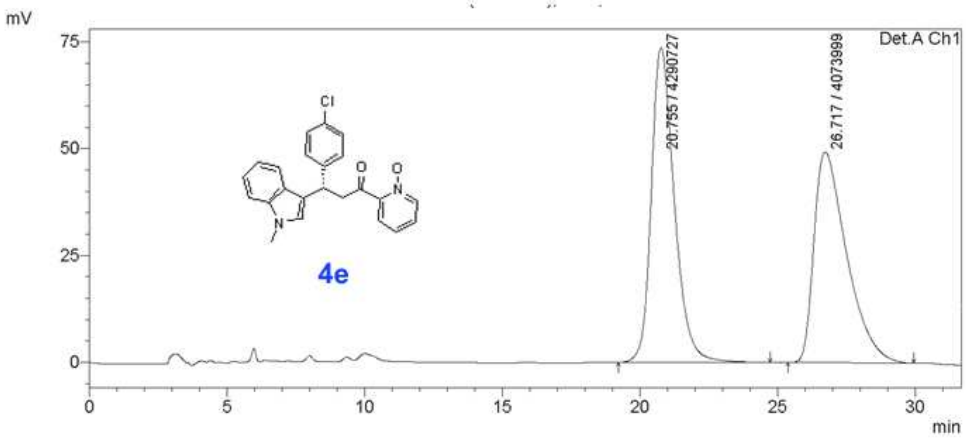


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	61.125	827368	9773	7.530	8.307
2	63.791	10160397	107870	92.470	91.693
Total		10987765	117643	100.000	100.000

Hplc chromatogram of 4e (racemic)

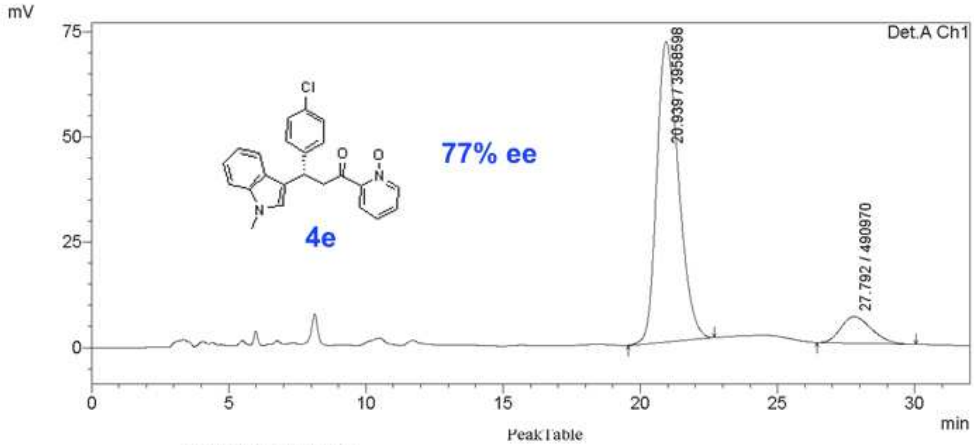


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.755	4290727	73717	51.295	59.894
2	26.717	4073999	49363	48.705	40.106
Total		8364727	123080	100.000	100.000

Hplc chromatogram of 4e (chiral)

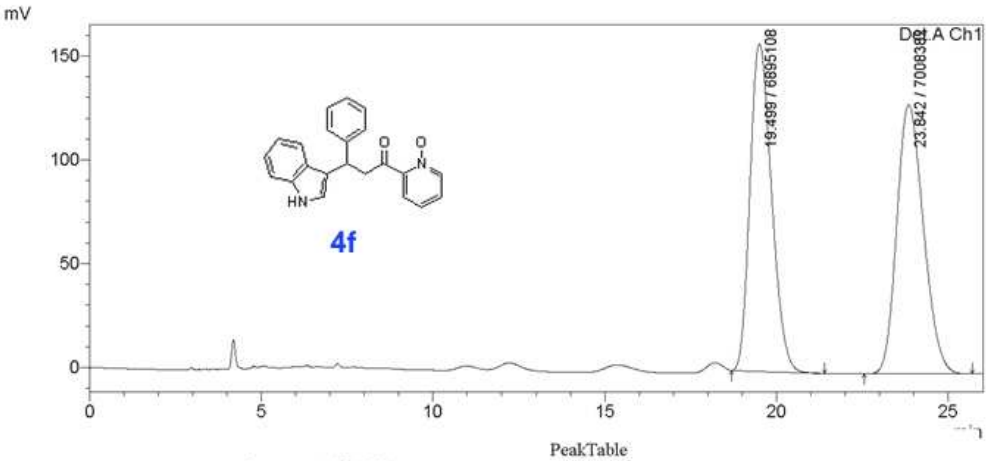


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.939	3958598	71407	88.966	91.905
2	27.792	490970	6290	11.034	8.095
Total		4449569	77696	100.000	100.000

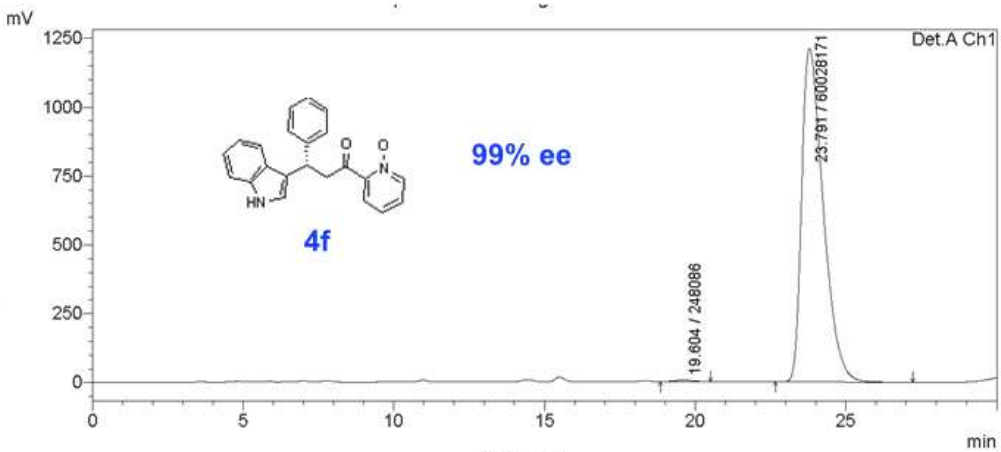
Hplc chromatogram of 4f (racemic)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %
1	19.499	6895108	157968	49.593
2	23.842	7008382	129704	50.407
Total		13903489	287672	100.000

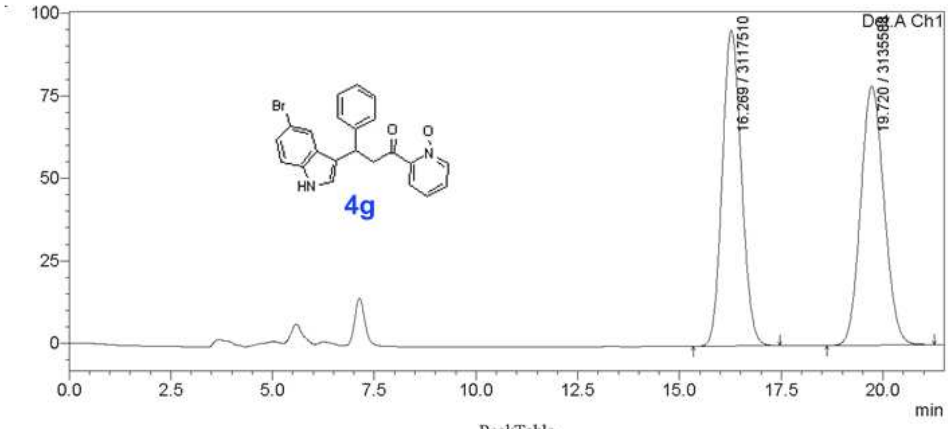
Hplc chromatogram of 4f (chiral)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	19.604	248086	5401	0.412	0.444
2	23.791	60028171	1209761	99.588	99.556
Total		60276257	1215163	100.000	100.000

Hplc chromatogram of 4g (racemic)

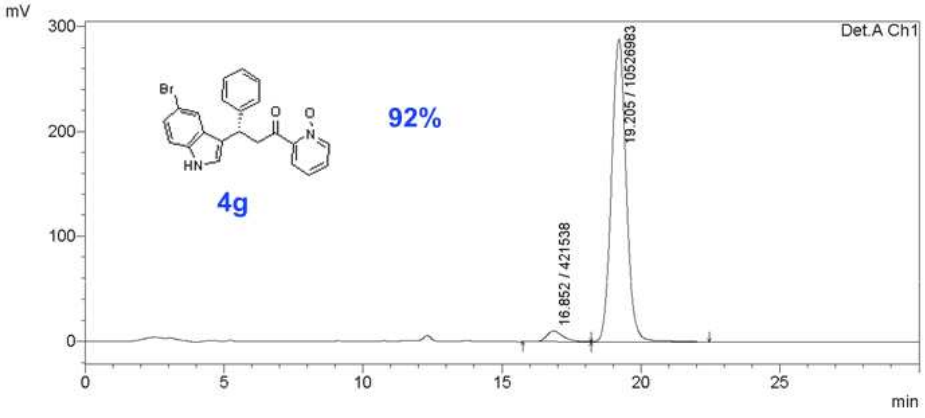


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.269	3117510	95692	49.855	54.946
2	19.720	3135588	78466	50.145	45.054
Total		6253098	174158	100.000	100.000

Hplc chromatogram of 4g (chiral)

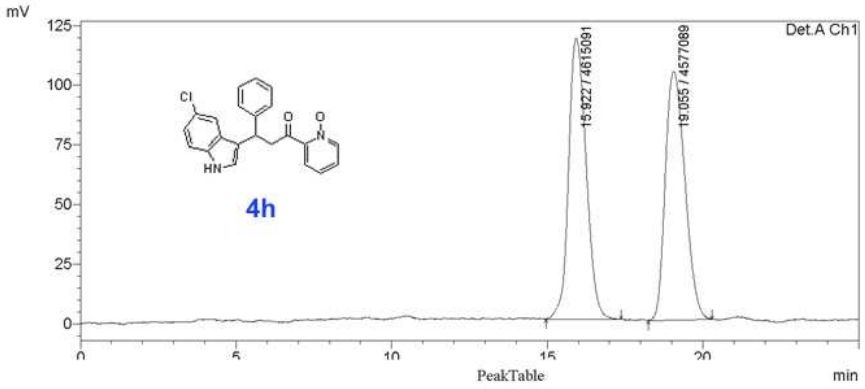


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.852	421538	10276	3.850	3.441
2	19.205	10526983	288328	96.150	96.559
Total		10948521	298604	100.000	100.000

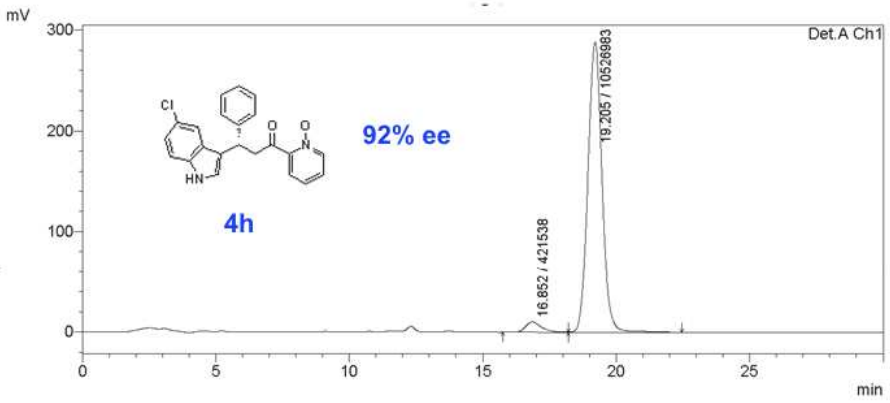
Hplc chromatogram of 4h (racemic)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.922	4615091	118147	50.207	53.118
2	19.055	4577089	104278	49.793	46.882
Total		9192180	222425	100.000	100.000

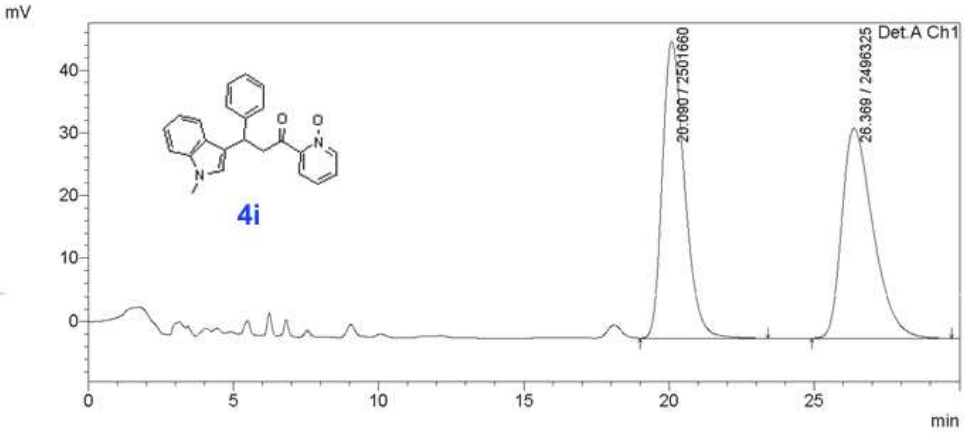
Hplc chromatogram of 4h (chiral)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.852	421538	10276	3.850	3.441
2	19.205	10526983	288328	96.150	96.559
Total		10948521	298604	100.000	100.000

Hplc chromatogram of 4i (racemic)

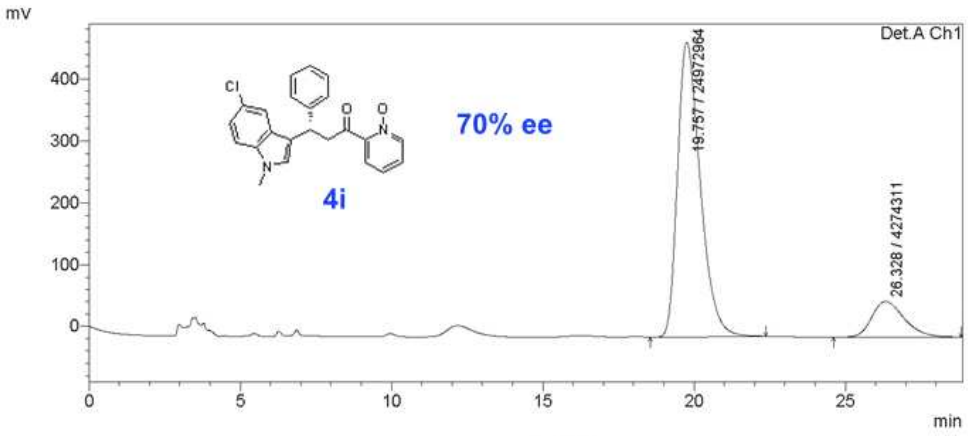


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.090	2501660	47262	50.053	58.597
2	26.369	2496325	33394	49.947	41.403
Total		4997985	80656	100.000	100.000

Hplc chromatogram of 4i (chiral)

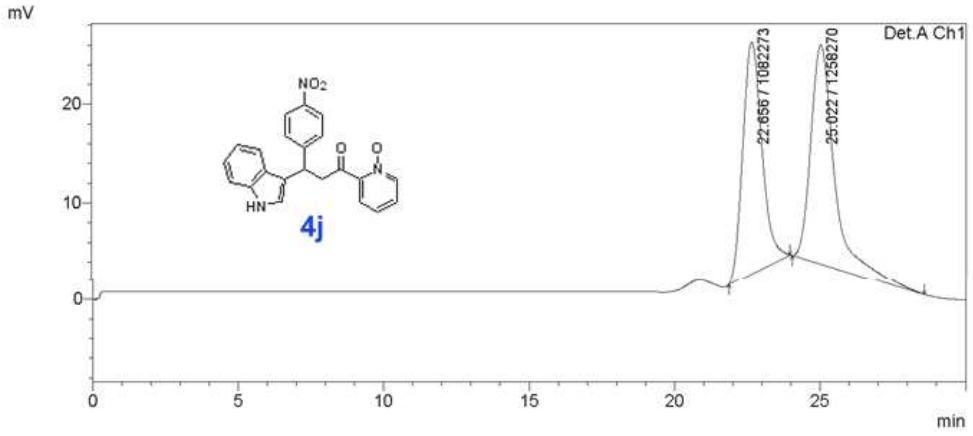


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	19.757	24972964	476798	85.386	89.229
2	26.328	4274311	57552	14.614	10.771
Total		29247275	534350	100.000	100.000

Hplc chromatogram of 4j (racemic)

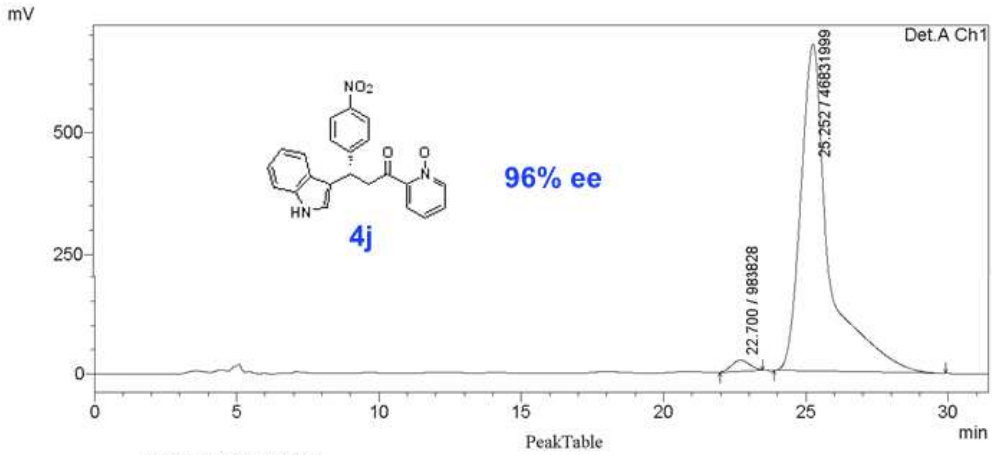


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	22.656	1082273	23566	46.240	51.380
2	25.022	1258270	22301	53.760	48.620
Total		2340543	45867	100.000	100.000

Hplc chromatogram of 4j (chiral)

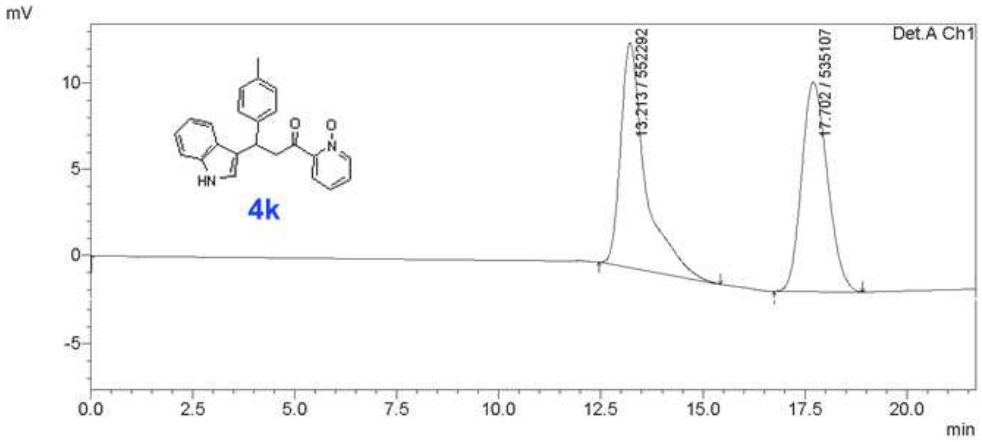


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	22.700	983828	22758	2.058	3.255
2	25.252	46831999	676434	97.942	96.745
Total		47815827	699192	100.000	100.000

Hplc chromatogram of 4k (racemic)

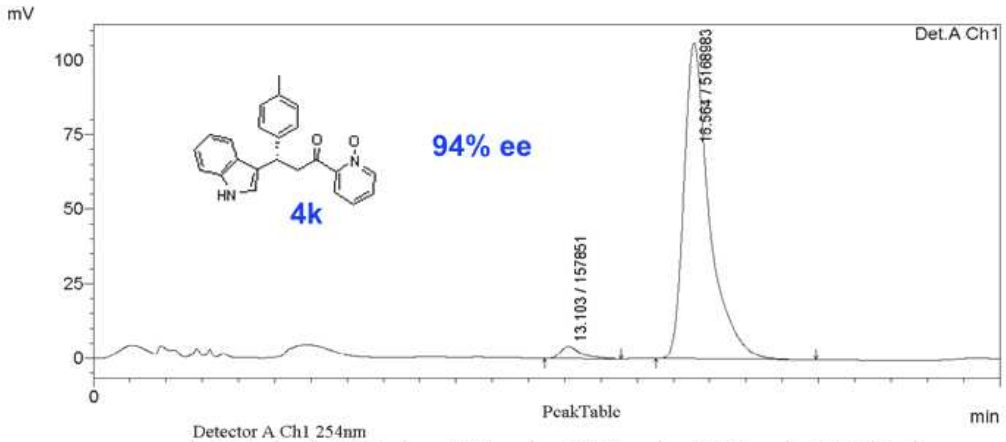


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.213	552292	13074	50.790	51.804
2	17.702	535107	12163	49.210	48.196
Total		1087399	25237	100.000	100.000

Hplc chromatogram of 4k (chiral)

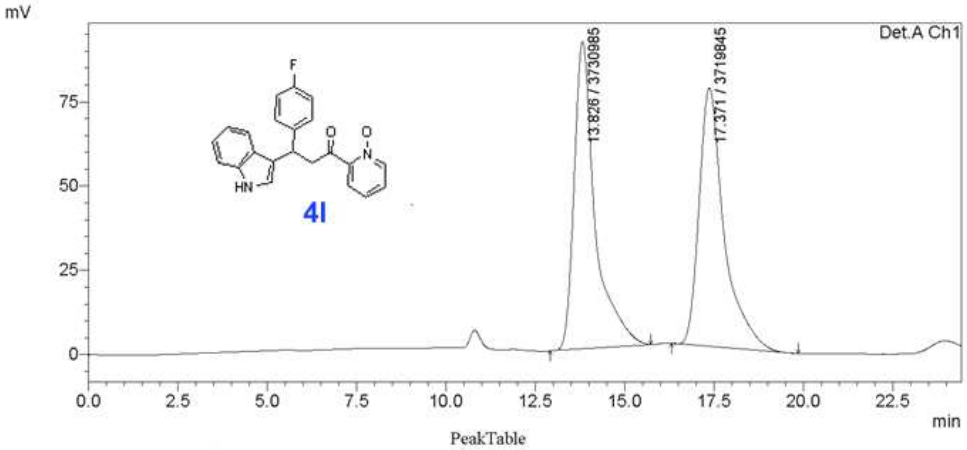


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.103	157851	4060	2.963	3.687
2	16.564	5168983	106063	97.037	96.313
Total		5326835	110124	100.000	100.000

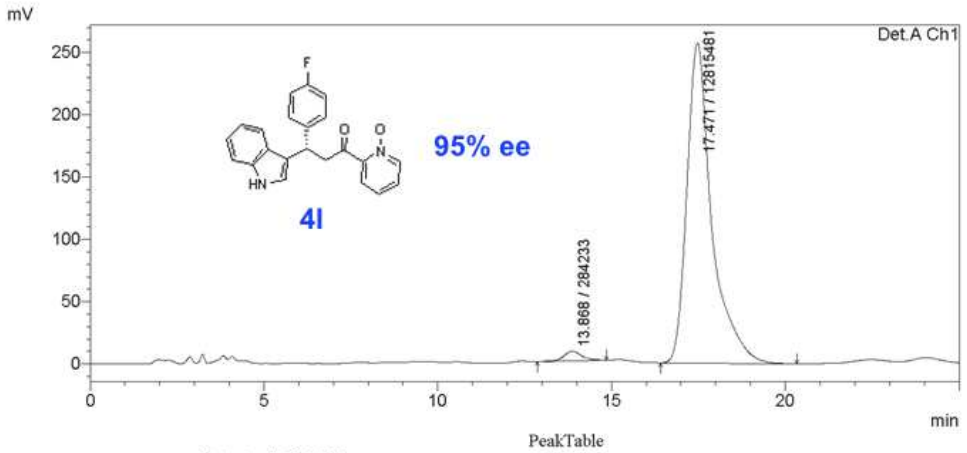
Hplc chromatogram of 4l (racemic)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.826	3730985	91243	50.075	54.343
2	17.371	3719845	76658	49.925	45.657
Total		7450830	167901	100.000	100.000

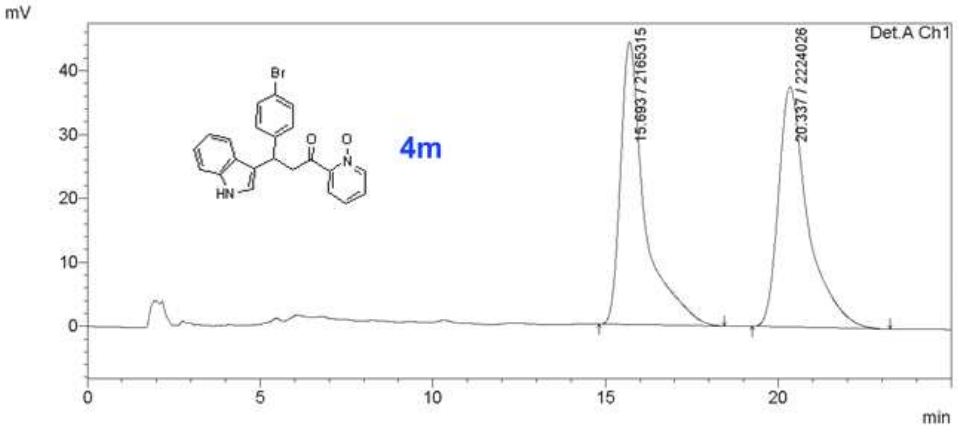
Hplc chromatogram of 4l (chiral)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.868	284233	7733	2.170	2.923
2	17.471	12815481	256852	97.830	97.077
Total		13099715	264586	100.000	100.000

Hplc chromatogram of 4m (racemic)

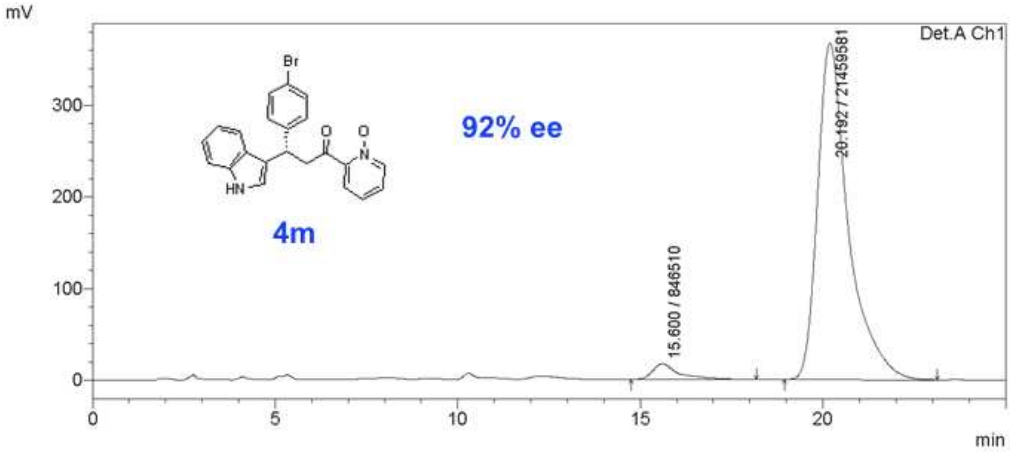


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.693	2165315	44293	49.331	54.108
2	20.337	2224026	37568	50.669	45.892
Total		4389341	81861	100.000	100.000

Hplc chromatogram of 4m (chiral)

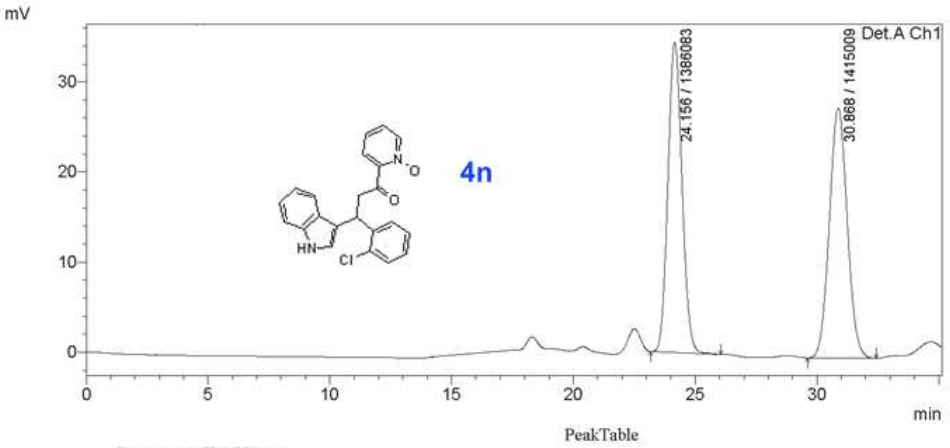


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.600	846510	17055	3.795	4.436
2	20.192	21459581	367406	96.205	95.564
Total		22306091	384461	100.000	100.000

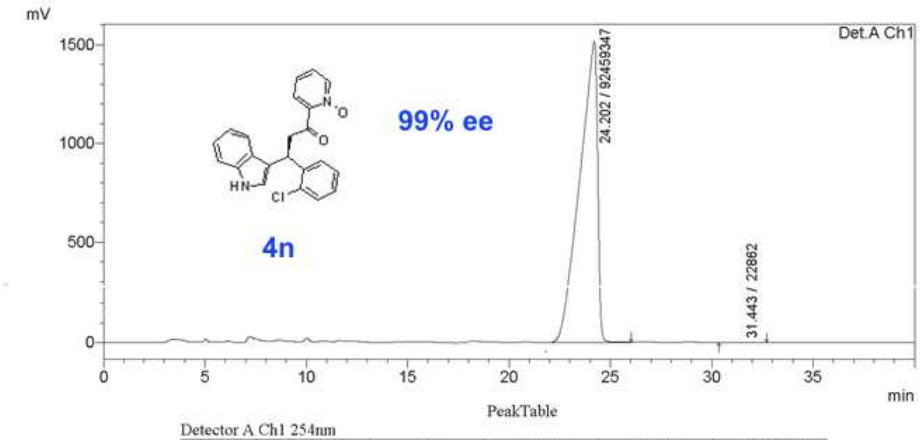
Hplc chromatogra of 4n (racemic)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	24.156	1386083	34468	49.484	55.420
2	30.868	1415009	27726	50.516	44.580
Total		2801092	62194	100.000	100.000

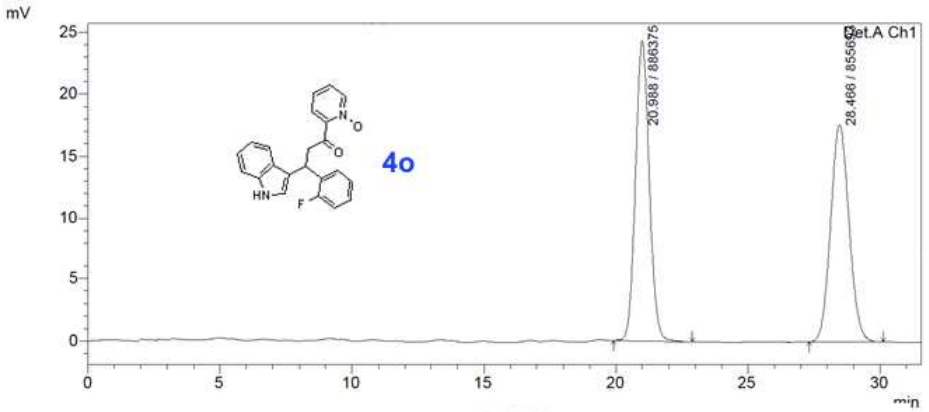
Hplc chromatogram of 4n (chiral)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	24.202	92459347	1515781	99.975	99.980
2	31.443	22862	307	0.025	0.020
Total		92482210	1516088	100.000	100.000

Hplc chromatogram of 4o (racemic)

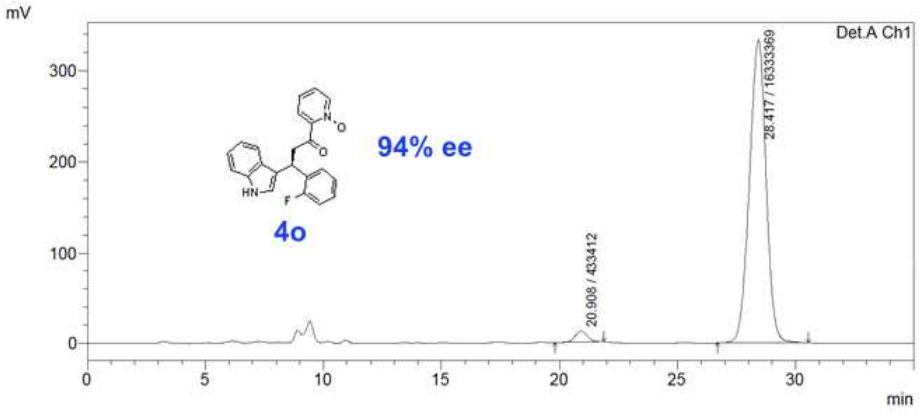


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.988	886375	24299	50.881	57.944

Hplc chromatogram of 4o (chiral)

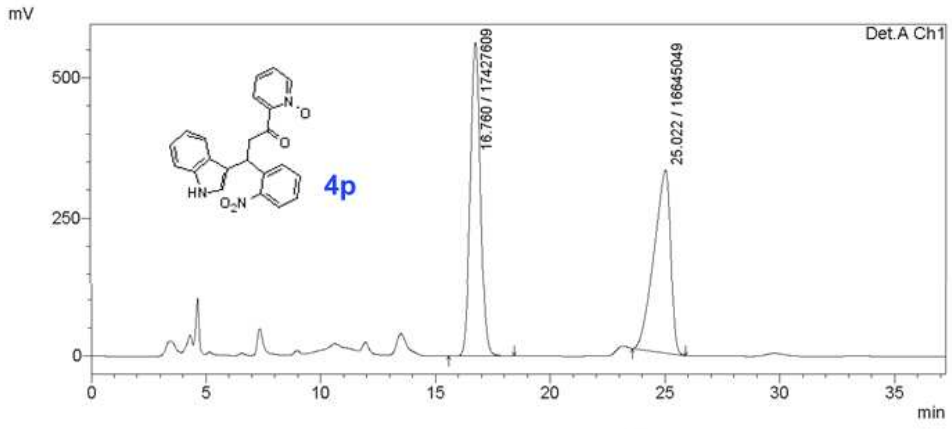


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.908	433412	12113	2.585	3.512
2	28.417	16333369	332766	97.415	96.488
Total		16766781	344879	100.000	100.000

Hplc chromatogram of 4p (racemic)

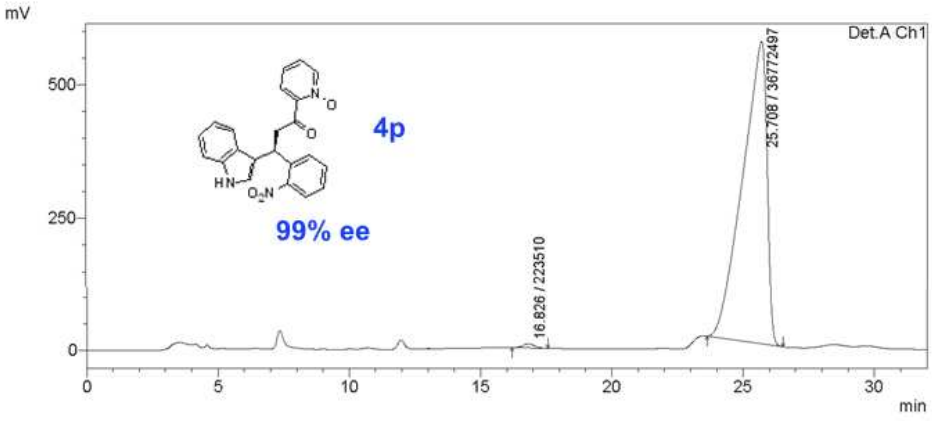


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.760	17427609	563841	51.148	63.064
2	25.022	16645049	330230	48.852	36.936
Total		34072658	894071	100.000	100.000

Hplc chromatogram of 4p (chiral)

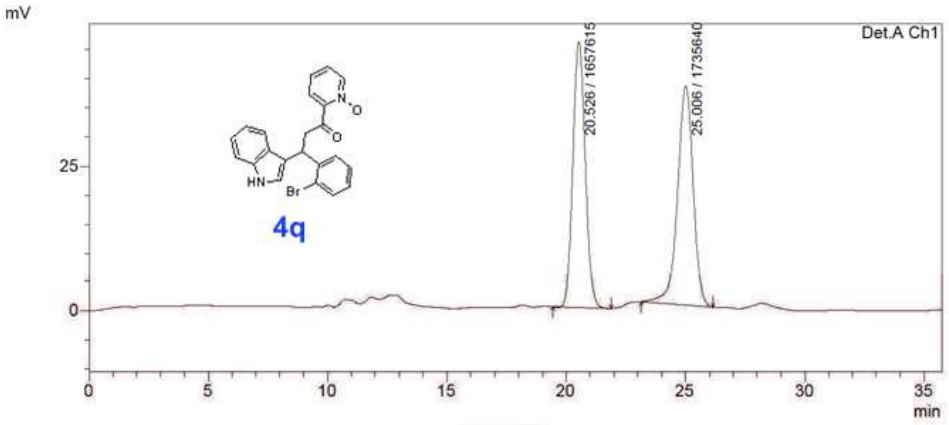


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.826	223510	7386	0.604	1.278
2	25.708	36772497	570453	99.396	98.722
Total		36996007	577839	100.000	100.000

Hplc chromatogram of 4q (racemic)

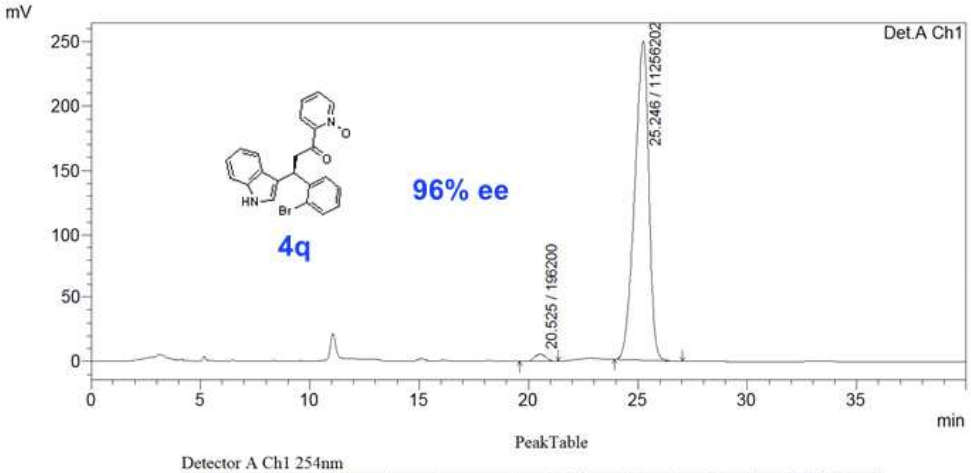


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.526	1657615	45912	48.850	54.783
2	25.006	1735640	37895	51.150	45.217
Total		3393255	83807	100.000	100.000

Hplc chromatogram of 4q (chiral)

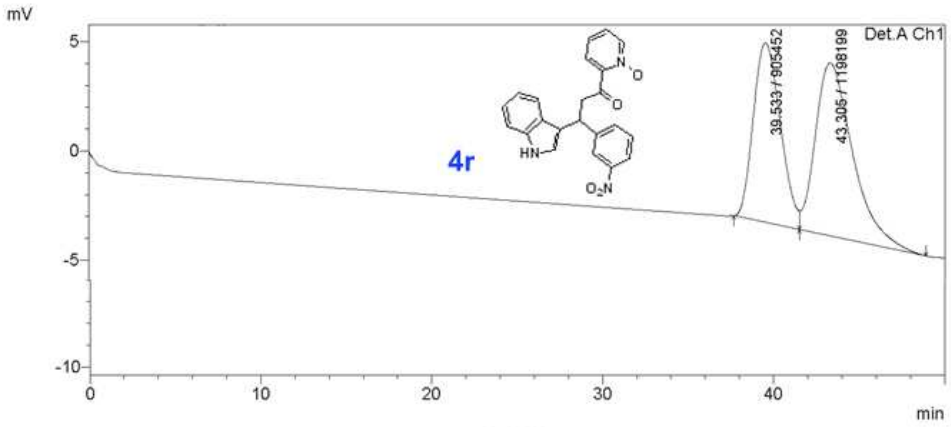


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.525	196200	5721	1.713	2.240
2	25.246	11256202	249622	98.287	97.760
Total		11452402	255342	100.000	100.000

Hplc chromatogram of 4r (racemic)

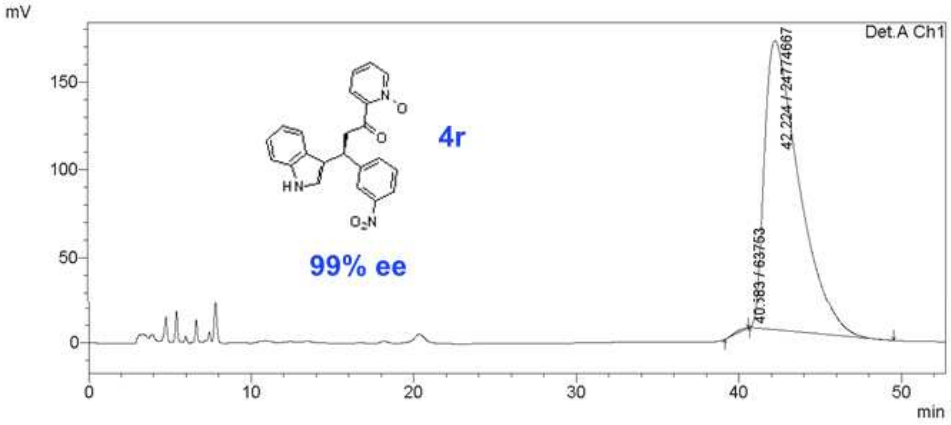


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	39.533	905452	8223	43.042	50.918
2	43.305	1198199	7927	56.958	49.082
Total		2103650	16150	100.000	100.000

Hplc chromatogram of 4r (chiral)

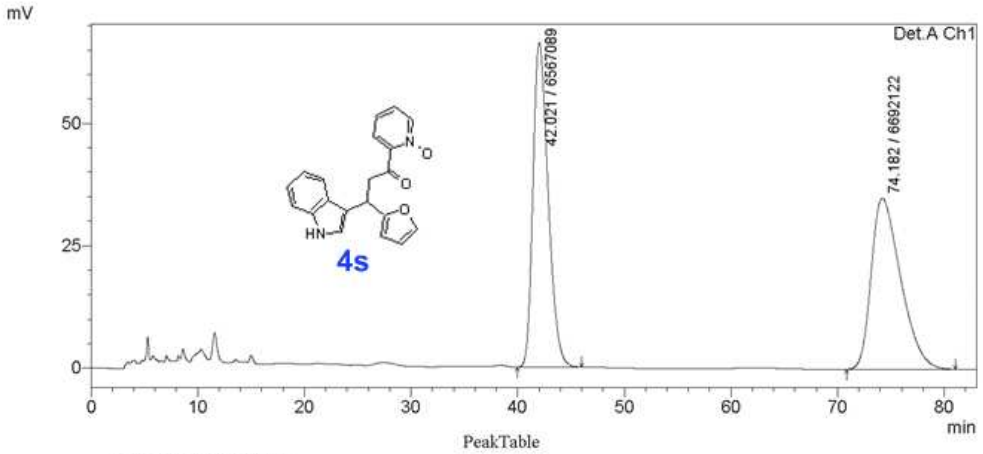


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	40.583	63753	19	0.257	0.011
2	42.224	24774667	165929	99.743	99.989
Total		24838420	165948	100.000	100.000

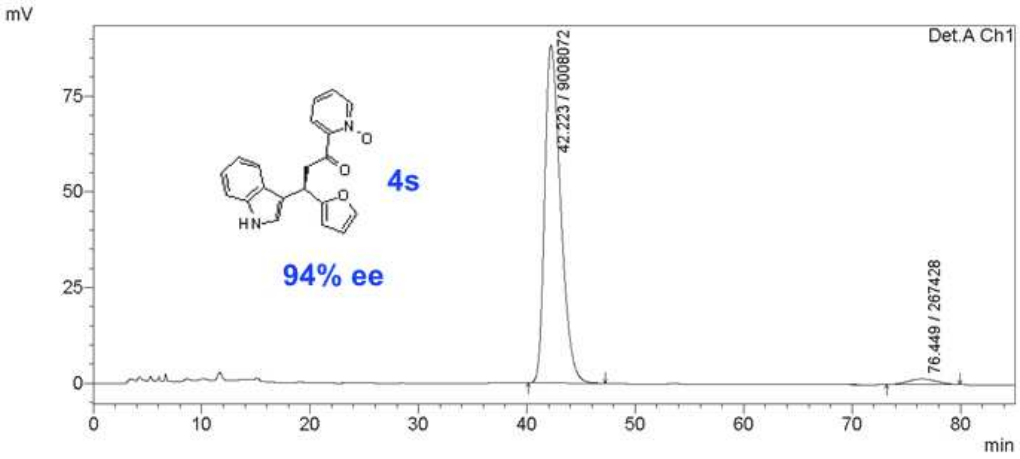
Hplc chromatogram of 4s (racemic)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	42.021	6567089	66380	49.529	65.505
2	74.182	6692122	34956	50.471	34.495
Total		13259212	101336	100.000	100.000

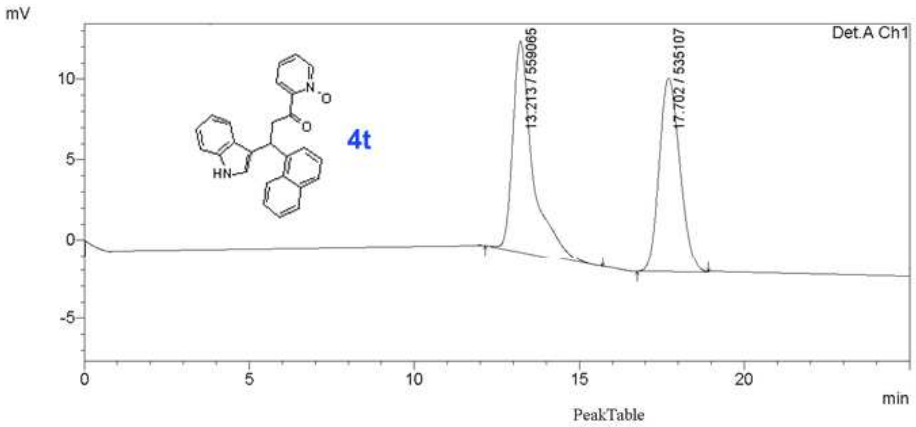
Hplc chromatogram of 4s (chiral)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	42.223	9008072	88385	97.117	98.399
2	76.449	267428	1438	2.883	1.601
Total		9275500	89823	100.000	100.000

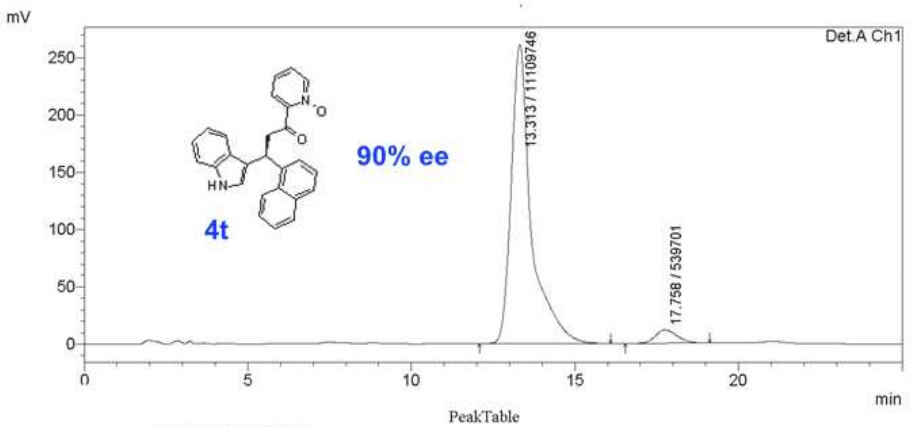
Hplc chromatogram of 4t (racemic)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.213	559065	13131	51.095	51.912
2	17.702	535107	12163	48.905	48.088
Total		1094171	25294	100.000	100.000

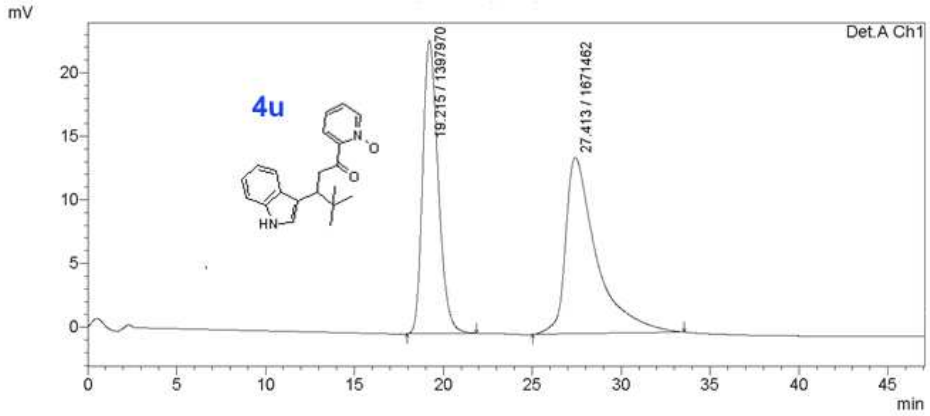
Hplc chromatogram of 4t (chiral)



Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.313	11109746	260857	95.367	95.732
2	17.758	539701	11629	4.633	4.268
Total		11649447	272486	100.000	100.000

Hplc chromatogram of 4u (racemic)

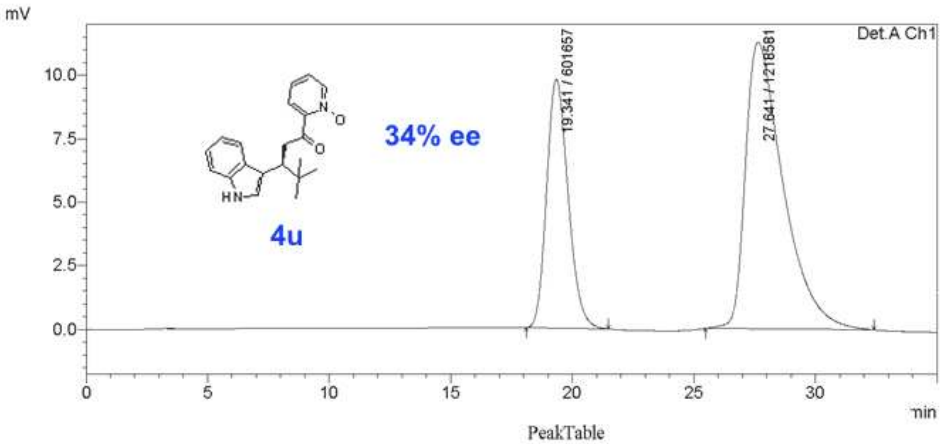


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	19.215	1397970	23063	45.545	62.469
2	27.413	1671462	13856	54.455	37.531
Total		3069432	36919	100.000	100.000

Hplc chromatogram of 4u (chiral)

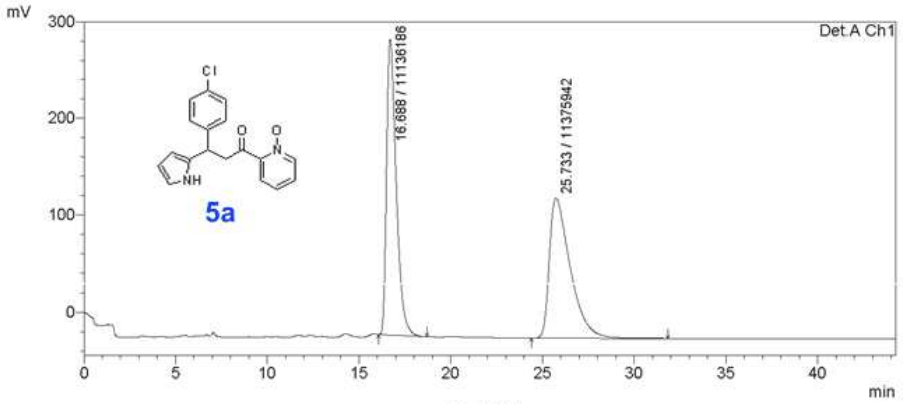


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	19.341	601657	9786	33.054	46.463
2	27.641	1218581	11276	66.946	53.537
Total		1820238	21062	100.000	100.000

Hplc chromatogram of 5a (racemic)

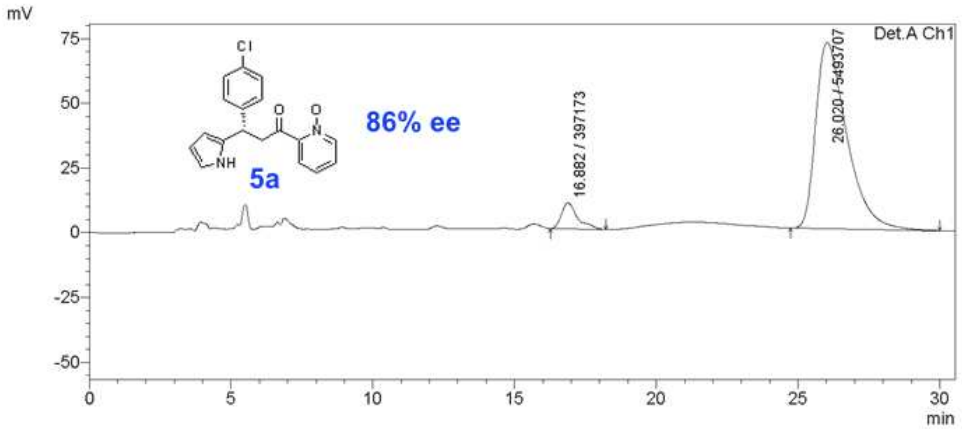


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.688	11136186	305777	49.467	67.941
2	25.733	11375942	144285	50.533	32.059
Total		22512128	450061	100.000	100.000

Hplc chromatogram of 5a (chiral)

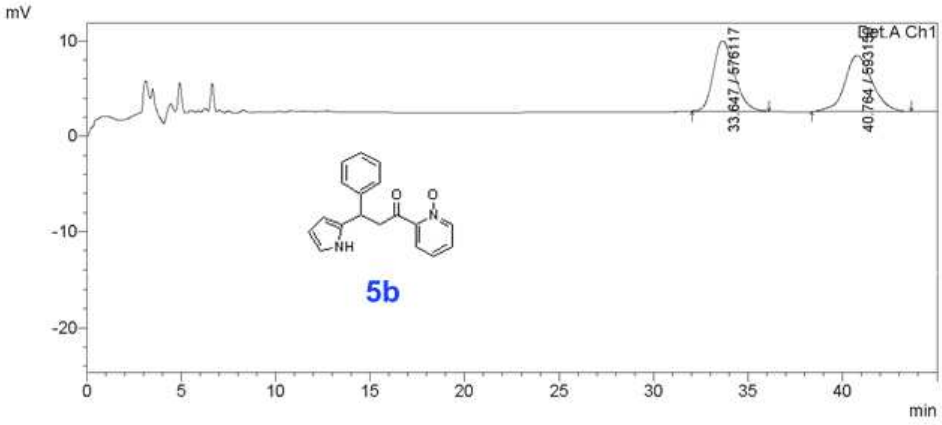


PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.882	397173	10076	6.742	12.257
2	26.020	5493707	72127	93.258	87.743
Total		5890879	82202	100.000	100.000

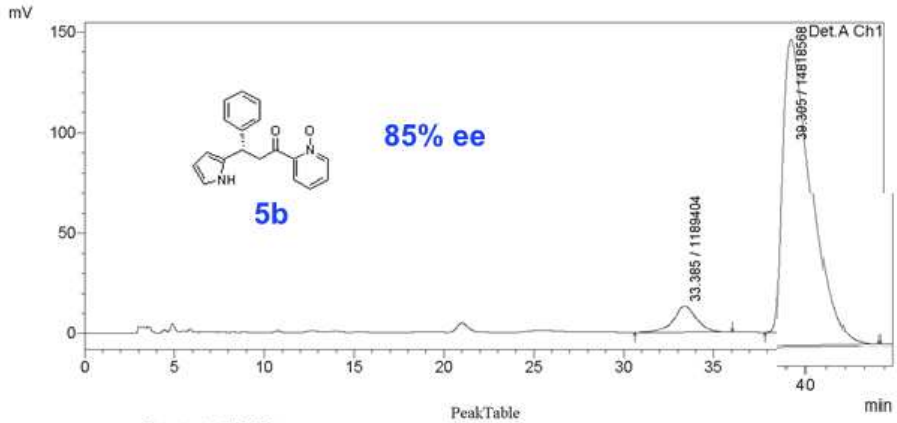
Hplc chromatogram of 5b (racemic)



Detector A Ch1 254nm

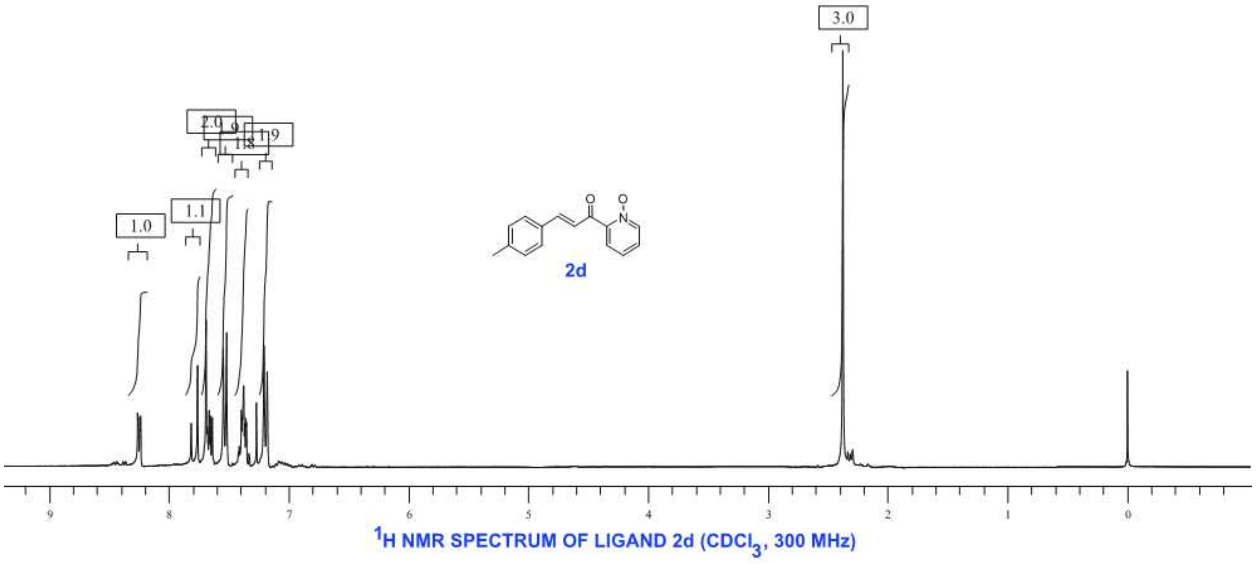
Peak#	Ret. Time	Area	Height	Area %	Height %
1	33.647	576117	7379	49.272	55.536
2	40.764	593150	5908	50.728	44.464
Total		1169267	13286	100.000	100.000

Hplc chromatogram of 5b (chiral)

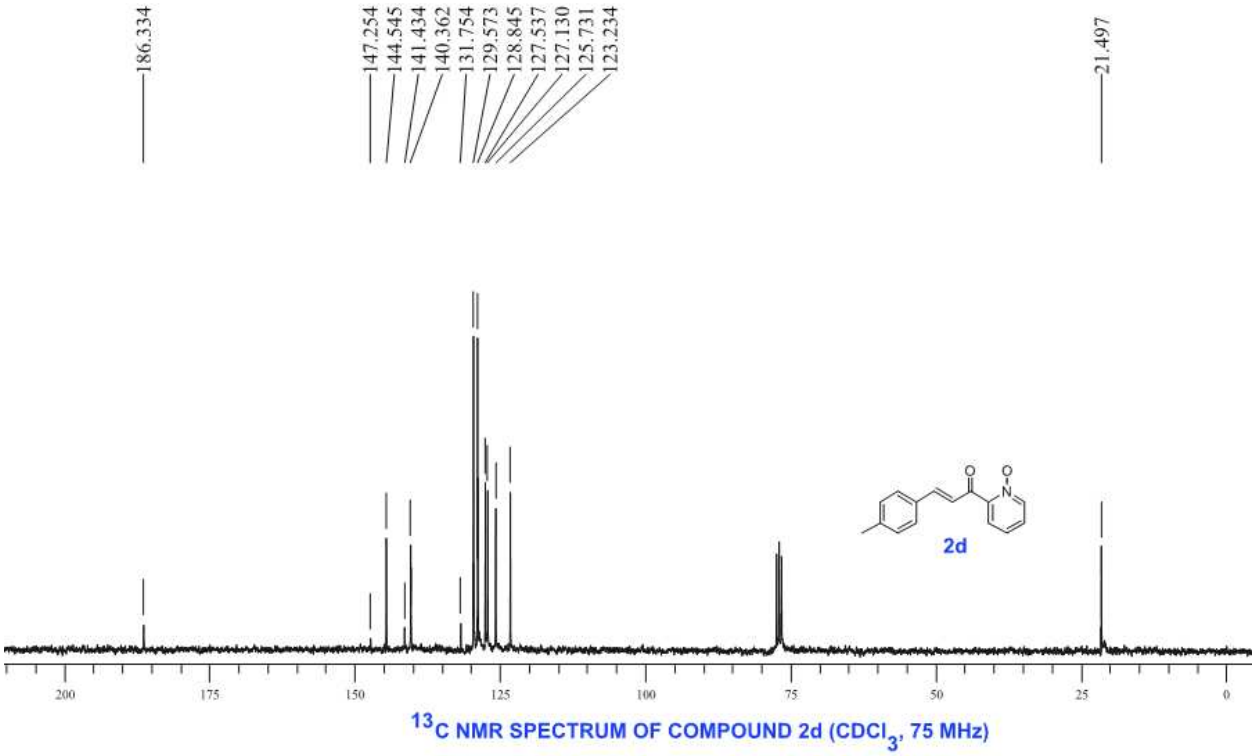


Detector A Ch1 254nm

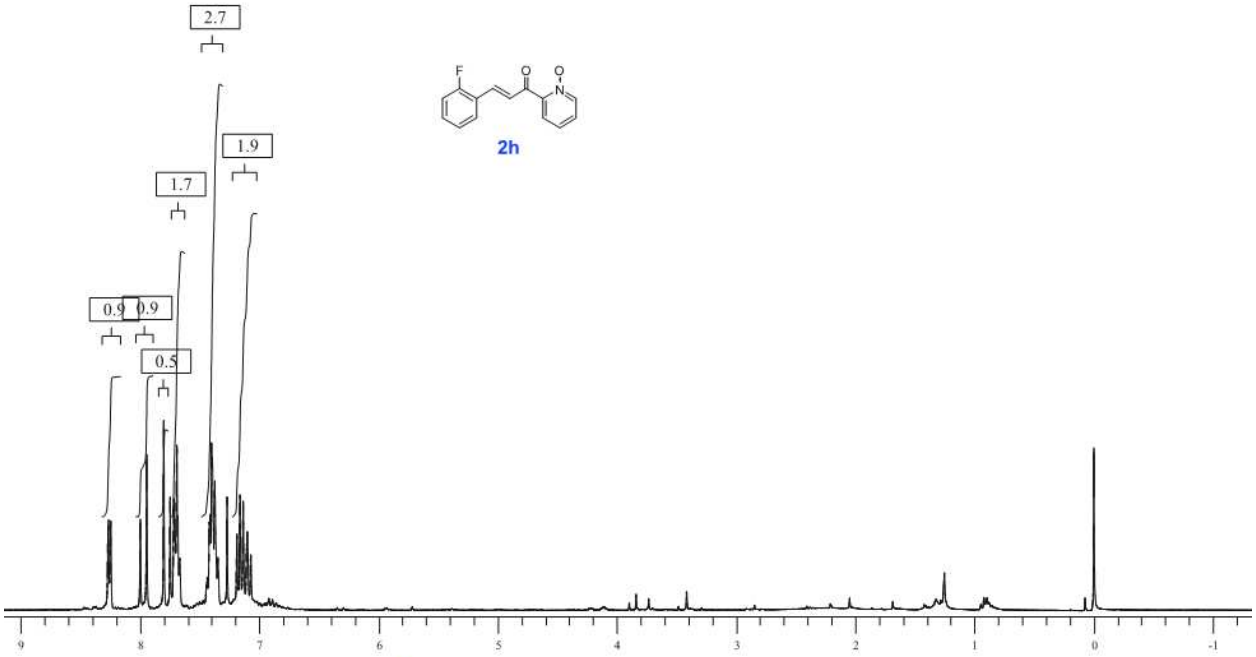
Peak#	Ret. Time	Area	Height	Area %	Height %
1	33.385	1189404	13421	7.430	8.429
2	39.305	14818568	145816	92.570	91.571
Total		16007972	159237	100.000	100.000



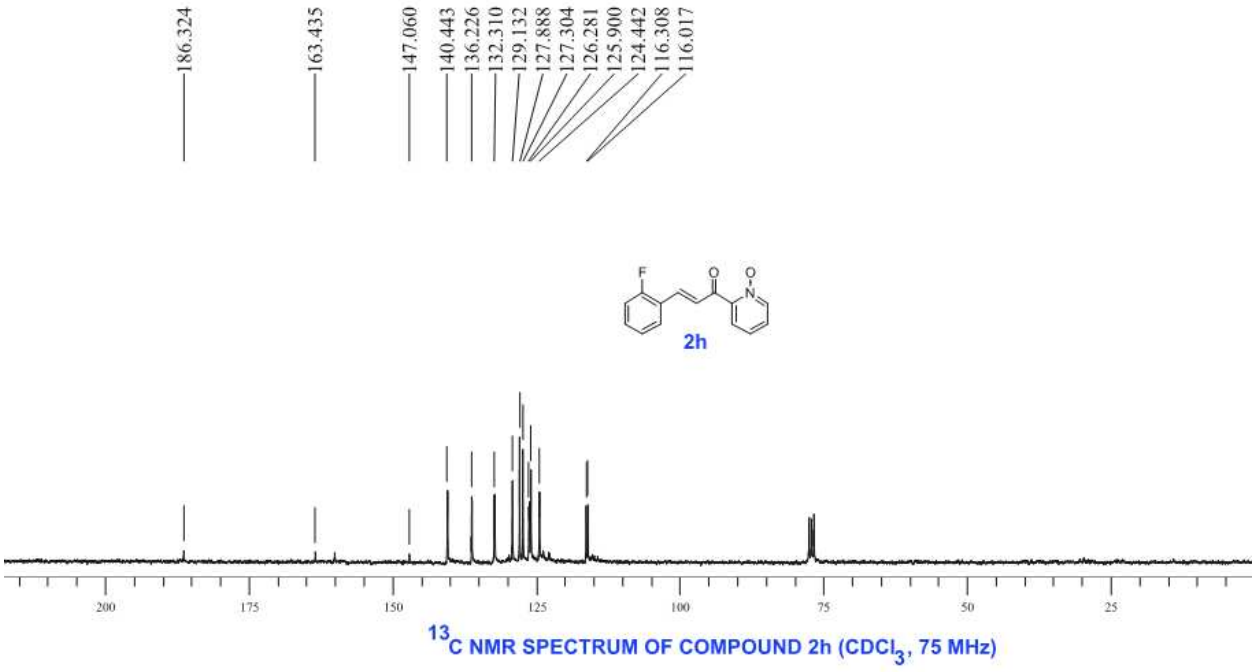
^{1}H NMR SPECTRUM OF LIGAND 2d ($CDCl_3$, 300 MHz)



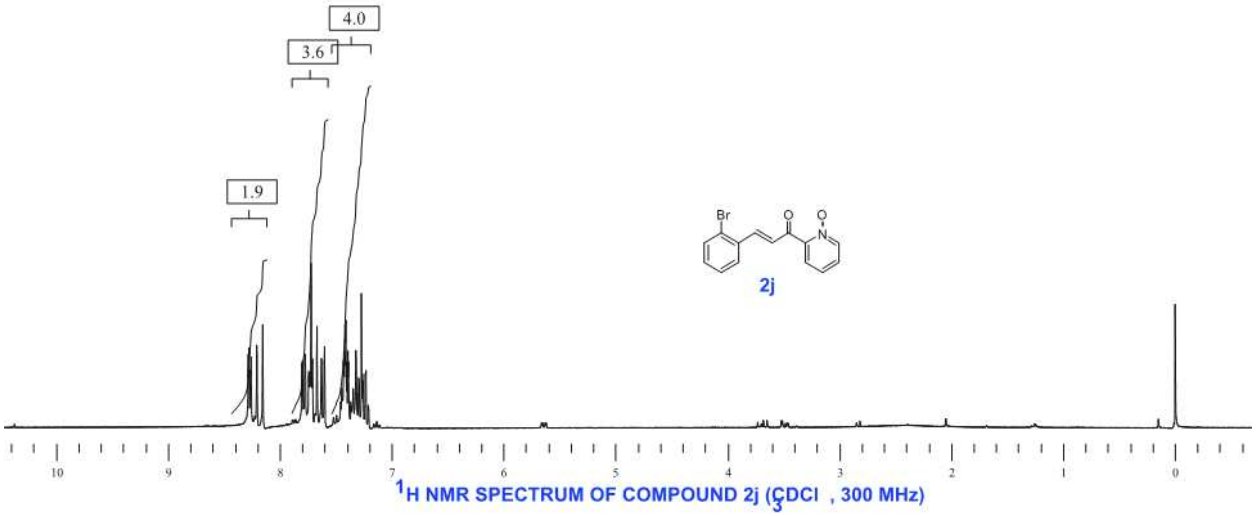
^{13}C NMR SPECTRUM OF COMPOUND 2d ($CDCl_3$, 75 MHz)



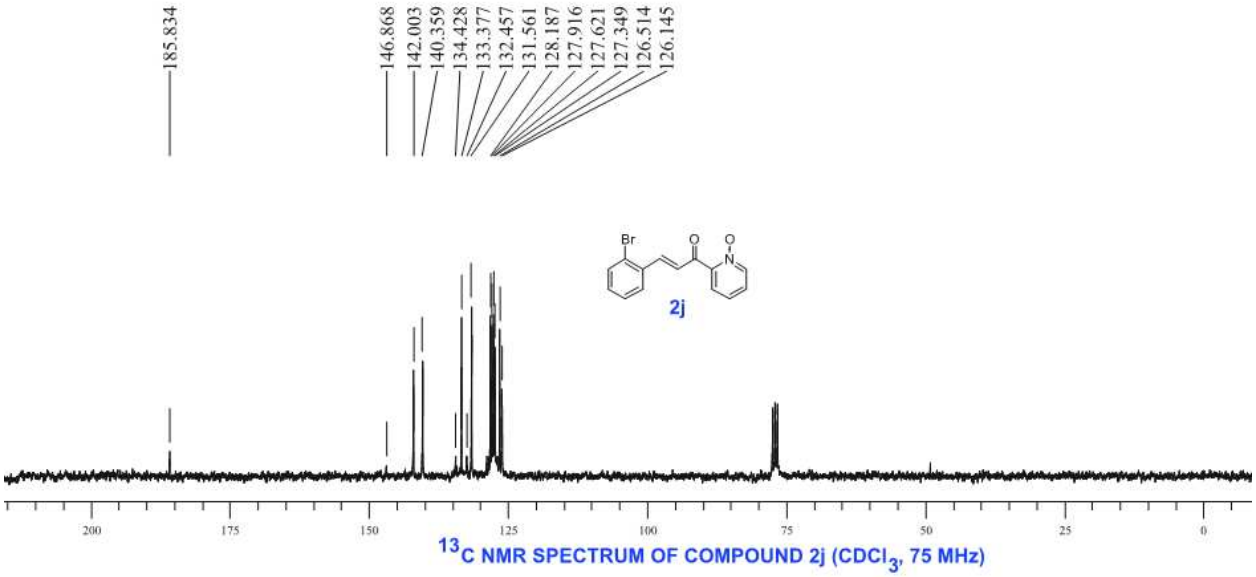
^{1}H NMR SPECTRUM OF LIGAND 2h ($CDCl_3$, 300 MHz)



^{13}C NMR SPECTRUM OF COMPOUND 2h ($CDCl_3$, 75 MHz)



^{1}H NMR SPECTRUM OF COMPOUND 2j ($CDCl_3$, 300 MHz)



^{13}C NMR SPECTRUM OF COMPOUND 2j ($CDCl_3$, 75 MHz)