

Supplementary information for

Mechanochemical Asymmetric Three-Component Mannich

Reaction involving unreactive anilines

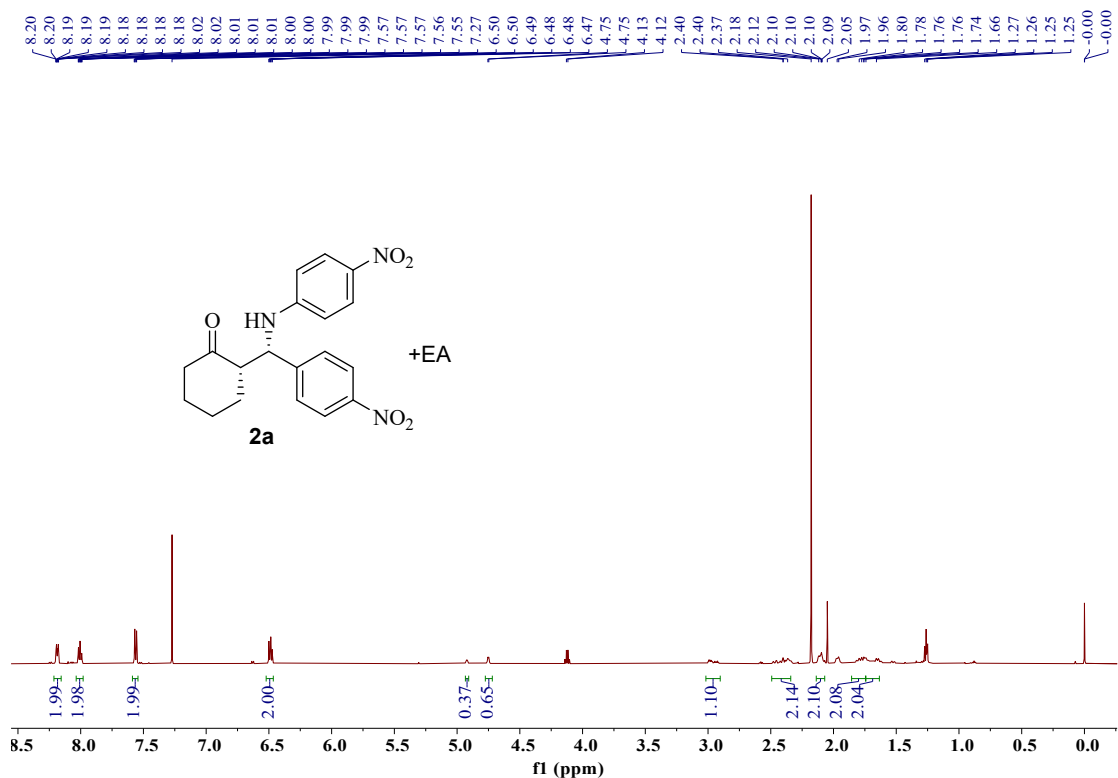
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I. NMR spectra

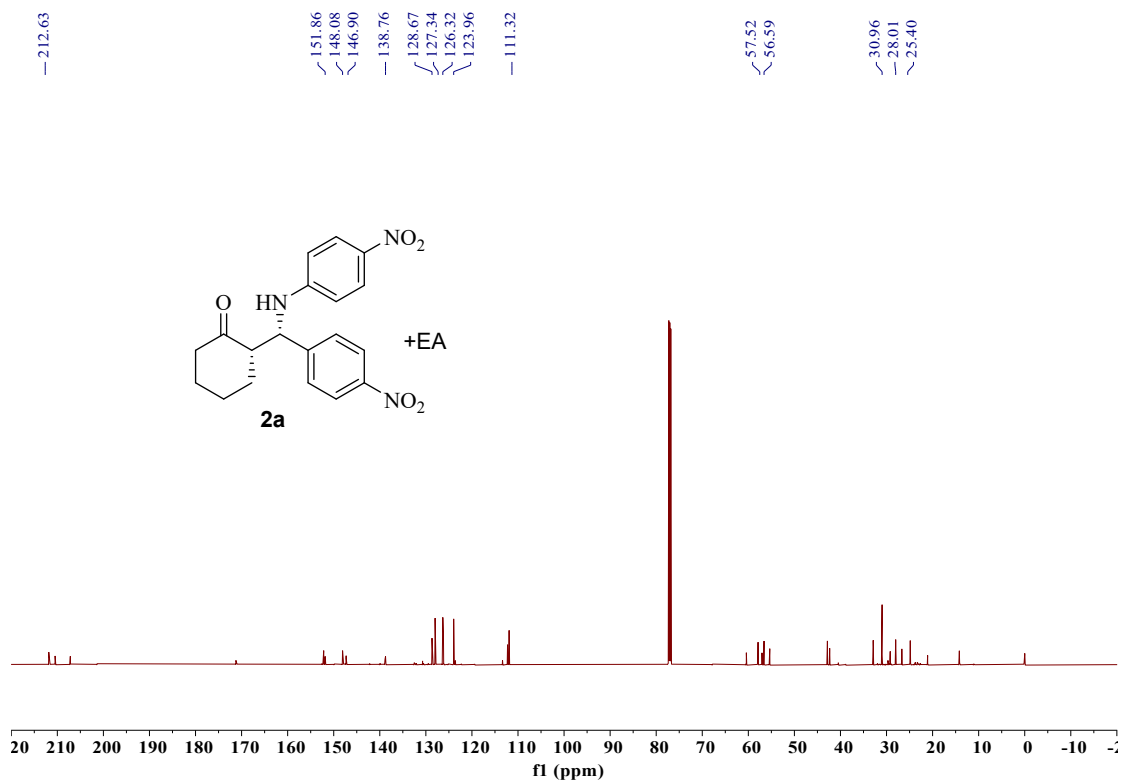
II. HPLC spectra

I NMR spectra

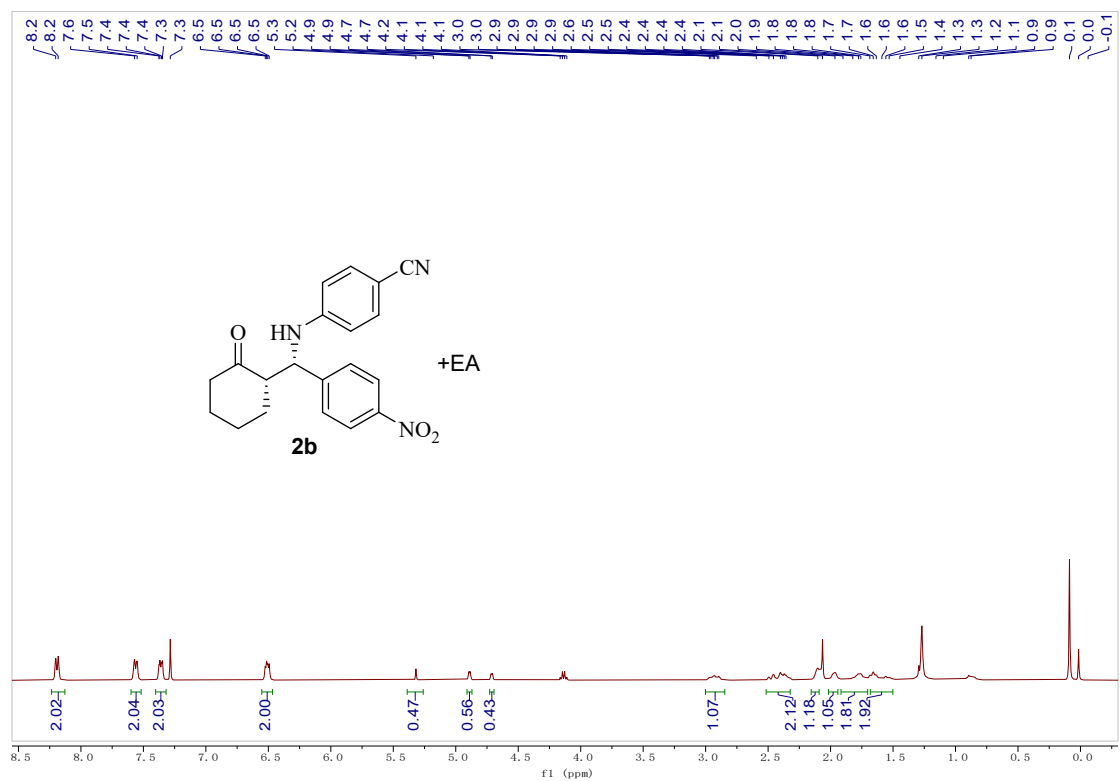
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2a**



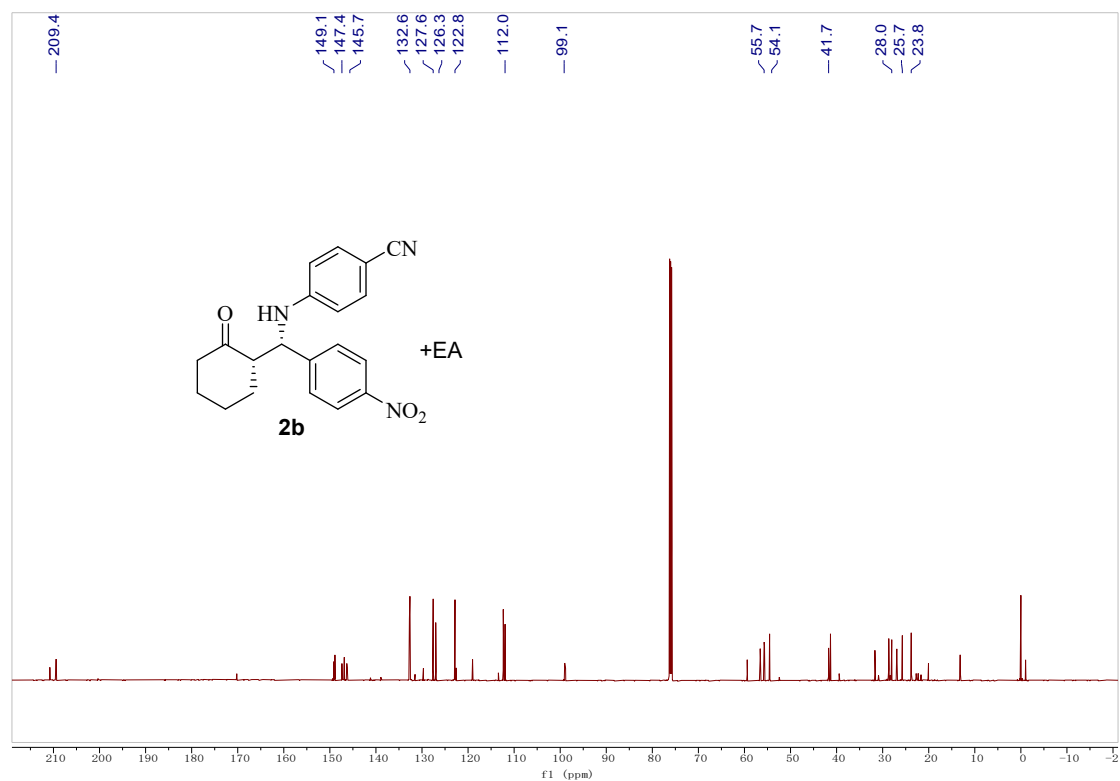
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **2a**



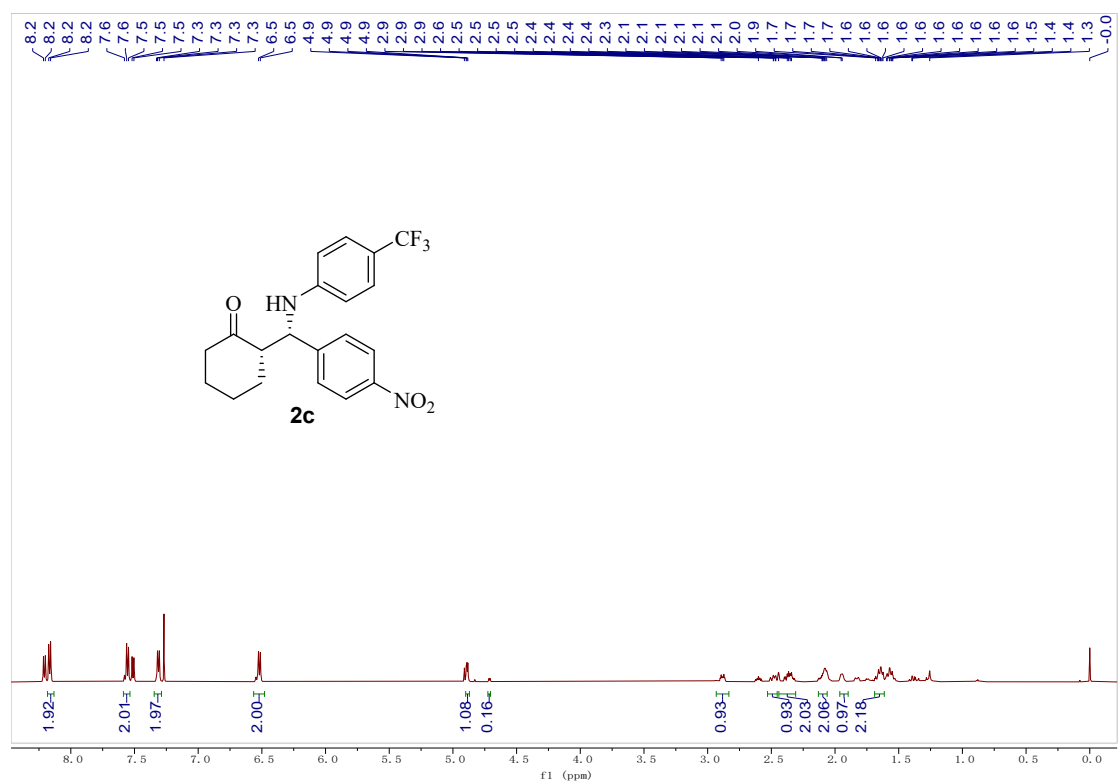
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2b**



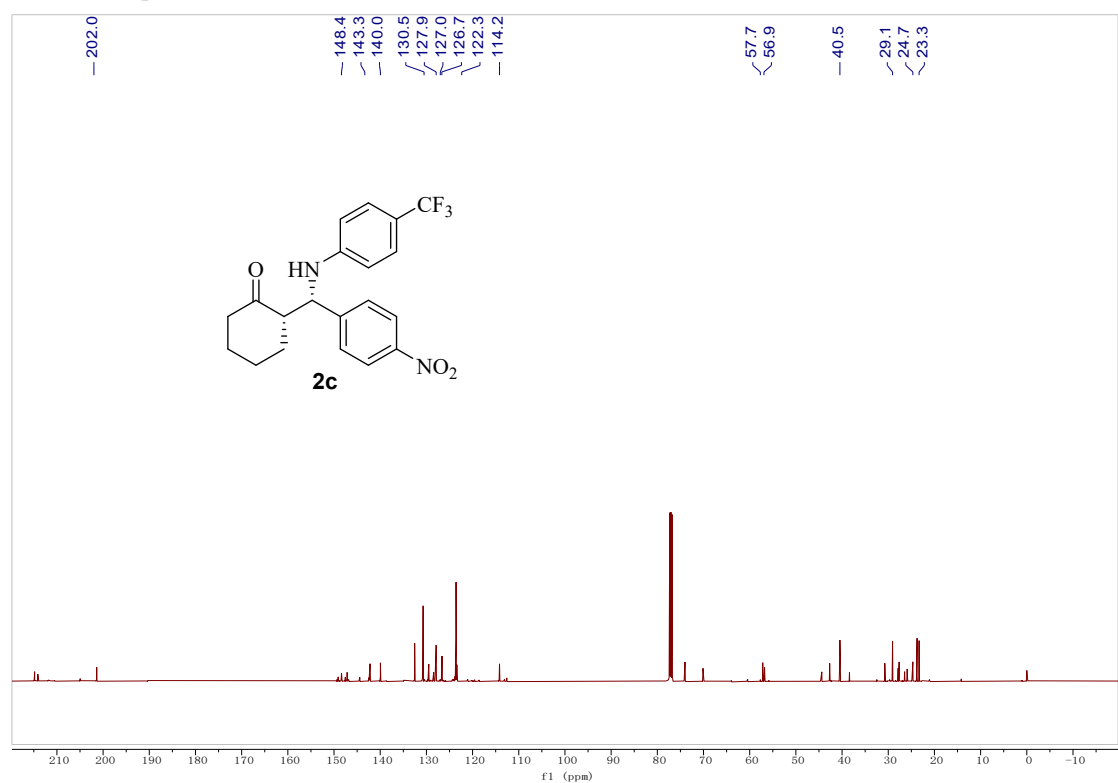
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **2b**



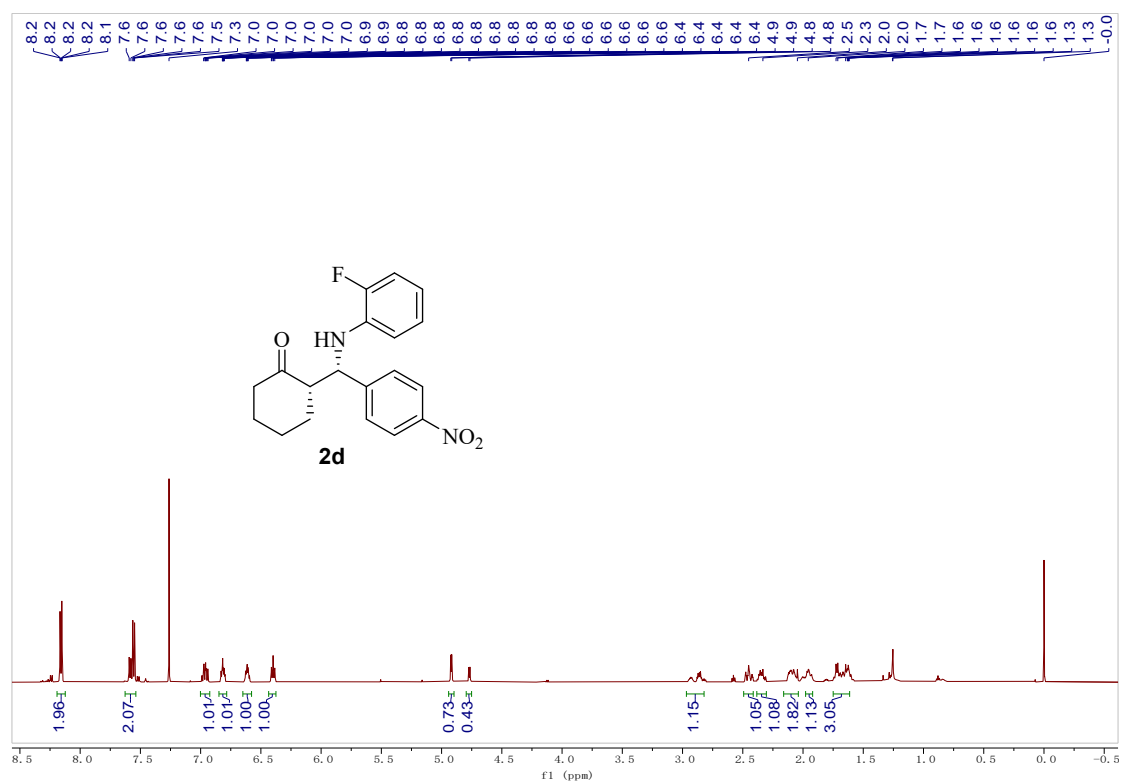
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2c**



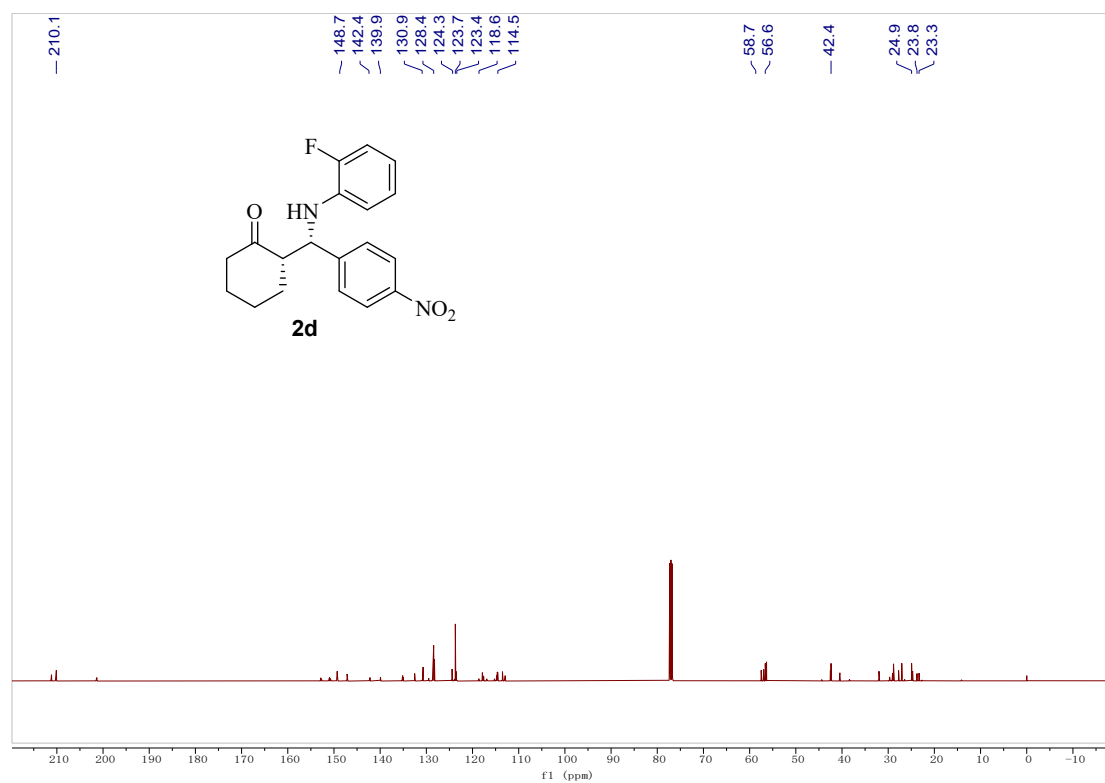
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **2c**



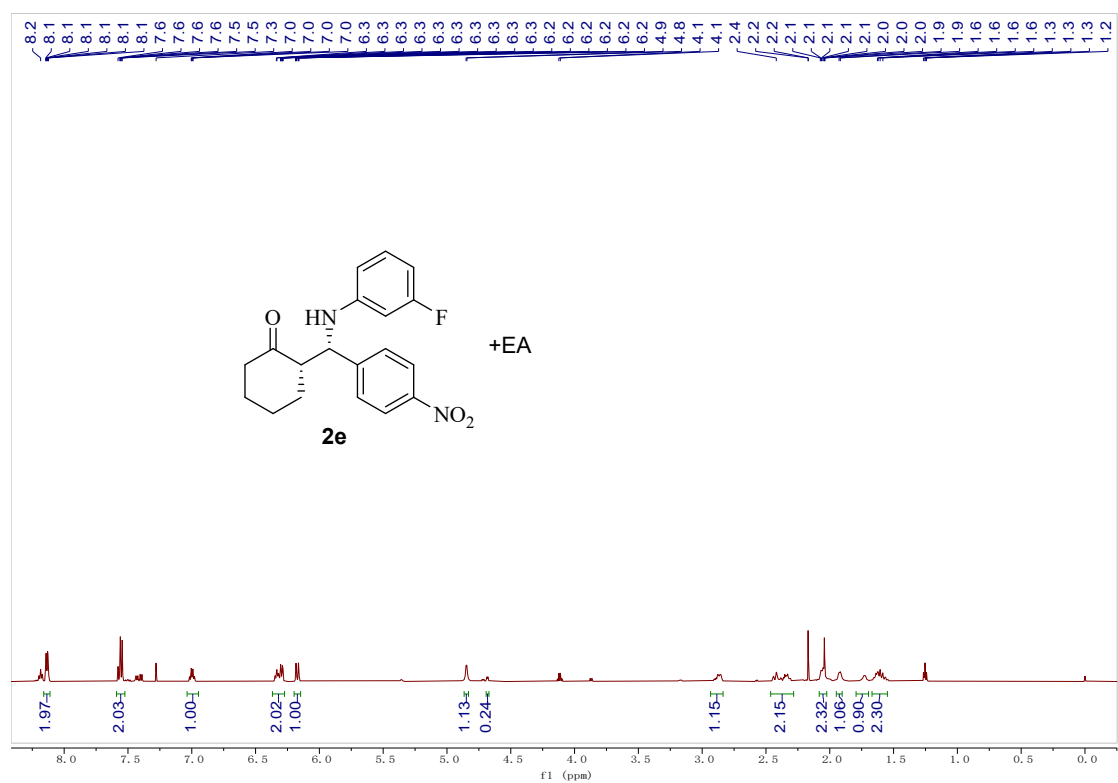
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2d**



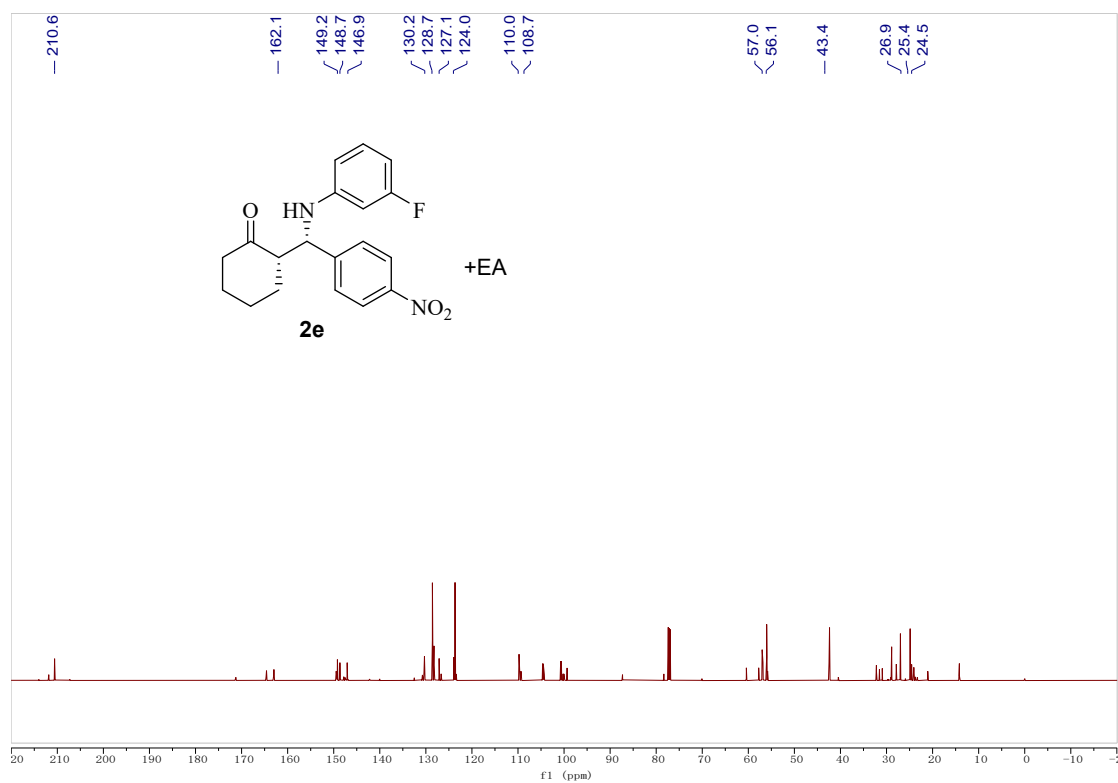
¹³C NMR Spectrum (126 MHz, Chloroform-*d*) of **2d**



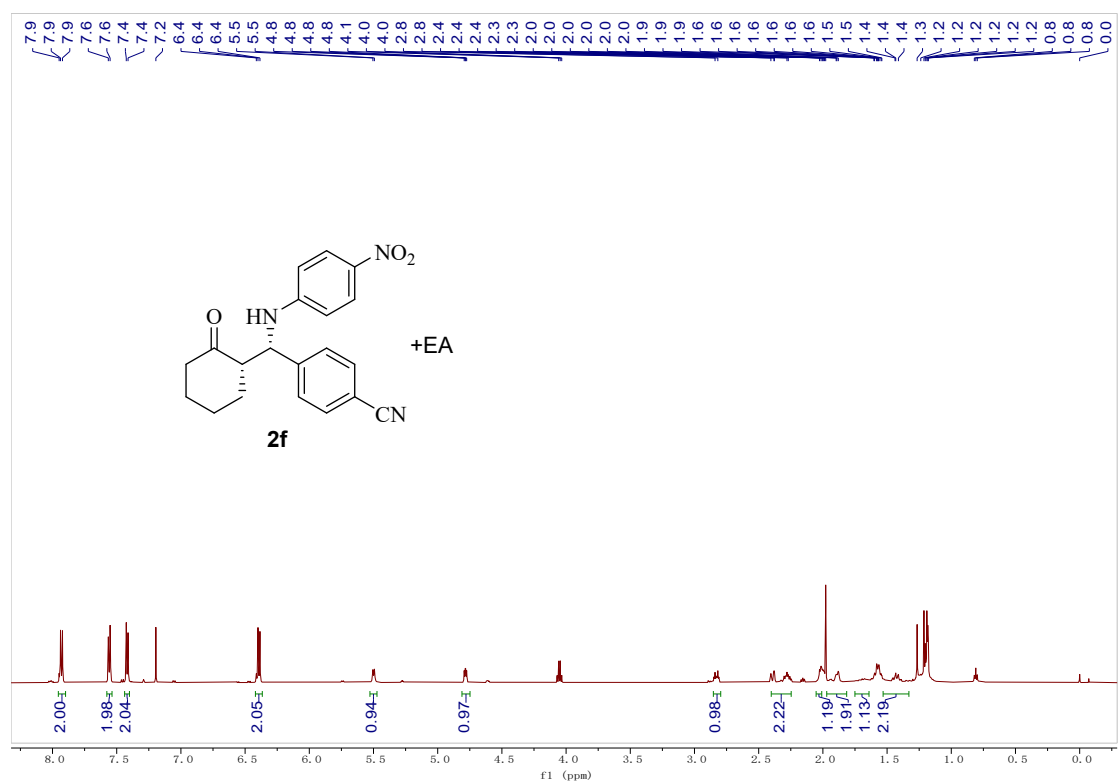
¹H NMR Spectrum (400 MHz, Chloroform-*d*) of **2e**



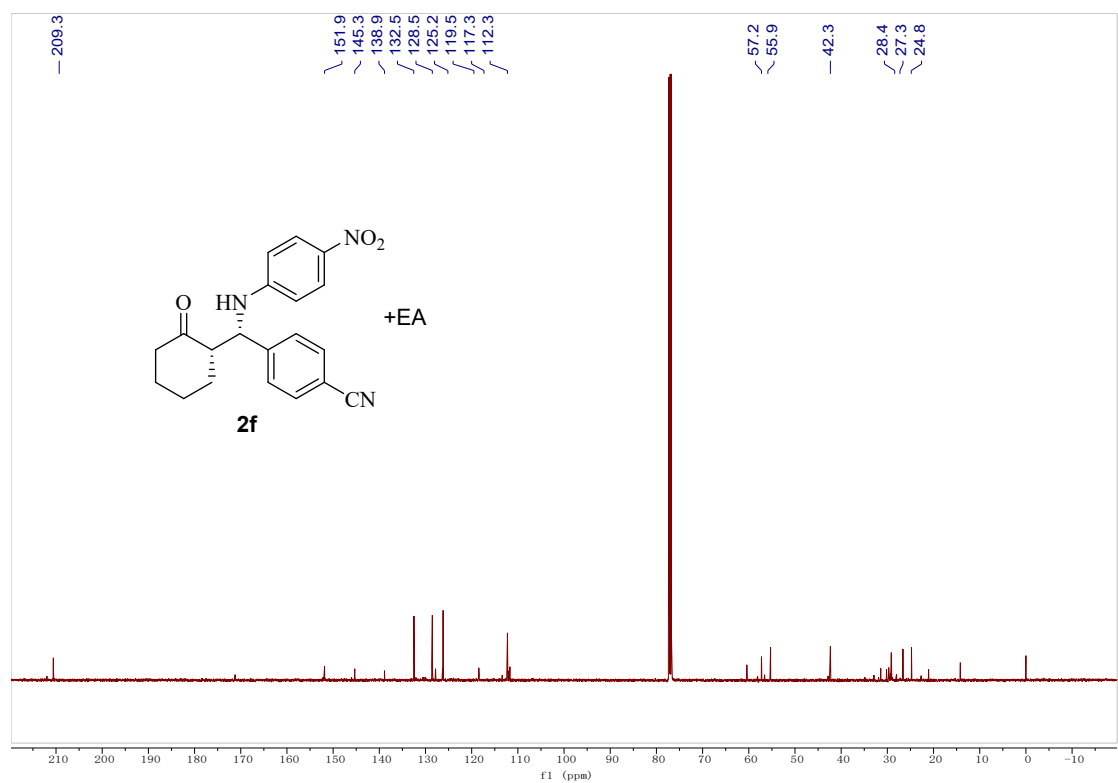
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **2e**



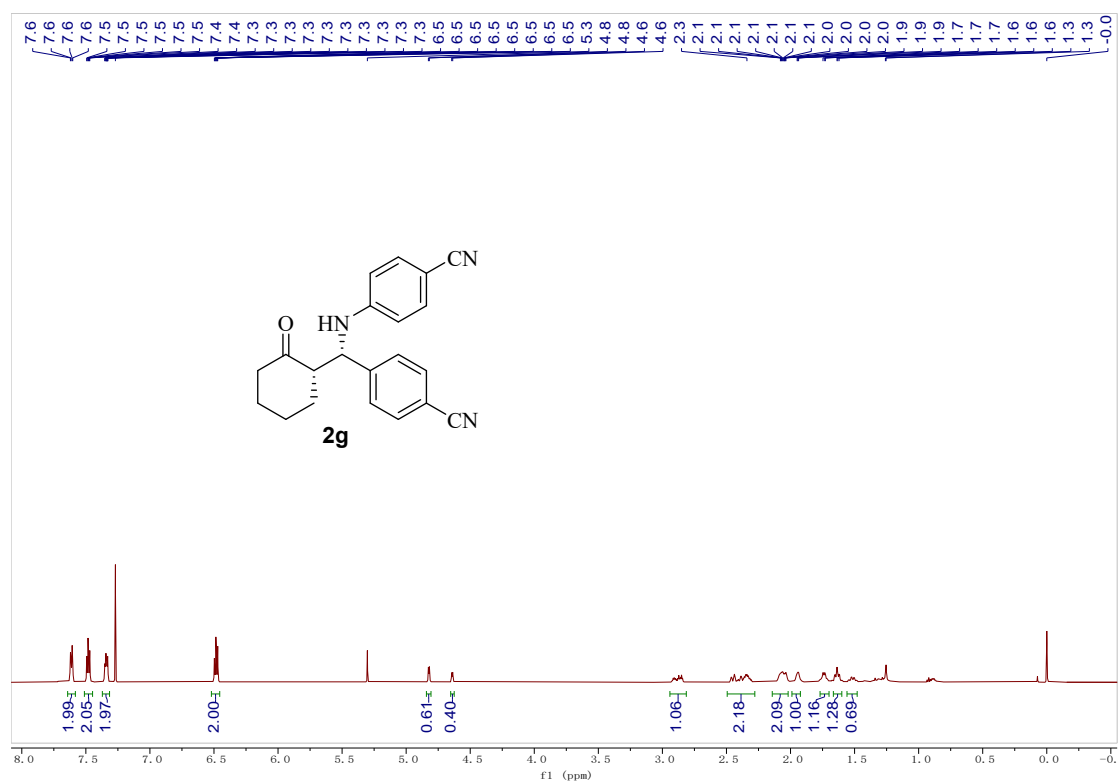
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2f**



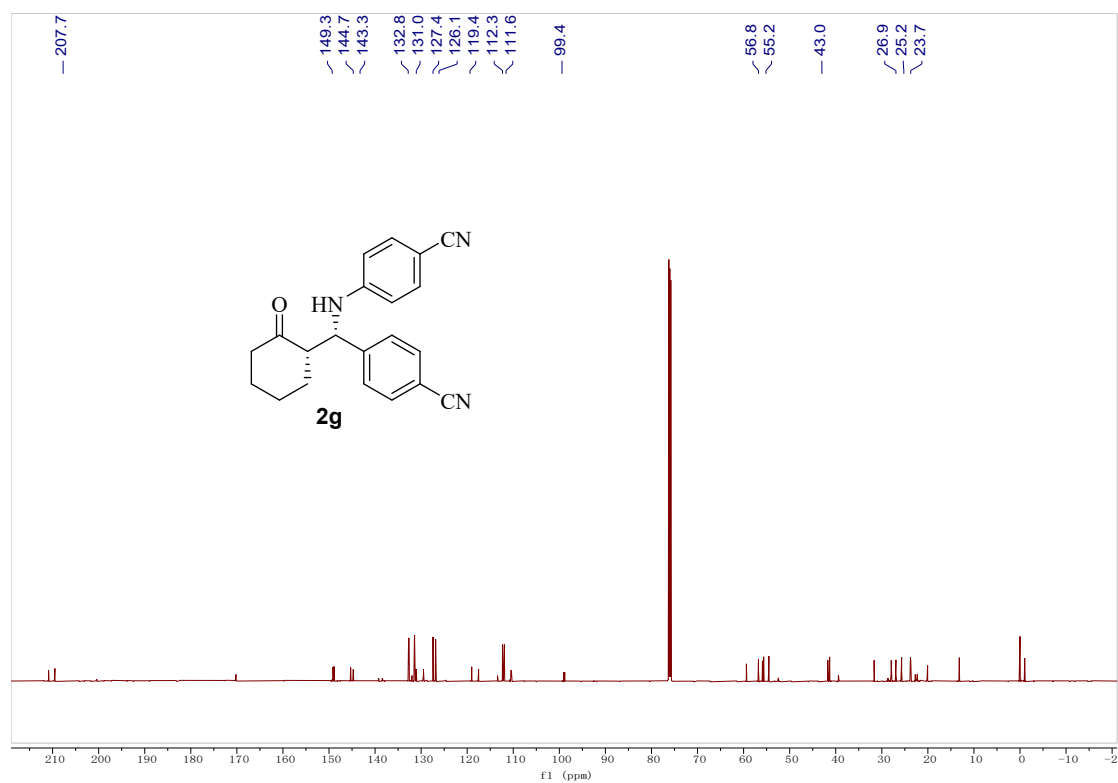
¹³C NMR Spectrum (126 MHz, Chloroform-*d*) of **2f**



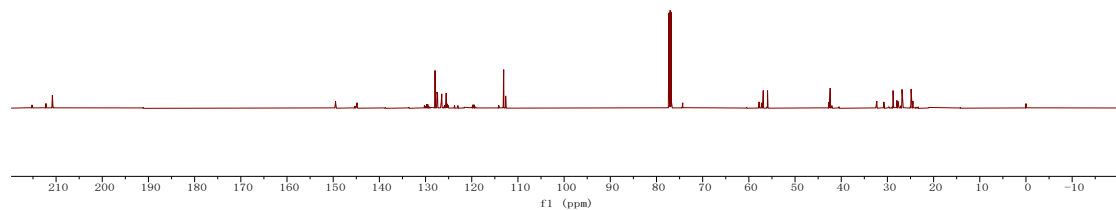
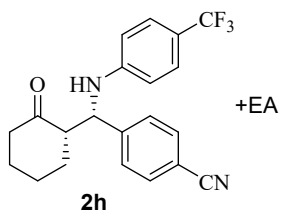
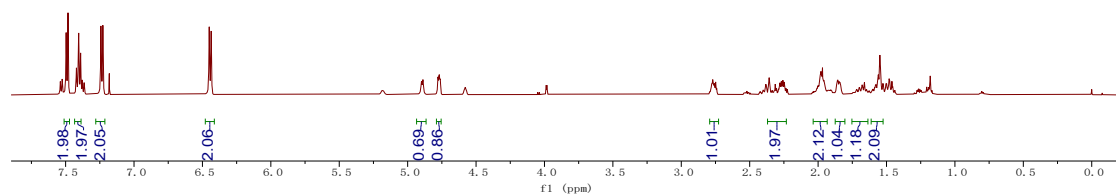
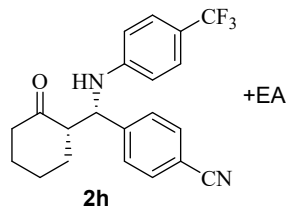
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2g**



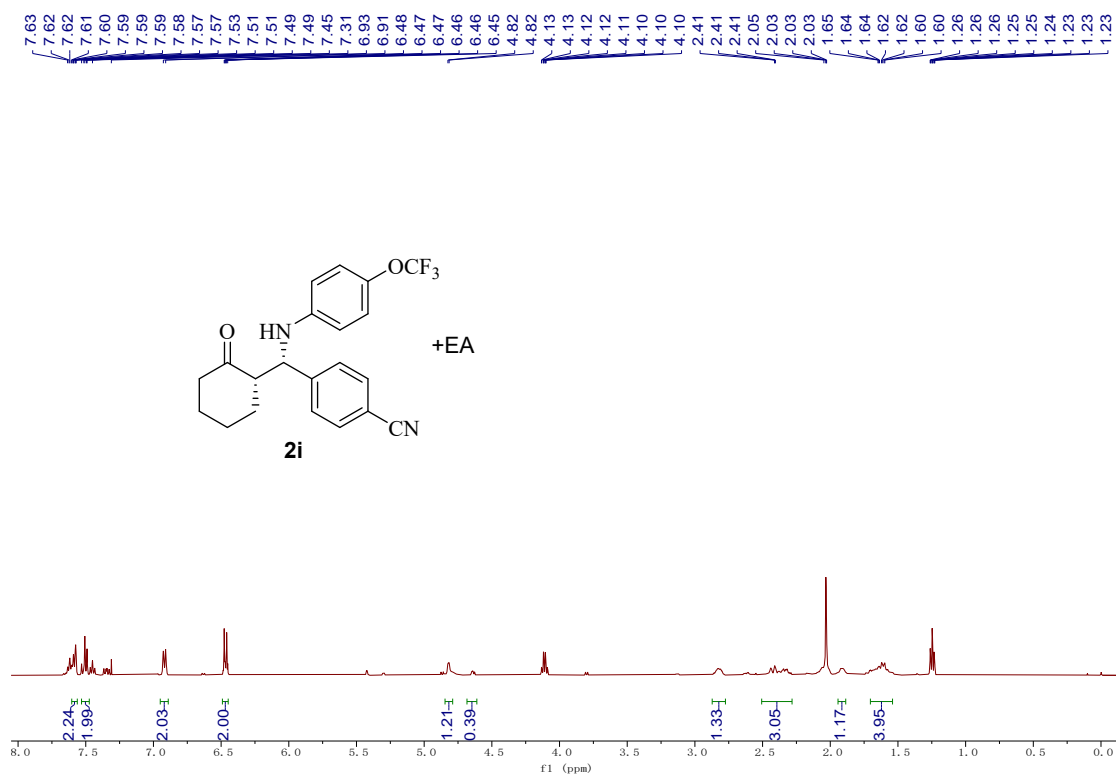
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **2g**



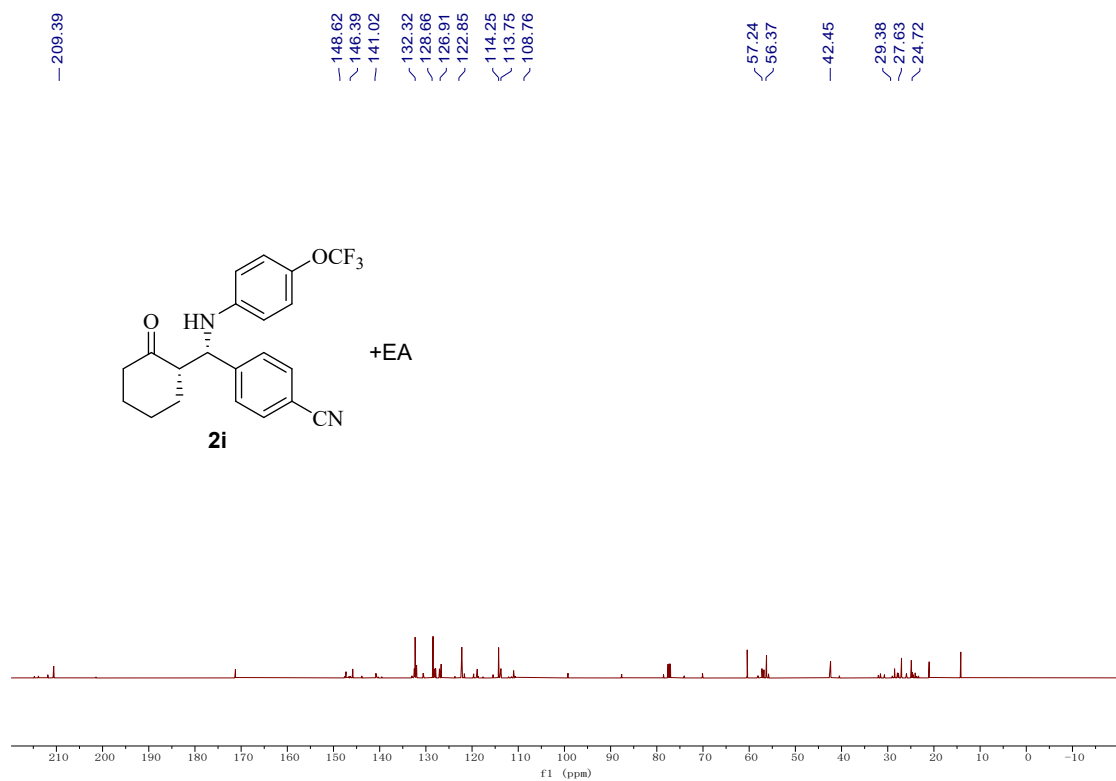
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2h**



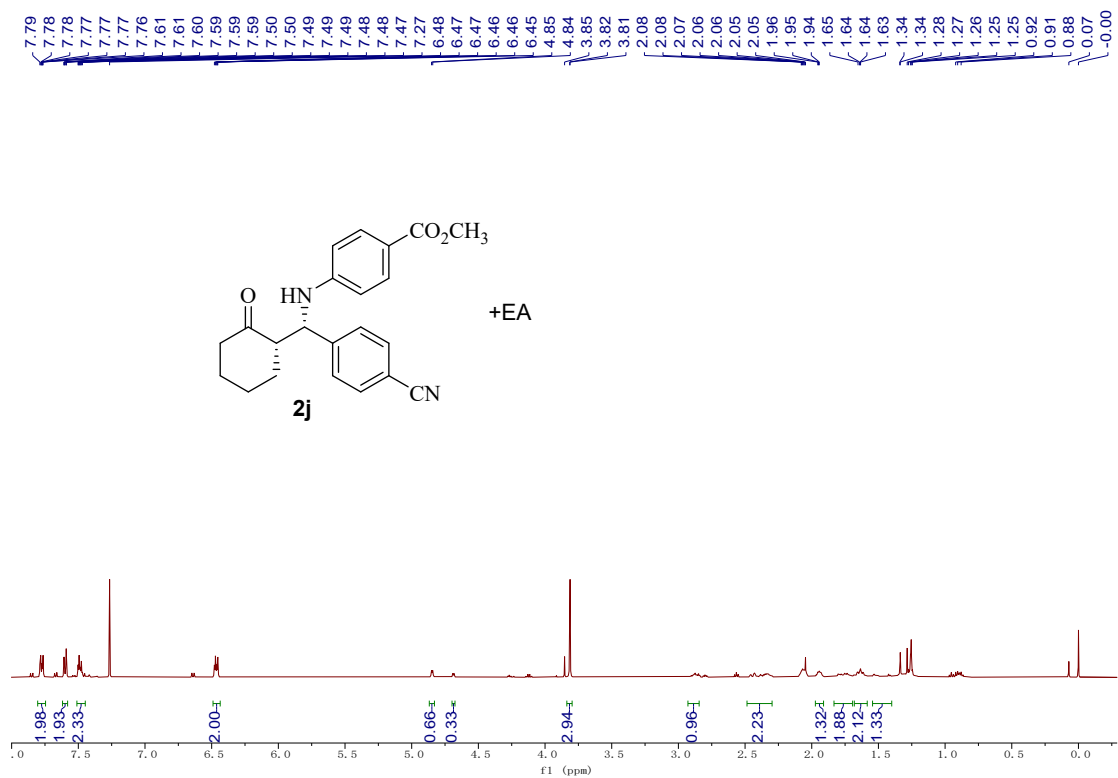
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2i**



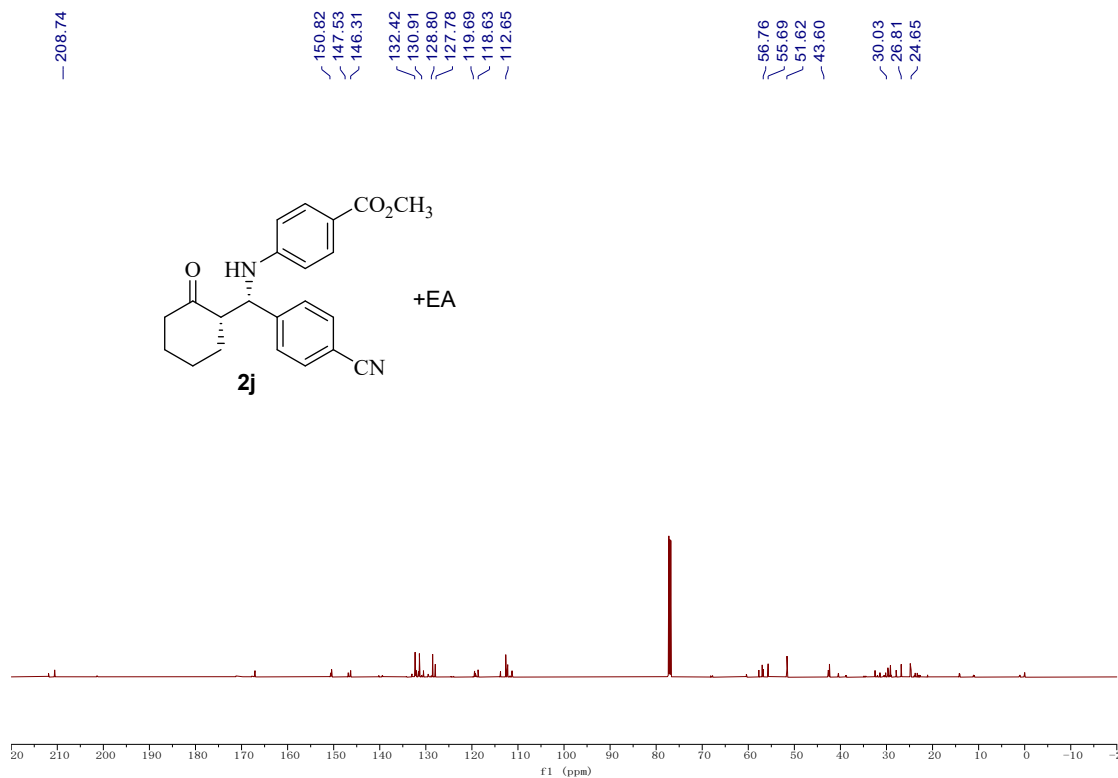
¹³C NMR Spectrum (126 MHz, Chloroform-*d*) of **2i**



¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2j**



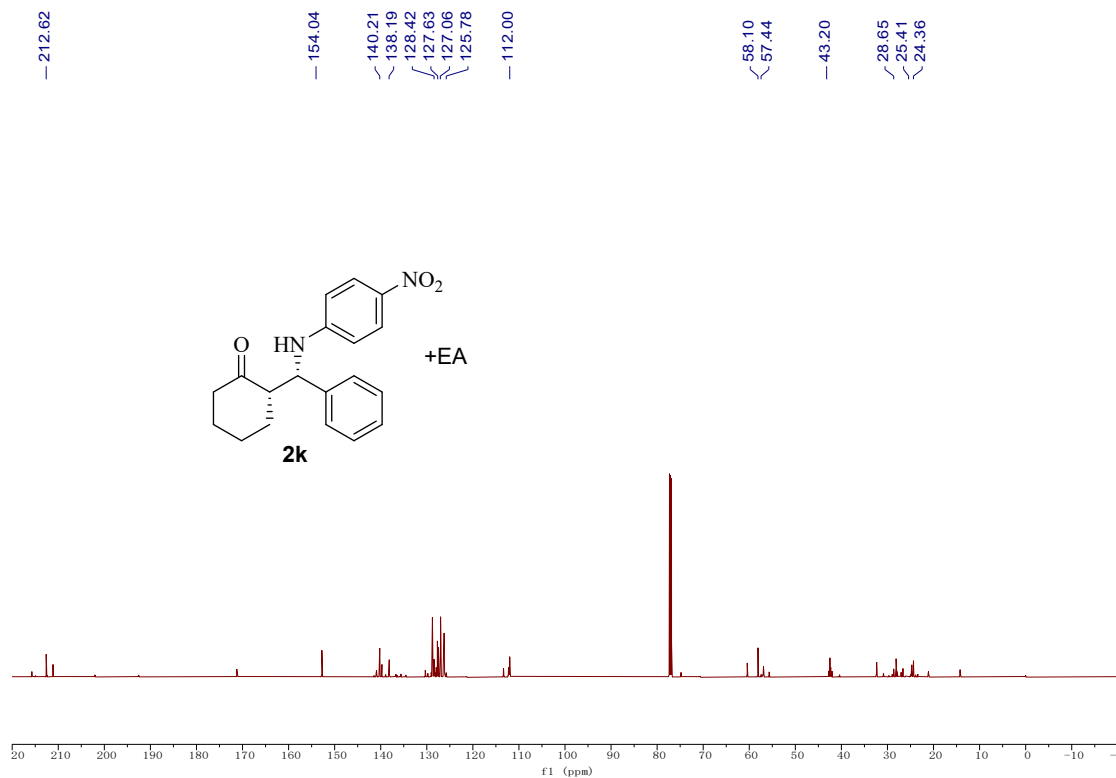
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **2j**



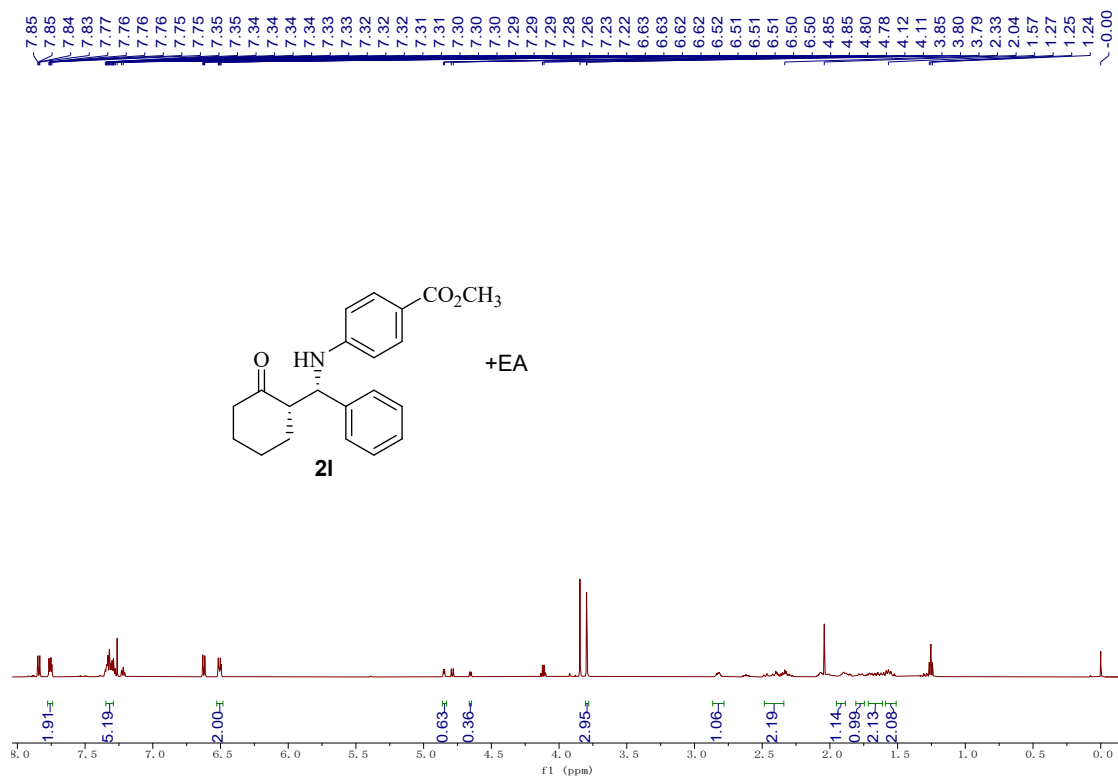
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2k**



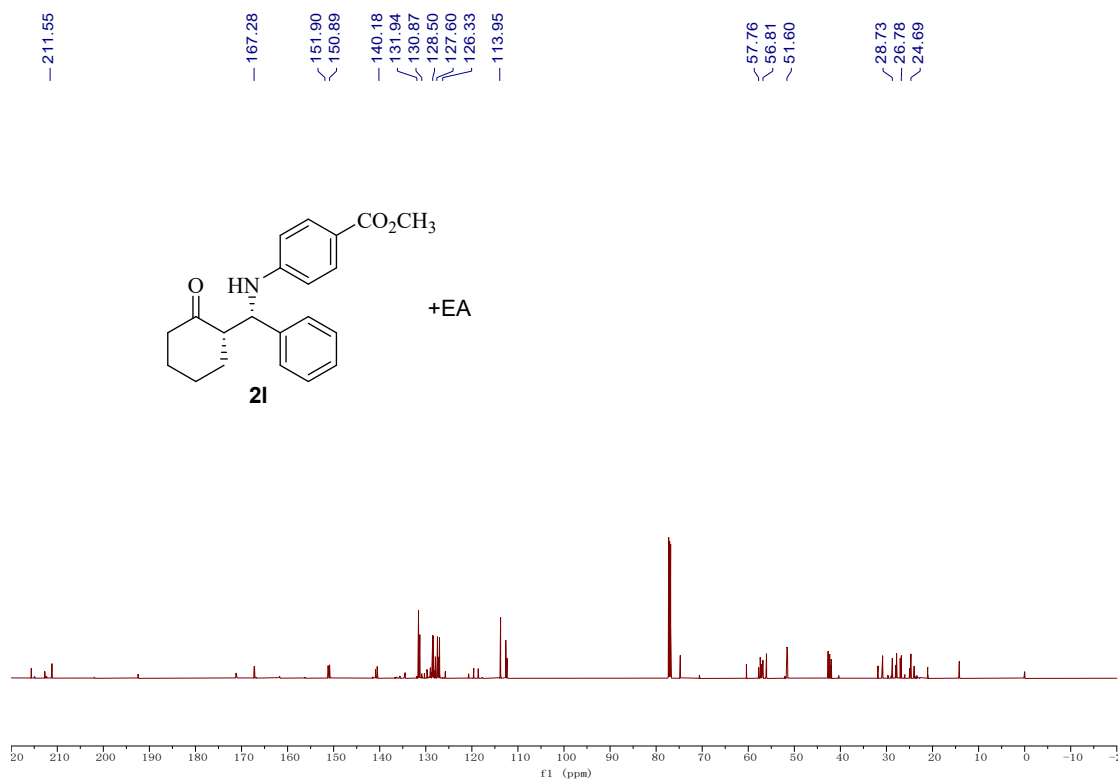
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **2k**



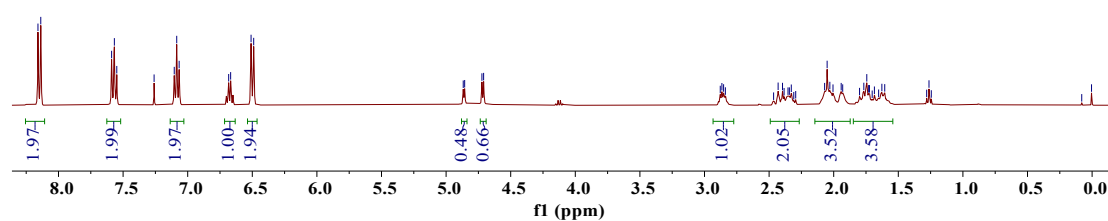
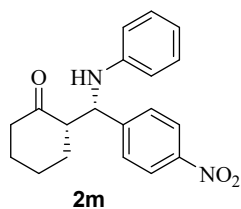
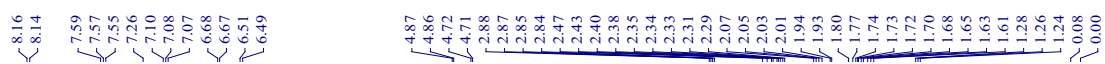
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **21**



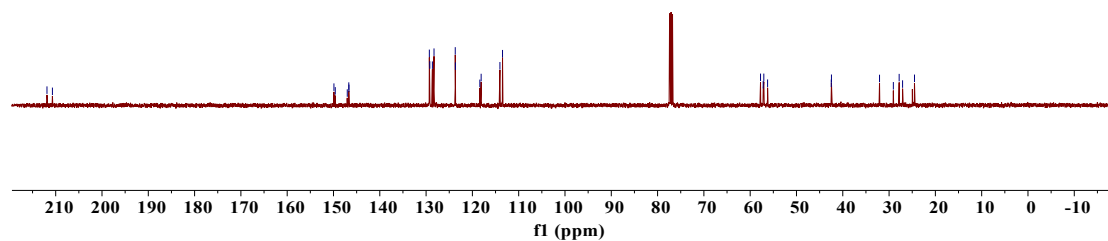
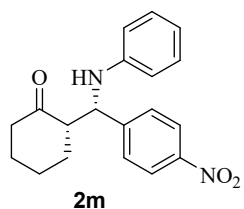
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **21**



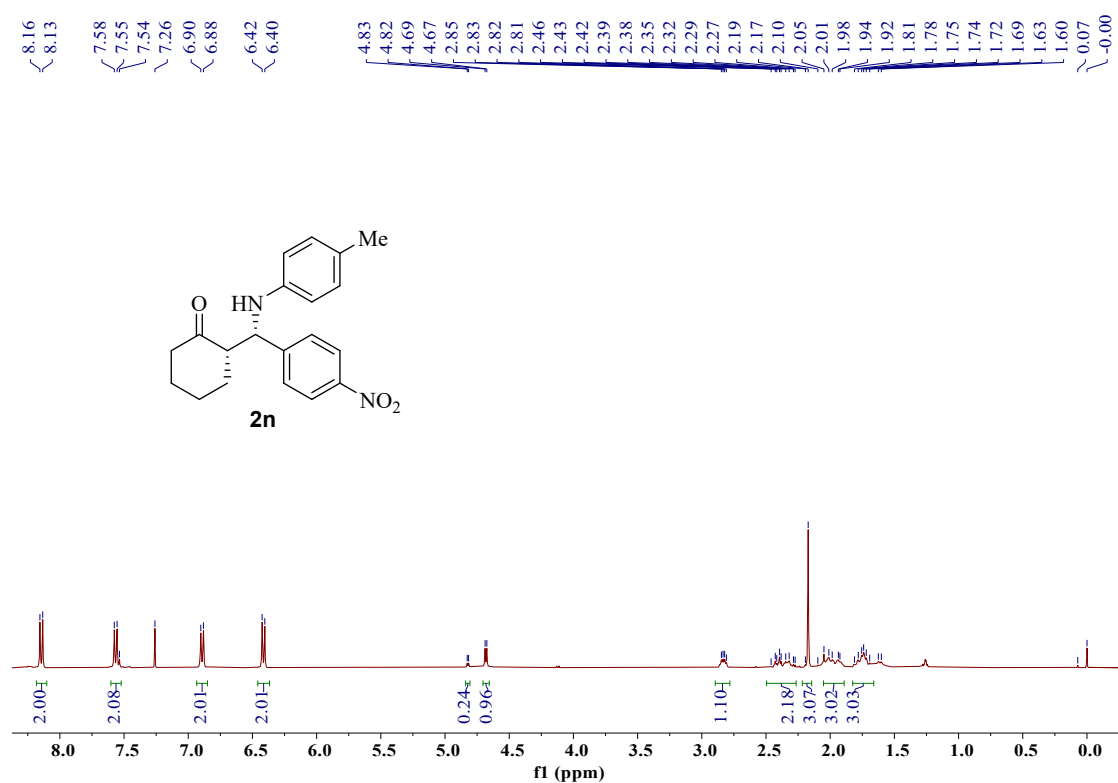
¹H NMR Spectrum (400 MHz, Chloroform-*d*) of **2m**



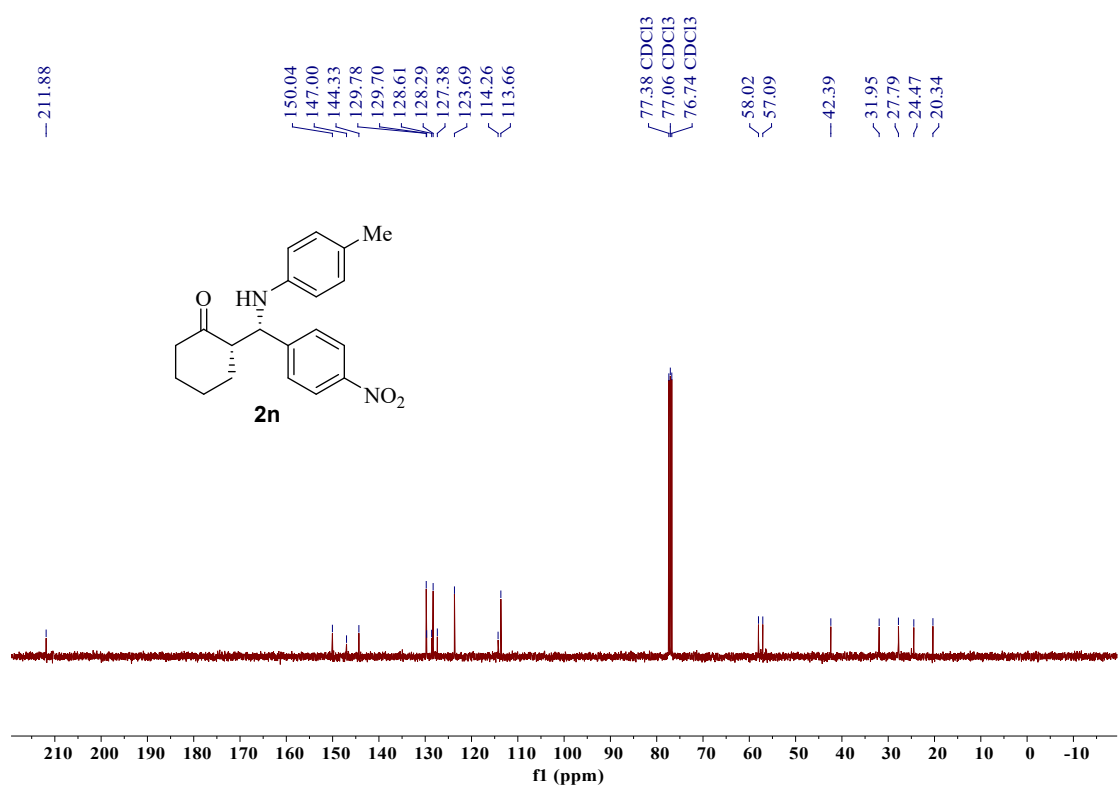
¹³C NMR Spectrum (101 MHz, Chloroform-*d*) of **2m**



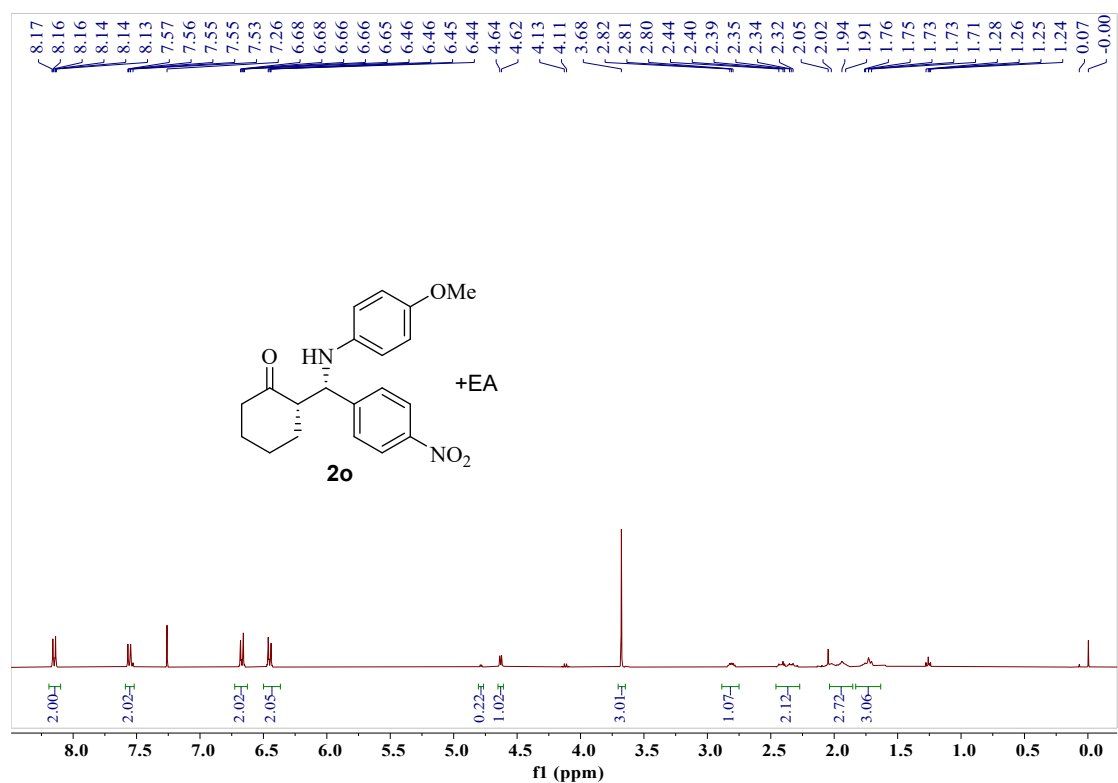
¹H NMR Spectrum (400 MHz, Chloroform-*d*) of **2n**



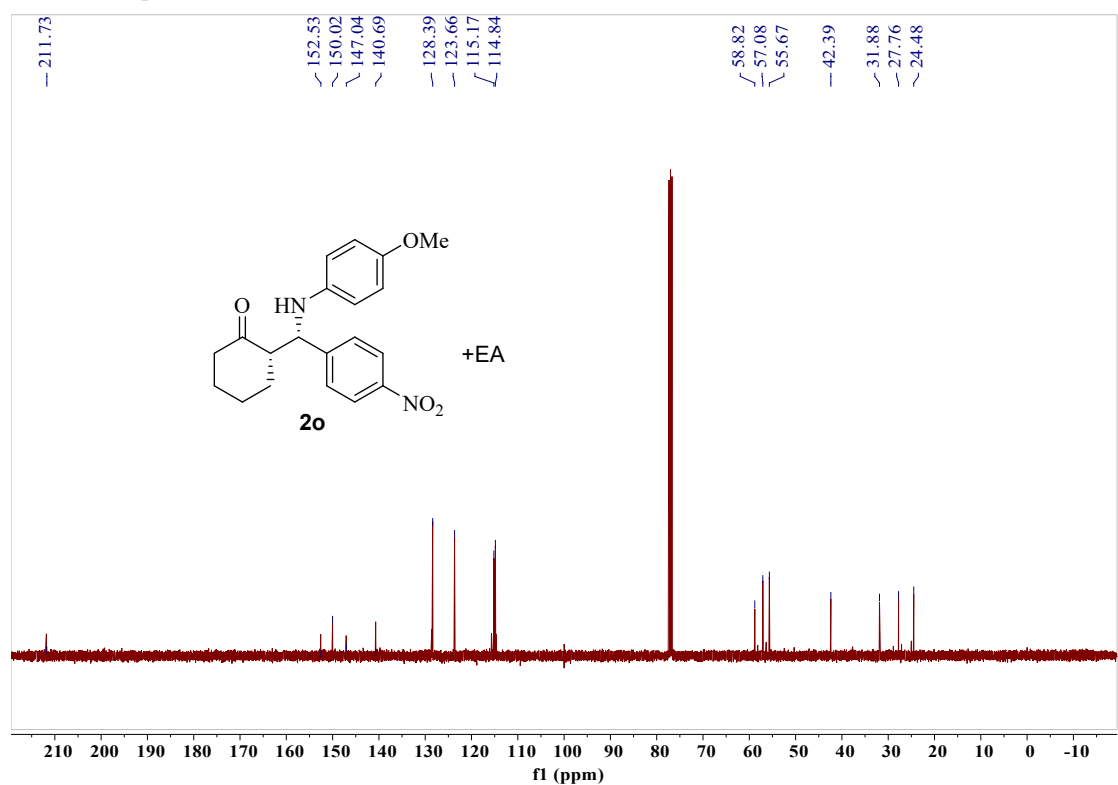
¹³C NMR Spectrum (101 MHz, Chloroform-*d*) of **2n**



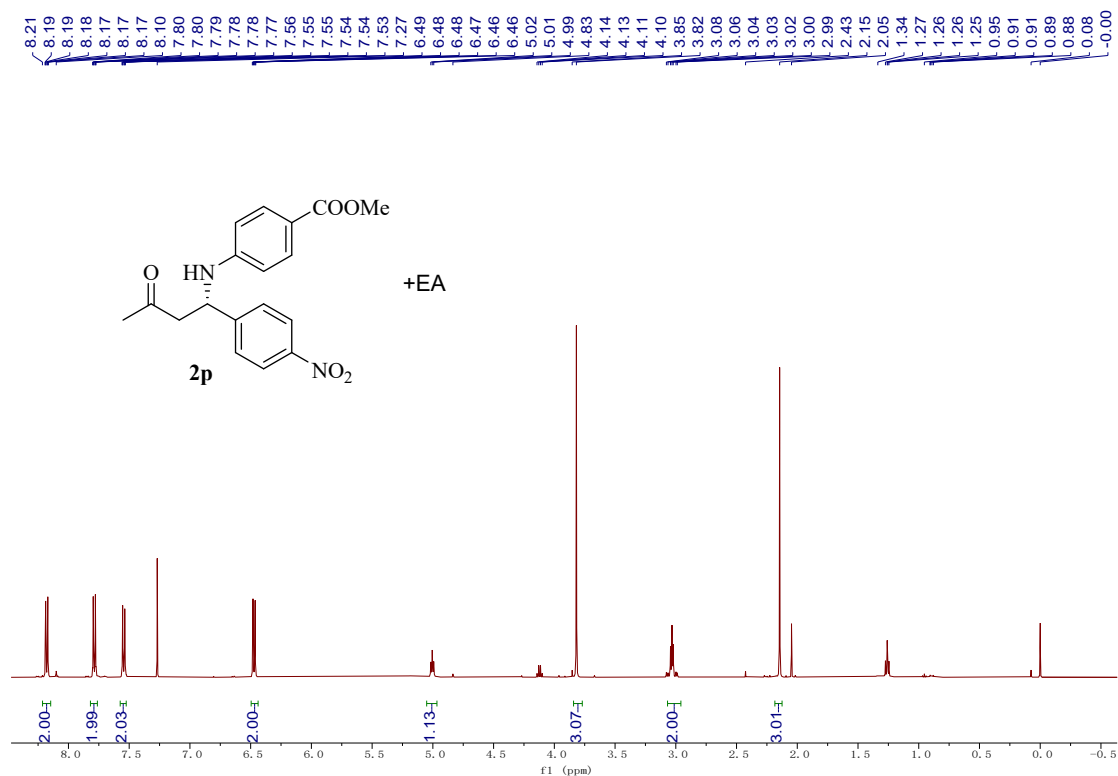
¹H NMR Spectrum (400 MHz, Chloroform-*d*) of **2o**



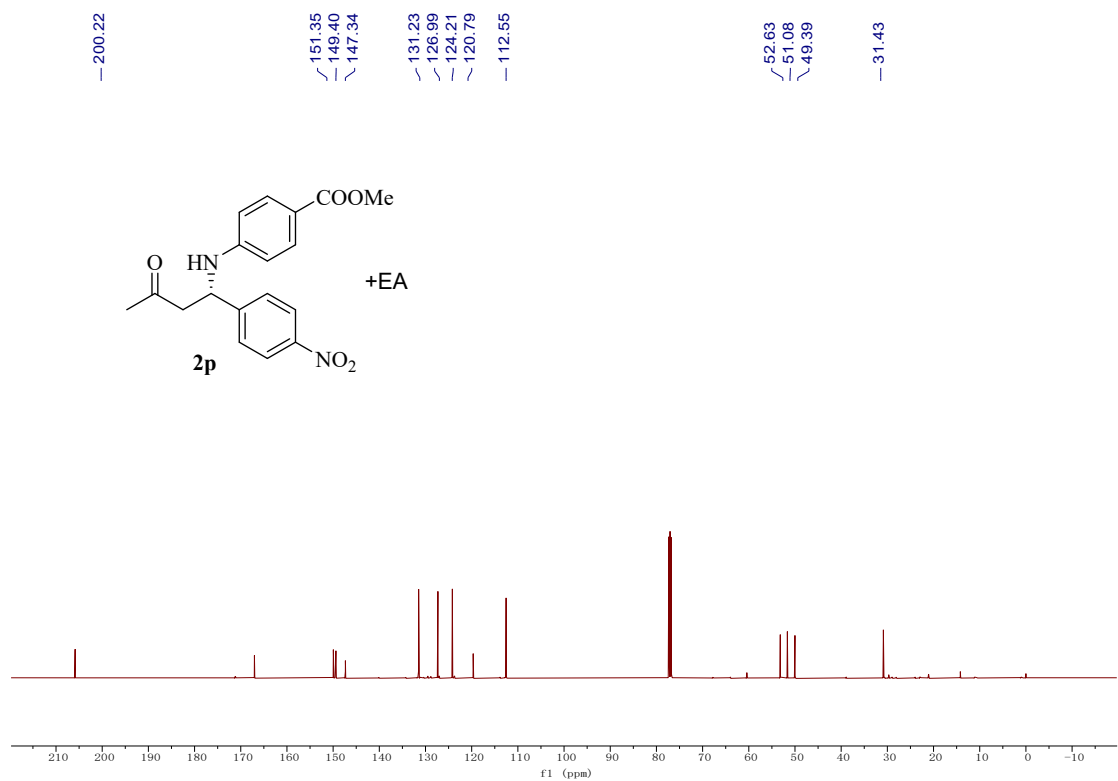
¹³C NMR Spectrum (101 MHz, Chloroform-*d*) of **2o**



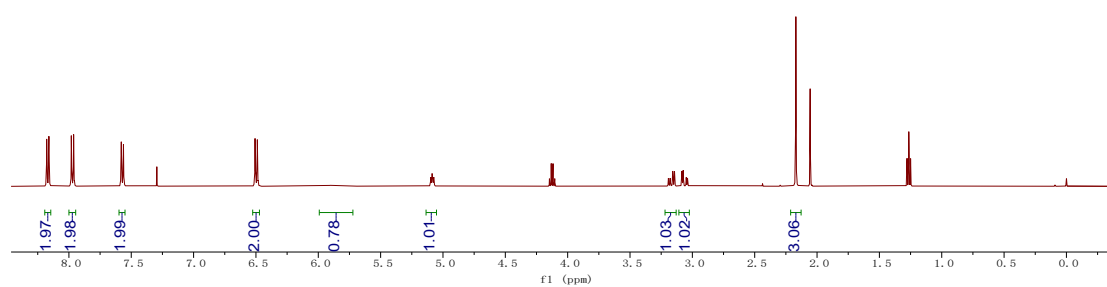
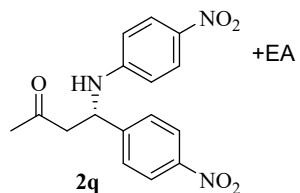
¹H NMR Spectrum (600 MHz, Chloroform-*d*) of **2p**



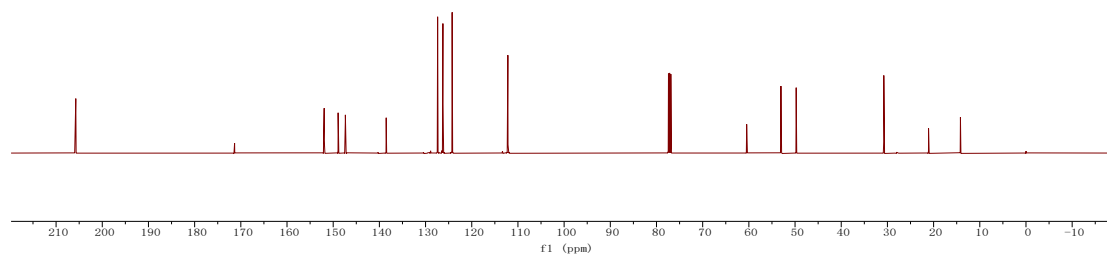
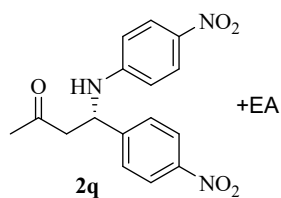
¹³C NMR Spectrum (126 MHz, Chloroform-*d*) of **2p**



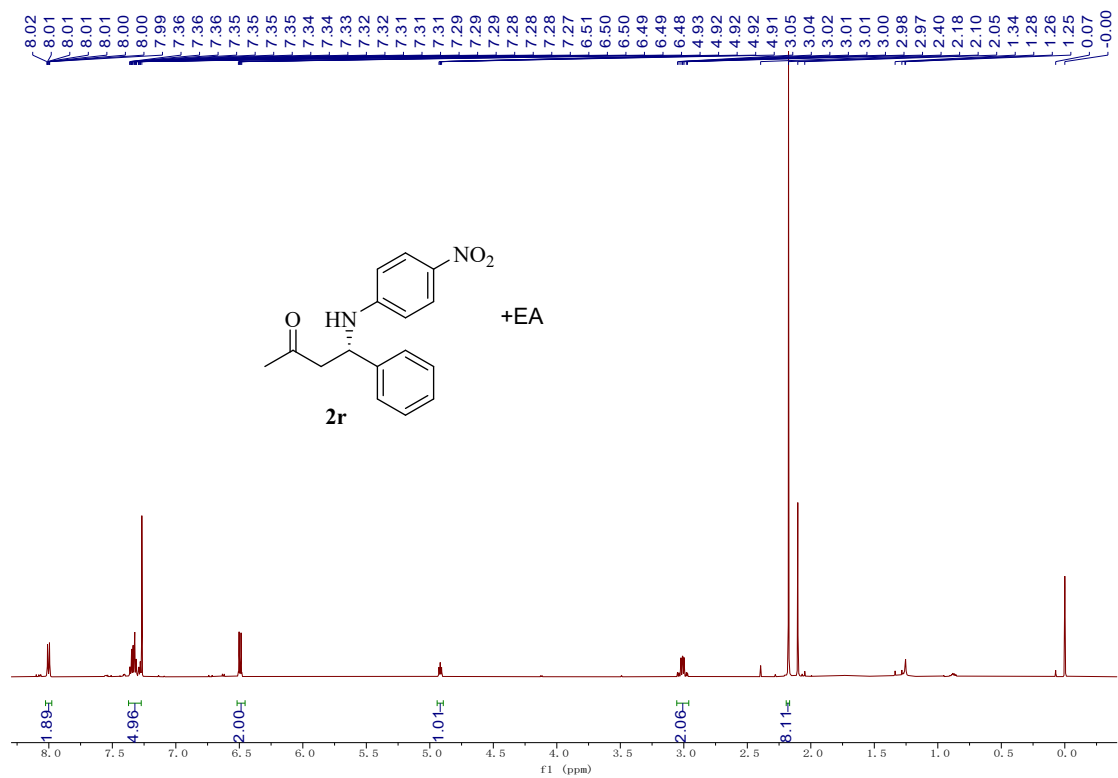
¹H NMR Spectrum (500 MHz, Chloroform-*d*) of **2q**



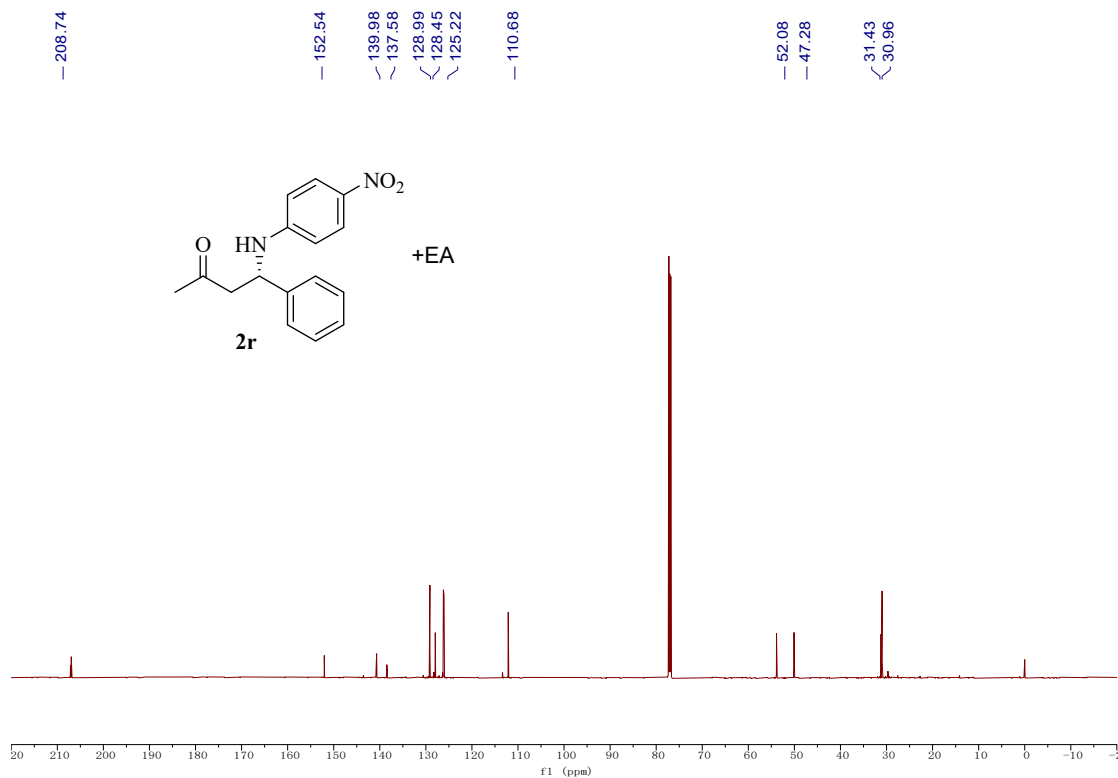
¹³C NMR Spectrum (126 MHz, Chloroform-*d*) of **2q**



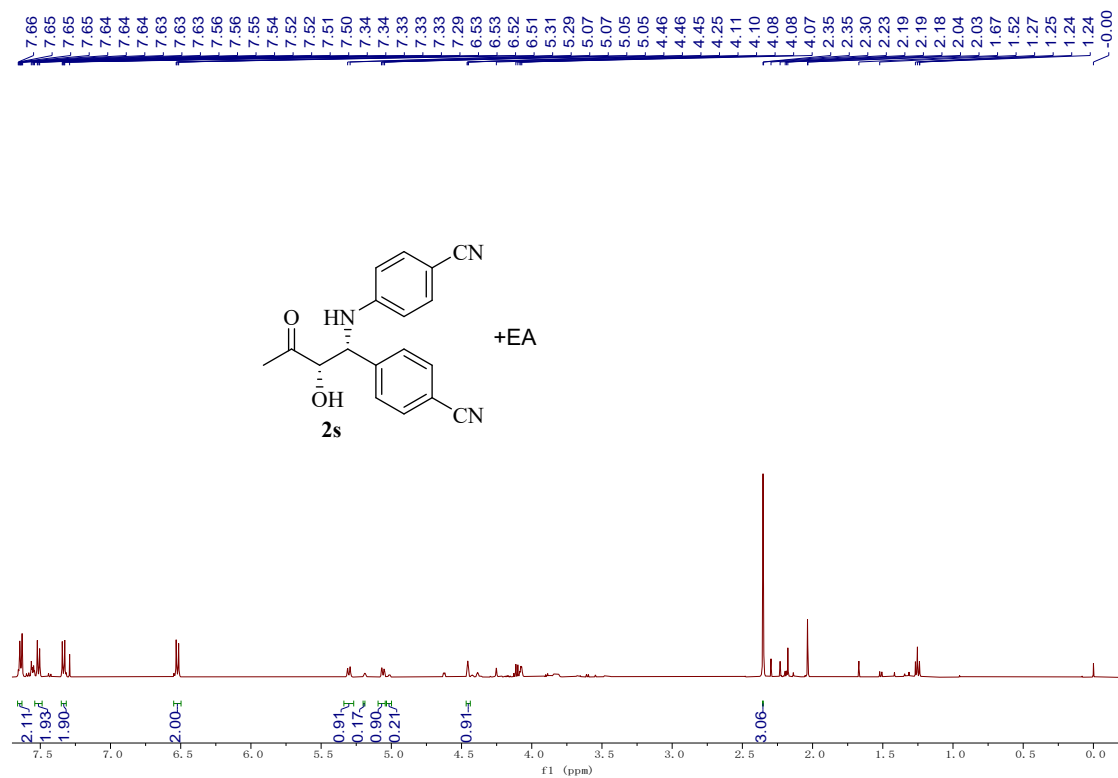
¹H NMR Spectrum (500 MHz, Chloroform-*d*) of **2r**



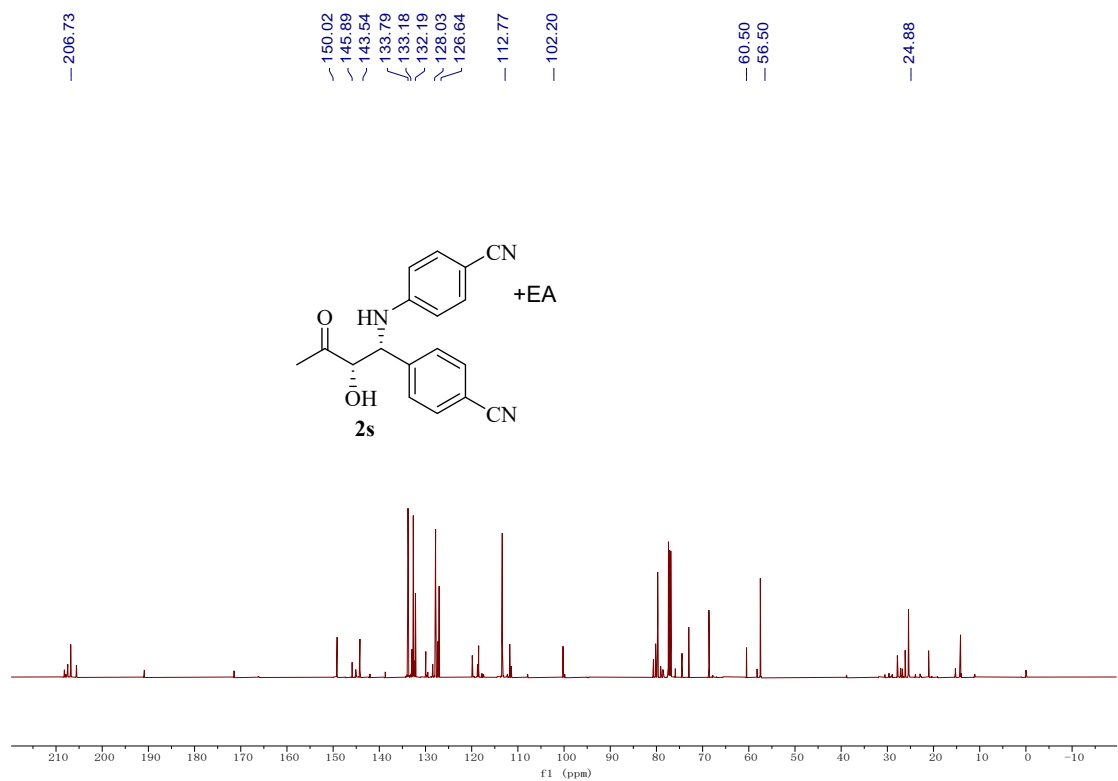
¹³C NMR Spectrum (126 MHz, Chloroform-*d*) of **2r**



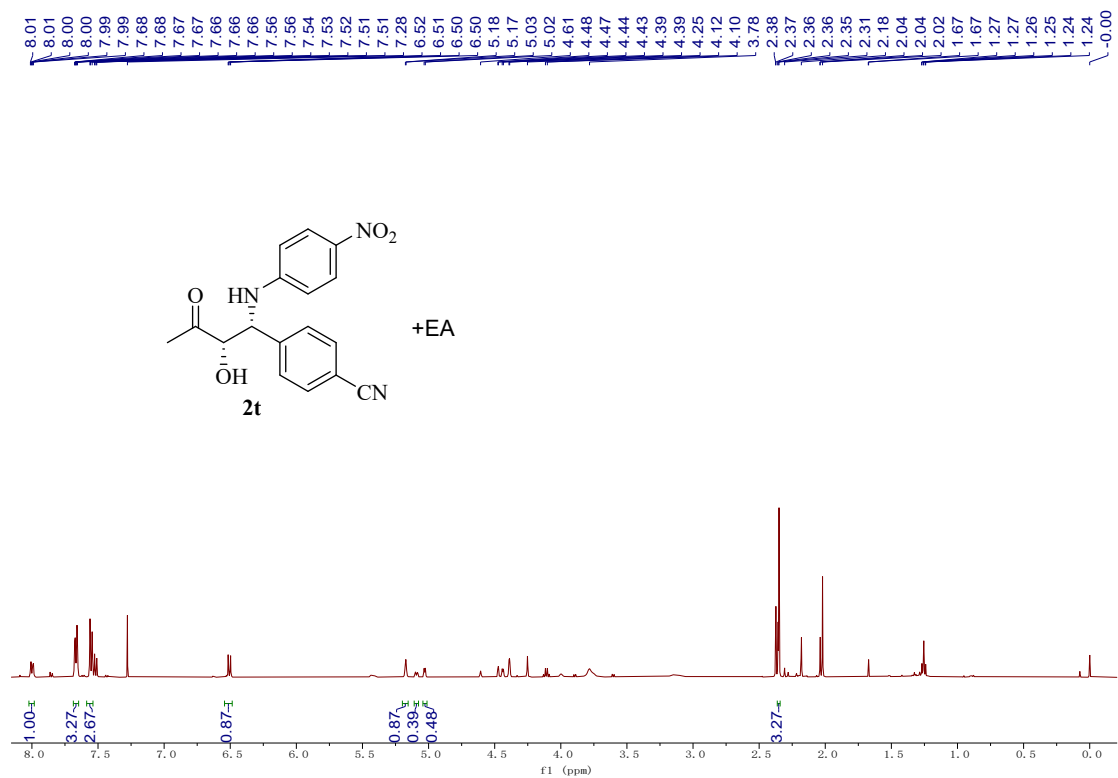
¹H NMR Spectrum (500 MHz, Chloroform-*d*) of **2s**



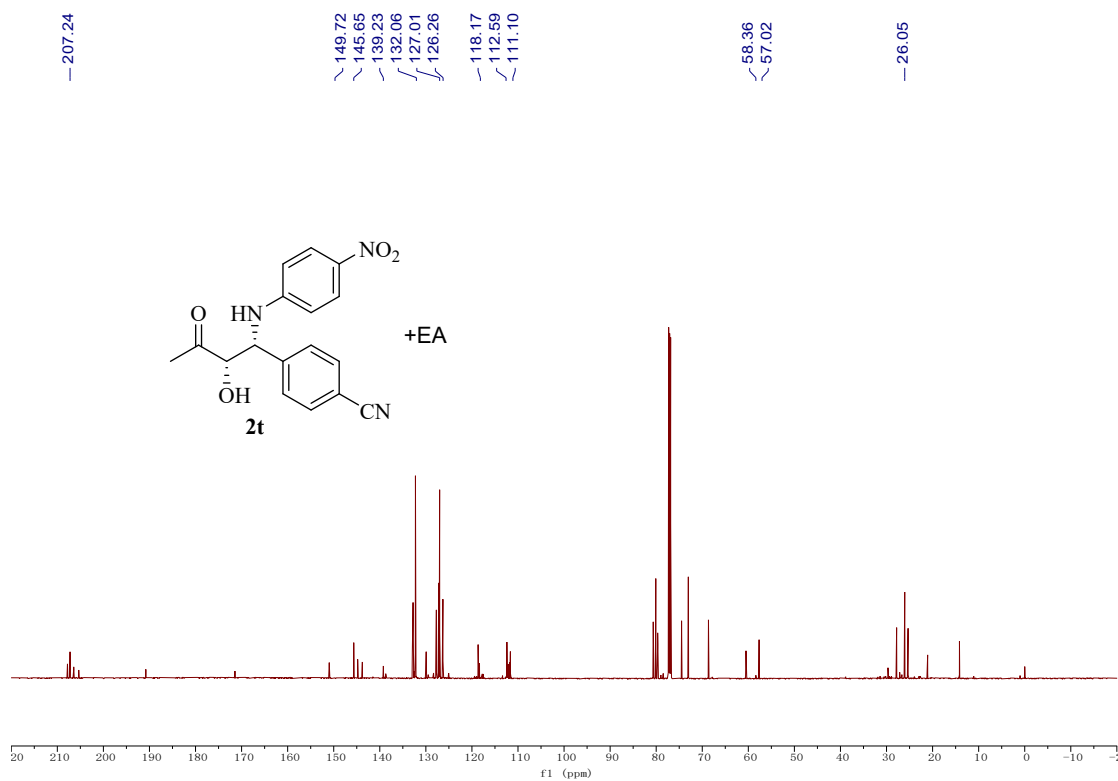
¹³C NMR Spectrum (126 MHz, Chloroform-*d*) of **2s**



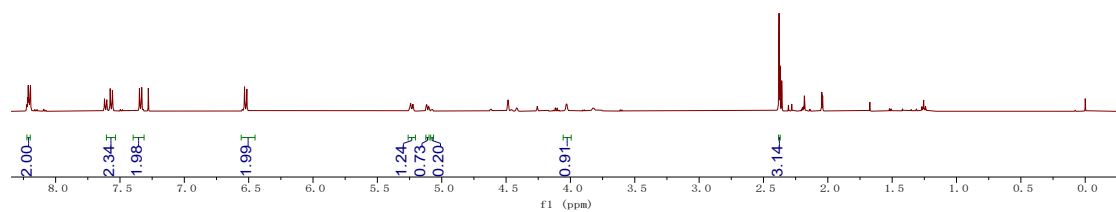
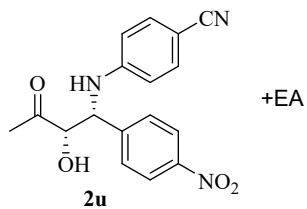
¹H NMR Spectrum (500 MHz, Chloroform-*d*) of **2t**



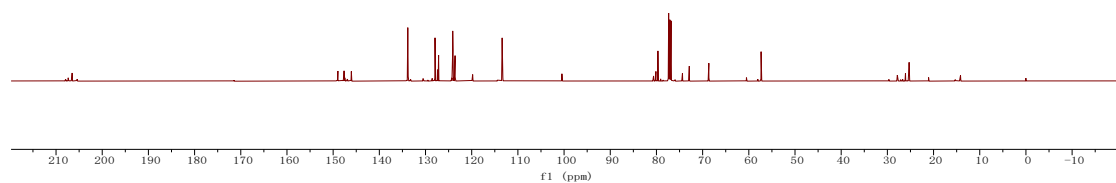
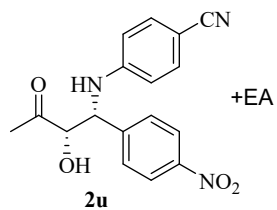
¹³C NMR Spectrum (151 MHz, Chloroform-*d*) of **2t**



¹H NMR Spectrum (500 MHz, Chloroform-*d*) of **2u**



¹³C NMR Spectrum (126 MHz, Chloroform-*d*) of **2u**

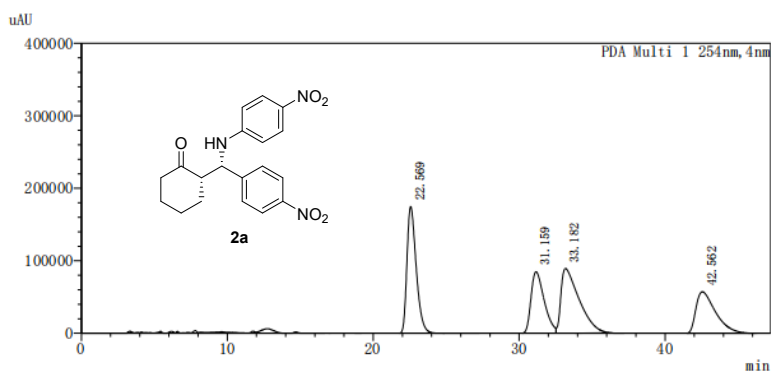


II HPLC spectra

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: LK-M
 Sample Type : Unknow
 Method Name : Mannich
 Batch Name : 20190104.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2019/4/12 21:53:42 Operator : System Administrator
 Modified Date : 2019/12/15 23:07:31 Modifield by : WC



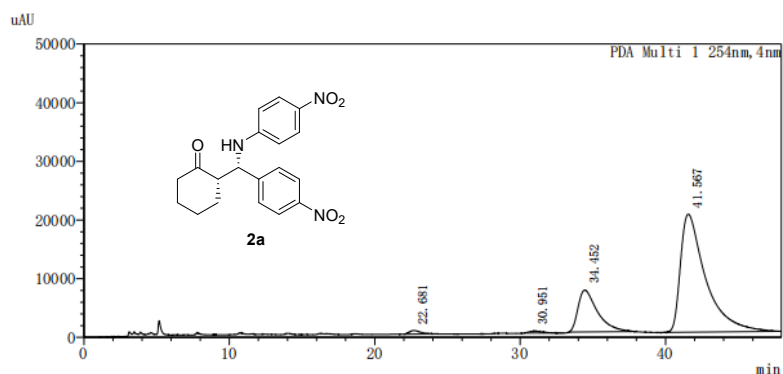
PDA Ch1 254nm

	RT(min)	Area	Height	Area (%)	Height (%)
1	22.569	7747032	175241	29.555	43.016
2	31.159	5382204	85333	20.533	20.946
3	33.182	7736449	89529	29.514	21.976
4	42.562	5346922	57285	20.398	14.062

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: LK-M-125-24
 Sample Type : Unknow
 Method Name : Mannich
 Batch Name : 迈克加成.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2022/11/25 12:46:52 Operator : System Administrator
 Modified Date : 2022/11/25 13:34:52 Modifield by : WC

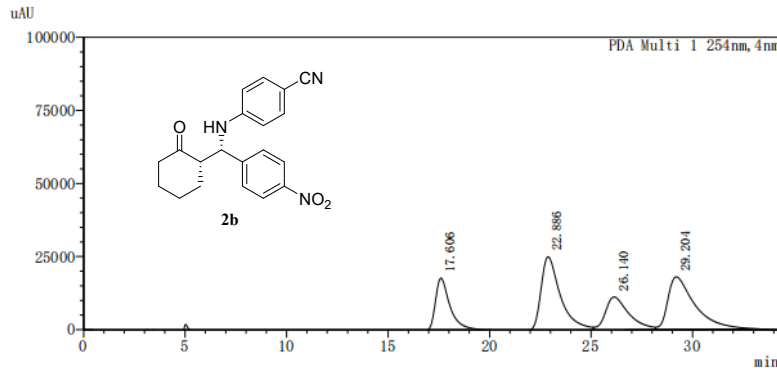


PDA Ch1 254nm

	RT(min)	Area	Height	Area (%)	Height (%)
1	22.681	33100	608	1.052	2.156
2	30.951	22203	333	0.705	1.182
3	34.452	661134	7130	21.004	25.289
4	41.567	2431218	20122	77.239	71.373

Sample Information

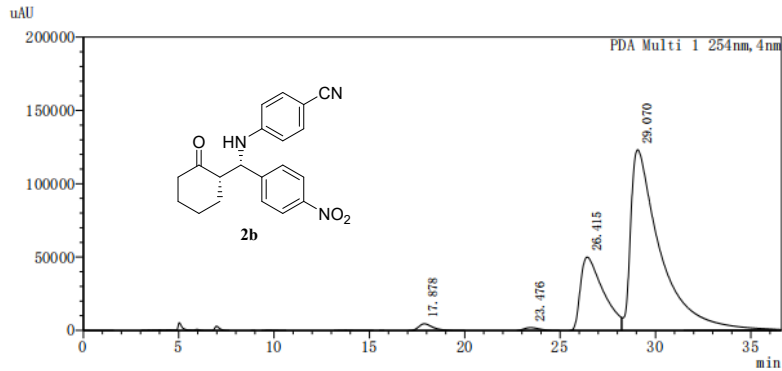
Sample Name: LK-M-139-10 rac
 Sample Type : Unknow
 Method Name : AD-H-80-20-1ml
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/10 11:59:51 Operator : System Administrator
 Modified Date : 2023/1/10 12:34:11 Modifield by : WC



	RT(min)	Area	Height	Area (%)	Height (%)
1	17.606	907825	18018	17.584	24.849
2	22.886	1681066	25207	32.560	34.762
3	26.140	906189	11288	17.552	15.567
4	29.204	1667848	17999	32.304	24.822

Sample Information

Sample Name: LK-M-139-10
 Sample Type : Mannich
 Method Name : AD-H-80-20-1ml
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/10 16:42:54 Operator : System Administrator
 Modified Date : 2023/1/10 17:19:32 Modifield by : WC

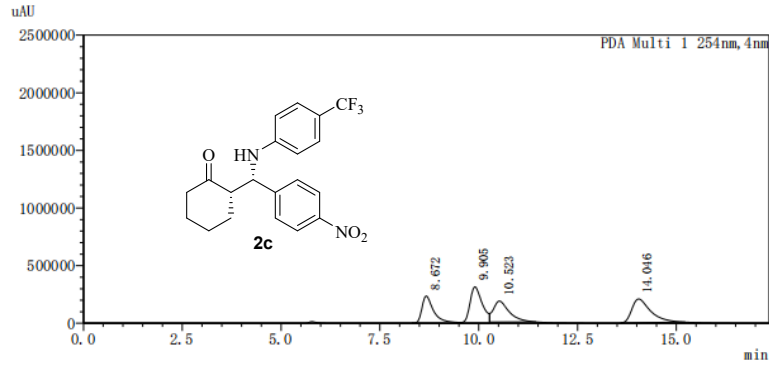


	RT(min)	Area	Height	Area (%)	Height (%)
1	17.878	290965	5385	1.600	2.946
2	23.476	150334	2329	0.827	1.274
3	26.415	4324956	51480	23.779	28.164
4	29.070	13422143	123594	73.795	67.616

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: 2c RAC
 Sample Type : Mannich Reaction
 Method Name : AD-H 70-30-0.8mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/8 19:00:22 Operator : System Administrator
 Modified Date : 2023/1/8 19:17:44 Modifield by : WC

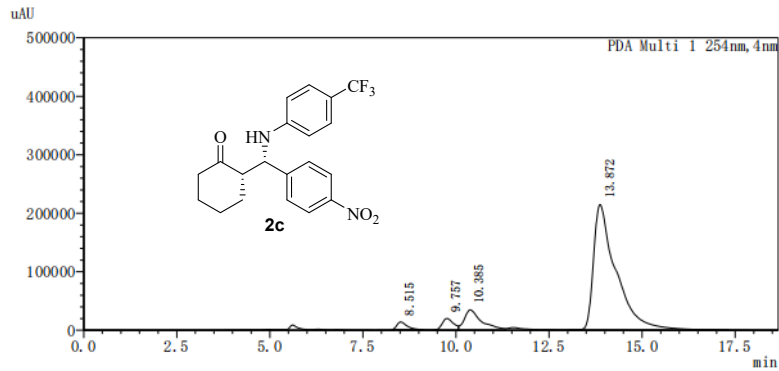


PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	8.672	4929618	236191	20.896	25.162
2	9.905	6808533	315205	28.860	33.579
3	10.523	5053624	180981	21.422	19.280
4	14.046	6799490	206311	28.822	21.979

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: 2c
 Sample Type : Mannich Reaction
 Method Name : AD-H 70-30-0.8mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/8 17:32:50 Operator : System Administrator
 Modified Date : 2023/1/8 17:51:32 Modifield by : WC

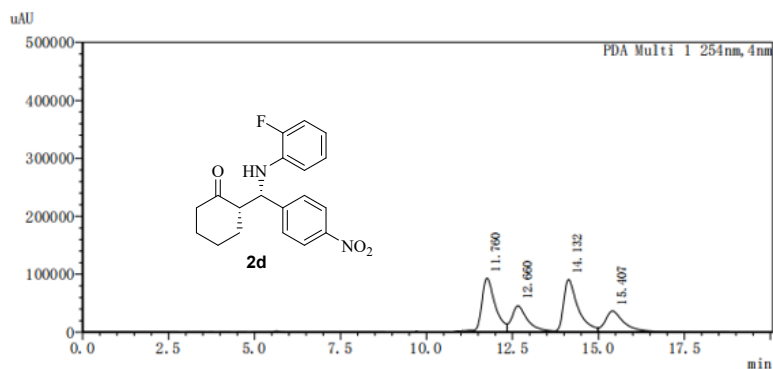


PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	8.515	238240	12976	2.202	4.603
2	9.757	423139	19872	3.911	7.049
3	10.385	1111329	34640	10.271	12.287
4	13.872	9047312	214427	83.616	76.061

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: 2d RAC
 Sample Type : Mannich Reaction
 Method Name : AD-II 85-15-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/8 21:30:39 Operator : System Administrator
 Modified Date : 2023/1/8 21:50:46 Modifield by : WC

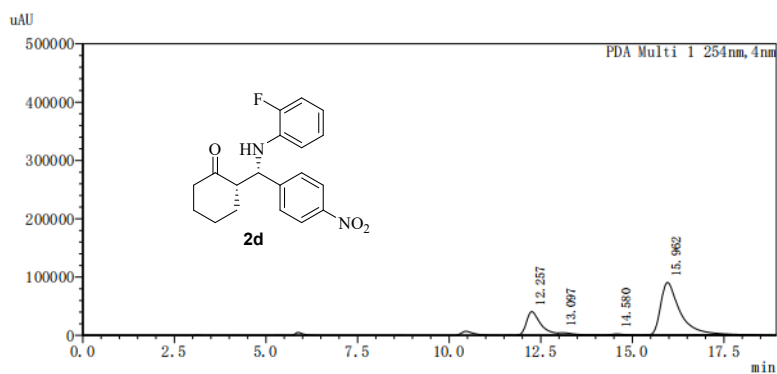


PDA Ch1 254nm					
RT (min)	Area	Height	Area (%)	Height (%)	
1	2547344	93891	31.181	35.140	
2	1503216	45771	18.400	17.130	
3	2684317	91046	32.858	34.075	
4	1434555	36483	17.560	13.654	

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: Mannich
 Sample Type : 139-1
 Method Name : AD-II 85-15-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/8 21:56:21 Operator : System Administrator
 Modified Date : 2023/1/8 22:15:20 Modifield by : WC

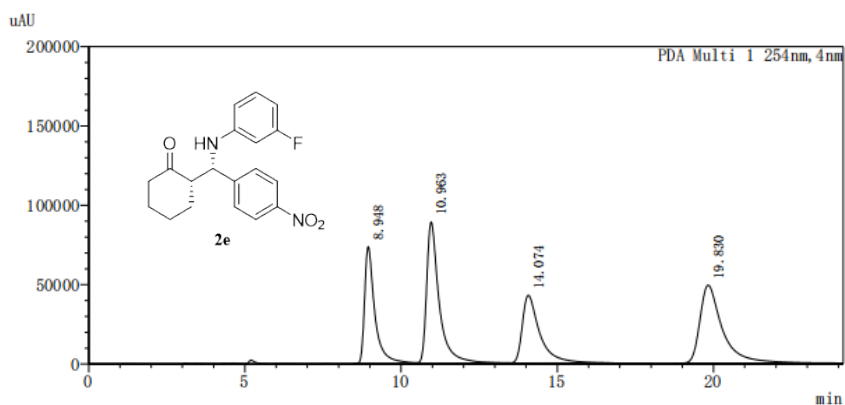


PDA Ch1 254nm					
RT (min)	Area	Height	Area (%)	Height (%)	
1	1106456	40649	24.073	29.660	
2	132914	4237	2.892	3.091	
3	54196	2074	1.179	1.513	
4	3302654	90092	71.856	65.736	

SHIMADZU LabSolutions Analysis

Sample Information

Sample Name: LK-M-139-9 rac
 Sample Type : Mannich
 Method Name : AD-H-80-20-1ml
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/11 11:07:55 Operator : System Administrator
 Modified Date : 2023/1/11 11:32:06 Modifield by : WC

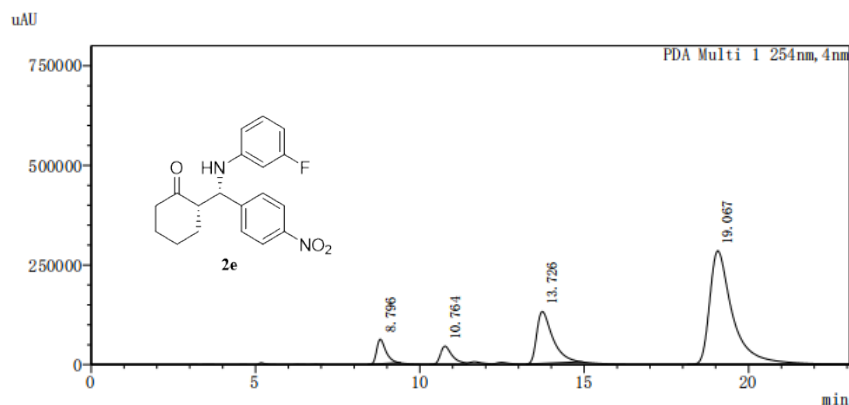


RT (min)	Area	Height	Area (%)	Height (%)
1 8.948	1689435	73677	20.374	28.941
2 10.963	2481212	89056	29.923	34.982
3 14.074	1660899	42705	20.030	16.775
4 19.830	2460523	49137	29.673	19.301

SHIMADZU LabSolutions Analysis

Sample Information

Sample Name: LK-M-139-9
 Sample Type : Mannich
 Method Name : AD-H 80-20-1ml
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/11 14:40:22 Operator : System Administrator
 Modified Date : 2023/1/11 15:03:28 Modifield by : WC

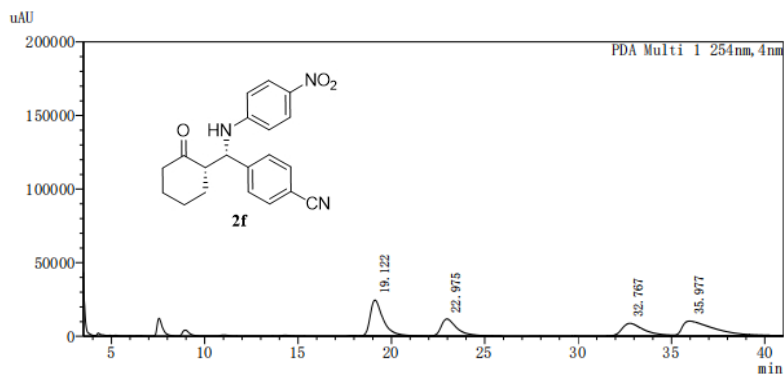


RT (min)	Area	Height	Area (%)	Height (%)
1 8.796	1206974	61642	5.835	11.790
2 10.764	1177395	46039	5.692	8.806
3 13.726	4416518	130338	21.351	24.929
4 19.067	13883948	284824	67.121	54.476

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: Mannich
 Sample Type : 125-23 Rac
 Method Name : AD-H -80-20-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/14 15:43:42 Operator : System Administrator
 Modified Date : 2023/4/14 16:26:43 Modifield by : WC

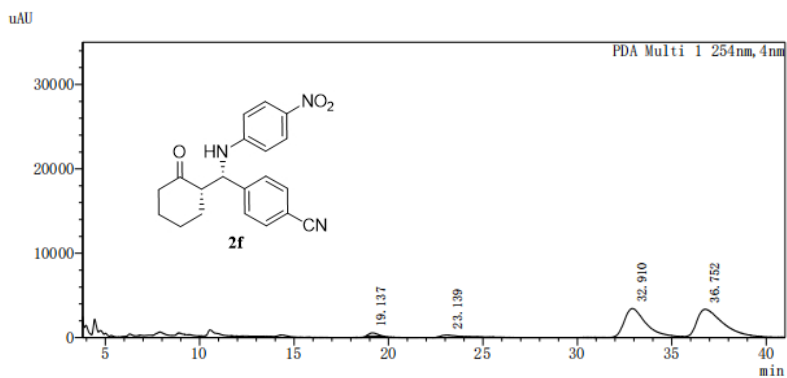


RT (min)	Area	Height	Area (%)	Height (%)
1 19.122	1152855	24138	31.353	44.476
2 22.975	682937	11633	18.573	21.434
3 32.767	686816	8513	18.678	15.685
4 35.977	1154436	9988	31.396	18.404

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: Mannich
 Sample Type : 125-23
 Method Name : AD-H 80-20-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/14 19:11:40 Operator : System Administrator
 Modified Date : 2023/4/14 20:01:51 Modifield by : WC

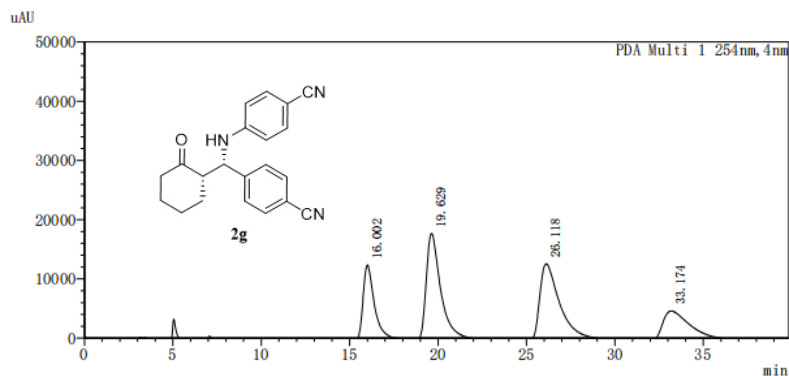


RT (min)	Area	Height	Area (%)	Height (%)
1 19.137	11496	370	1.645	4.836
2 23.139	18644	298	2.668	3.902
3 32.910	293223	3507	41.955	45.873
4 36.752	375541	3470	53.733	45.389

SHIMADZU LabSolutions Analysis

Sample Information

Sample Name: LK-M-143-1 RAC
 Sample Type : AD-H80-20-1ML
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/10 14:36:59 Operator : System Administrator
 Modified Date : 2023/1/10 15:16:51 Modifield by : WC

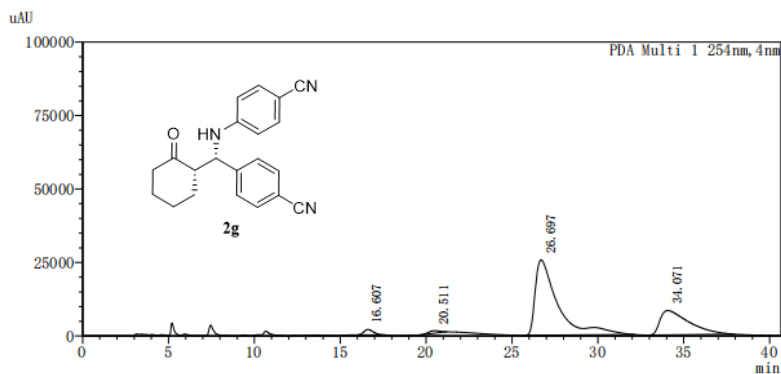


RT (min)	Area	Height	Area (%)	Height (%)
1 16.002	555966	12675	17.798	26.068
2 19.629	1019499	18001	32.637	37.022
3 26.118	1003161	12940	32.114	26.614
4 33.174	545094	5006	17.450	10.296

SHIMADZU LabSolutions Analysis

Sample Information

Sample Name: LK-M-143-1
 Sample Type : AD-H 80-20-1ML
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/10 17:27:37 Operator : System Administrator
 Modified Date : 2023/1/10 18:08:18 Modifield by : WC

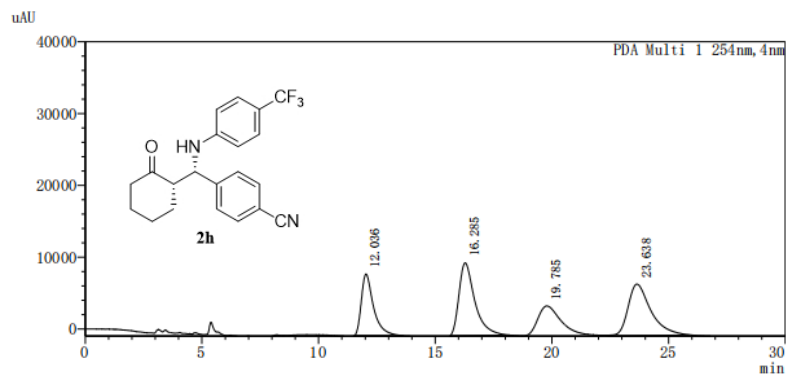


RT (min)	Area	Height	Area (%)	Height (%)
1 16.607	69664	1841	2.039	5.036
2 20.511	38288	830	1.121	2.269
3 26.697	2336477	25603	68.396	70.036
4 34.071	971654	8283	28.444	22.658

SHIMADZU LabSolutions Analysis

Sample Information

Sample Name: LK-M-136-3
 Sample Type : Unknown
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/5 21:36:14 Operator : System Administrator
 Modified Date : 2023/1/5 22:04:35 Modified by : WC

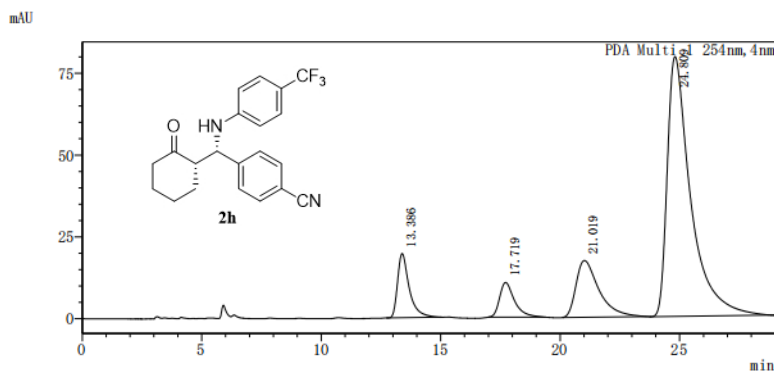


PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	12.036	310701	8580	19.602	28.461
2	16.285	477527	10136	30.128	33.624
3	19.785	311613	4269	19.660	14.160
4	23.638	485174	7161	30.610	23.755

SHIMADZU LabSolutions Analysis

Sample Information

Sample Name: LK-136-3
 Sample Type : Unknown
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/5 22:12:49 Operator : System Administrator
 Modified Date : 2023/1/5 22:44:36 Modified by : WC

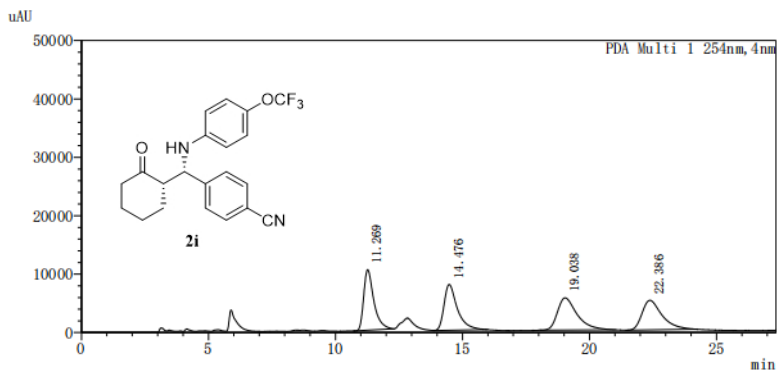


PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	13.386	665179	19605	8.643	15.448
2	17.719	458941	10587	5.963	8.342
3	21.019	1161184	17330	15.088	13.656
4	24.809	5410944	79387	70.306	62.554

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: LK-M-136-14
 Sample Type : Unknown
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/4 20:02:11 Operator : System Administrator
 Modified Date : 2023/1/4 20:29:34 Modifield by : WC

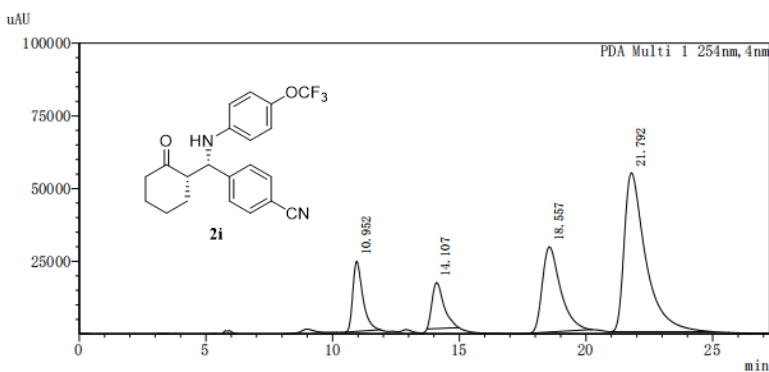


PDA Ch1 254nm					
	RT(min)	Area	Height	Area (%)	Height (%)
1	11.269	288470	10387	25.123	36.047
2	14.476	285044	7841	24.825	27.212
3	19.038	297185	5518	25.882	19.150
4	22.386	277525	5069	24.170	17.592

SHIMADZU
LabSolutions Analysis

Sample Information

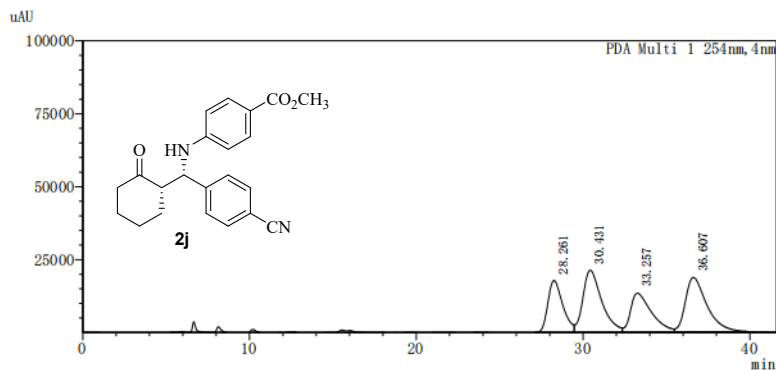
Sample Name: LK-M-136-14
 Sample Type : Unknow
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/4 19:21:33 Operator : System Administrator
 Modified Date : 2023/1/4 19:48:50 Modifield by : WC



PDA Ch1 254nm					
	RT(min)	Area	Height	Area (%)	Height (%)
1	10.952	661518	24099	11.300	19.472
2	14.107	514299	15776	8.785	12.747
3	18.557	1466617	29295	25.053	23.670
4	21.792	3211527	54594	54.861	44.111

Sample Information

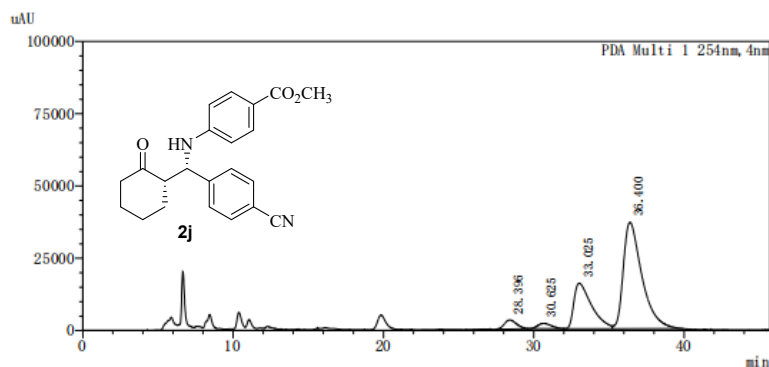
Sample Name: LK-M-141-9RAC
 Sample Type : M
 Method Name : AD-H 85-15-1ml
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/2/20 11:29:10 Operator : System Administrator
 Modified Date : 2023/2/20 12:10:48 Modifield by : WC



PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	28.261	1107636	17839	19.787	25.064
2	30.431	1673683	21317	29.898	29.951
3	33.257	1157739	13368	20.682	18.783
4	36.607	1658856	18649	29.633	26.202

Sample Information

Sample Name: LK-M-150-9
 Sample Type : AD-H 85-15-1ml
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/2/20 12:15:55 Operator : System Administrator
 Modified Date : 2023/2/20 13:01:40 Modifield by : WC

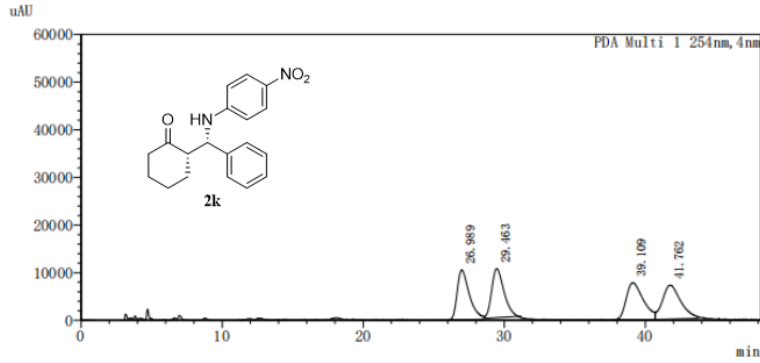


PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	28.396	175301	3134	3.689	5.447
2	30.625	114508	1823	2.410	3.169
3	33.025	1283501	15749	27.011	27.374
4	36.400	3178500	36827	66.890	64.010

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: LK-M-150-25 RAC
 Sample Type : AD-H 90-10-1ML
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/3/3 16:26:25 Operator : System Administrator
 Modified Date : 2023/3/3 17:14:38 Modifield by : WC

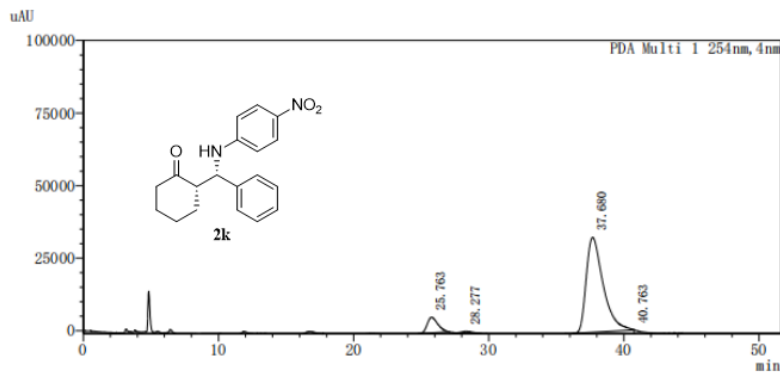


PDA Ch1 254nm					
RT (min)	Area	Height	Area (%)	Height (%)	
1	26.989	621999	10440	24.552	29.306
2	29.463	620789	10315	24.504	28.954
3	39.109	647555	7728	25.561	21.692
4	41.762	643058	7142	25.383	20.048

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: LK-M-150-25
 Sample Type : Unknow
 Method Name : AD-H-90-10-1ml
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/3/1 14:48:17 Operator : System Administrator
 Modified Date : 2023/3/1 15:39:58 Modifield by : WC

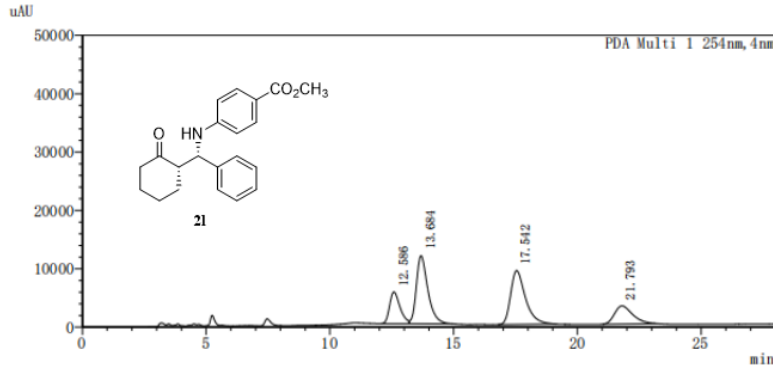


PDA Ch1 254nm					
RT (min)	Area	Height	Area (%)	Height (%)	
1	25.763	289196	5297	8.988	13.234
2	28.277	28313	559	0.880	1.397
3	37.680	2845516	32675	88.436	81.641
4	40.763	54587	1492	1.696	3.727

SHIMADZU LabSolutions Analysis

Sample Information

Sample Name: LK-M-150-26 RAC
 Sample Type : AD-H 80-20-1ML
 Method Name : Mannich
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/2/26 19:31:24 Operator : System Administrator
 Modified Date : 2023/2/26 19:59:26 Modifield by : WC

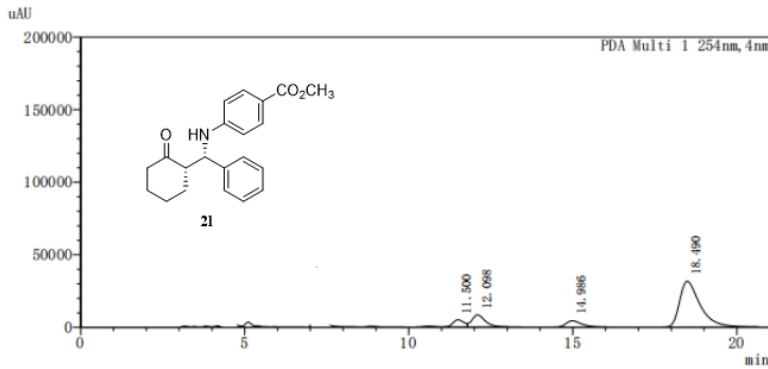


PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	12.586	159005	5435	14.748	18.476
2	13.684	378035	11649	35.064	39.599
3	17.542	383931	9230	35.611	31.375
4	21.793	157156	3104	14.577	10.550

SHIMADZU LabSolutions Analysis

Sample Information

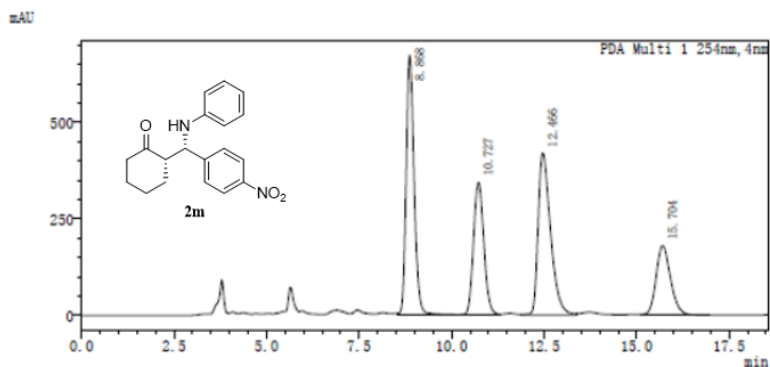
Sample Name: Mannich
 Sample Type : 150-26
 Method Name : AD-H 80-20-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/3/1 21:14:41 Operator : System Administrator
 Modified Date : 2023/3/1 21:35:44 Modifield by : WC



PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	11.500	114635	4947	6.151	10.049
2	12.098	231072	8332	12.399	16.926
3	14.986	144827	4372	7.771	8.881
4	18.490	1373074	31575	73.678	64.144

Sample Information

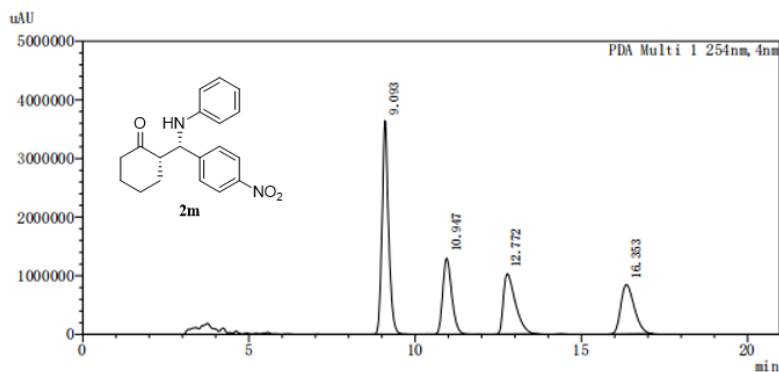
Sample Name: 2019022051-0
 Sample Type : Unknow
 Method Name : Mannich cat5%
 Batch Name : 20190104.1cb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2019/3/4 14:41:15 Operator : System Administrator
 Modified Date : 2019/11/1 11:14:13 Modifield by : yzy



RT (min)	Area	Height	Area (%)	Height (%)
1 8.868	10087523	671651	31.967	41.619
2 10.727	6740670	343009	21.361	21.255
3 12.466	9541360	419439	31.157	25.991
4 15.704	4386683	179716	15.486	11.136

Sample Information

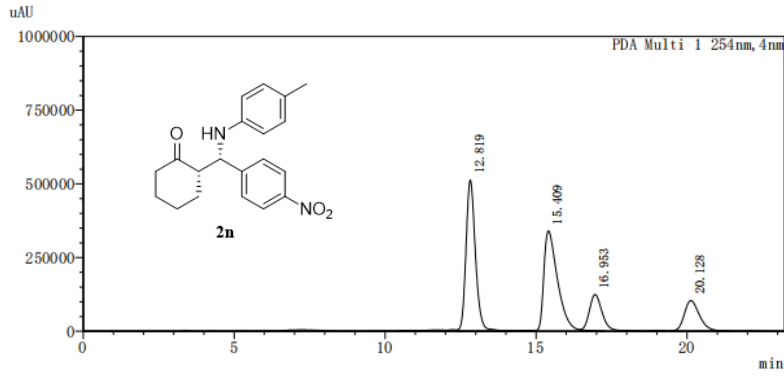
Sample Name: 2m
 Sample Type : Unknow
 Method Name :
 Batch Name : 20190104.1cb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2019/3/2 11:53:17 Operator : System Administrator
 Modified Date : 2019/3/2 12:14:17 Modifield by : WC



RT (min)	Area	Height	Area (%)	Height (%)
1 9.093	49629631	3637823	39.943	53.414
2 10.947	24583628	1297906	19.785	19.057
3 12.772	26127308	1030152	21.028	15.126
4 16.353	23911546	844784	19.244	12.404

Sample Information

Sample Name: 2n rac
 Sample Type : Unknow
 Method Name : Mannich cat5%
 Batch Name : 20190104.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2019/3/21 21:47:38 Operator : System Administrator
 Modified Date : 2019/3/21 22:10:53 Modifield by : WC

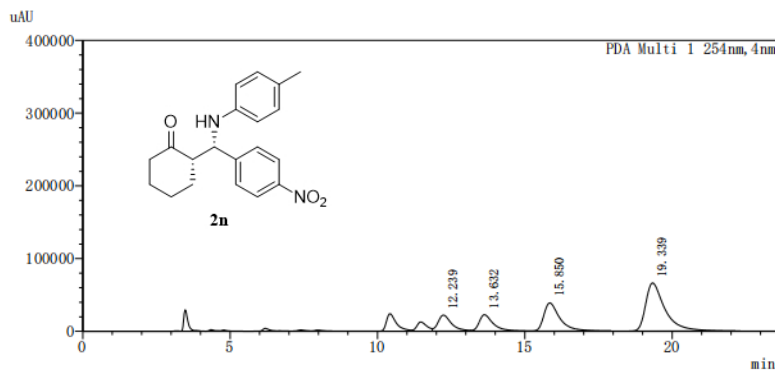


PDA Ch1 254nm

RT (min)	Area	Height	Area (%)	Height (%)	
1	12.819	11120725	512235	37.225	47.145
2	15.409	11354440	347216	38.007	31.957
3	16.953	3726559	123351	12.474	11.353
4	20.128	3672931	103708	12.294	9.545

Sample Information

Sample 2n
 Sample Type : 2n
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/9 18:36:09 Operator : System Administrator
 Modified Date : 2023/4/9 18:59:44 Modifield by : WC

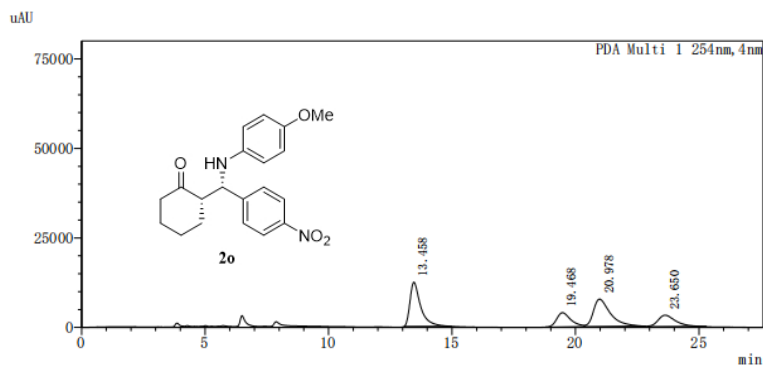


PDA Ch1 254nm

RT (min)	Area	Height	Area (%)	Height (%)	
1	12.239	694280	21869	11.776	14.683
2	13.632	748723	22425	12.700	15.056
3	15.850	1452627	38587	24.639	25.907
4	19.339	2999986	66061	50.885	44.354

Sample Information

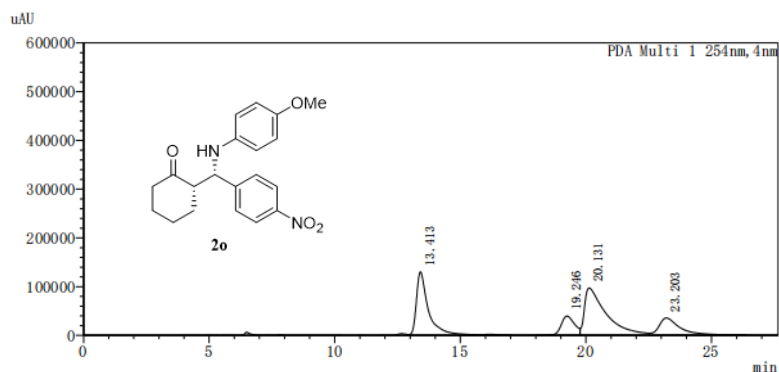
Sample Name: 2o RAC
 Sample Type : Mannich Reaction
 Method Name : AD-H 80-20-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/5 19:57:59 Operator : System Administrator
 Modified Date : 2023/1/5 20:25:37 Modified by : WC



RT (min)	Area	Height	Area (%)	Height (%)
1	369684	12329	35.276	45.441
2	158858	3976	15.159	14.655
3	364774	7652	34.808	28.202
4	154650	3175	14.757	11.702

Sample Information

Sample Name: 2o
 Sample Type : Mannich Reaction
 Method Name : AD-H 80-20-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/1/5 20:27:23 Operator : System Administrator
 Modified Date : 2023/1/5 20:55:04 Modified by : WC

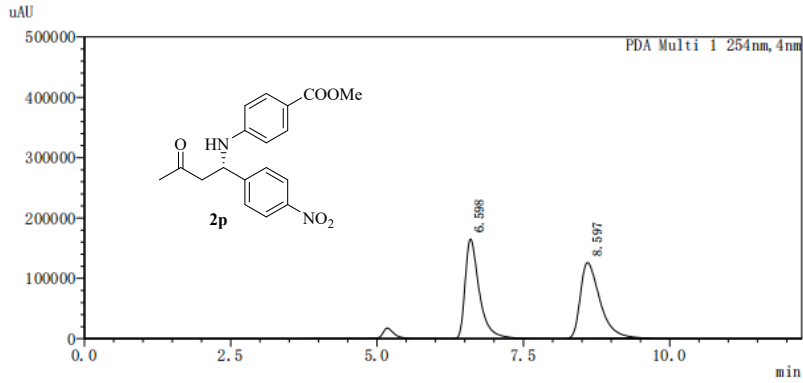


RT (min)	Area	Height	Area (%)	Height (%)
1	4358227	129968	32.125	43.173
2	1438927	39213	10.606	13.026
3	5743003	96803	42.332	32.157
4	2026318	35052	14.936	11.644

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: Mannich
 Sample Type : 11pRAC
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/3/21 9:11:07
 Modified Date : 2023/3/21 9:23:25
 Operator : System Administrator
 Modified by : WC

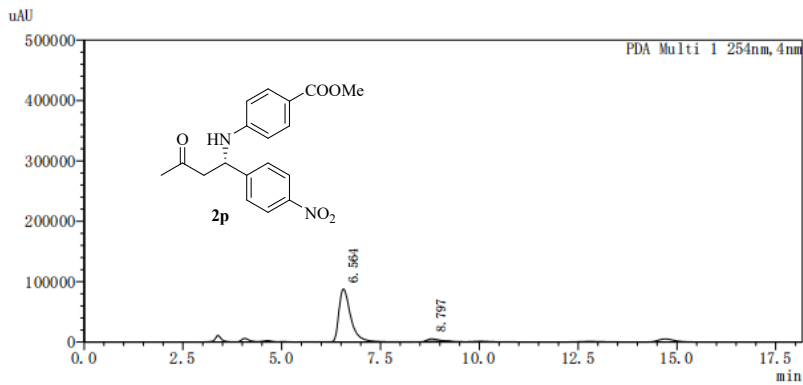


RT (min)	Area	Height	Area (%)	Height (%)
1 6.598	2917616	166182	49.835	56.868
2 8.597	2936881	126044	50.165	43.132

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: Mannich
 Sample Type : 111p
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/8 8:46:30
 Modified Date : 2023/4/8 9:04:43
 Operator : System Administrator
 Modified by : WC

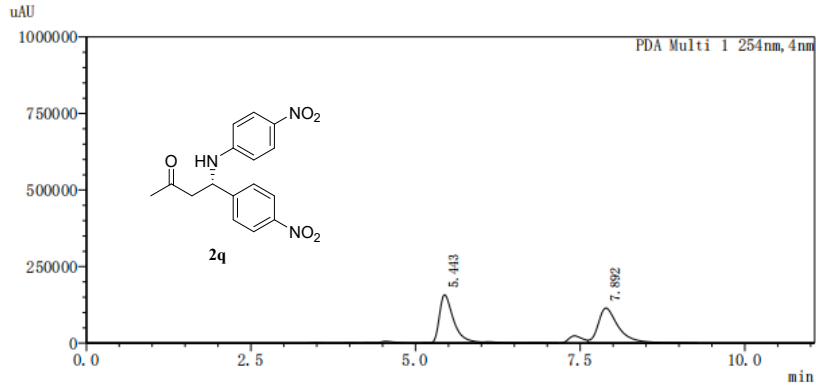


RT (min)	Area	Height	Area (%)	Height (%)
1 6.564	1880326	87915	96.077	95.638
2 8.797	76784	4010	3.923	4.362

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: 151RAC-64
 Sample Type : mannich
 Method Name : AD-H 70-30-1
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/3/26 10:11:38 Operator : System Administrator
 Modified Date : 2023/3/26 10:22:44 Modifield by : WC

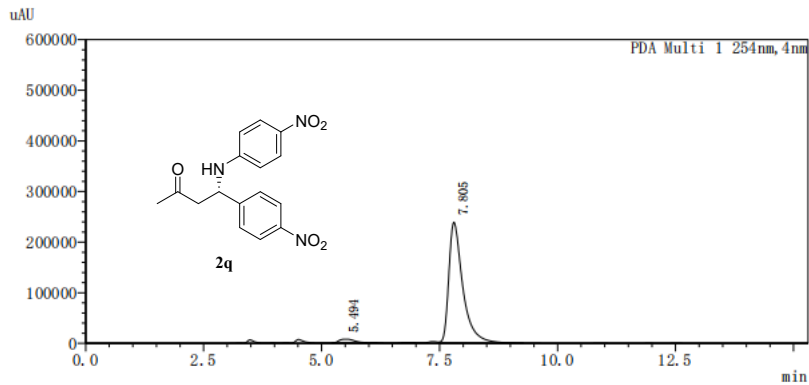


RT(min)	Area	Height	Area (%)	Height (%)	
1	5.443	2446094	157556	50.021	57.963
2	7.892	2444016	114264	49.979	42.037

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: 151-64
 Sample Type : mannich
 Method Name : AD-H 70-30-1
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/3/26 9:53:49 Operator : System Administrator
 Modified Date : 2023/3/26 10:09:10 Modifield by : WC

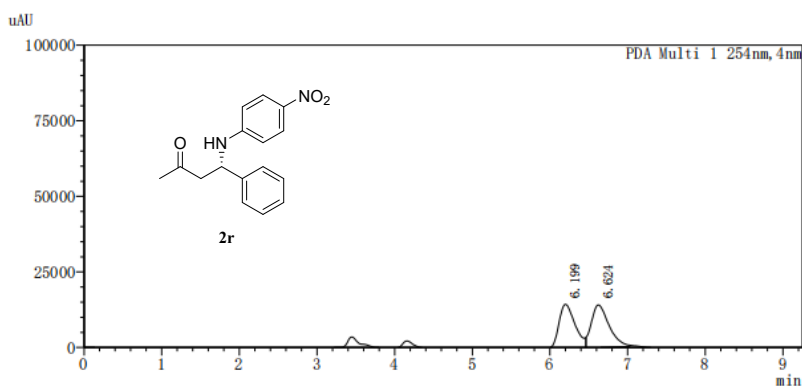


RT(min)	Area	Height	Area (%)	Height (%)	
1	5.494	167594	7335	3.300	2.986
2	7.805	4911282	238302	96.700	97.014

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: Mannich
 Sample Type : 151-71RAC
 Method Name : AD-H 70-30-1 mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/10 13:06:36 Operator : System Administrator
 Modified Date : 2023/4/10 13:15:54 Modifield by : WC

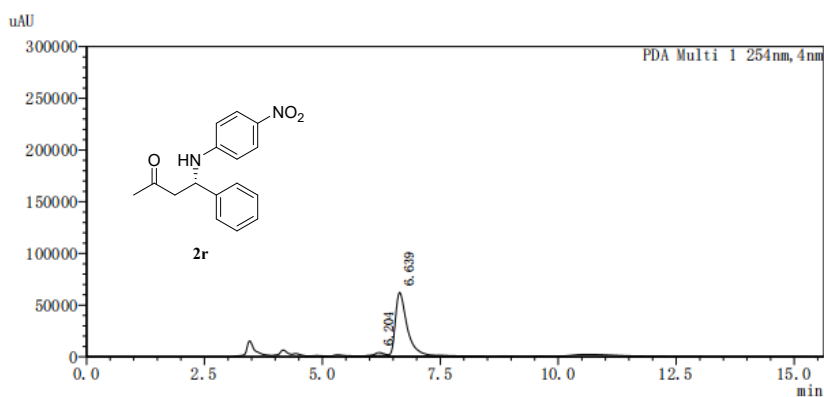


PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	6.199	224256	14945	50.231	51.468
2	6.624	222191	14093	49.769	48.532

SHIMADZU
LabSolutions Analysis

Sample Information

Sample Name: Mannich
 Sample Type : 151-71
 Method Name : AD-H70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/10 12:38:46 Operator : System Administrator
 Modified Date : 2023/4/10 12:54:25 Modifield by : WC

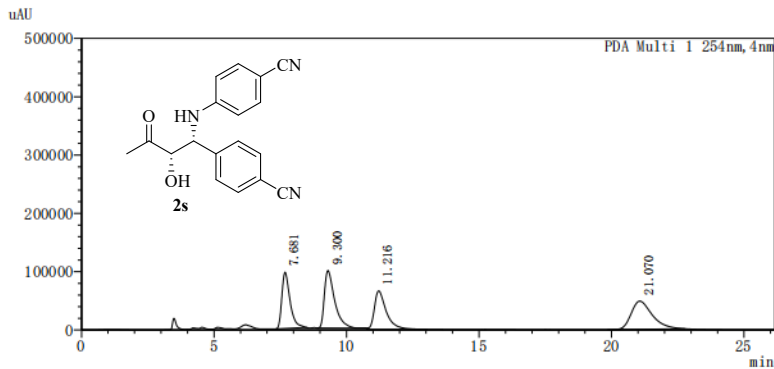


PDA Ch1 254nm					
	RT (min)	Area	Height	Area (%)	Height (%)
1	6.204	36317	2833	3.151	4.376
2	6.639	1116405	61907	96.849	95.624

SHIMADZU LabSolutions Analysis

Sample Information

Sample Name:Mannich
 Sample Type : 151-109RAC
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/14 13:21:05 Operator : System Administrator
 Modified Date : 2023/4/14 13:47:17 Modifield by : WC

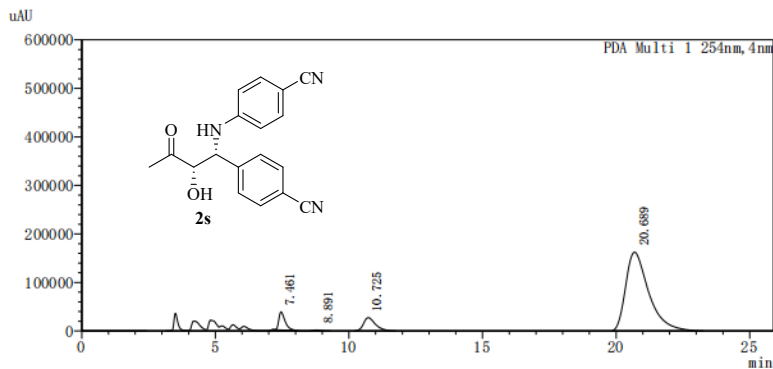


PDA Ch1 254nm					
	RT(min)	Area	Height	Area (%)	Height (%)
1	7.681	2067796	96418	21.903	31.169
2	9.300	2649489	98520	28.065	31.848
3	11.216	2076199	66237	21.992	21.412
4	21.070	2647011	48170	28.039	15.572

SHIMADZU LabSolutions Analysis

Sample Information

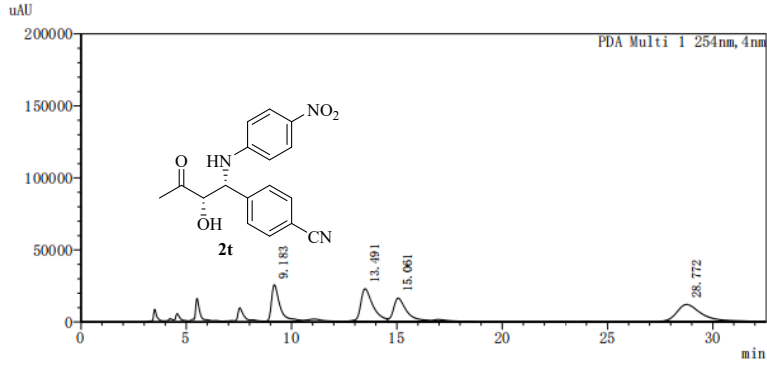
Sample Name:Mannich
 Sample Type : 151-109
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/14 12:53:52 Operator : System Administrator
 Modified Date : 2023/4/14 13:19:49 Modifield by : WC



PDA Ch1 254nm					
	RT(min)	Area	Height	Area (%)	Height (%)
1	7.461	605216	37170	5.100	15.959
2	8.891	70902	2858	0.598	1.227
3	10.725	968444	28515	8.161	12.243
4	20.689	10221909	164364	86.141	70.571

Sample Information

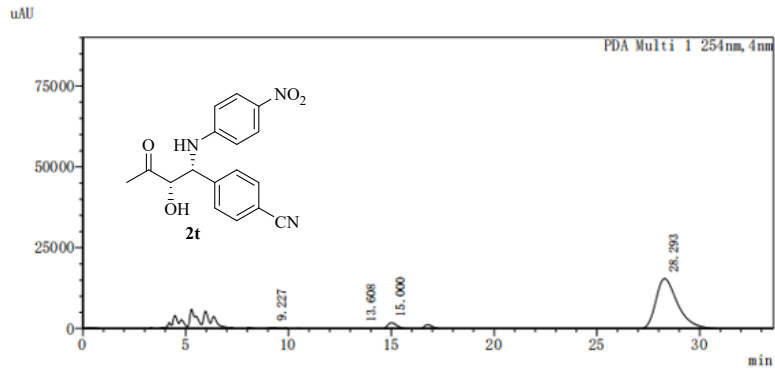
Sample Name: Mannich
 Sample Type : 151-110RAC
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/13 20:20:23 Operator : System Administrator
 Modified Date : 2023/4/13 20:52:58 Modifield by : WC



RT (min)	Area	Height	Area (%)	Height (%)
1 9.183	719884	25428	22.176	33.672
2 13.491	899934	22504	27.723	29.800
3 15.061	727183	15968	22.401	21.146
4 28.772	899194	11615	27.700	15.381

Sample Information

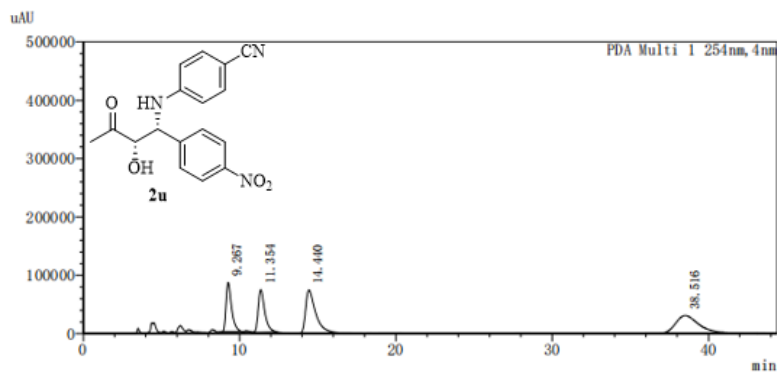
Sample Name: Mannich
 Sample Type : 151-110
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/14 13:48:46 Operator : System Administrator
 Modified Date : 2023/4/14 14:22:23 Modifield by : WC



RT (min)	Area	Height	Area (%)	Height (%)
1 9.227	11196	368	0.866	1.985
2 13.608	8301	245	0.642	1.320
3 15.000	78279	2118	6.051	11.432
4 28.293	1195811	15799	92.441	85.263

Sample Information

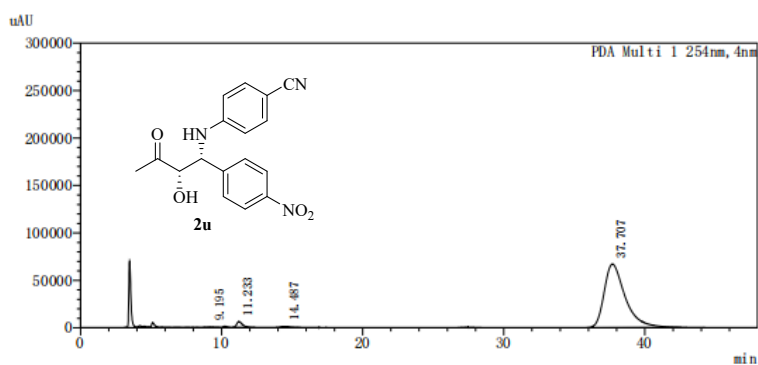
Sample Name: Mannich
 Sample Type : 151-112RAC
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/13 21:15:15 Operator : System Administrator
 Modified Date : 2023/4/13 21:59:41 Modifield by : WC



RT (min)	Area	Height	Area (%)	Height (%)
1 9.267	2106166	84090	19.405	32.131
2 11.354	2104117	72844	19.386	27.834
3 14.440	3324971	73902	30.634	28.238
4 38.516	3318496	30873	30.575	11.797

Sample Information

Sample Name: Mannich
 Sample Type : 151-112
 Method Name : AD-H 70-30-1mL
 Batch Name : 1021.lcb
 sample number :
 Injection Volume : 10 uL
 Acquisition Date : 2023/4/14 14:23:08 Operator : System Administrator
 Modified Date : 2023/4/14 15:11:10 Modifield by : WC



RT (min)	Area	Height	Area (%)	Height (%)
1 9.195	7560	358	0.106	0.479
2 11.233	176122	6146	2.461	8.240
3 14.487	54148	1186	0.757	1.590
4 37.707	6917903	66900	96.676	89.690

