

## 3-Nitro-3,4-dihydrocoumarins: Valuable precursors for the synthesis of enantiomerically enriched masked quaternary $\alpha$ -amino acid derivatives with a 3,4-dihydrocoumarin scaffold

Dan Lv, Min Zhao, Youming Wang, Zhenghong Zhou\*

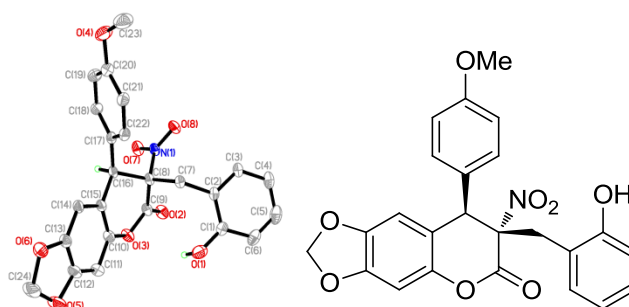
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### 1. Crystallography data of Compound (7*S*,8*R*)-**3aa**

(a) X-ray crystallography structure of compound (7*S*,8*R*)-**3aa**



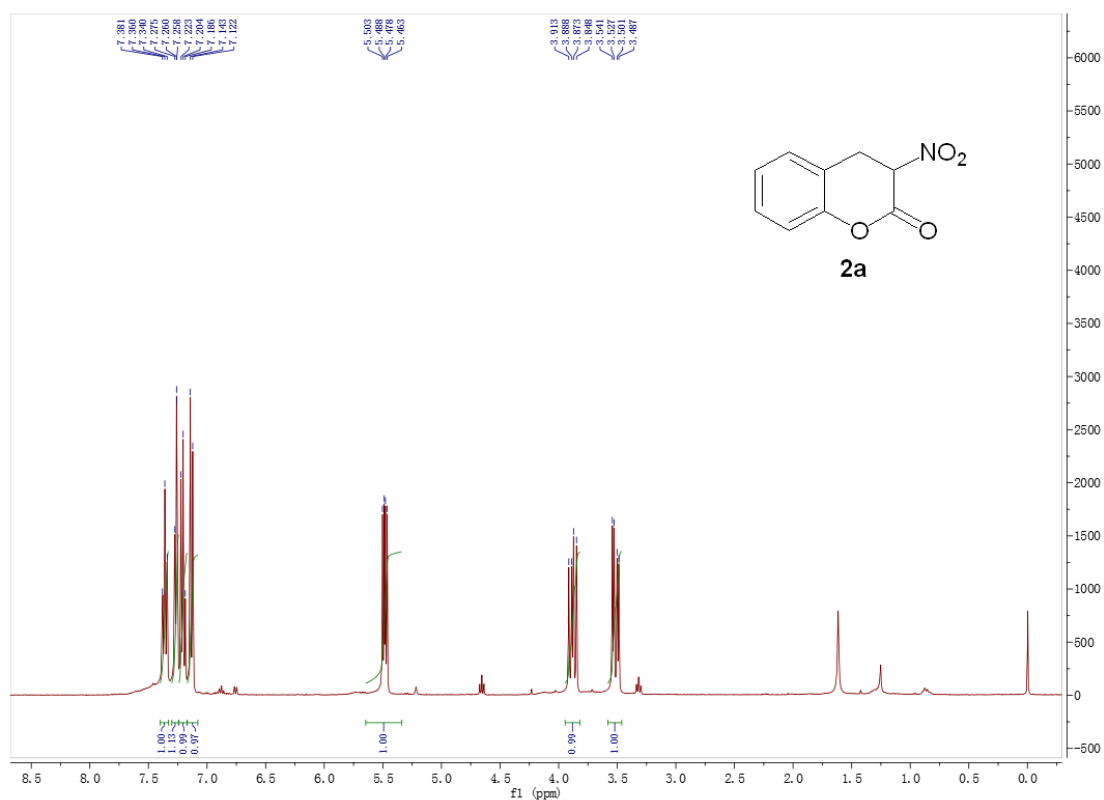
X-ray crystal structure of (7*S*,8*R*)-**3aa**. Most of the hydrogen atoms have been omitted for clarity. Displacement ellipsoids are drawn at 30% probability level.

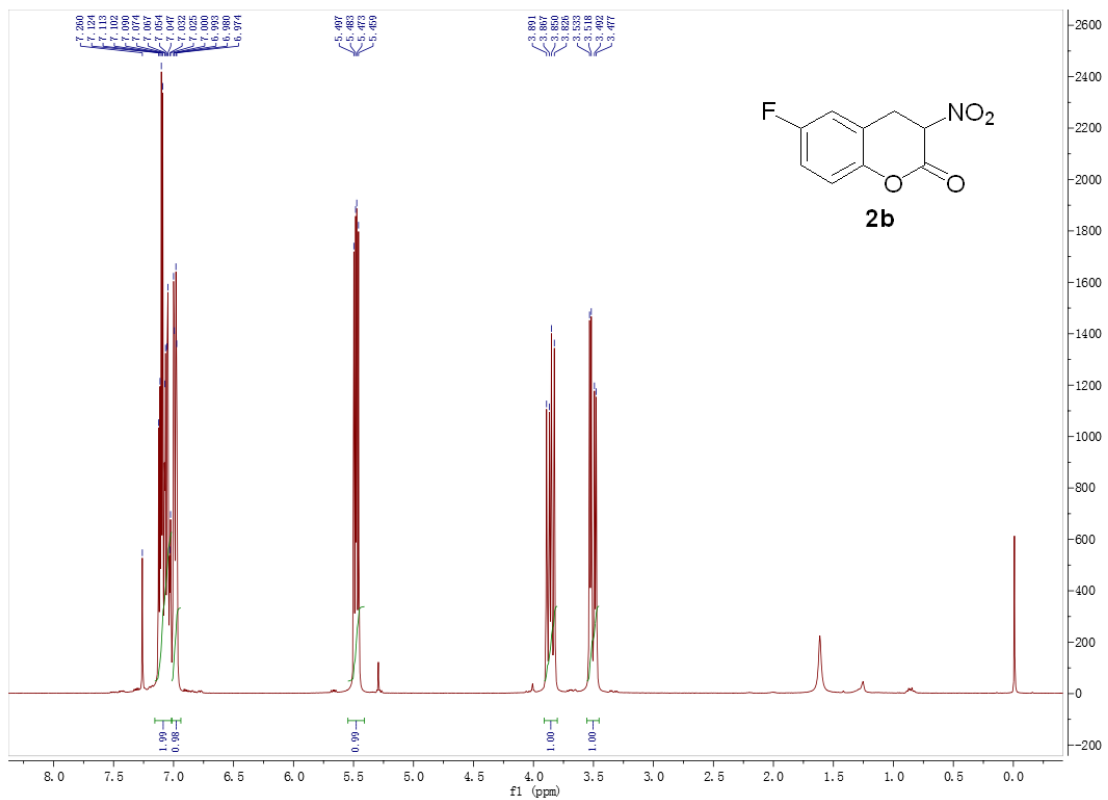
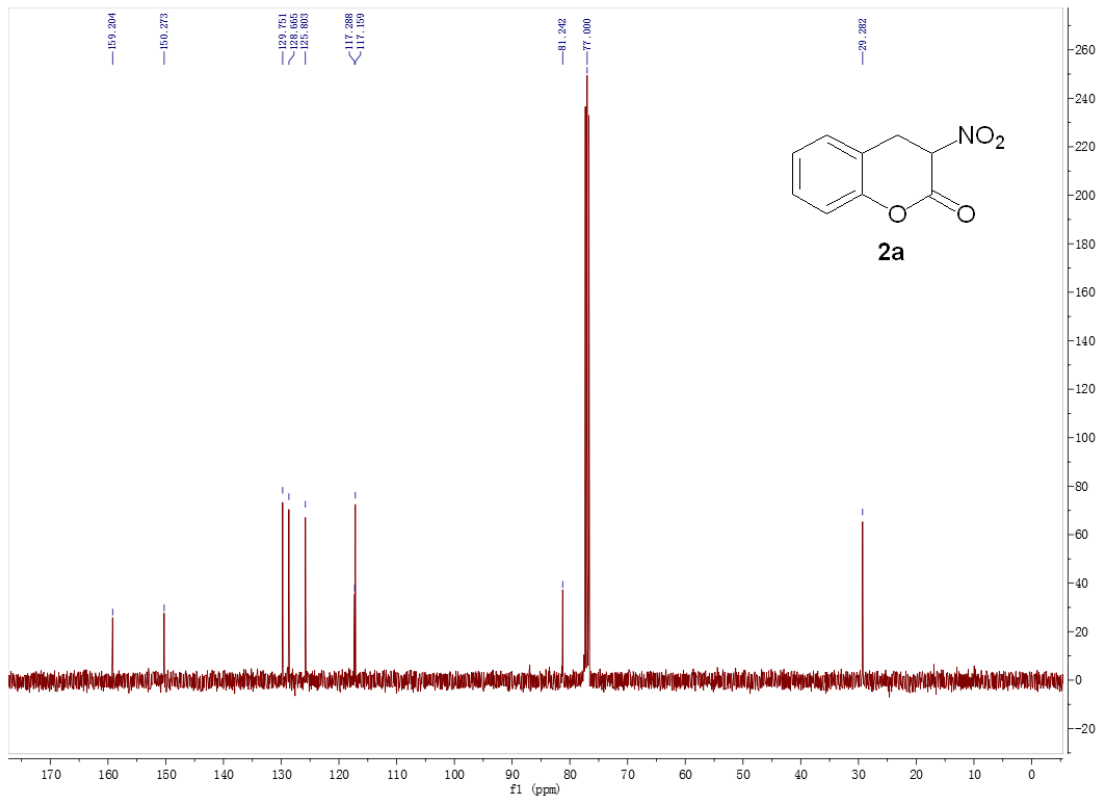
(b) Crystal data of compound (7*S*,8*R*)-**3aa**

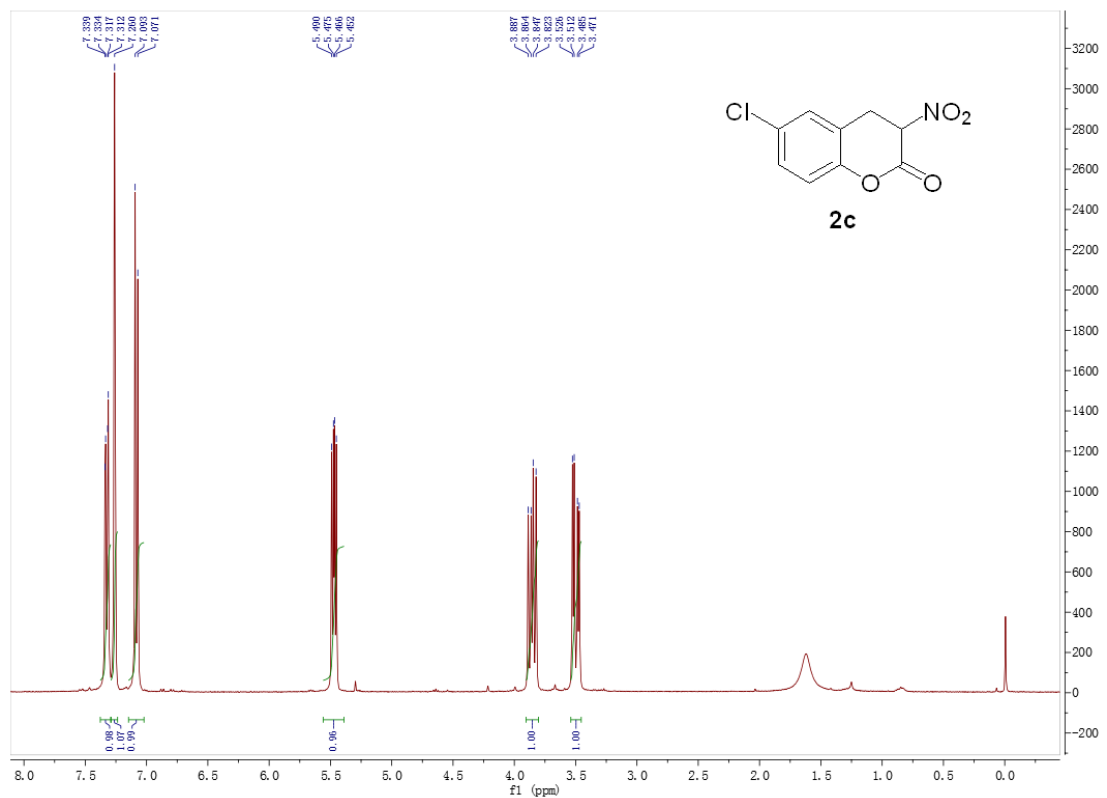
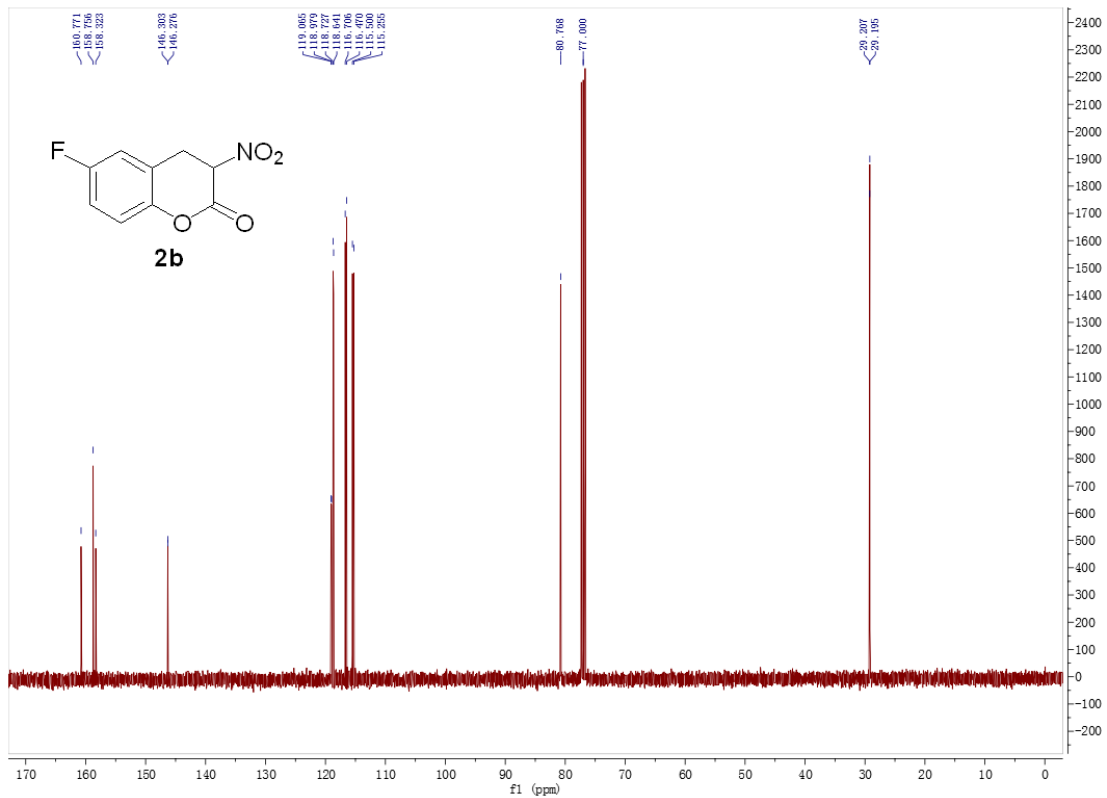
Identification code	P20180726a_sq
Empirical formula	C <sub>24</sub> H <sub>19</sub> NO <sub>8</sub>
Formula weight	449.40
Temperature/K	295.15
Crystal system	orthorhombic
Space group	P2 <sub>1</sub> 2 <sub>1</sub> 2 <sub>1</sub>
a/Å	10.31120(10)
b/Å	17.8036(2)
c/Å	30.2278(3)
$\alpha$ /°	90
$\beta$ /°	90
$\gamma$ /°	90

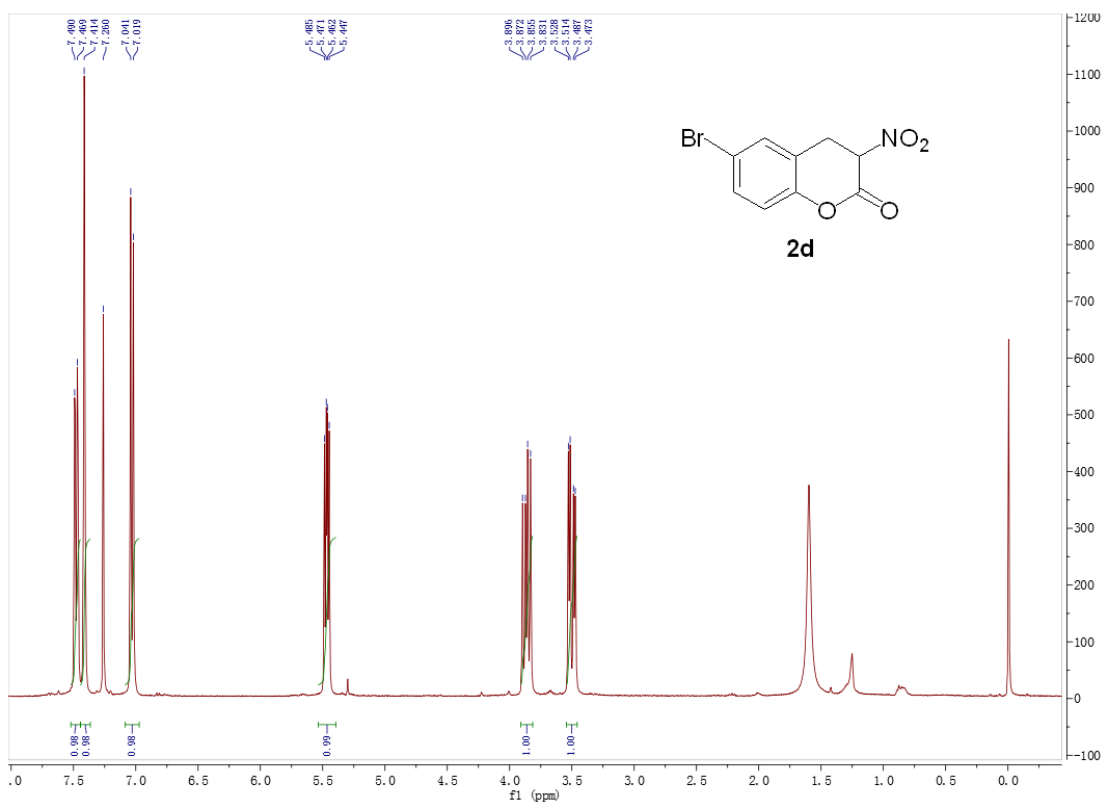
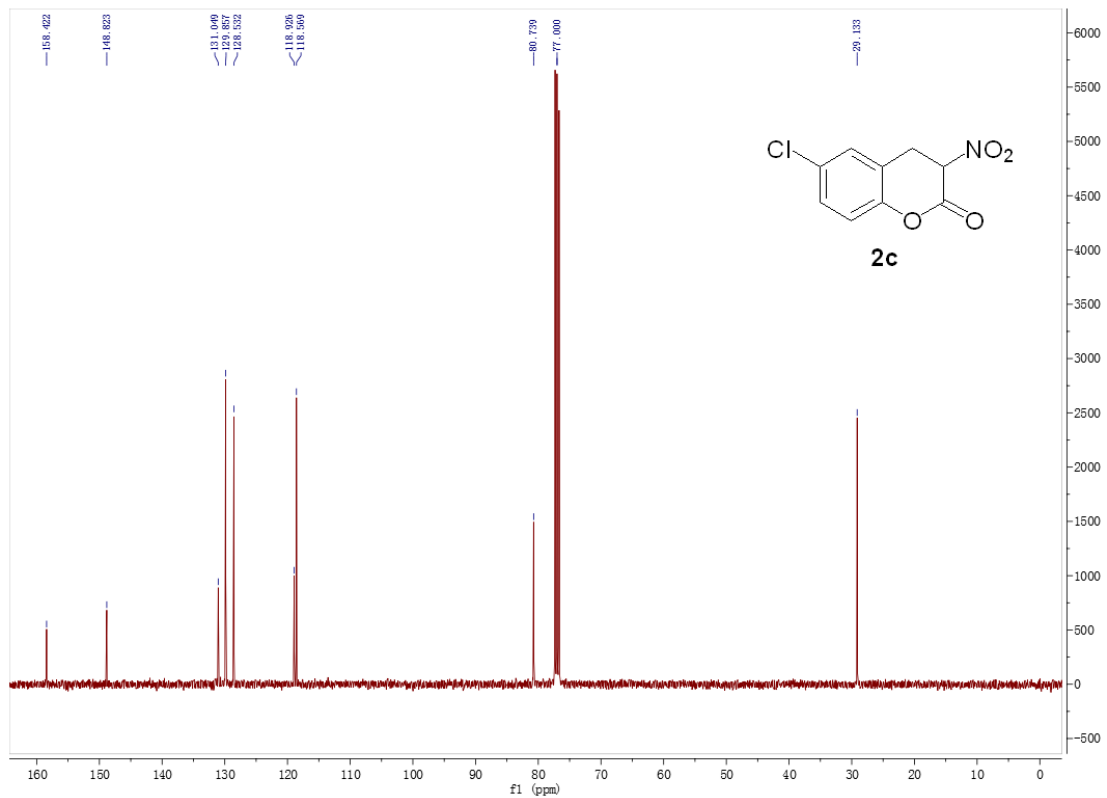
Volume/Å <sup>3</sup>	5549.11(10)
Z	8
ρ <sub>calc</sub> /cm <sup>3</sup>	1.076
μ/mm <sup>-1</sup>	0.688
F(000)	1872.0
Crystal size/mm <sup>3</sup>	0.26 × 0.22 × 0.12
Radiation	CuKα (λ = 1.54184)
2θ range for data collection/°	5.762 to 158.928
Index ranges	-12 ≤ h ≤ 10, -22 ≤ k ≤ 22, -38 ≤ l ≤ 38
Reflections collected	66075
Independent reflections	11867 [R <sub>int</sub> = 0.0465, R <sub>sigma</sub> = 0.0314]
Data/restraints/parameters	11867/0/600
Goodness-of-fit on F <sup>2</sup>	1.065
Final R indexes [I ≥ 2σ (I)]	R <sub>1</sub> = 0.0445, wR <sub>2</sub> = 0.1315
Final R indexes [all data]	R <sub>1</sub> = 0.0494, wR <sub>2</sub> = 0.1372
Largest diff. peak/hole / e Å <sup>-3</sup>	0.23/-0.17
Flack parameter	0.07(4)

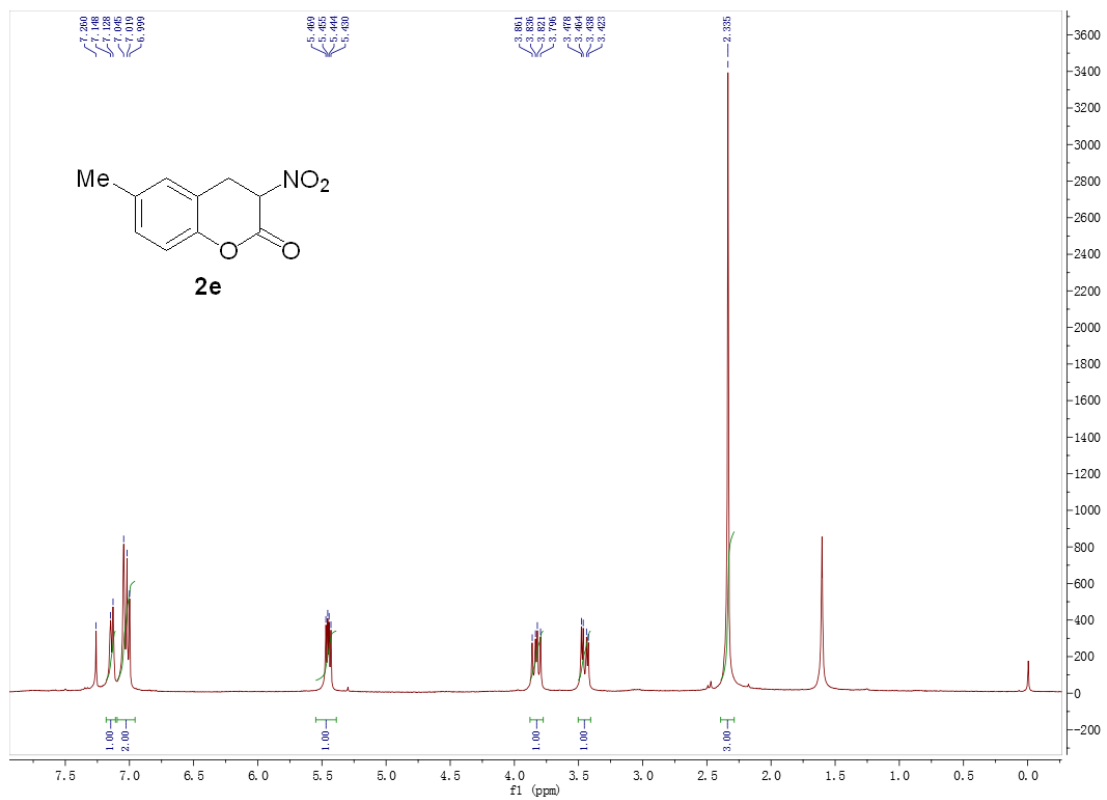
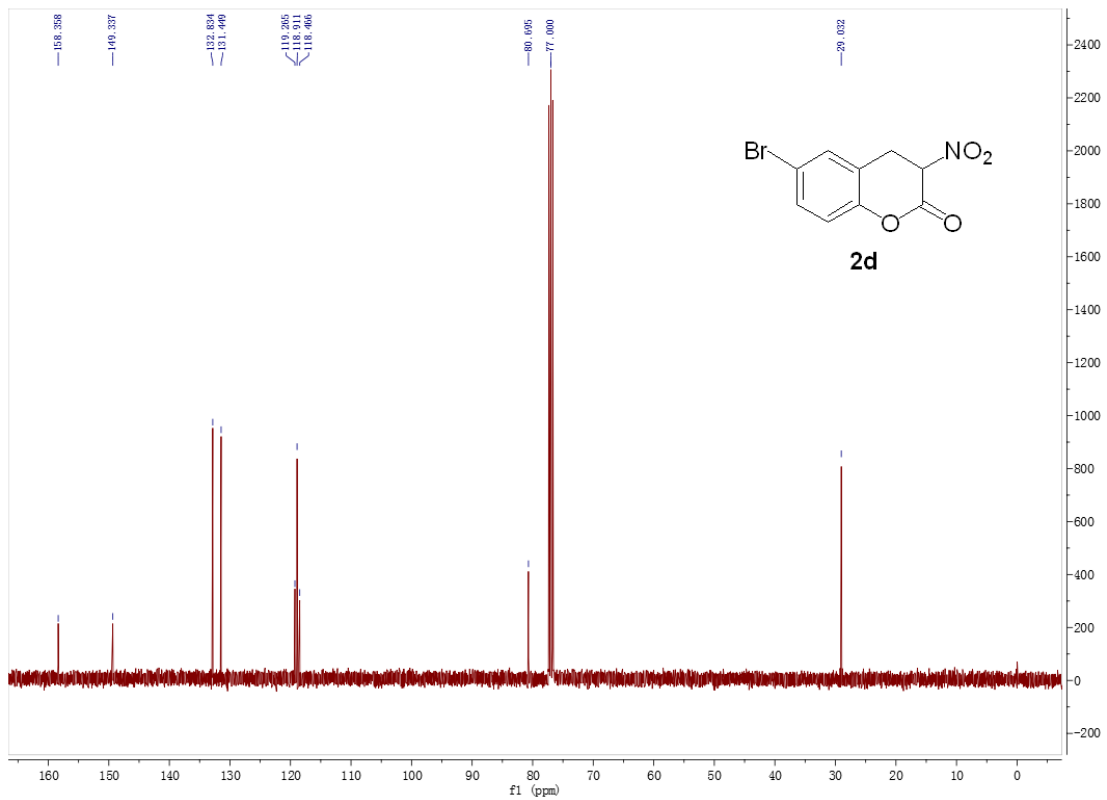
## 2. Copies of NMR Spectra

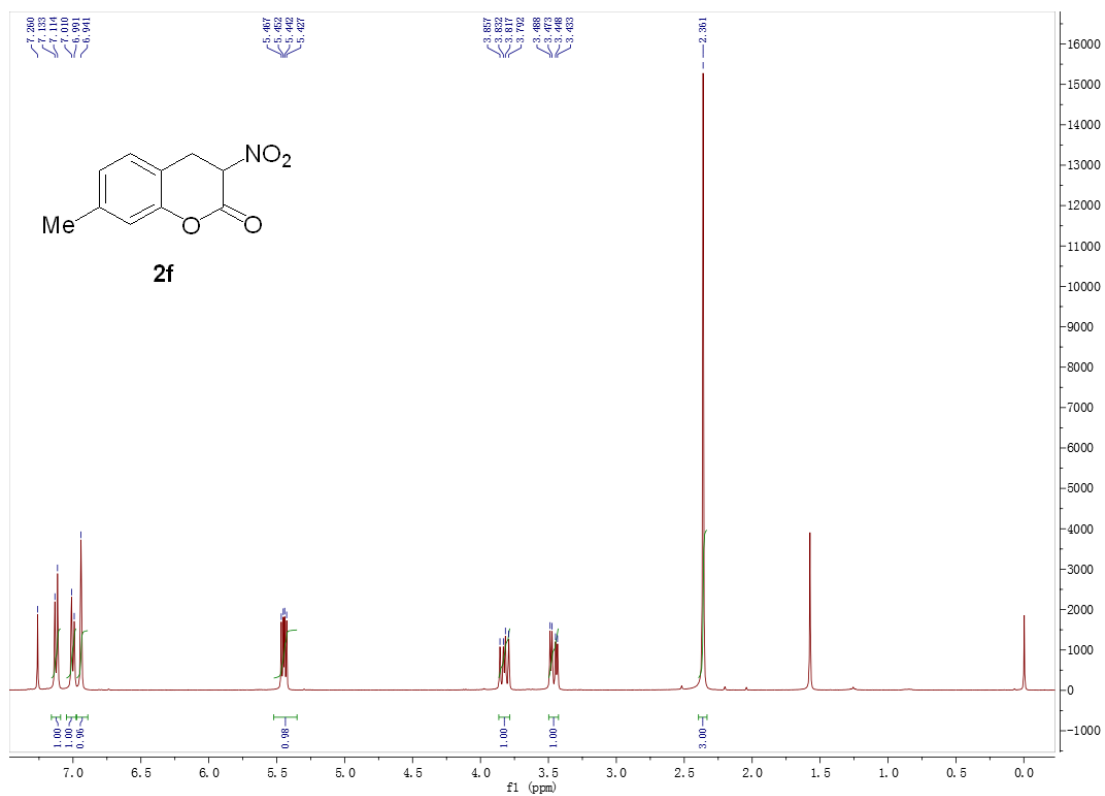
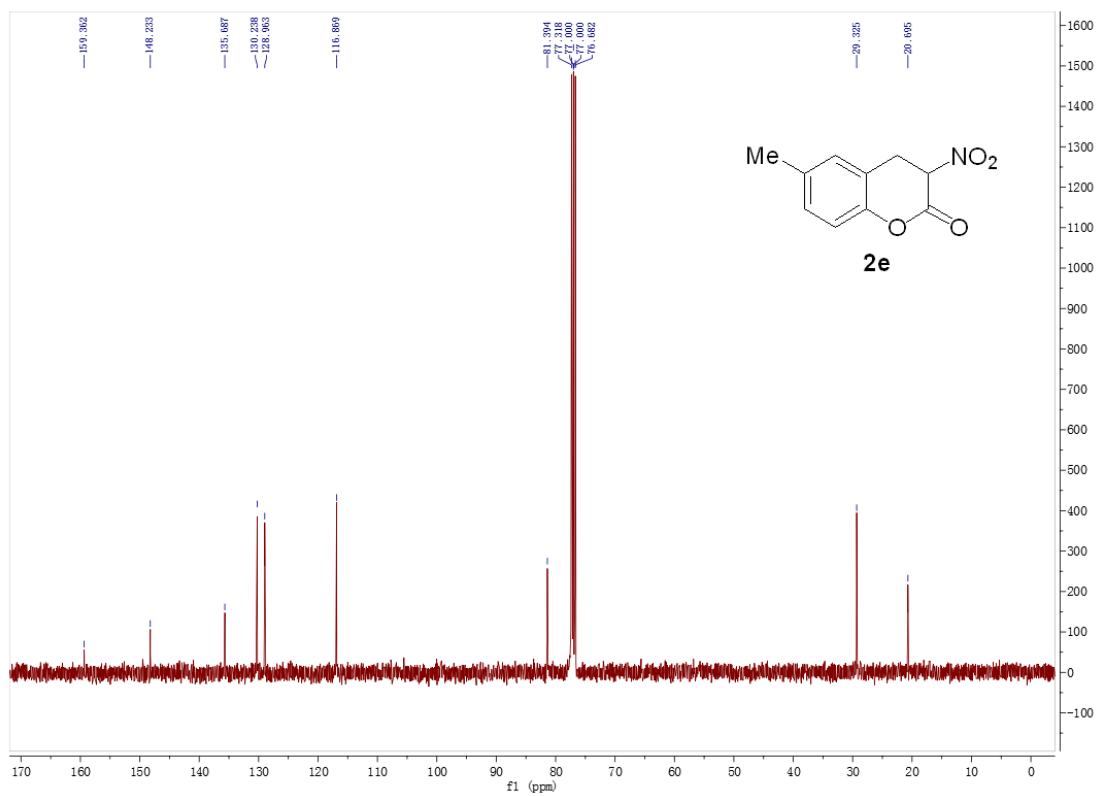


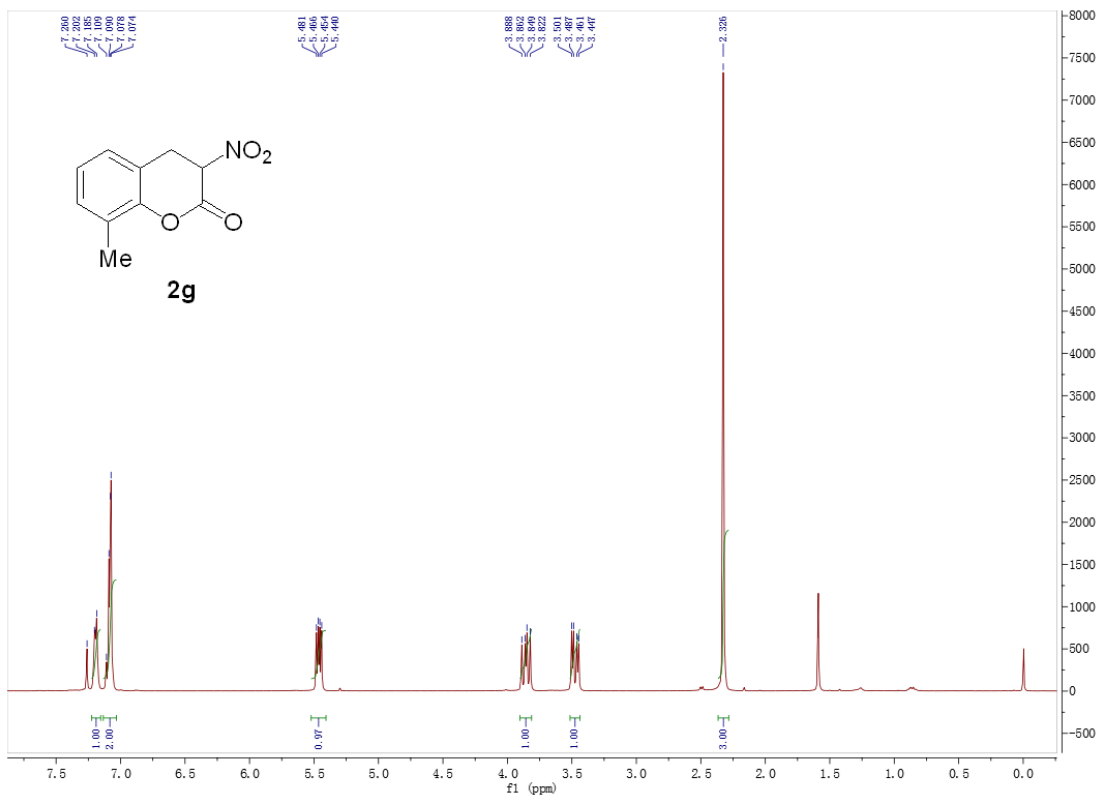
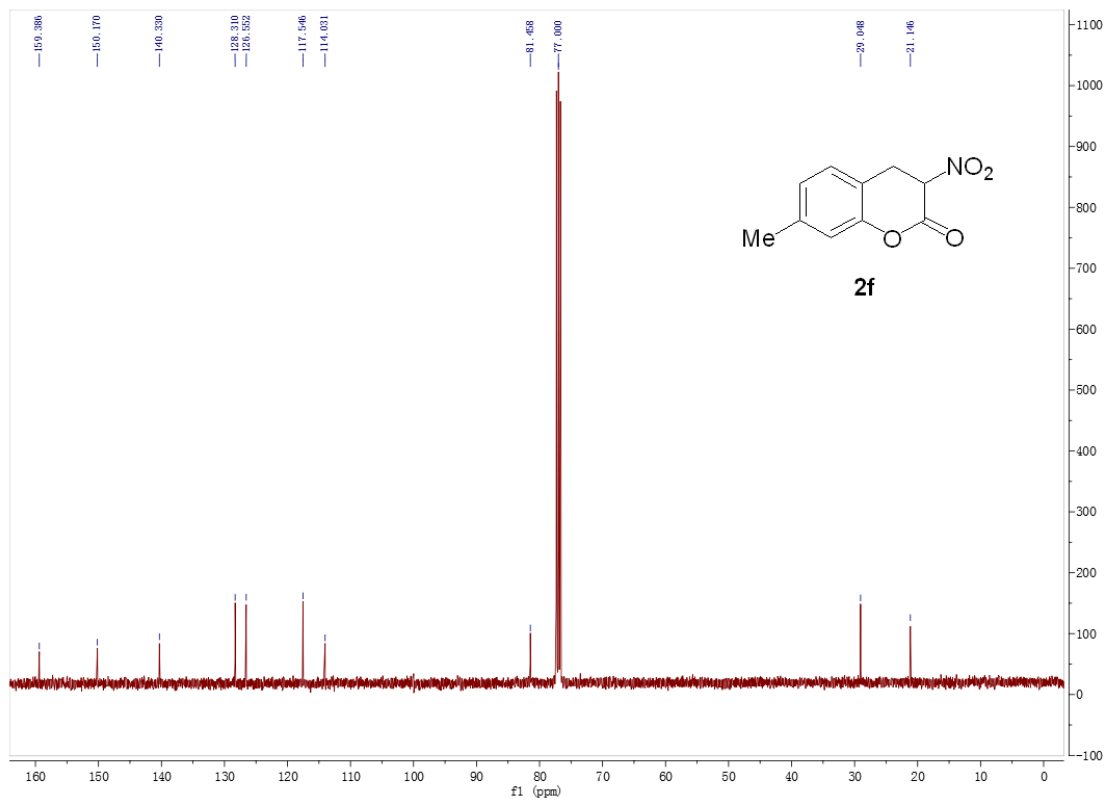




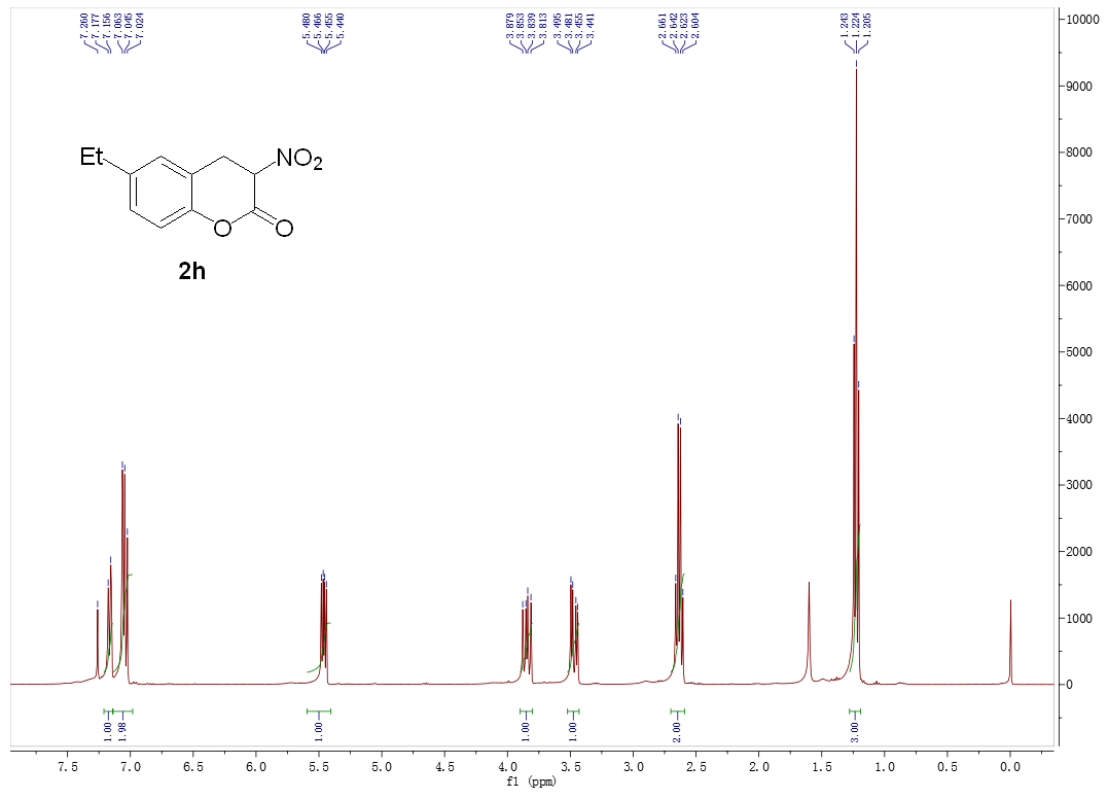
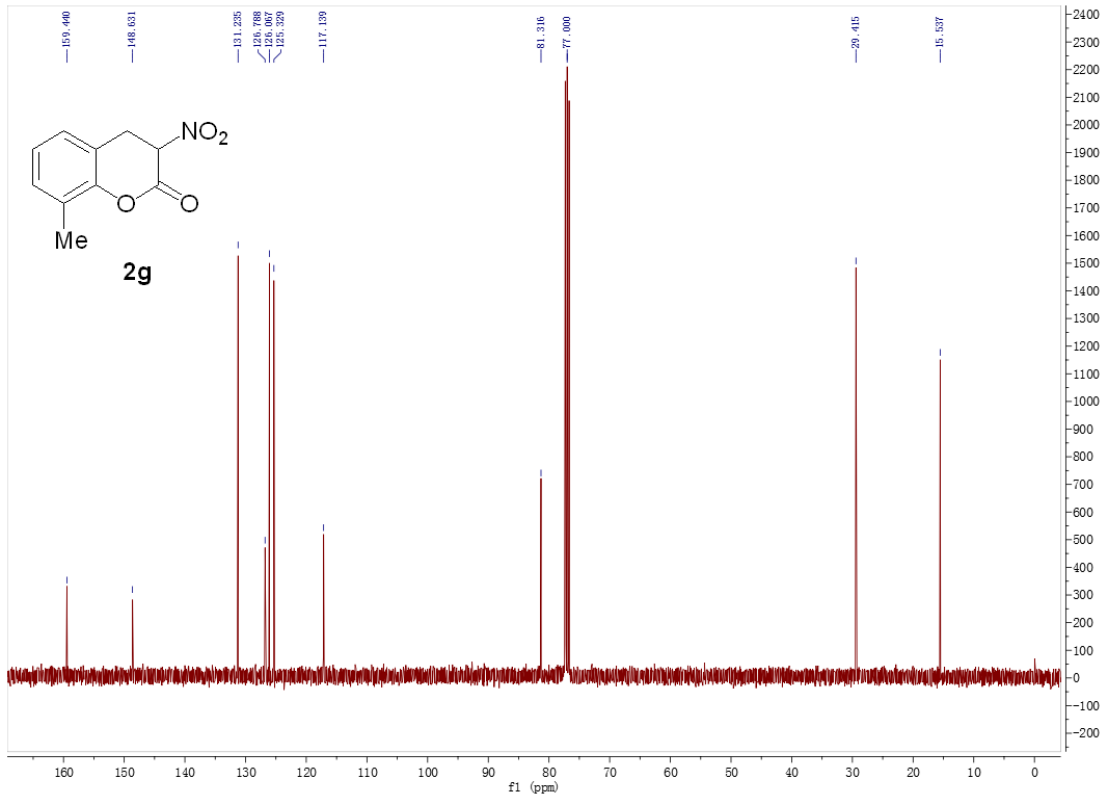


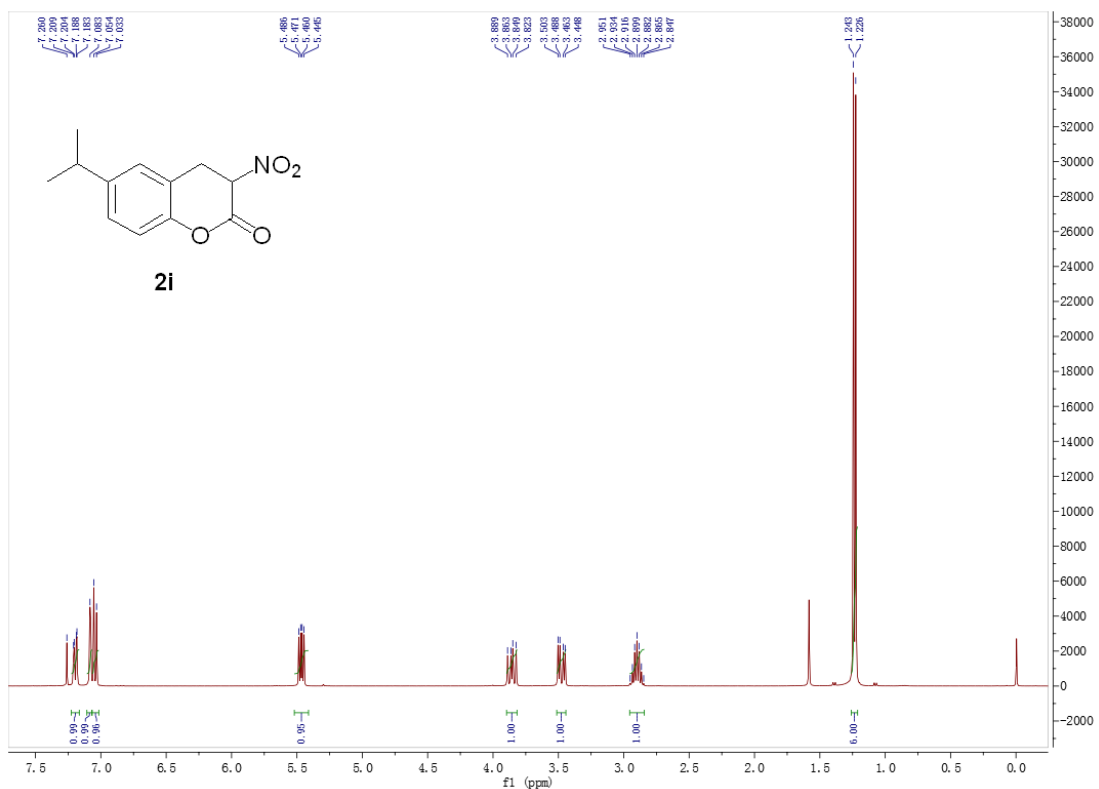
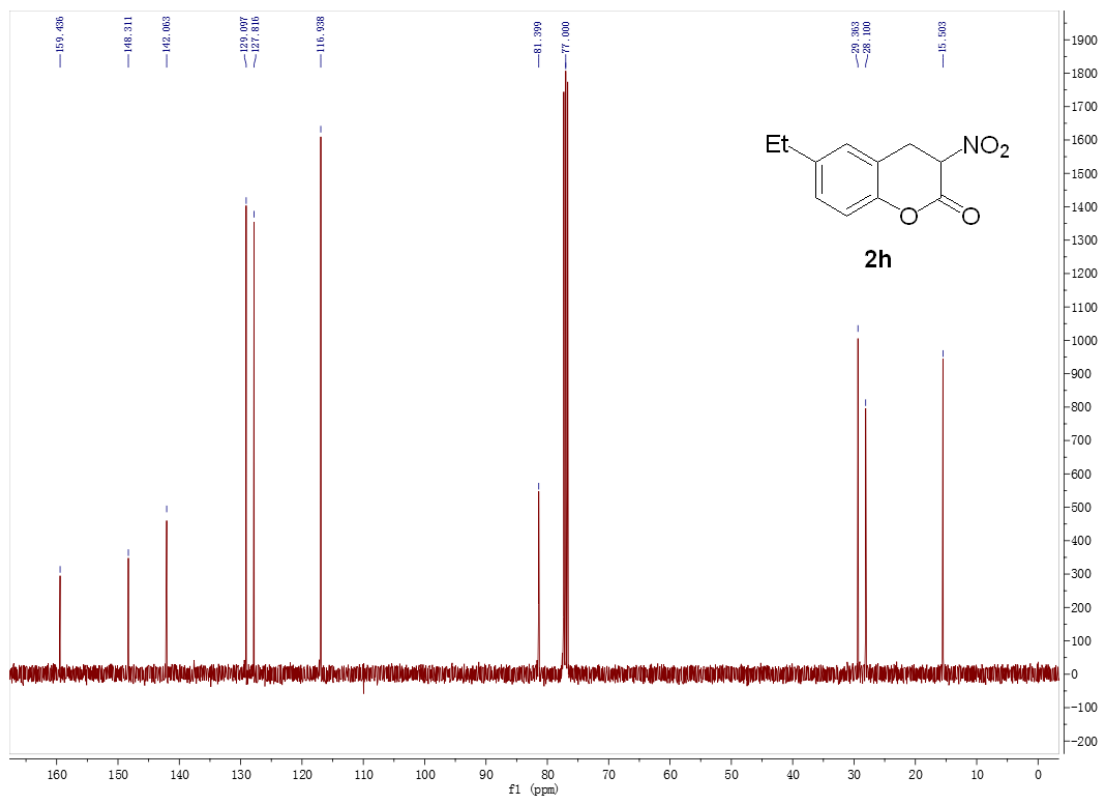


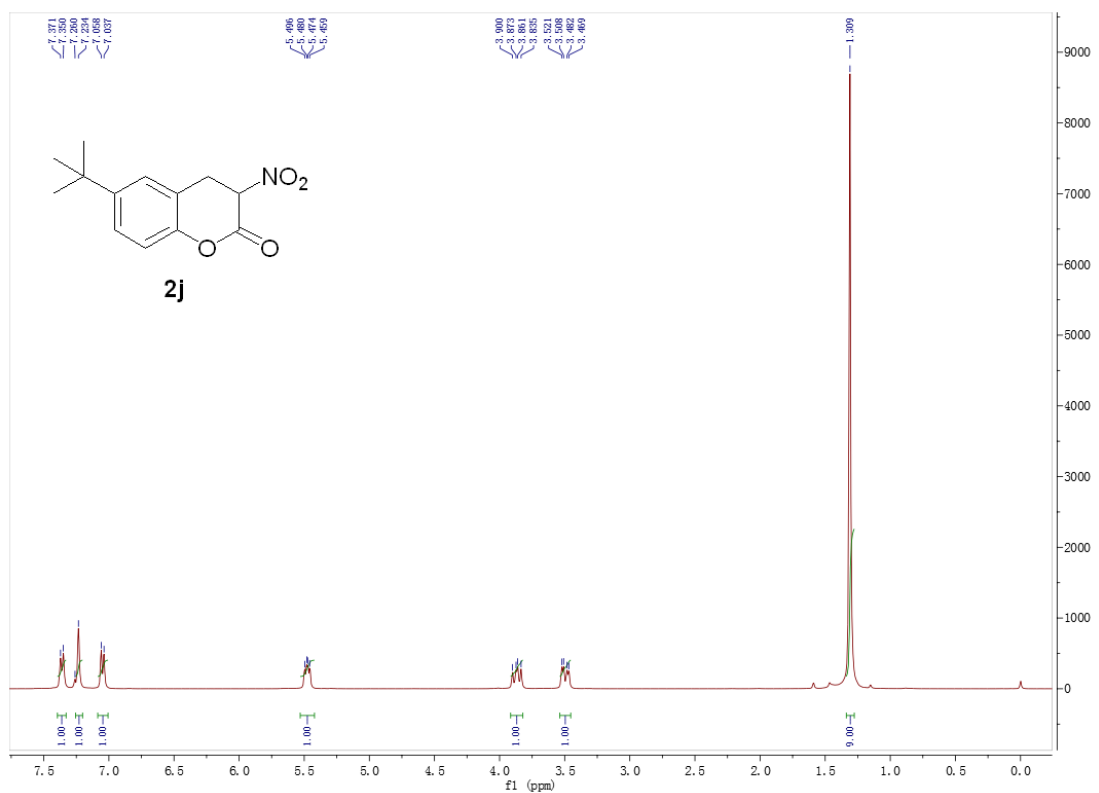
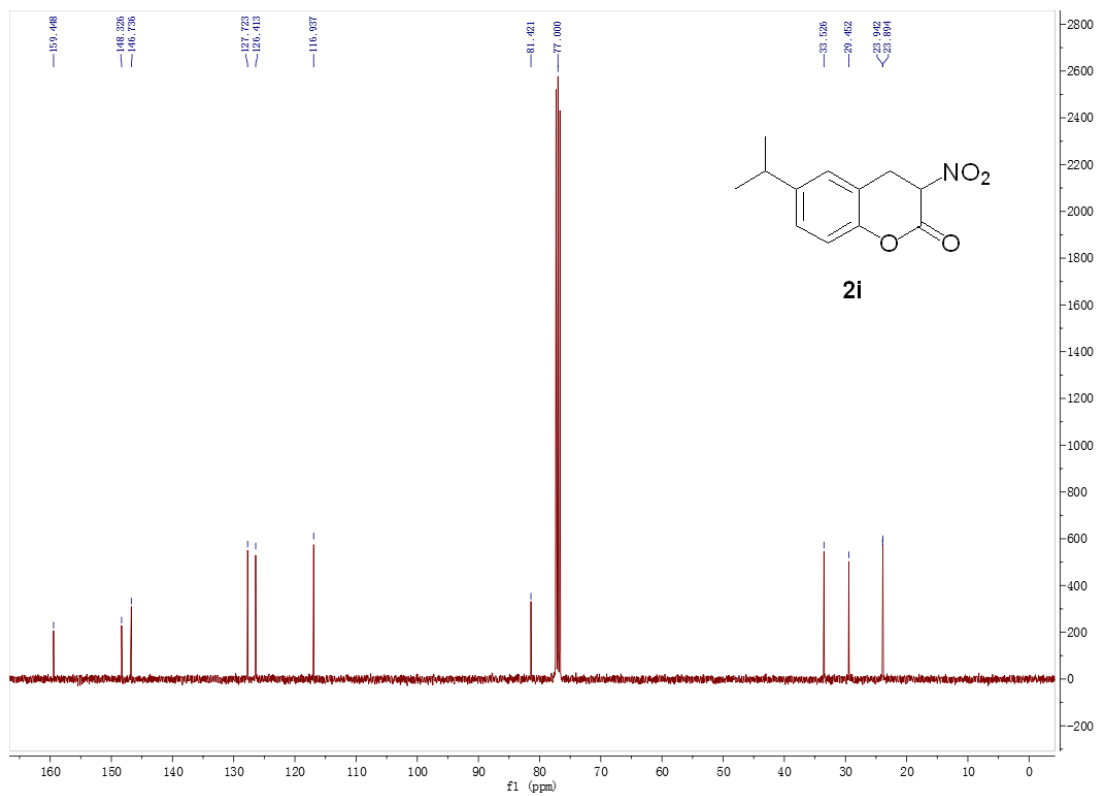


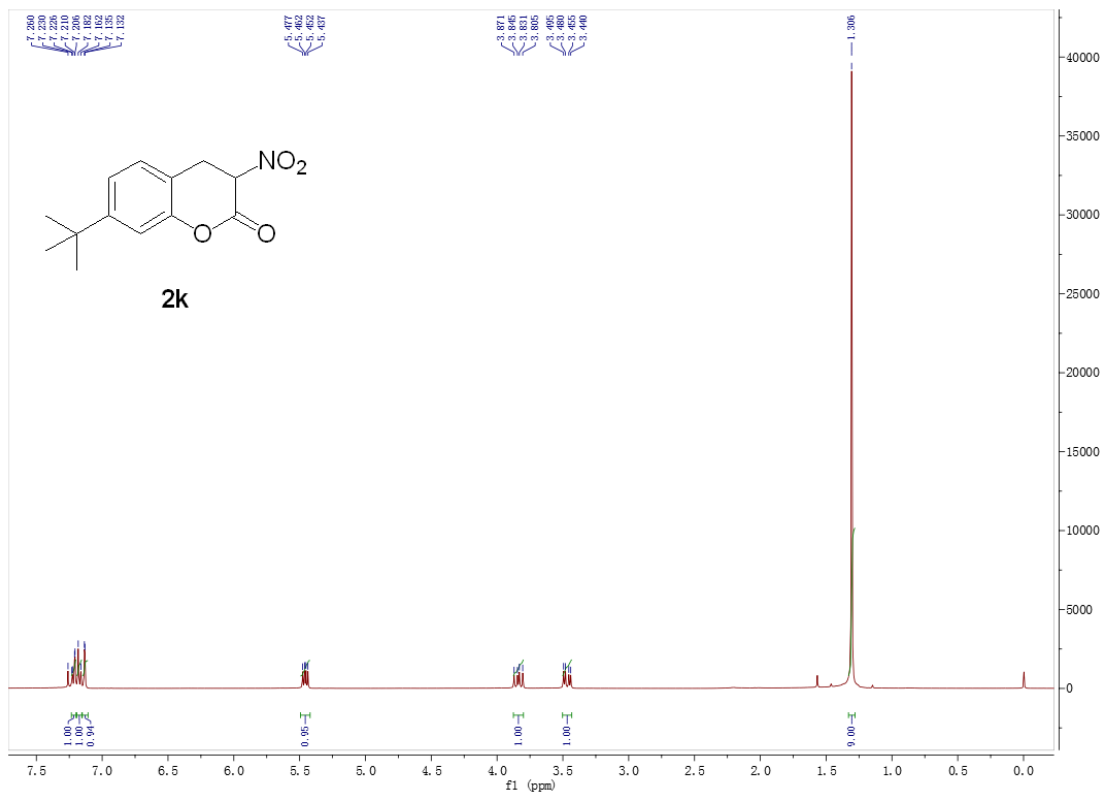
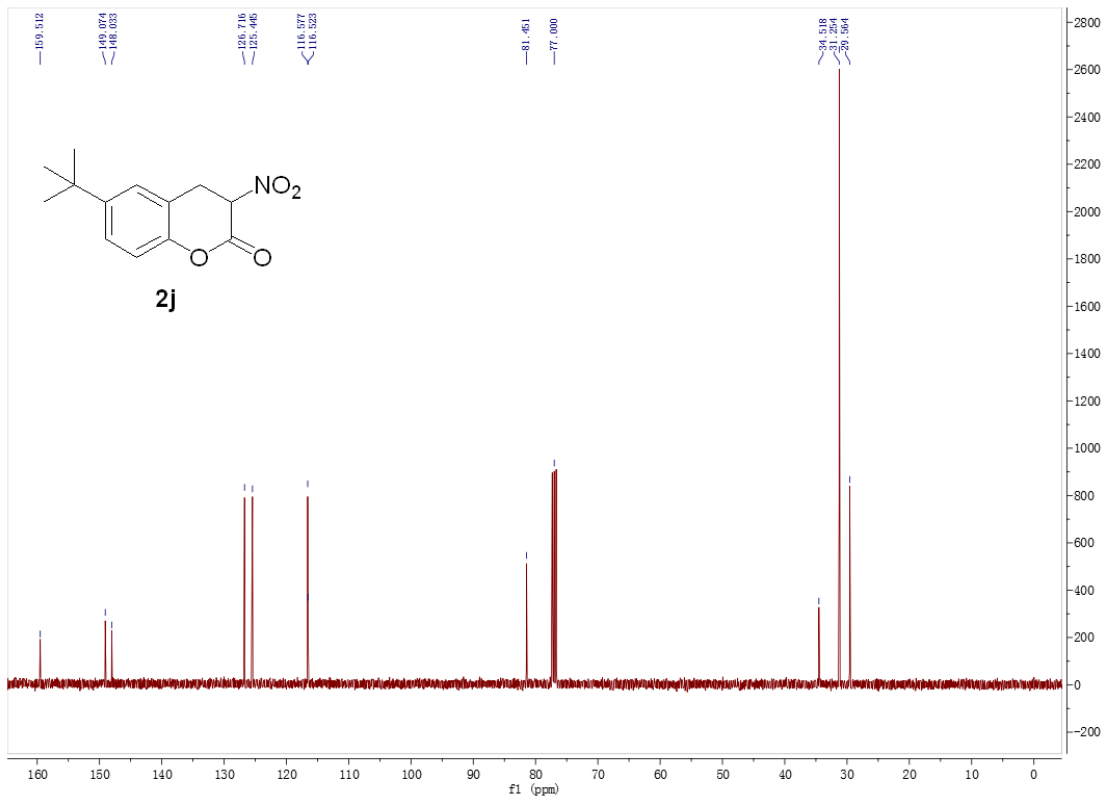


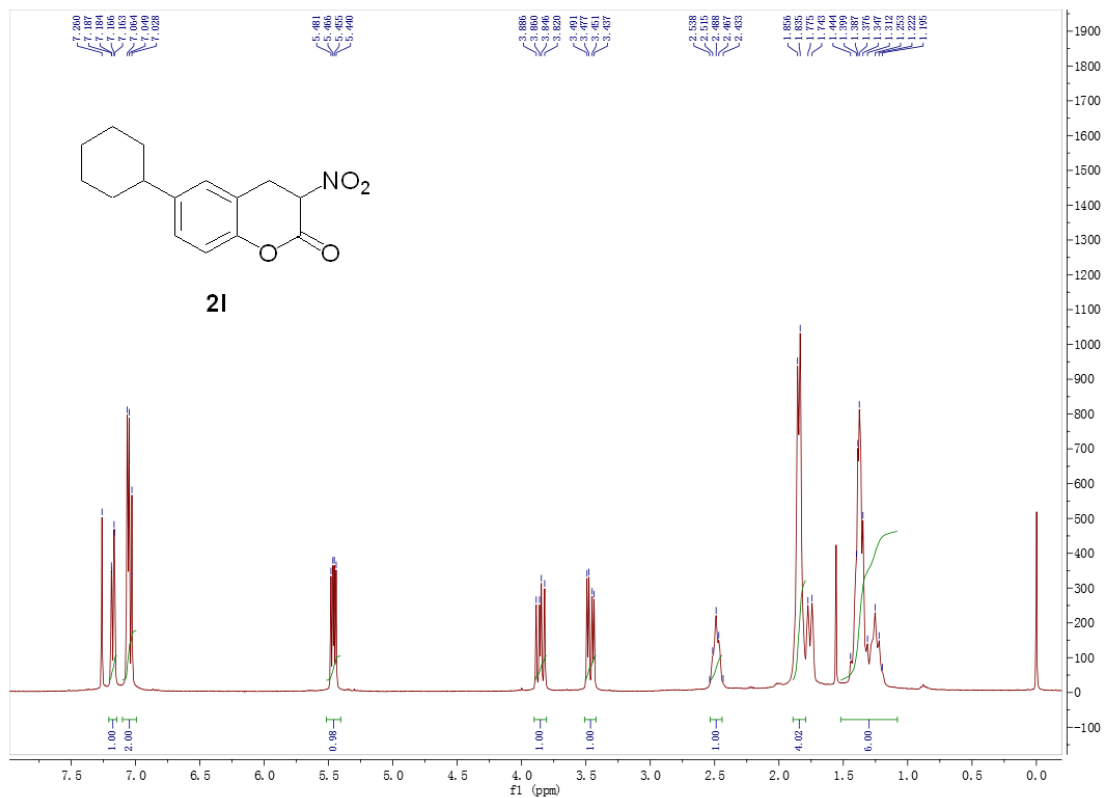
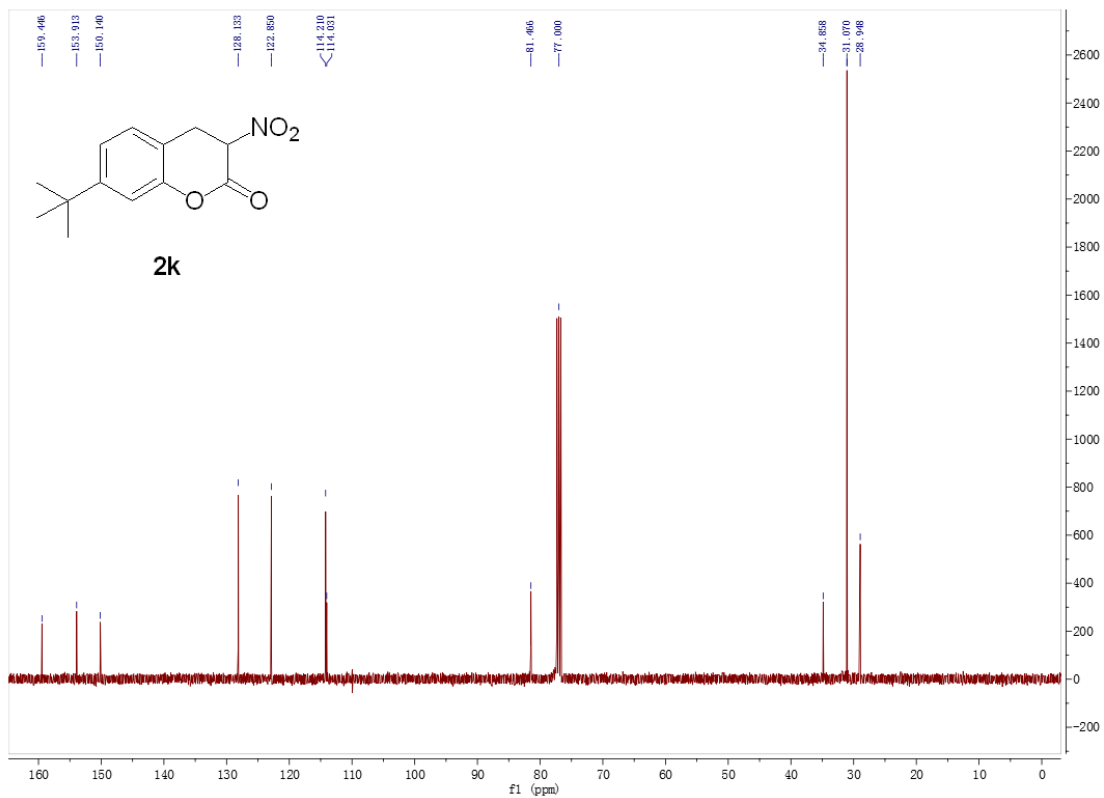


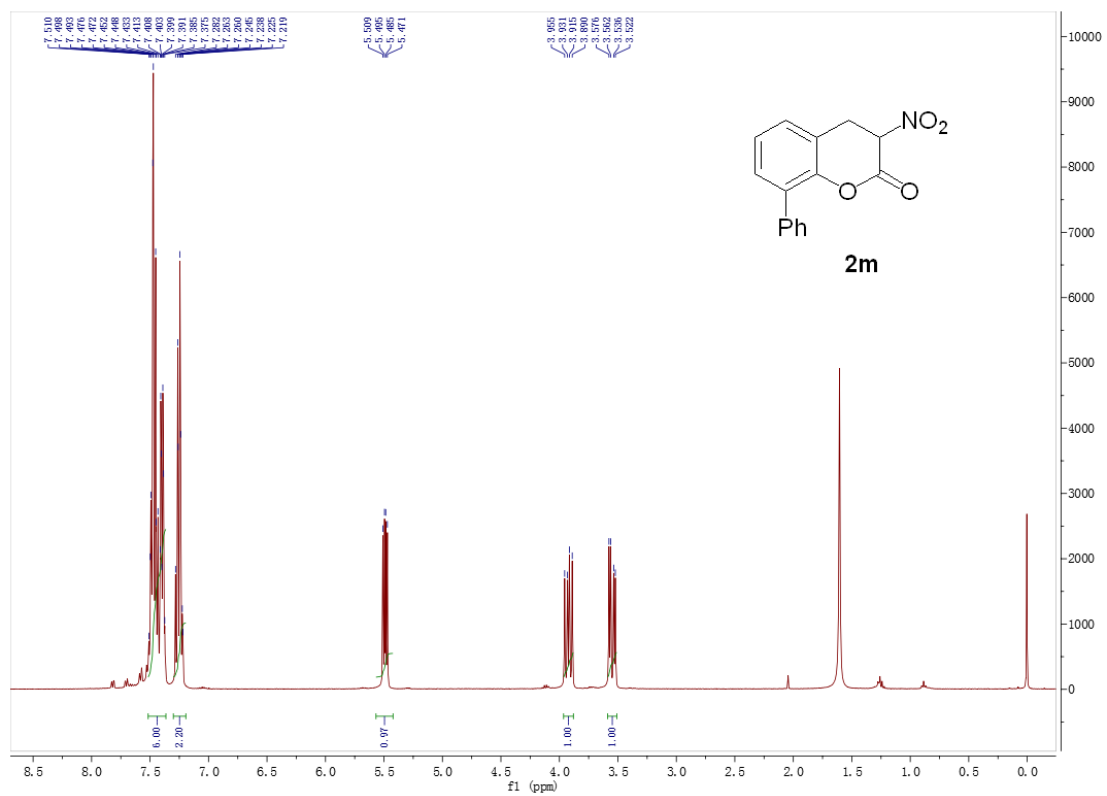
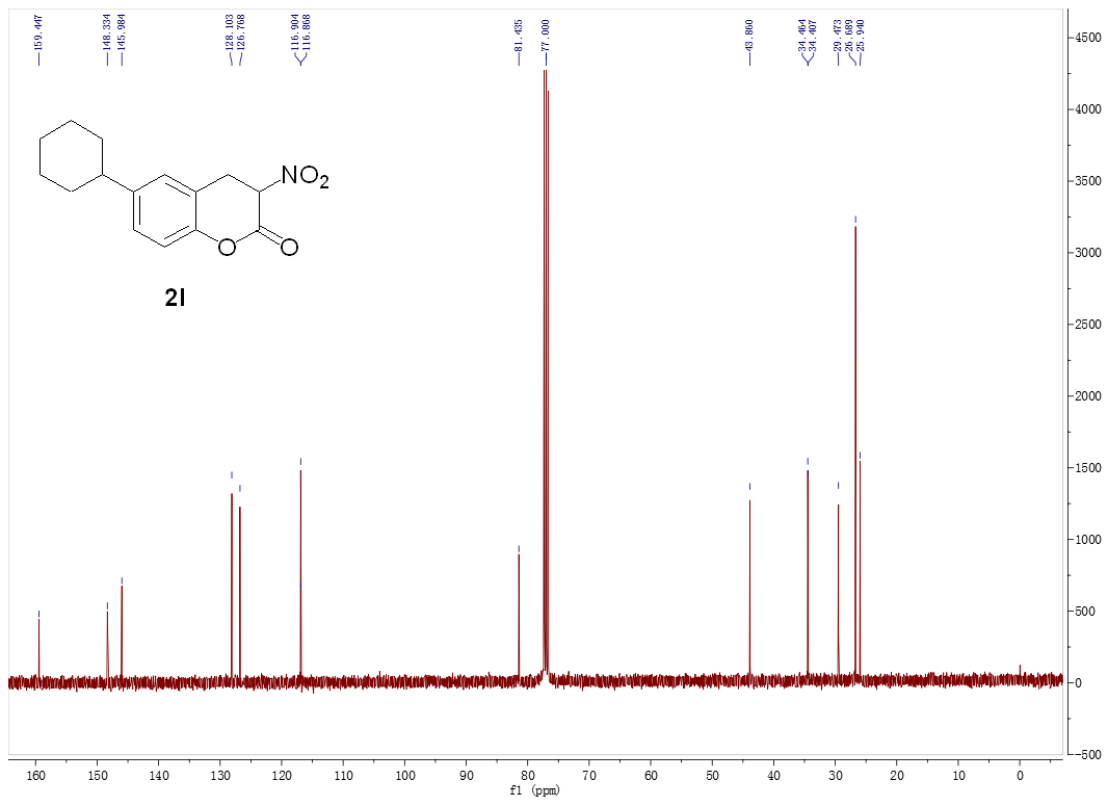


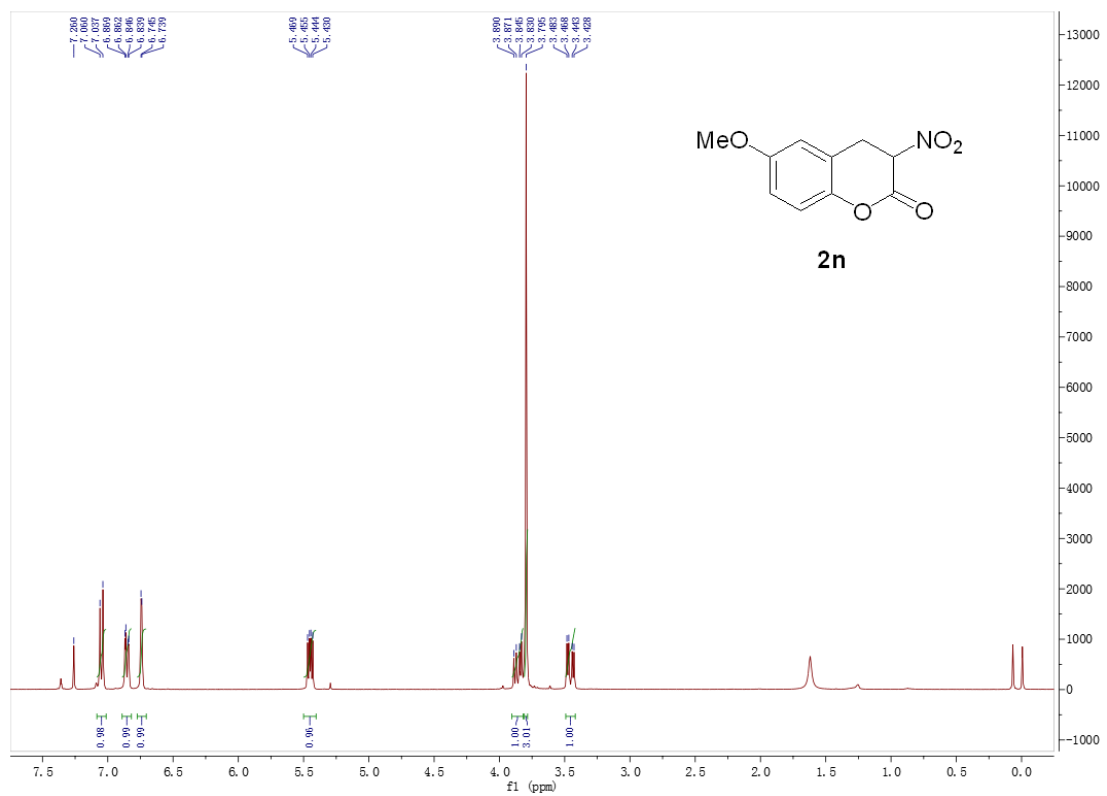
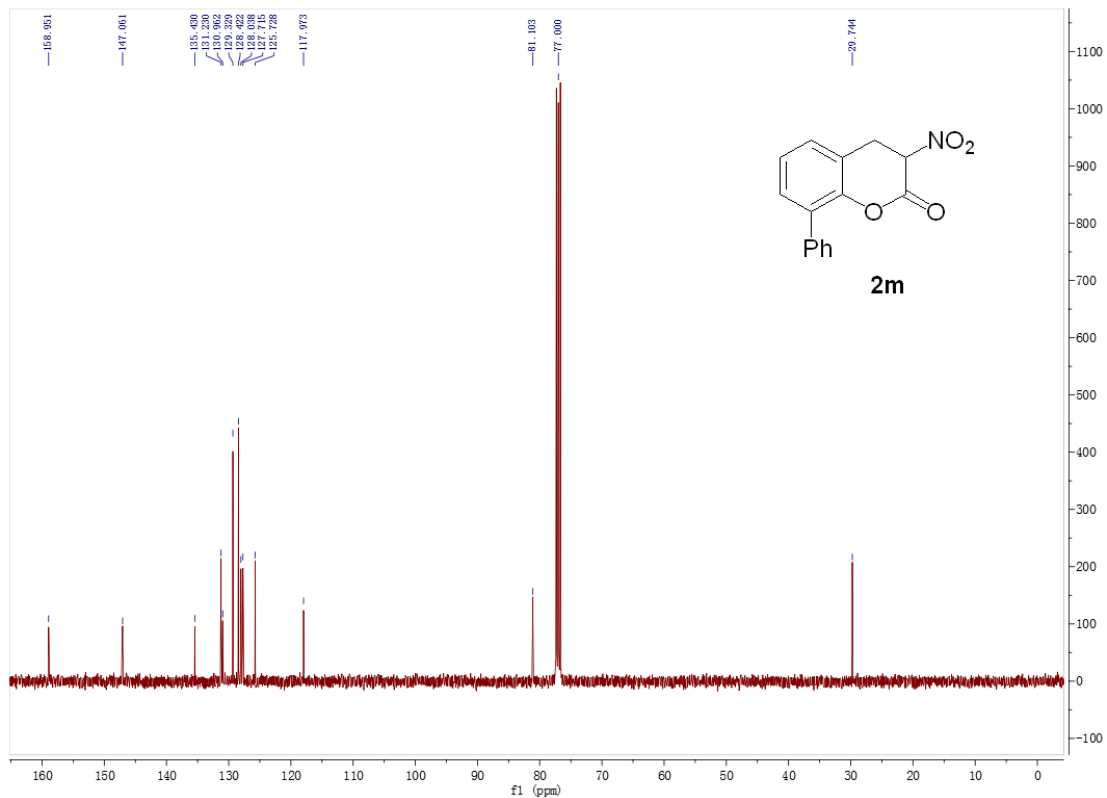


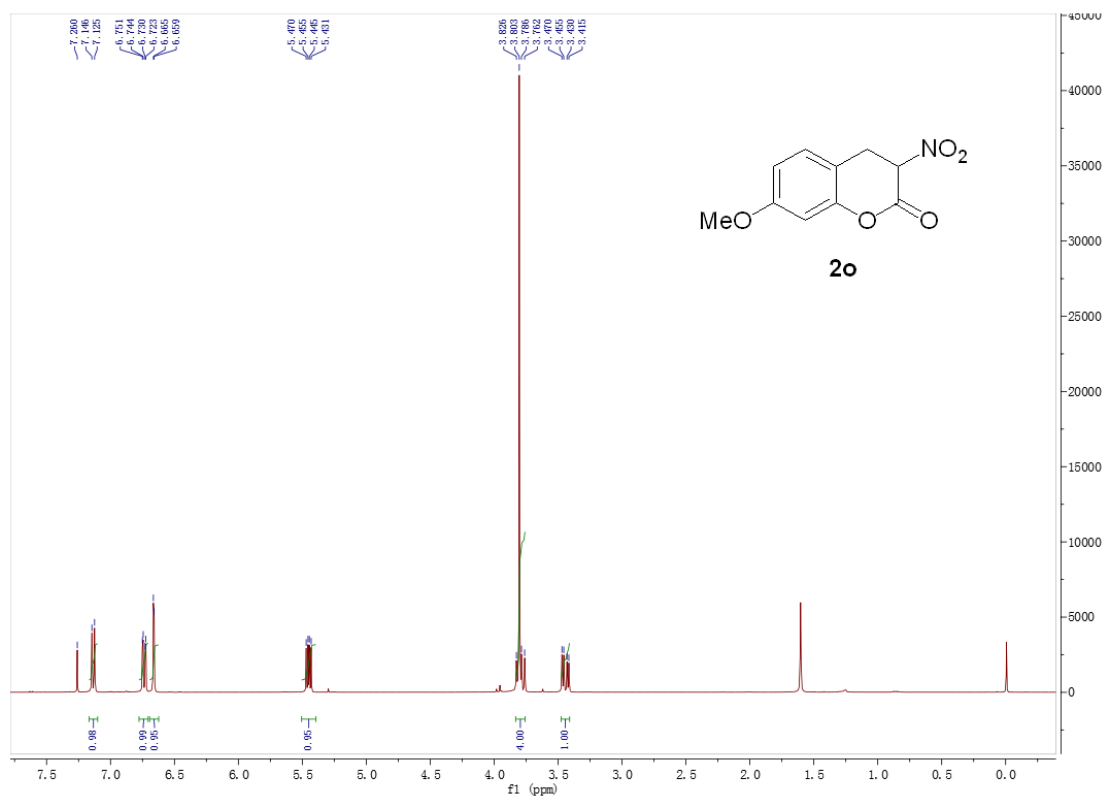
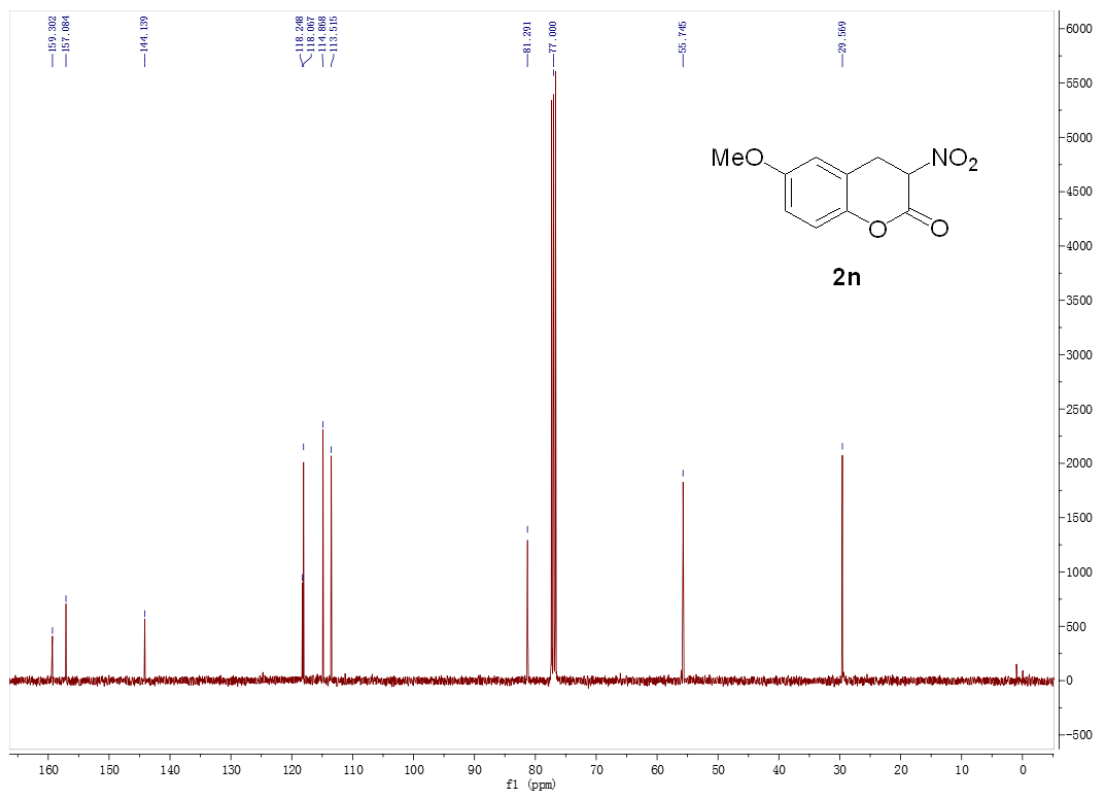




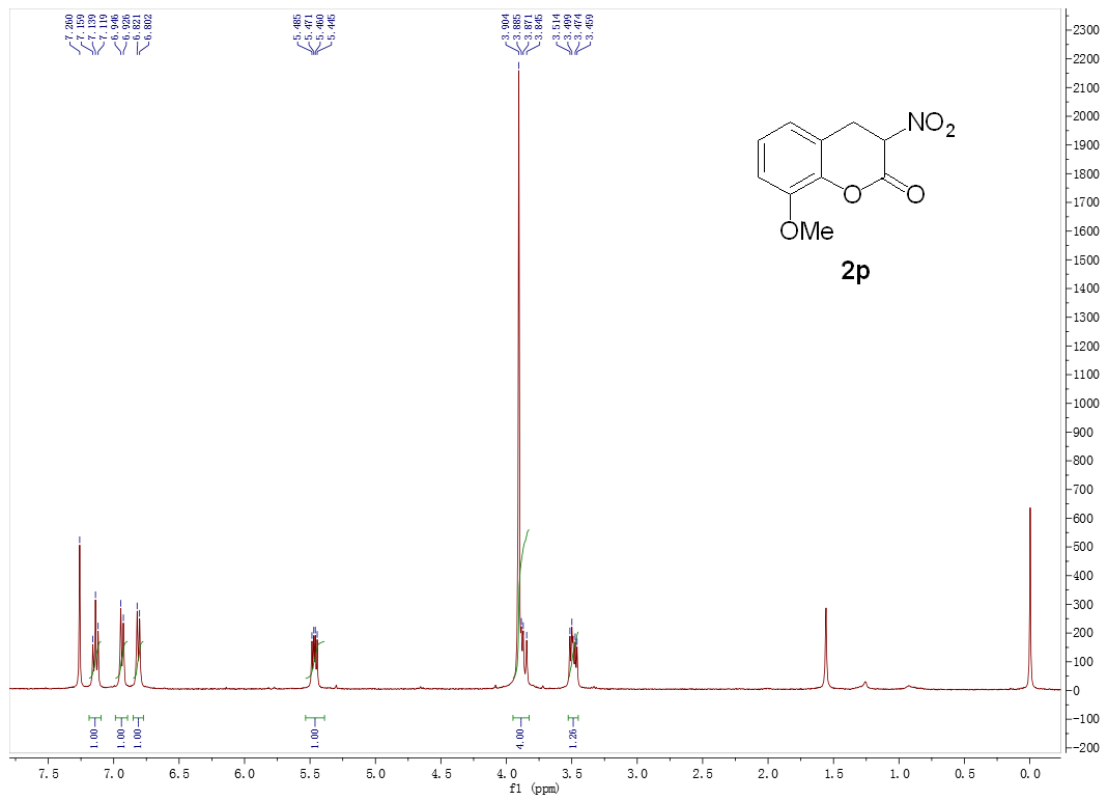
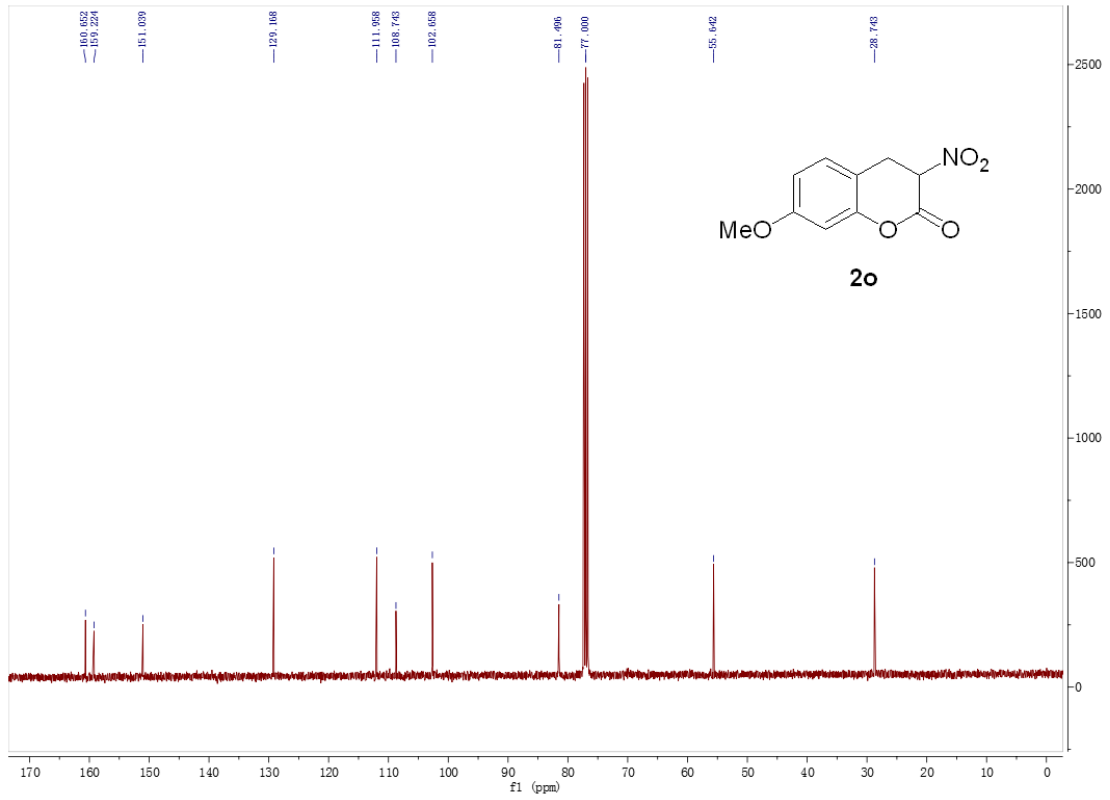


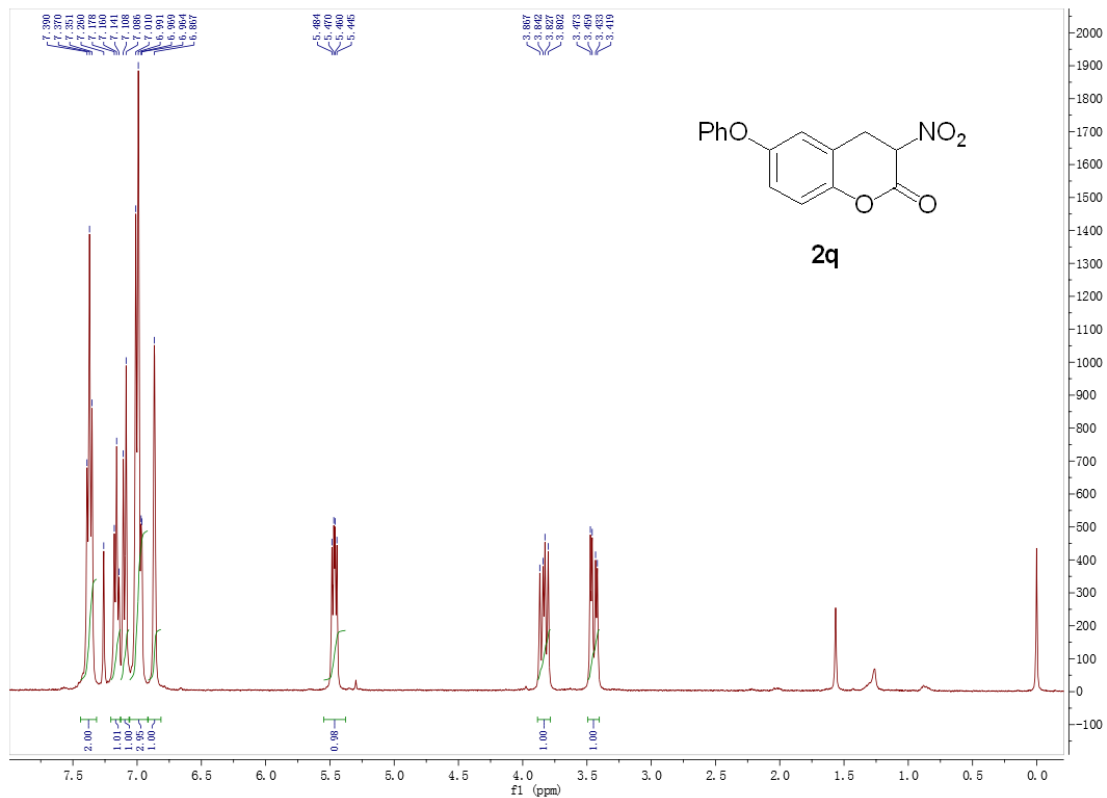
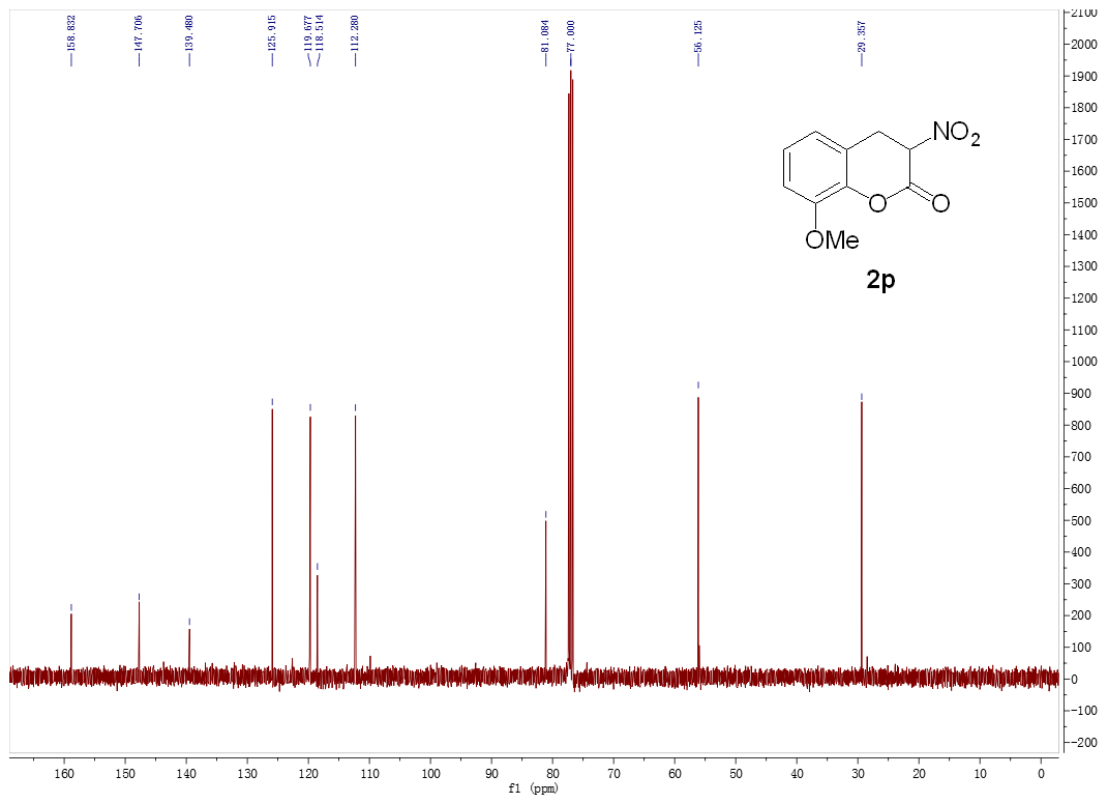


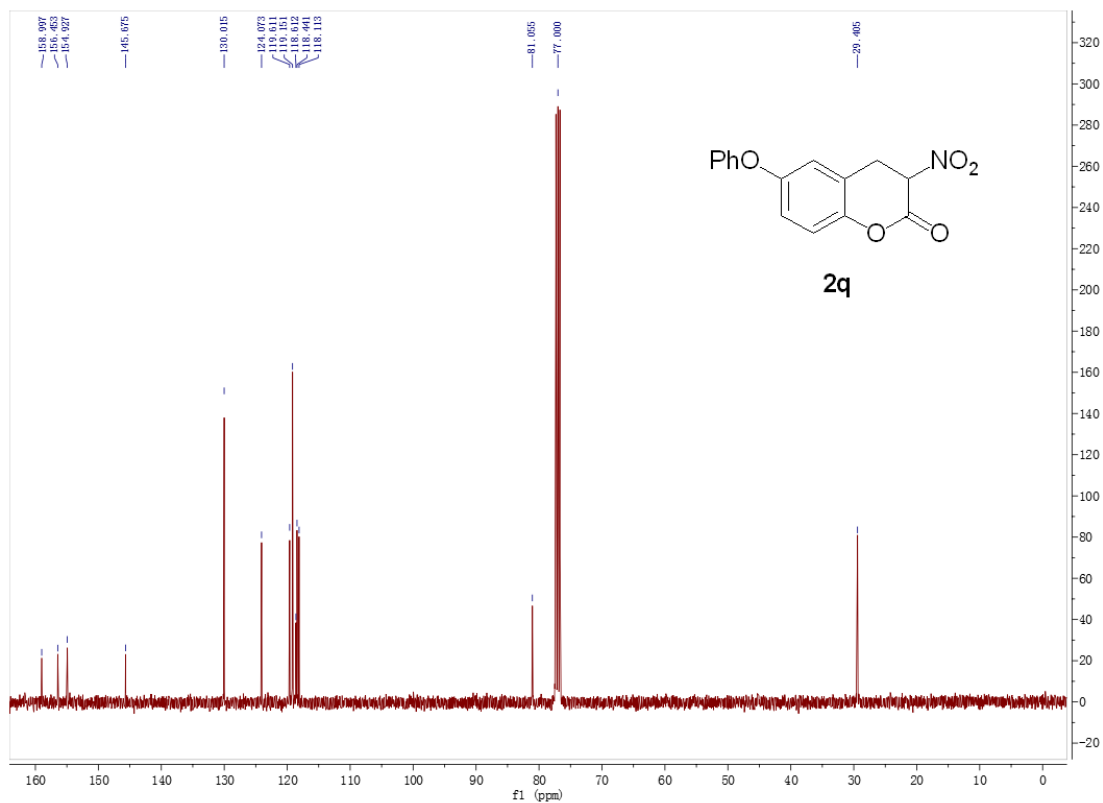




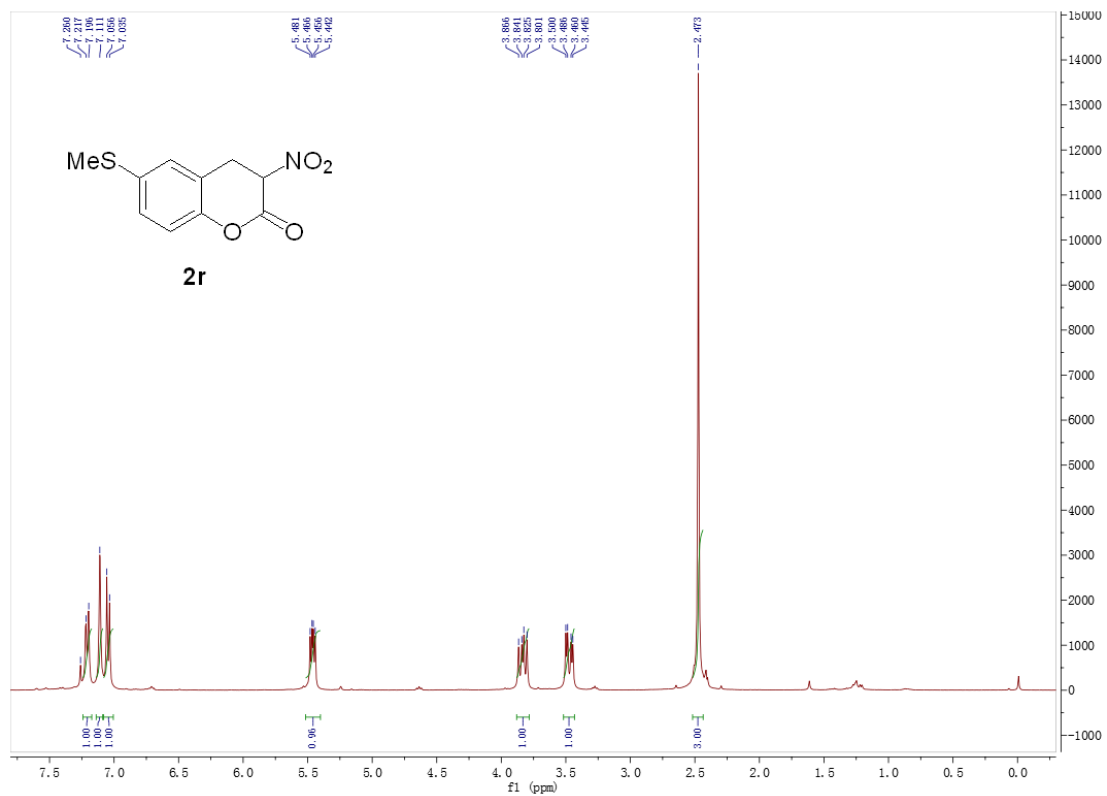


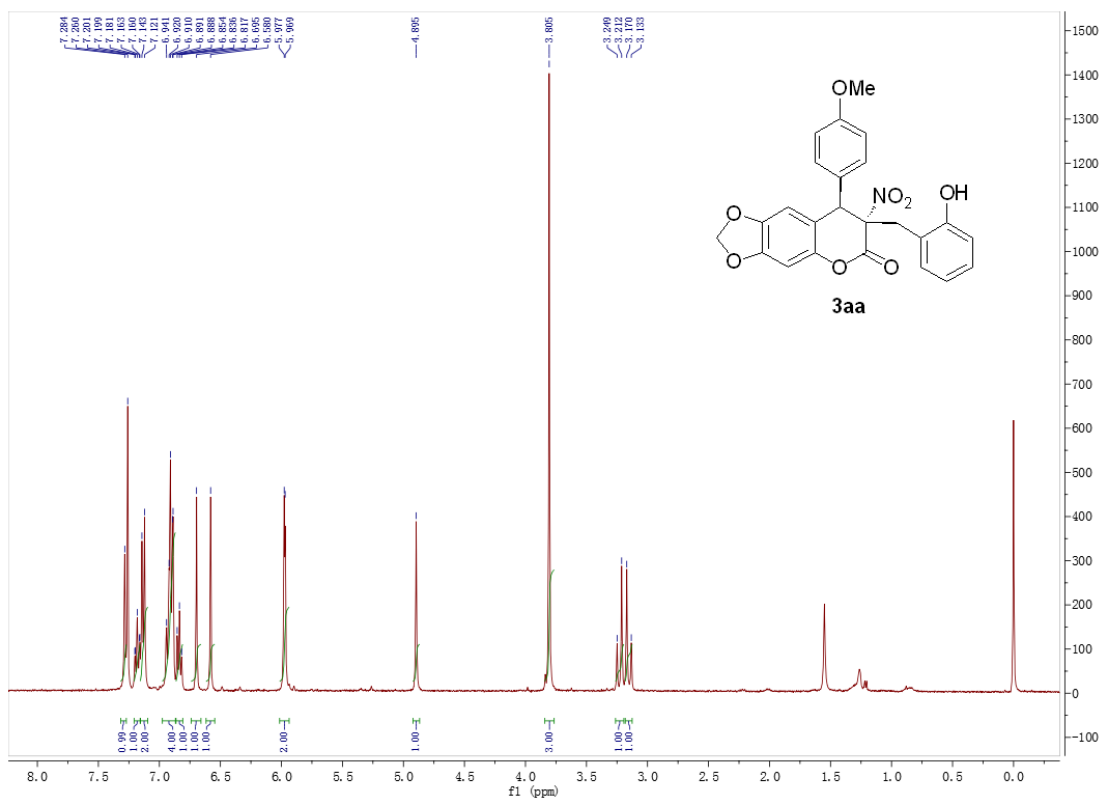
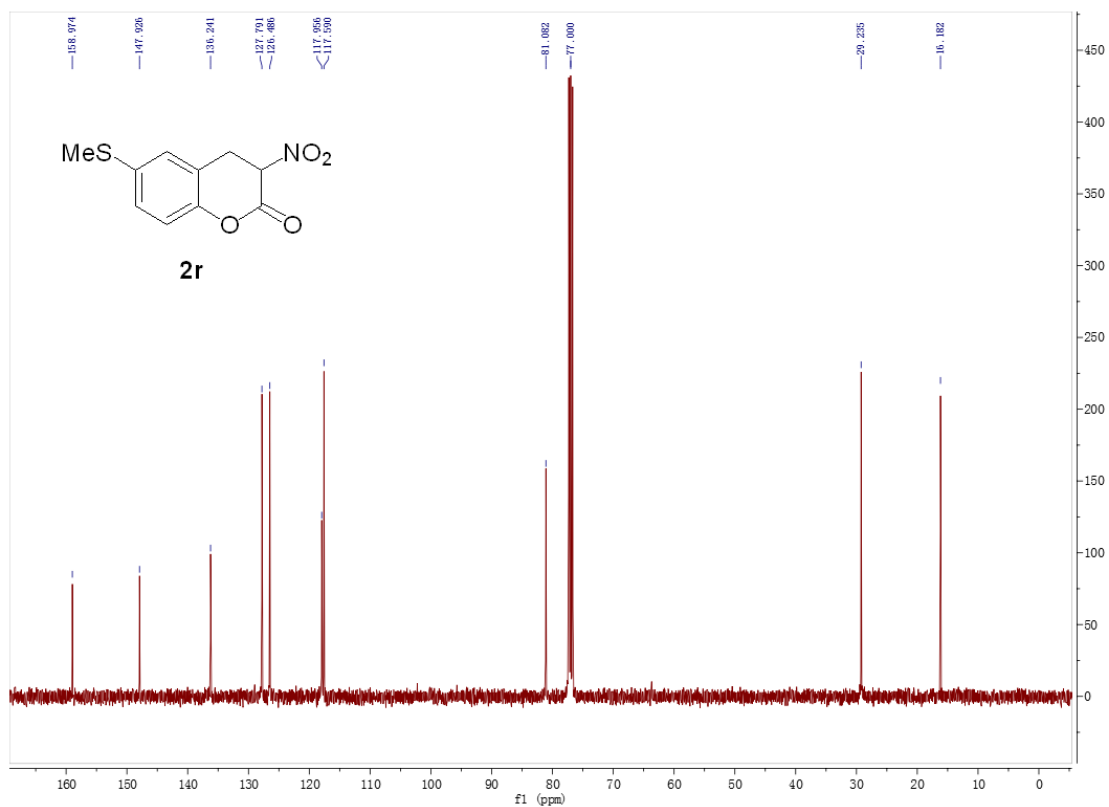


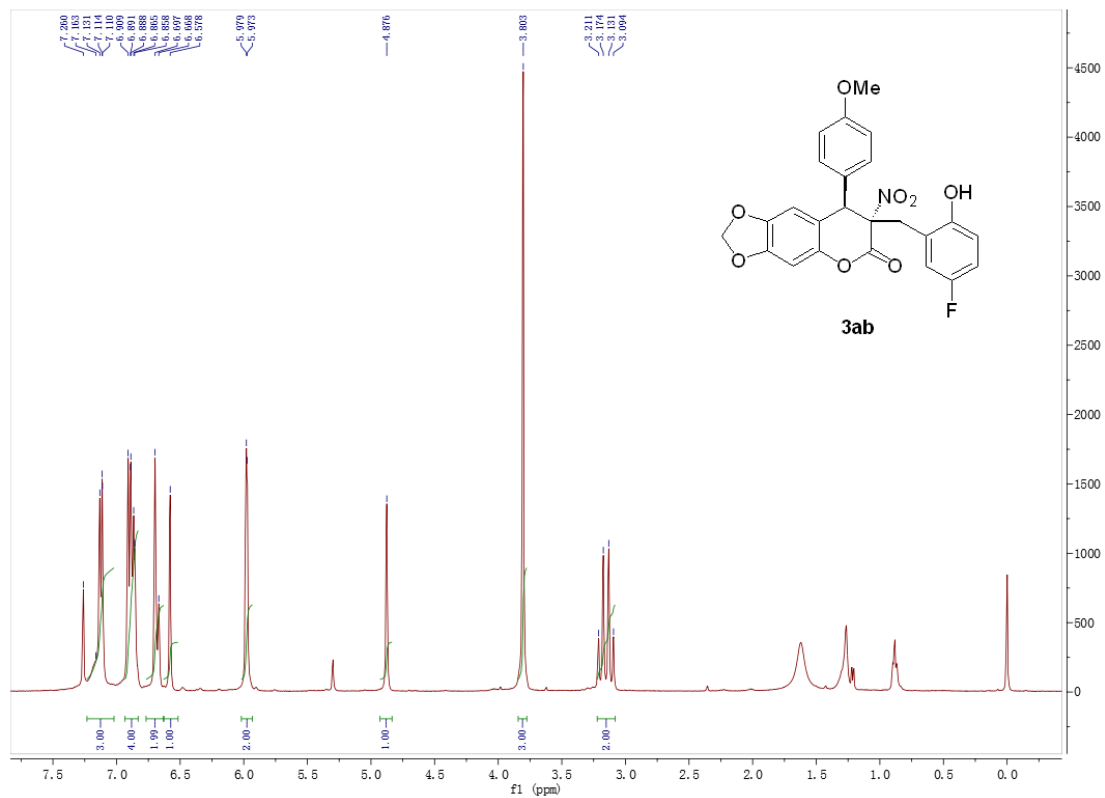
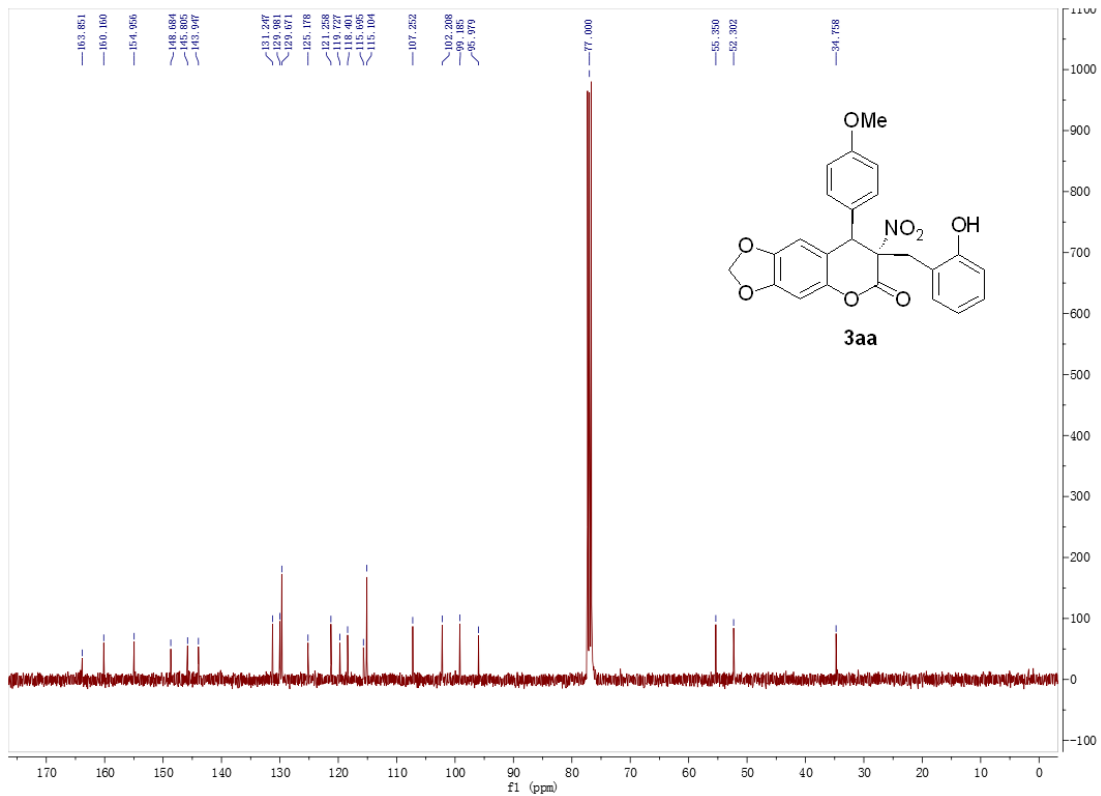


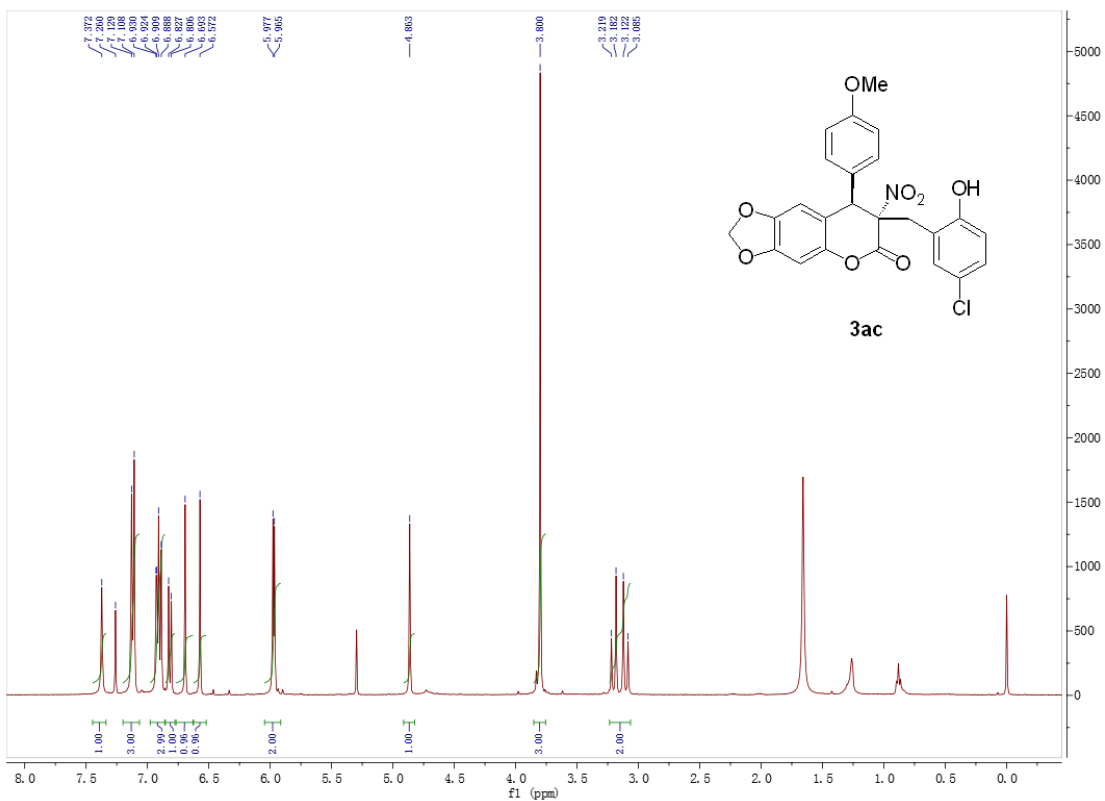
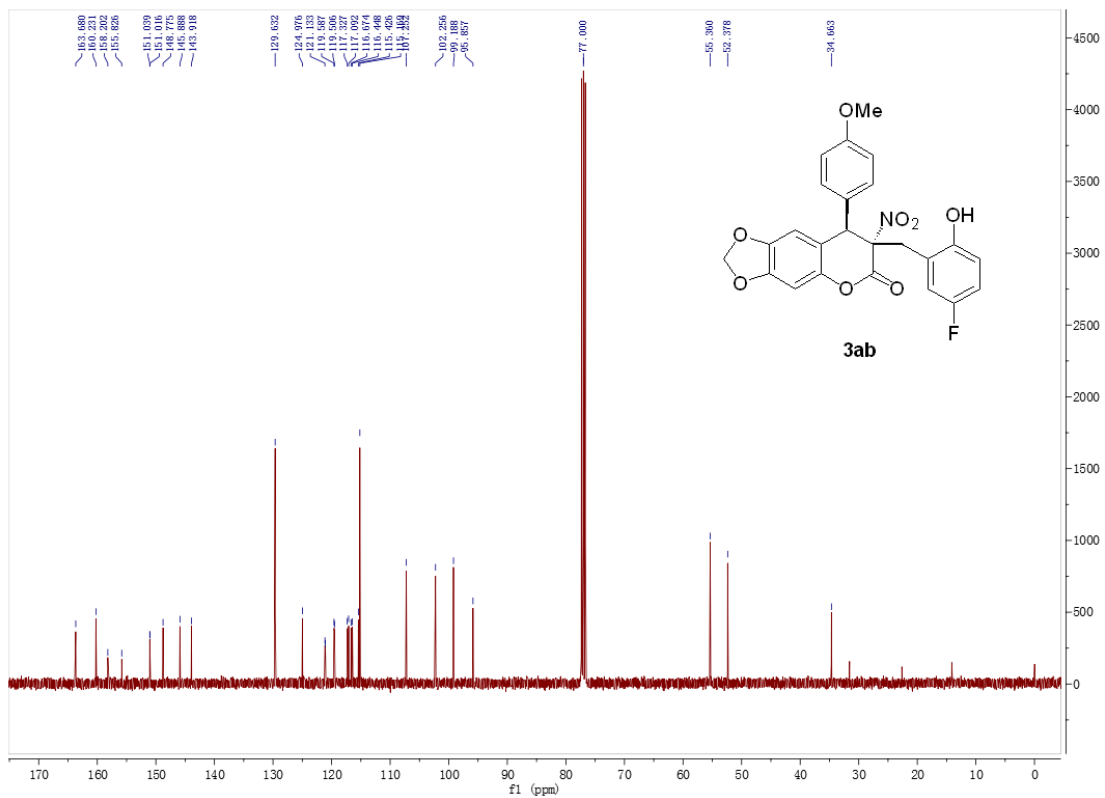


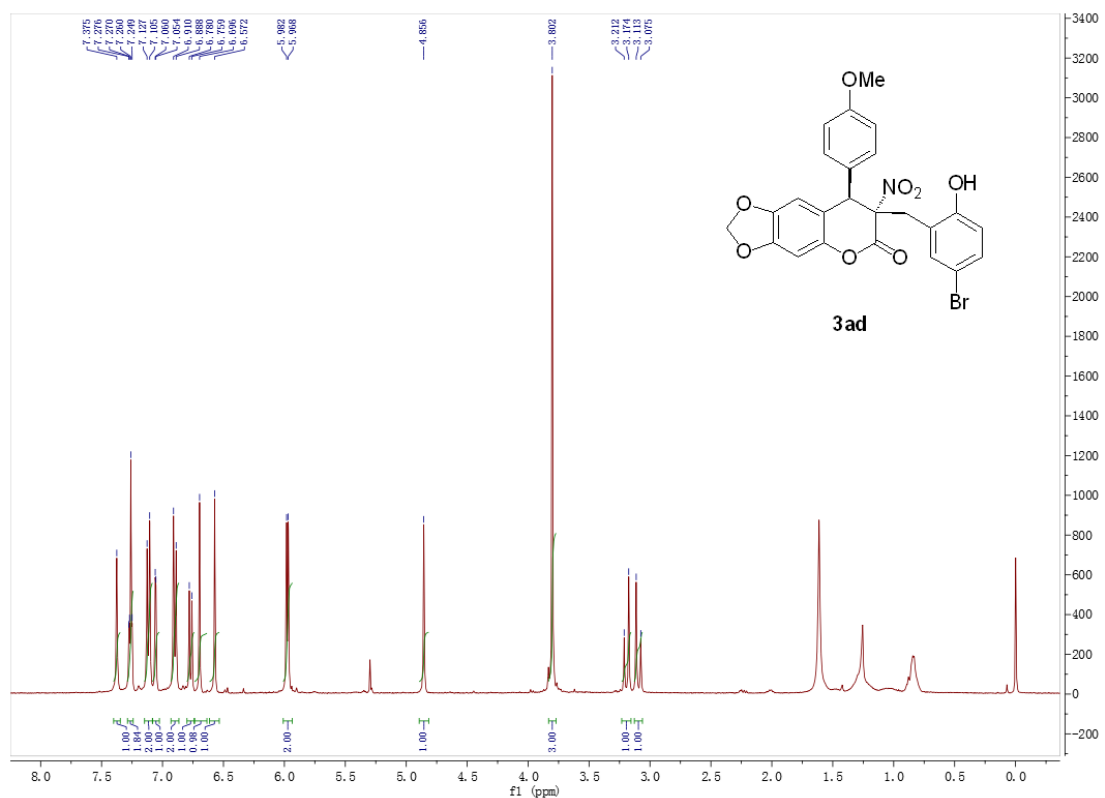
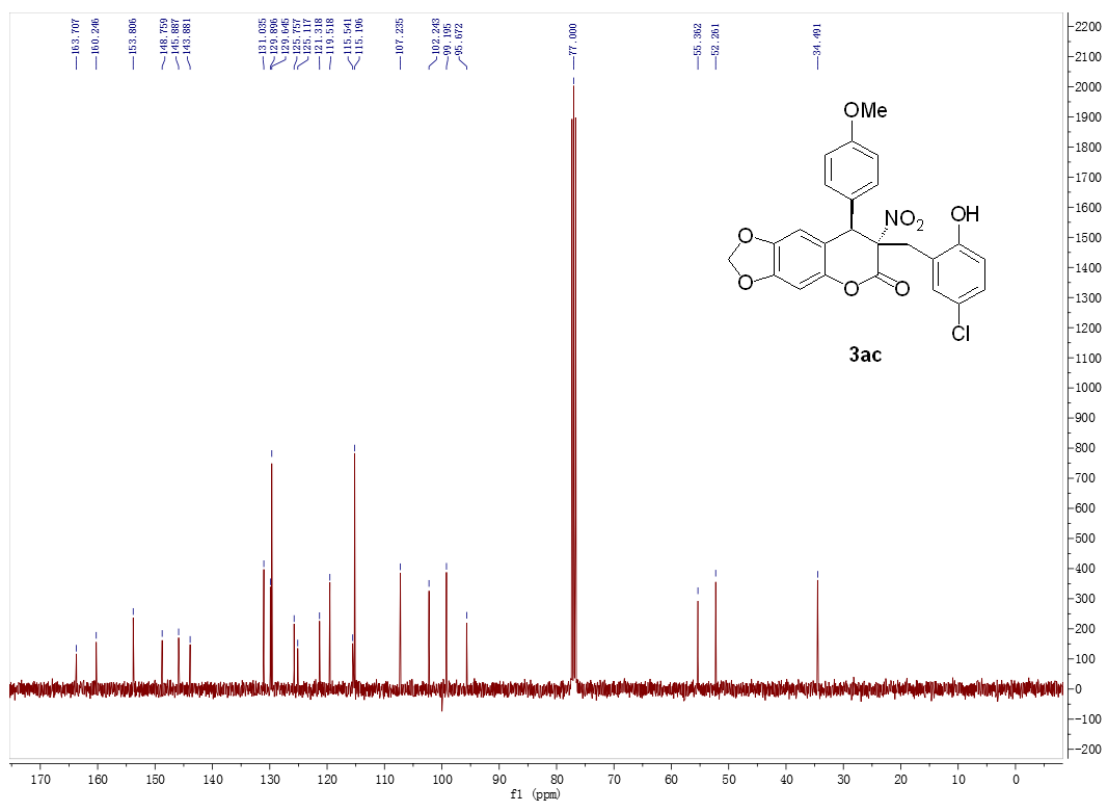
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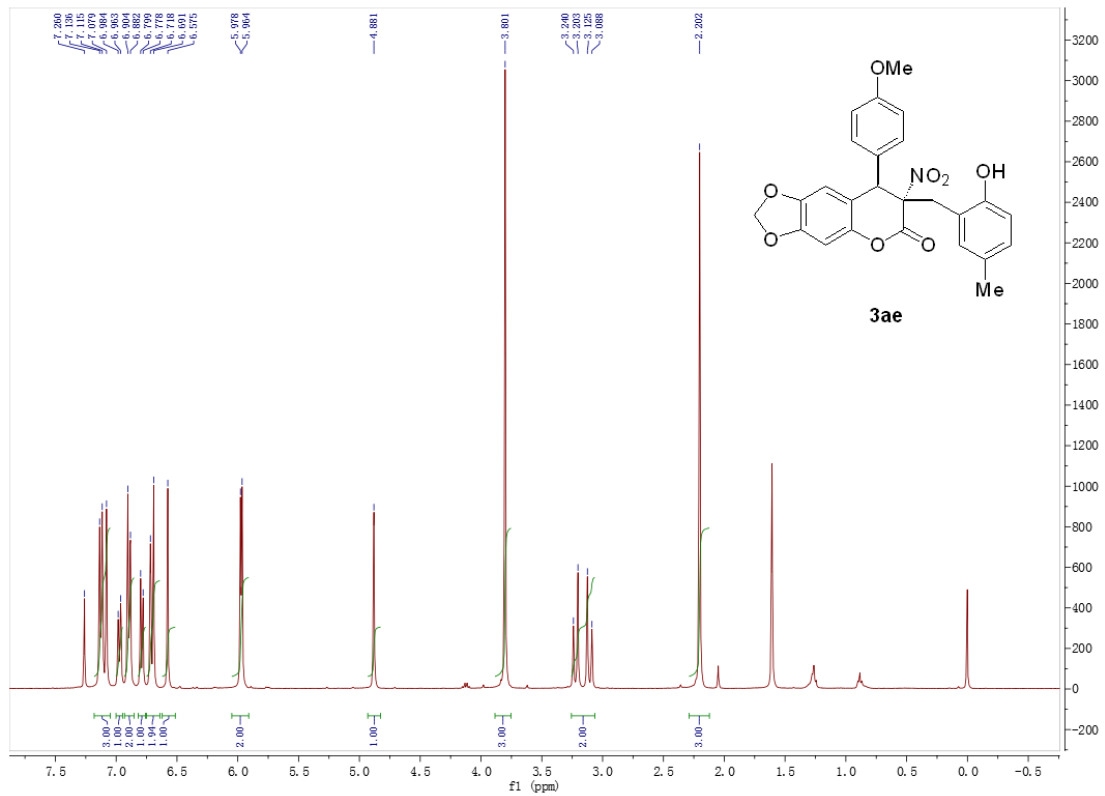
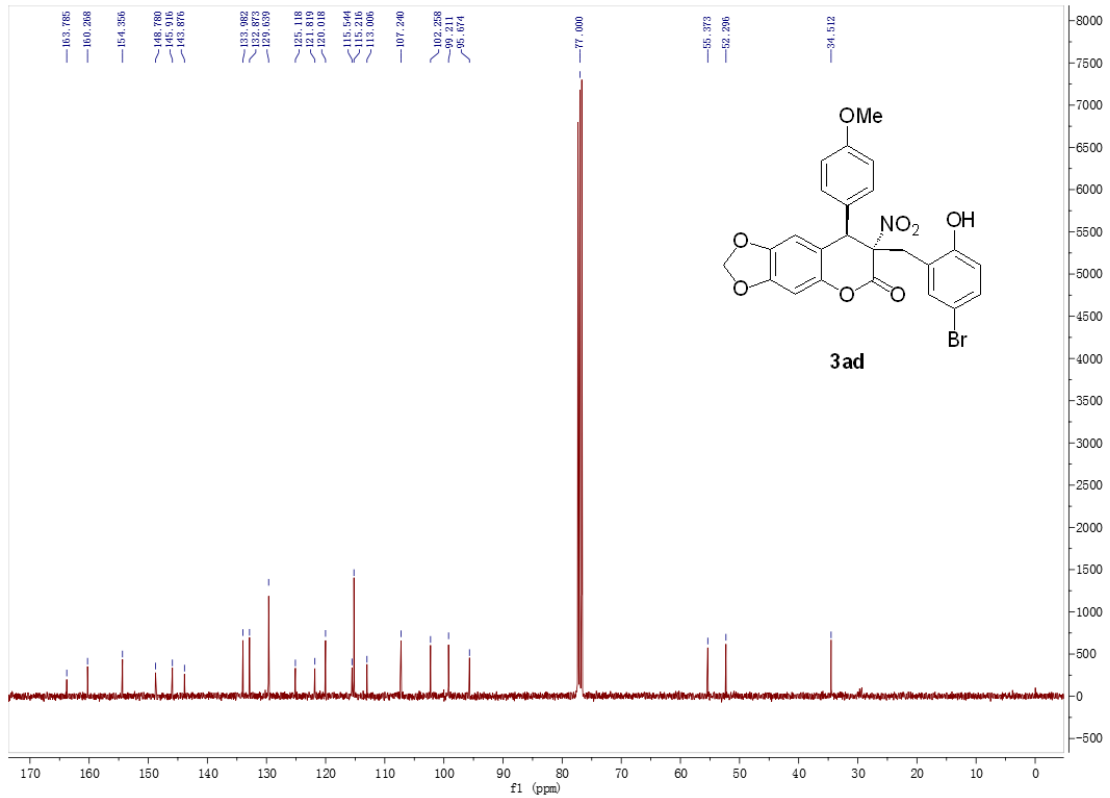




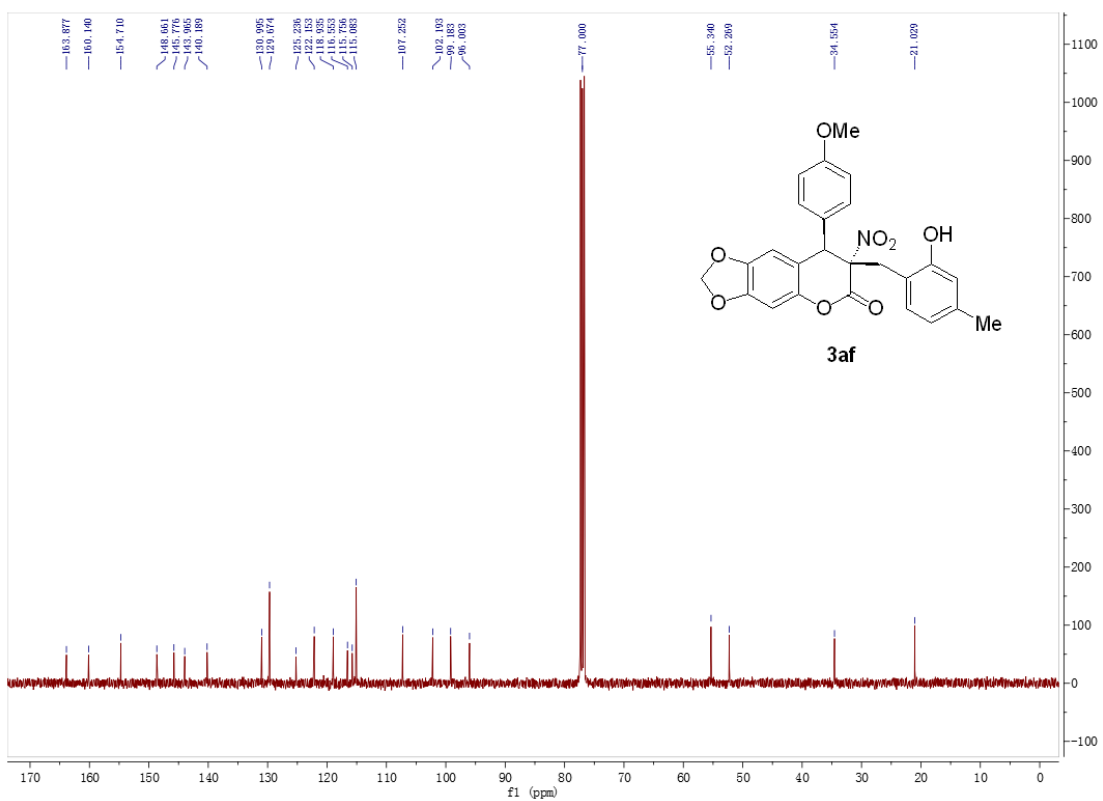
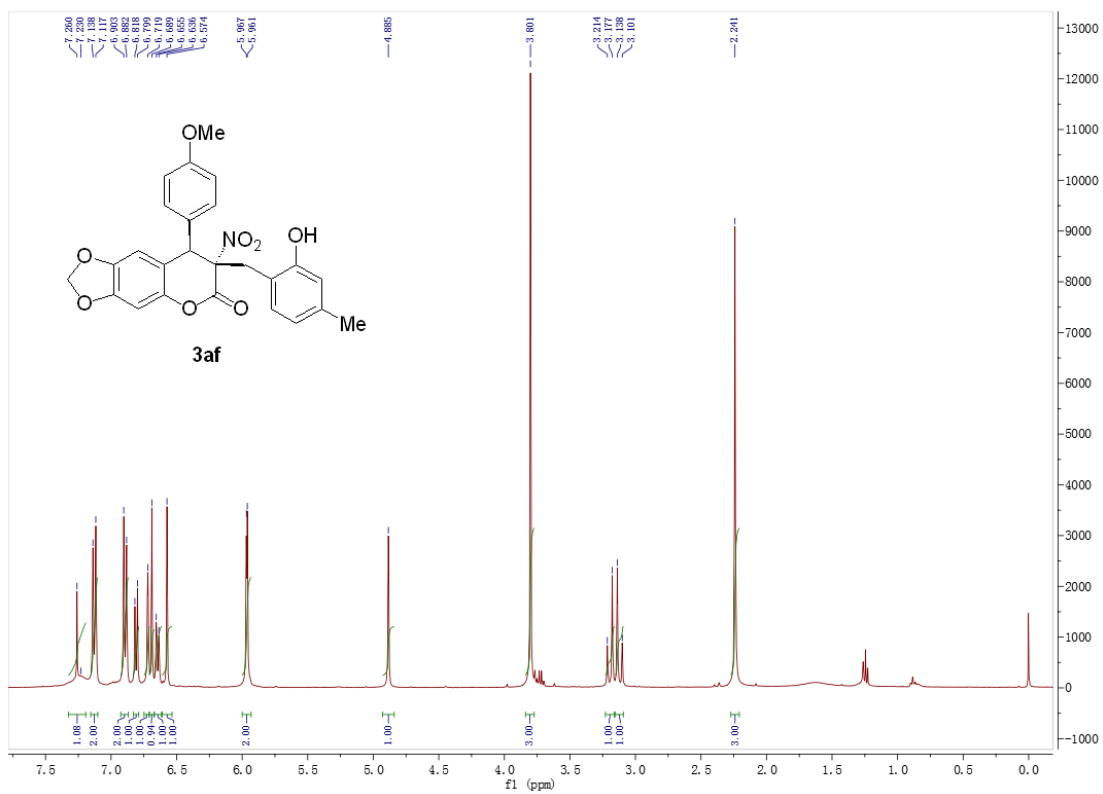


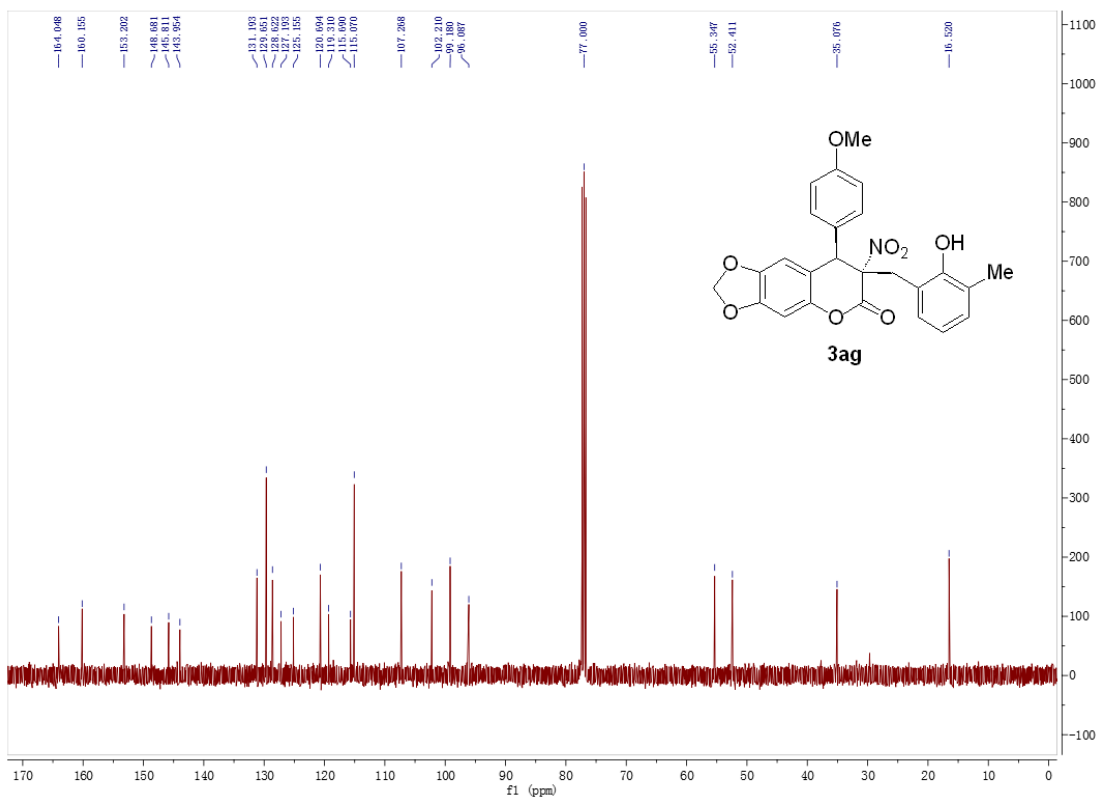
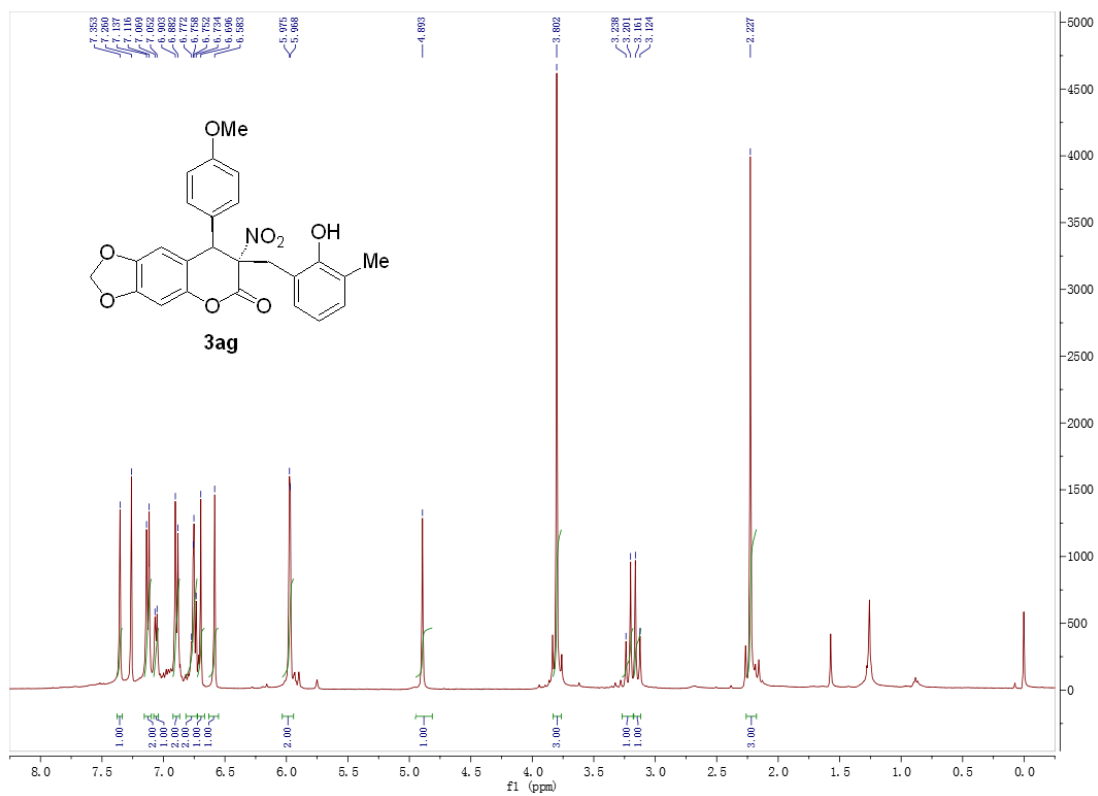


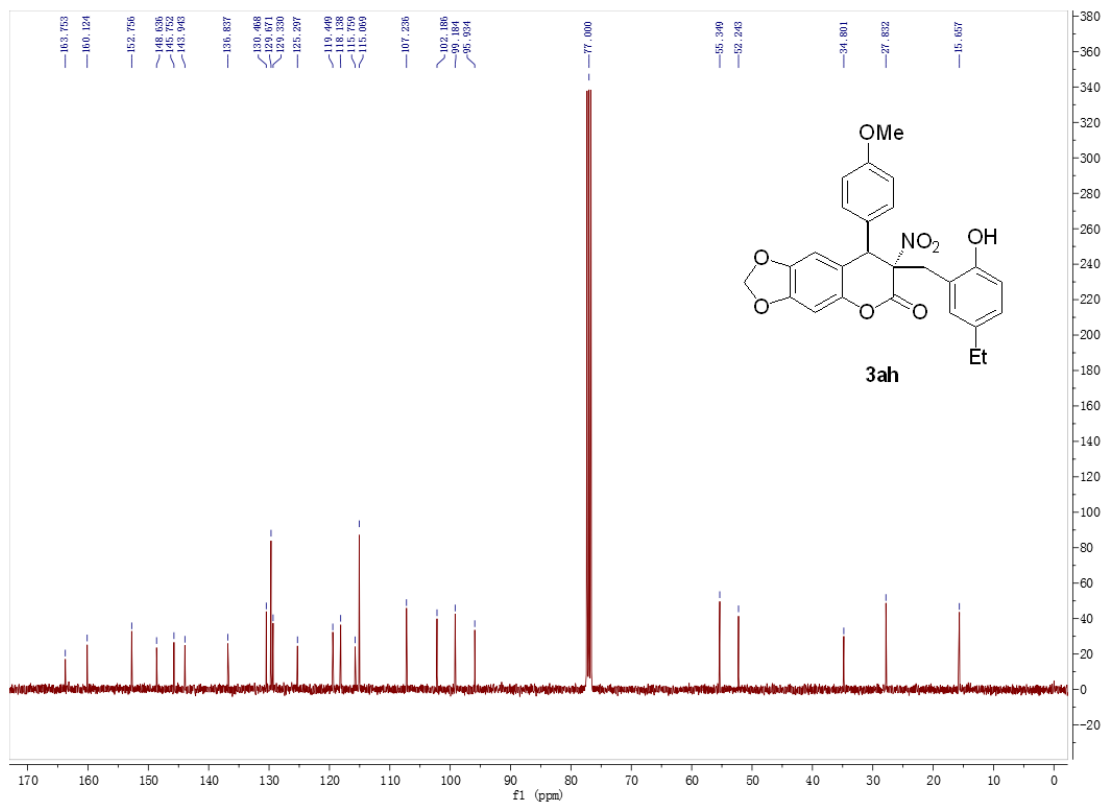
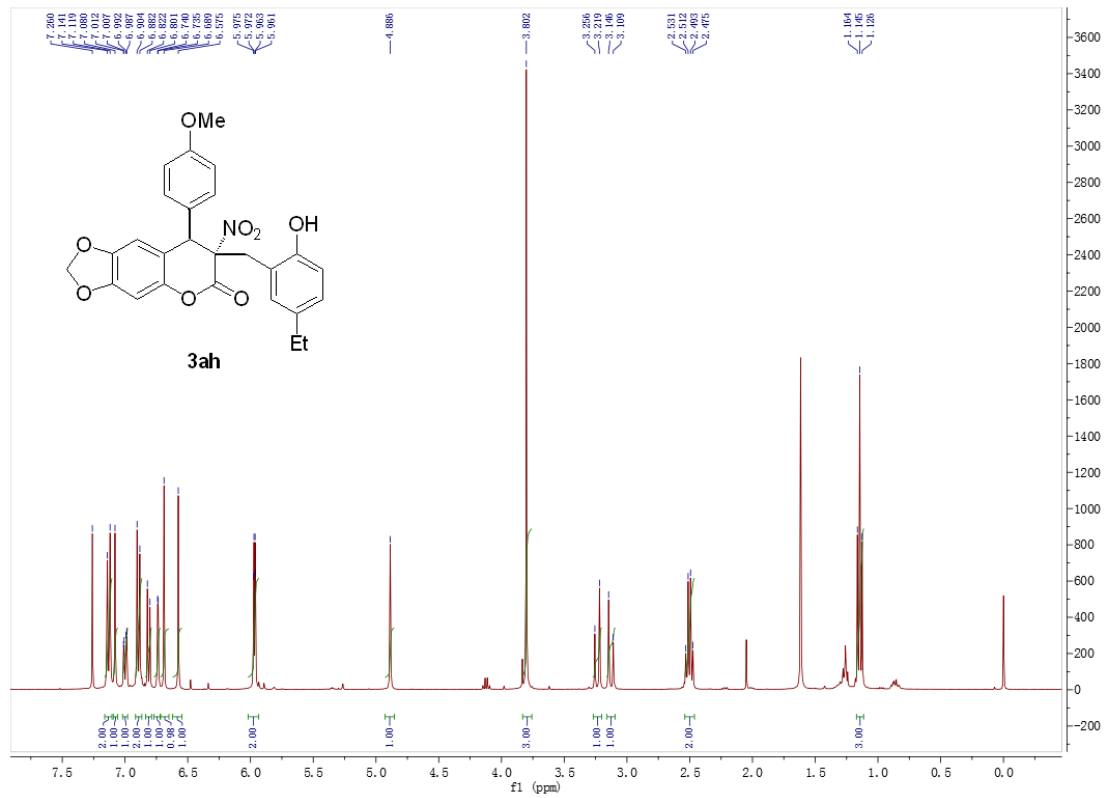


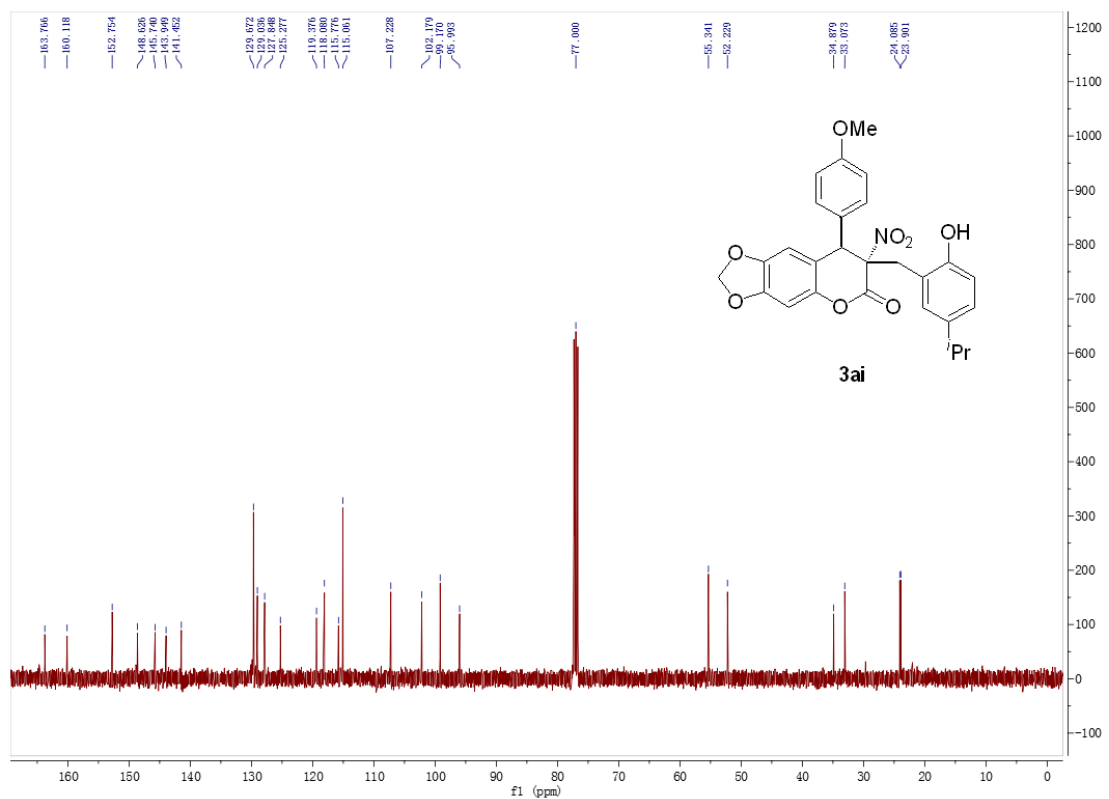
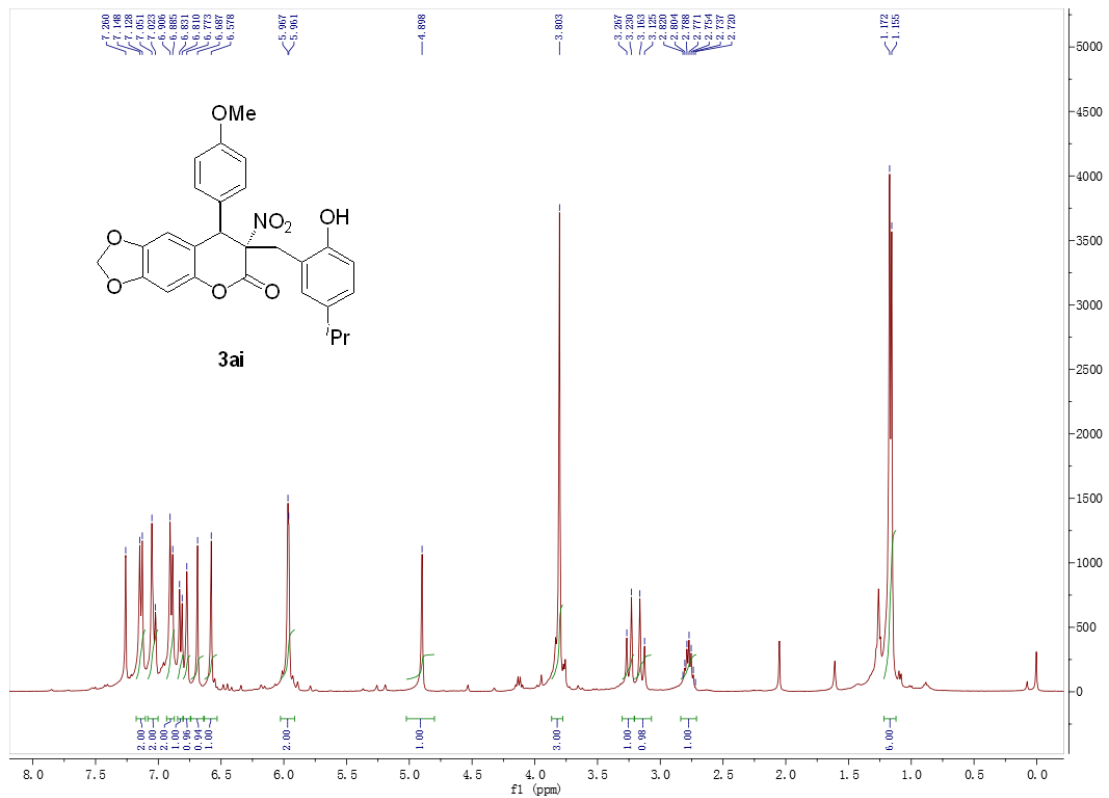


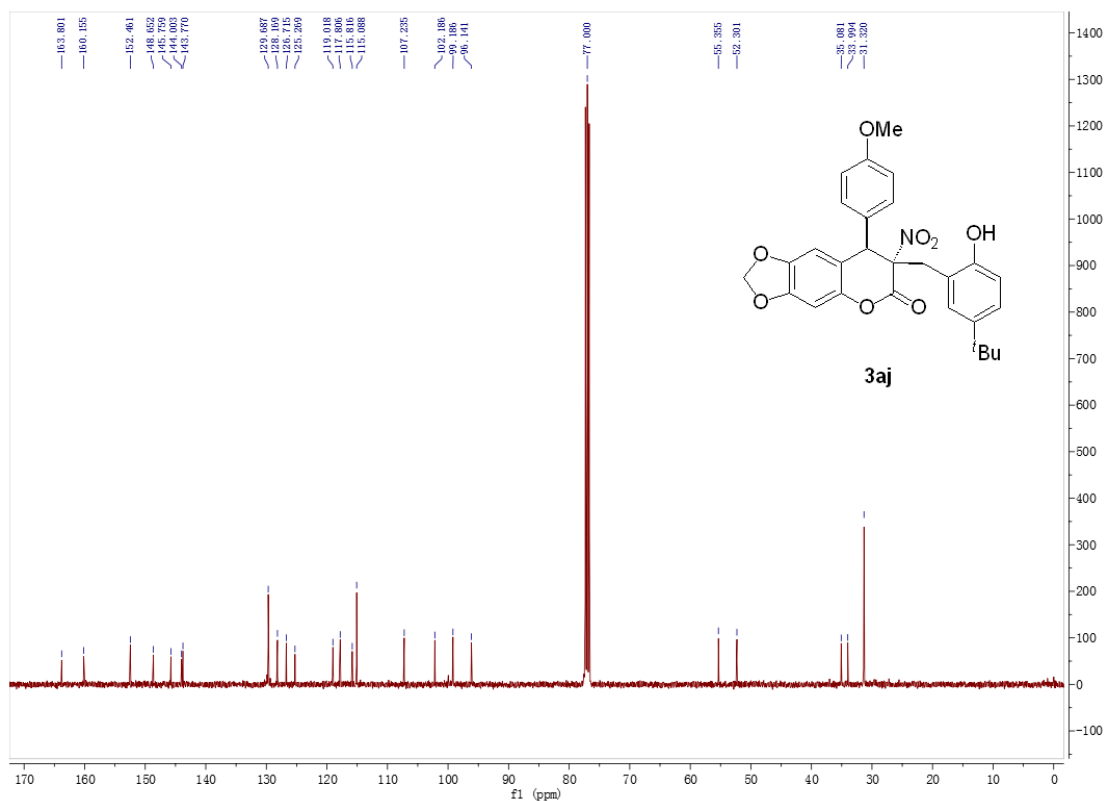
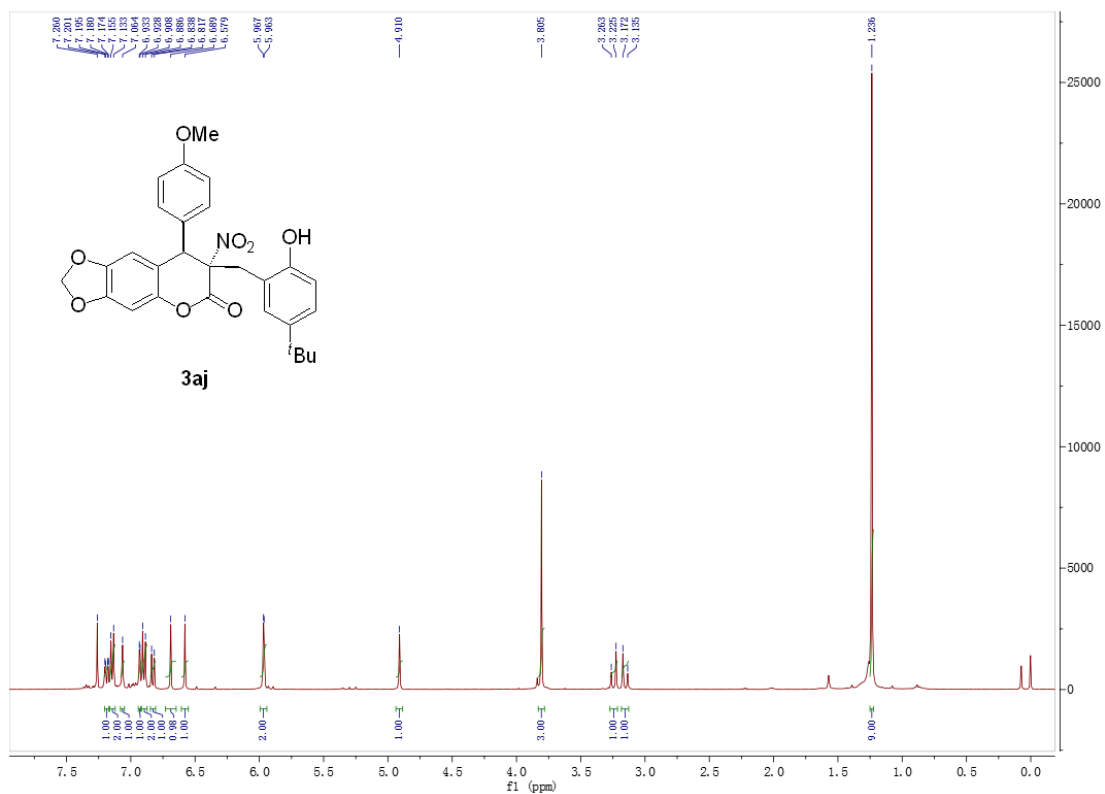


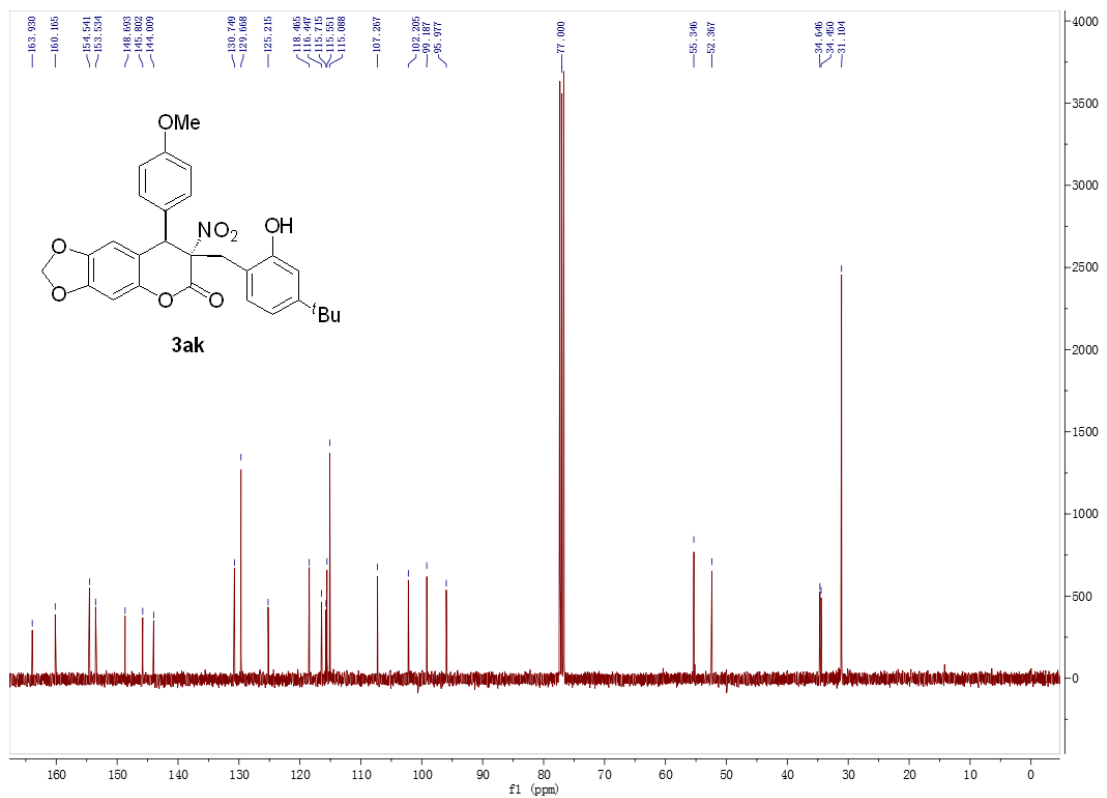
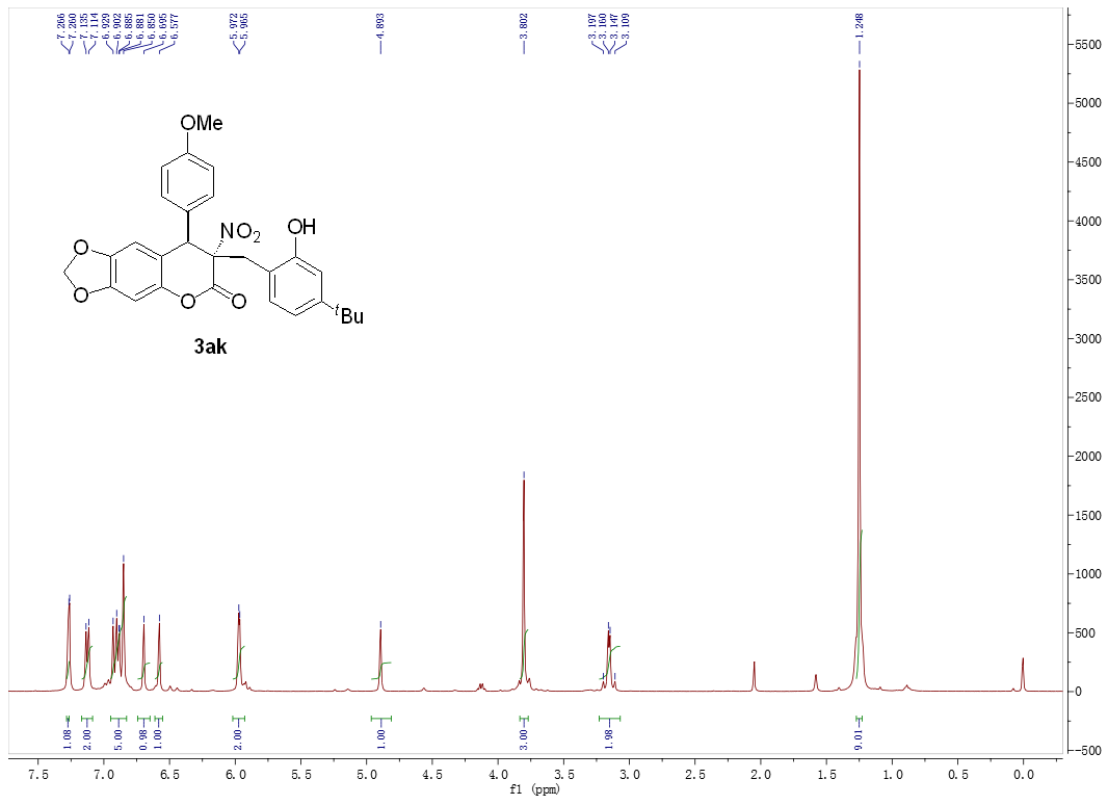


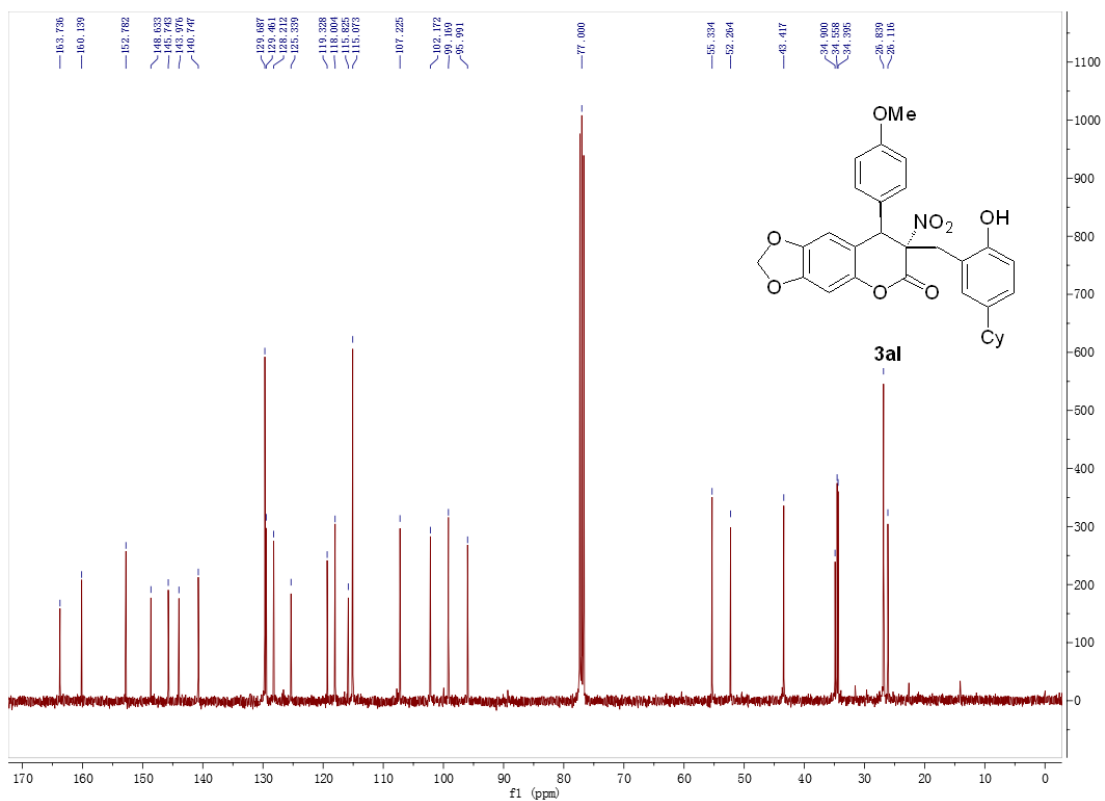
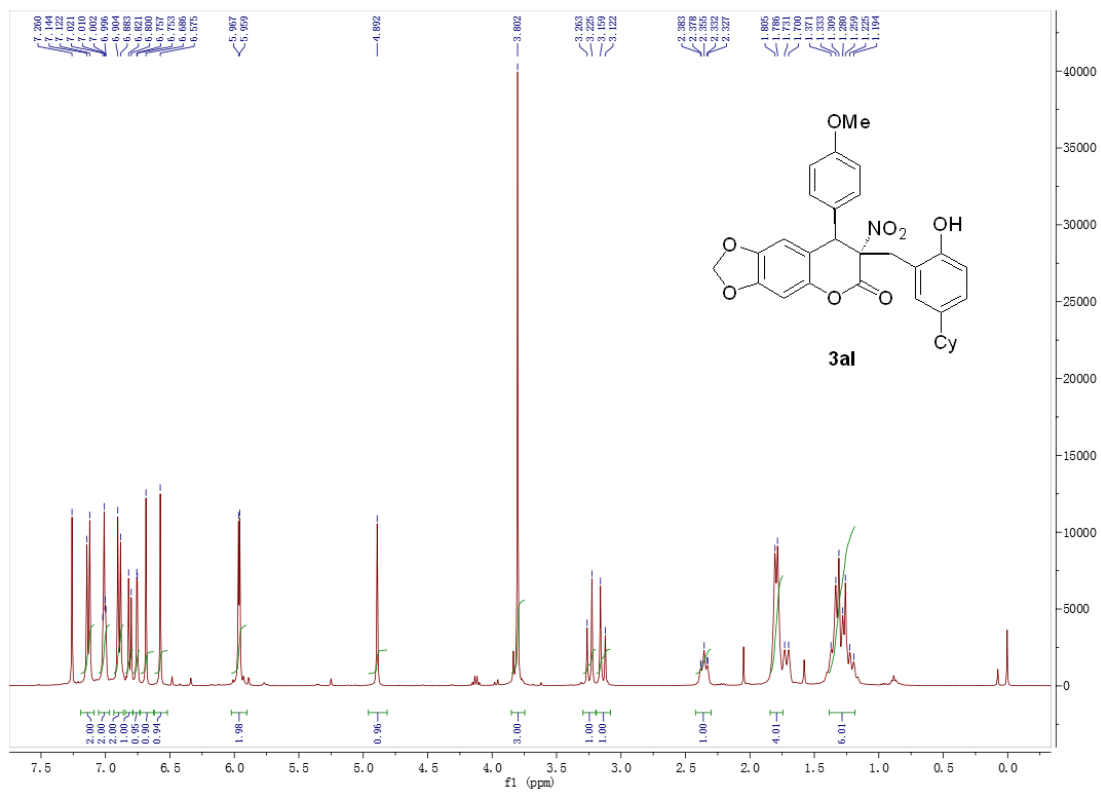


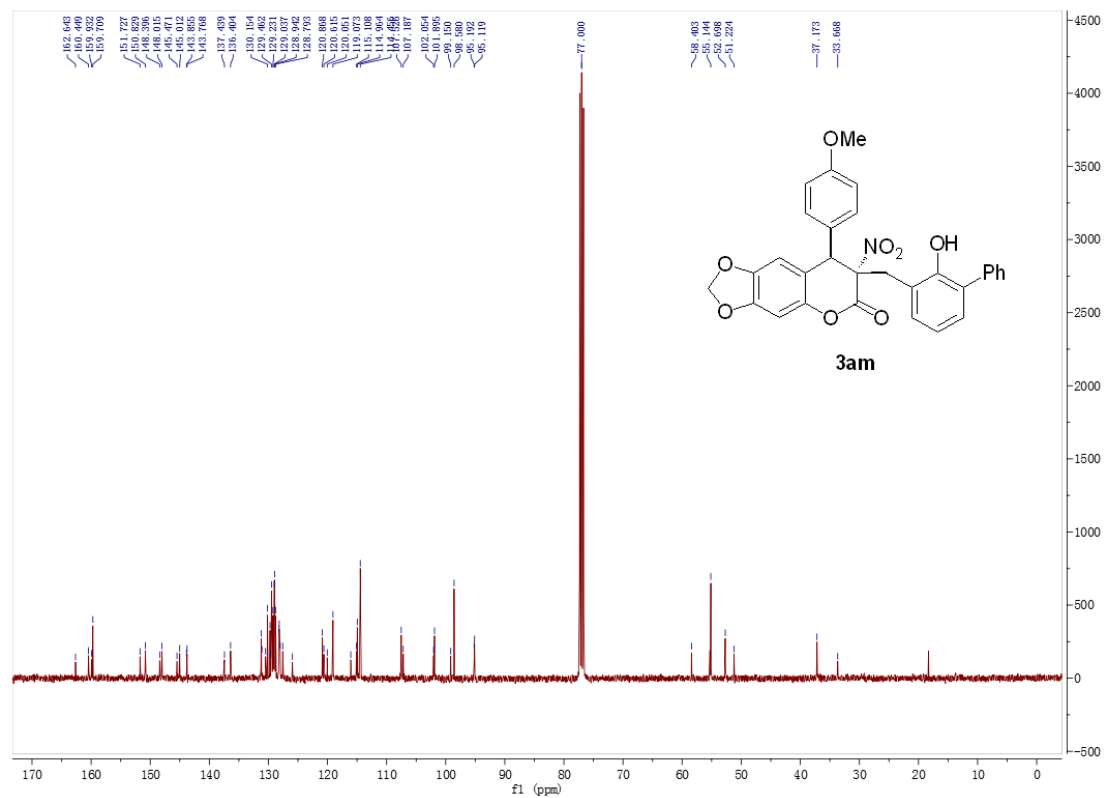
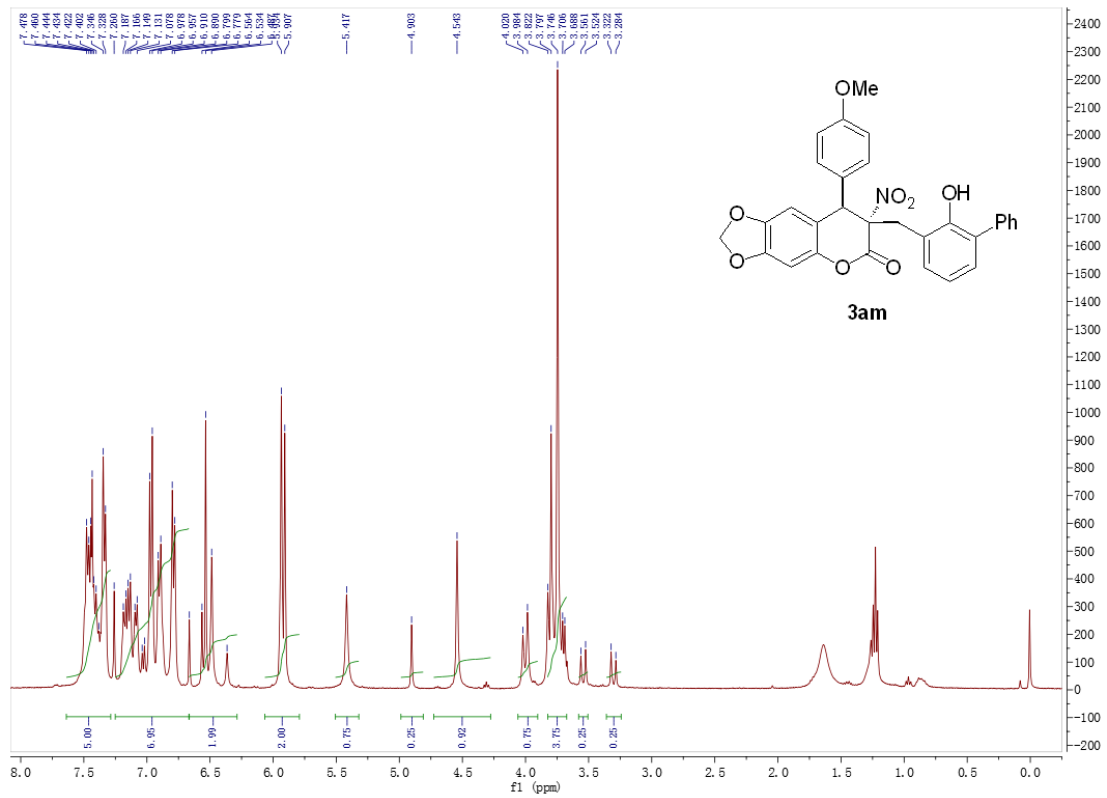




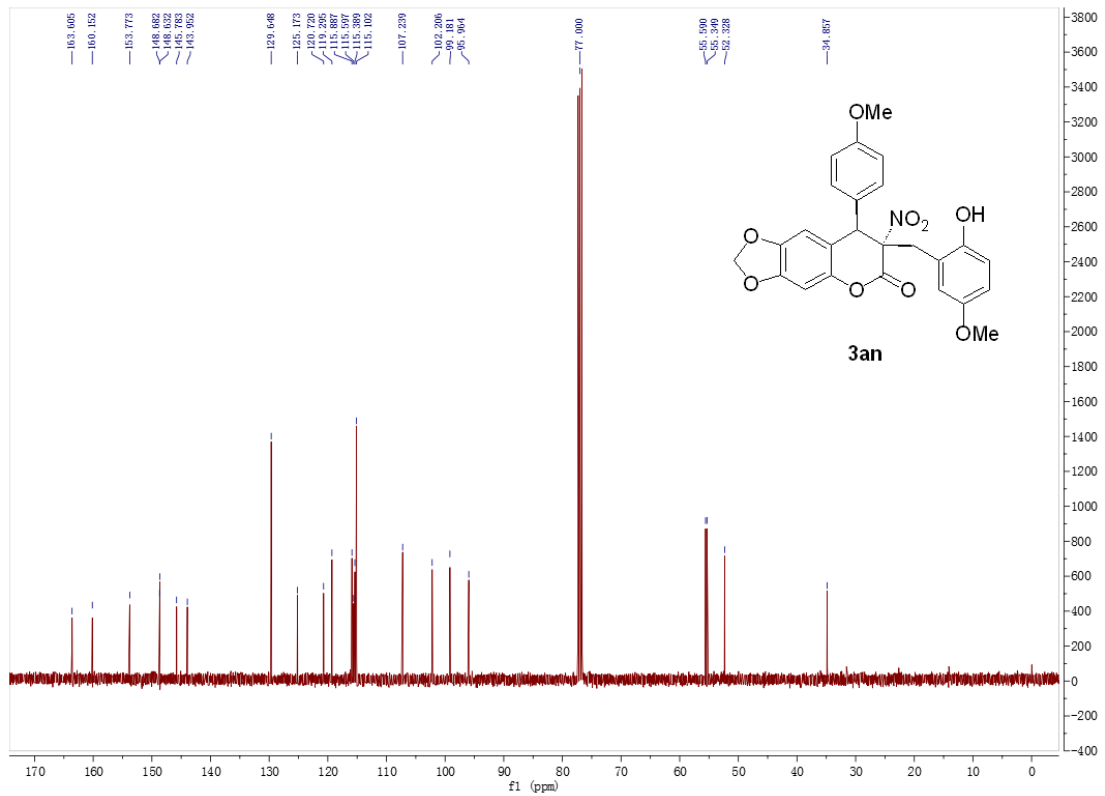
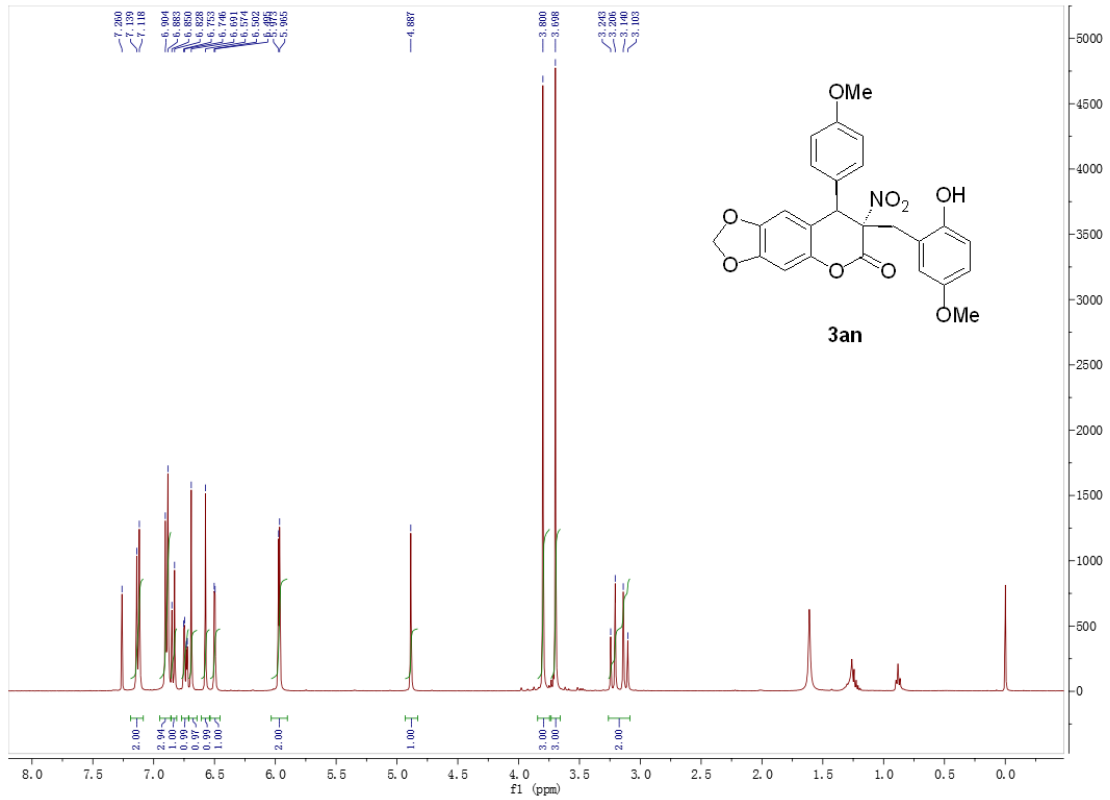


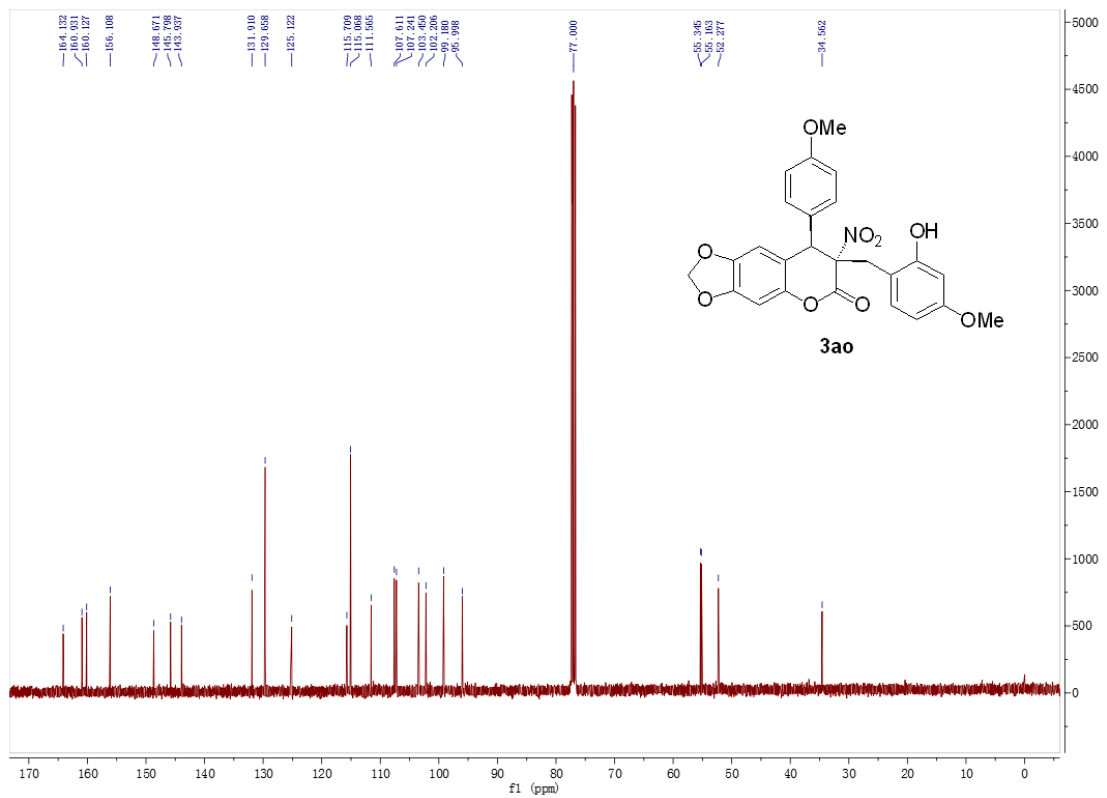
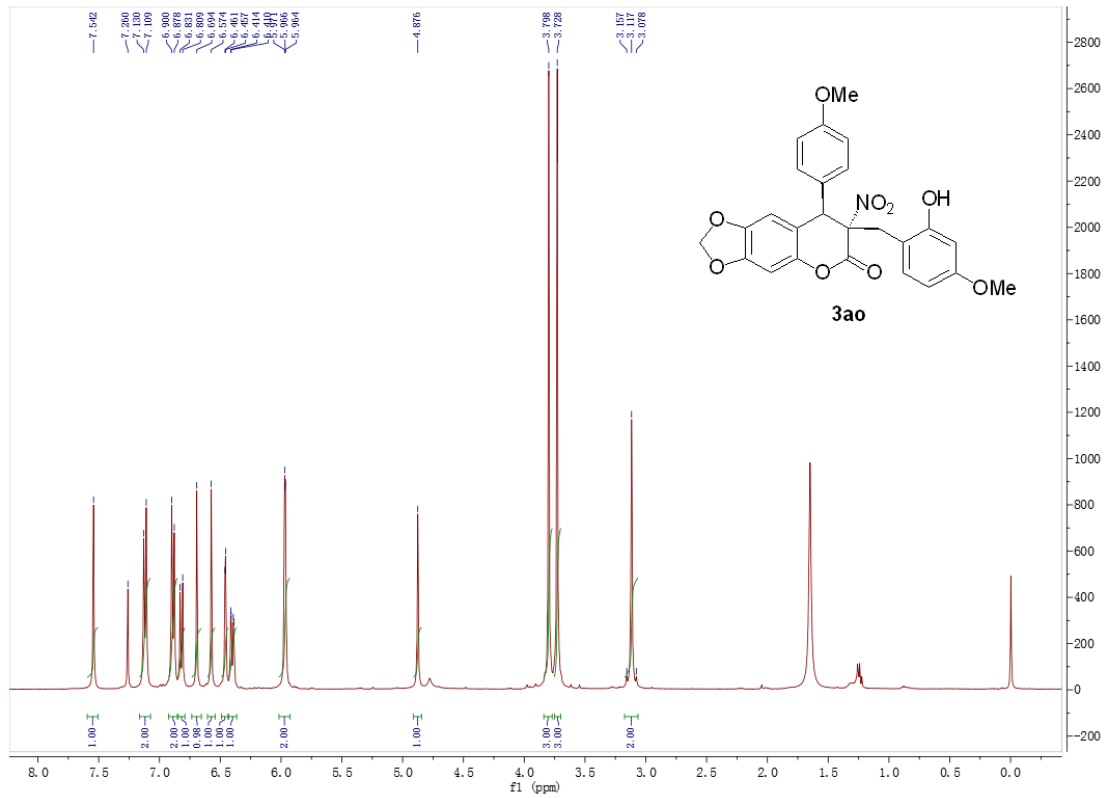


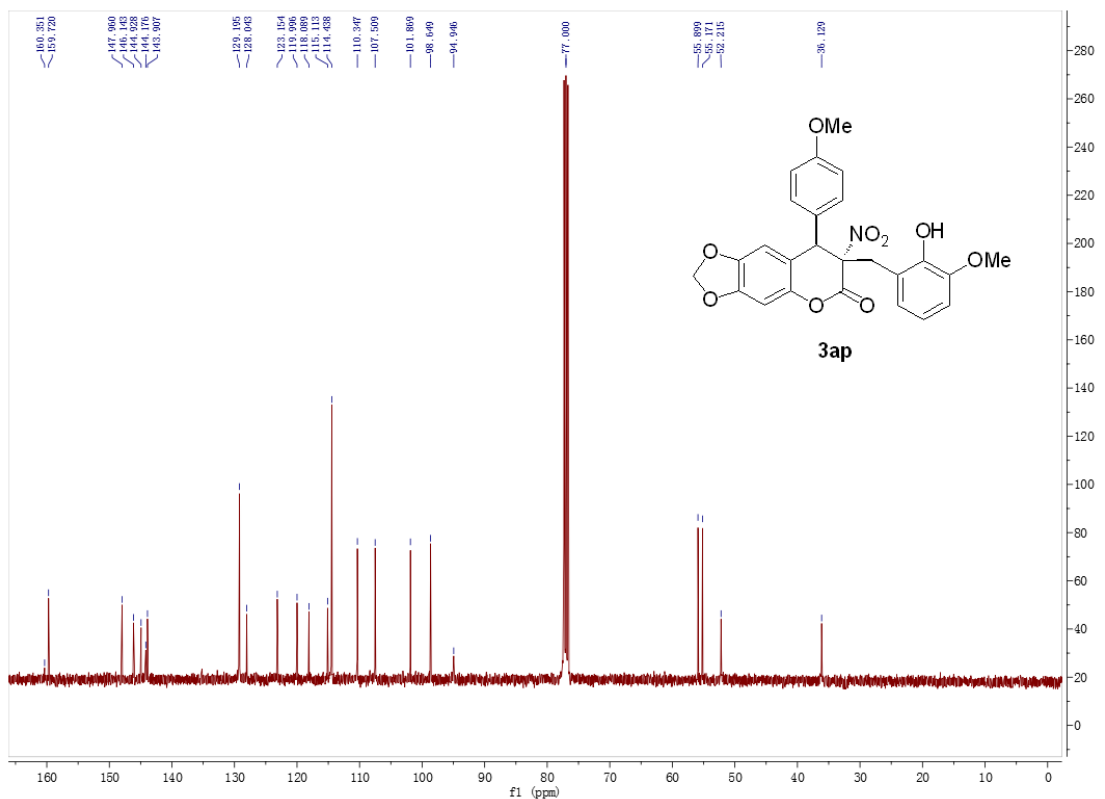
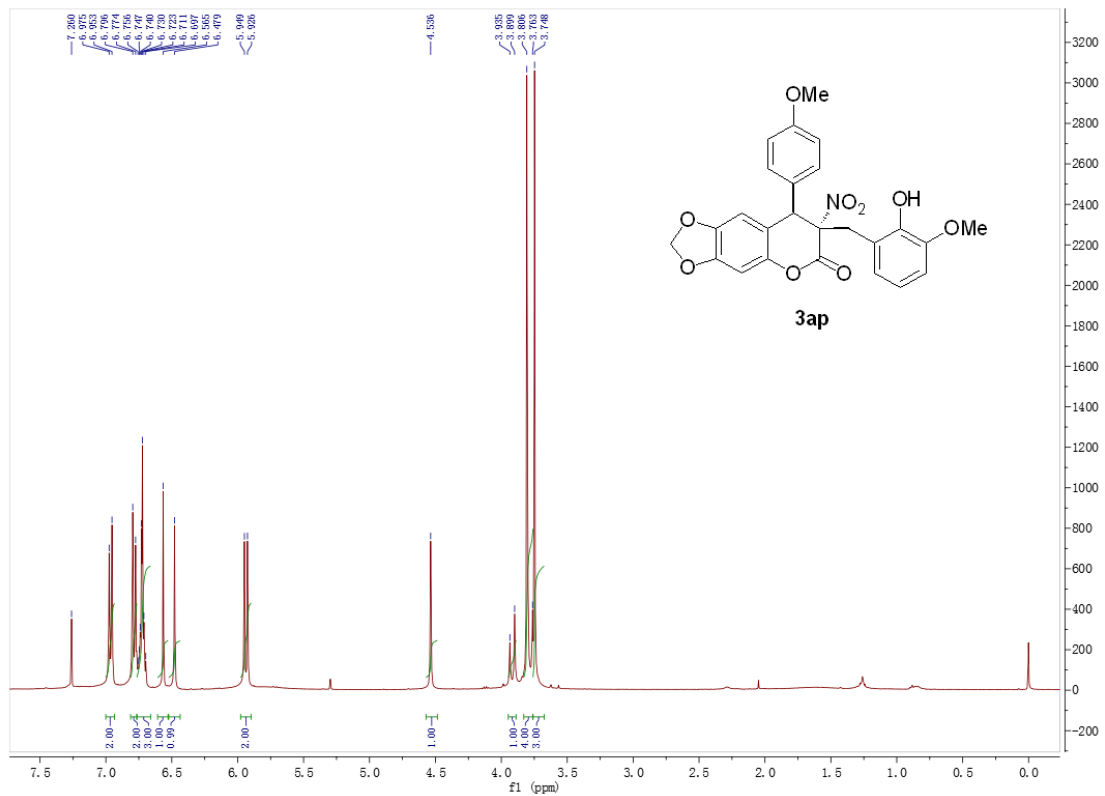


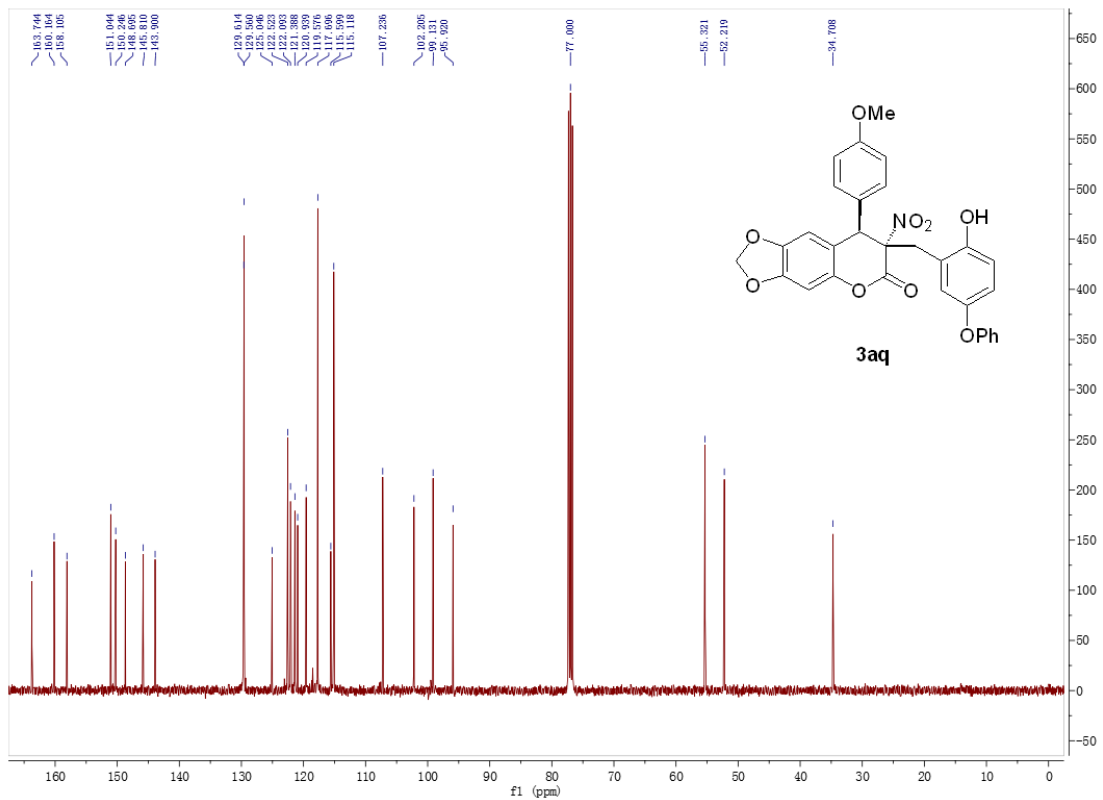
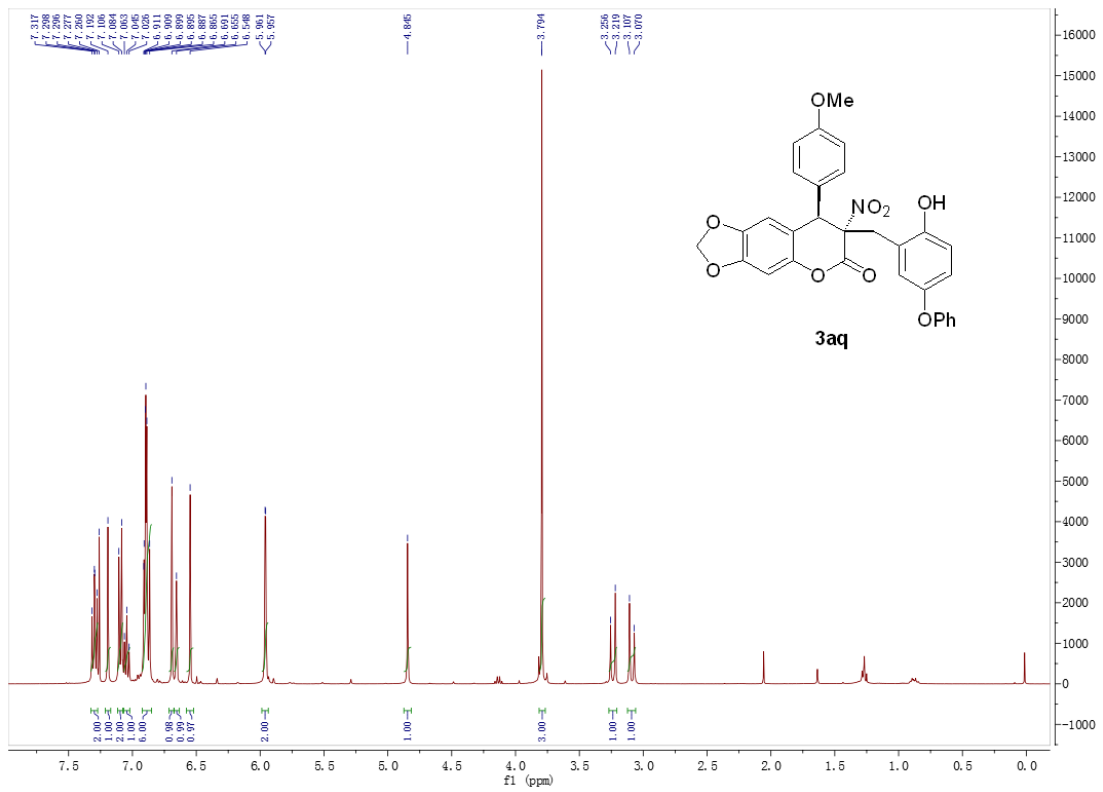


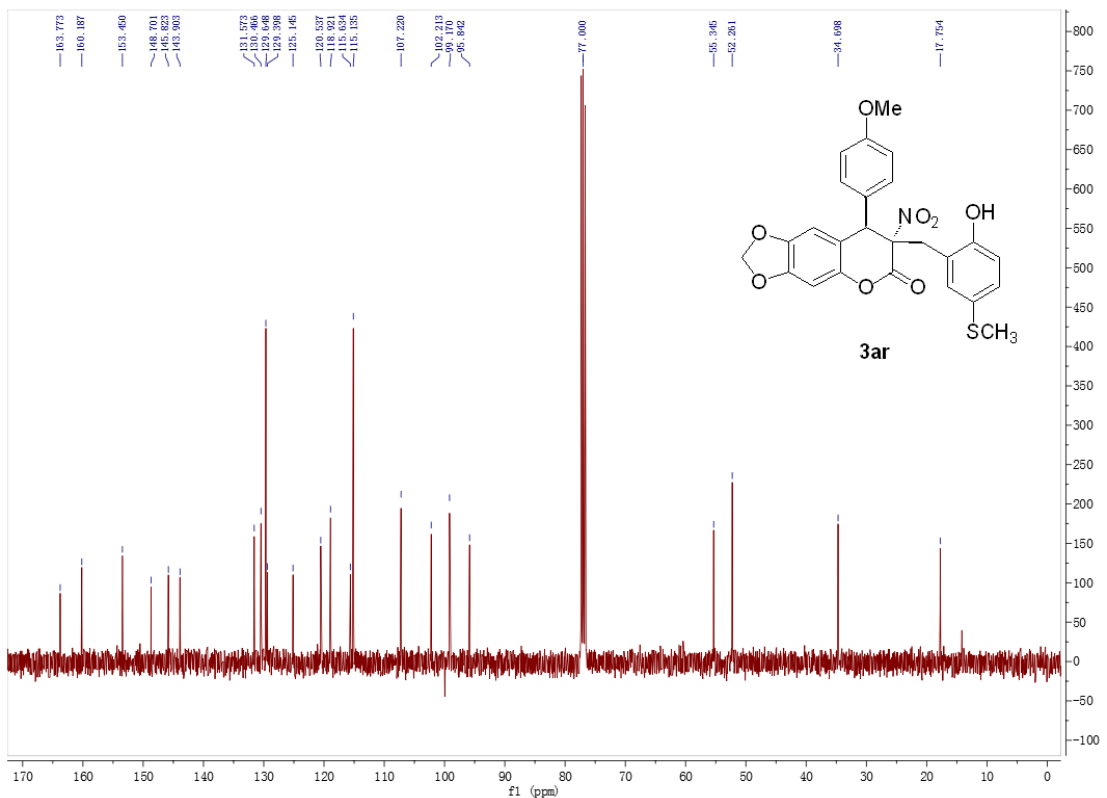
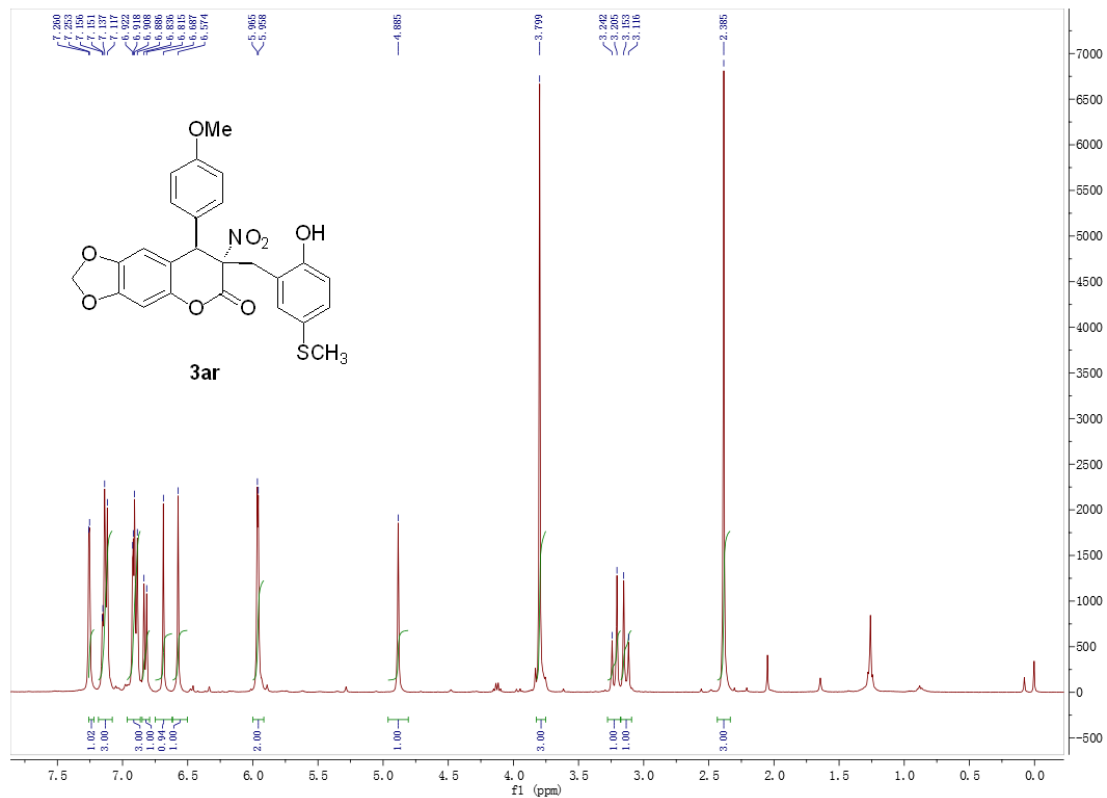


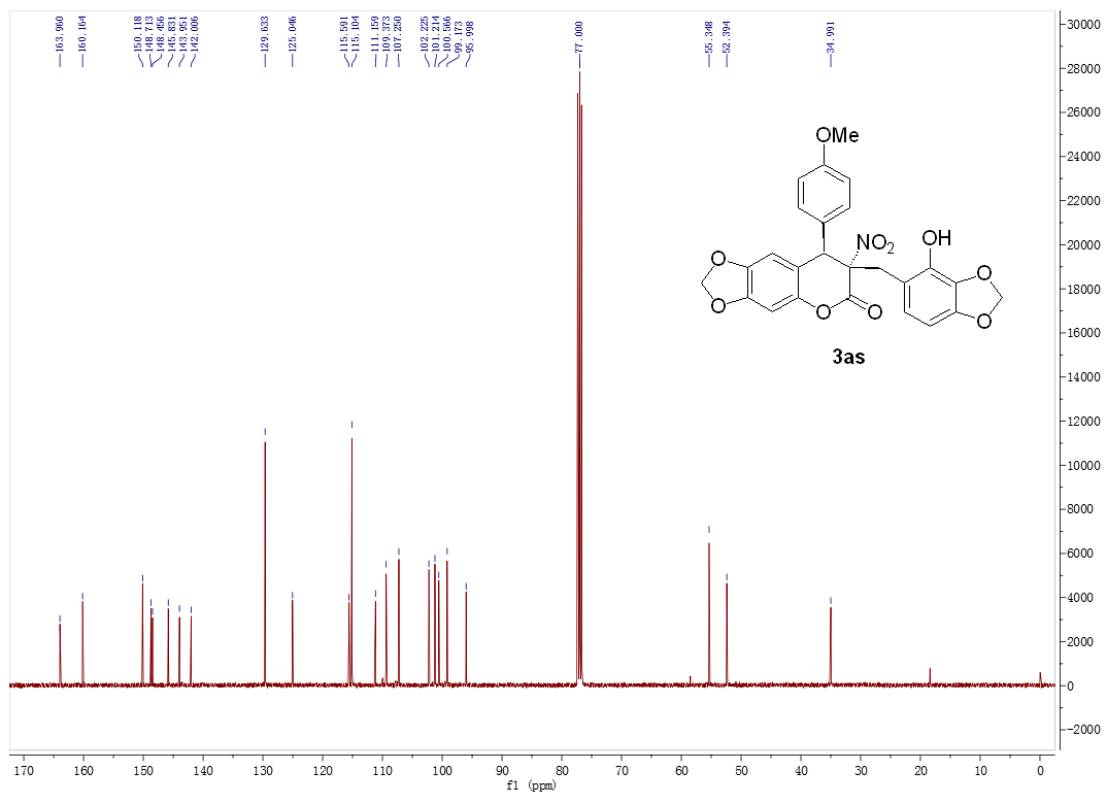
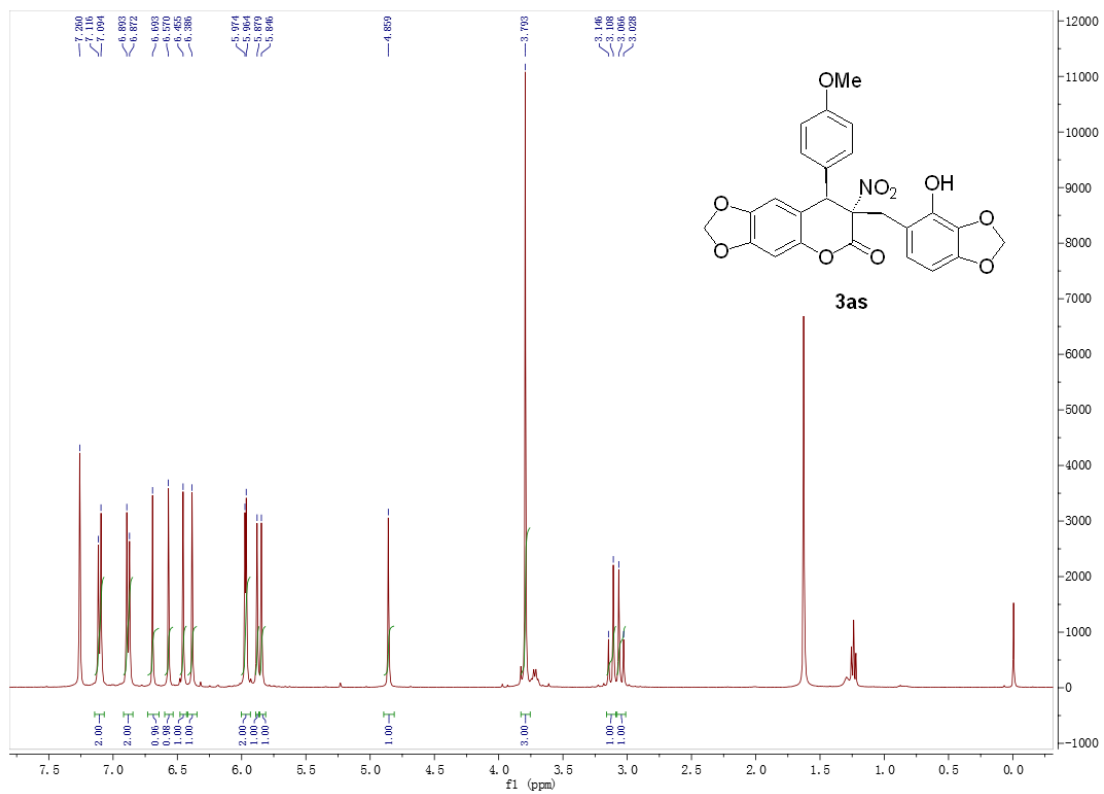


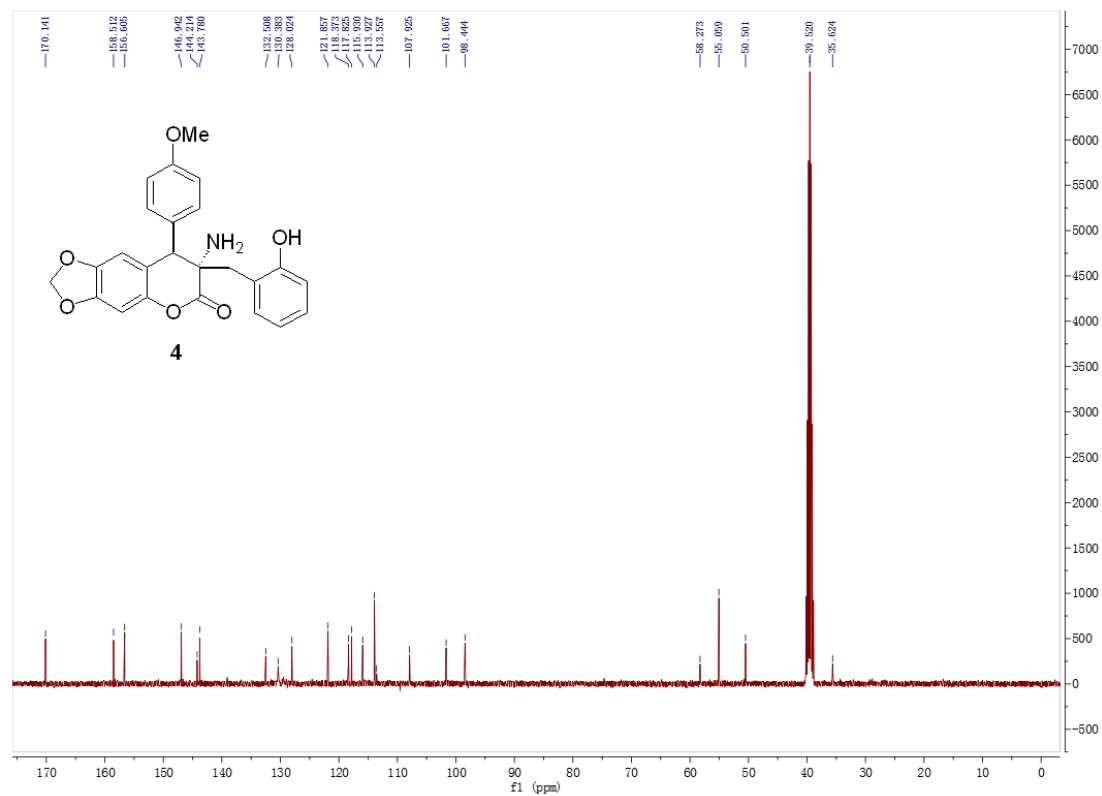
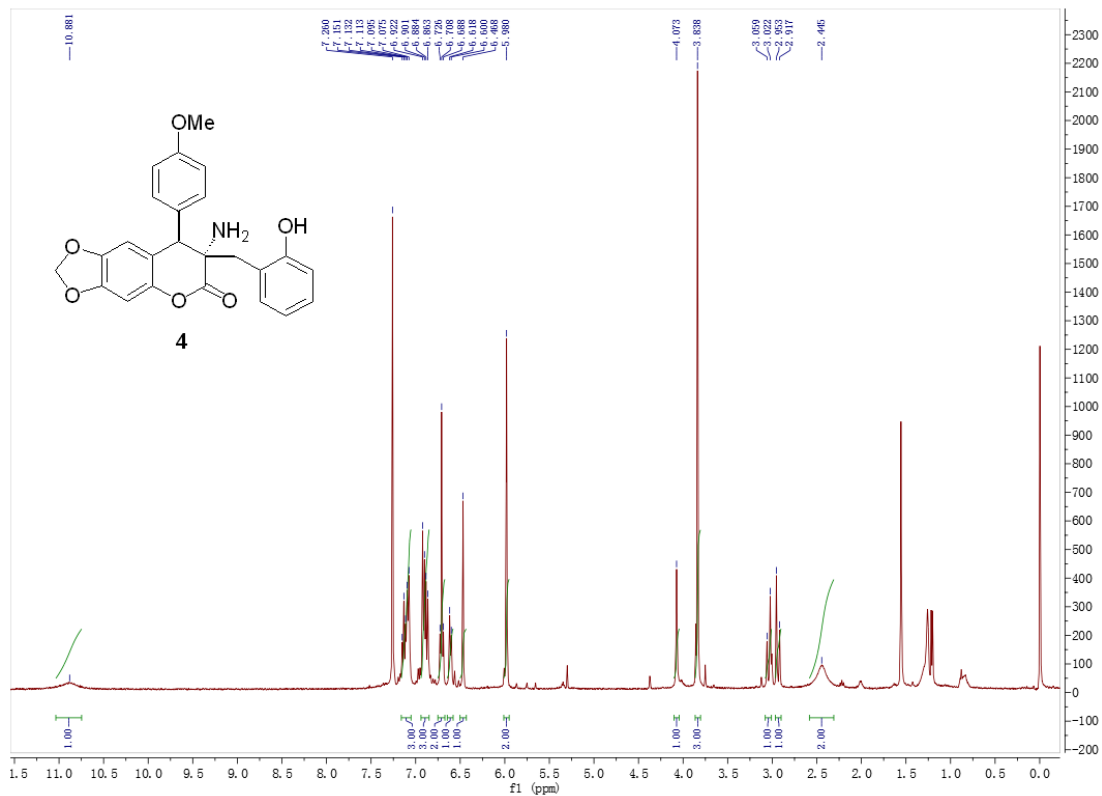


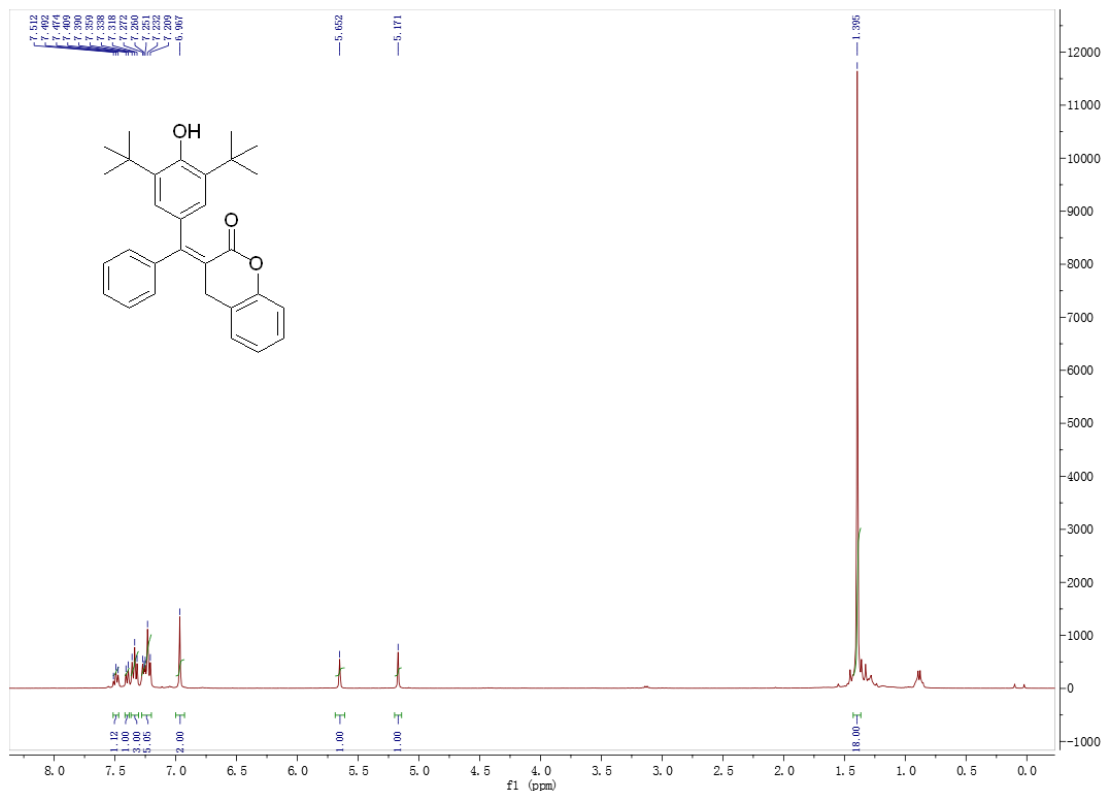






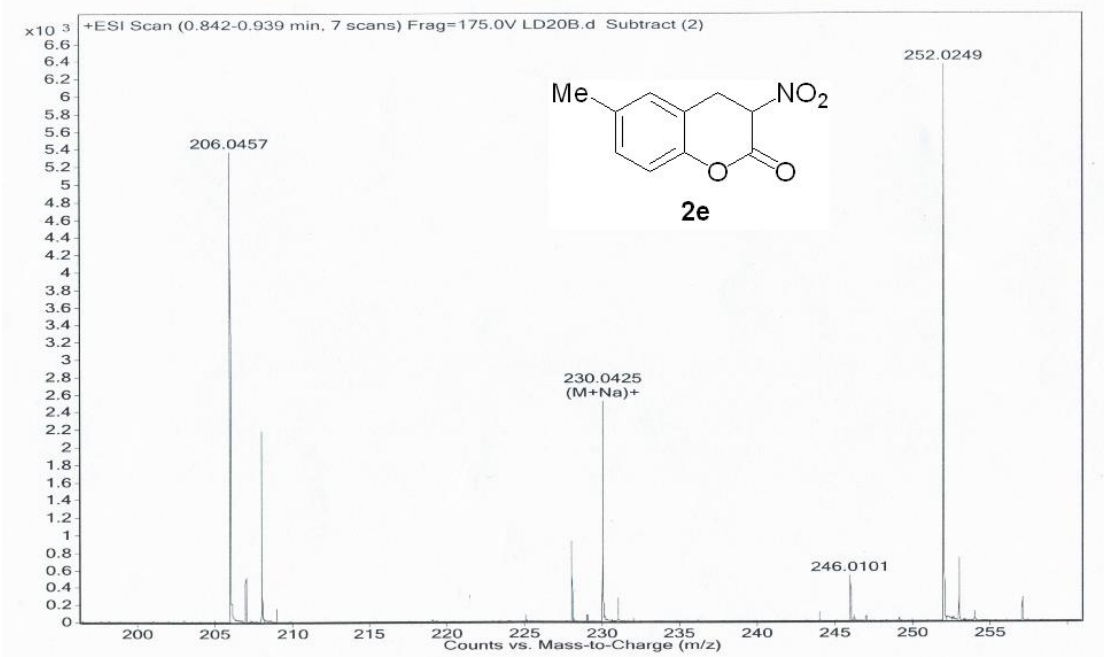






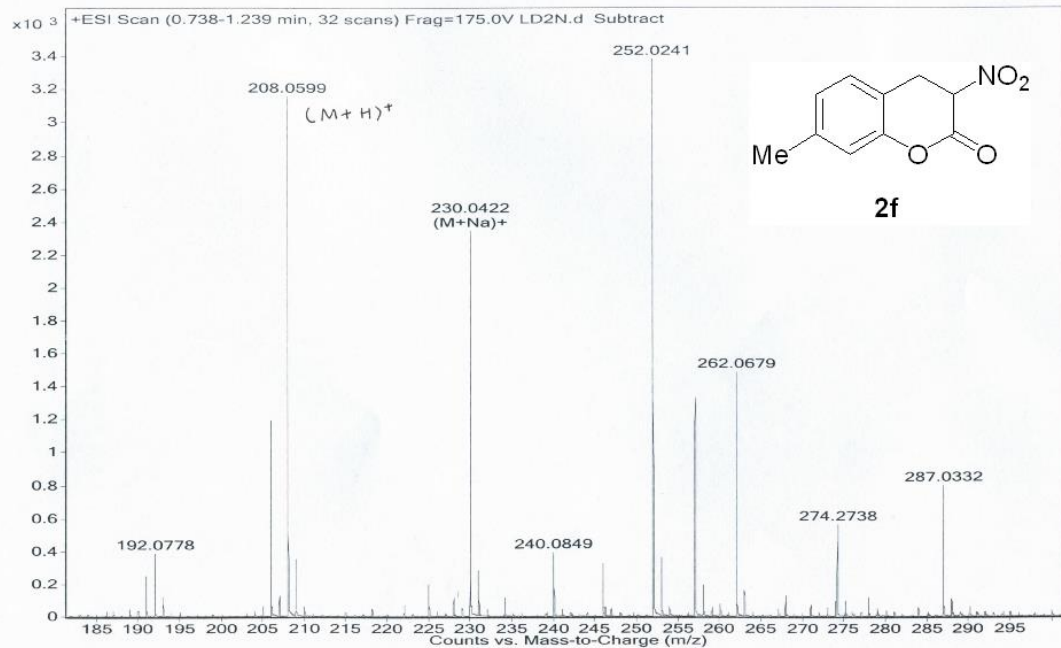
### 3. Copies of HRMS spectra

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Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
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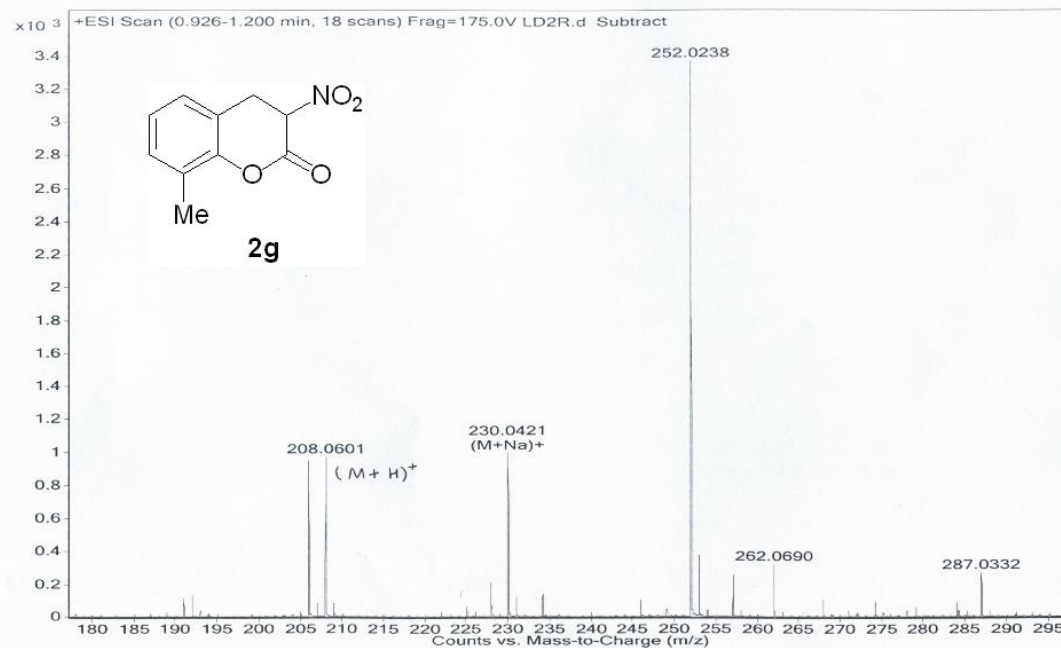




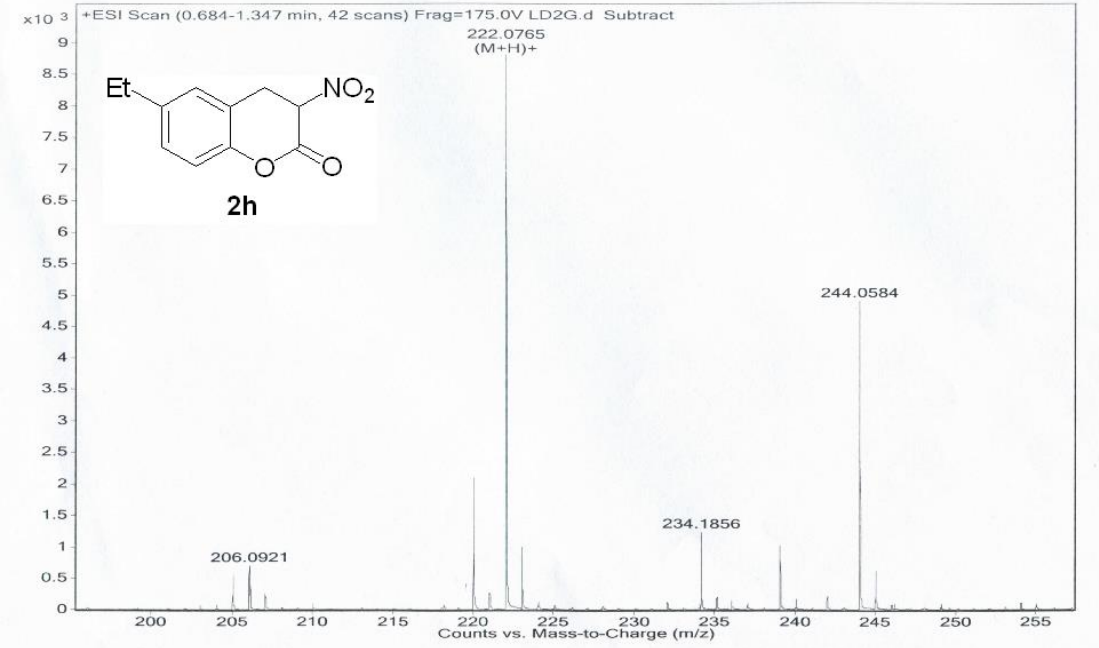
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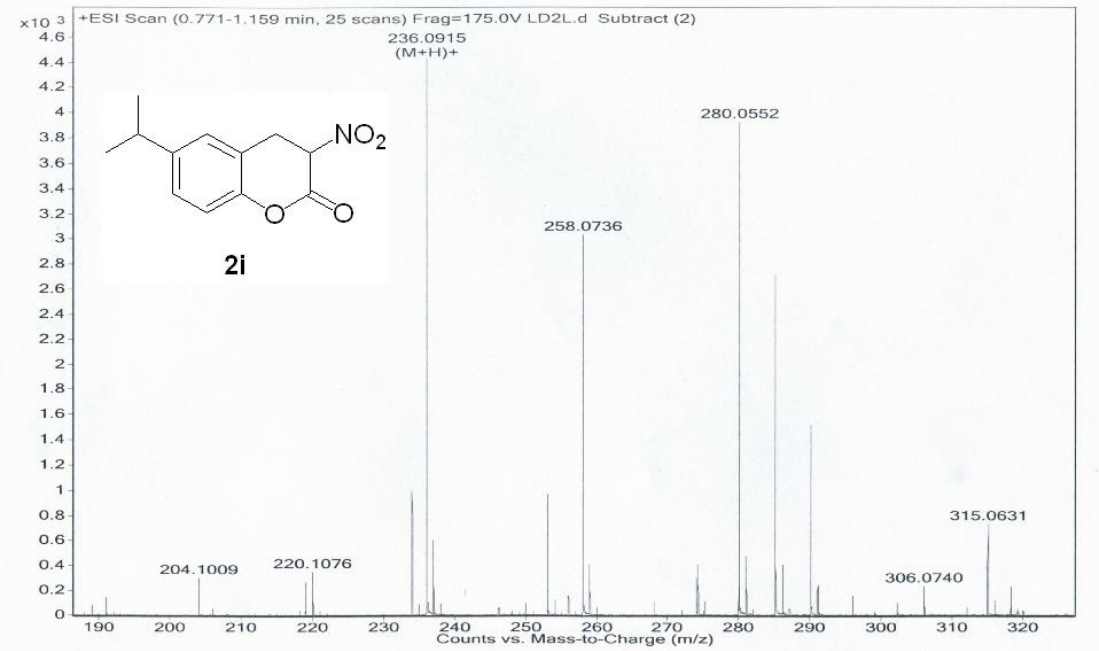
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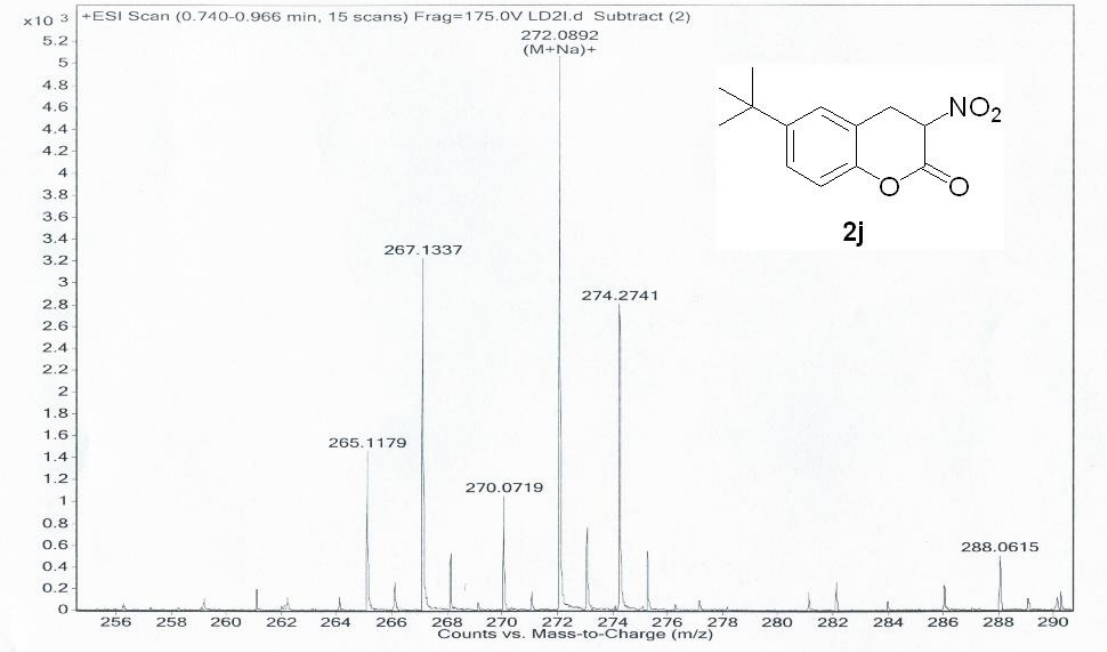
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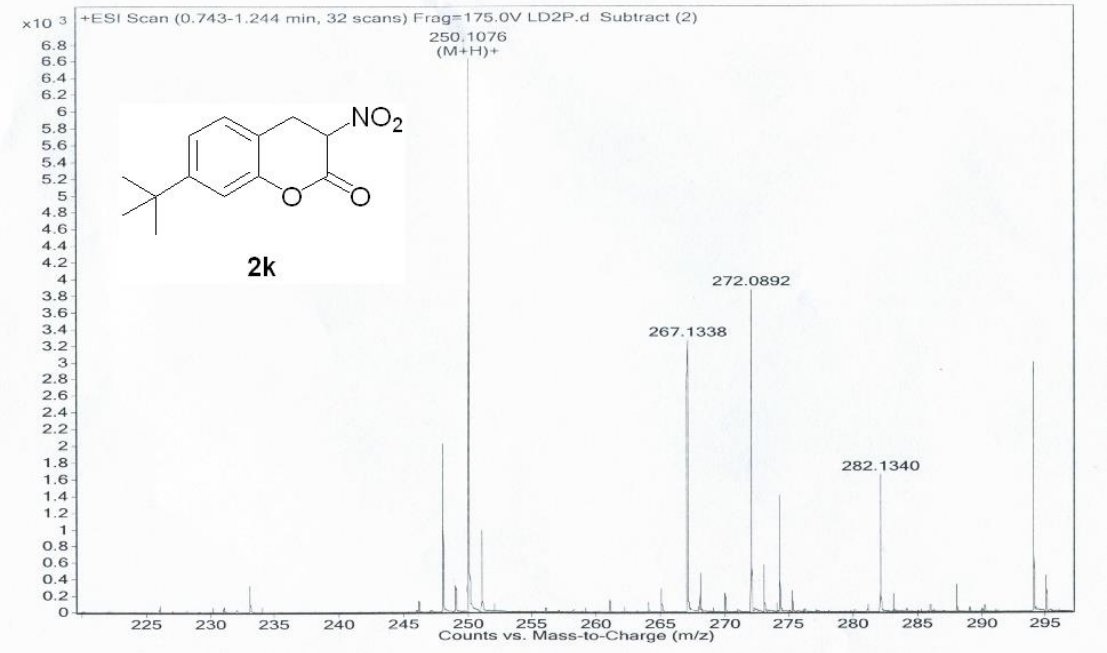
Sample Name	Sample12	Position	P1-B3	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD2L.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 5:01:01 PM



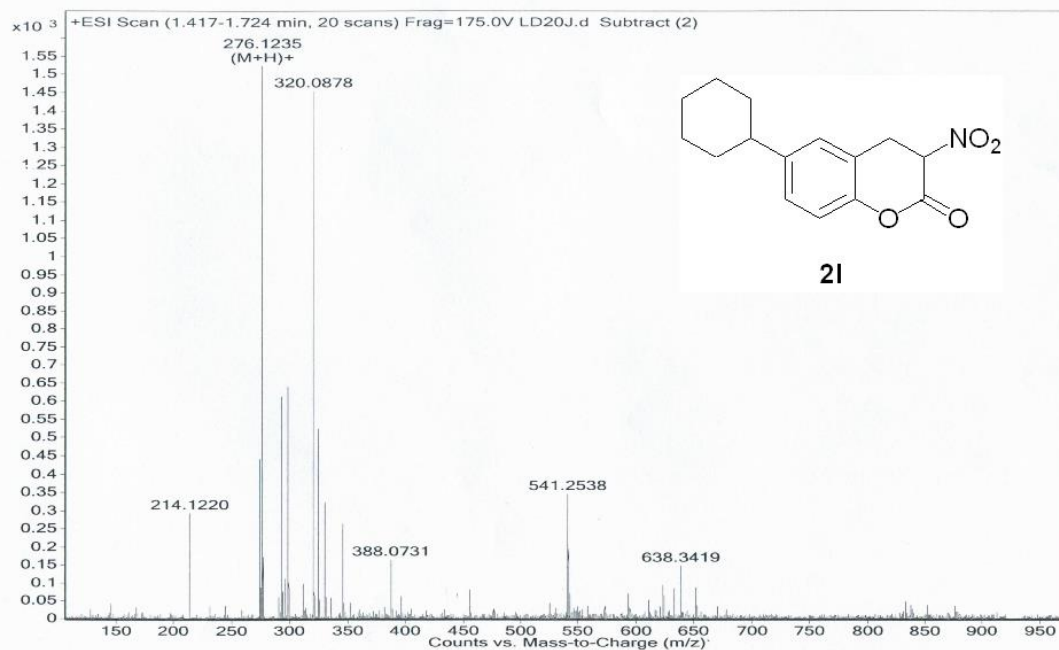
Sample Name	Sample9	Position	P1-A9	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD2I.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 4:40:21 PM



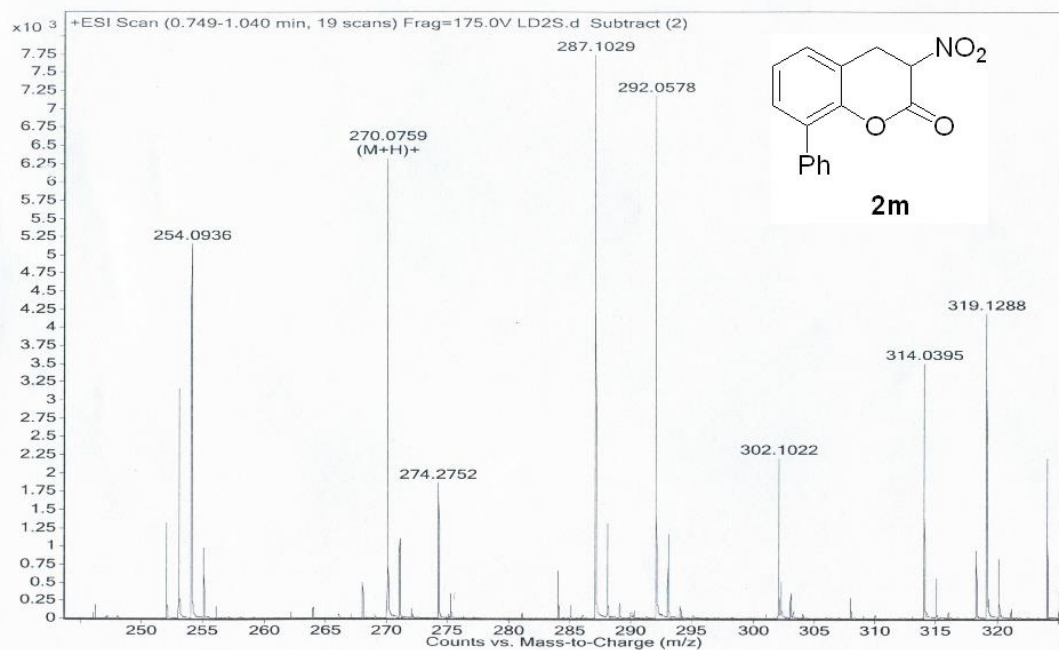
Sample Name	Sample16	Position	P1-B7	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD2P.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 5:28:33 PM



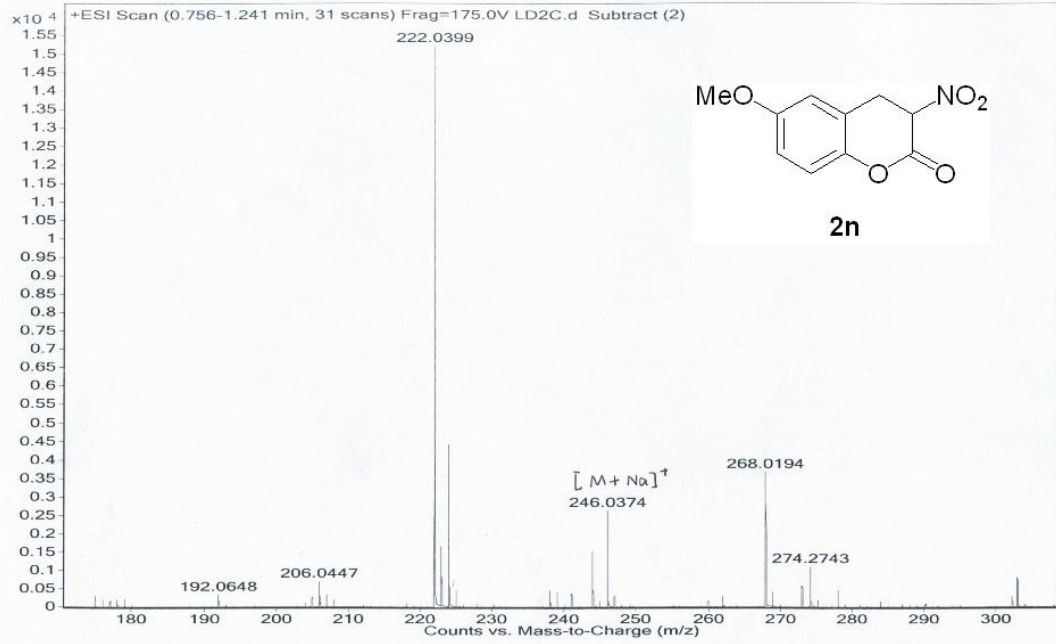
Sample Name	Sample10	Position	P1-C2	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD20J.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/20/2019 2:09:54 PM



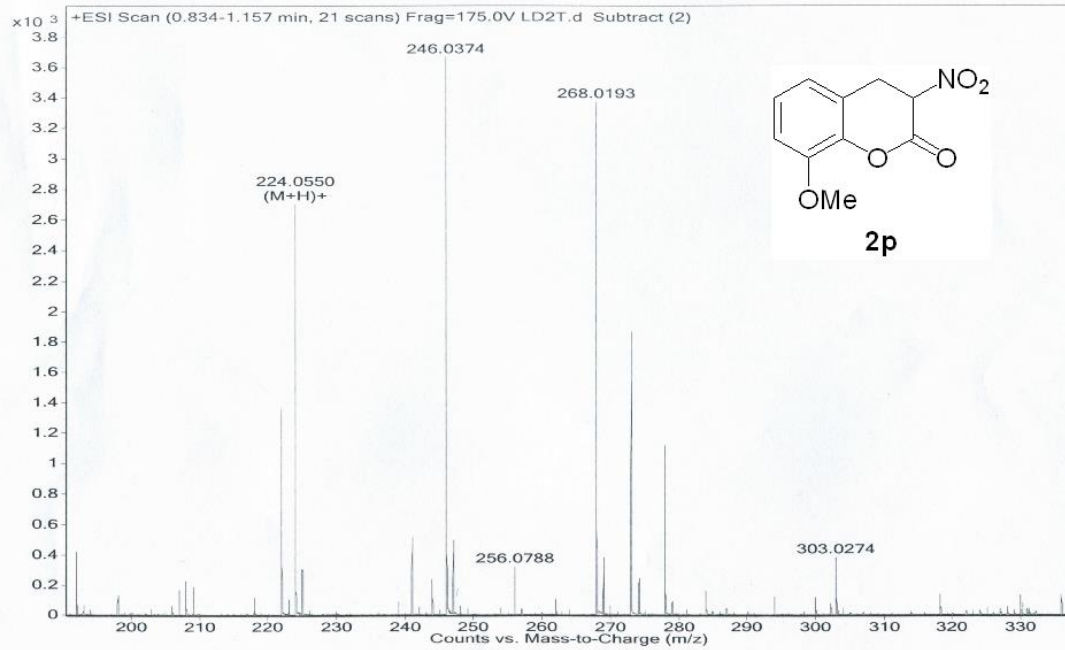
Sample Name	Sample19	Position	P1-C1	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD25.c	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 5:49:13 PM



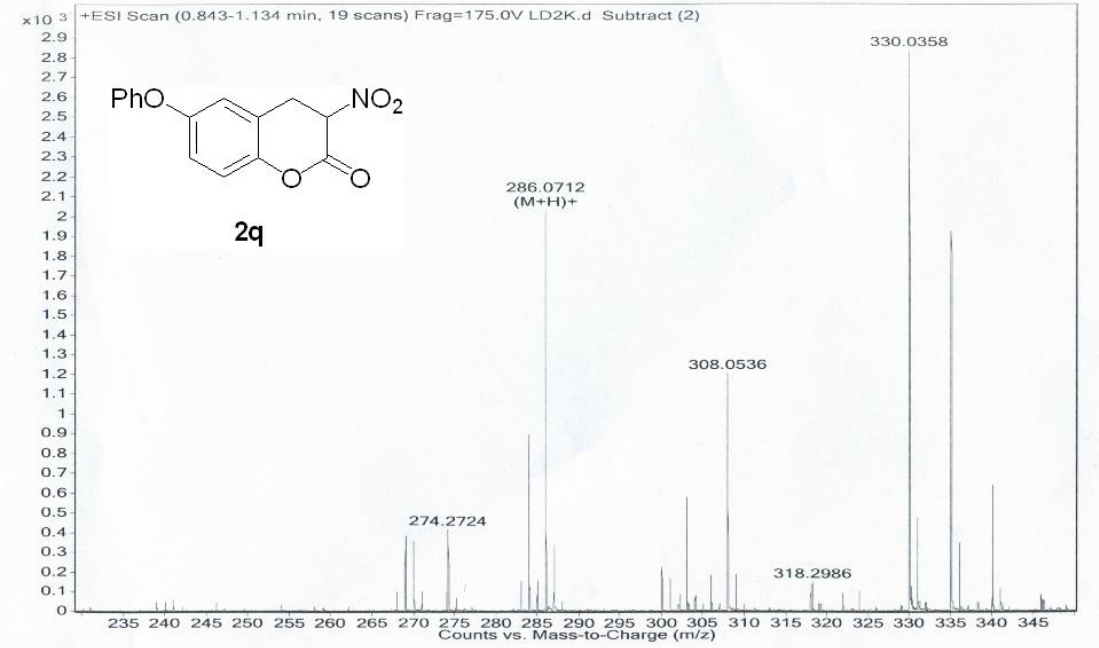
Sample Name	Sample3	Position	P1-A3	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD2C.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 3:59:09 PM



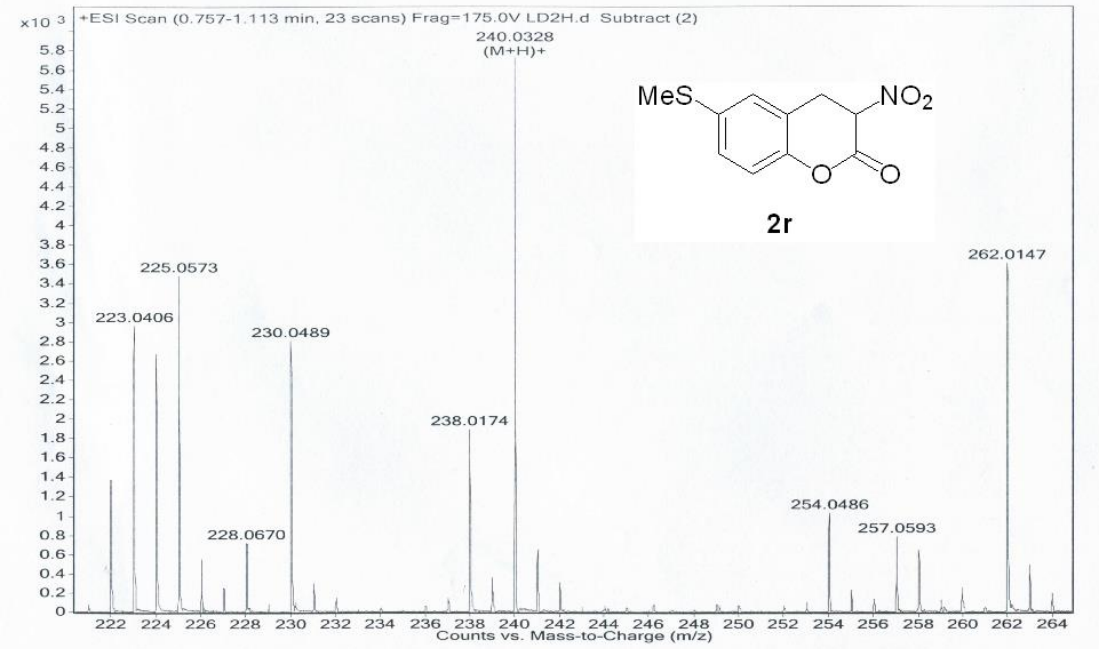
Sample Name	Sample20	Position	P1-C2	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD2T.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 5:56:06 PM



Sample Name	Sample11	Position	P1-B2	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD2K.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 4:54:07 PM

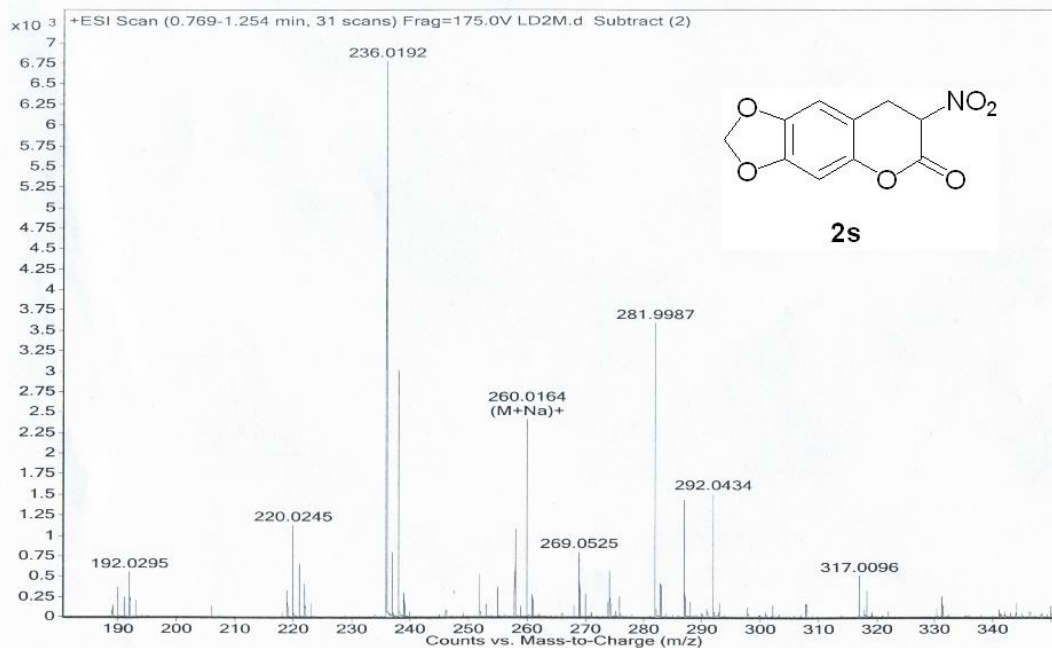


Sample Name	Sample8	Position	P1-A8	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD2H.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 4:33:27 PM

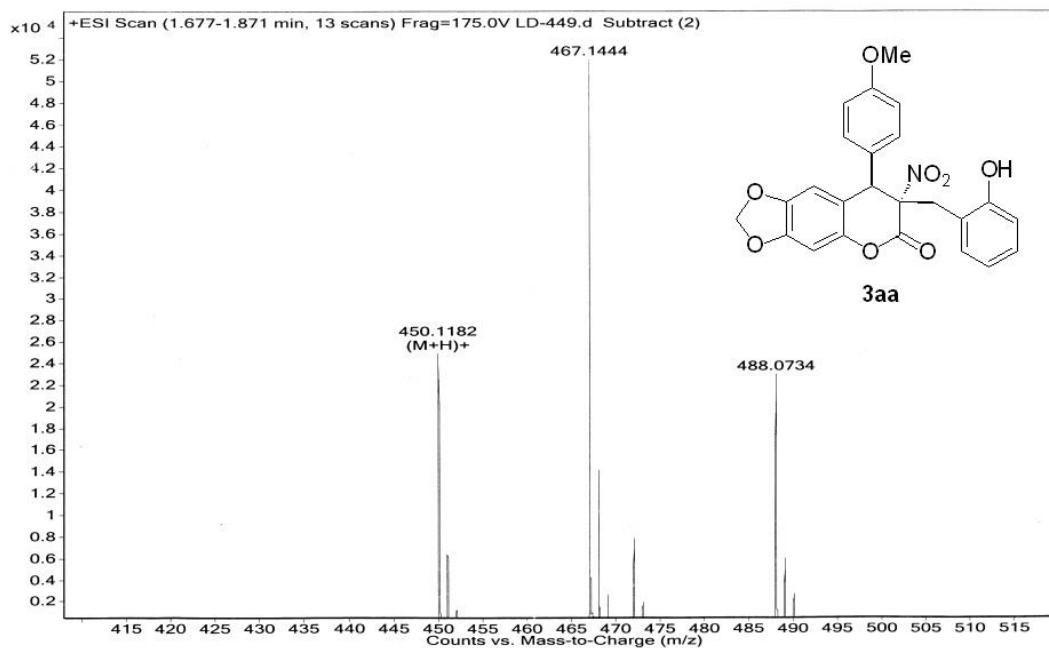




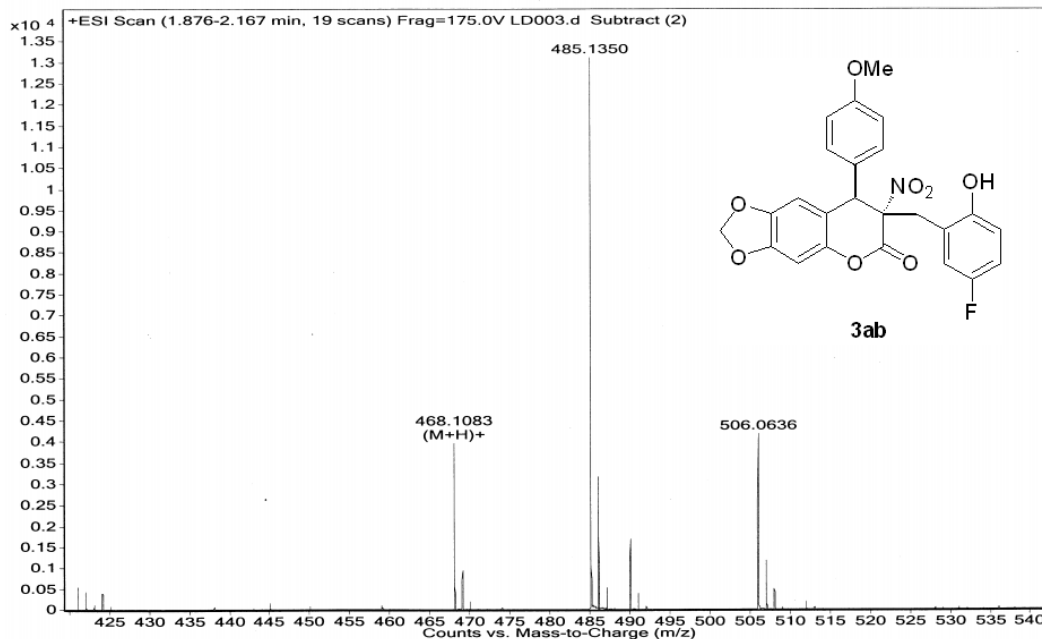
Sample Name	Sample13	Position	P1-B4	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD2M.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	3/14/2019 5:07:54 PM



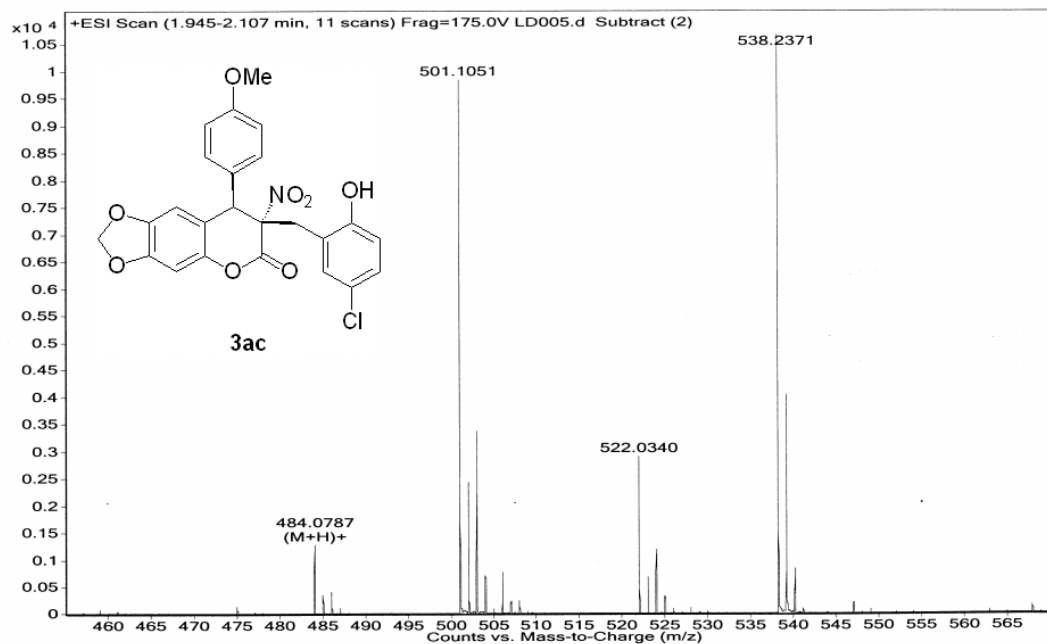
Sample Name	Sample2	Position	P1-A2	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD-449.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	6/12/2018 9:41:42 AM



Sample Name	Sample5	Position	P1-A5	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD003.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	10/9/2018 11:47:01 AM

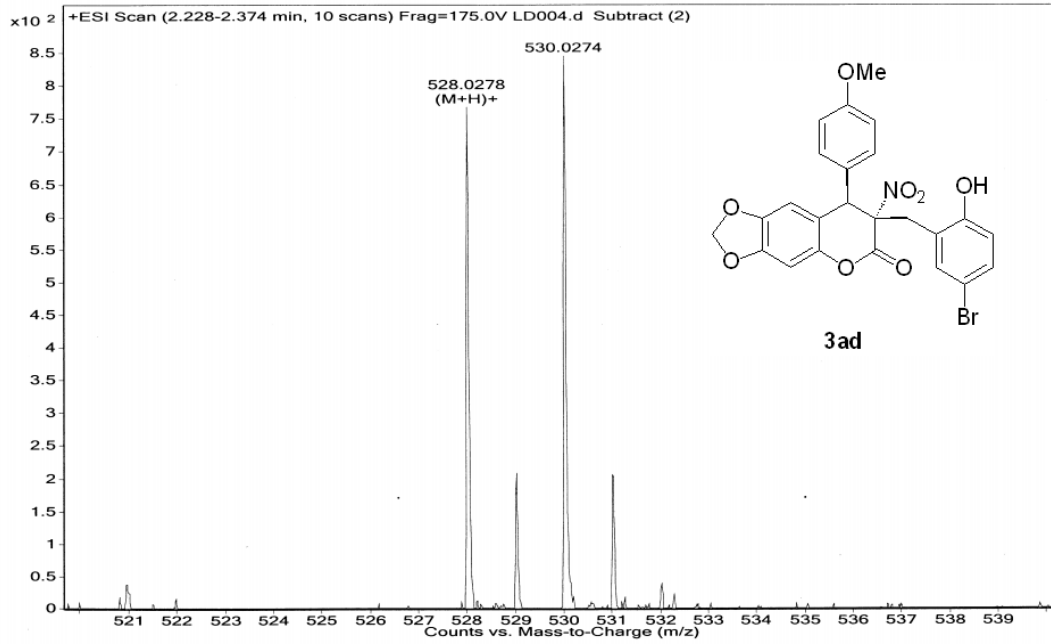


Sample Name	Sample7	Position	P1-A7	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD005.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	10/9/2018 12:00:43 PM

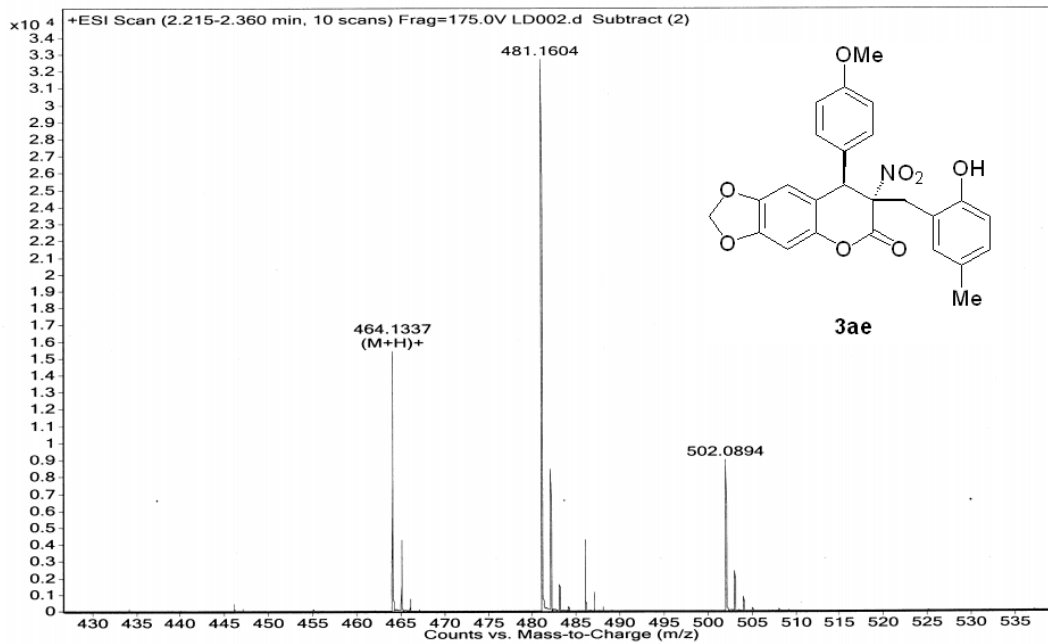




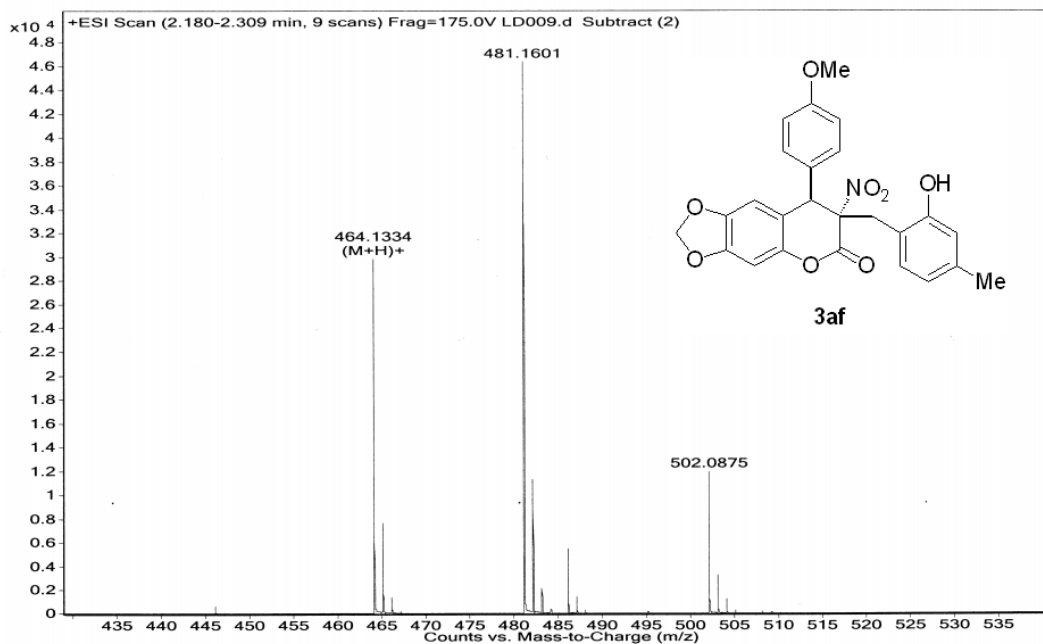
<b>Sample Name</b>	Sample6	<b>Position</b>	P1-A6	<b>Instrument Name</b>	Instrument 1	<b>User Name</b>	
<b>Inj Vol</b>	-1	<b>InjPosition</b>		<b>SampleType</b>	Sample	<b>IRM Calibration Status</b>	Some Ions Missed
<b>Data Filename</b>	LD004.d	<b>ACQ Method</b>	Default-TEST.m	<b>Comment</b>		<b>Acquired Time</b>	10/9/2018 11:53:51 AM



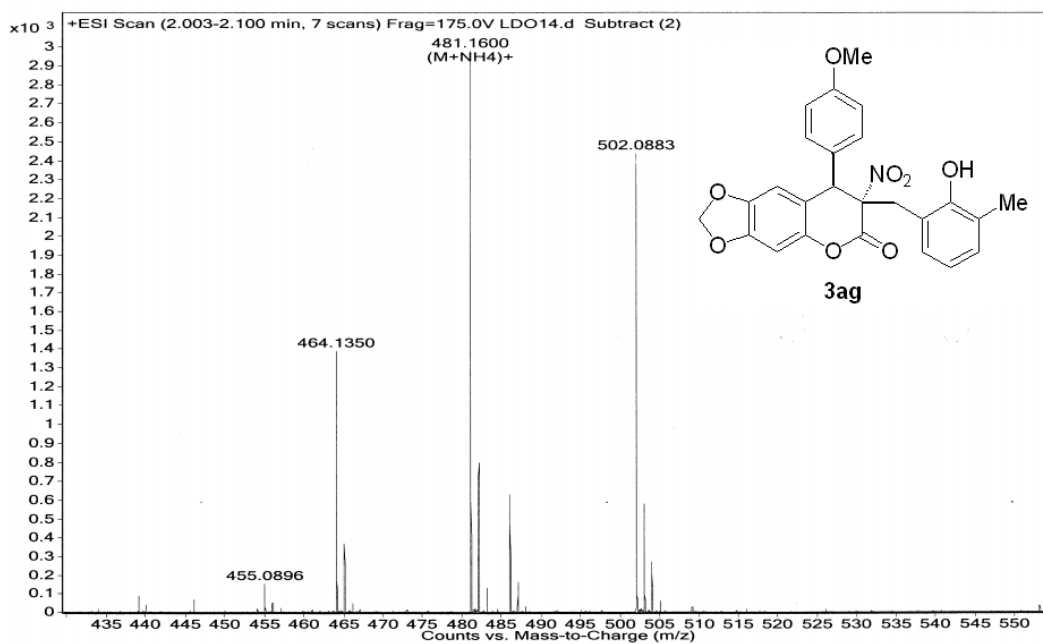
<b>Sample Name</b>	Sample4	<b>Position</b>	P1-A4	<b>Instrument Name</b>	Instrument 1	<b>User Name</b>	
<b>Inj Vol</b>	-1	<b>InjPosition</b>		<b>SampleType</b>	Sample	<b>IRM Calibration Status</b>	Some Ions Missed
<b>Data Filename</b>	LD002.d	<b>ACQ Method</b>	Default-TEST.m	<b>Comment</b>		<b>Acquired Time</b>	10/9/2018 11:40:12 AM



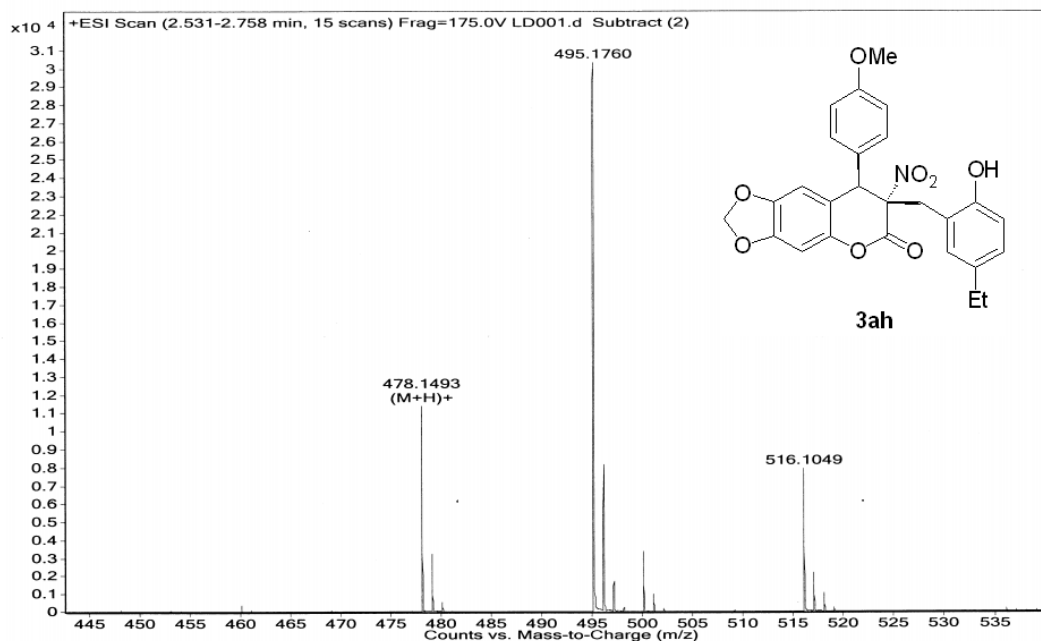
Sample Name	Sample11	Position	P1-B2	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD009.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	10/9/2018 12:28:07 PM



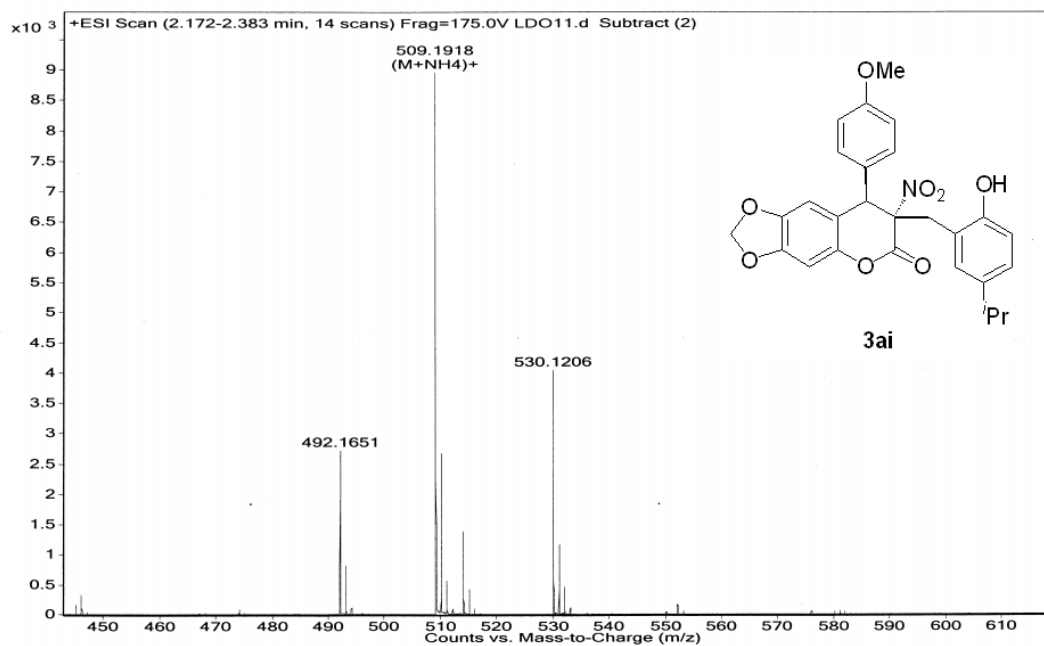
Sample Name	Sample4	Position	P1-A4	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LDO14.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	10/23/2018 4:02:37 PM



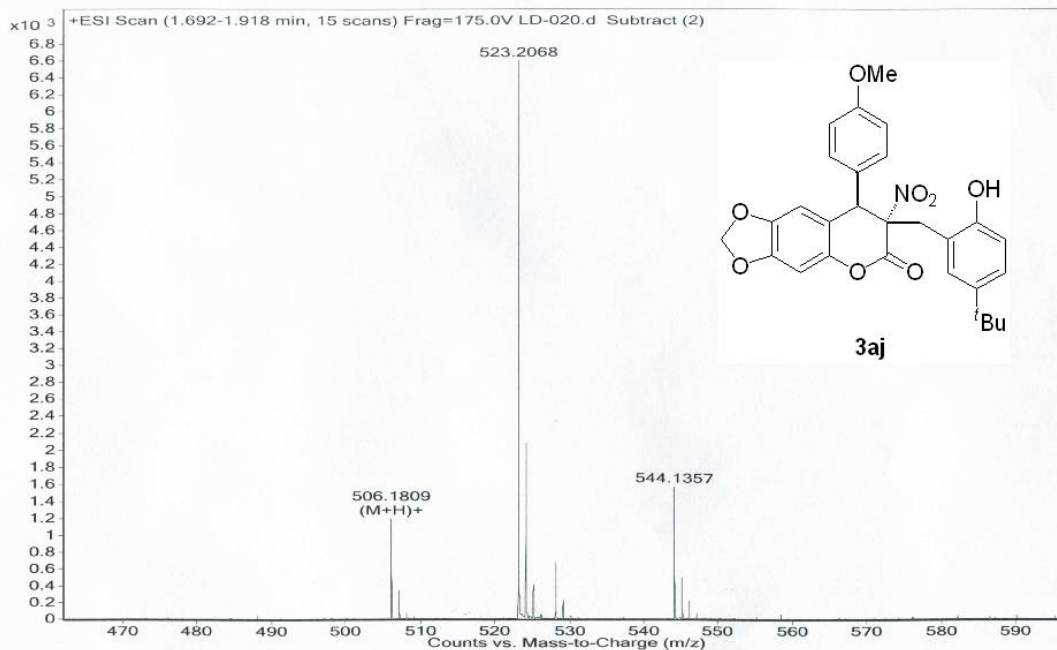
<b>Sample Name</b>	Sample3	<b>Position</b>	P1-A3	<b>Instrument Name</b>	Instrument 1	<b>User Name</b>	
<b>Inj Vol</b>	-1	<b>InjPosition</b>		<b>SampleType</b>	Sample	<b>IRM Calibration Status</b>	Some Ions Missed
<b>Data Filename</b>	LD001.d	<b>ACQ Method</b>	Default-TEST.m	<b>Comment</b>		<b>Acquired Time</b>	10/9/2018 11:33:24 AM



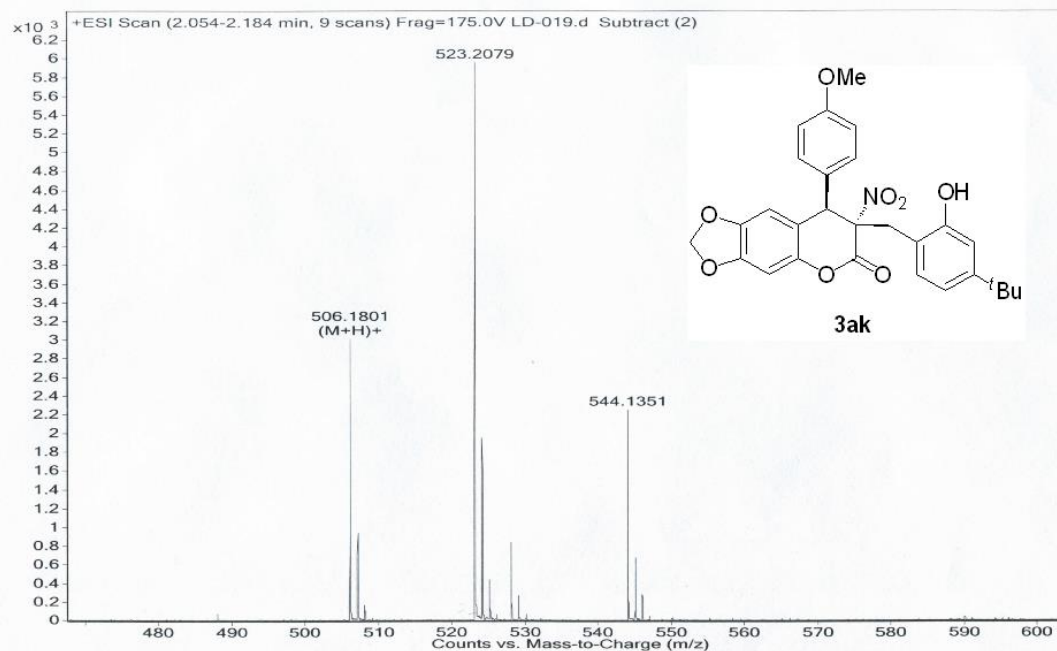
<b>Sample Name</b>	Sample1	<b>Position</b>	P1-A1	<b>Instrument Name</b>	Instrument 1	<b>User Name</b>	
<b>Inj Vol</b>	-1	<b>InjPosition</b>		<b>SampleType</b>	Sample	<b>IRM Calibration Status</b>	Some Ions Missed
<b>Data Filename</b>	LD011.d	<b>ACQ Method</b>	Default-TEST.m	<b>Comment</b>		<b>Acquired Time</b>	10/23/2018 3:41:56 PM



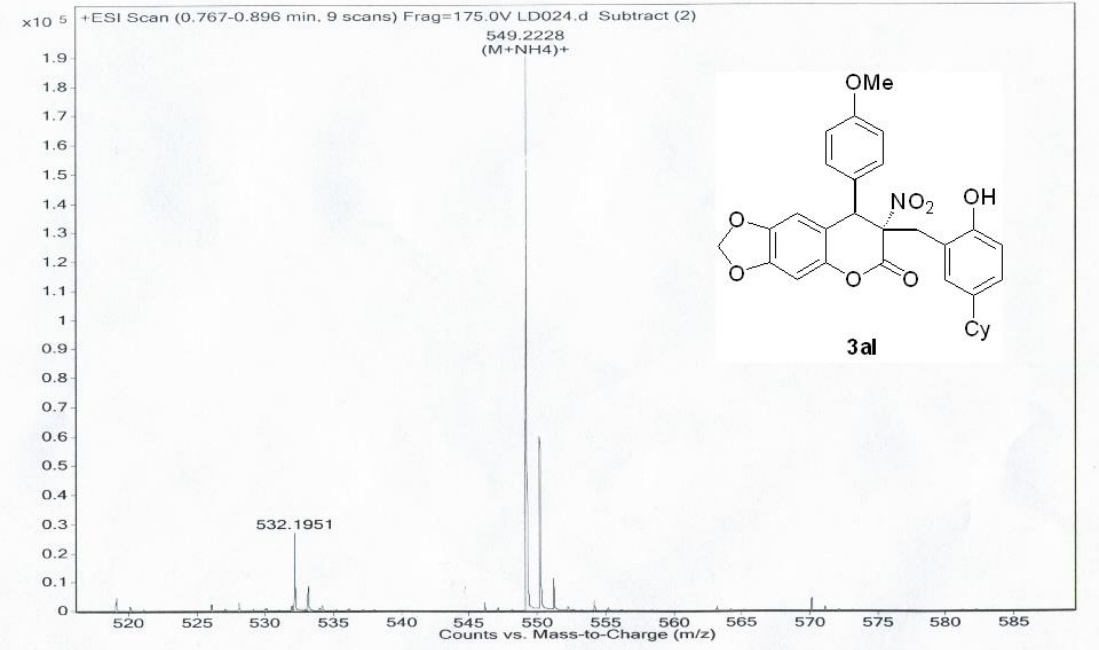
Sample Name	Sample44	Position	P1-E8	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD-020.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	1/3/2019 9:48:57 PM



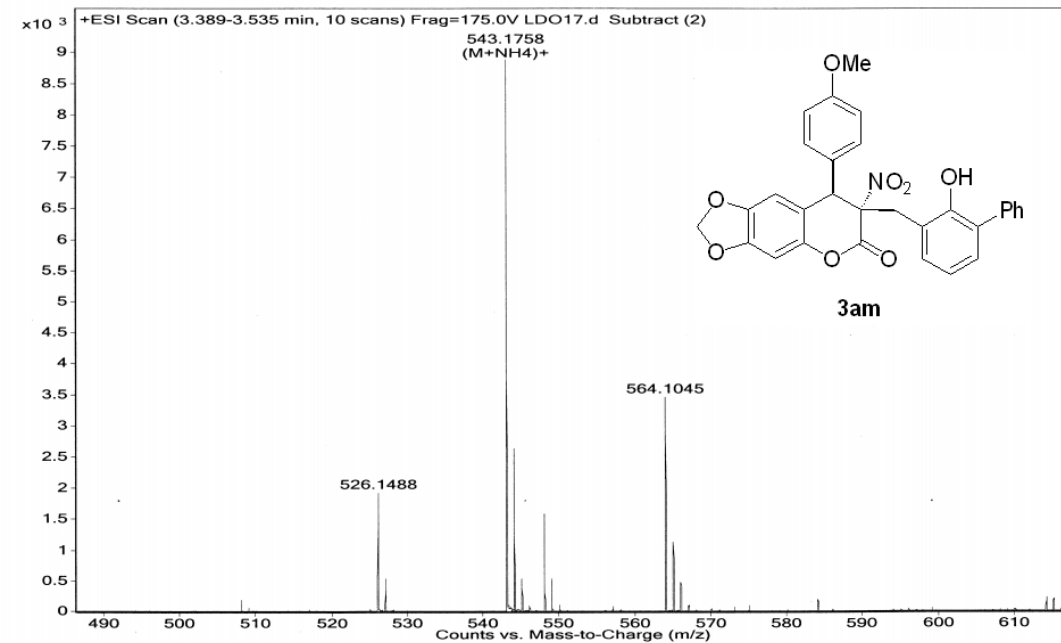
Sample Name	Sample43	Position	P1-E7	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD-019.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	1/3/2019 9:42:07 PM



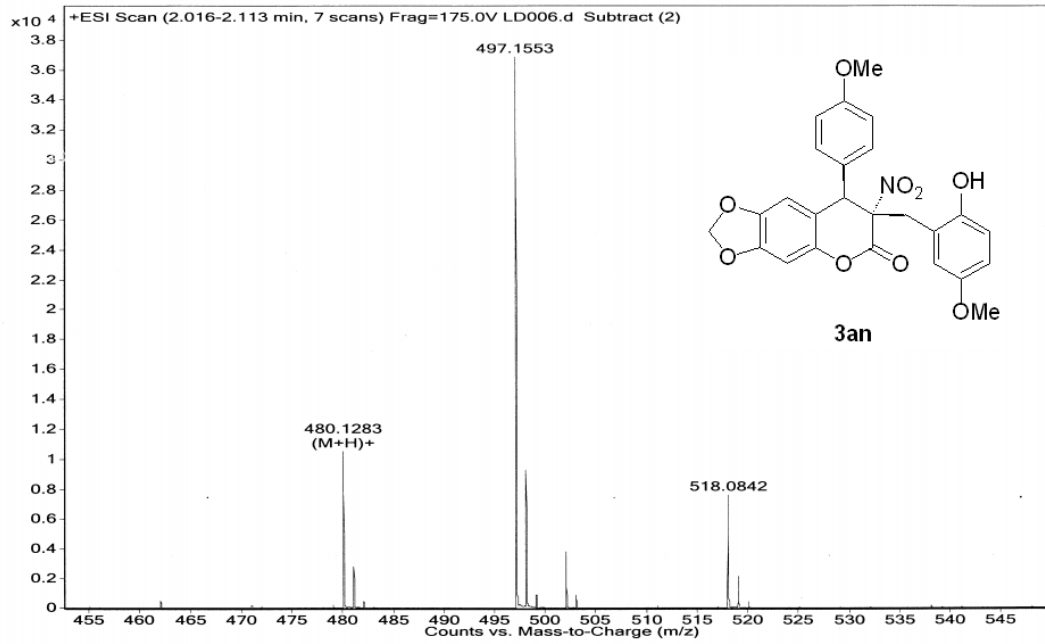
Sample Name	Sample2	Position	P1-A3	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD024.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	1/8/2019 11:02:47 AM



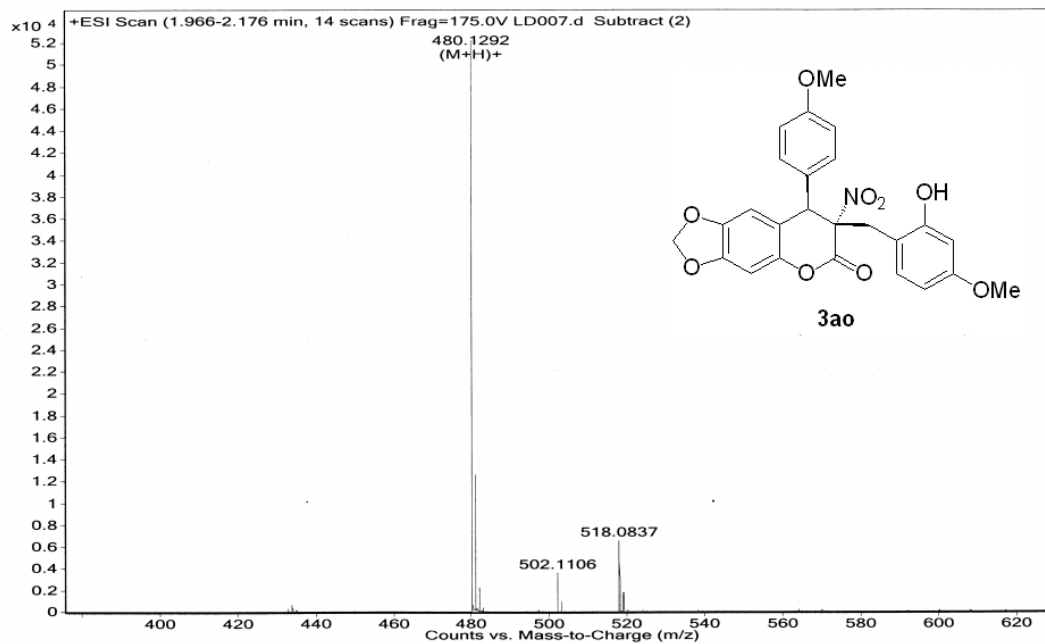
Sample Name	Sample7	Position	P1-A7	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LDO17.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	10/23/2018 4:23:17 PM



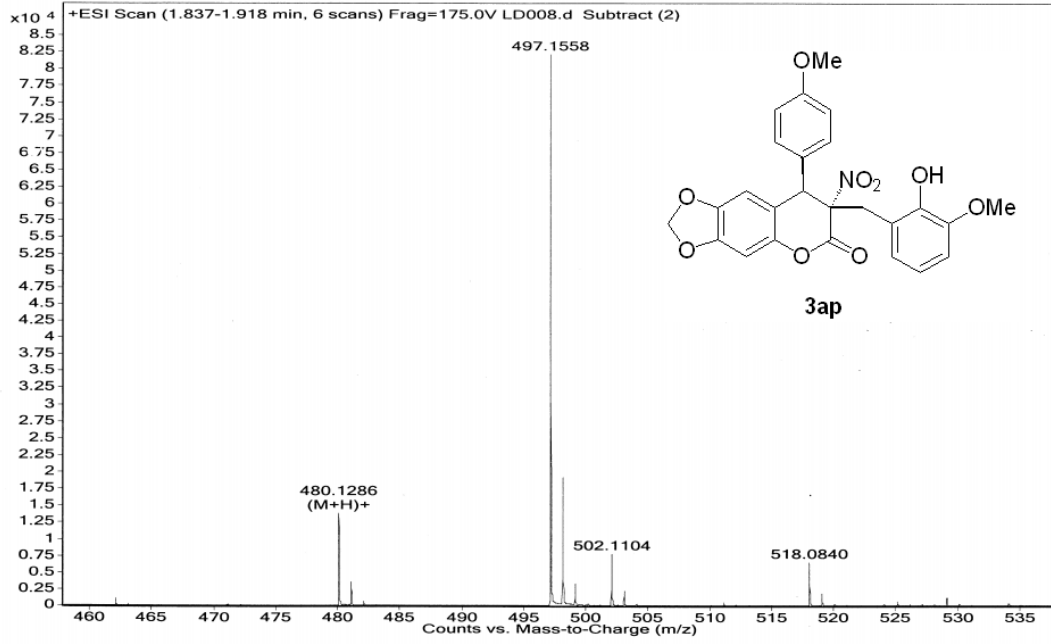
<b>Sample Name</b>	Sample8	<b>Position</b>	P1-A8	<b>Instrument Name</b>	Instrument 1	<b>User Name</b>	
<b>Inj Vol</b>	-1	<b>InjPosition</b>		<b>SampleType</b>	Sample	<b>IRM Calibration Status</b>	Some Ions Missed
<b>Data Filename</b>	LD006.d	<b>ACQ Method</b>	Default-TEST.m	<b>Comment</b>		<b>Acquired Time</b>	10/9/2018 12:07:34 PM



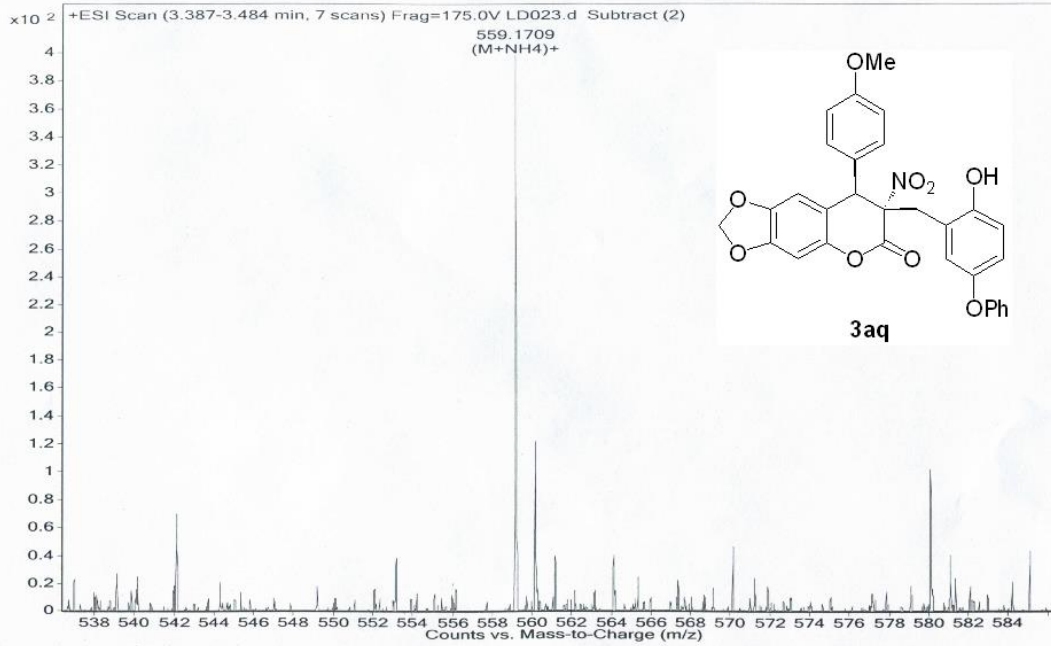
<b>Sample Name</b>	Sample9	<b>Position</b>	P1-A9	<b>Instrument Name</b>	Instrument 1	<b>User Name</b>	
<b>Inj Vol</b>	-1	<b>InjPosition</b>		<b>SampleType</b>	Sample	<b>IRM Calibration Status</b>	Some Ions Missed
<b>Data Filename</b>	LD007.d	<b>ACQ Method</b>	Default-TEST.m	<b>Comment</b>		<b>Acquired Time</b>	10/9/2018 12:14:26 PM



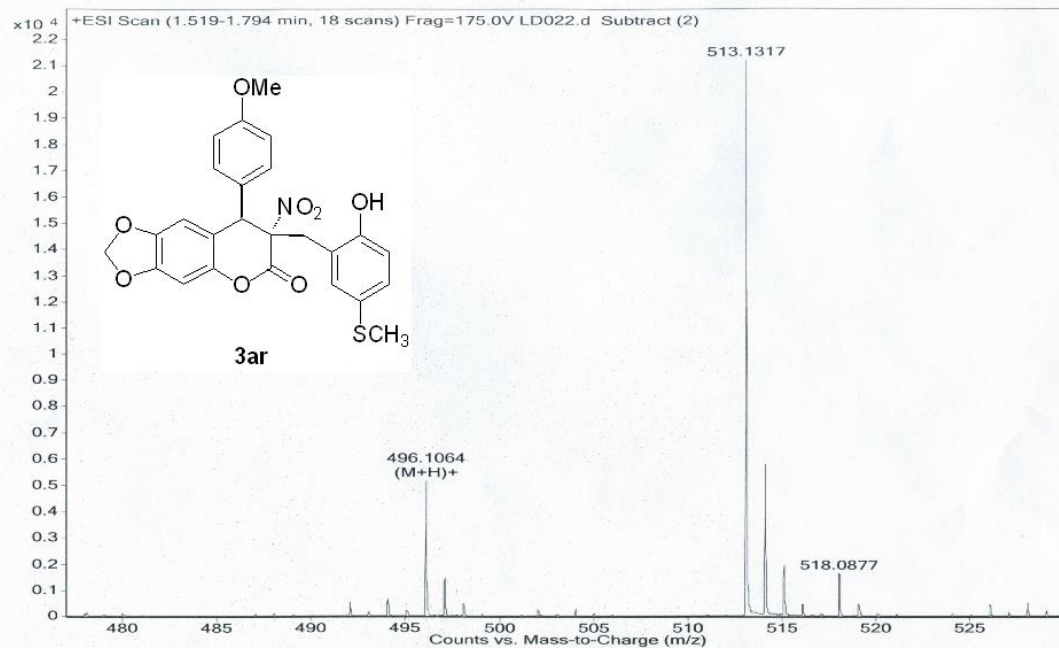
Sample Name	Sample10	Position	P1-B1	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD008.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	10/9/2018 12:21:16 PM



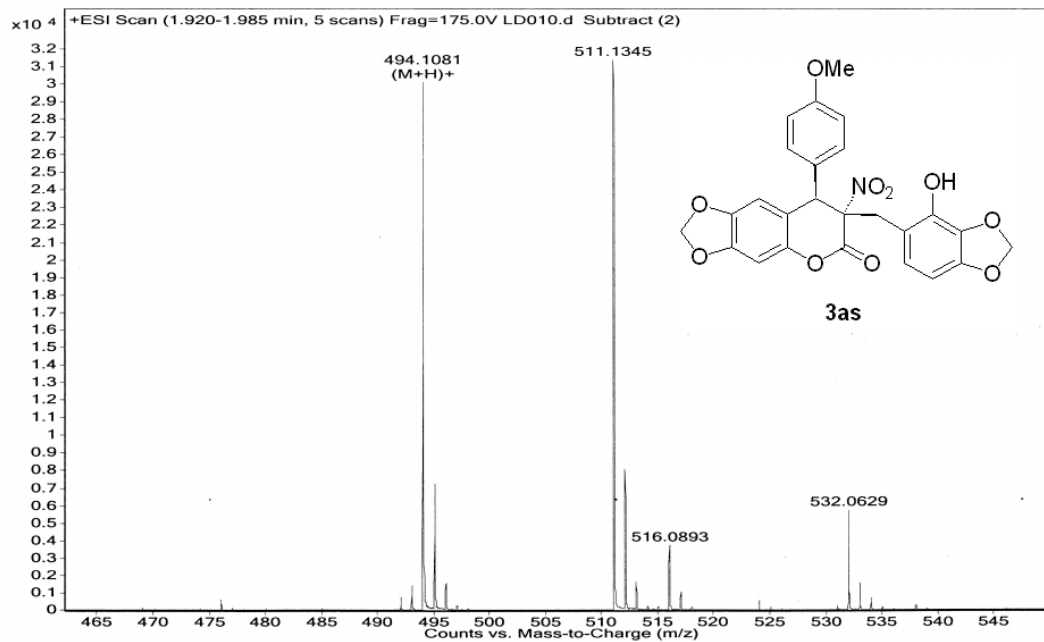
Sample Name	Sample1	Position	P1-A2	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD023.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	1/8/2019 10:55:53 AM



Sample Name	Sample1	Position	P1-A1	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD022.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	1/8/2019 10:48:55 AM



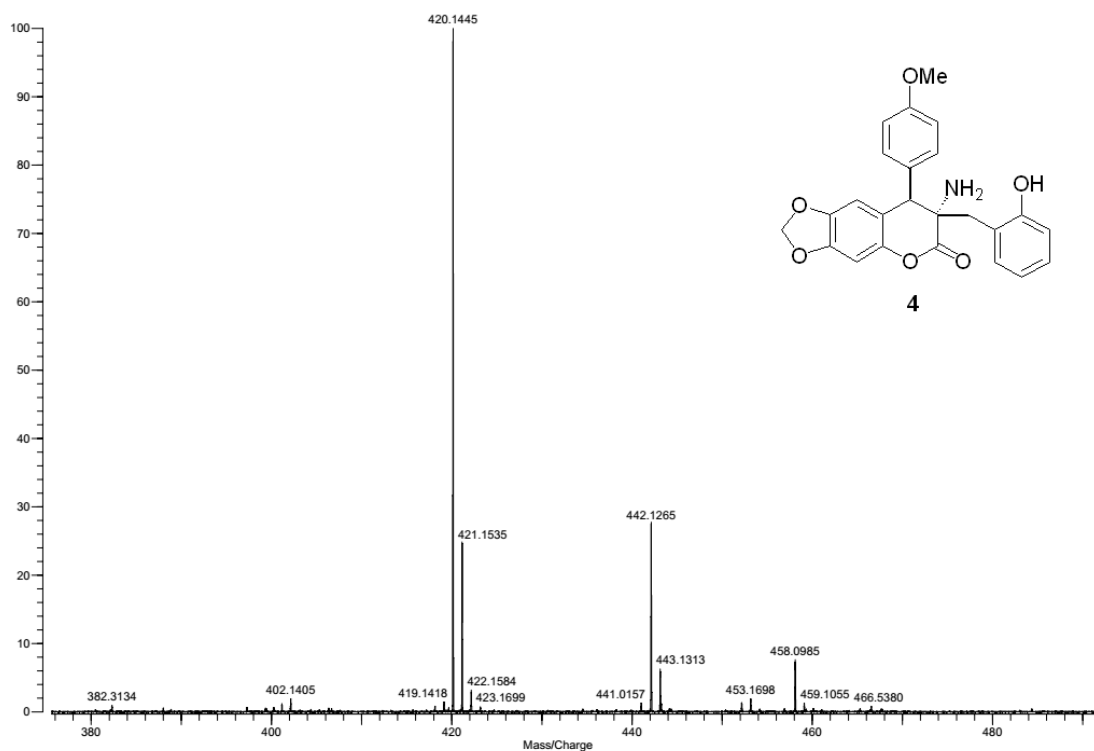
Sample Name	Sample12	Position	P1-B3	Instrument Name	Instrument 1	User Name	
Inj Vol	-1	InjPosition		SampleType	Sample	IRM Calibration Status	Some Ions Missed
Data Filename	LD010.d	ACQ Method	Default-TEST.m	Comment		Acquired Time	10/9/2018 12:34:57 PM





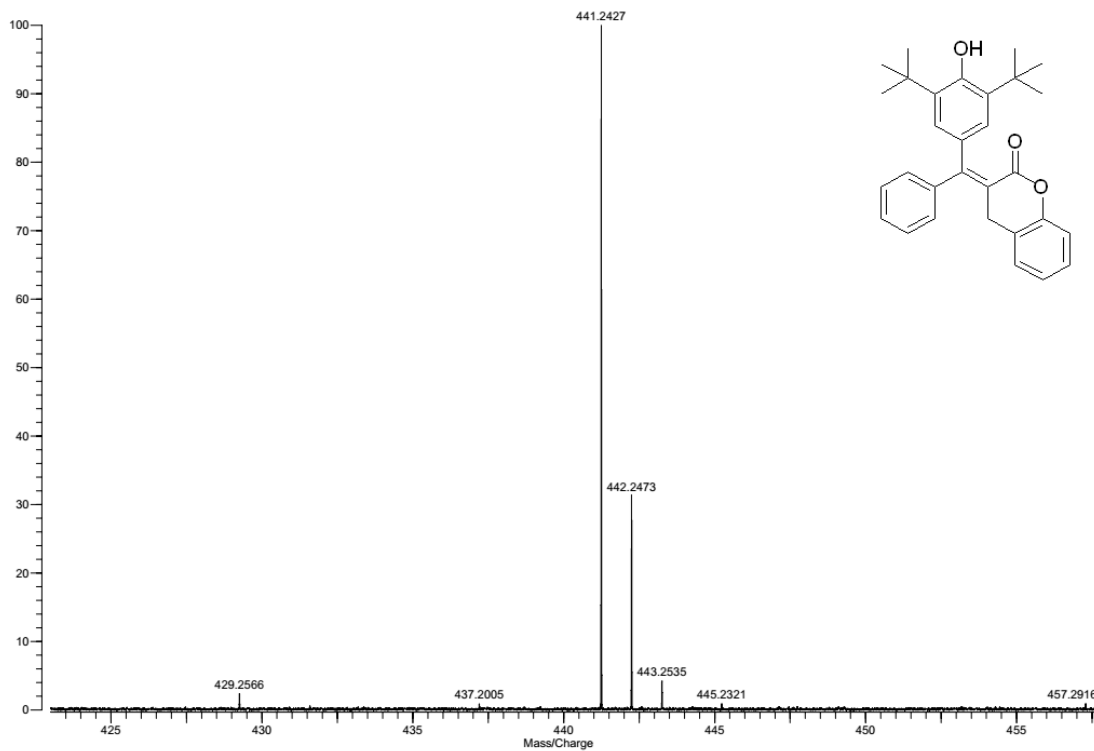
Varian QFT-ESI  
File: LD-419-2(2)\_ESI.trans

Mode: Positive  
Scans: 1  
Date: 11-JAN-2019  
Time: 16:20:32  
Scale: 0.5094



Varian QFT-ESI  
File: LD-9-1022-1\_ESI.trans

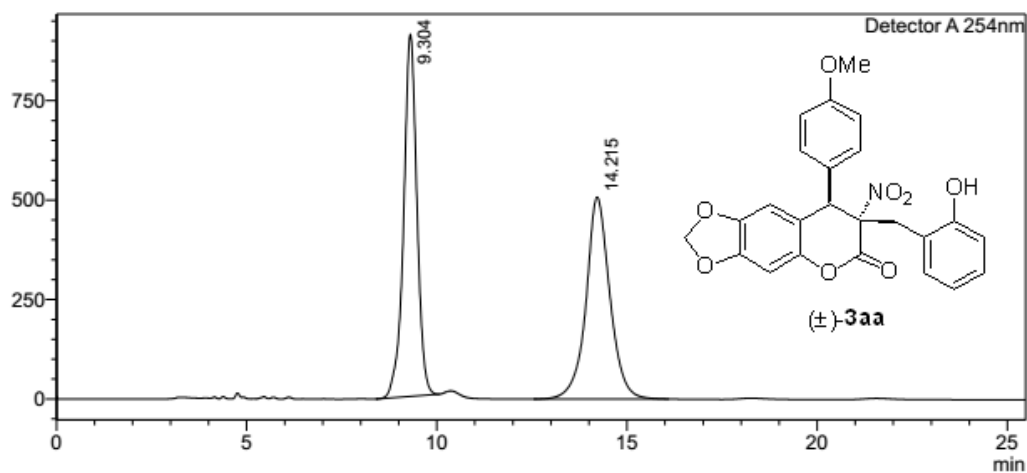
Mode: Positive  
Scans: 1  
Date: 22-OCT-2019  
Time: 12:13:02  
Scale: 6.6345



#### 4. Copies of HRMS spectra

##### <Chromatogram>

mV



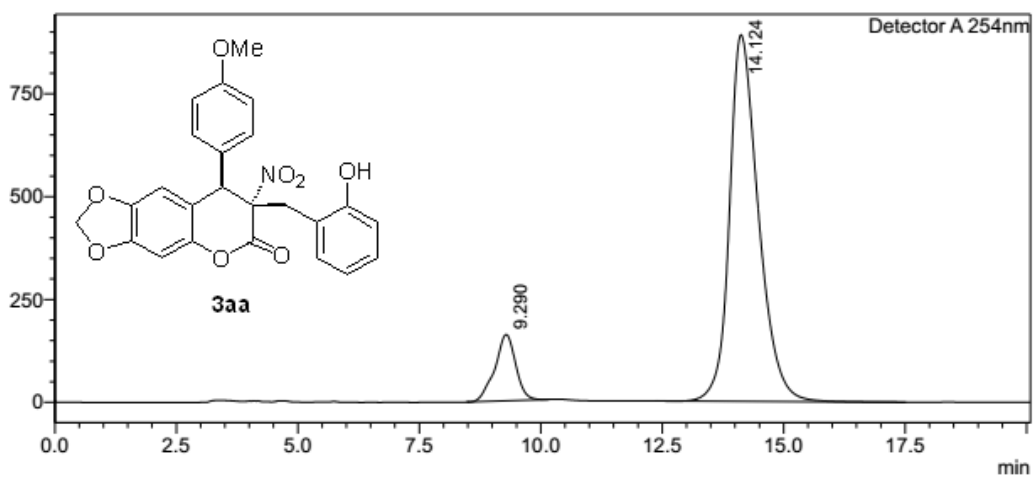
##### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	9.304	22130709	909730	49.975		M	
2	14.215	22153125	507772	50.025		M	
Total		44283834	1417502				

##### <Chromatogram>

mV



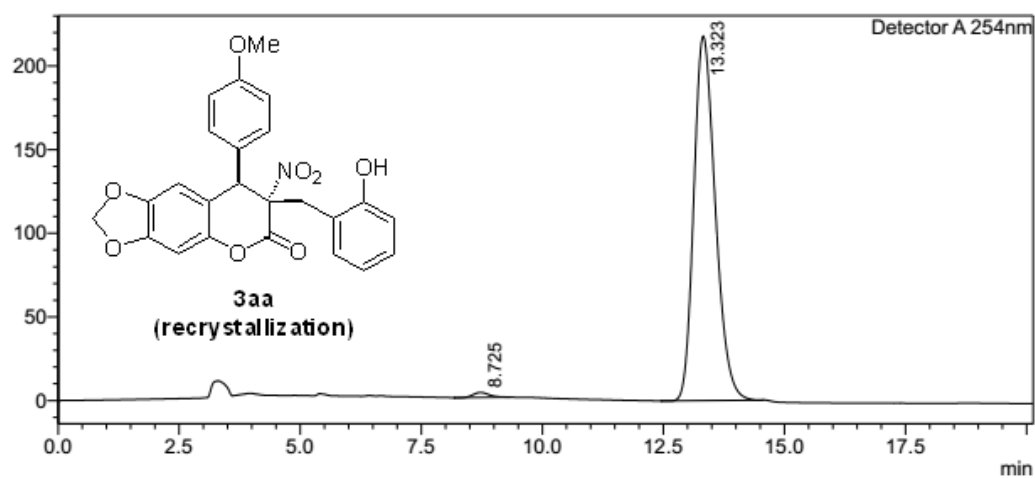
##### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	9.290	4804814	161101	11.490		M	
2	14.124	37010767	891171	88.510		M	
Total		41815580	1052272				

### <Chromatogram>

mV



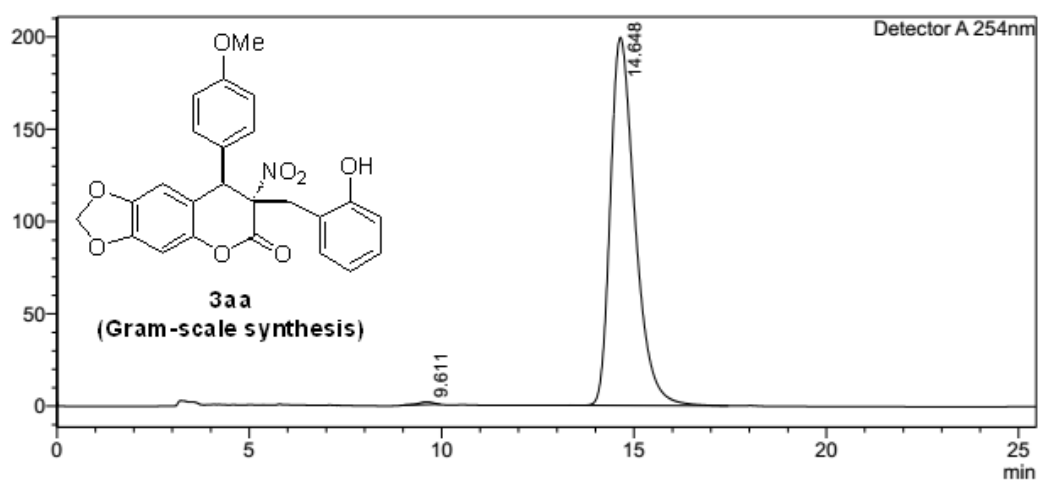
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.725	67859	2965	0.999		M	
2	13.323	6723708	217798	99.001		M	
Total		6791567	220763				

### <Chromatogram>

mV



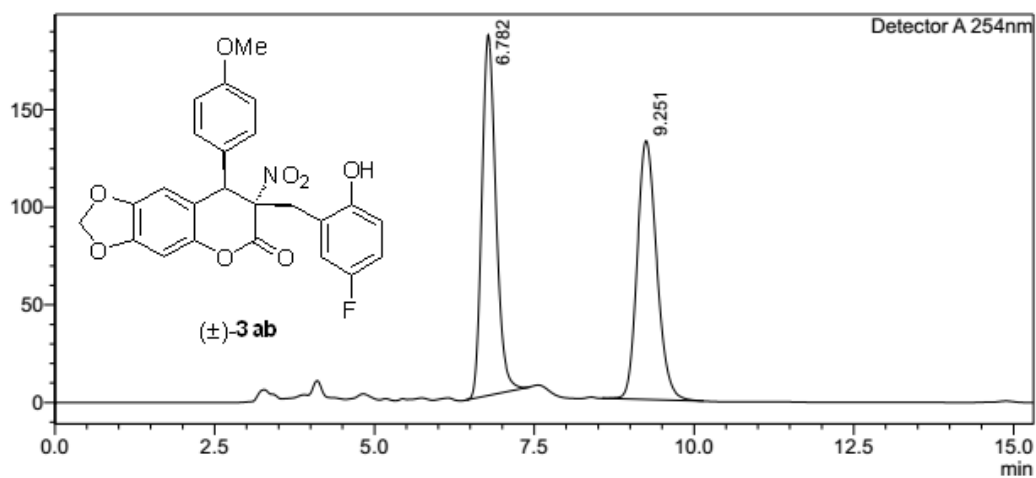
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	9.611	35658	1432	0.400		M	
2	14.648	8881469	199297	99.600		M	
Total		8917127	200729				

### <Chromatogram>

mV



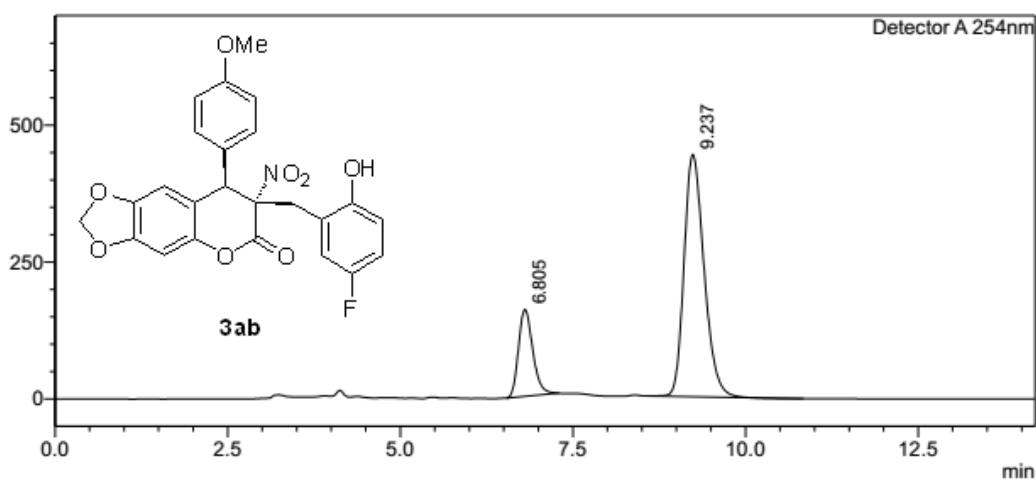
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	6.782	2831235	184713	50.082		M	
2	9.251	2821943	132620	49.918		M	
Total		5653178	317334				

### <Chromatogram>

mV



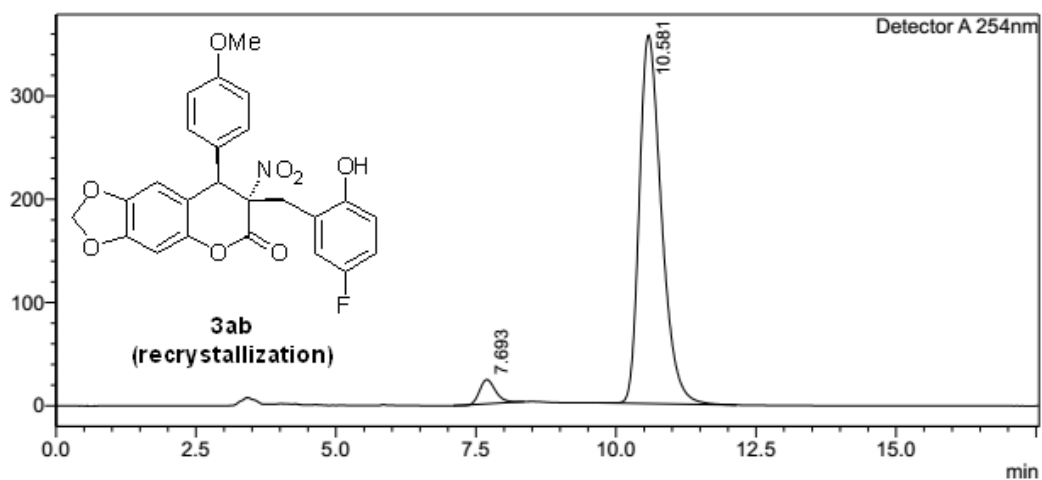
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	6.805	2275413	158281	20.316		M	
2	9.237	8924472	442432	79.684		M	
Total		11199885	600712				

### <Chromatogram>

mV



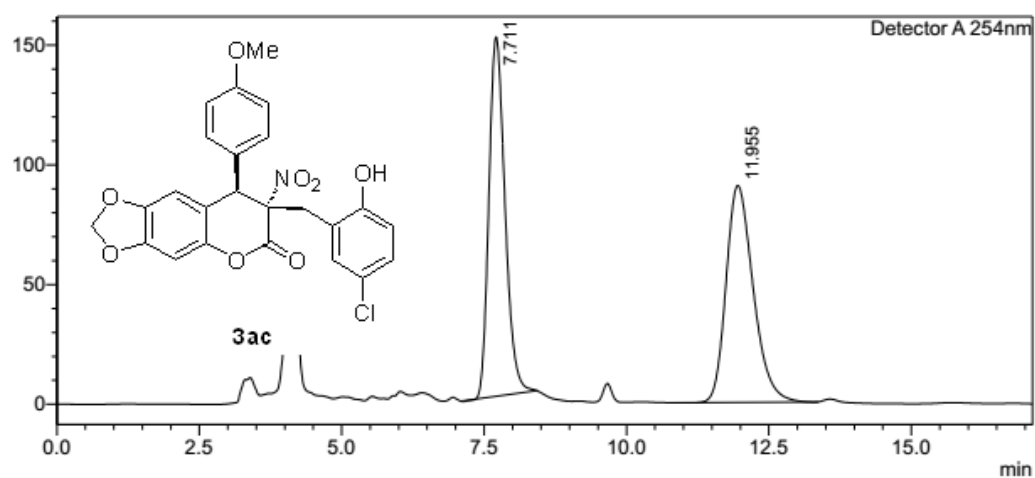
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	7.693	460097	23328	4.482		M	
2	10.581	9806348	356711	95.518		M	
Total		10266445	380038				

### <Chromatogram>

mV



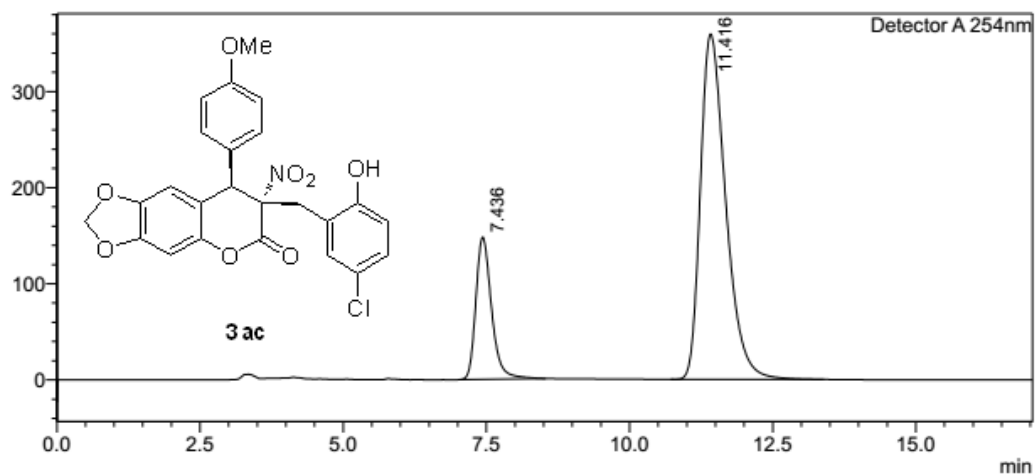
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	7.711	2952187	150057	49.552		M	
2	11.955	3005576	90625	50.448		M	
Total		5957763	240682				

### <Chromatogram>

mV



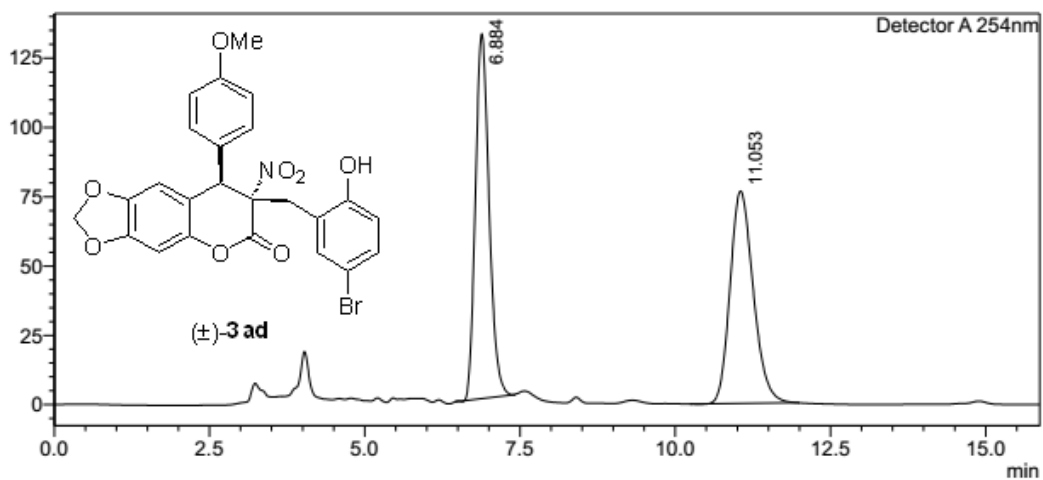
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	7.436	2823531	147828	20.376		M	
2	11.416	11033602	359045	79.624		M	
Total		13857133	506872				

### <Chromatogram>

mV



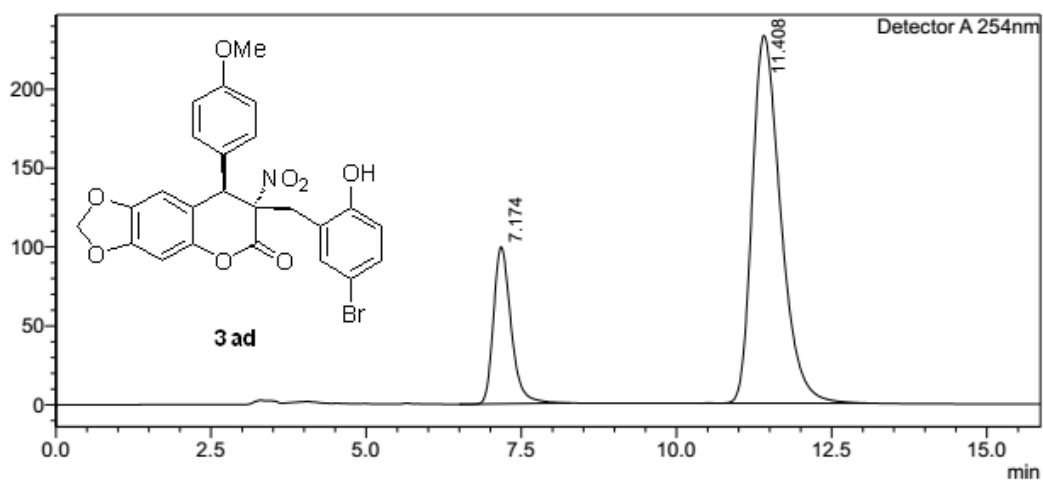
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	6.884	2017421	131458	50.298		M	
2	11.053	1993530	76615	49.702		M	
Total		4010951	208073				

### <Chromatogram>

mV



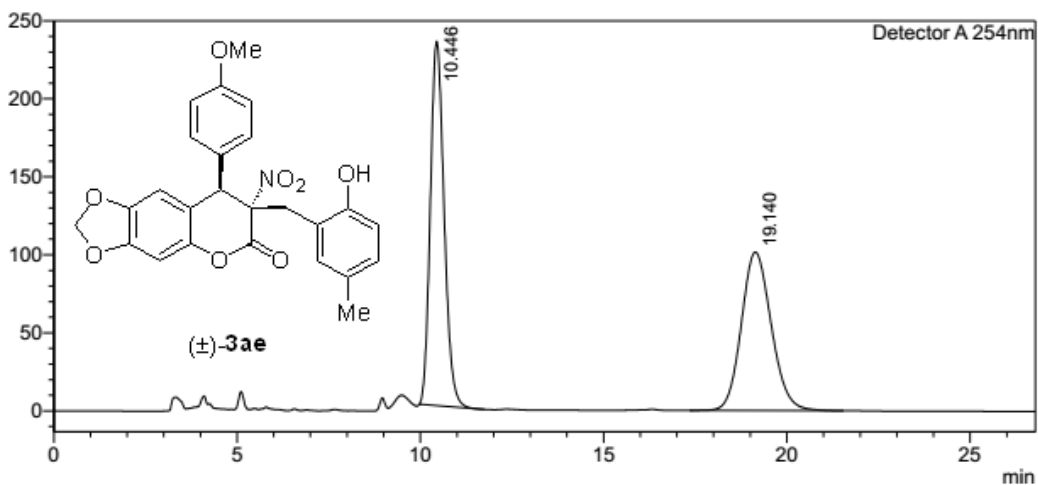
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	7.174	1953905	99387	20.805		M	
2	11.408	7437707	233091	79.195		M	
Total		9391612	332478				

### <Chromatogram>

mV



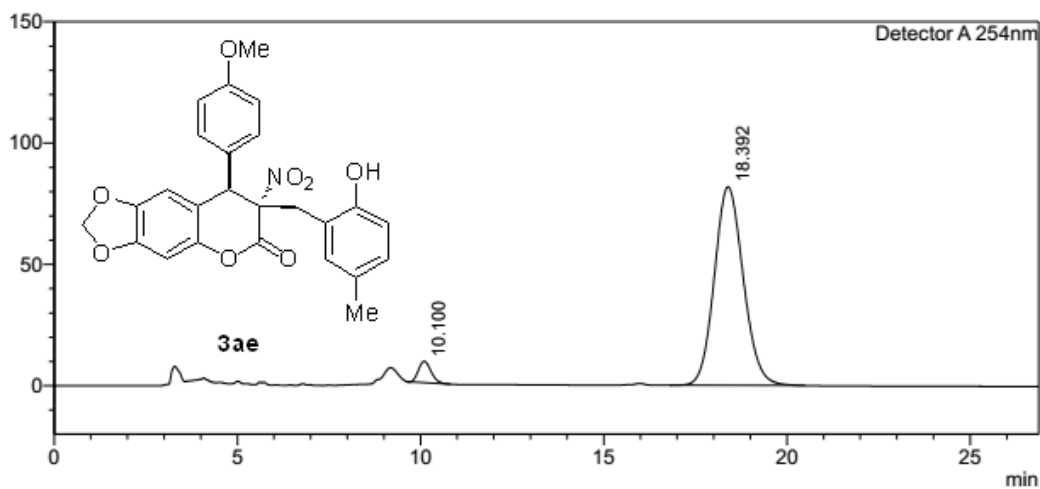
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	10.446	6100115	233317	51.432		M	
2	19.140	5760436	101477	48.568		M	
Total		11860551	334794				

### <Chromatogram>

mV



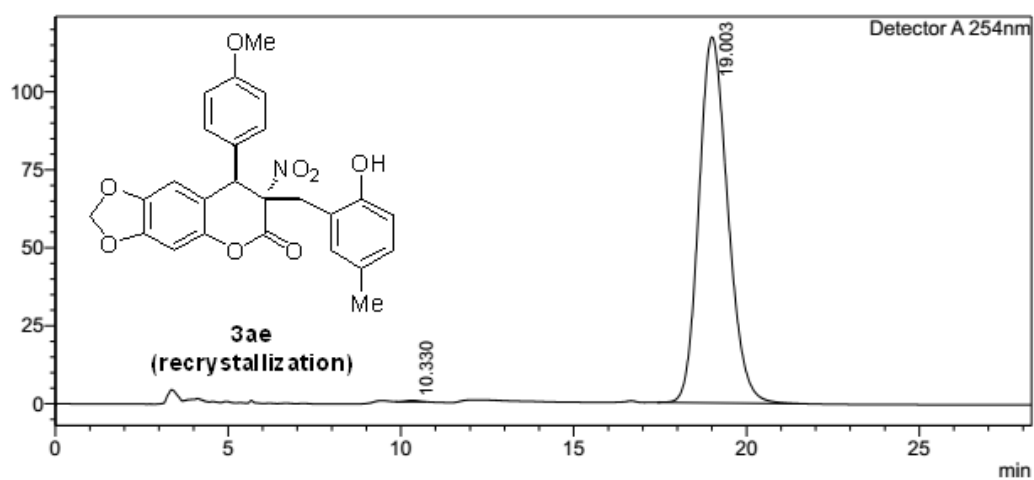
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	10.100	209996	8840	4.458		M	
2	18.392	4500394	81827	95.542		M	
Total		4710390	90667				

### <Chromatogram>

mV



### <Peak Table>

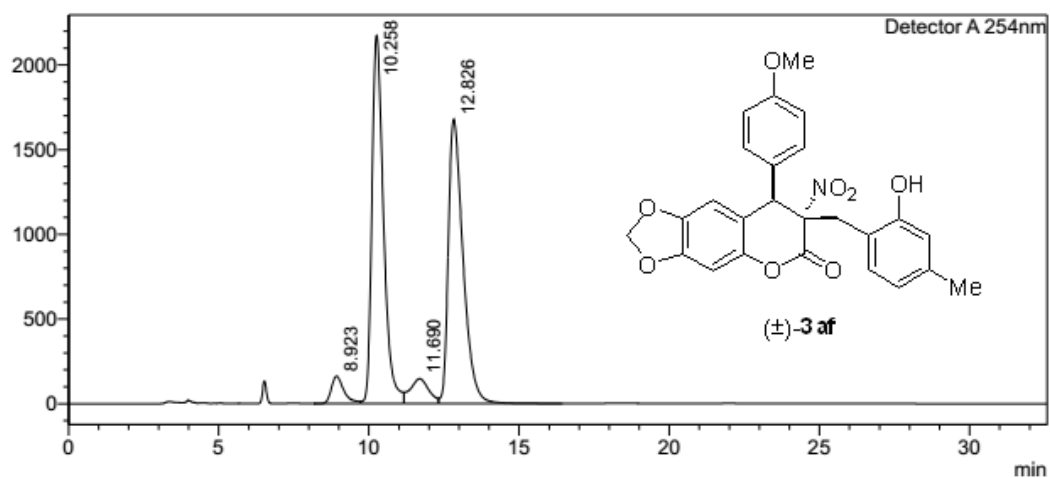
Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	10.330	9308	432	0.136		M	
2	19.003	6818837	117250	99.864		M	
Total		6828145	117682				



### <Chromatogram>

mV



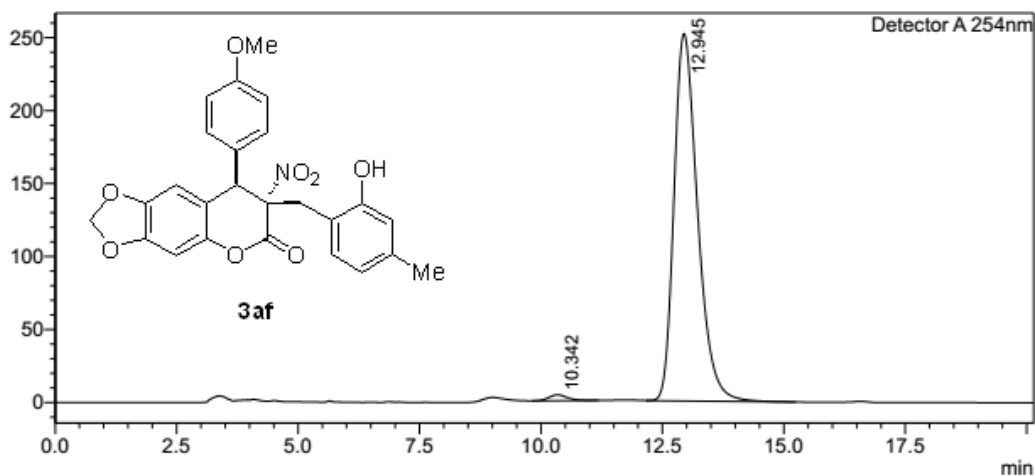
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.923	4714631	161705	3.726			
2	10.258	58418874	2173108	46.170		V	
3	11.690	6307534	146533	4.985		V	
4	12.826	57090166	1678400	45.119		V	
Total		126531205	4159747				

### <Chromatogram>

mV



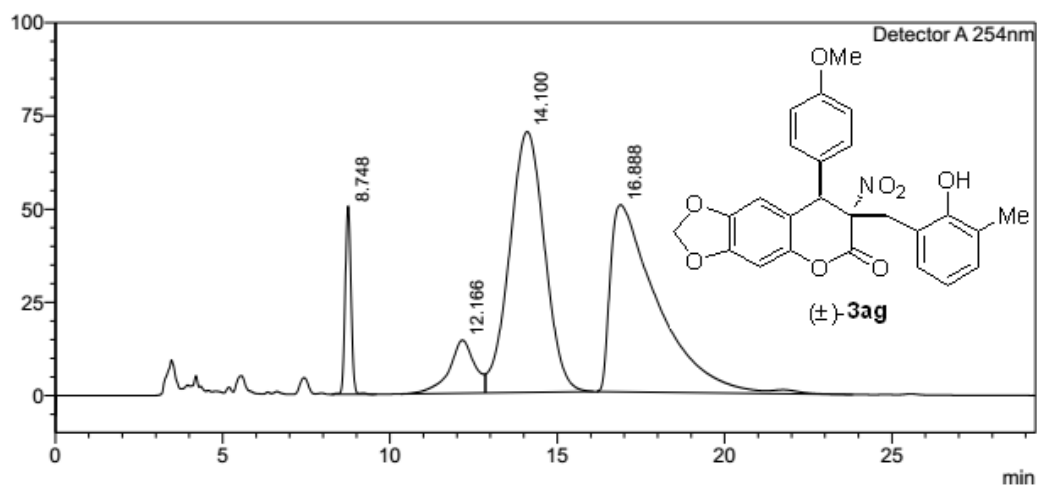
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	10.342	105809	3952	1.233			
2	12.945	8476980	251584	98.767		M	
Total		8582789	255536				

### <Chromatogram>

mV



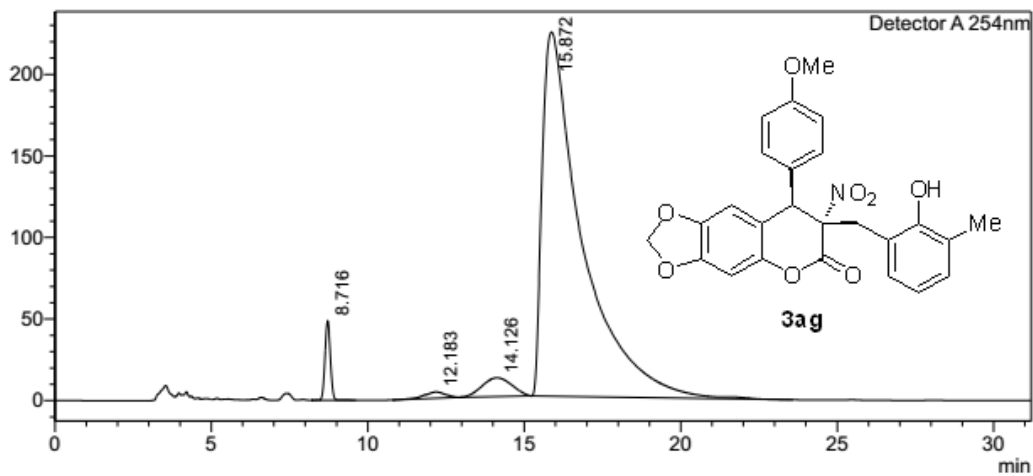
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.748	613899	50485	5.360		M	
2	12.166	756238	14215	6.603		M	
3	14.100	5097993	69937	44.512		V M	
4	16.888	4984838	50197	43.524		M	
Total		11452968	184835				

### <Chromatogram>

mV



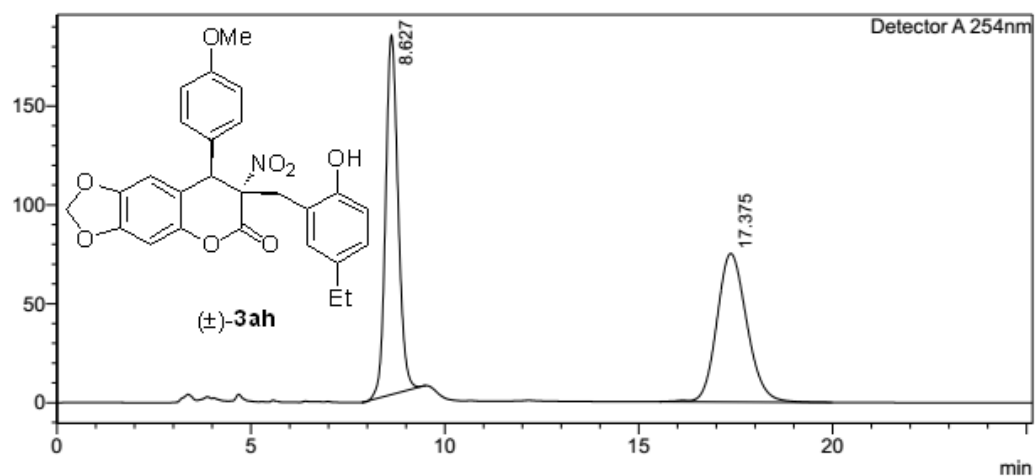
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.716	585587	48729	2.750		M	
2	12.183	183726	3907	0.863		M	
3	14.126	760203	11488	3.570		M	
4	15.872	19763399	223134	92.817		M	
Total		21292915	287257				

### <Chromatogram>

mV



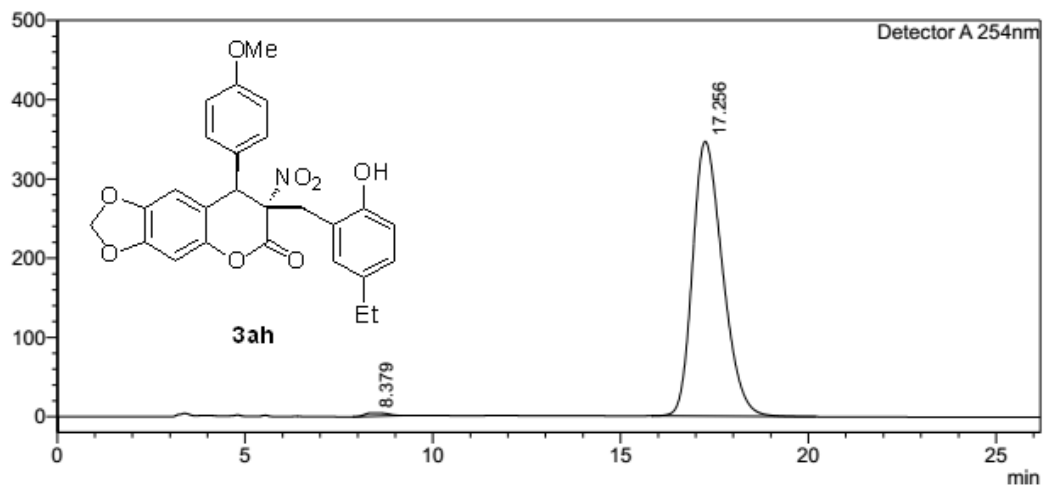
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.627	4067530	181658	50.242		M	
2	17.375	4028277	75028	49.758		M	
Total		8095808	256687				

### <Chromatogram>

mV



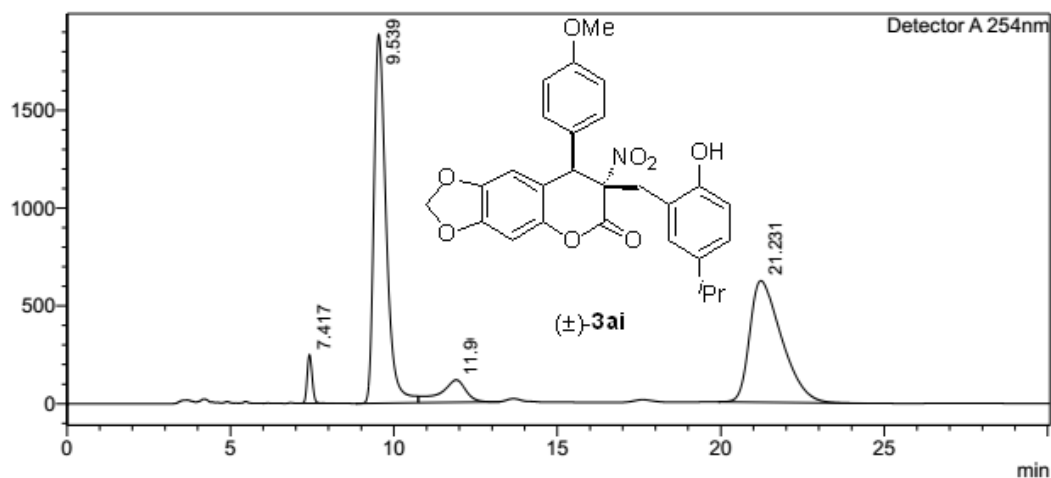
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.379	164058	4220	0.843		M	
2	17.256	19295857	346618	99.157		M	
Total		19459915	350838				

### <Chromatogram>

mV



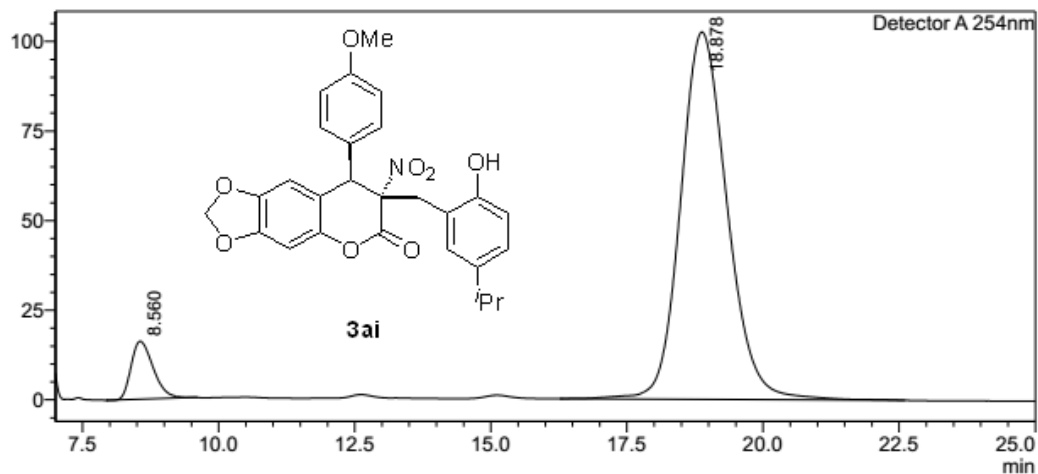
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	7.417	2641038	247753	2.633		M	
2	9.539	49349633	1885735	49.196		M	
3	11.906	6279566	114428	6.260		VM	
4	21.231	42042199	621240	41.911		M	
Total		100312436	2869156				

### <Chromatogram>

mV



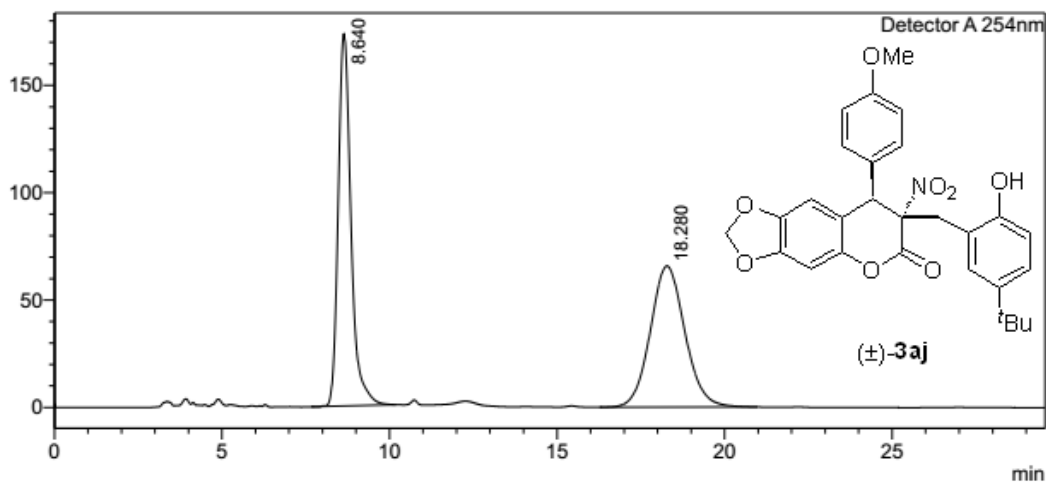
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.560	456347	16160	6.948		M	
2	18.878	6112009	102487	93.052		M	
Total		6568357	118647				

### <Chromatogram>

mV



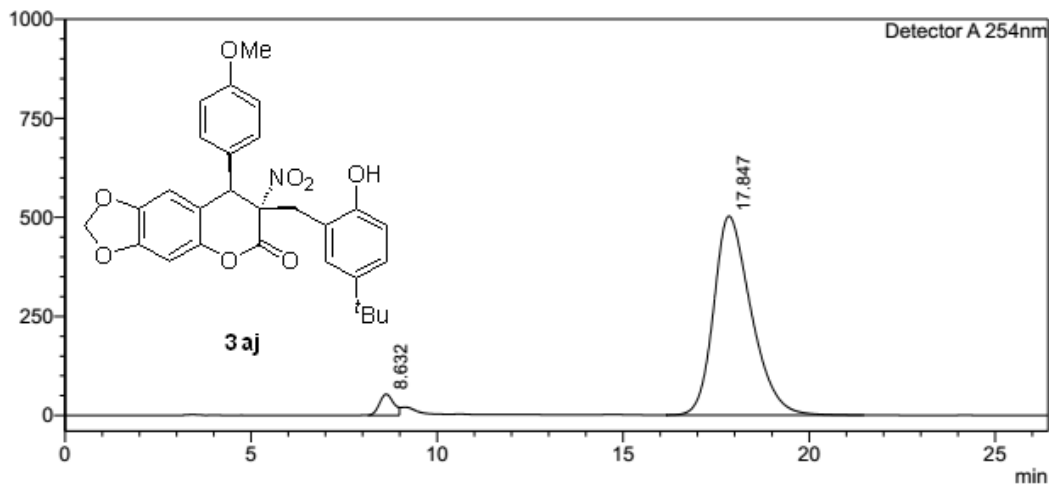
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.640	4596371	173300	49.330		M	
2	18.280	4721165	65737	50.670		M	
Total		9317536	239037				

### <Chromatogram>

mV



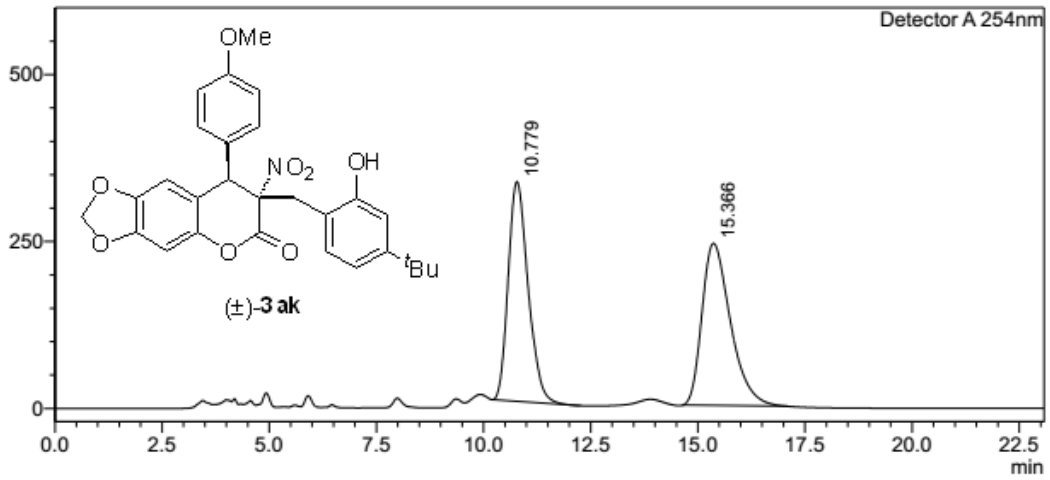
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.632	1440662	53553	3.928		M	
2	17.847	35238629	502209	96.072		M	
Total		36679291	555762				

### <Chromatogram>

mV



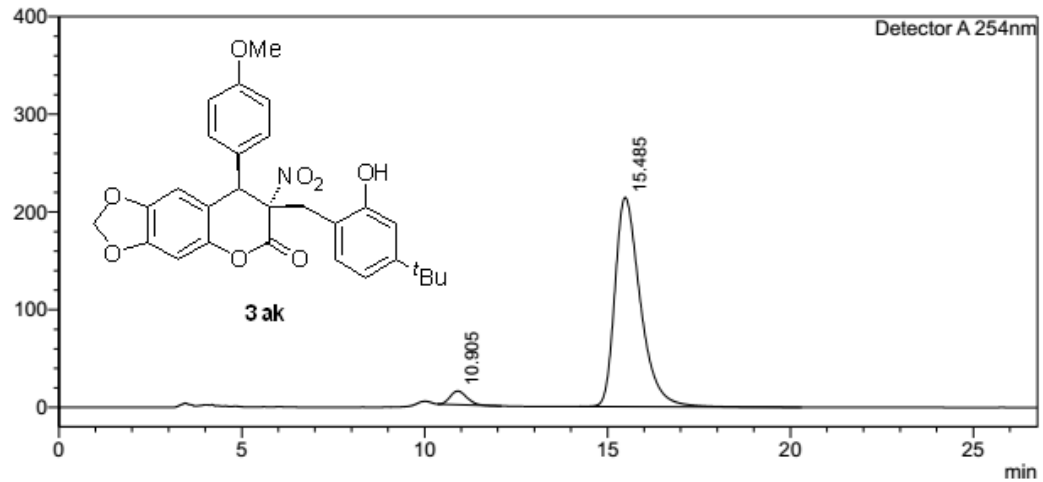
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	10.779	10621966	329022	48.598		M	
2	15.366	11235054	242748	51.402		M	
Total		21857019	571770				

### <Chromatogram>

mV



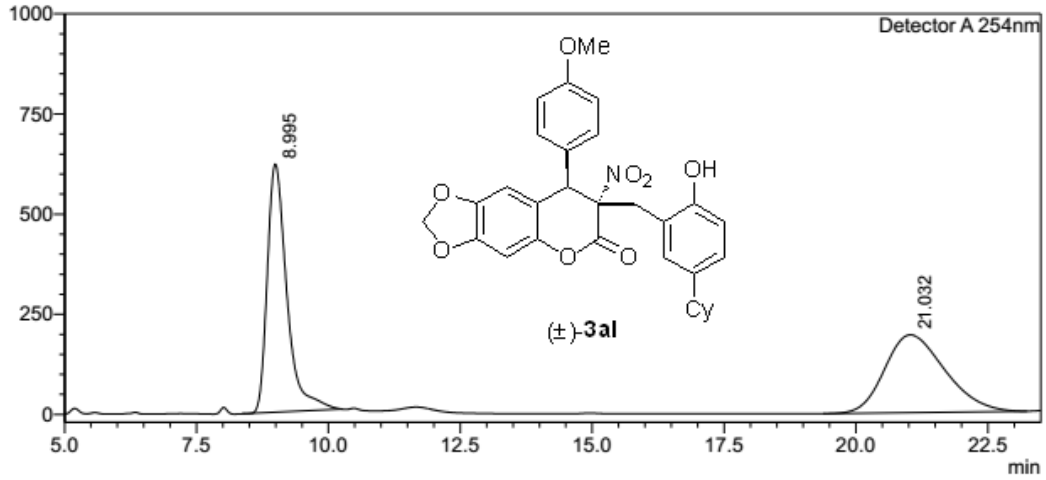
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	10.905	445801	14011	4.115		M	
2	15.485	10388819	214246	95.885		M	
Total		10834620	228257				

<Chromatogram>

mV



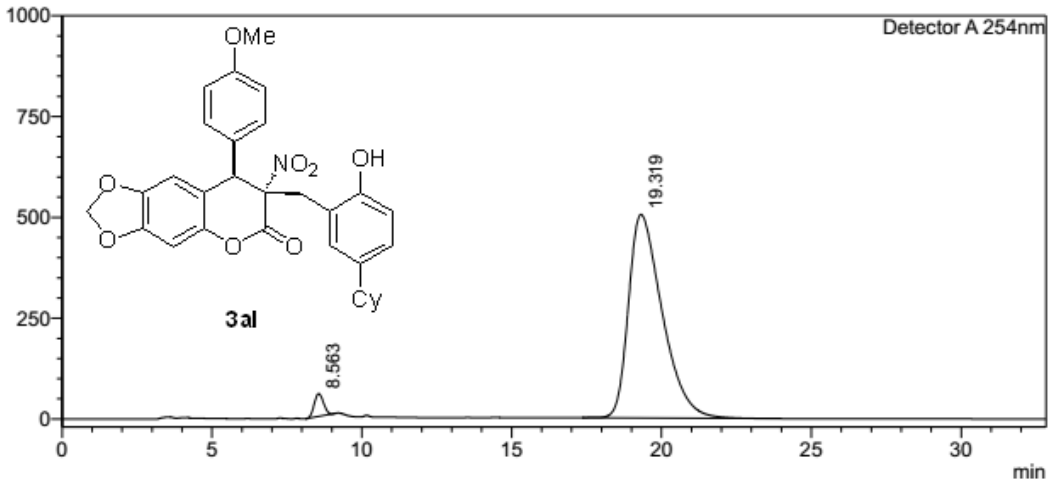
<Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.995	15978352	619197	50.879		M	
2	21.032	15426040	194112	49.121			
Total		31404392	813309				

<Chromatogram>

mV



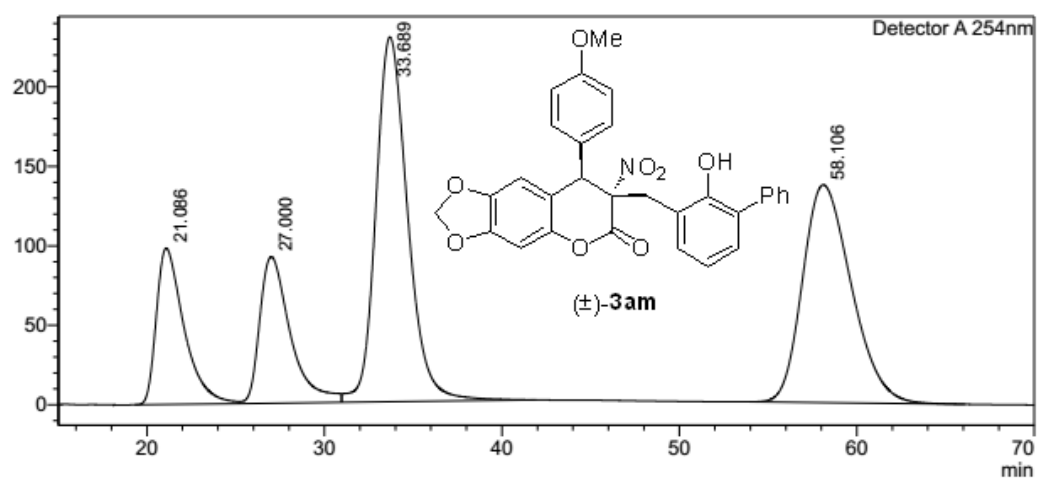
<Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	8.563	1205850	56208	2.968		M	
2	19.319	39424751	504316	97.032		M	
Total		40630602	560524				

### <Chromatogram>

mV



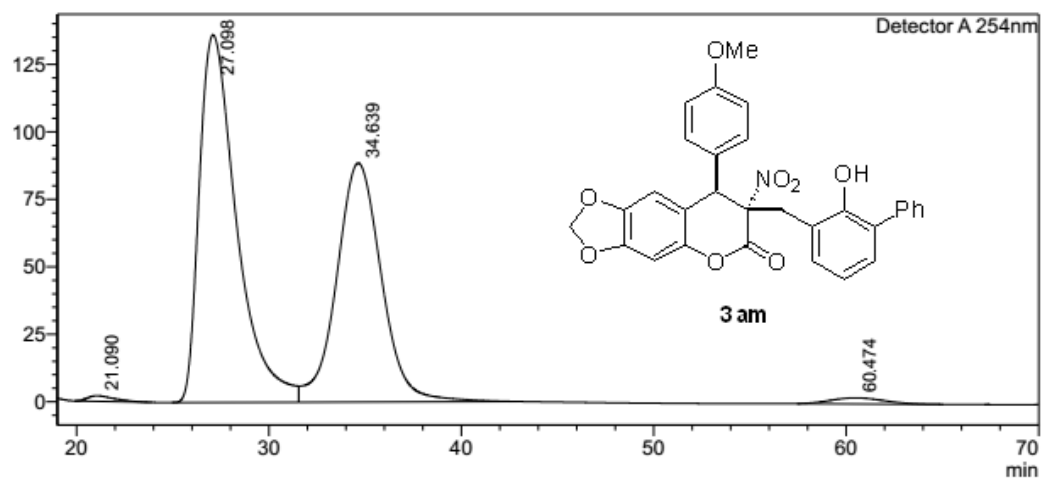
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	21.086	10647278	98378	13.899			
2	27.000	11065081	92176	14.445		SV	
3	33.689	28656952	229468	37.410		SV	
4	58.106	26233388	137109	34.246			
Total		76602699	557131				

### <Chromatogram>

mV



### <Peak Table>

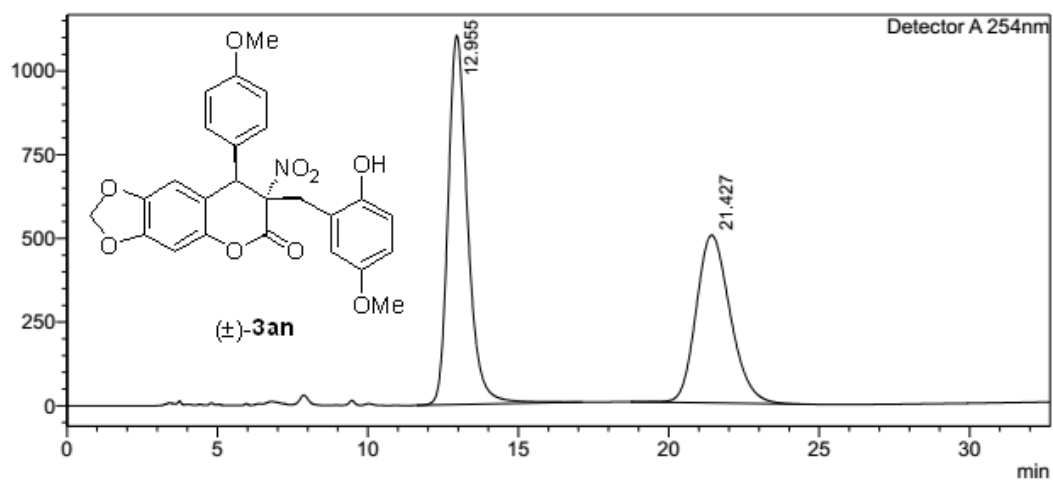
Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	21.090	202996	2092	0.608			
2	27.098	18386866	136161	55.068			
3	34.639	14369298	88528	43.036		SV	
4	60.474	429955	2250	1.288			
Total		33389115	229031				



### <Chromatogram>

mV



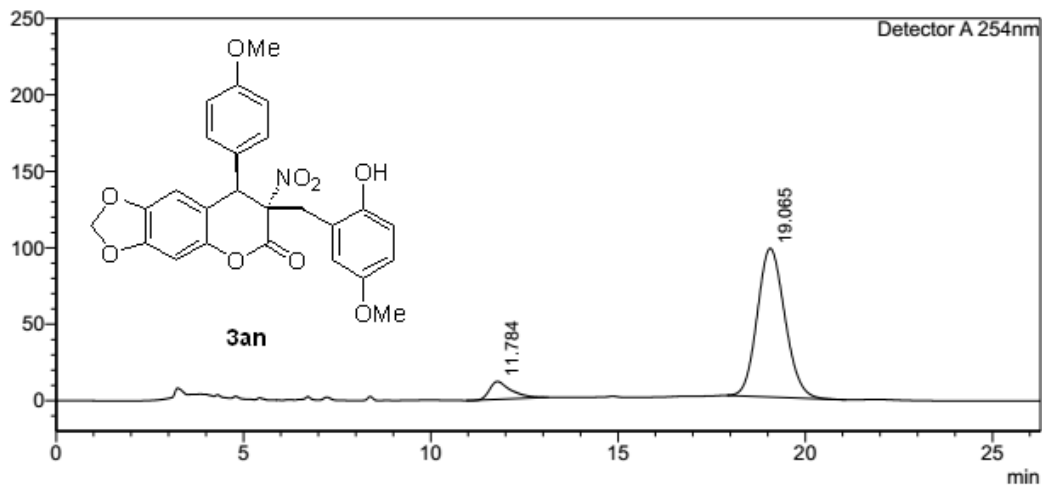
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	12.955	50011813	1102594	55.842			
2	21.427	39547138	501480	44.158			
Total		89558950	1604074				

### <Chromatogram>

mV



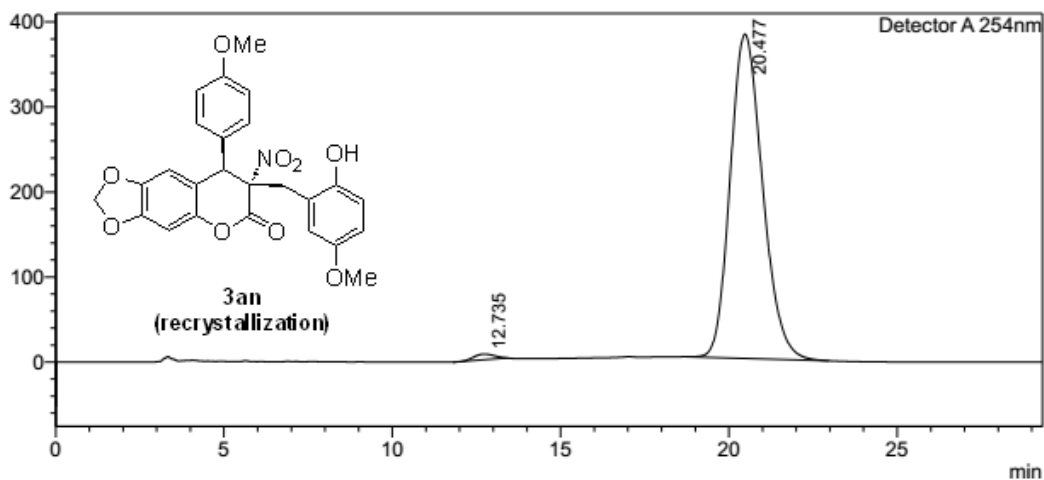
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	11.784	458354	11631	8.410		M	
2	19.065	4991857	97189	91.590		M	
Total		5450211	108820				

### <Chromatogram>

mV



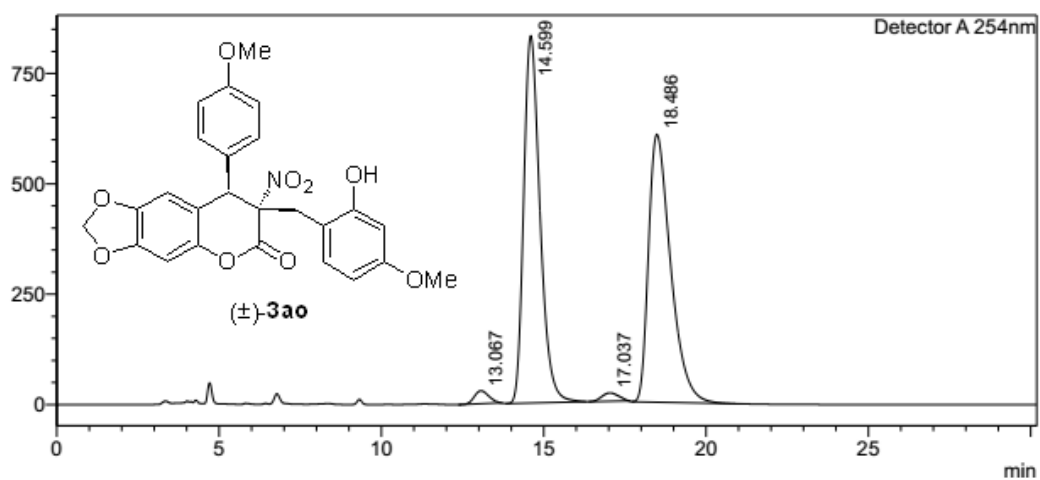
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	12.735	274586	6536	1.065		M	
2	20.477	25513723	381324	98.935		M	
Total		25788308	387860				

### <Chromatogram>

mV



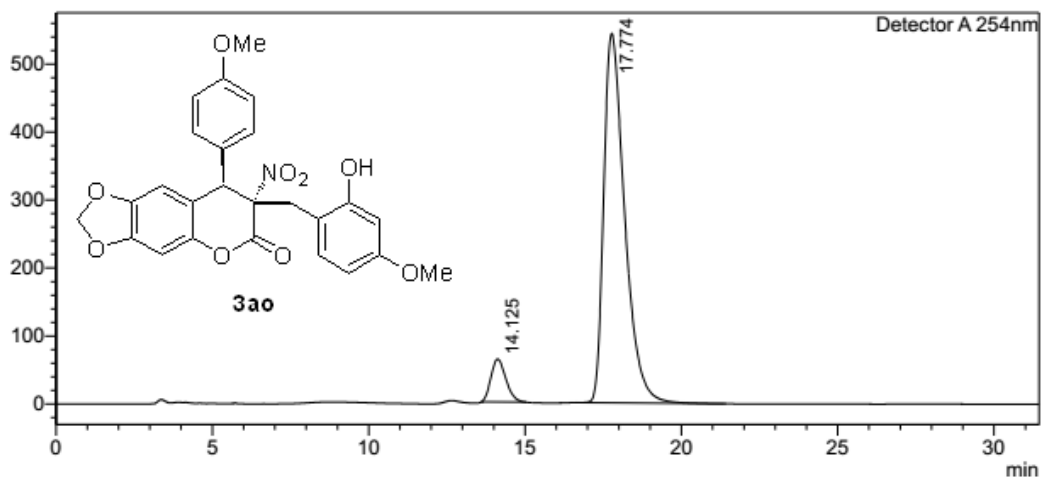
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	13.067	896206	29098	1.512		M	
2	14.599	28987342	831416	48.914		M	
3	17.037	686800	18908	1.159		M	
4	18.486	28691762	606208	48.415		M	
Total		59262109	1485630				

### <Chromatogram>

mV



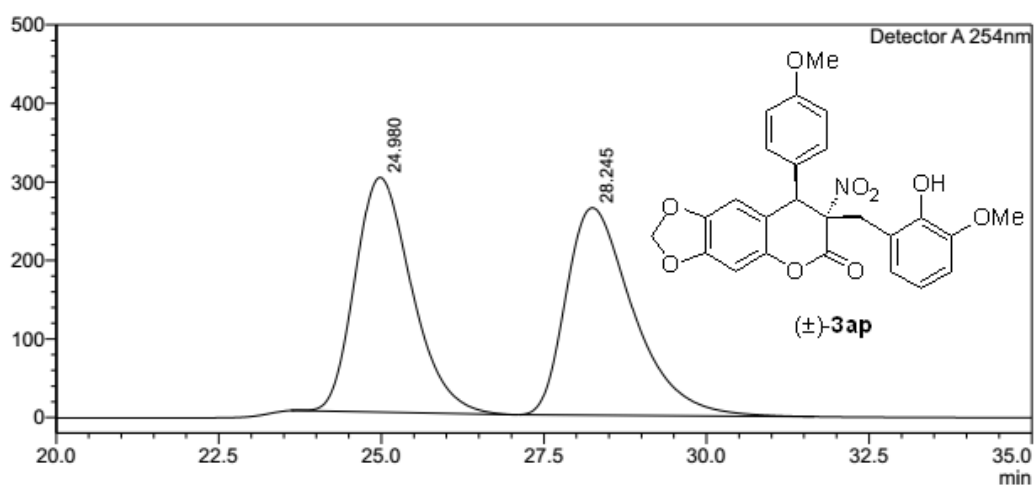
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	14.125	2079721	62772	7.590		M	
2	17.774	25319743	543648	92.410		M	
Total		27399465	606420				

### <Chromatogram>

mV



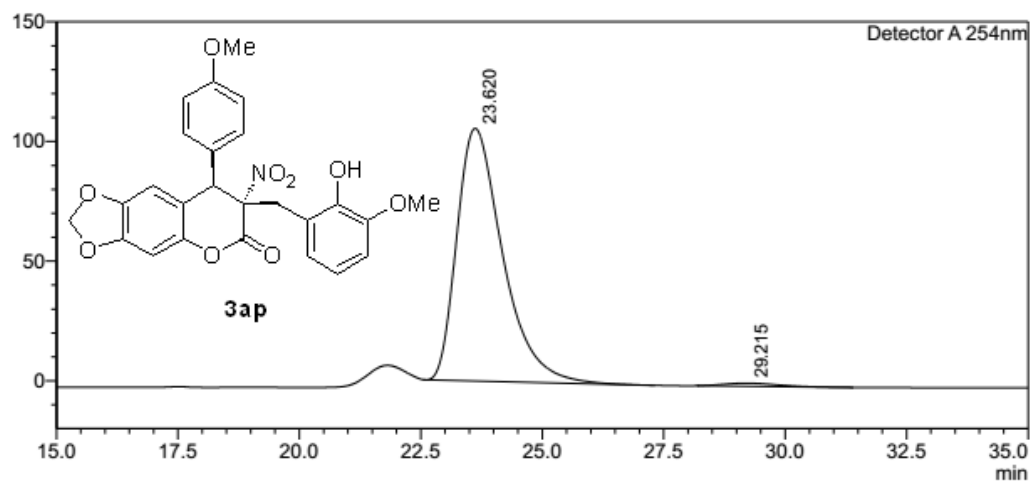
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	24.980	18219410	298832	48.956		M	
2	28.245	18996774	264018	51.044		M	
Total		37216184	562850				

### <Chromatogram>

mV



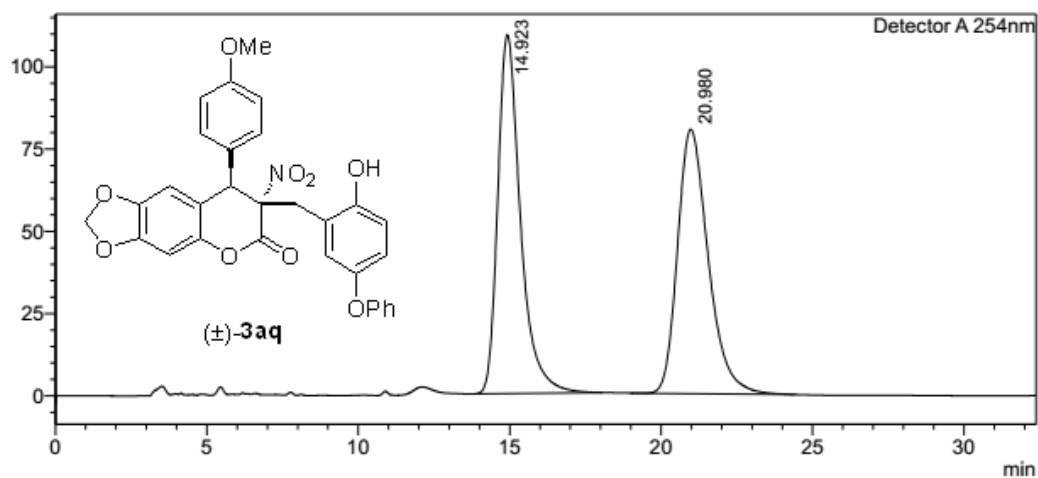
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	23.620	6938230	105540	98.599		M	
2	29.215	98620	1310	1.401		M	
Total		7036850	106851				

### <Chromatogram>

mV



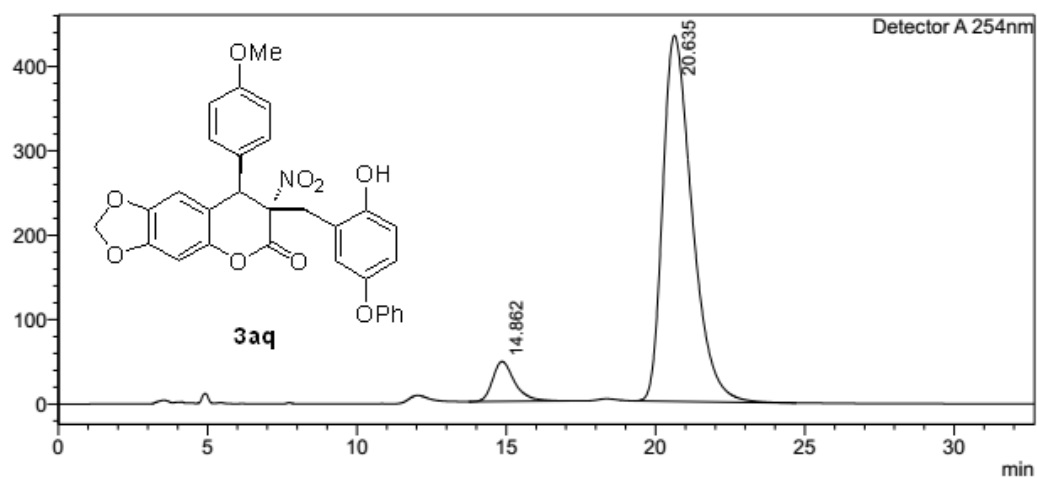
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	14.923	5674848	109039	50.056		M	
2	20.980	5662111	80348	49.944		M	
Total		11336959	189387				

### <Chromatogram>

mV



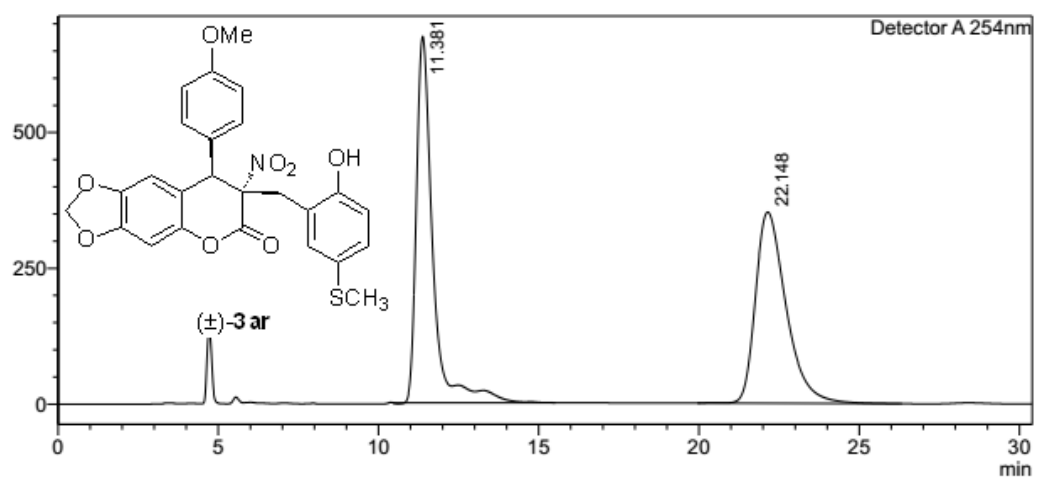
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	14.862	2418022	47202	7.546			
2	20.635	29626705	433455	92.454			
Total		32044727	480657				

### <Chromatogram>

mV



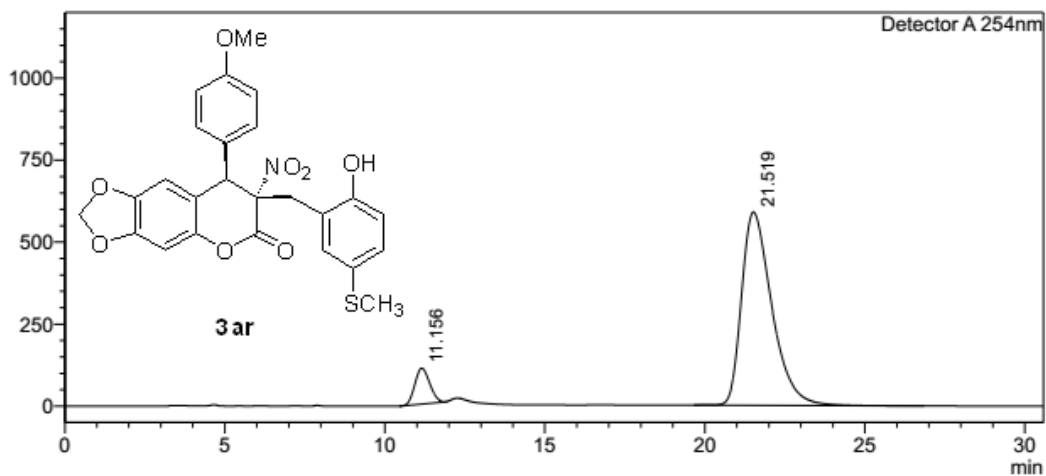
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	11.381	23986585	674452	50.604		M	
2	22.148	23414261	352034	49.396		M	
Total		47400845	1026486				

### <Chromatogram>

mV



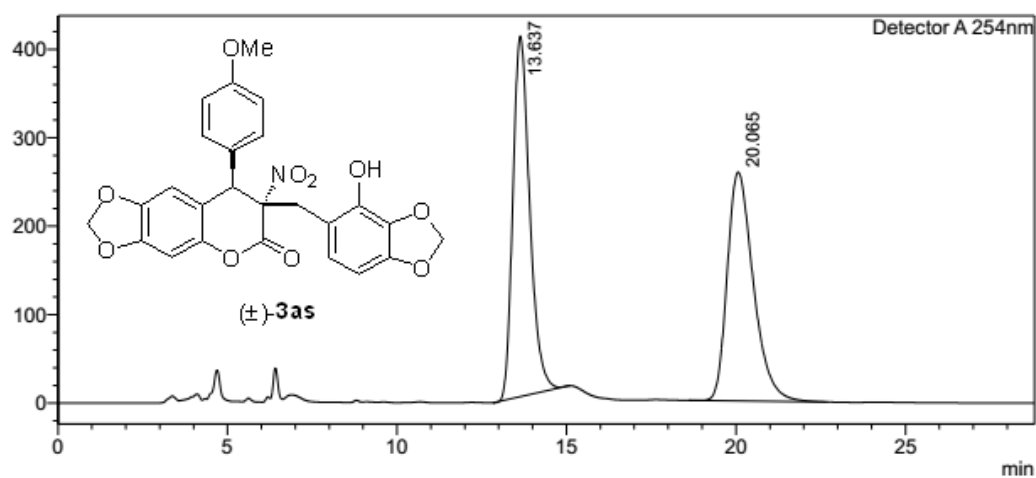
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	11.156	3513998	109011	8.321		M	
2	21.519	38717961	588886	91.679		M	
Total		42231959	697898				

### <Chromatogram>

mV



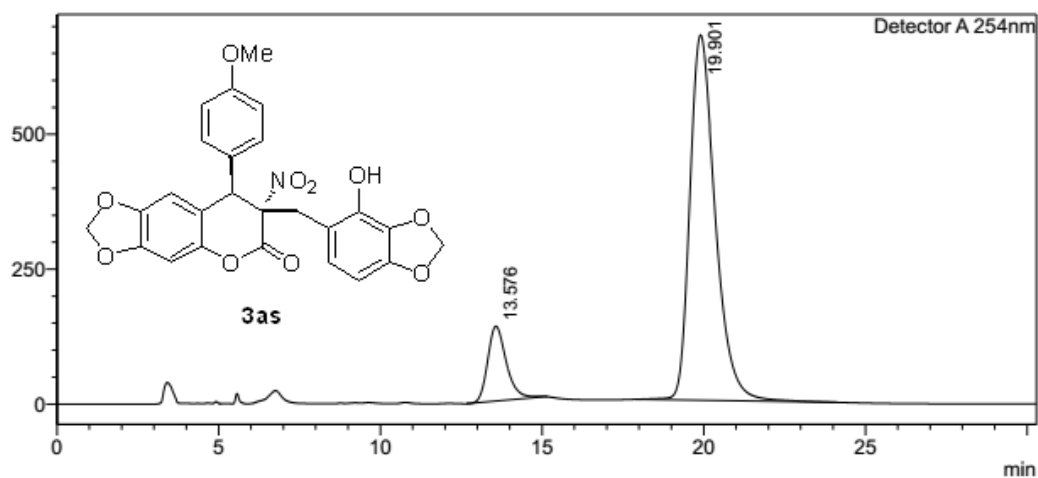
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	13.637	14093969	407357	50.392		M	
2	20.065	13874570	258672	49.608		M	
Total		27968539	666030				

### <Chromatogram>

mV



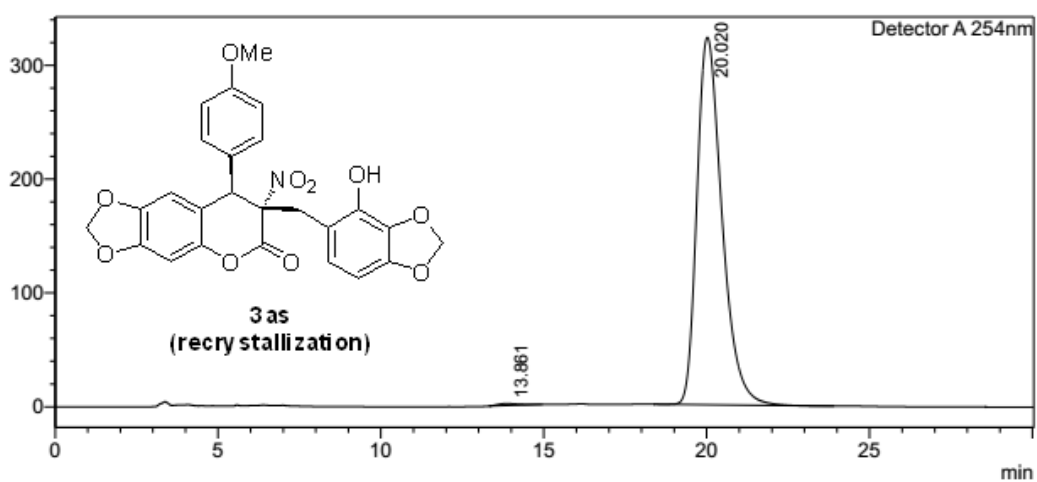
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	13.576	5549760	138814	12.987		M	
2	19.901	37182356	677103	87.013		M	
Total		42732116	815917				

### <Chromatogram>

mV



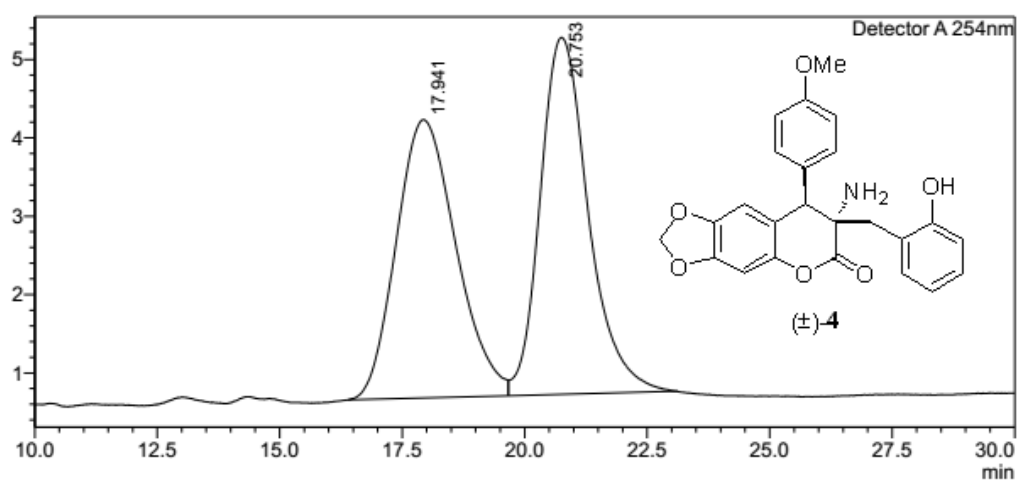
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	13.861	78733	1700	0.455		M	
2	20.020	17227226	322690	99.545		M	
Total		17305959	324391				

### <Chromatogram>

mV



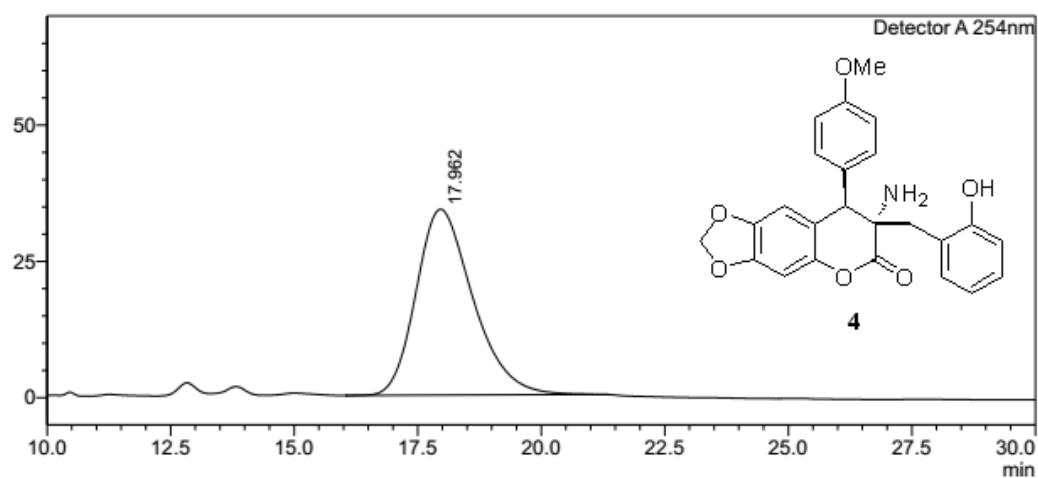
### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	17.941	301142	3550	49.158			
2	20.753	311463	4553	50.842		V	
Total		612605	8103				

### <Chromatogram>

mV



### <Peak Table>

Detector A 254nm

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	17.962	2734999	34080	100.000		M	
Total		2734999	34080				