

**DESIGN, SYNTHESIS, AND BIOLOGICAL EVALUATION OF
NOVEL 6, 8-DISUBSTITUTED IMIDAZO[1,2-*a*]PYRIDINE
DERIVATIVES AS A CDK-2 INHIBITORS**

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Vruti Parikh¹ · Harnisha Patel¹ · Hirak Shah¹ · Drashti Shah² · Bhavna
Patel¹ · Nilesh Pandey⁴

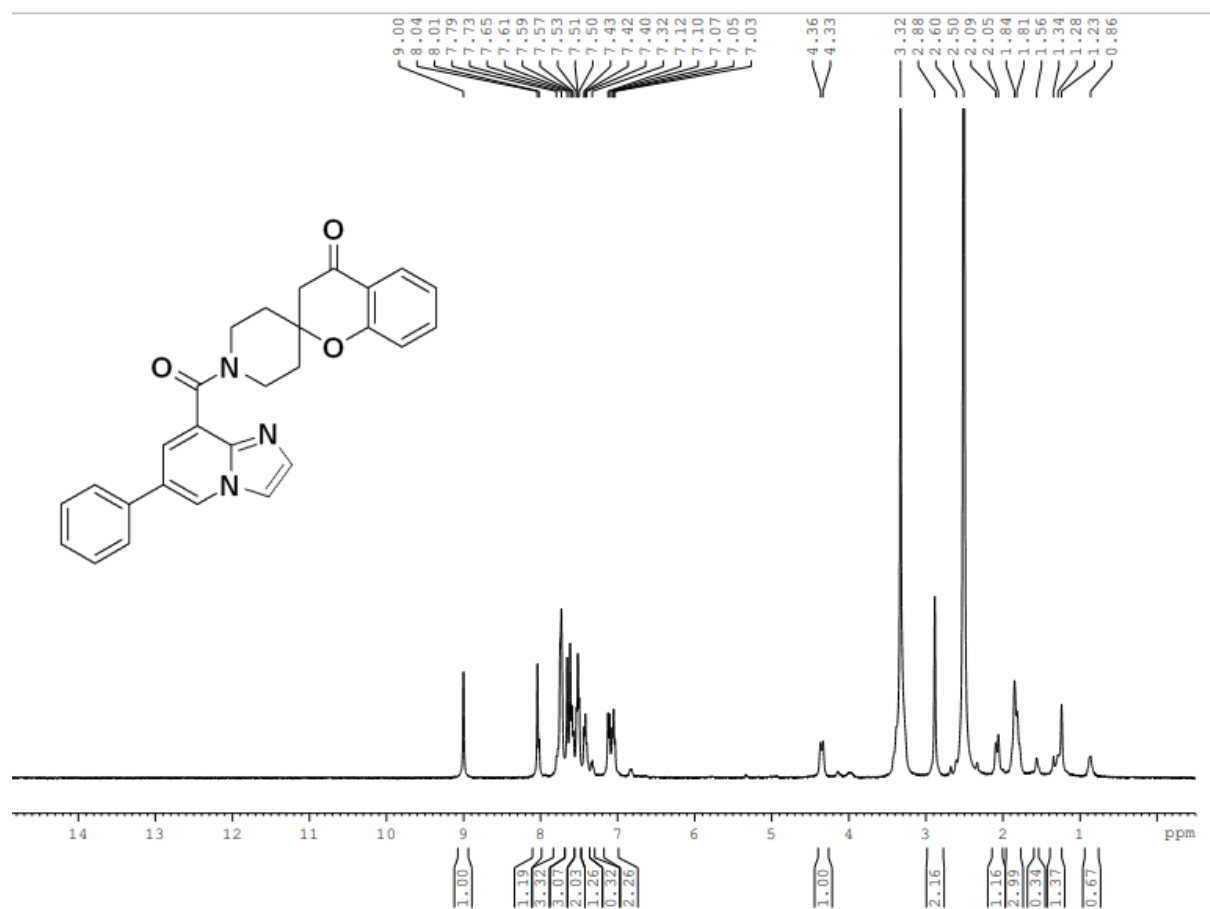
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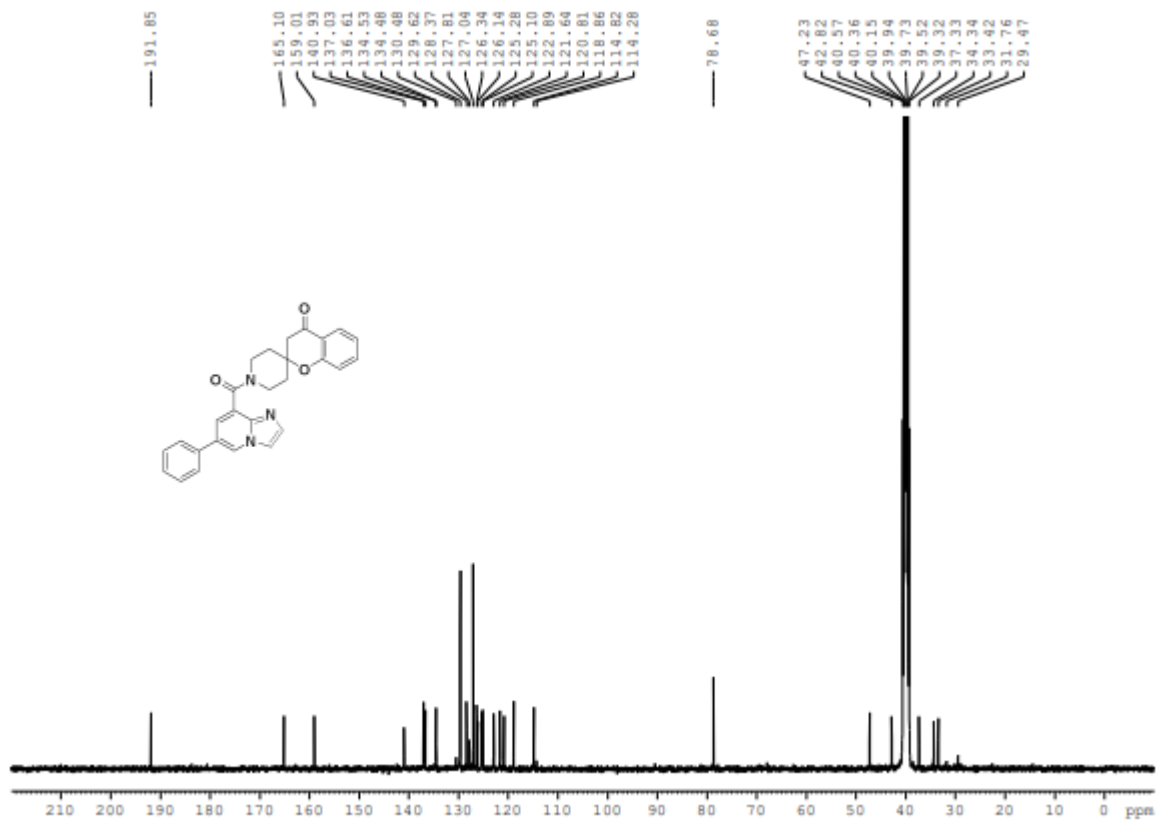
²Ramanbhai Patel College of Pharmacy, Charotar University of
Science and Technology, CHARUSAT Campus, Changa-388421,
India.

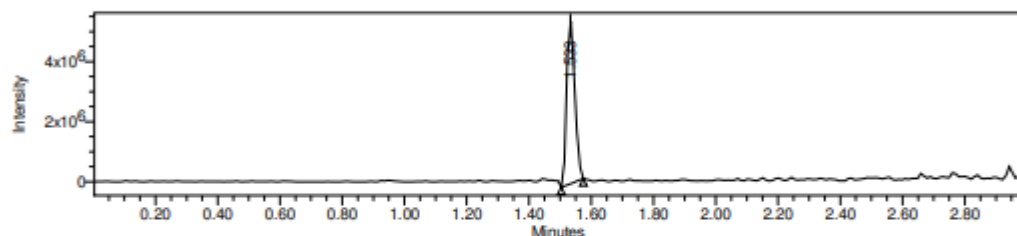
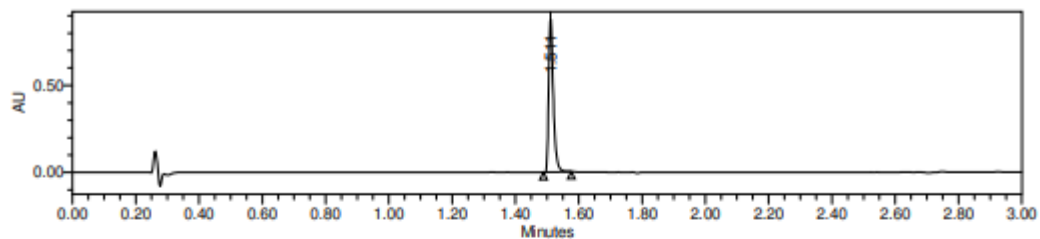
³Piramal Pharma Limited, Pharmaceutical Special Economic Zone,
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⁴Charotar Institute of Paramedical Science, Charotar University of
Science and Technology, CHARUSAT Campus, Changa-388421,
India.

^1H NMR, ^{13}C NMR and LCMS of compound 11i





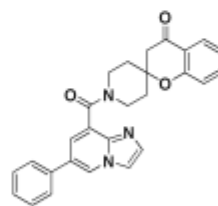


Peak Results
Channel: PDA Spectrum

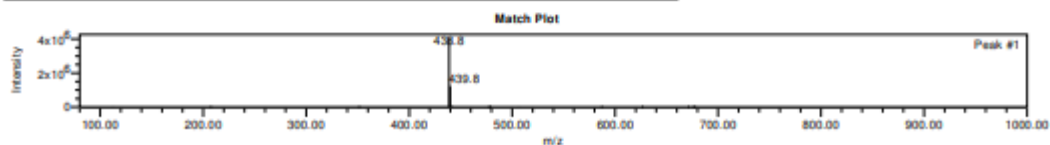
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.511	875685	903508	100.00	PDA Spectrum	254.0nm

Peak Results
Channel: SQ 1: MS Scan

Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name	
1	1.533	438.81	5426824	9811375	100.00	SQ 1: MS Scan	MS TIC

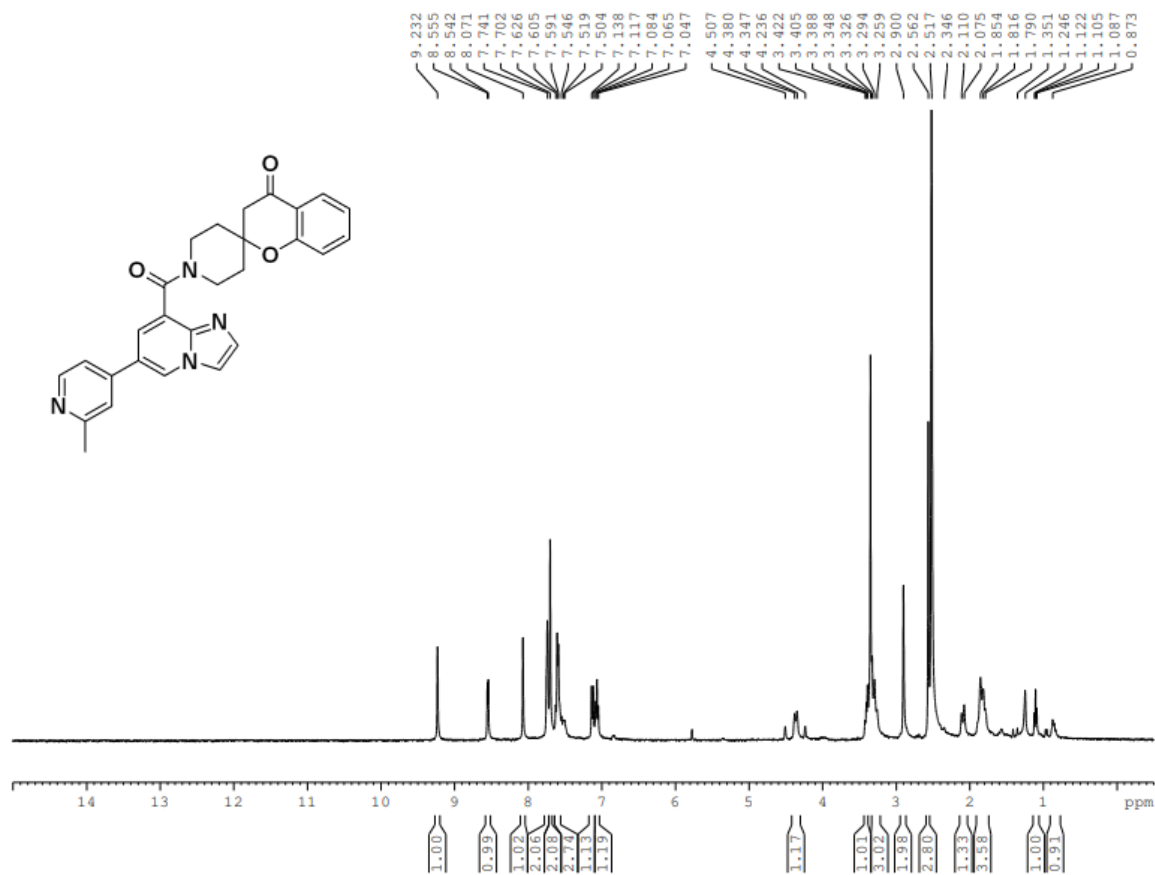


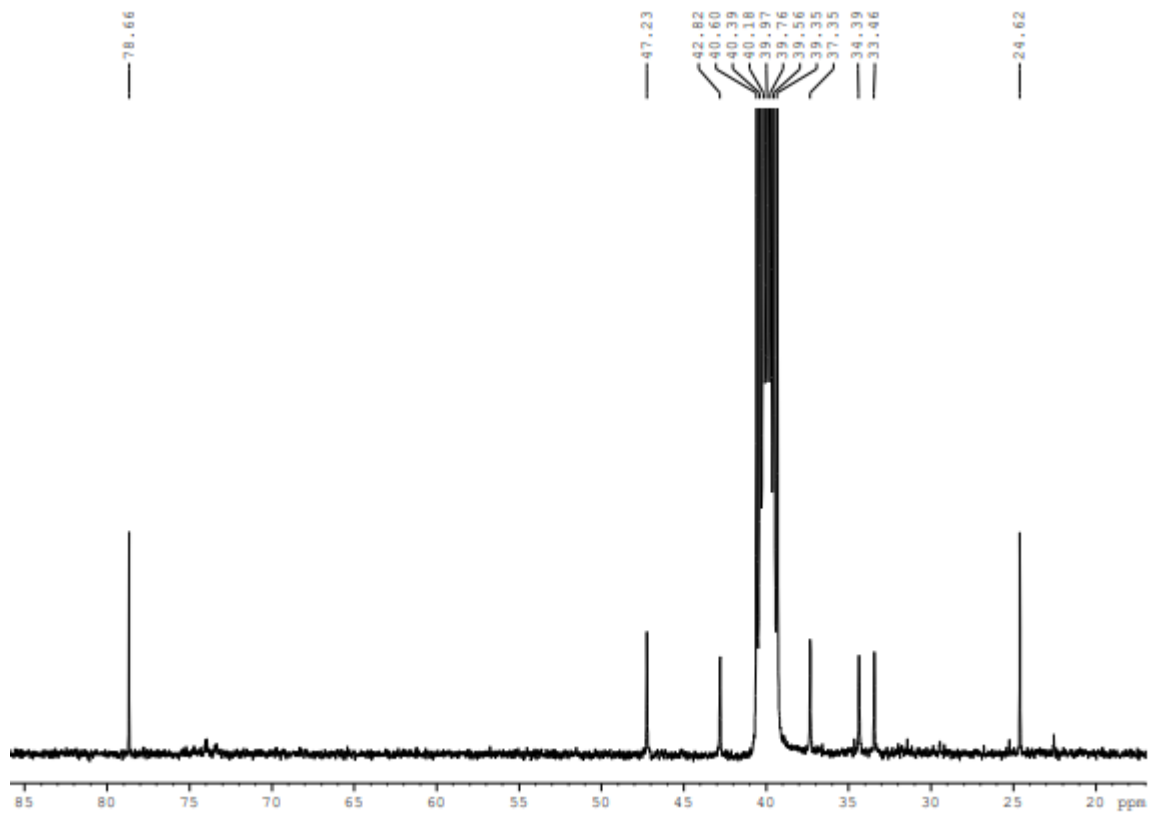
M.W-437.50

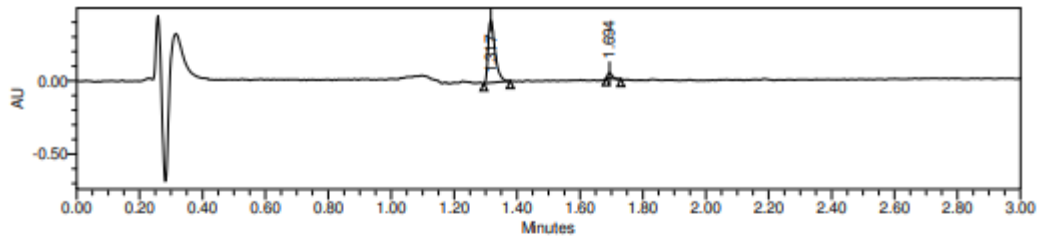


Base Peak 438.81 Channel Description 1: 80.00-1000.00 ES+, Centroid, CV=30 - AVG (1.6:3.0:0.0:1.5) x 30.000 - AVG (1.6:3.0:0.0:1.5) x 30.000 Retention Time 1.533

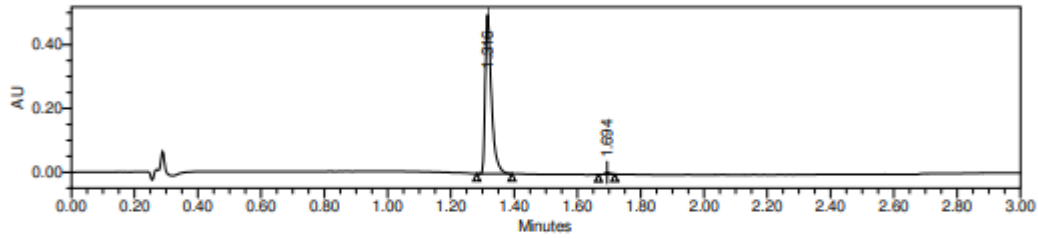
^1H NMR, ^{13}C NMR and LCMS of compound 11ii



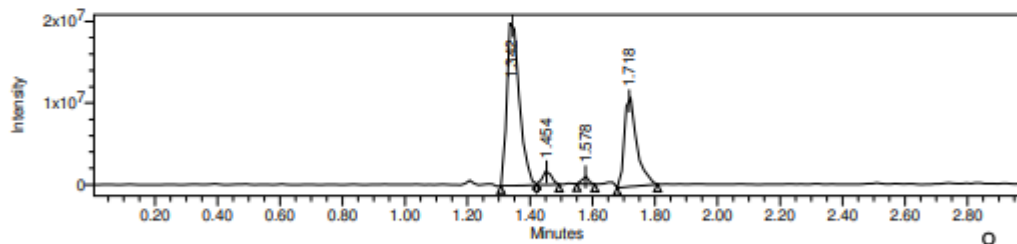




Channel Name 202.0nm; Channel PDA Spectrum



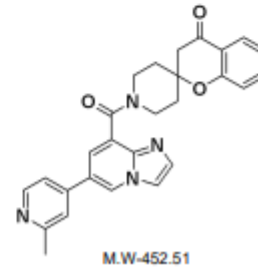
Channel Name 257.0nm; Channel PDA Spectrum



Channel Name MS TIC; Channel SQ 1: MS Scan

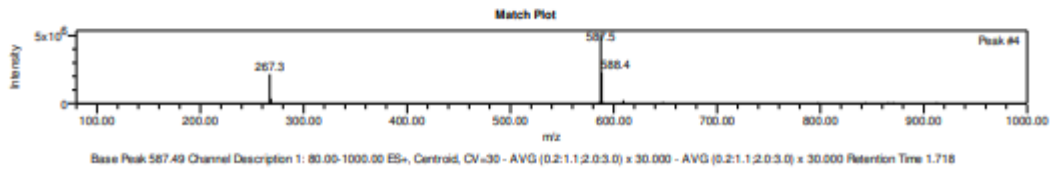
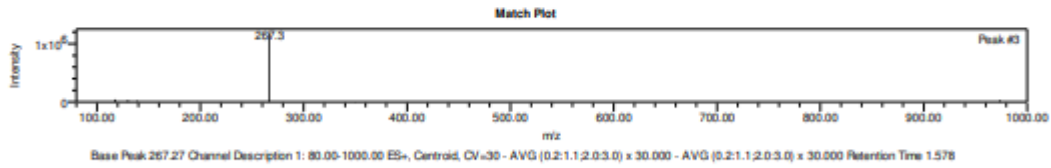
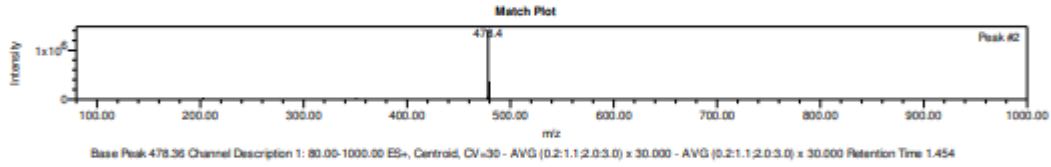
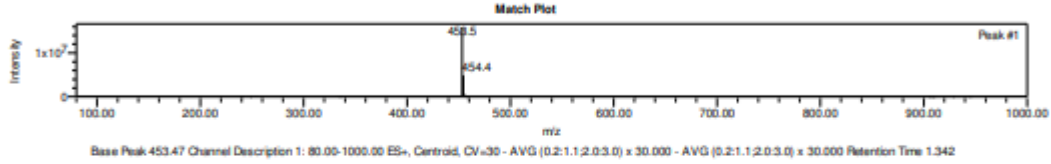
Peak Results
Channel: PDA Spectrum

	Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV·sec)	% Area	Channel	Channel Name
1	1.316		498716	689400	99.06	PDA Spectrum	257.0nm
2	1.317		425668	649579	94.59	PDA Spectrum	202.0nm
3	1.694		5943	6512	0.94	PDA Spectrum	257.0nm
4	1.694		38169	37148	5.41	PDA Spectrum	202.0nm

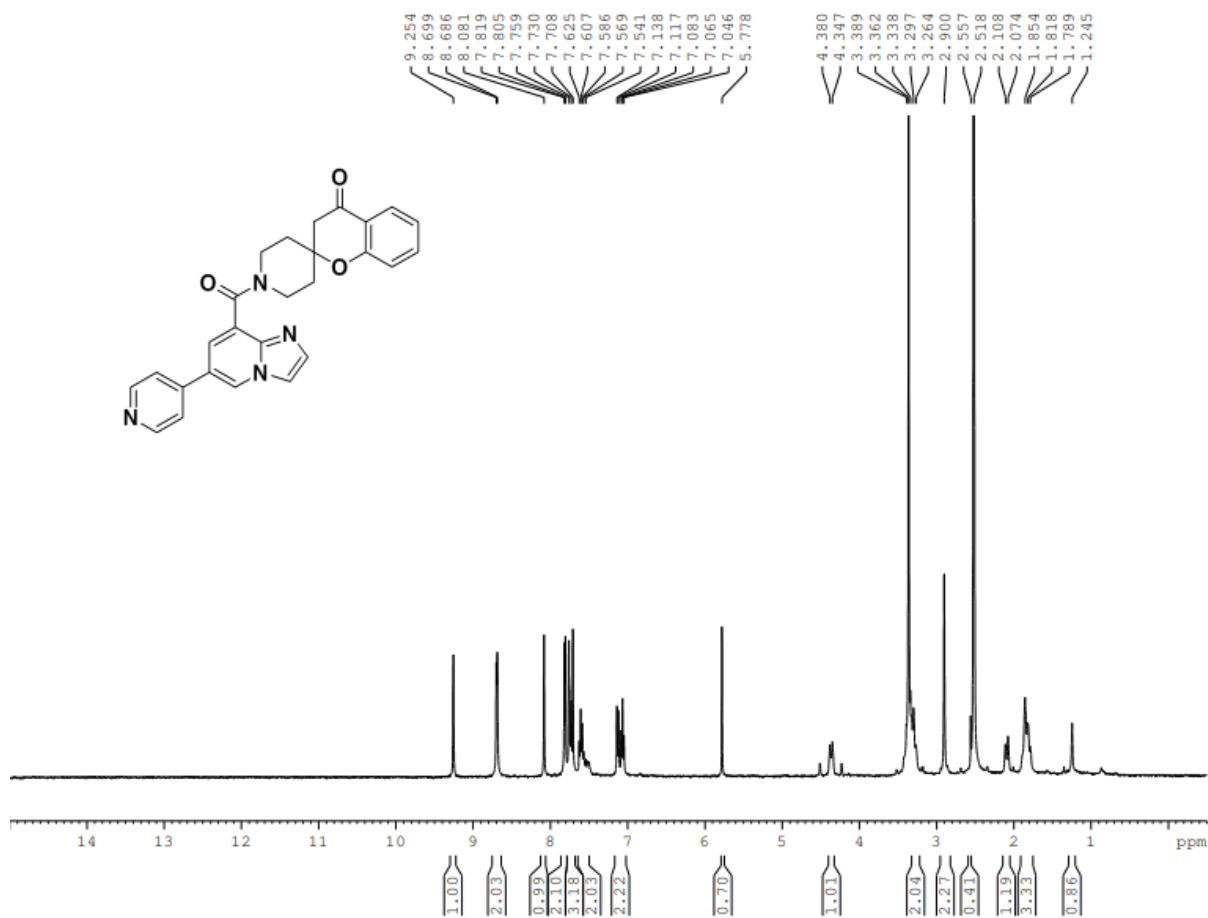


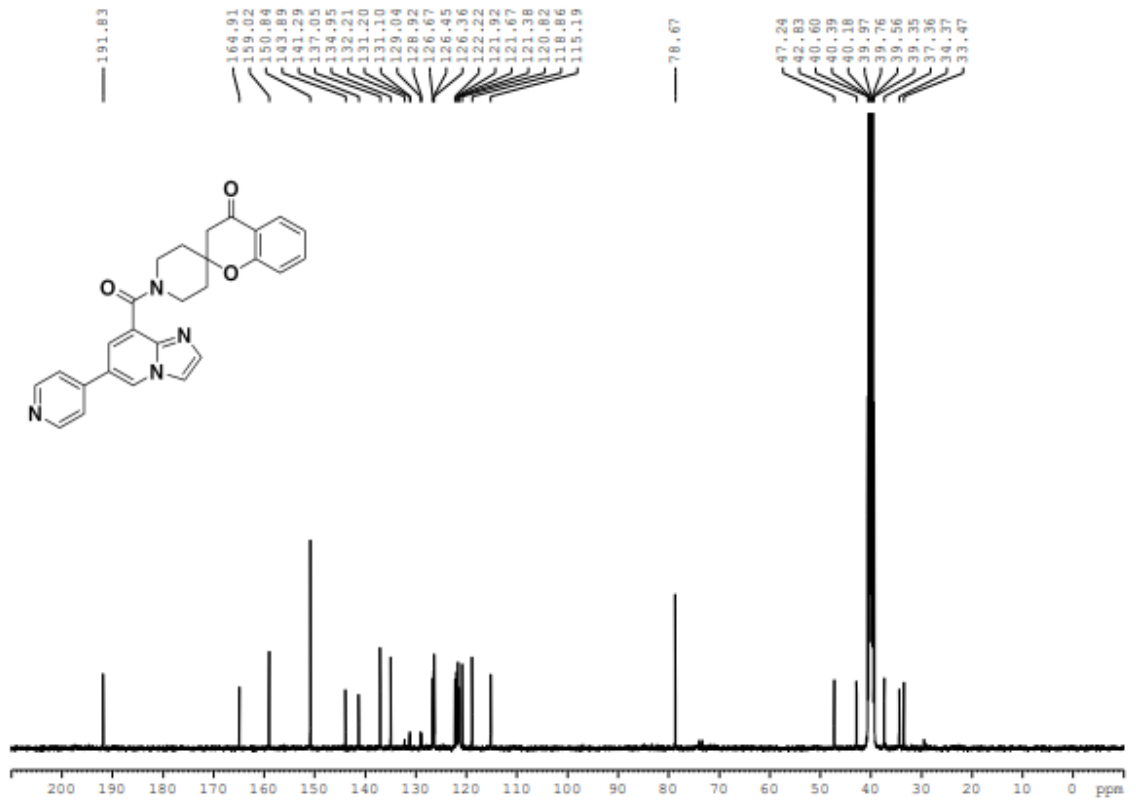
Channel: SQ 1: MS Scan

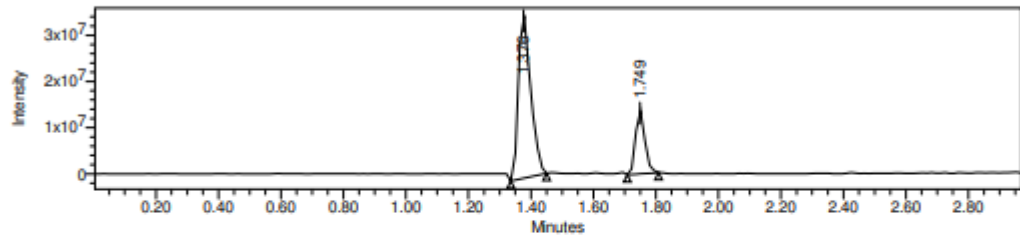
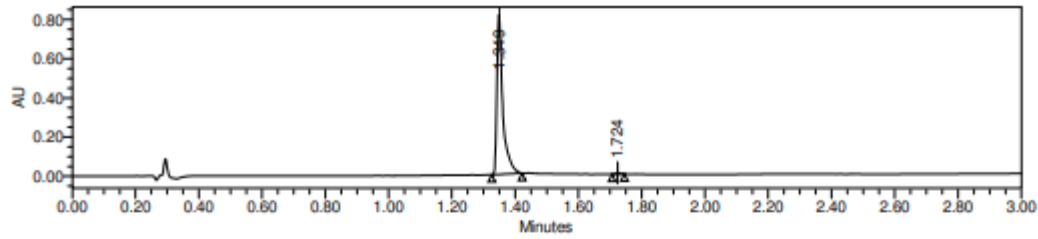
	Retention Time (min)	Base Peak (m/z)	Height (µV)	Area (µV*sec)	% Area	Channel	Channel Name
1	1.342	453.47	21320283	55931723	61.35	SQ 1: MS Scan	MS TIC
2	1.454	478.36	1693942	3450866	3.79	SQ 1: MS Scan	MS TIC
3	1.578	267.27	930324	1369276	1.50	SQ 1: MS Scan	MS TIC
4	1.718	587.49	11097895	30411139	33.36	SQ 1: MS Scan	MS TIC



¹H NMR and LCMS of compound 11iii

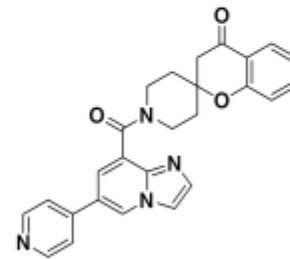






Peak Results
Channel: PDA Spectrum

Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1		816148	1051427	99.33	PDA Spectrum	254.0nm
2		6915	7070	0.67	PDA Spectrum	254.0nm

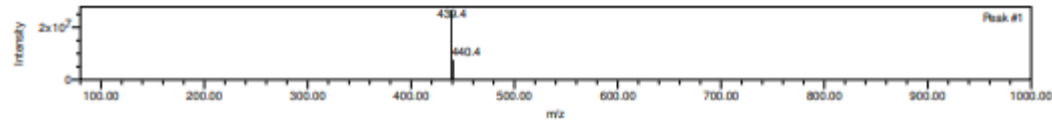


M.W-438.49

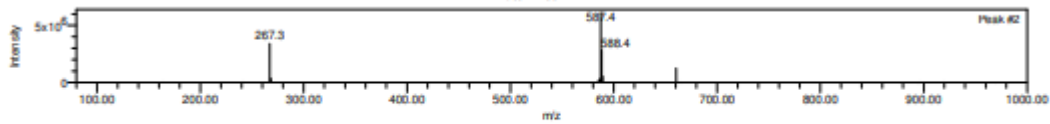
Peak Results
Channel: SQ 1: MS Scan

Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	439.42	35282785	97713718	77.27	SQ 1: MS Scan	MS TIC
2	587.44	13684540	28736100	22.73	SQ 1: MS Scan	MS TIC

Match Plot



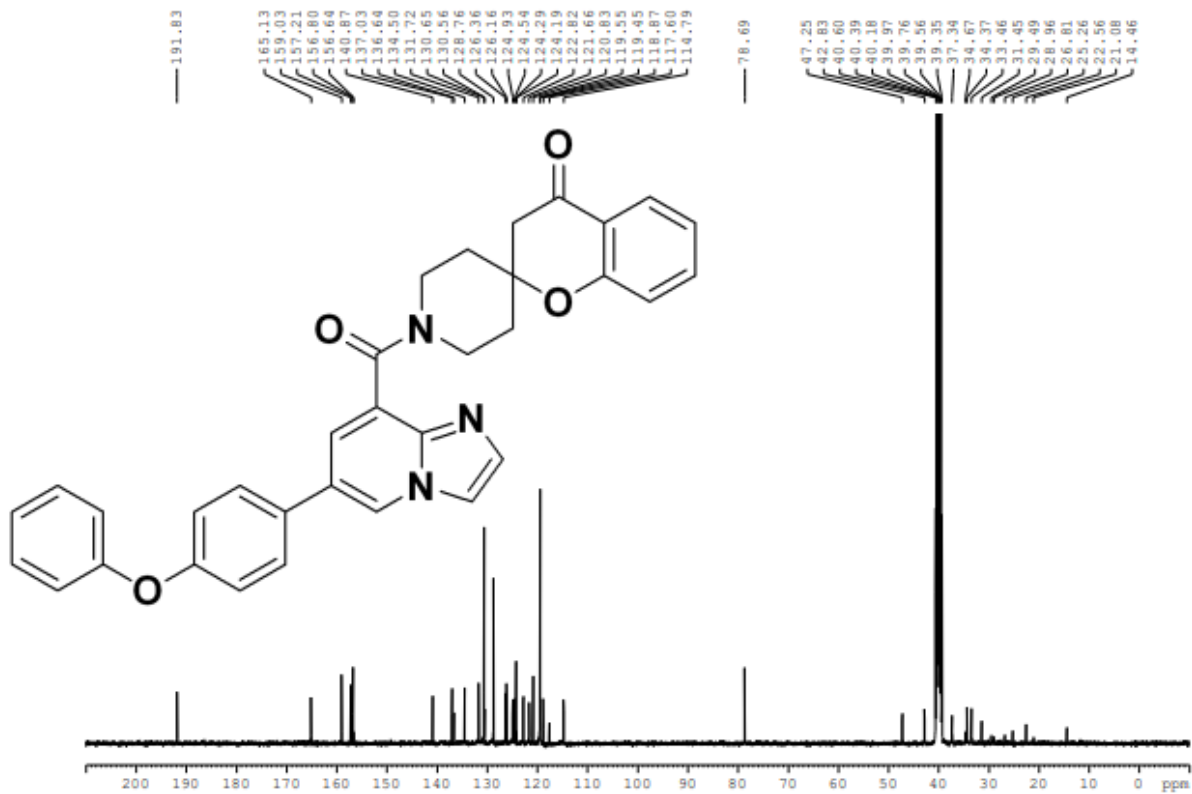
Match Plot

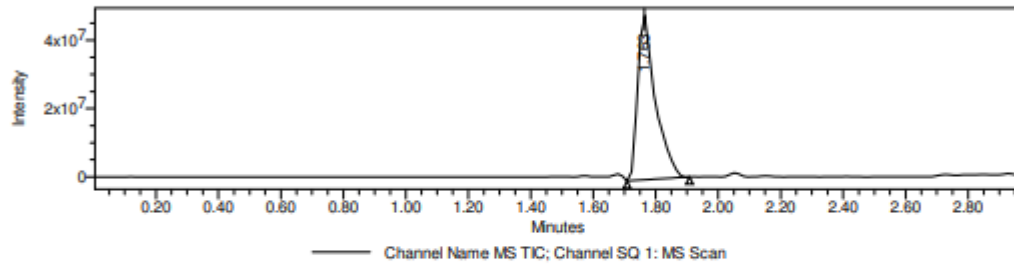
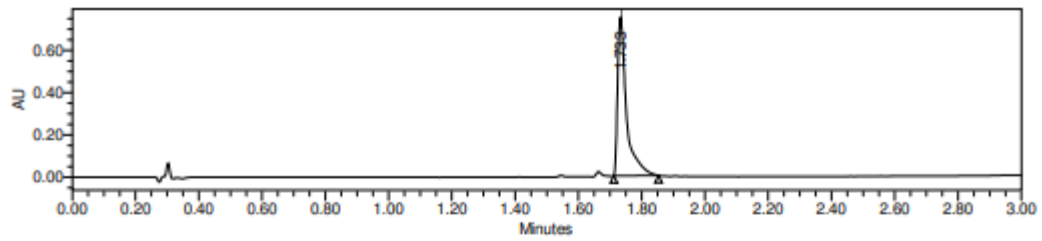


Base Peak 587.44 Channel Description 1: 80.00-1000.00 ES+, Centroid, CV=30 - AVG (0.0:1.2;1.9:3.0) x 50.000 - AVG (0.0:1.2;1.9:3.0) x 20.000 Retention Time 1.749

^1H NMR, ^{13}C NMR and LCMS of compound 11iv





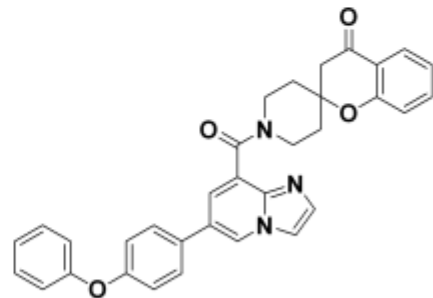


Peak Results
Channel: PDA Spectrum

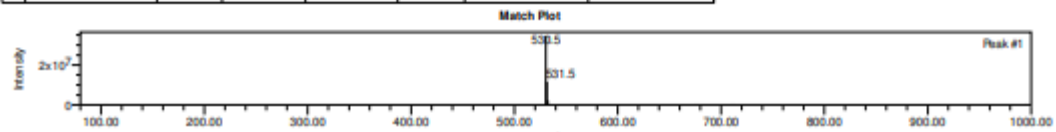
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV·sec)	% Area	Channel	Channel Name
1	1.733	748525	1455660	100.00	PDA Spectrum	254.0nm

Peak Results
Channel: SQ 1: MS Scan

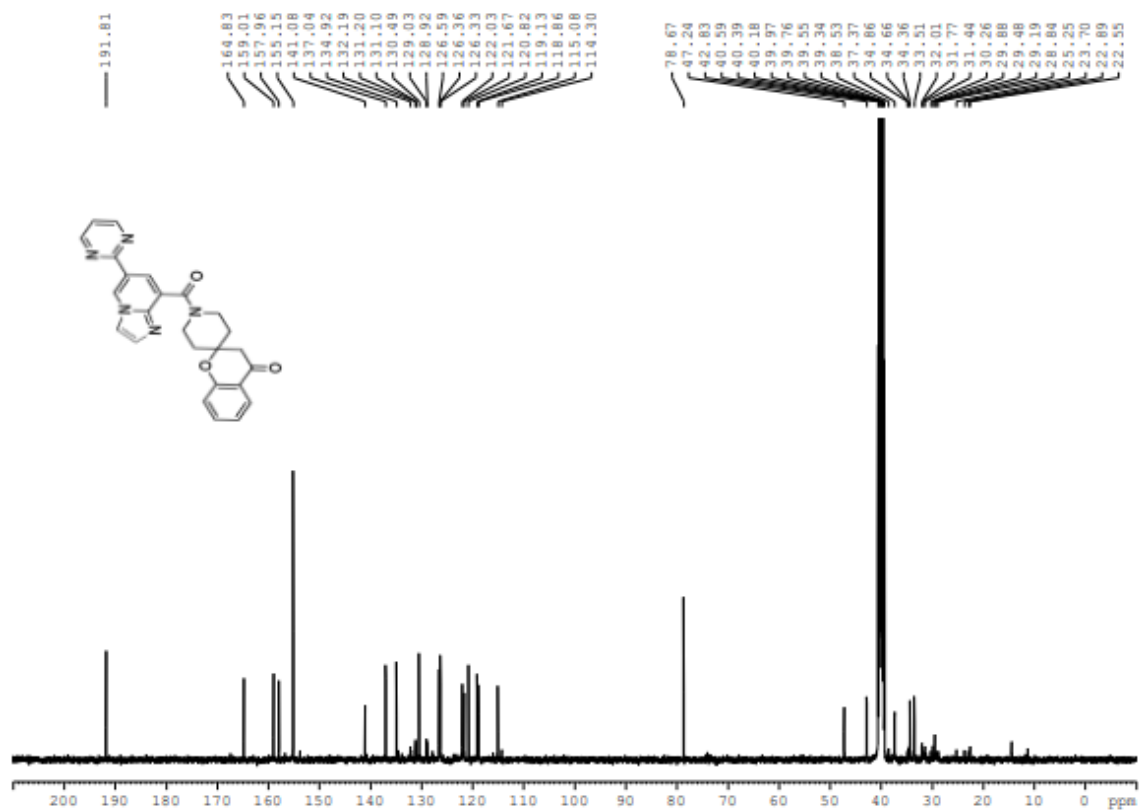
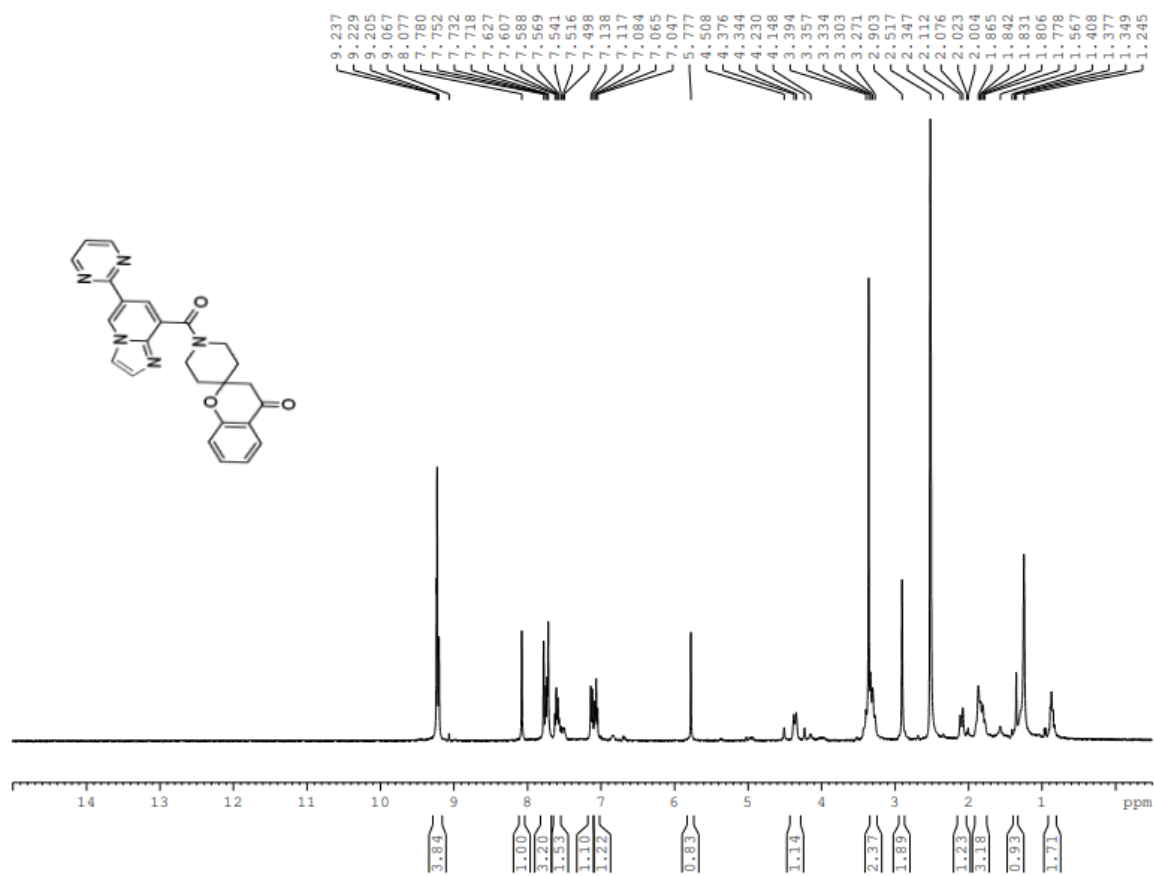
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV·sec)	% Area	Channel	Channel Name
1	1.763	530.45	489645803	100.00	SQ 1: MS Scan	MS TIC

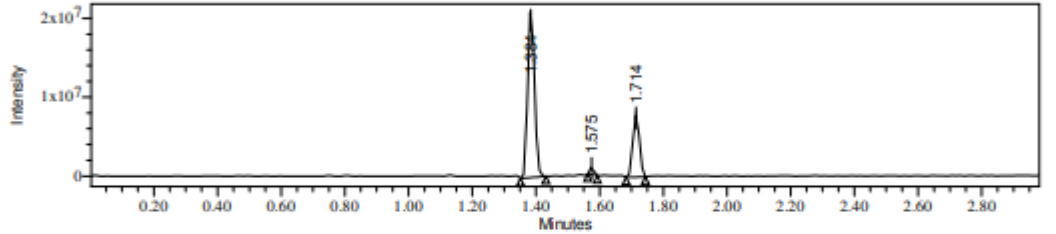
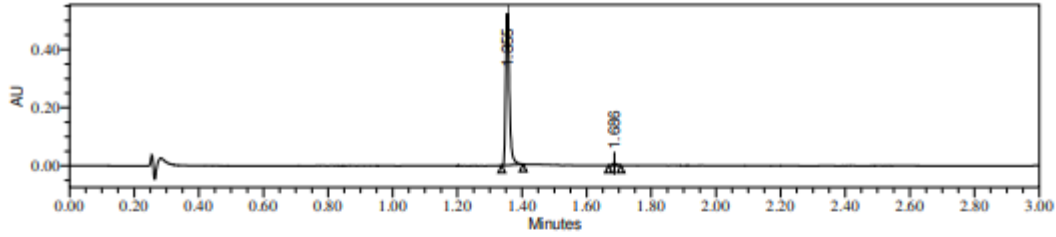


M.W-529.60



^1H NMR, ^{13}C NMR and LCMS of compound 11v





Peak Results

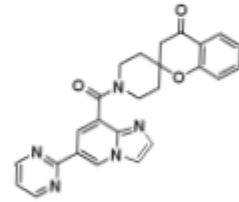
Channel: PDA Spectrum

Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.355	524243	413342	98.57	PDA Spectrum	242.0nm
2	1.686	7219	5979	1.43	PDA Spectrum	242.0nm

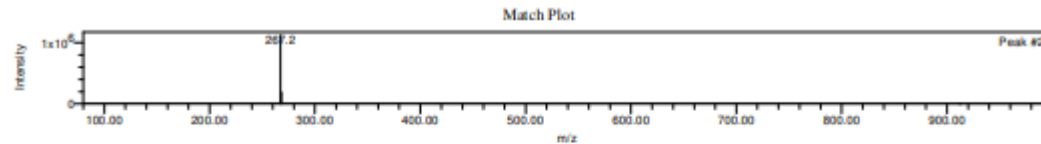
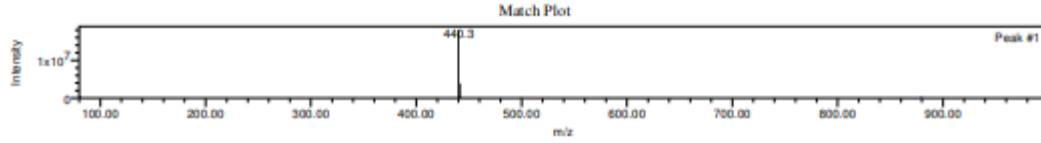
Peak Results

Channel: SQ 1: MS Scan

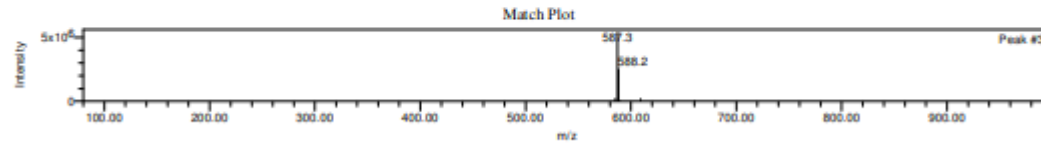
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name	
1	1.384	440.27	21471928	32338585	72.63	SQ 1: MS Scan	MS TIC
2	1.575	267.18	875595	827056	1.86	SQ 1: MS Scan	MS TIC
3	1.714	587.28	7777664	11359867	25.51	SQ 1: MS Scan	MS TIC



M.W-439.48

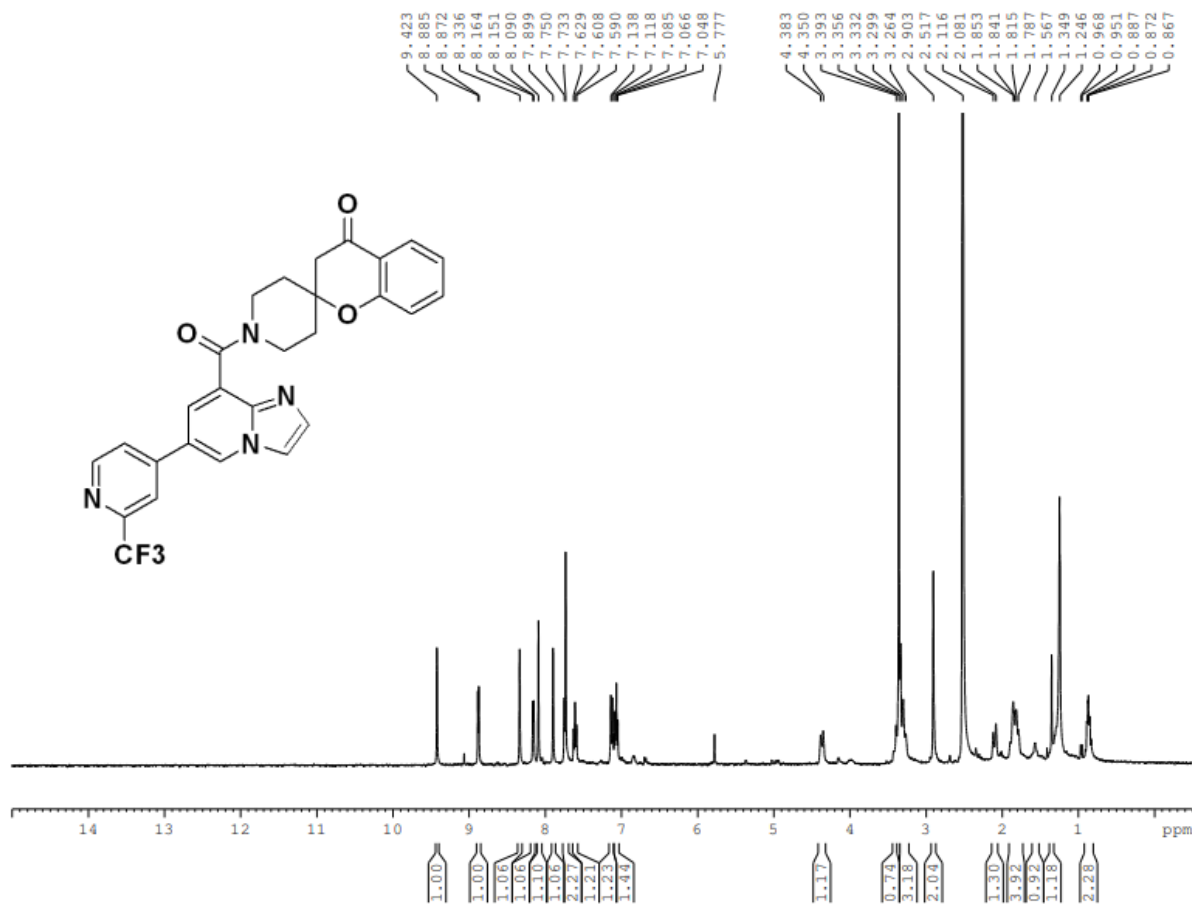


Base Peak 267.18 Channel Description 1: 80.00-1000.00 ES+, Centroid, CV=30 - AVG (1.8:3.0:0.0:1.3) x 80.000 - AVG (1.8:3.0:0.0:1.3) x 80.000 Retention Time 1.575



Base Peak 587.28 Channel Description 1: 80.00-1000.00 ES+, Centroid, CV=30 - AVG (1.8:3.0:0.0:1.3) x 80.000 - AVG (1.8:3.0:0.0:1.3) x 80.000 Retention Time 1.714

^1H NMR, ^{13}C NMR and LCMS of compound 11vi

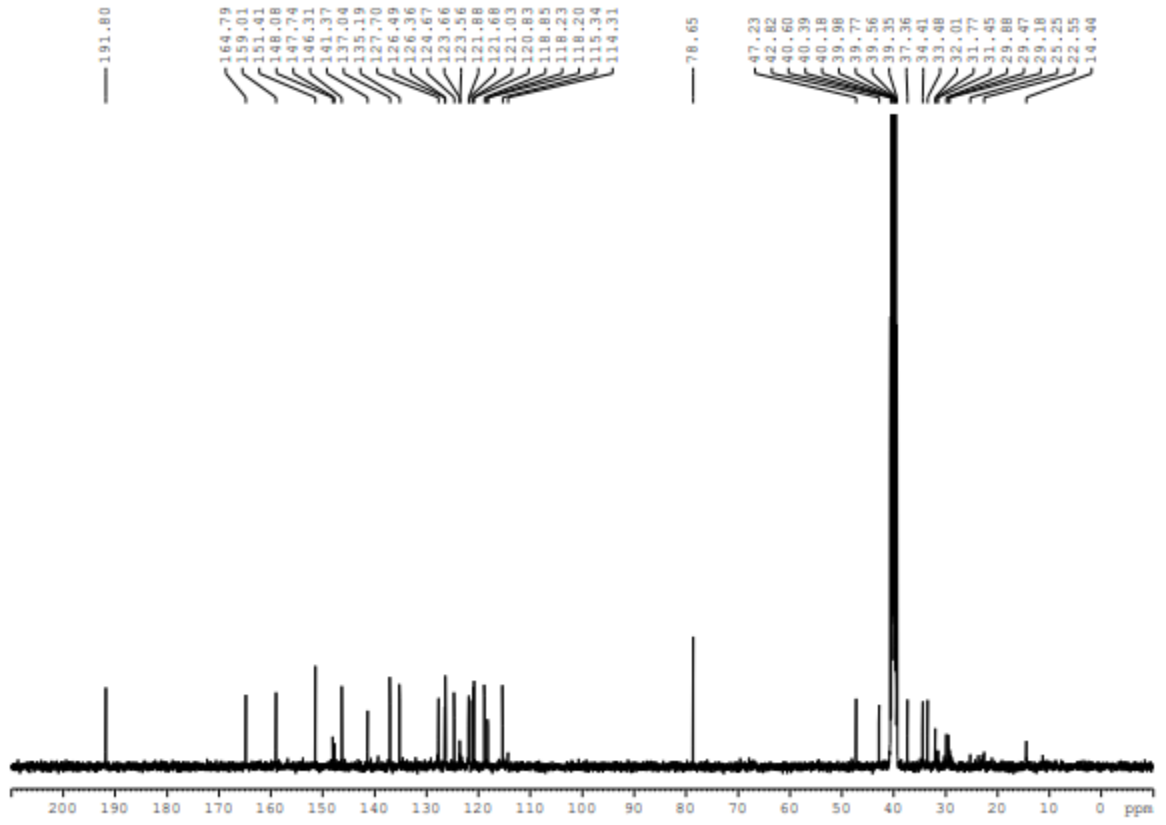


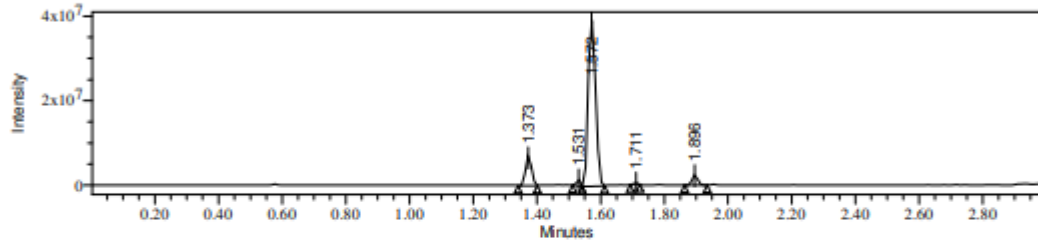
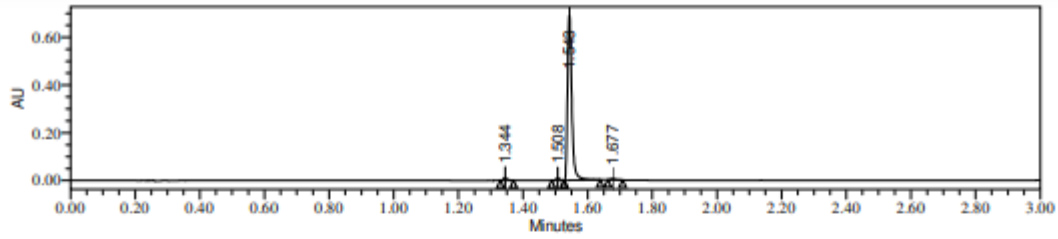
9.423
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8.336
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8.151
8.090
7.899
7.750
7.733
7.629
7.608
7.590
7.138
7.118
7.085
7.066
7.048
5.777

4.383
4.350
3.393
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1.00
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1.10
1.06
2.27
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2.28



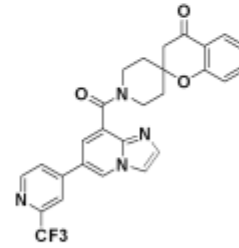


Peak Results
Channel: PDA Spectrum

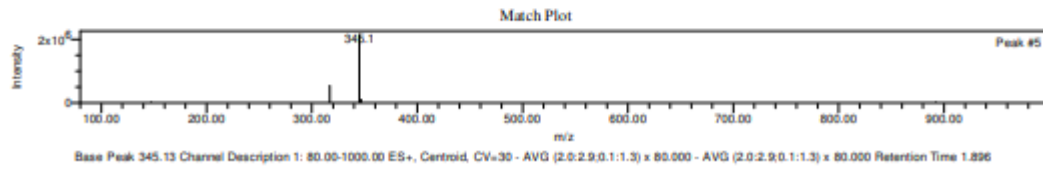
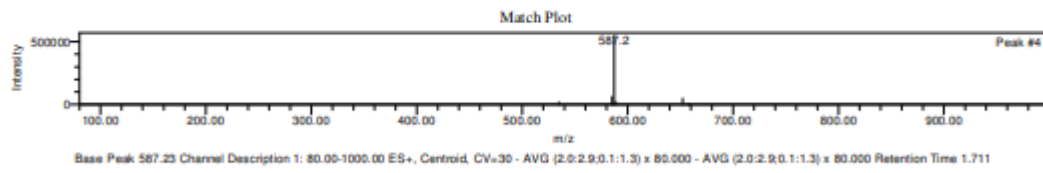
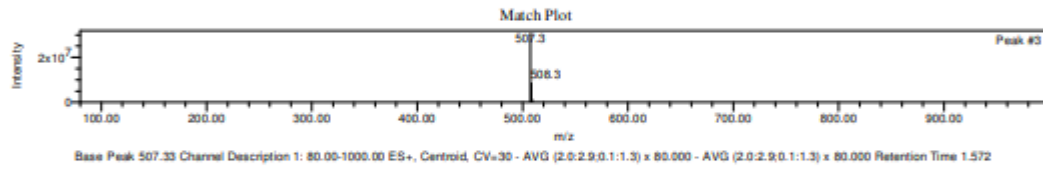
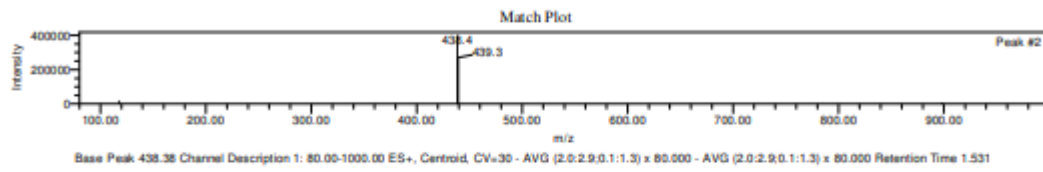
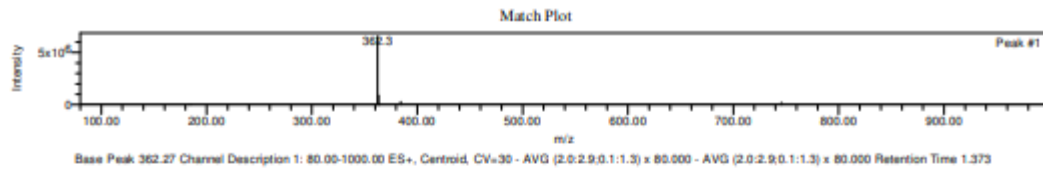
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.344	11196	9225	1.39	PDA Spectrum	254.0nm
2	1.508	8889	7332	1.11	PDA Spectrum	254.0nm
3	1.543	691886	641268	96.74	PDA Spectrum	254.0nm
4	1.677	4976	5066	0.76	PDA Spectrum	254.0nm

Peak Results
Channel: SQ 1: MS Scan

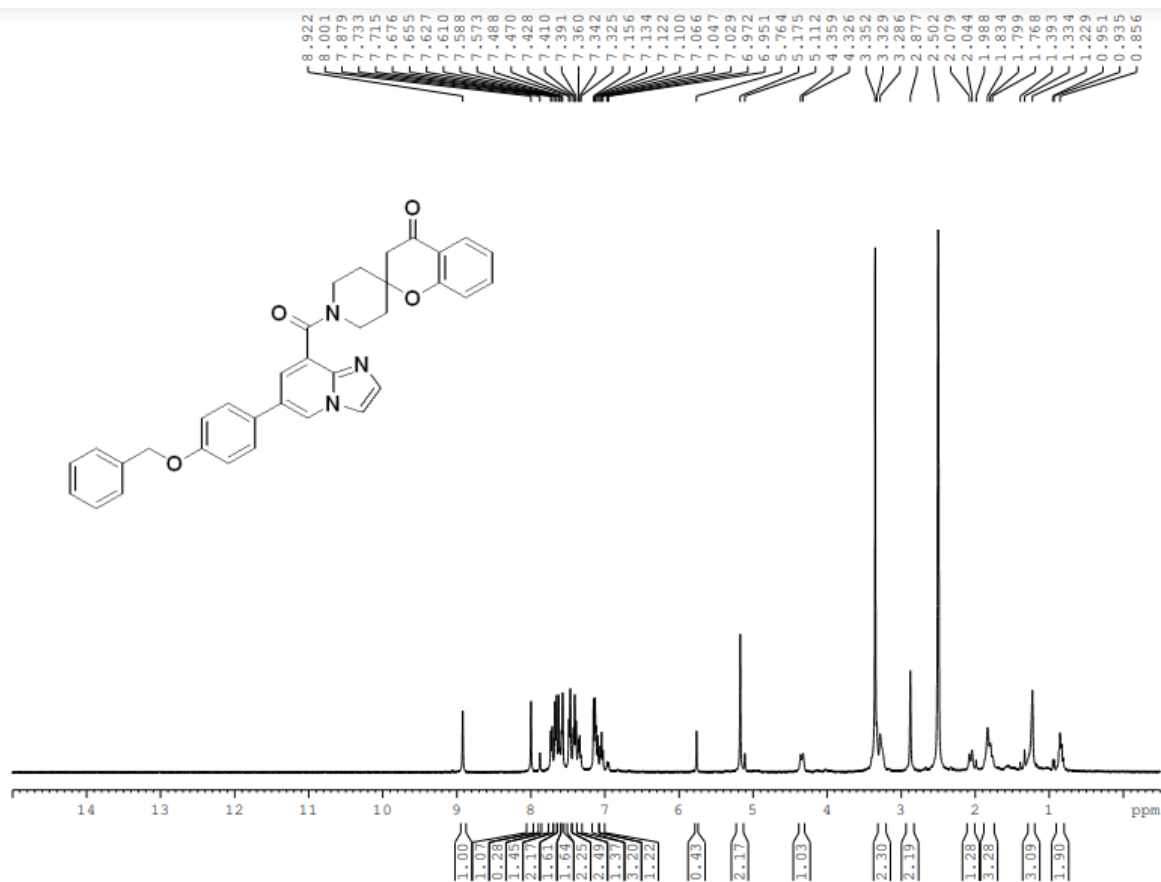
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.373	362.27	6963717	11.71	SQ 1: MS Scan	MS TIC
2	1.531	438.38	1472023	1.50	SQ 1: MS Scan	MS TIC
3	1.572	507.33	39248412	82.61	SQ 1: MS Scan	MS TIC
4	1.711	587.23	368414	0.44	SQ 1: MS Scan	MS TIC
5	1.896	345.13	2384729	3.73	SQ 1: MS Scan	MS TIC

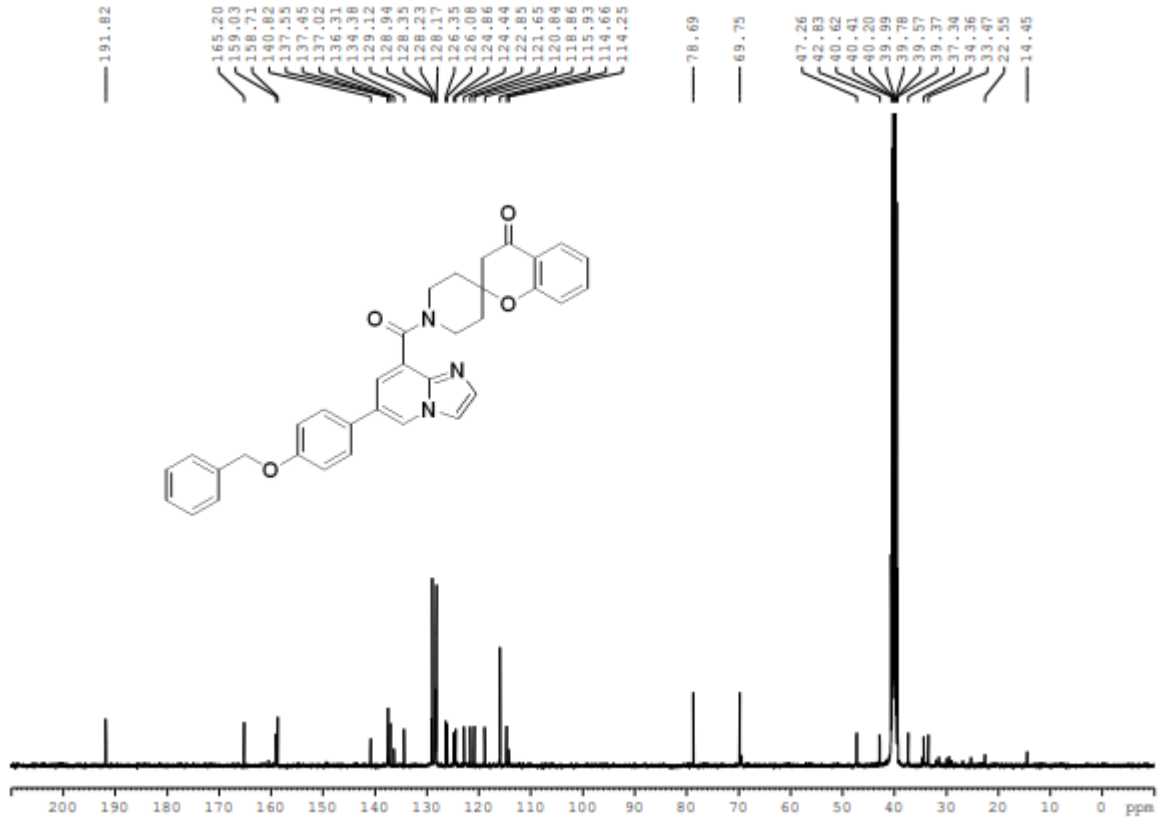


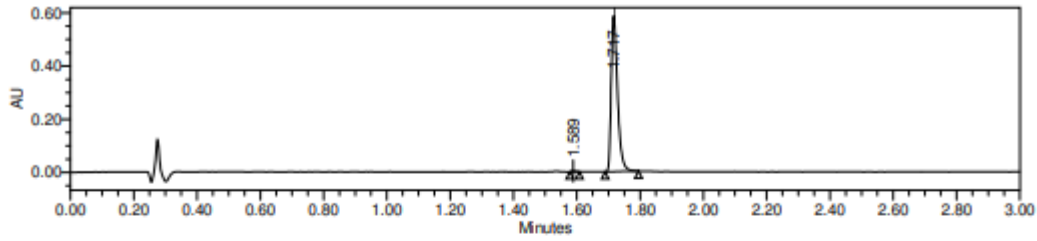
M.W-506.49



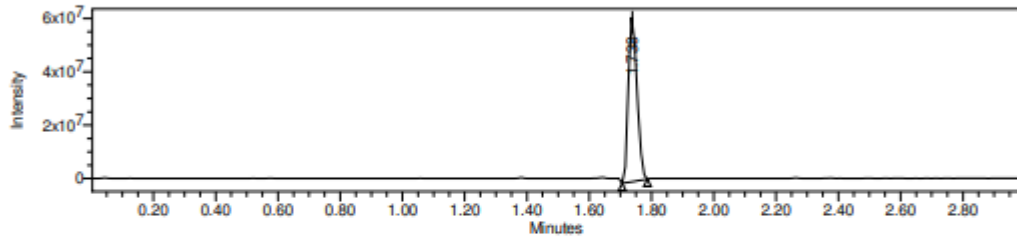
^1H NMR, ^{13}C NMR and LCMS of compound 11vii







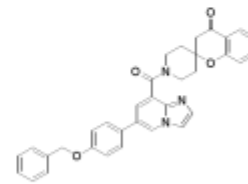
Channel Name 265.0nm; Channel PDA Spectrum



Channel Name MS TIC; Channel SQ 1: MS Scan

Peak Results
Channel: PDA Spectrum

Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.589	3037	2609	0.32	PDA Spectrum	265.0nm
2	1.717	585015	814723	99.68	PDA Spectrum	265.0nm

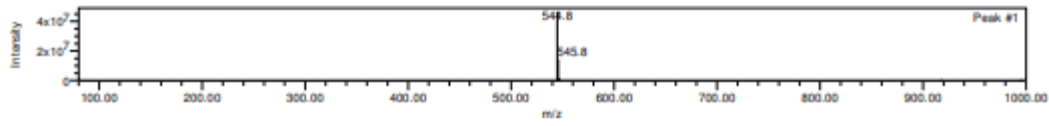


M.W-543.62

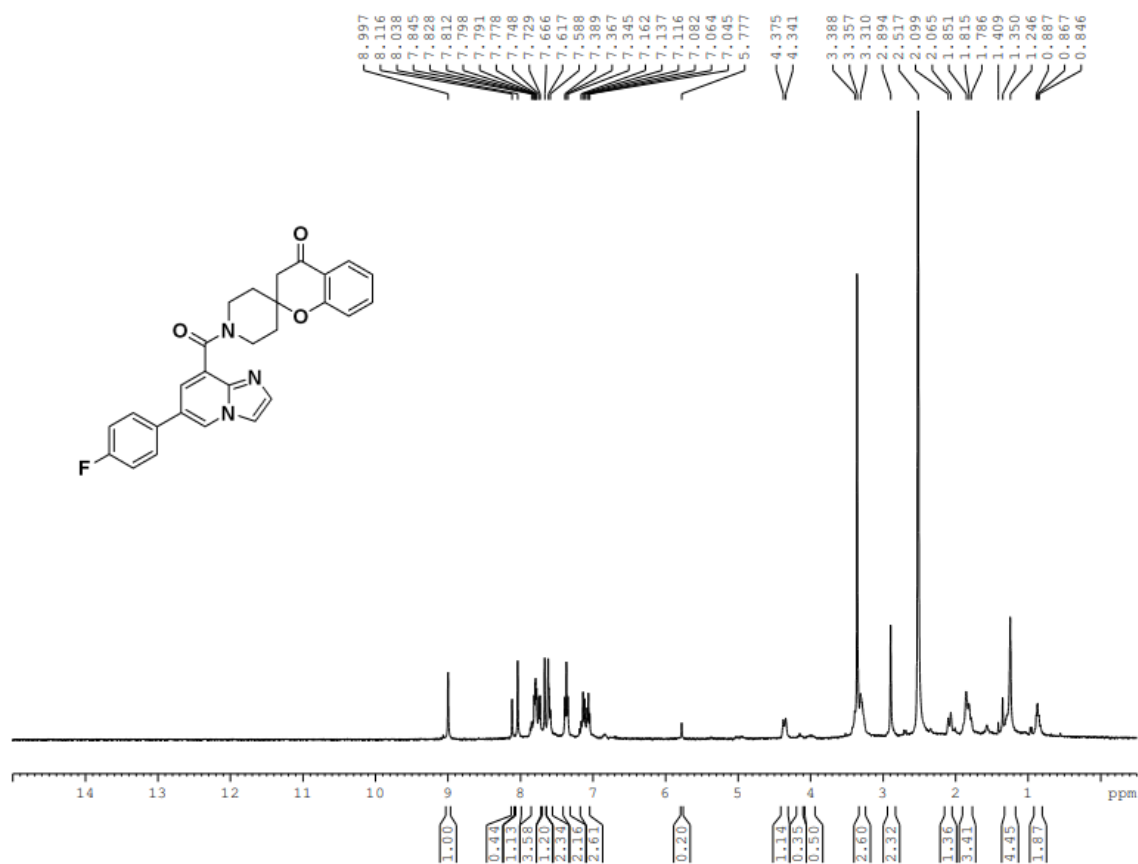
Peak Results
Channel: SQ 1: MS Scan

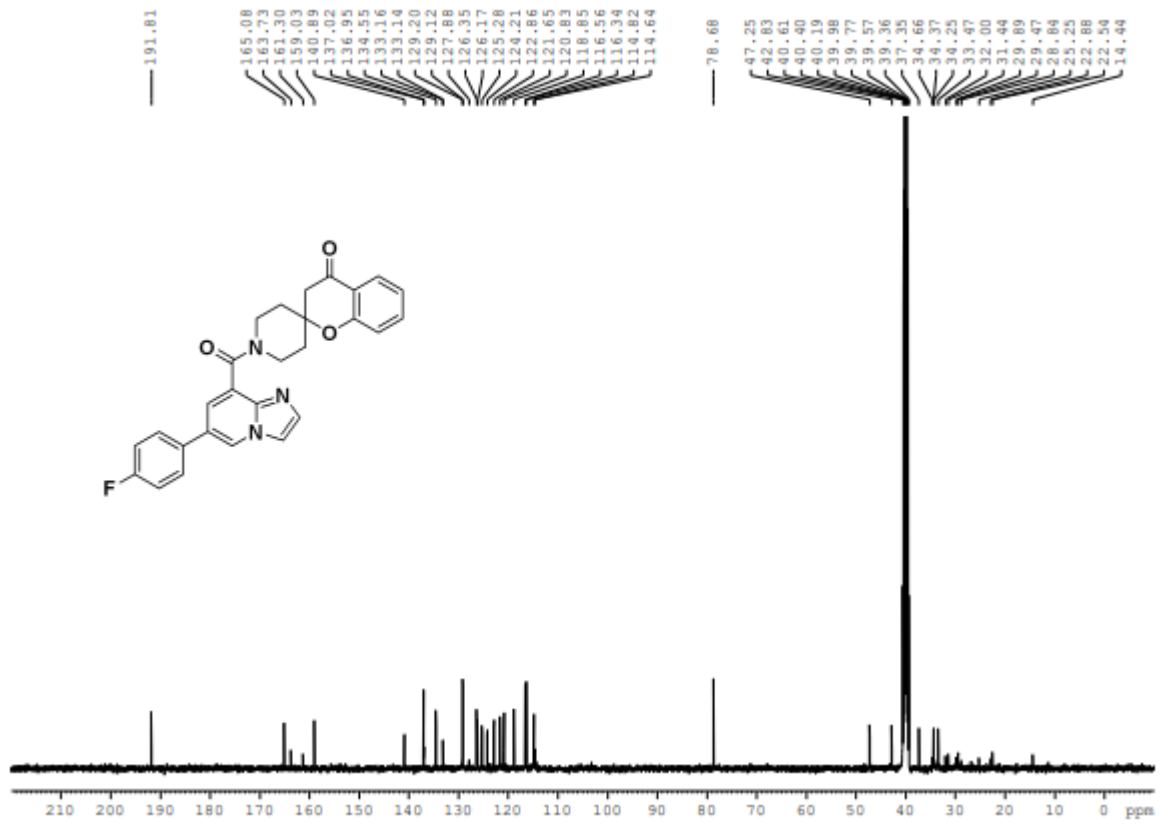
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.738	544.78	119197901	100.00	SQ 1: MS Scan	MS TIC

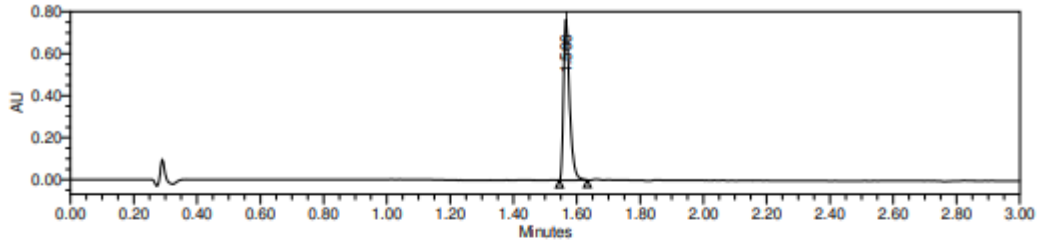
Match Plot



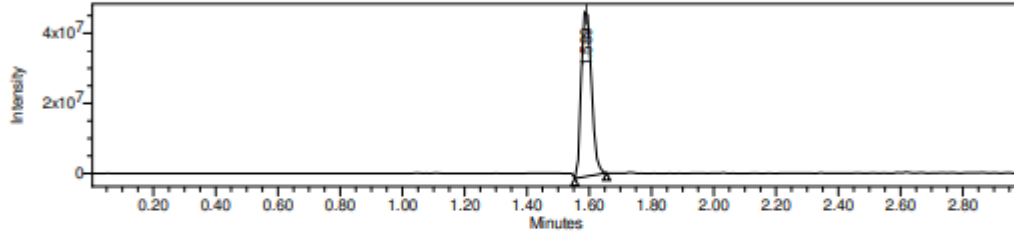
^1H NMR, ^{13}C NMR and LCMS of compound 11viii







Channel Name 254.0nm; Channel PDA Spectrum



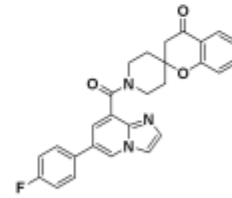
Channel Name MS TIC; Channel SQ 1: MS Scan

Peak Results
Channel: PDA Spectrum

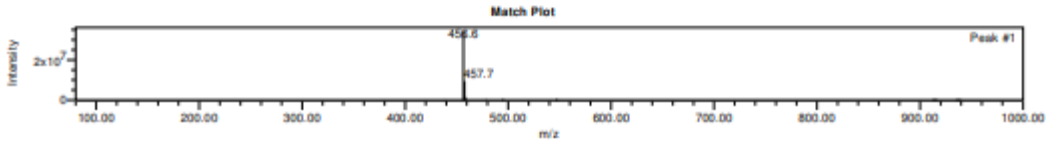
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.566	768136	1025361	100.00	PDA Spectrum	254.0nm

Peak Results
Channel: SQ 1: MS Scan

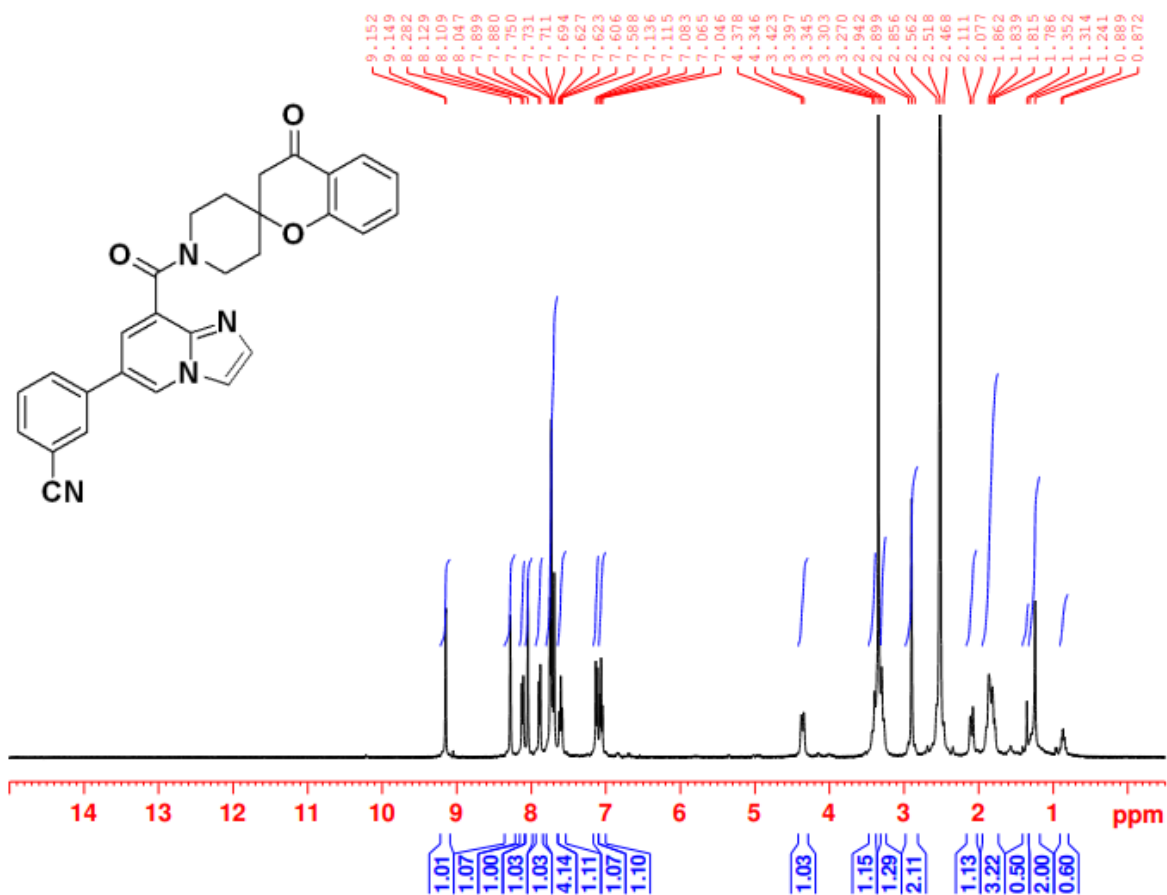
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.589	456.61	108250666	100.00	SQ 1: MS Scan	MS TIC

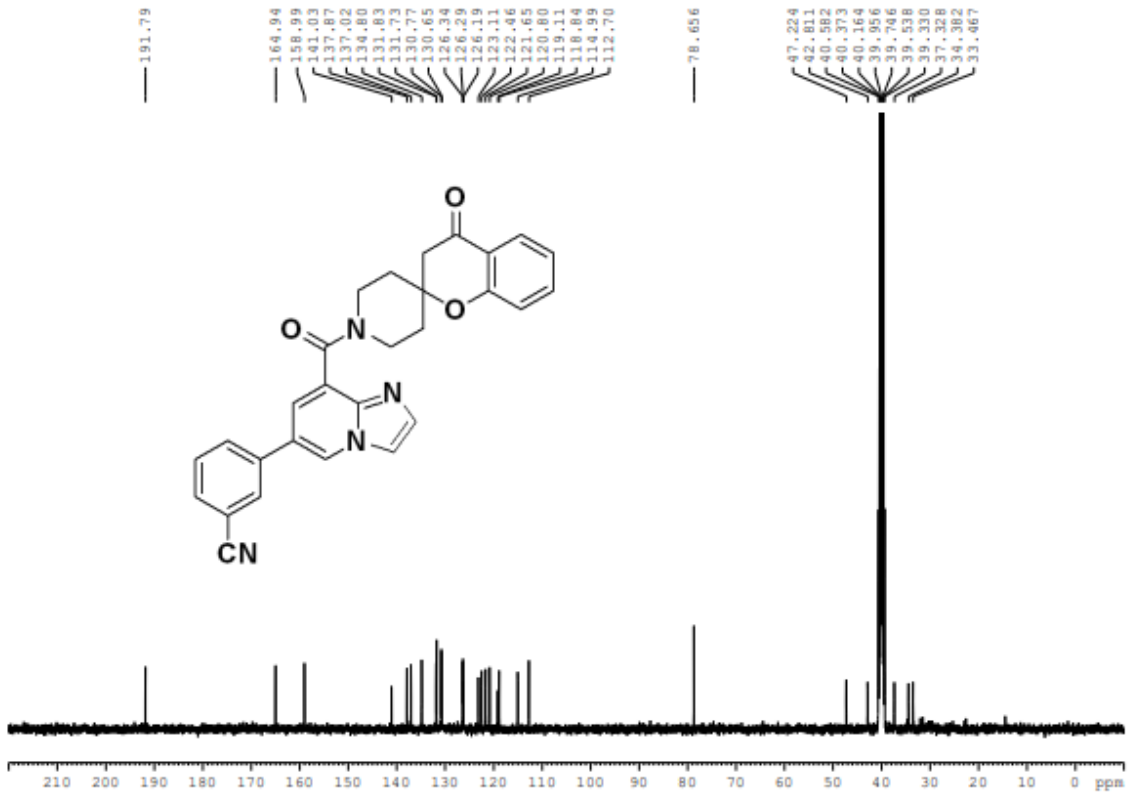


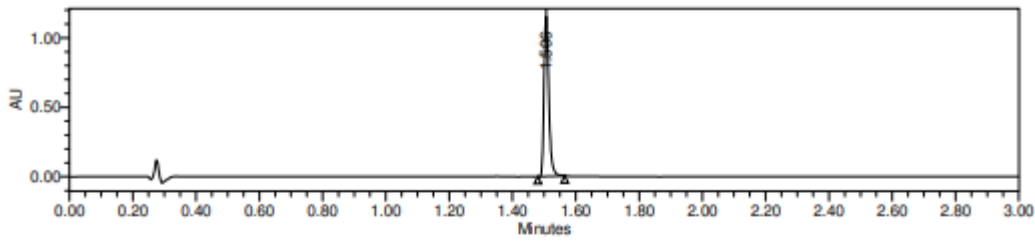
M.W-455.49



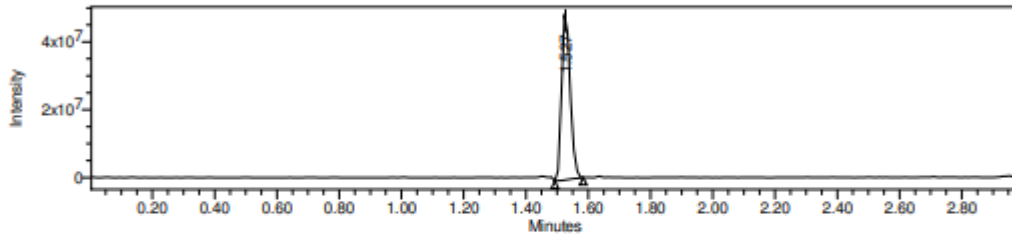
^1H NMR, ^{13}C NMR and LCMS of compound 11ix







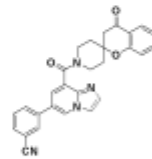
Channel Name 254.0nm; Channel PDA Spectrum



Channel Name MS TIC; Channel SQ 1: MS Scan

Peak Results
Channel: PDA Spectrum

Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.506	1149294	1219079	100.00	PDA Spectrum	254.0nm

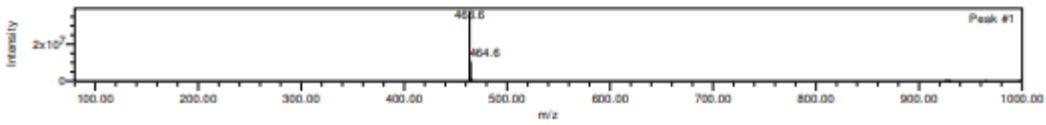


M.W-462.51

Peak Results
Channel: SQ 1: MS Scan

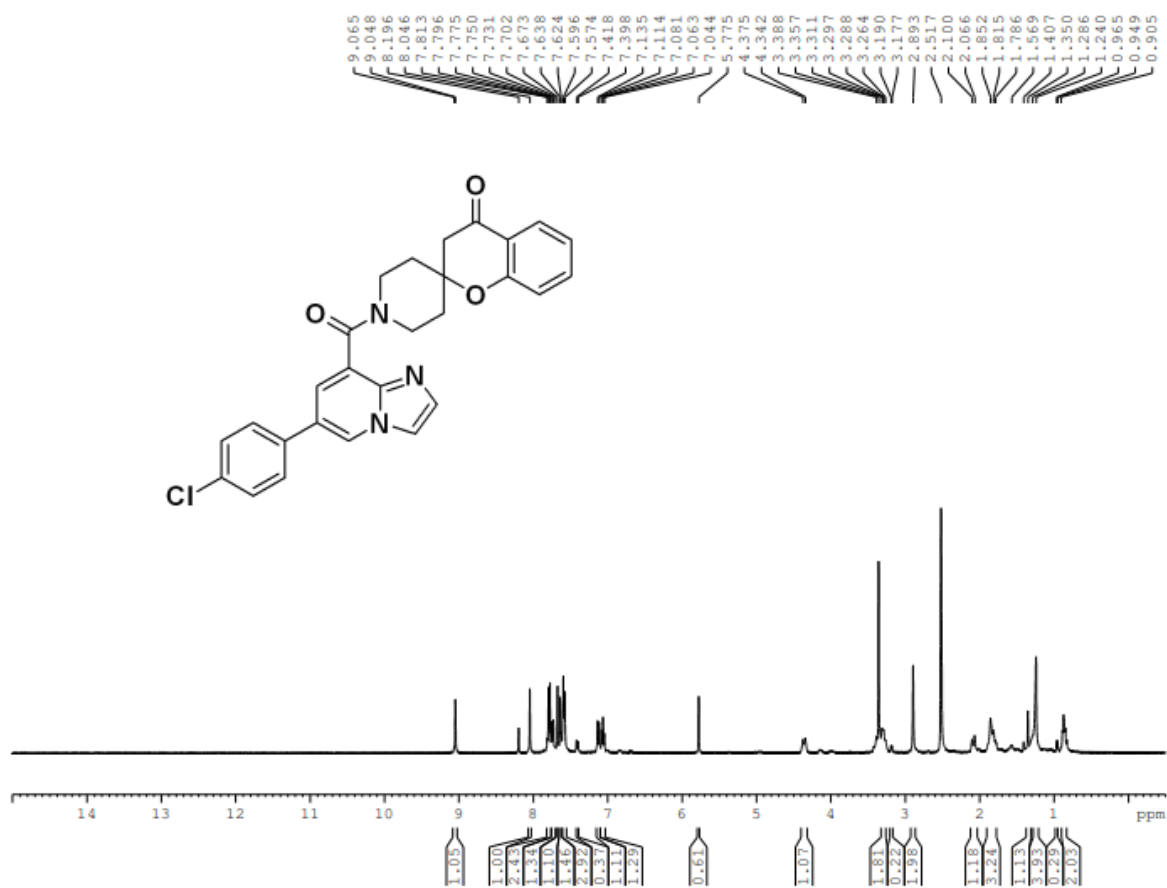
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.527	463.61	94101598	100.00	SQ 1: MS Scan	MS TIC

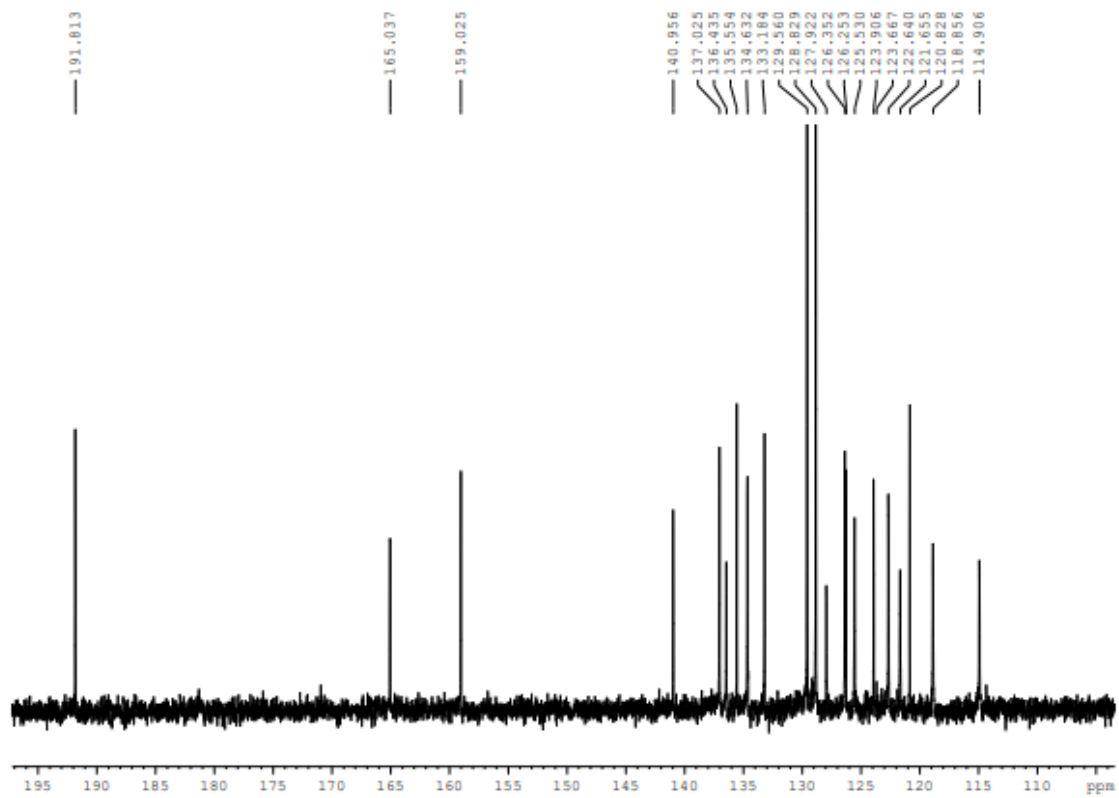
Match Plot

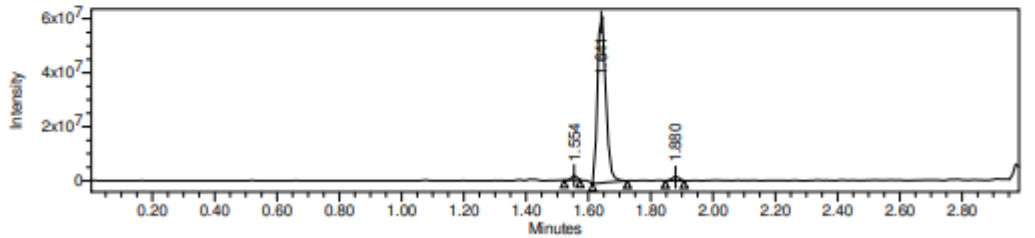
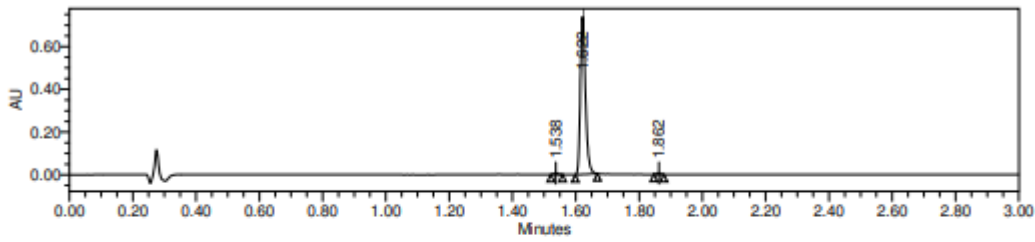


Base Peak 463.61 Channel Description 1: 80.00-1000.00 ES+, Centroid, CV=30 - AVG (1.7;2.9;0.4;1.4) x 69.000 - AVG (1.7;2.9;0.4;1.4) x 69.000 Retention Time 1.527

^1H NMR, ^{13}C NMR and LCMS of compound 11x





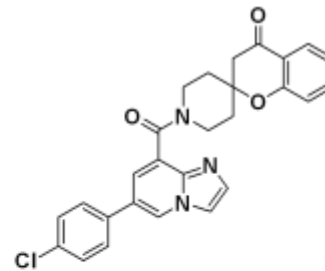


Peak Results
Channel: PDA Spectrum

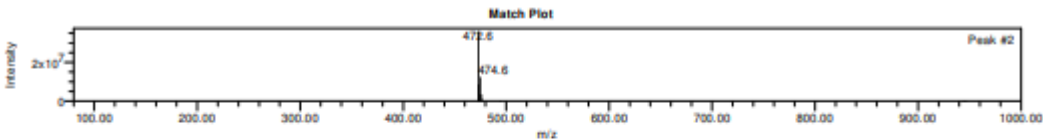
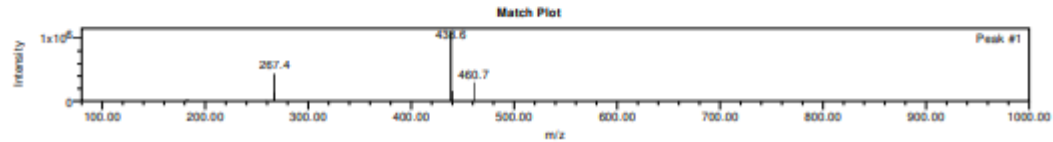
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name
1	1.538	7192	6563	0.79	PDA Spectrum	256.0nm
2	1.622	735418	822591	98.49	PDA Spectrum	256.0nm
3	1.862	6555	6037	0.72	PDA Spectrum	256.0nm

Peak Results
Channel: SQ 1: MS Scan

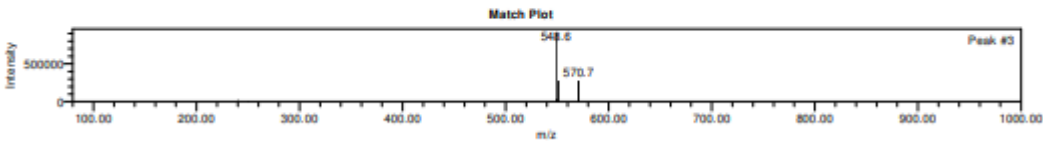
Retention Time (min)	Base Peak (m/z)	Height (μV)	Area (μV*sec)	% Area	Channel	Channel Name	
1	1.554	438.61	1767776	2138851	1.78	SQ 1: MS Scan	MS TIC
2	1.641	472.61	62755107	115746069	96.39	SQ 1: MS Scan	MS TIC
3	1.880	548.63	1426232	2200136	1.83	SQ 1: MS Scan	MS TIC



M.W-471.94



Base Peak 472.61 Channel Description 1: 80.00-1000.00 ES+, Centroid, CV=30 - AVG (2.0:2.9;0.3:1.4) x 20.000 - AVG (2.0:2.9;0.3:1.4) x 40.000 Retention Time 1.641



Base Peak 548.63 Channel Description 1: 80.00-1000.00 ES+, Centroid, CV=30 - AVG (2.0:2.9;0.3:1.4) x 20.000 - AVG (2.0:2.9;0.3:1.4) x 40.000 Retention Time 1.880