

Supporting information

An Expedient Approach to Highly Enantioenriched Cyclic Nitrones Mediated by Robust and Recoverable C₃-Symmetric Cinchonine-Squaramide Catalysts

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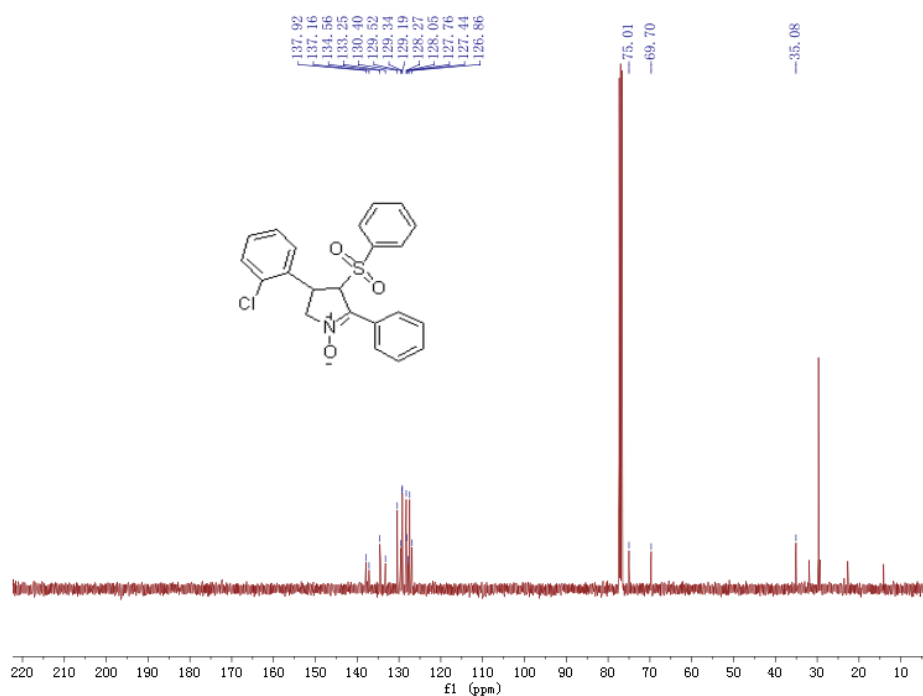
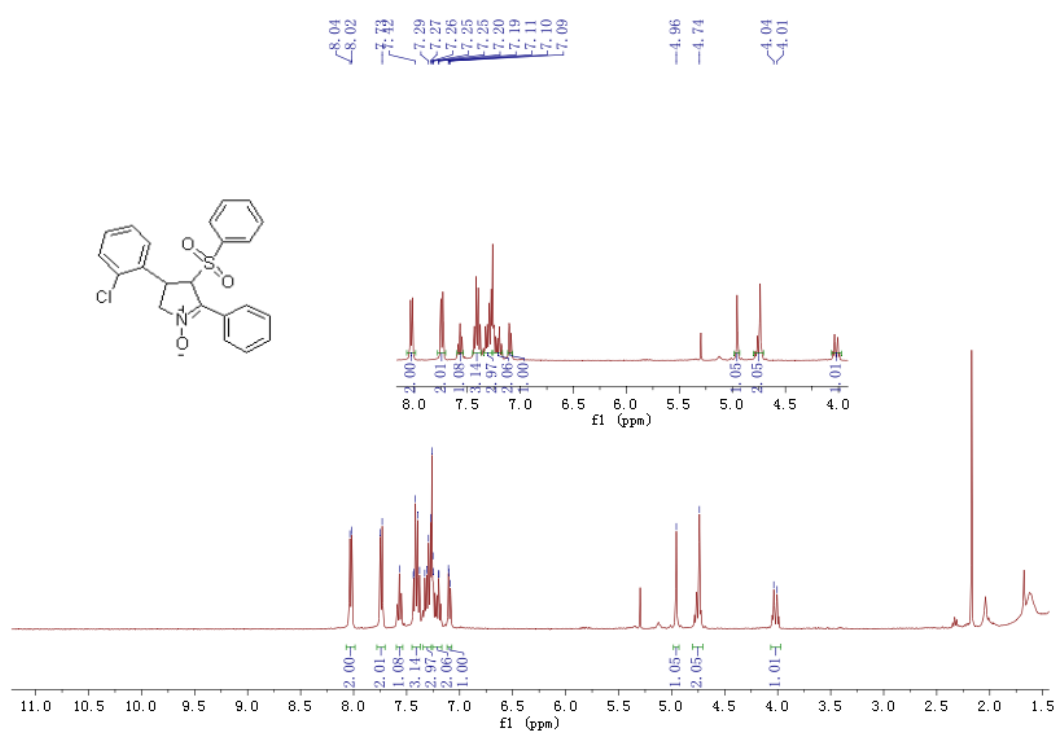
cdong@whu.edu.cn

Content

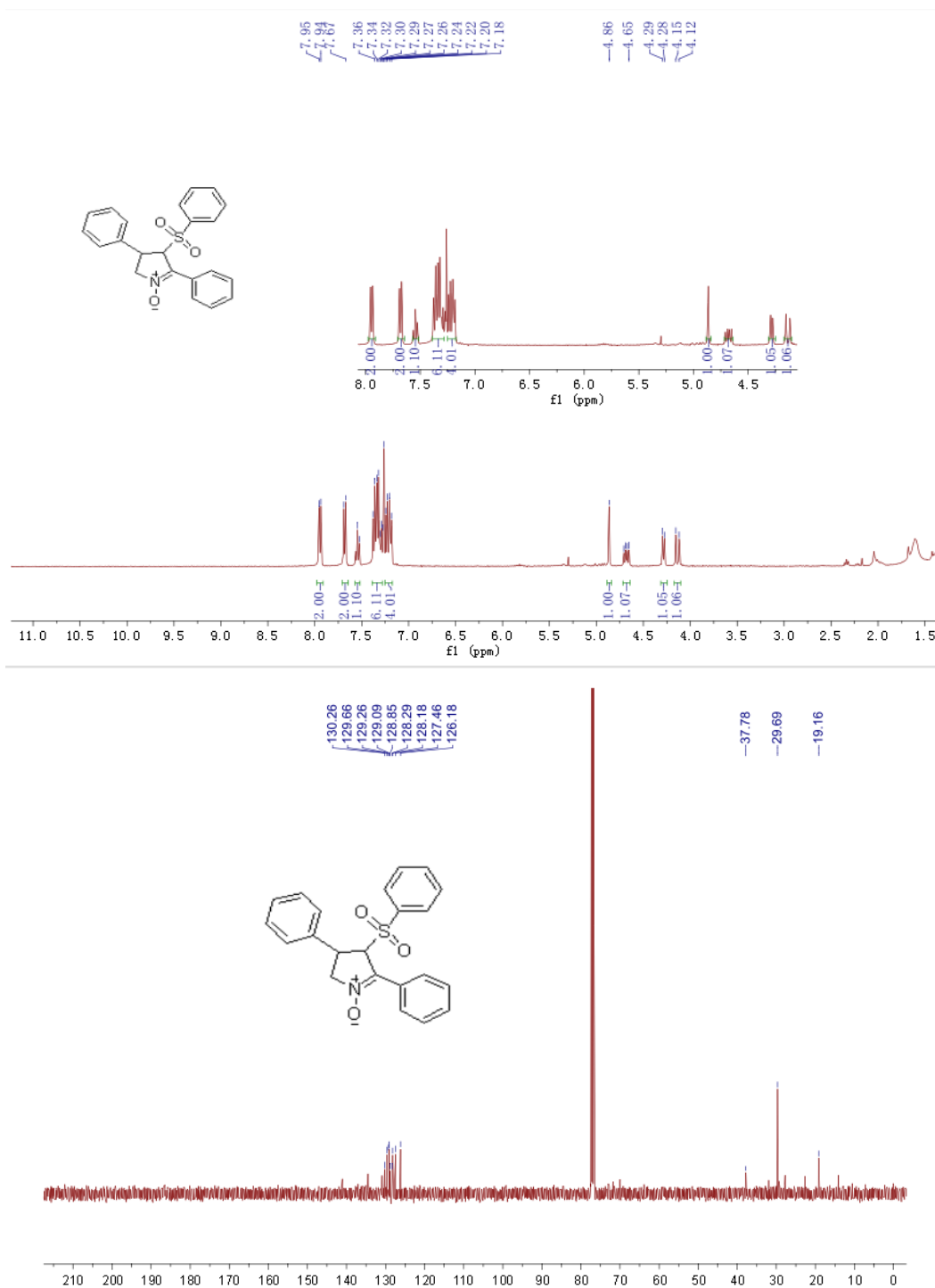
NMR Spectra of Products 5	S2
HPLC of 5	S14

NMR spectra of products

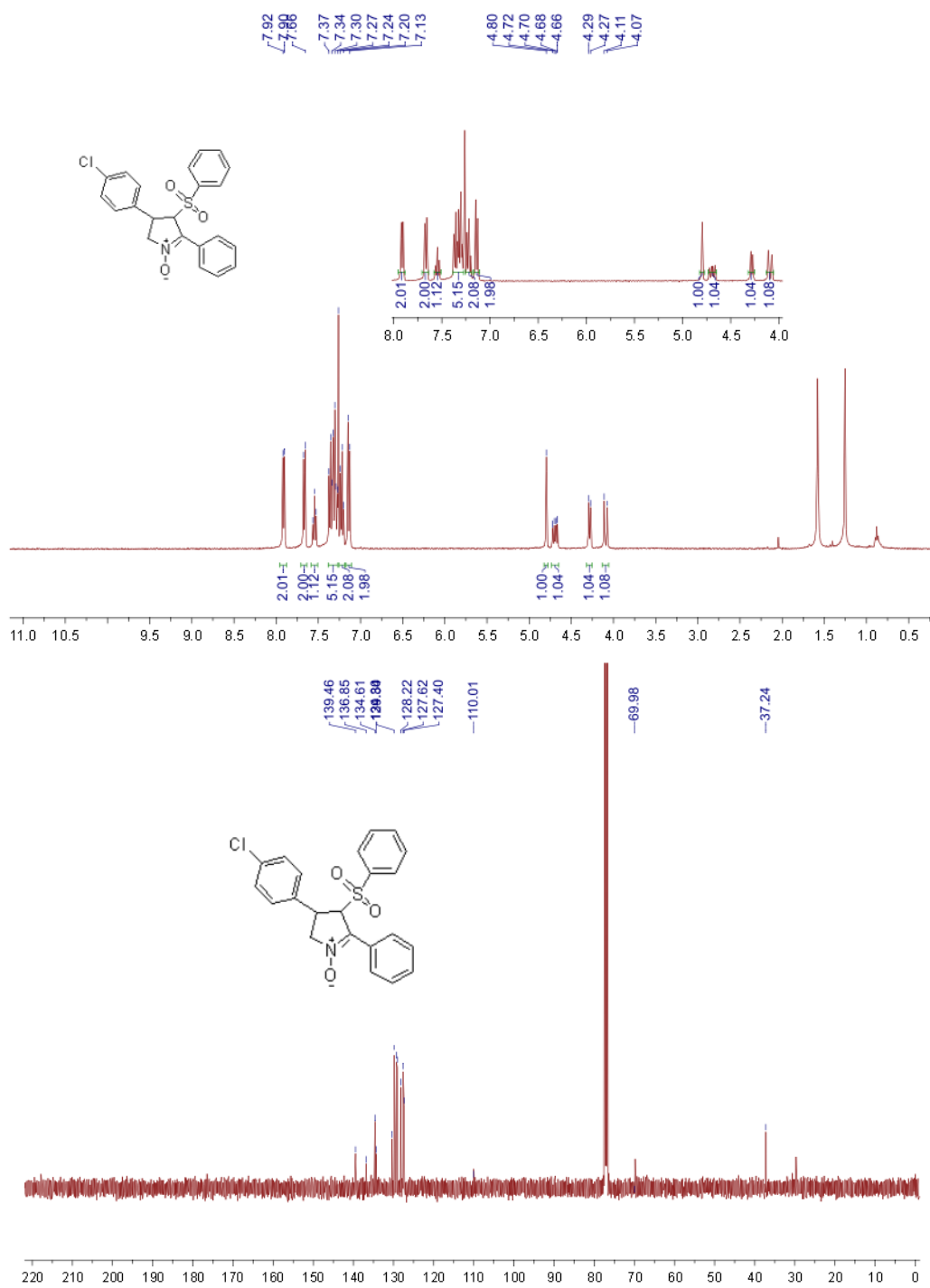
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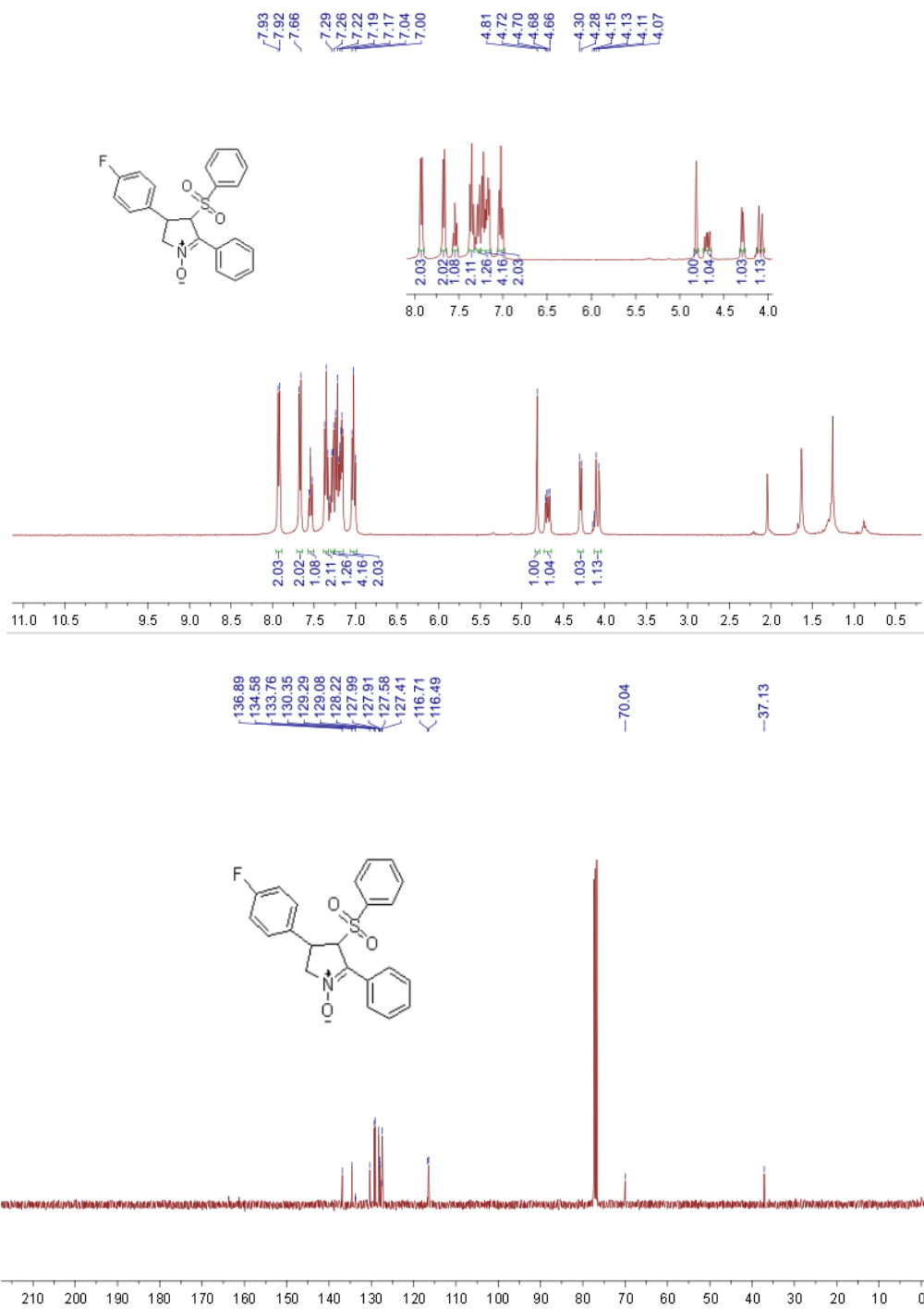
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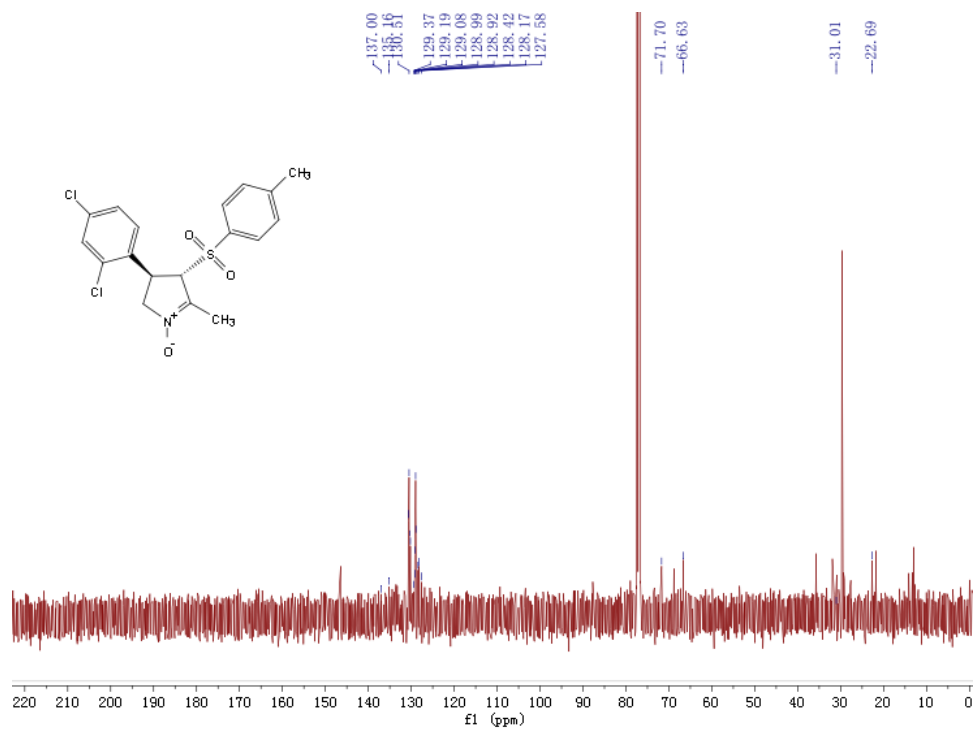
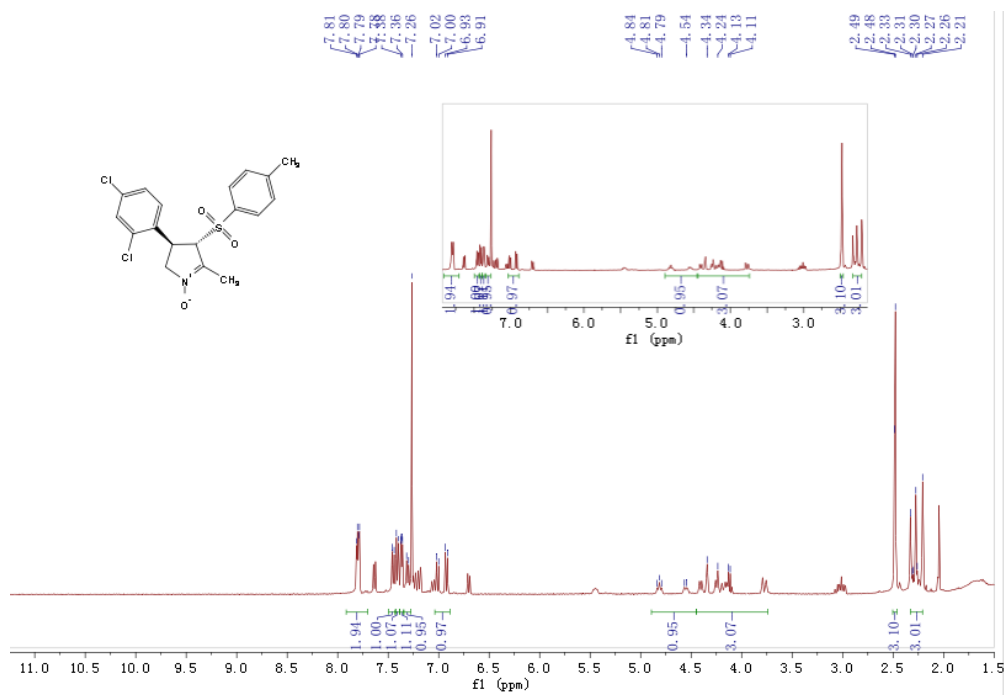
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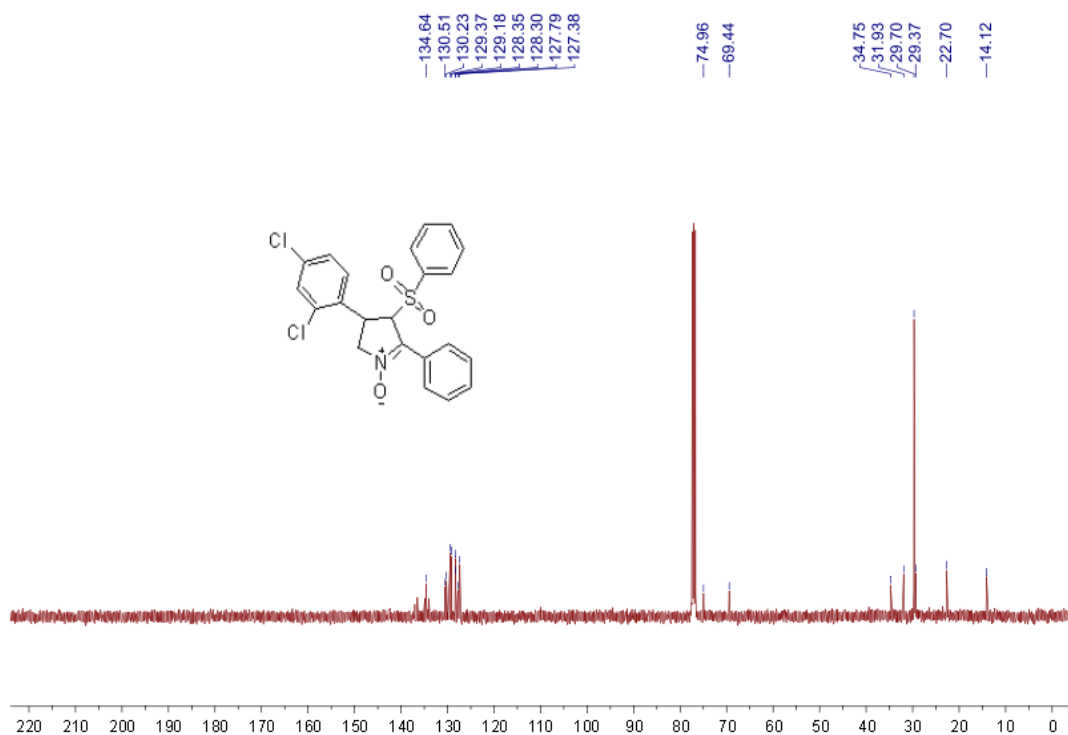
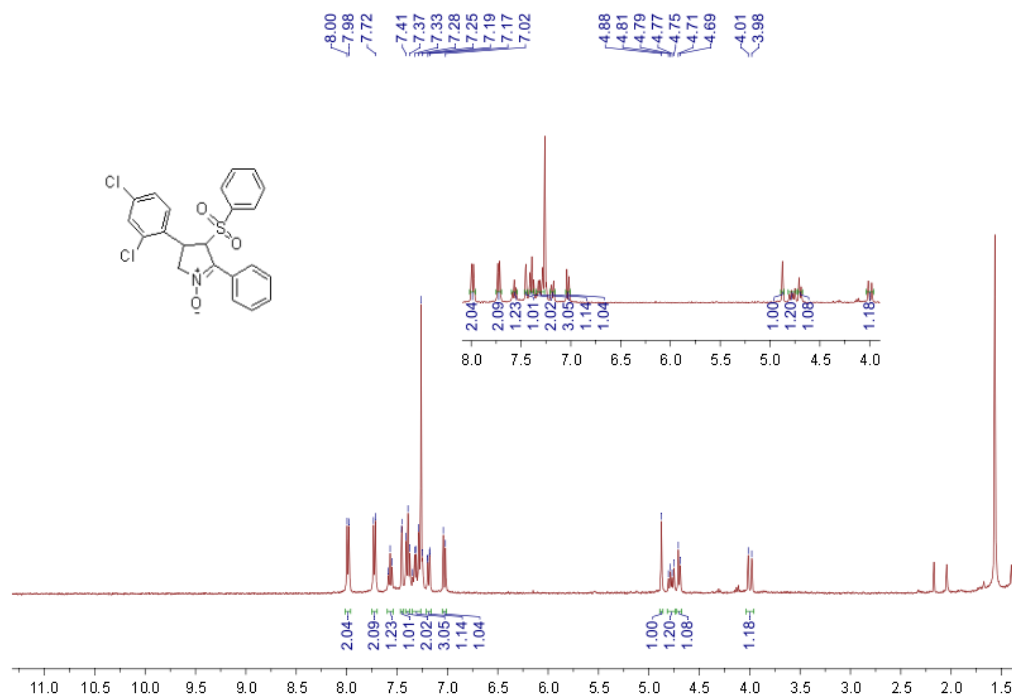
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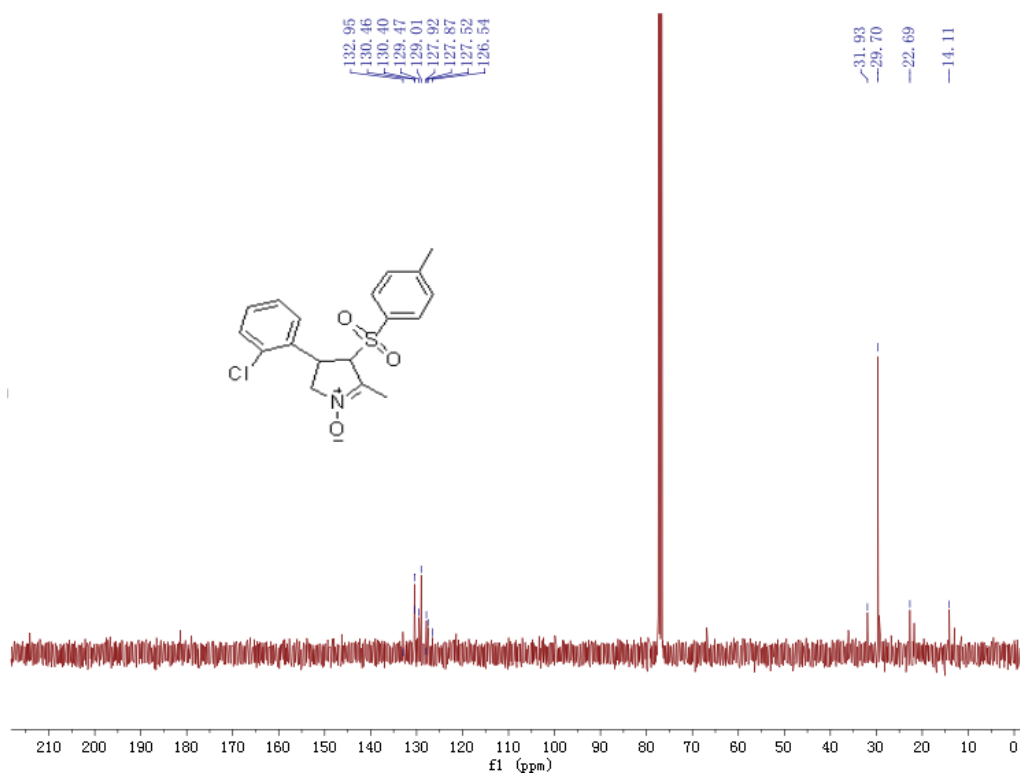
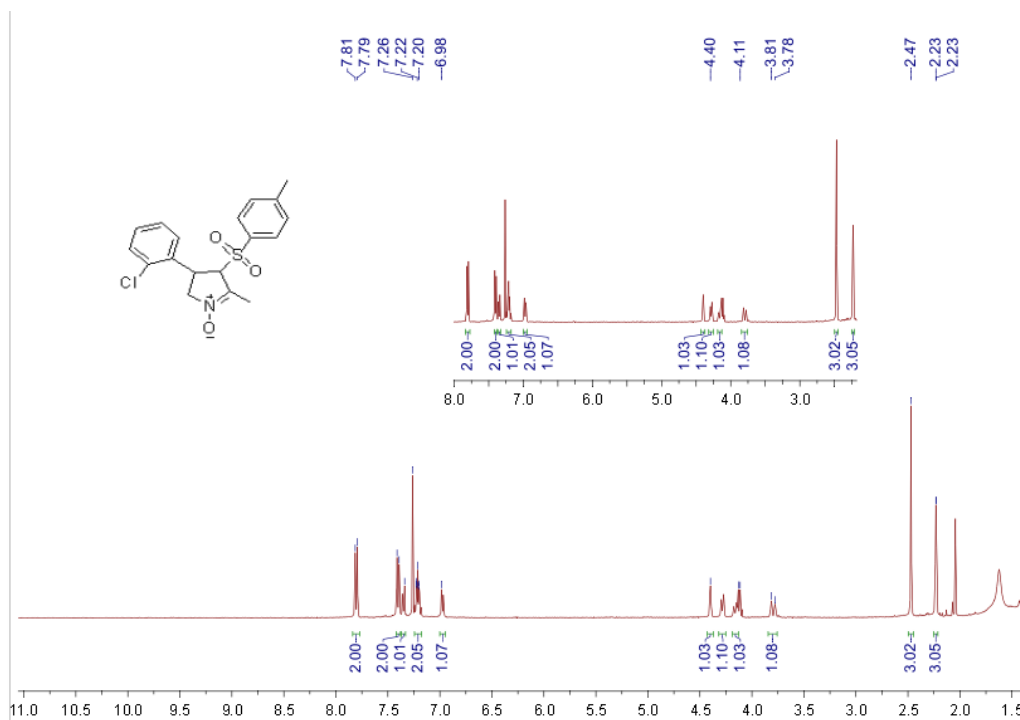
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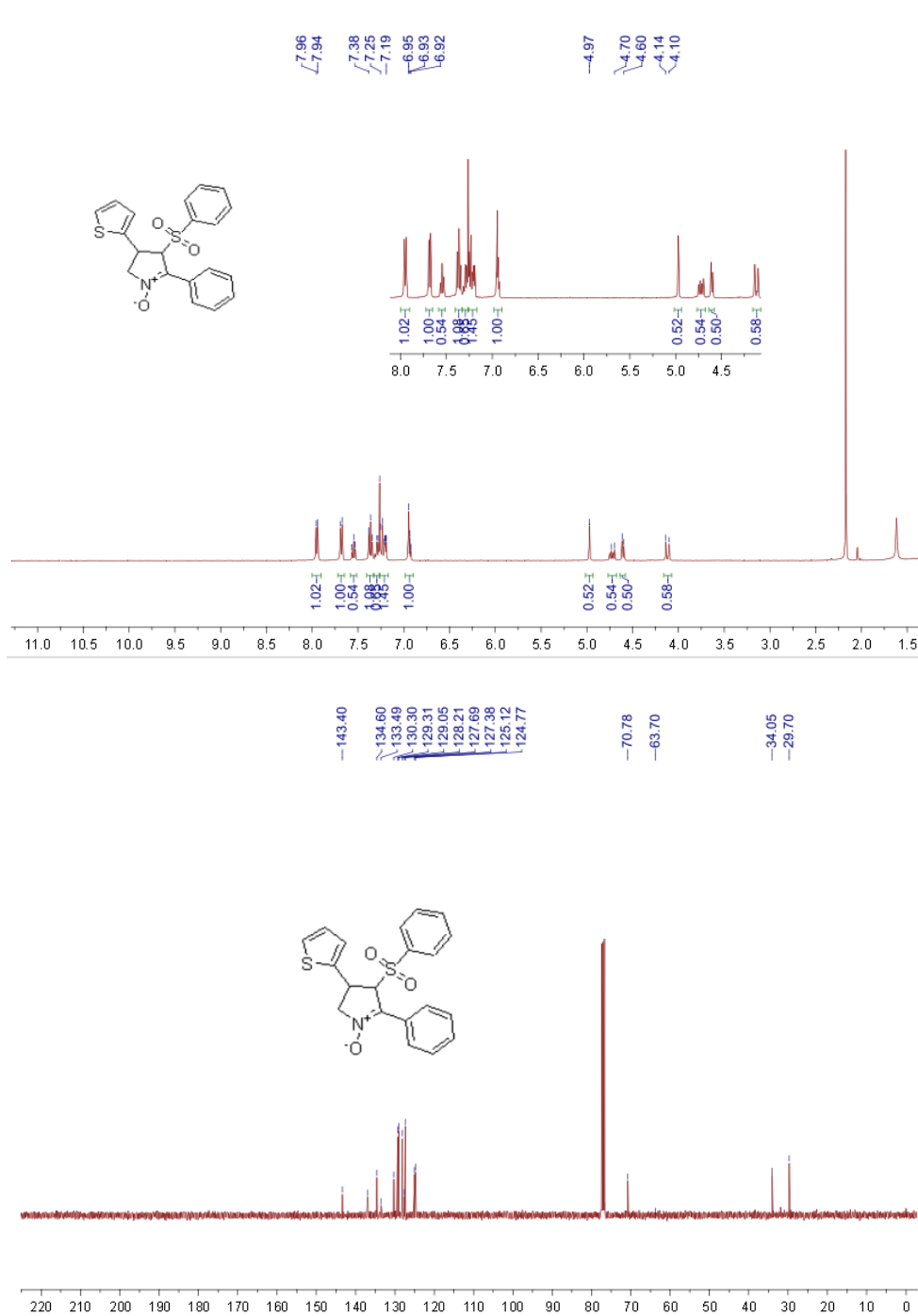
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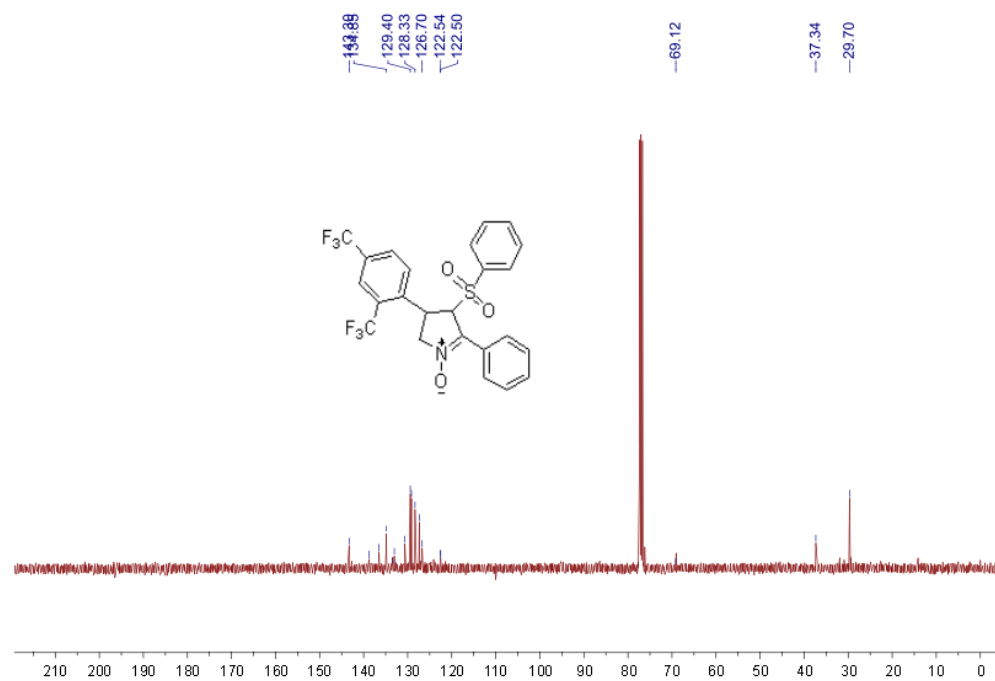
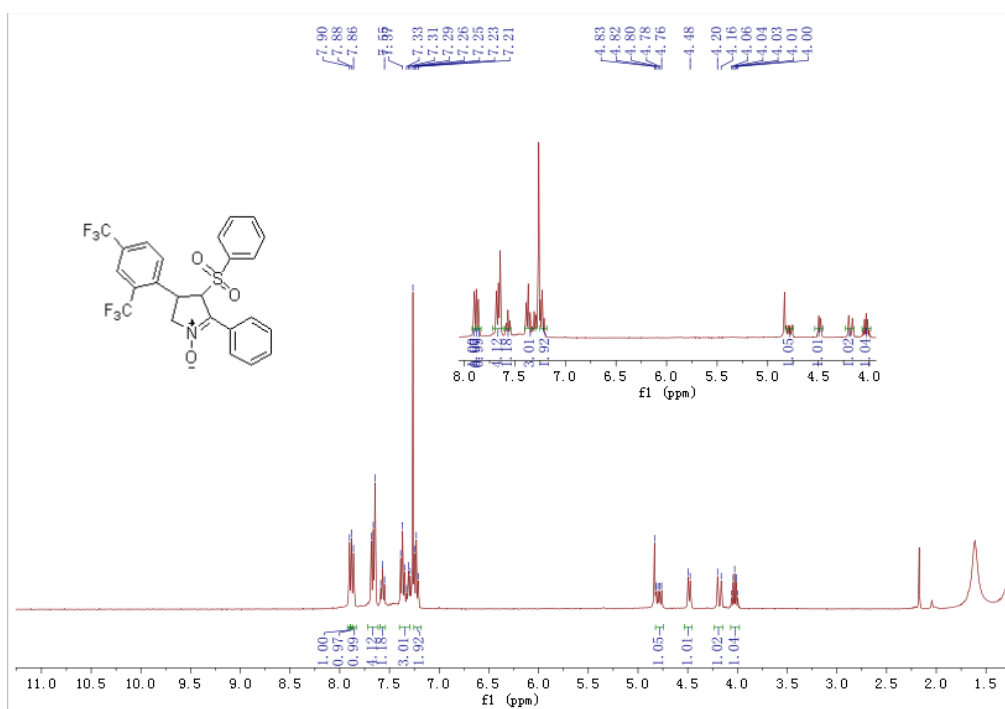
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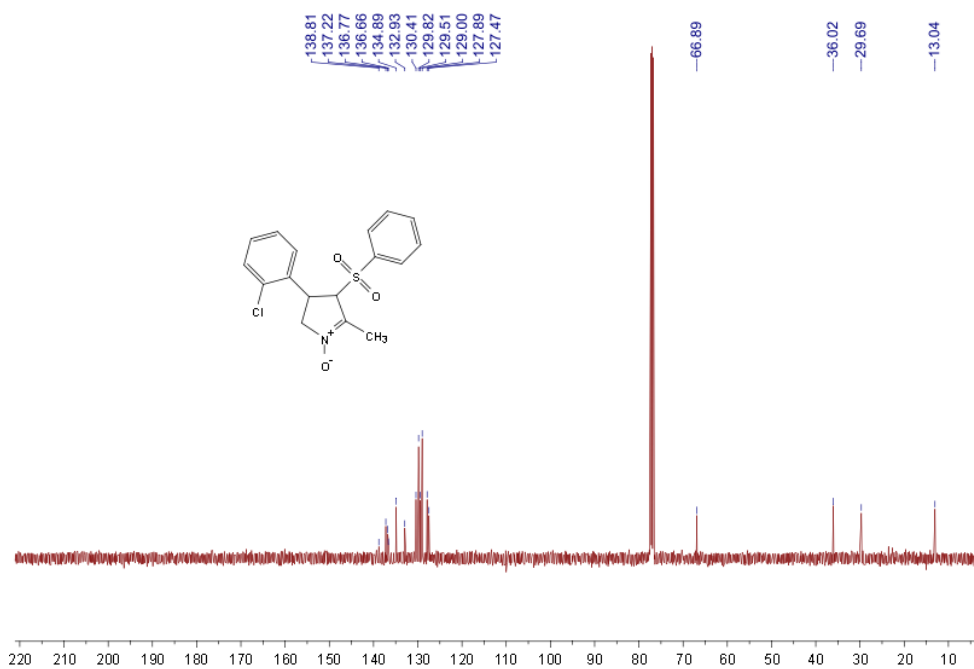
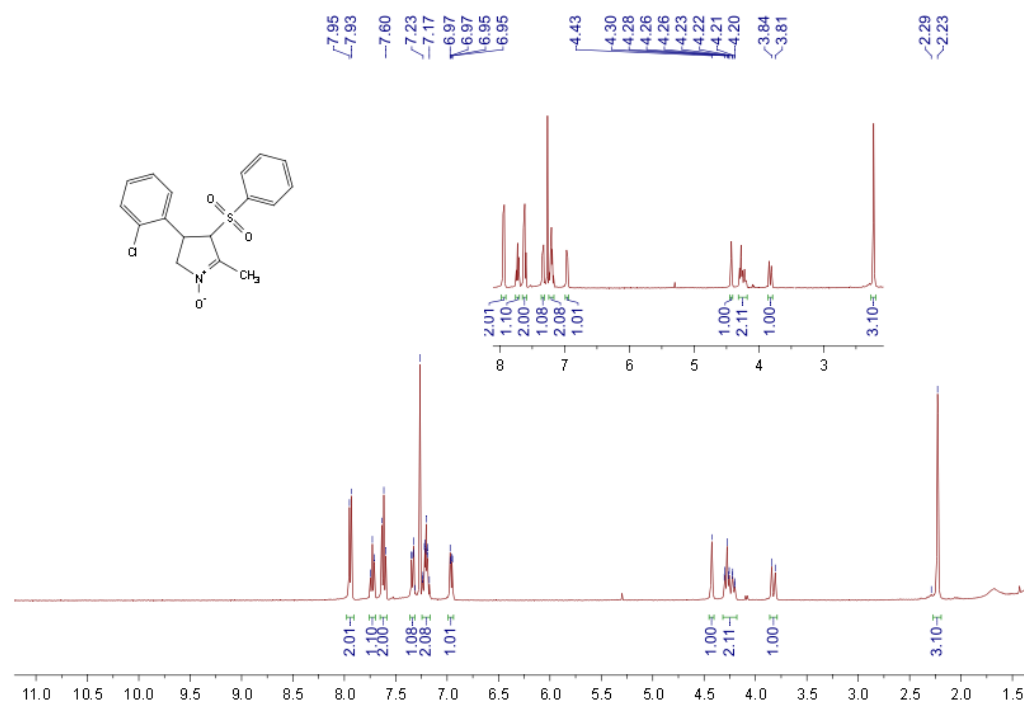
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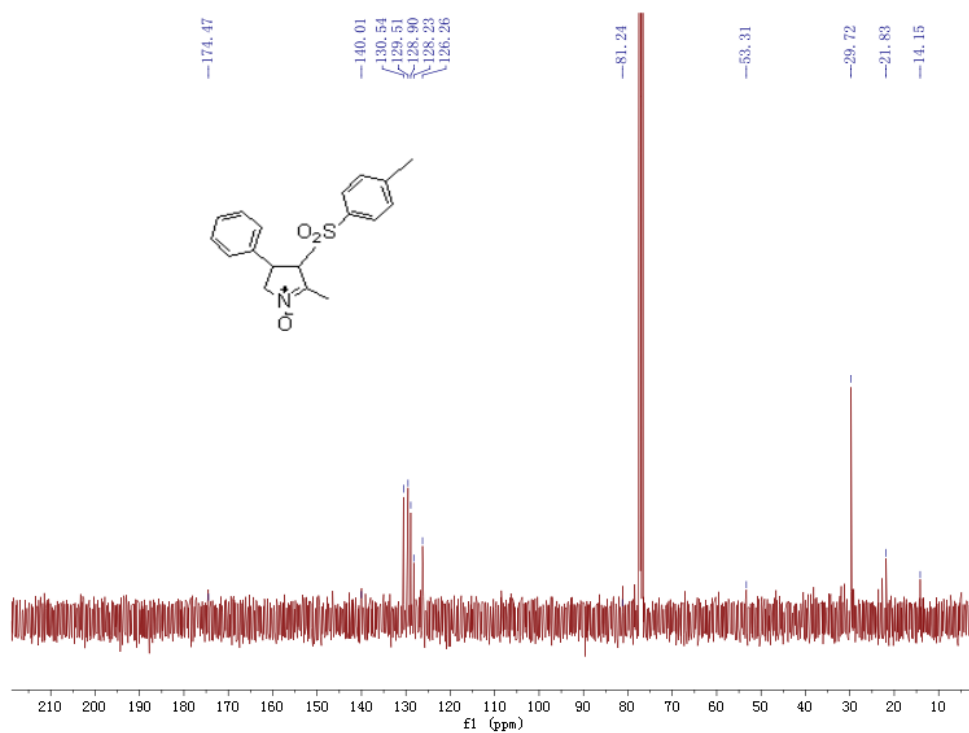
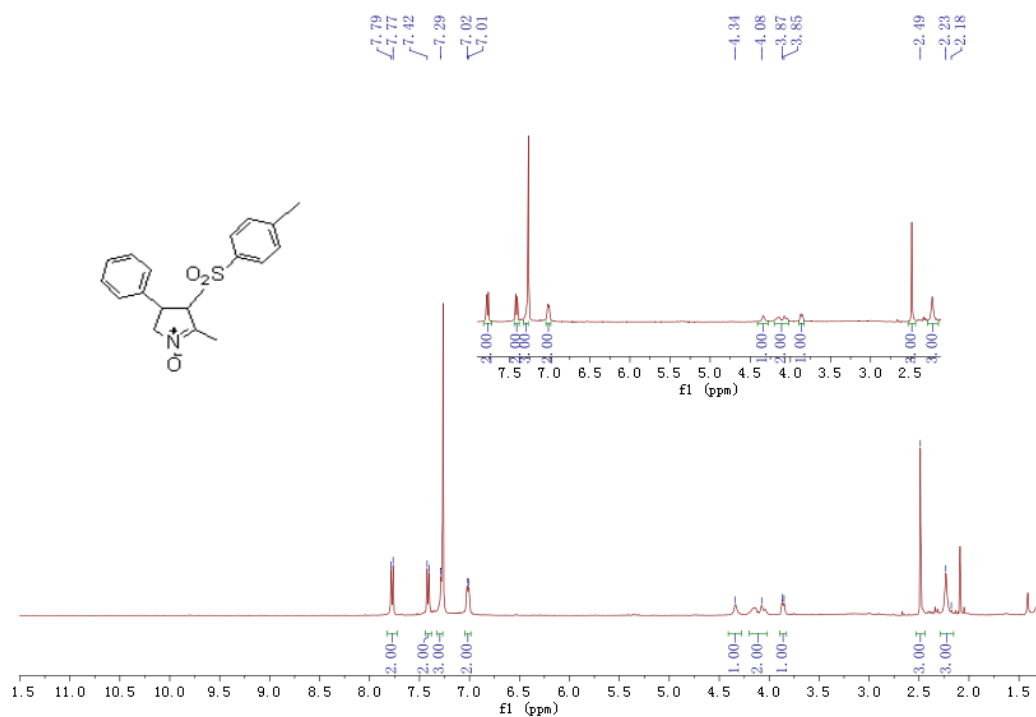
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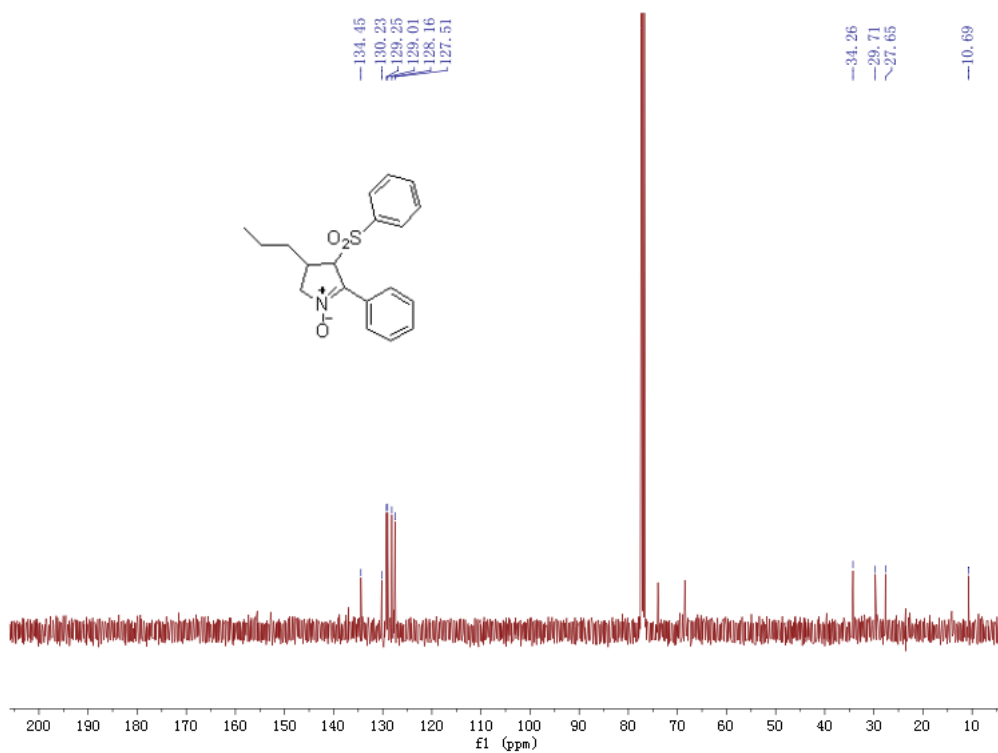
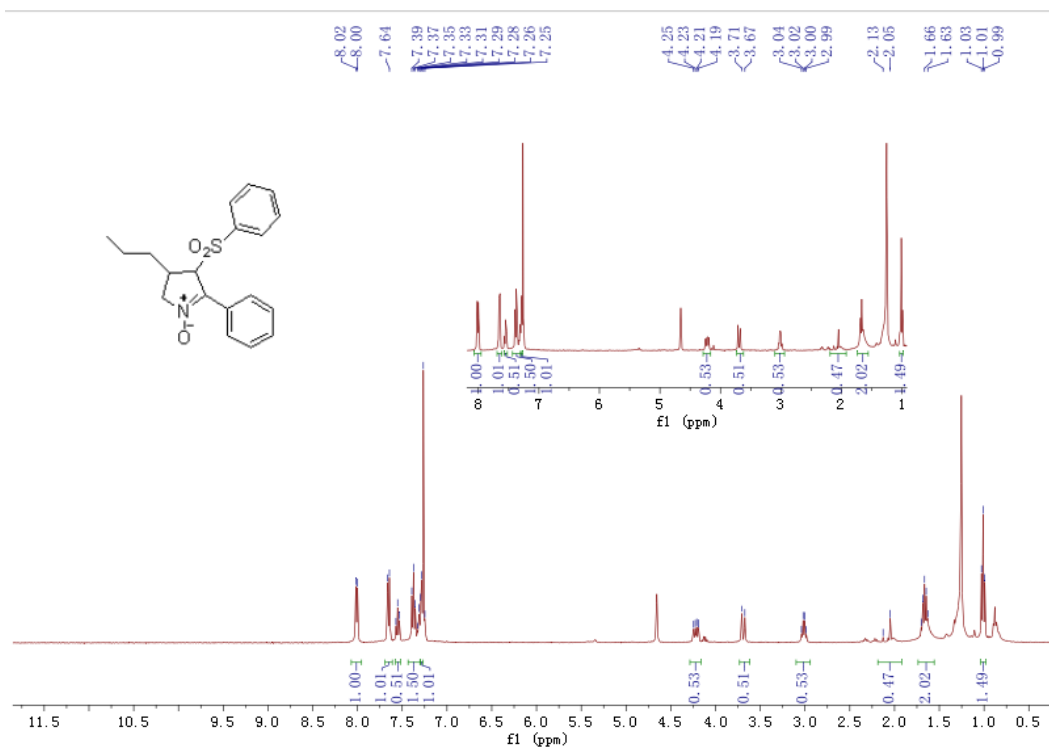
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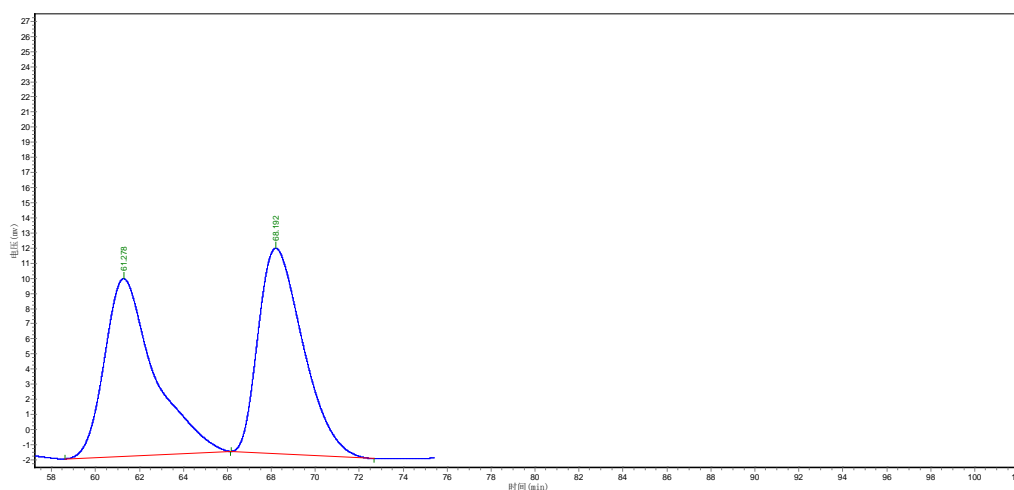
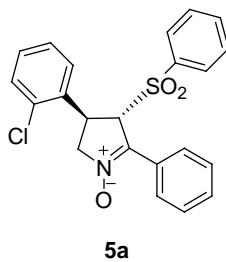
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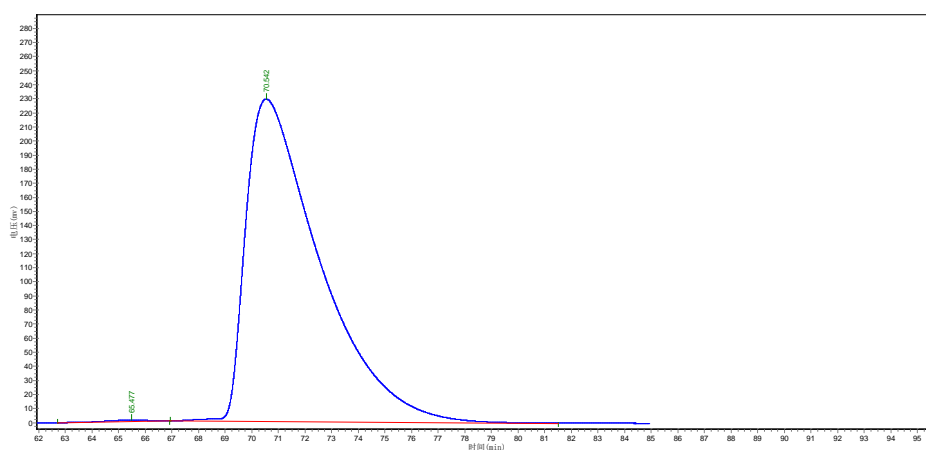
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HPLC spectra of products

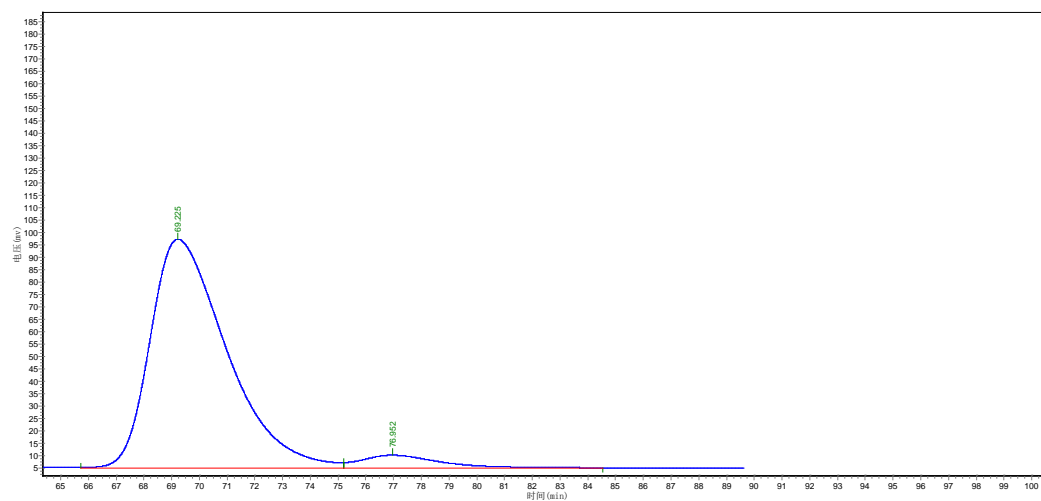


Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	61.278	11747.470	1847255.750	49.2102
2	68.192	13587.118	1924237.375	50.7898

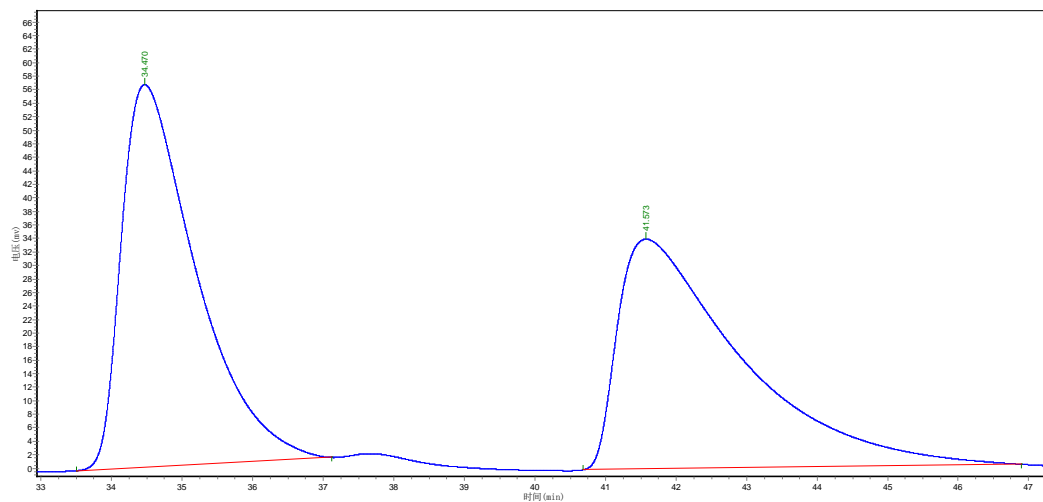
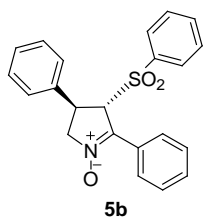


Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	65.477	610.950	66869.750	0.1486
2	70.542	230237.516	44935288.000	99.8514

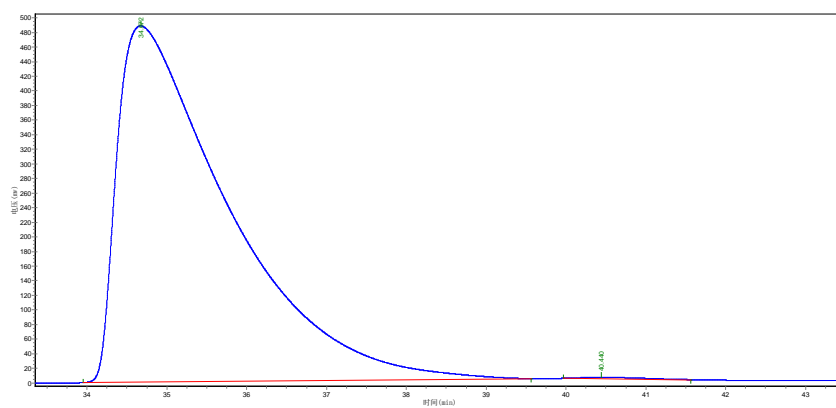
5a catalyzed by C₃-symmetric cinchonidine-squaramide 1d



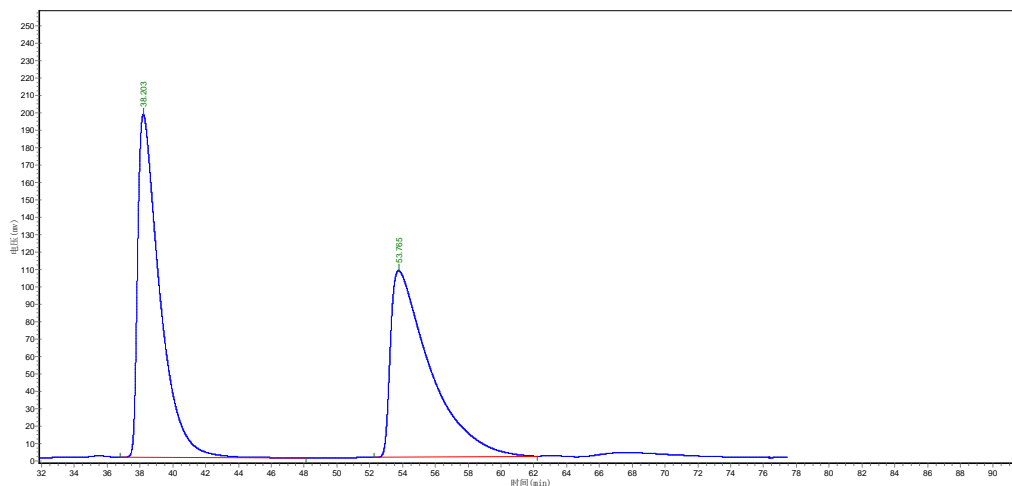
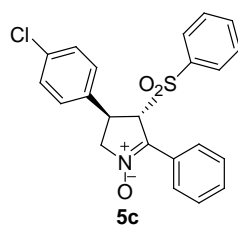
峰号	峰名	保留时间	峰高	峰面积	含量
1	69.225	92064.453	17567602.000	97.3012	
2	76.952	3366.101	487257.969	2.6988	



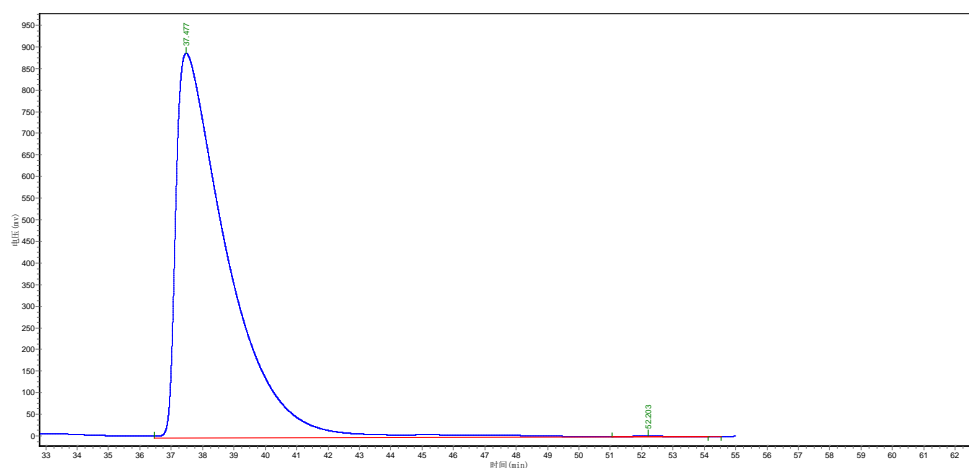
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	34.470	56595.398	4157207.000	50.2320
2	41.573	34013.254	4118813.750	49.7680



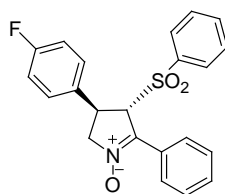
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	34.672	487907.188	47251792.000	99.7521
2	40.440	1783.506	117410.383	0.2479



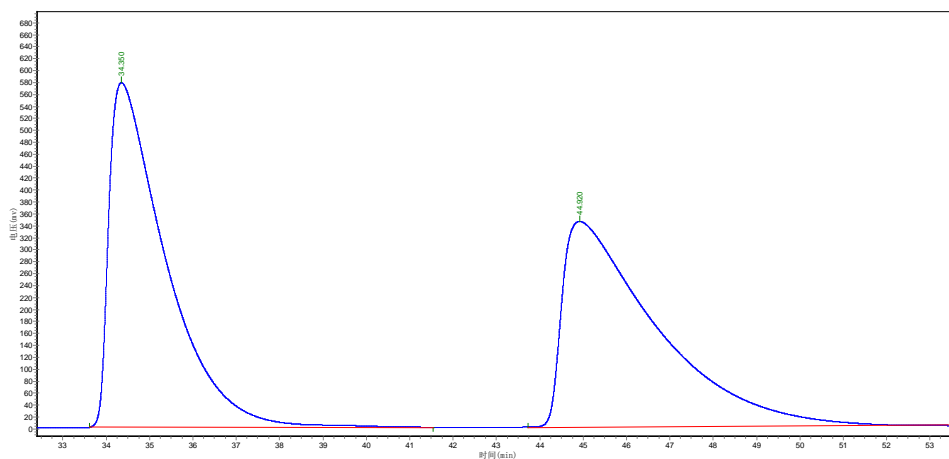
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	38.203	197158.281	18392066.000	50.7171
2	53.765	107219.813	17871980.000	49.2829



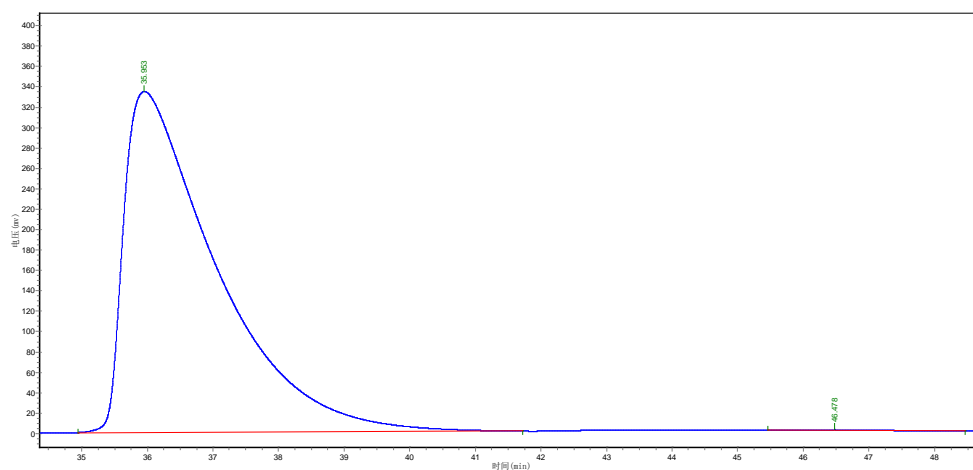
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	37.477	890029.313	101603544.000	99.8910
2	52.203	1449.909	110870.250	0.1090



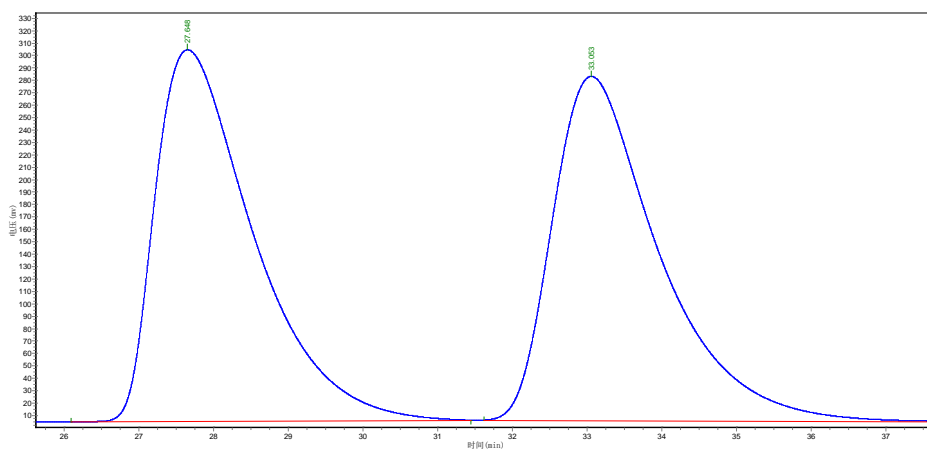
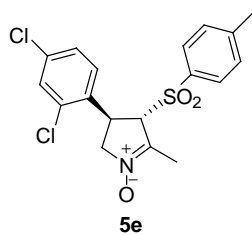
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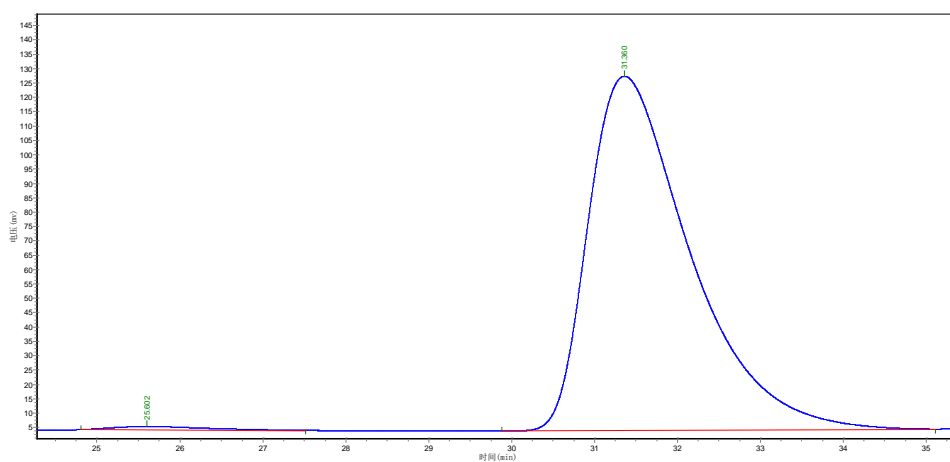
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	34.350	576731.813	52276004.000	50.4171
2	44.920	343751.625	51411068.000	49.5829



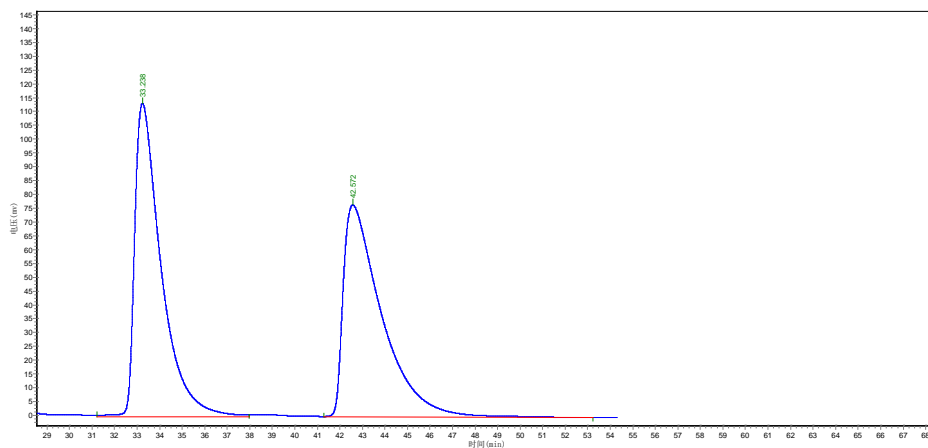
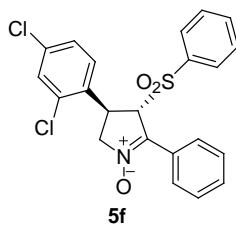
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	35.953	334452.969	32731796.000	99.8346
2	46.478	658.059	54216.836	0.1654



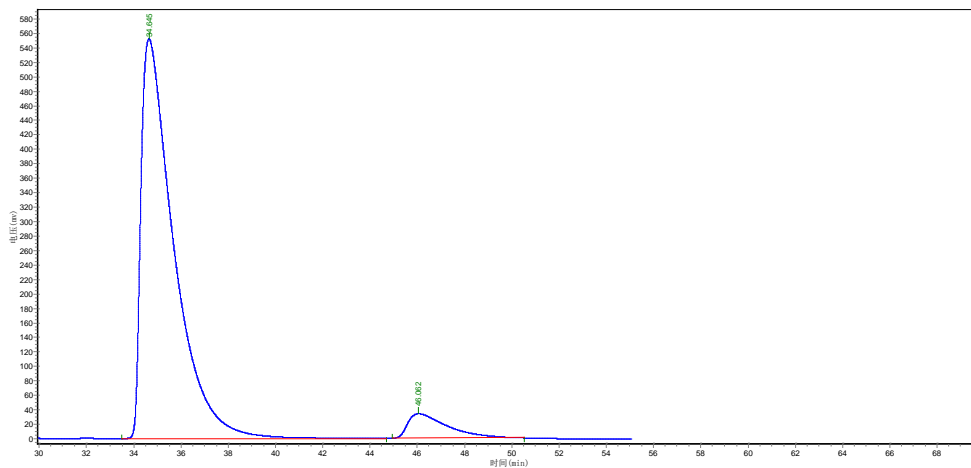
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1	27.648	299298.688	27260920.000	49.8503
2	33.053	277158.094	27424672.000	50.1497



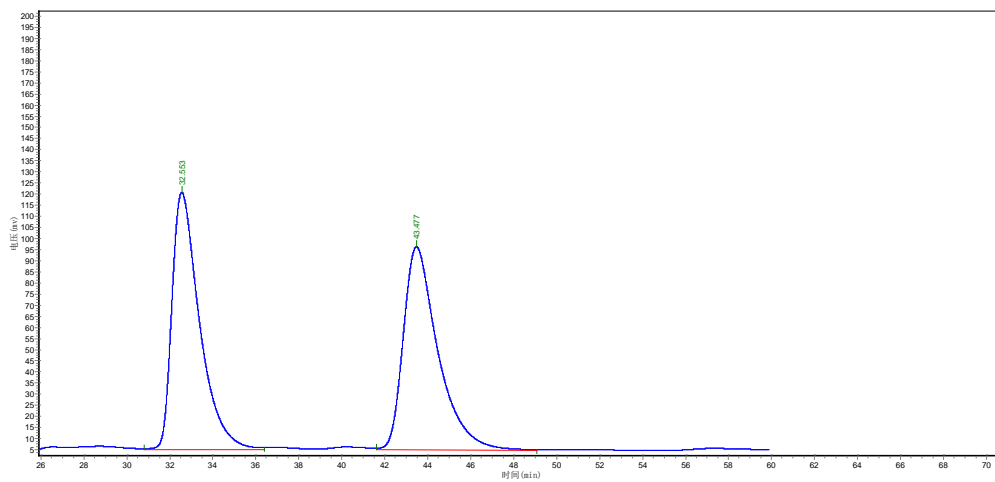
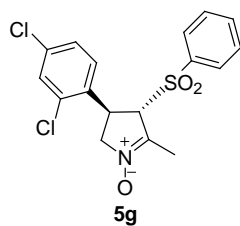
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	25.602	1194.819	95886.930	0.9046
2	31.360	123377.320	10504184.000	99.0954



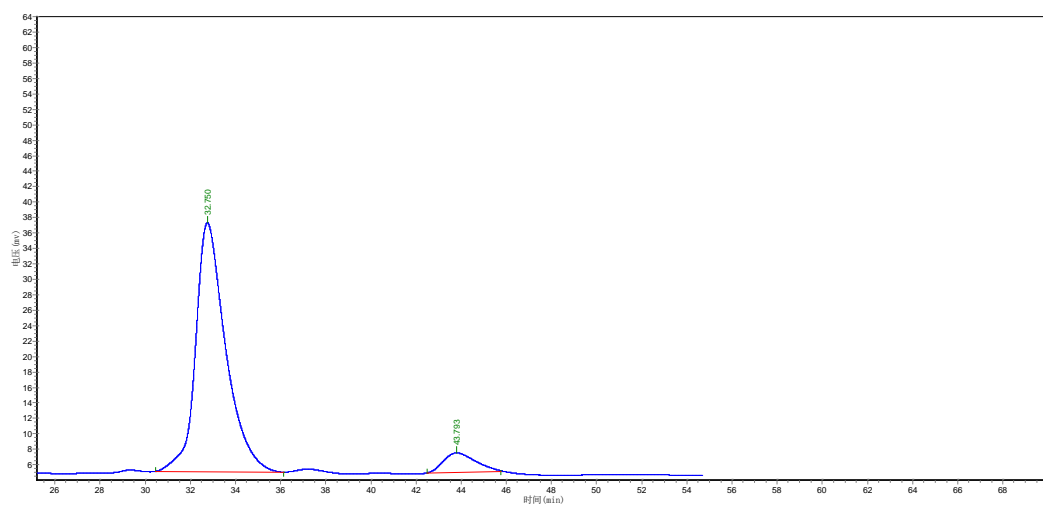
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1	33.238	113421.586	9265379.000	50.3635
2	42.572	76750.023	9131631.000	49.6365



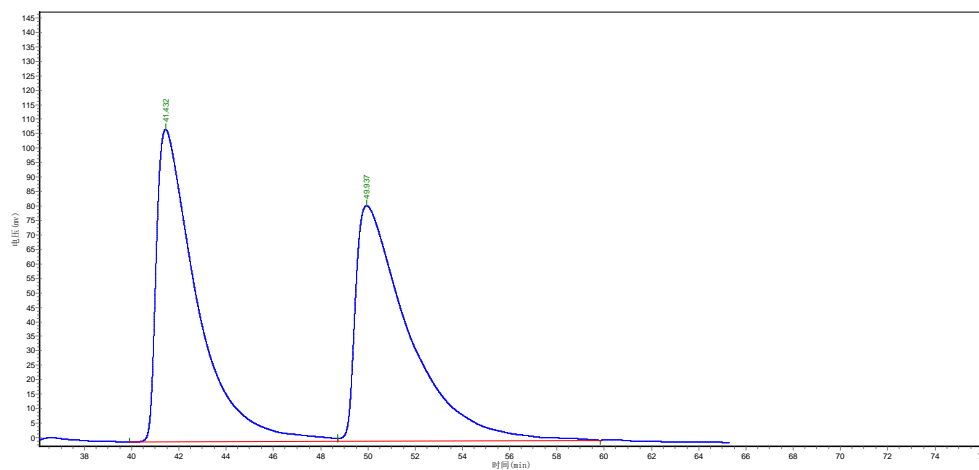
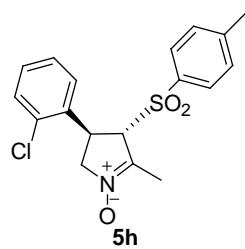
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1	34.645	551484.313	52590460.000	94.8019
2	46.062	30678.080	2883607.250	5.1981



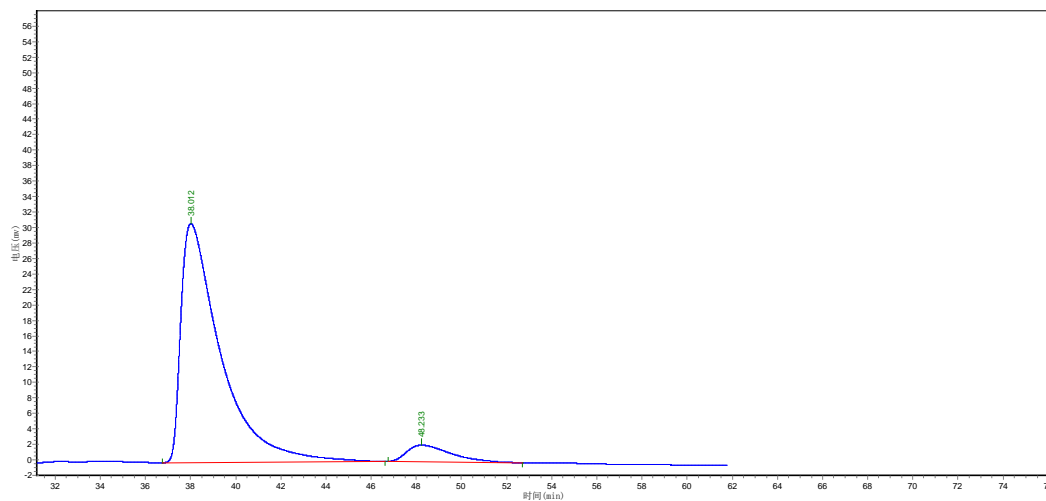
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	32.553	115767.773	10351496.000	50.2194
2	43.477	91437.758	10261030.000	49.7806



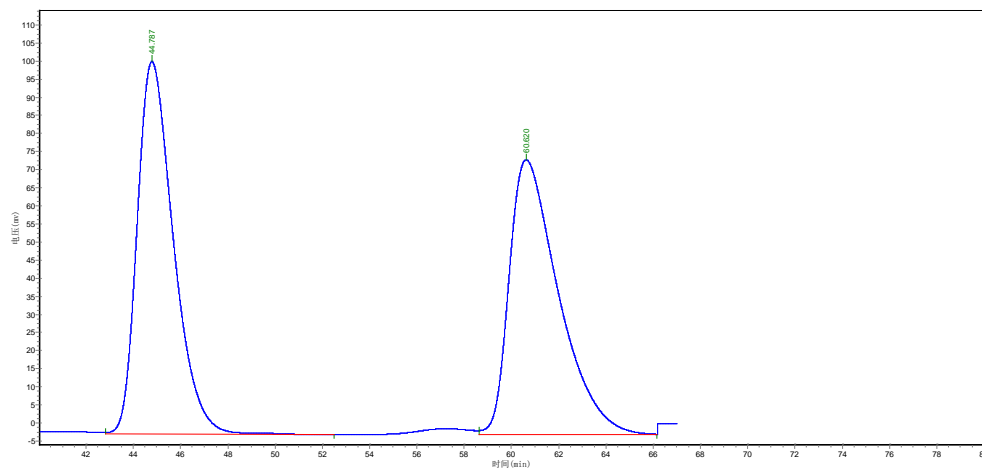
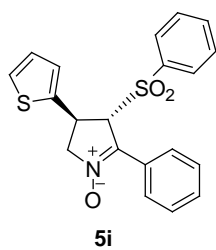
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	32.750	32217.285	2982590.000	94.8641
2	43.793	2038.825	161475.188	5.1359



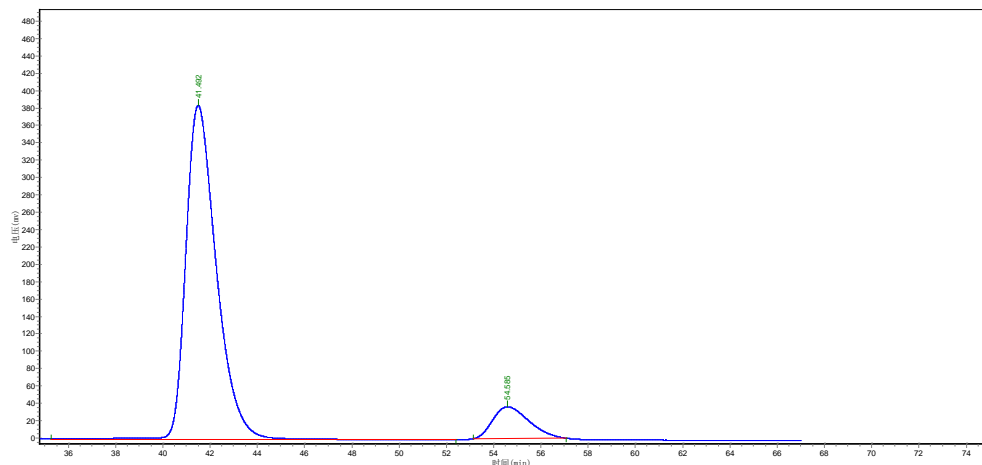
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	41.432	107997.164	12800144.000	50.2506
2	49.937	81391.125	12672484.000	49.7494



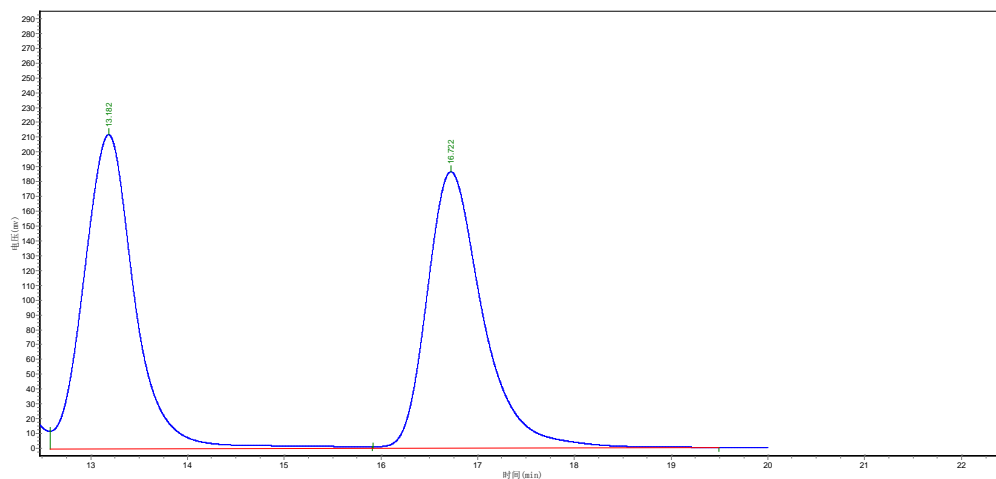
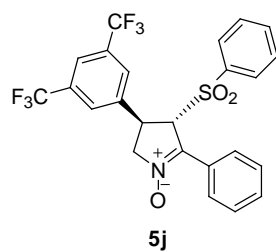
Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	38.012	30881.373	3781360.750	92.8625
2	48.233	2136.664	290637.688	7.1375



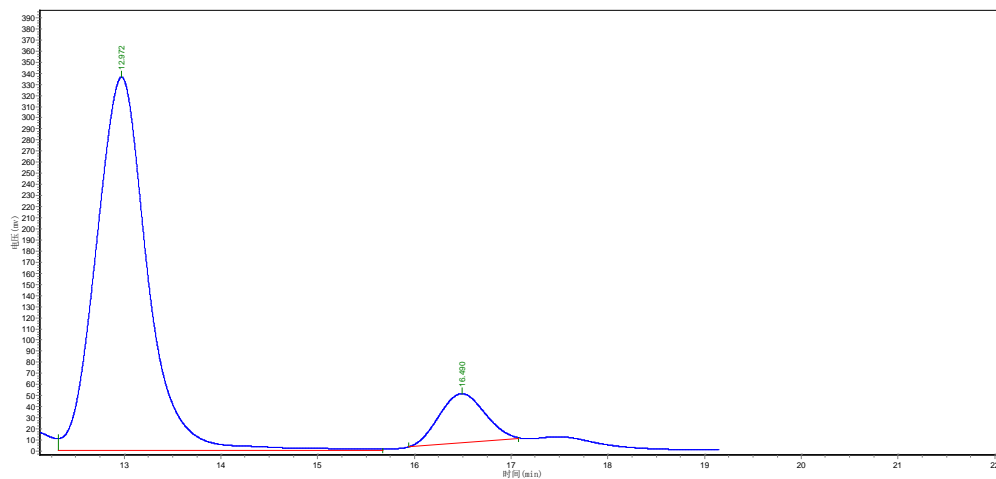
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1	44.787	103018.711	11003791.000	50.0458
2	60.620	75917.359	10983661.000	49.9542



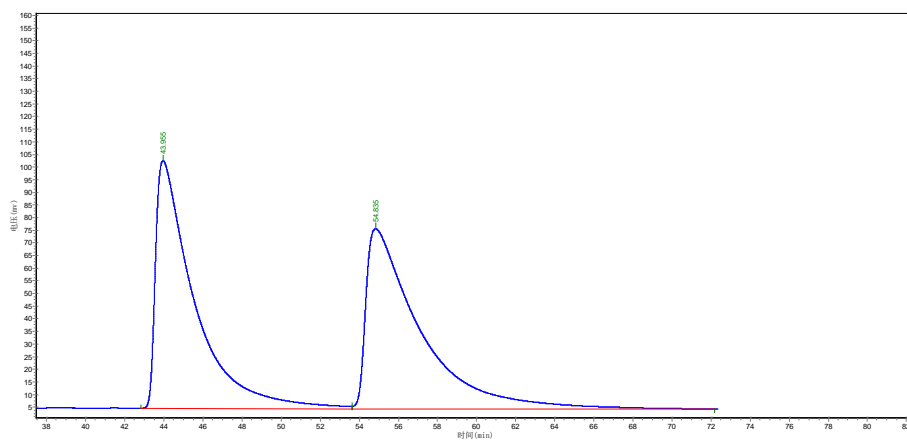
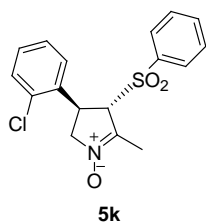
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1	41.492	383147.156	33796168.000	90.5065
2	54.585	35216.727	3544997.500	9.4935



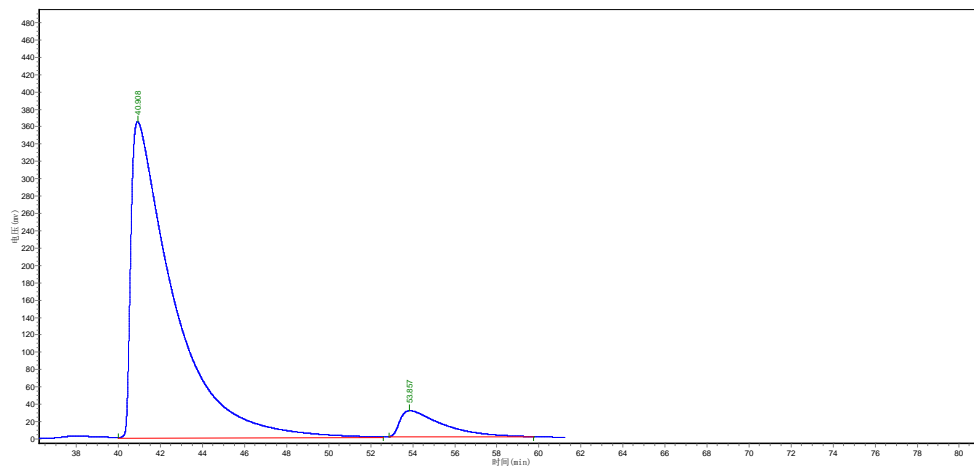
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1	13.182	211972.375	7741787.500	50.9270
2	16.722	186393.906	7459942.000	49.0730



Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	12.972	328887.844	11527151.000	90.1633
2	16.490	41152.746	1257601.875	9.8367

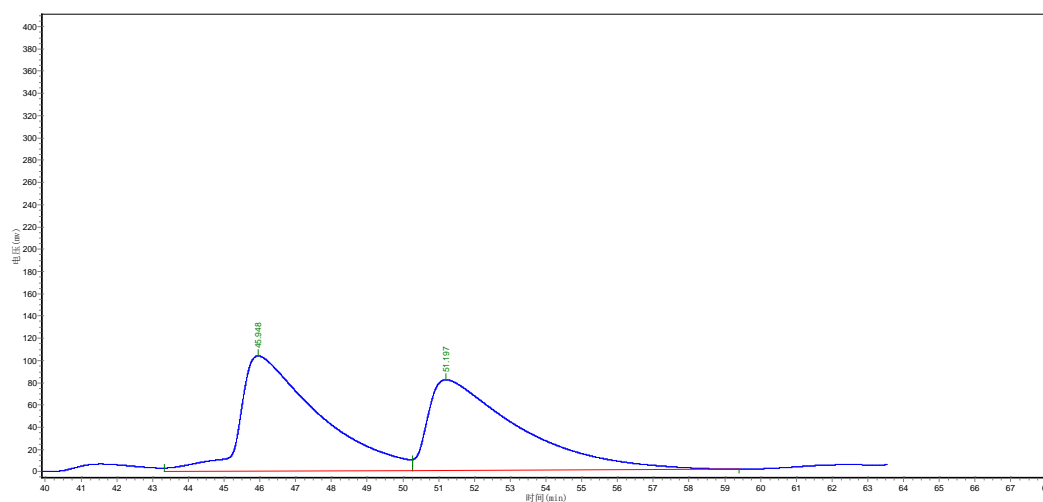


Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	43.955	98033.422	13462370.000	49.7565
2	54.835	71241.734	13666193.000	50.2435

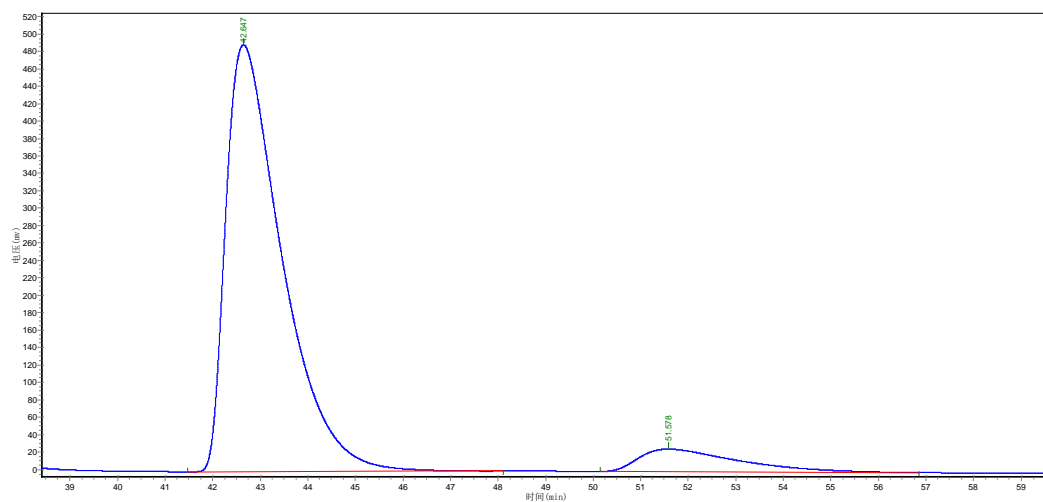


Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	40.908	364717.938	51140636.000	92.9149
2	53.857	29724.738	3899658.250	7.0851

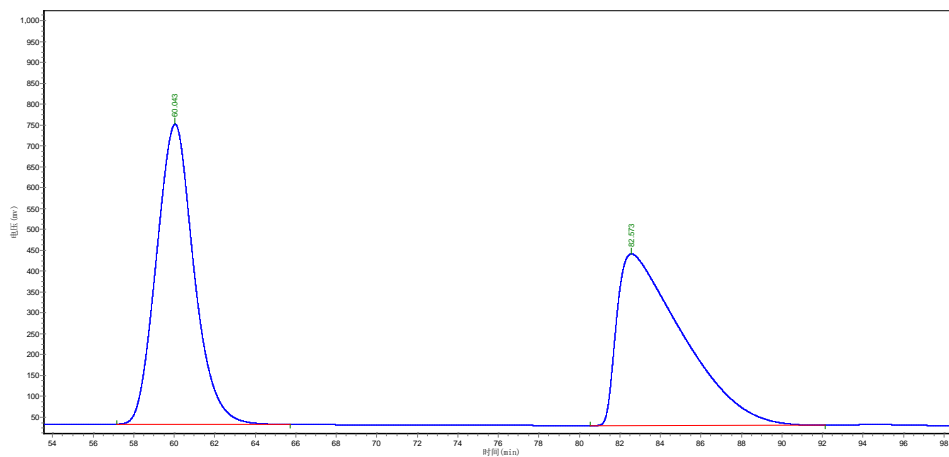
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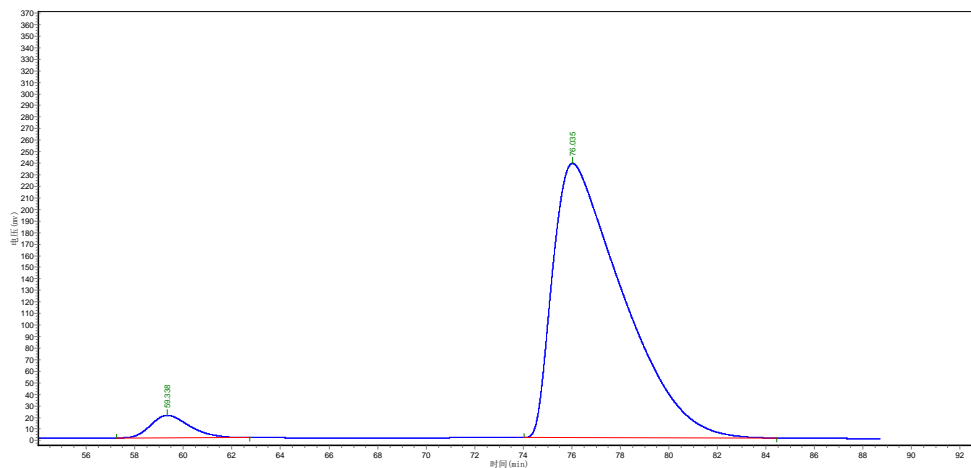
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1	45.948	81282.797	14056010.000	51.9012	
2	51.197	97679.172	13026248.000	48.0988	



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1	42.647	490181.844	40224072.000	91.3749	
2	51.578	26030.682	3796841.250	8.6251	



Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	60.043	719453.813	92331200.000	49.8476
2	82.573	411480.594	92895832.000	50.1524



Peak	Ret Time(min)	Height(mAU)	Area(Mau *s)	Area (%)
1	59.338	19430.230	2174932.000	4.3795
2	76.035	237412.047	47486332.000	95.6205