

Supporting Information

Advanced Generation of Paeonol-Phenylsulfonyl Derivatives as Potential Anti-HBV Agents

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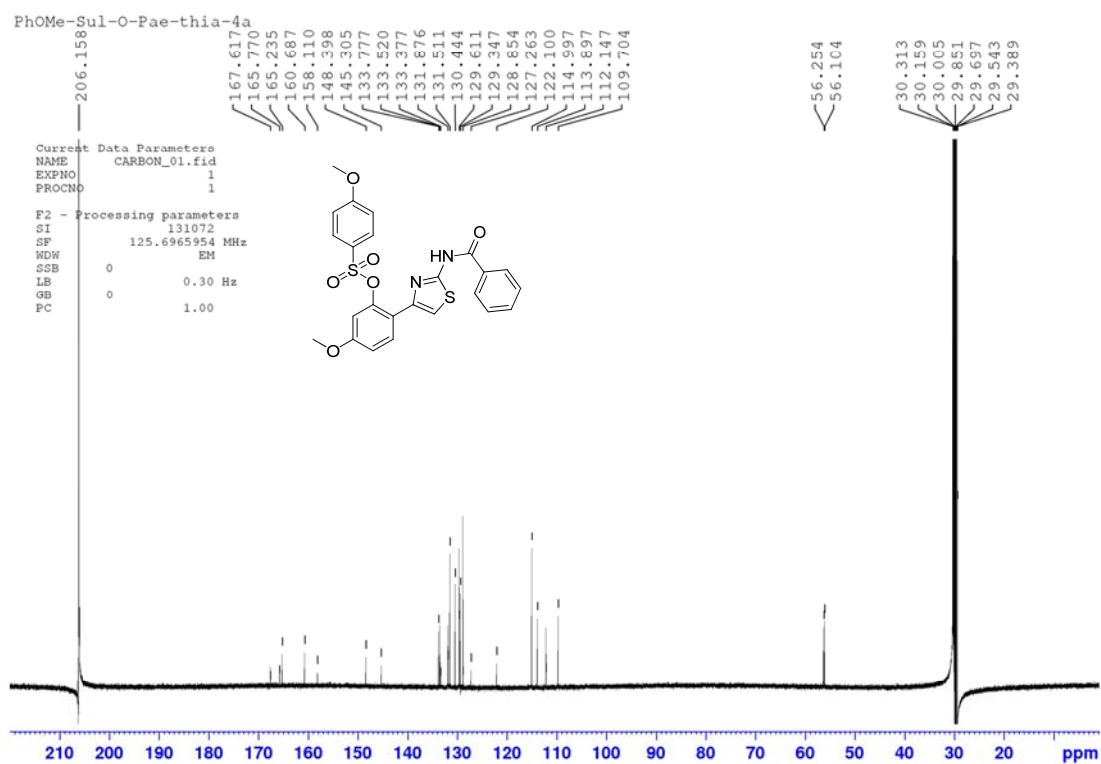
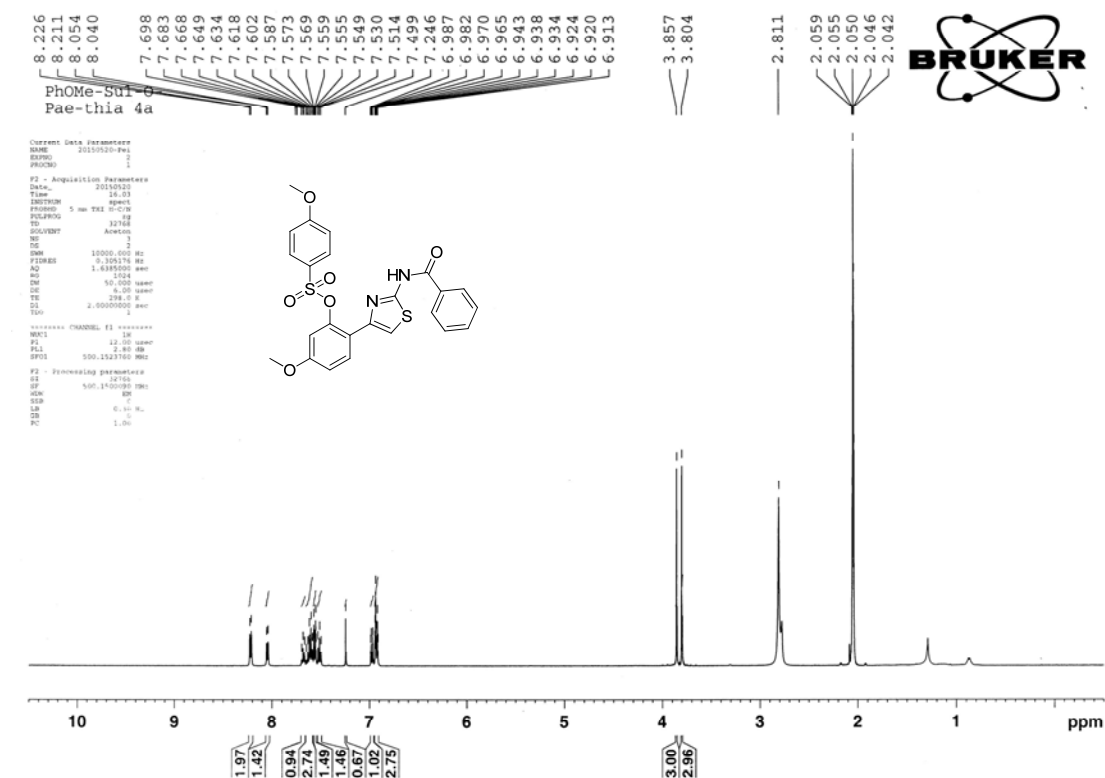
^g *Nuclear Science & Technology Development Center, National Tsing Hua University, Hsinchu 30013, Taiwan.*

^h *Department of Chemistry, Tamkang University, New Taipei City 25131, Taiwan.*

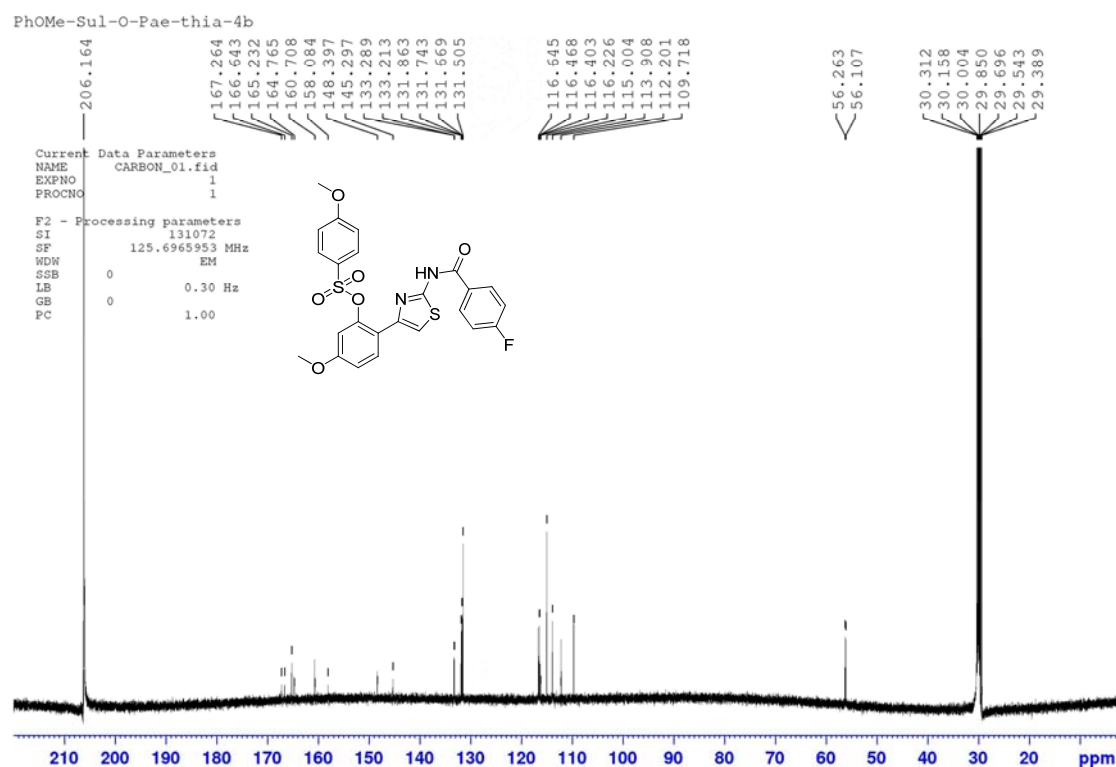
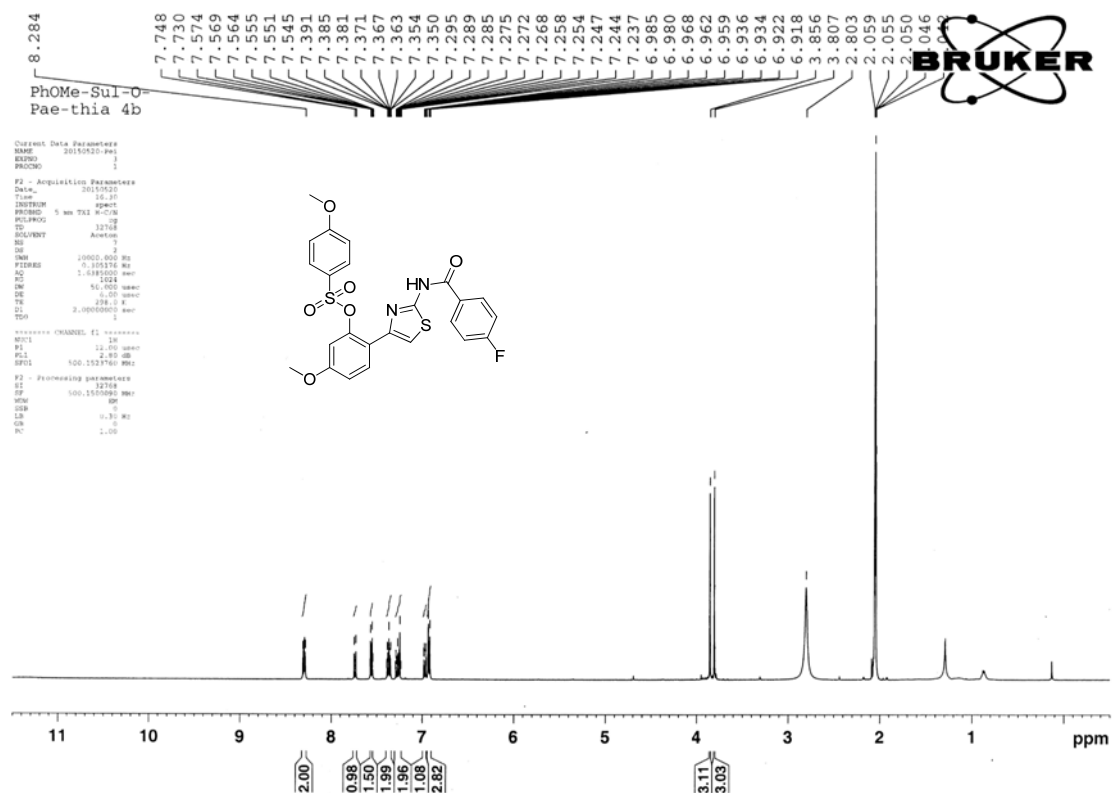
* Corresponding author.

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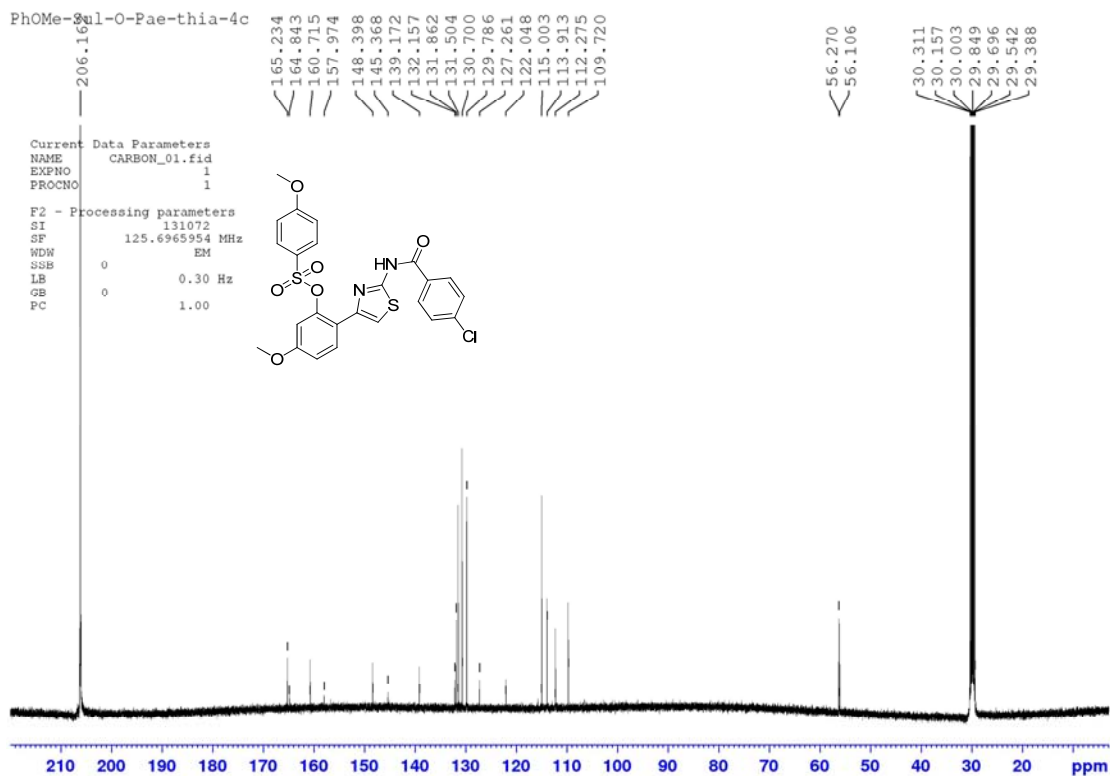
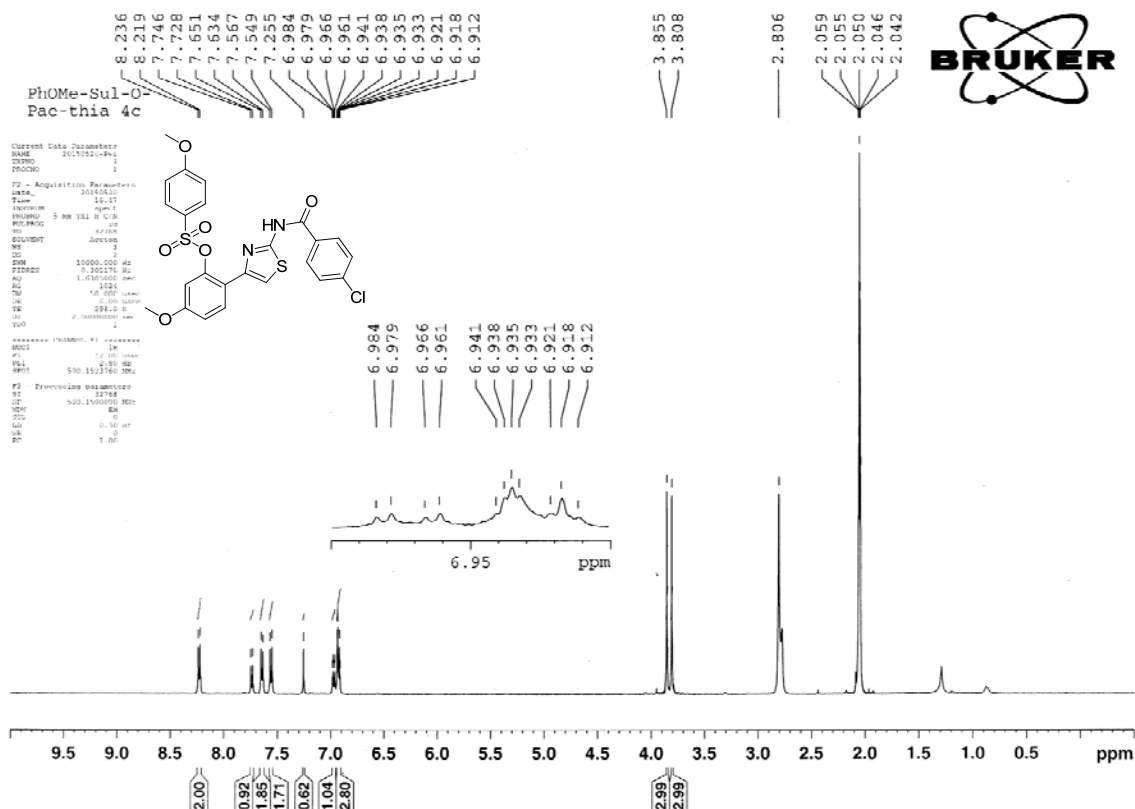
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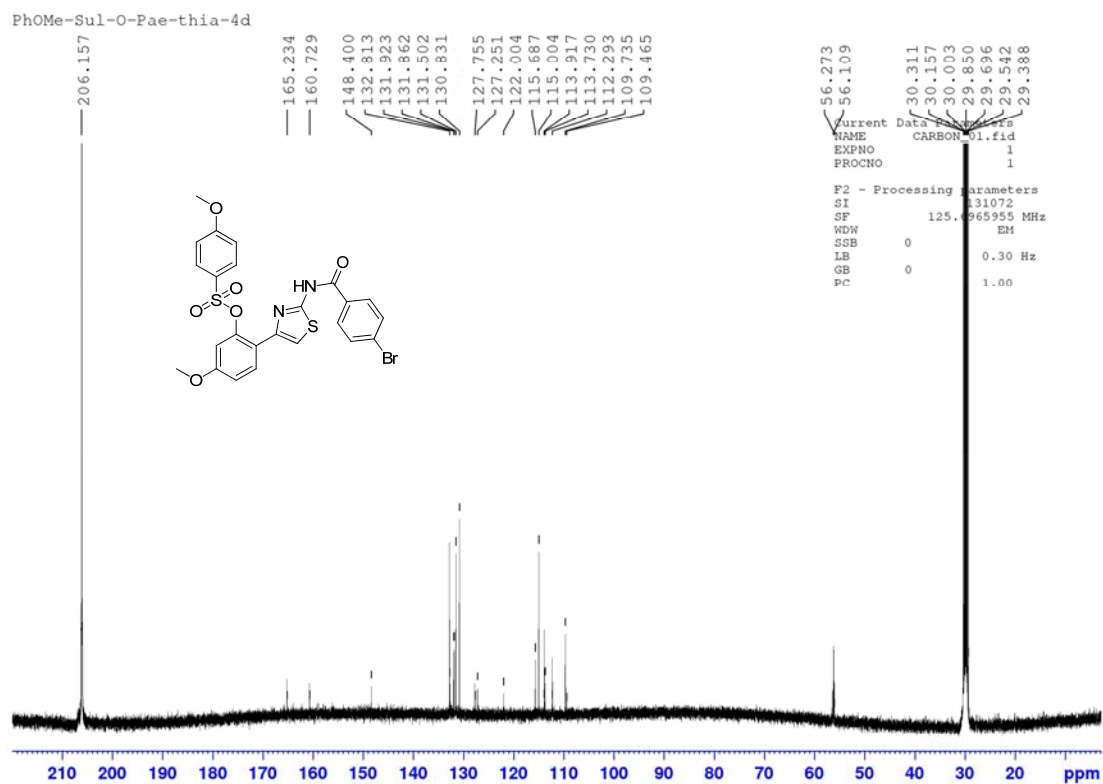
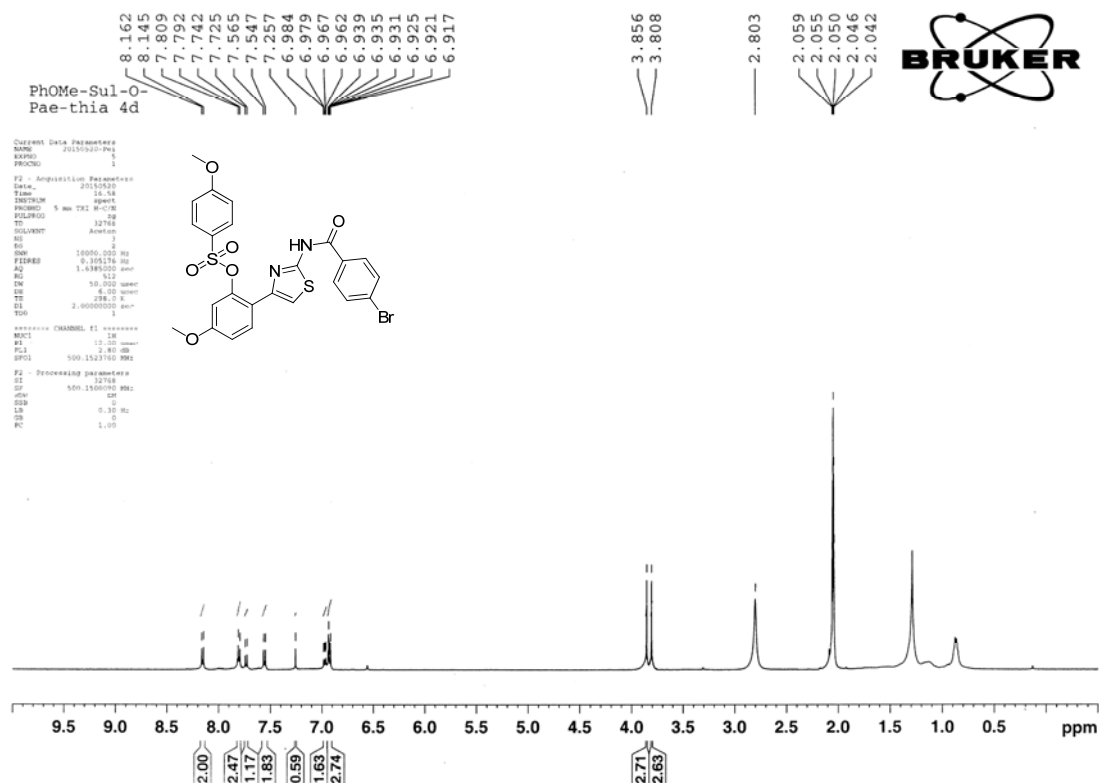
¹H and ¹³C NMR of 8b



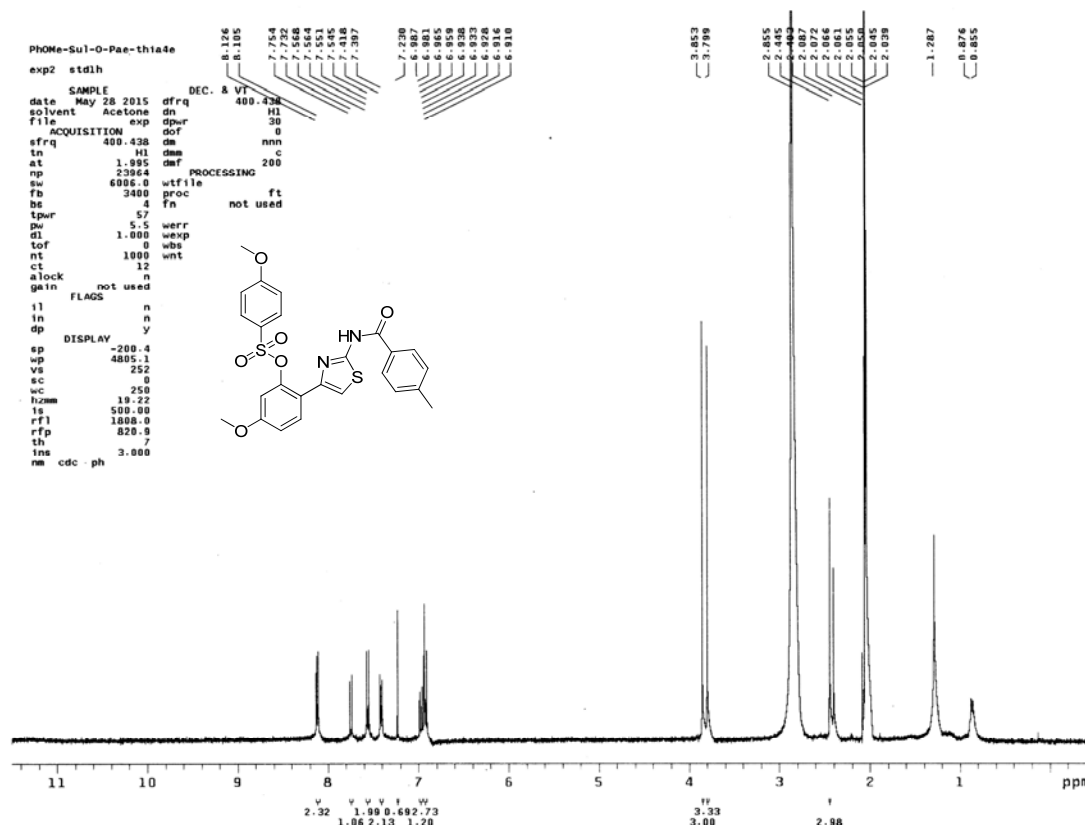
¹H and ¹³C NMR of 8c



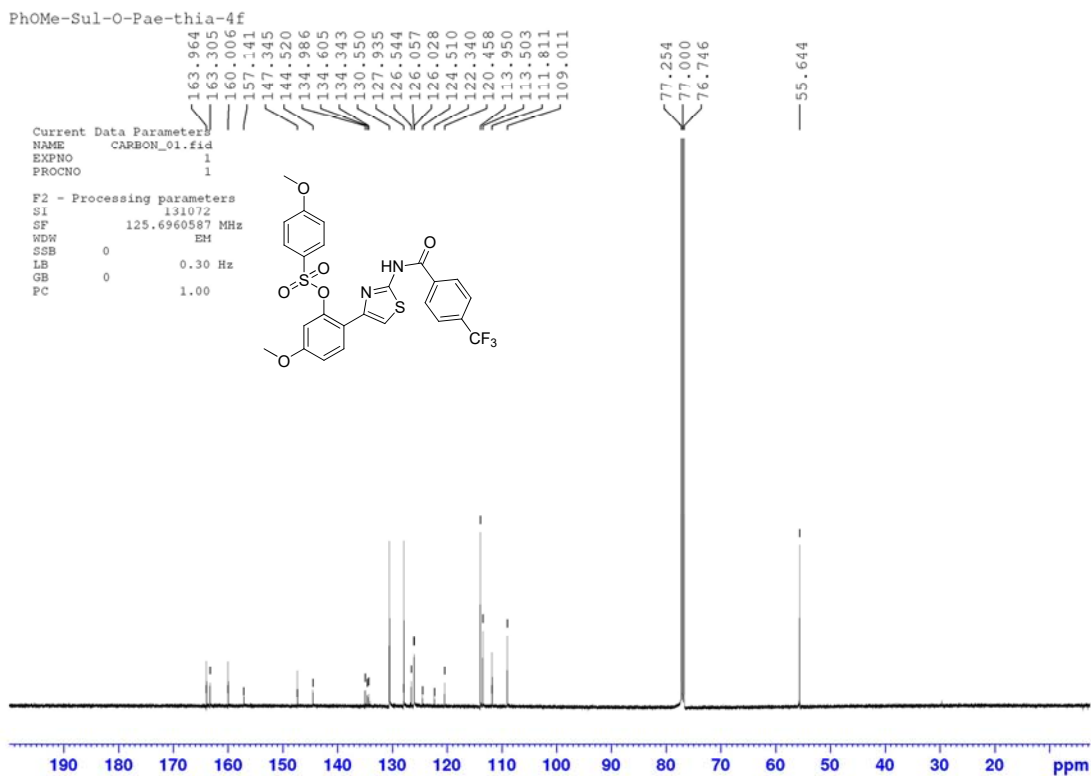
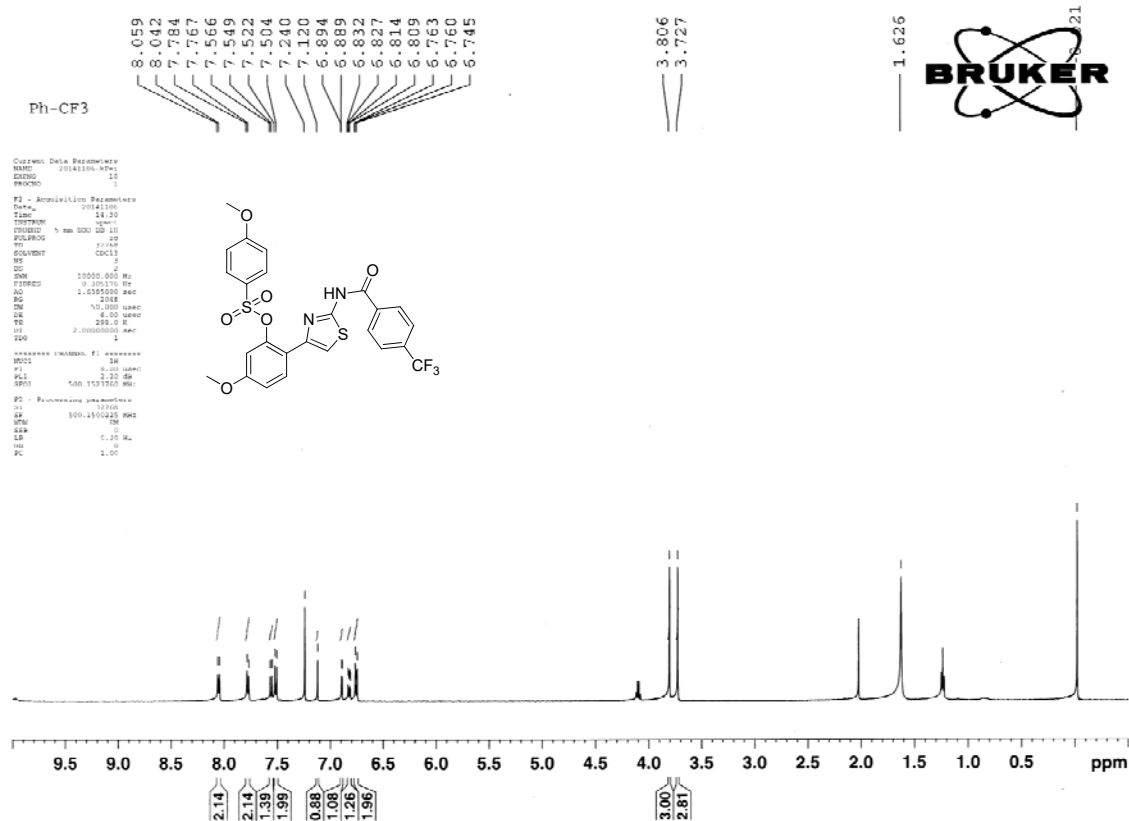
¹H and ¹³C NMR of 8d



¹H and ¹³C NMR of 8e



¹H and ¹³C NMR of 8f



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 date May 28 2015 dfreq 408.436
 solvent Acetone d5
 file exp1 opur 20
 ACQUISITION exp1 ref 0
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 rg 2396.4
 sw 4084.0 wtfila
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 pw 5.5 hrrr
 dl 1.800 wexp
 tof 0 wds
 nt 1600 wat
 ct 24
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 gain not used
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 it 0
 in 0
 dp 0
 DISPLAY 0
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 op 4885.1
 vs 949
 sc 0
 wc 250
 hznm 16.22
 ls 5.86.88
 rffl 1800.0
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 th 0
 tms
 nm cat ph 2.080

0.213
 0.195
 0.189
 0.182
 0.173
 0.164
 0.154
 0.141
 0.127
 0.122
 0.119
 0.103
 0.083
 0.062
 0.055
 0.035
 0.029
 0.014
 0.000

3.923
 3.851
 3.790

2.886
 2.872
 2.866
 2.855
 2.841
 2.839
 2.805
 2.798
 1.285
 0.875
 0.669

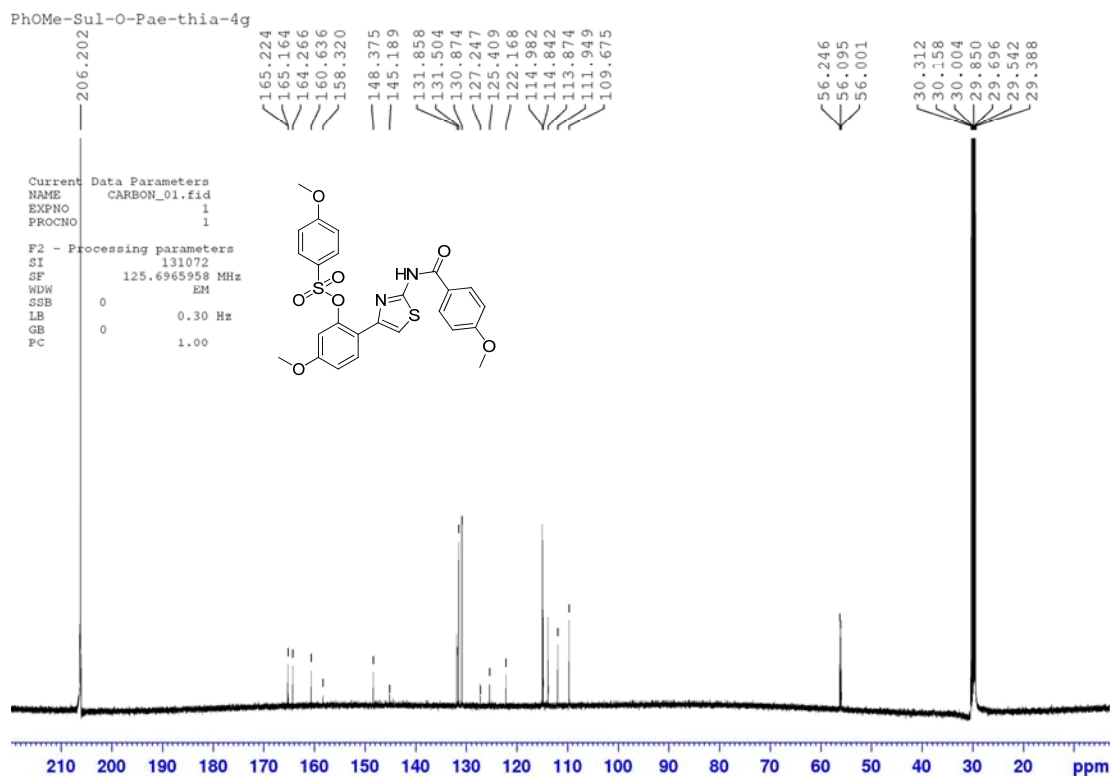
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 7.137
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 7.110
 7.104
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 6.910

11
 10
 9
 8
 7
 6
 5
 4
 3
 2
 1
 ppm

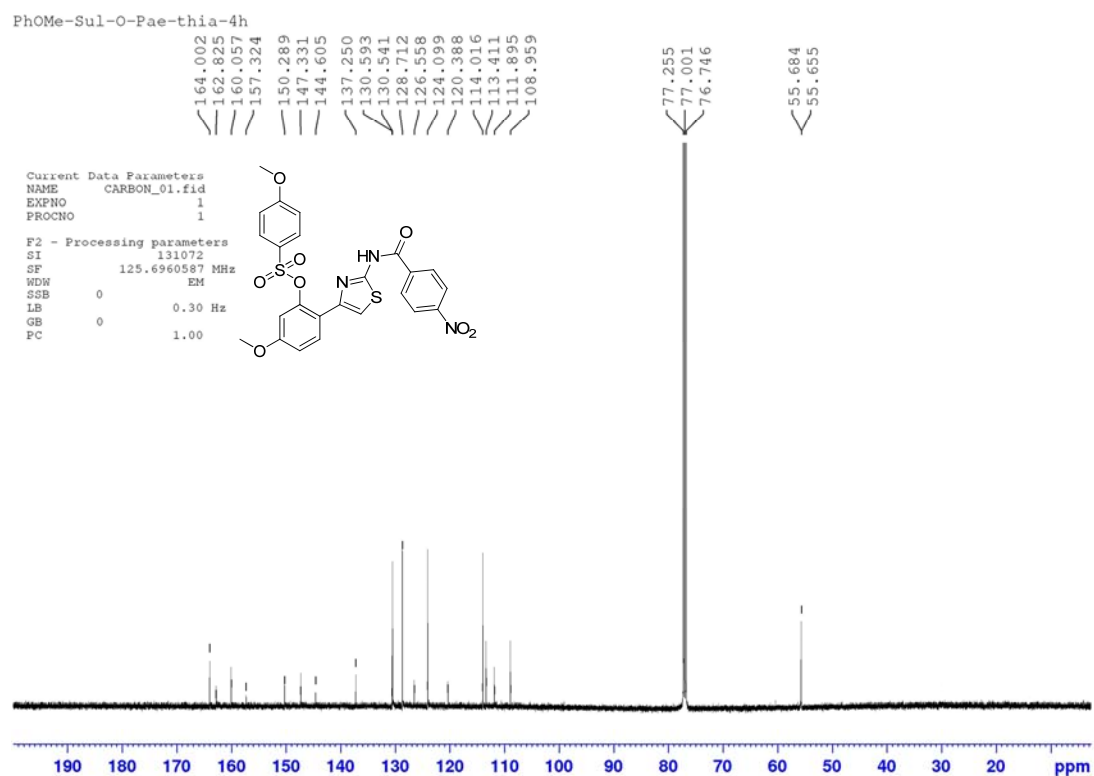
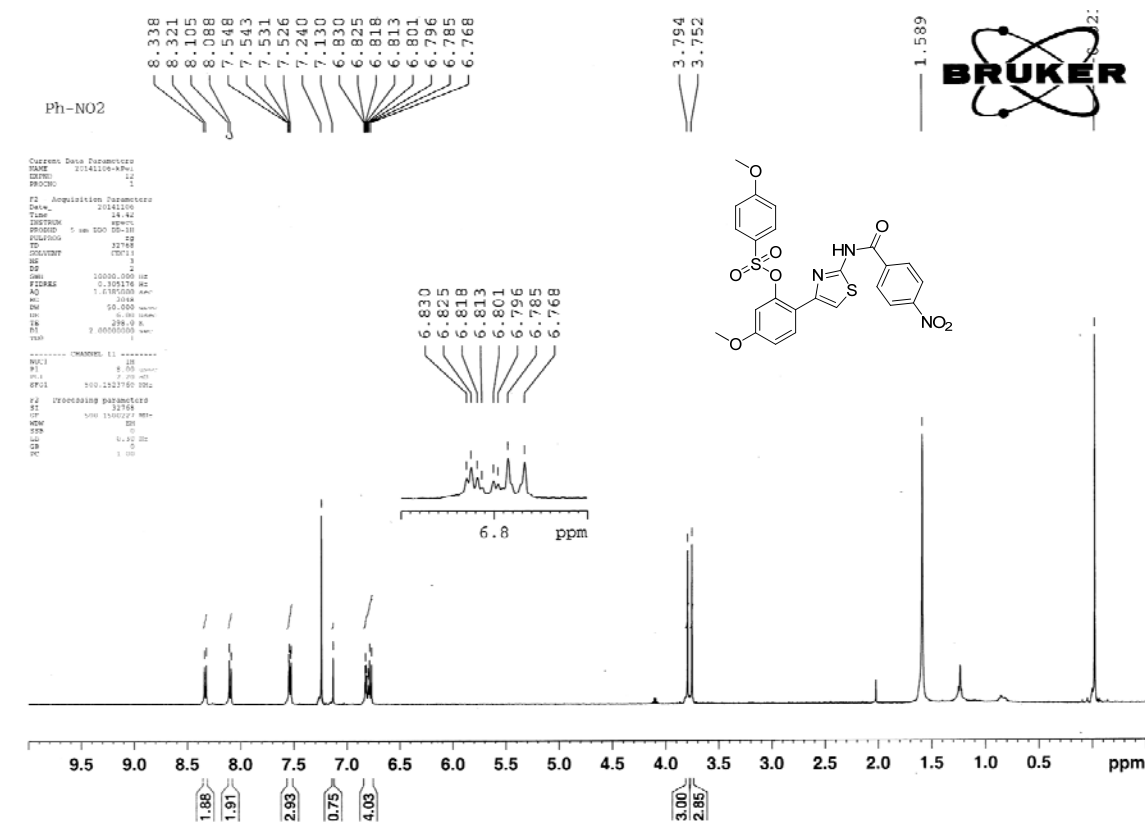
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 0.60
 46

110
 0.38
 3.9020

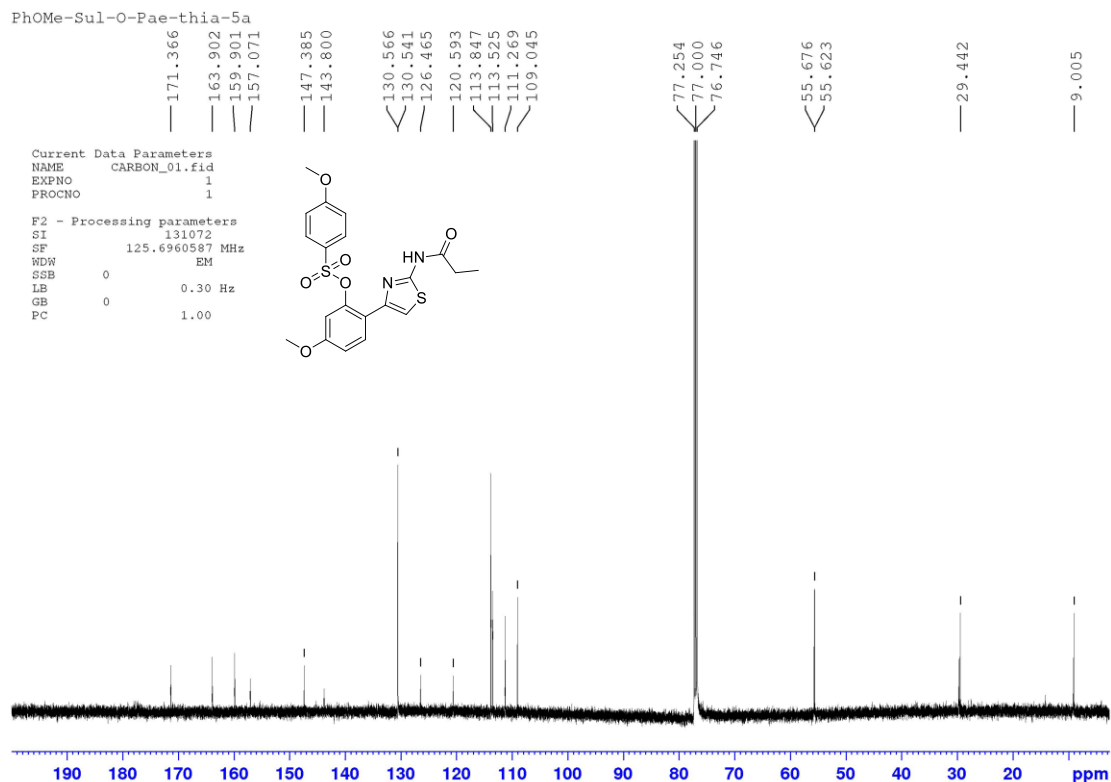
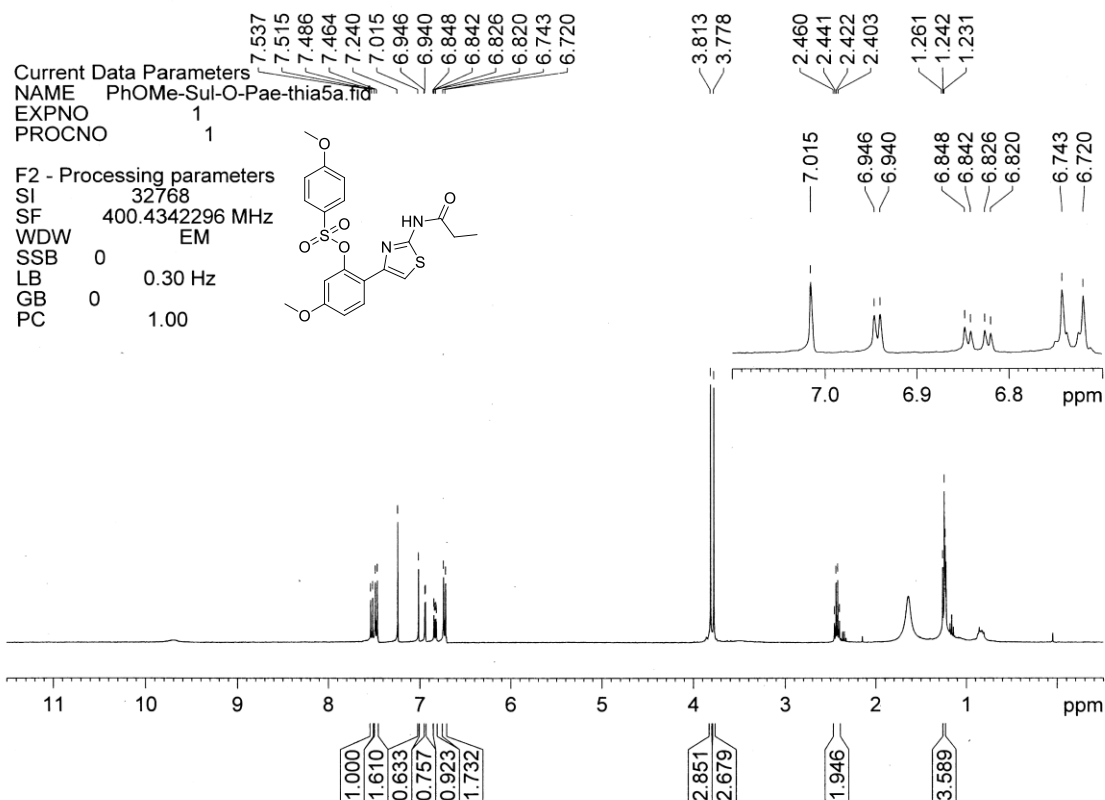
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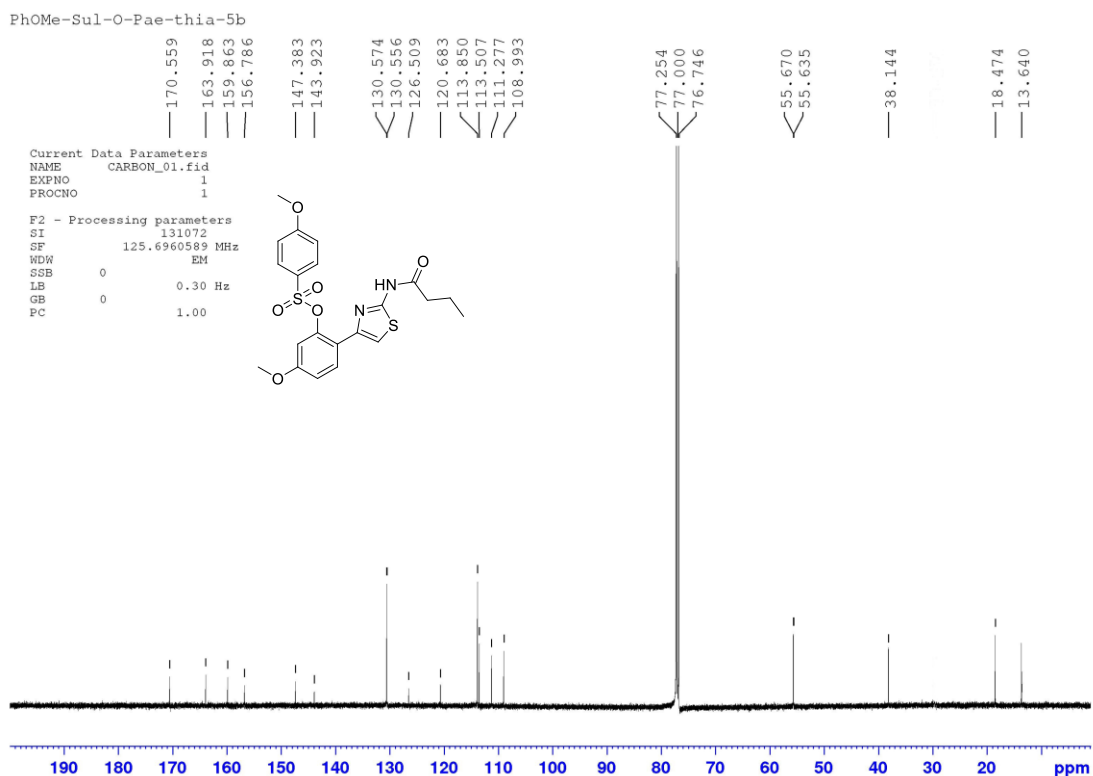
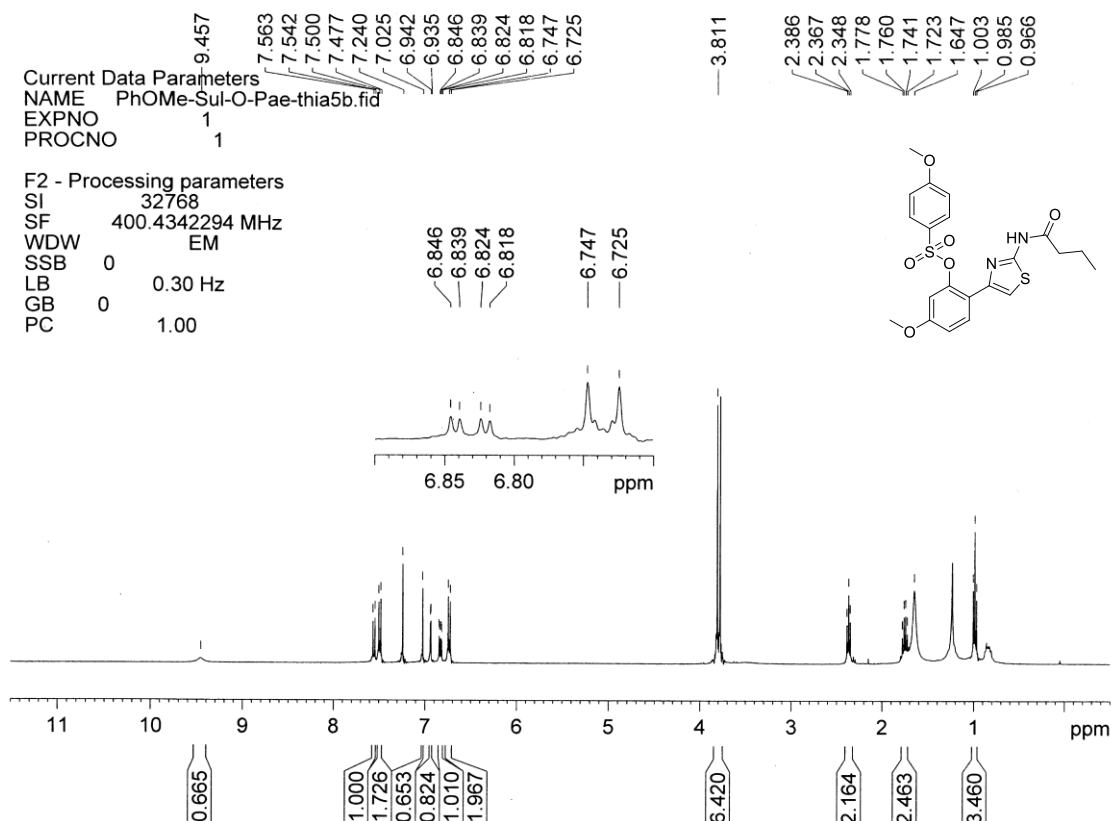
¹H and ¹³C NMR of 8h



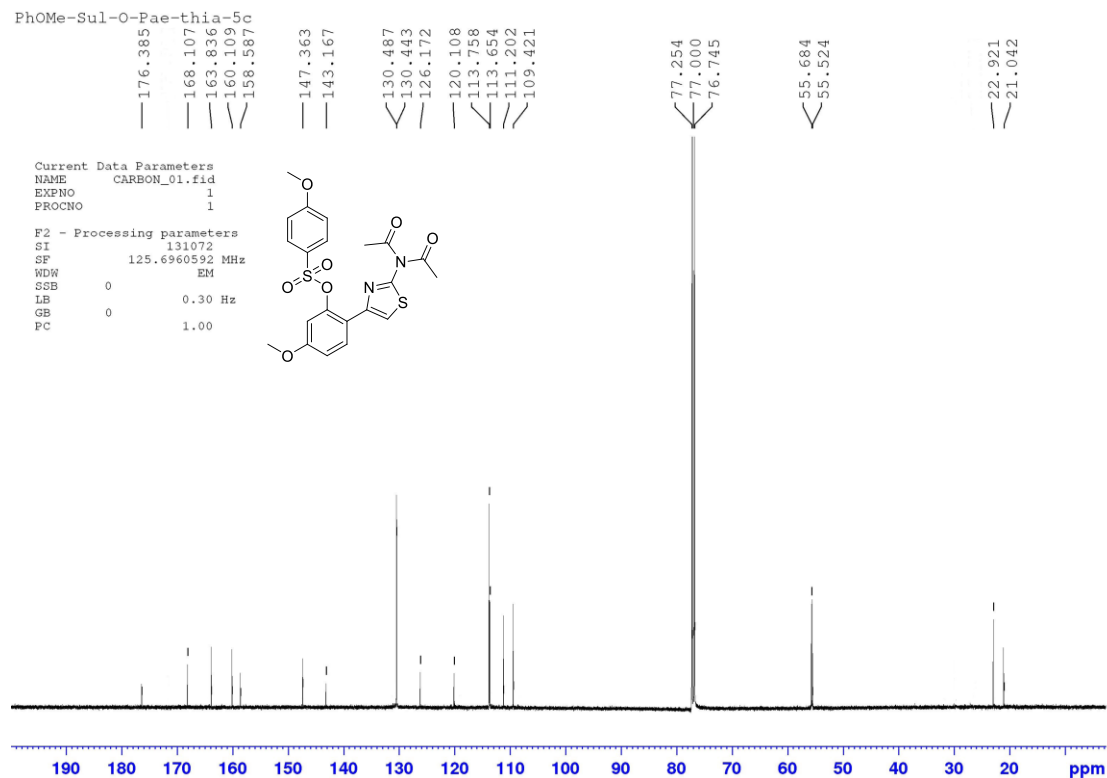
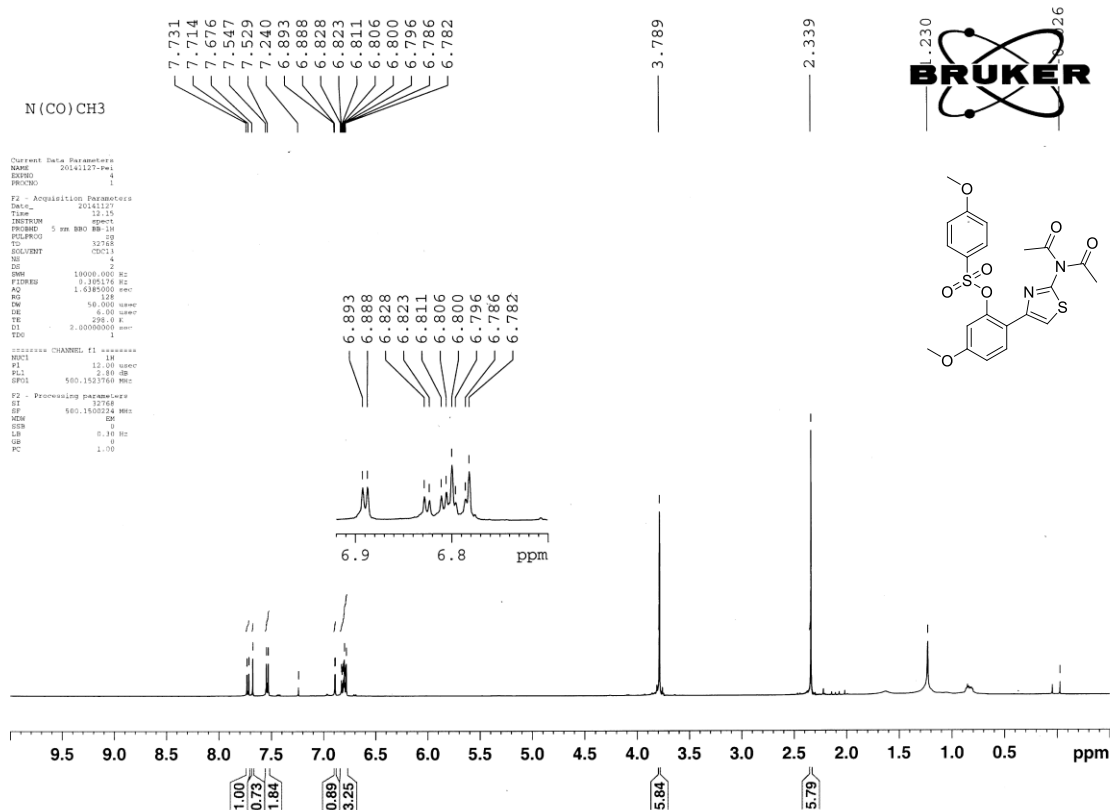
¹H and ¹³C NMR of 9a



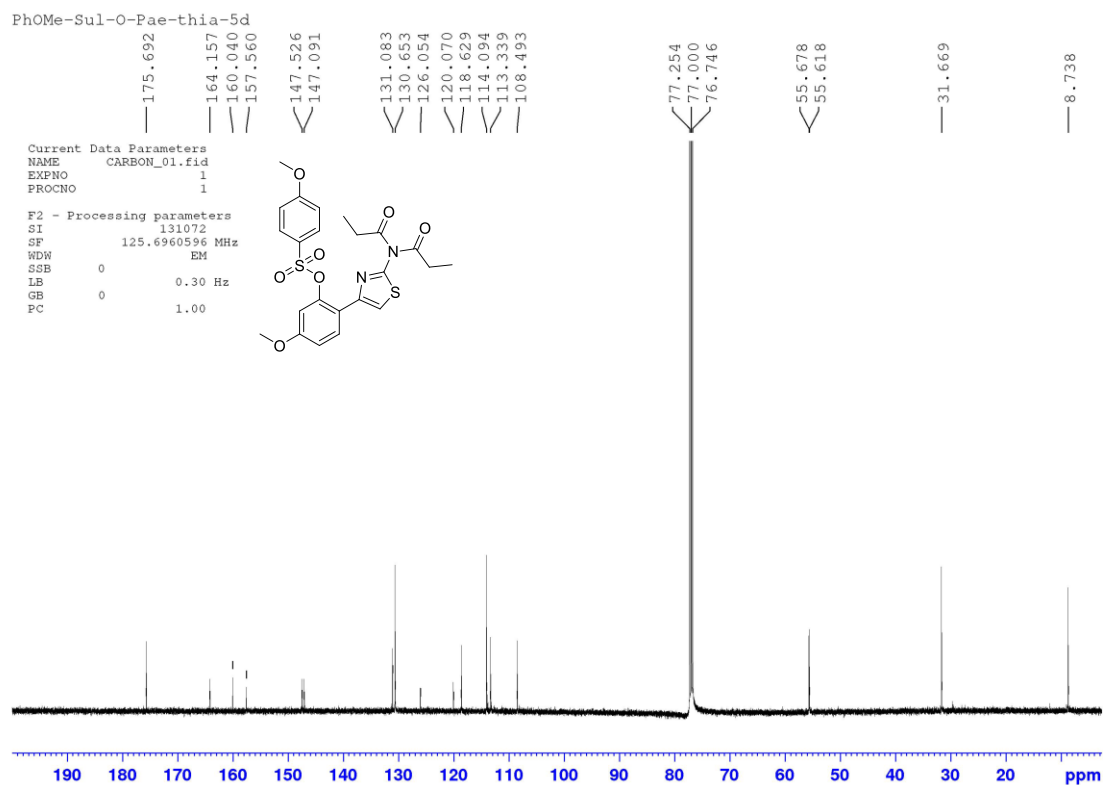
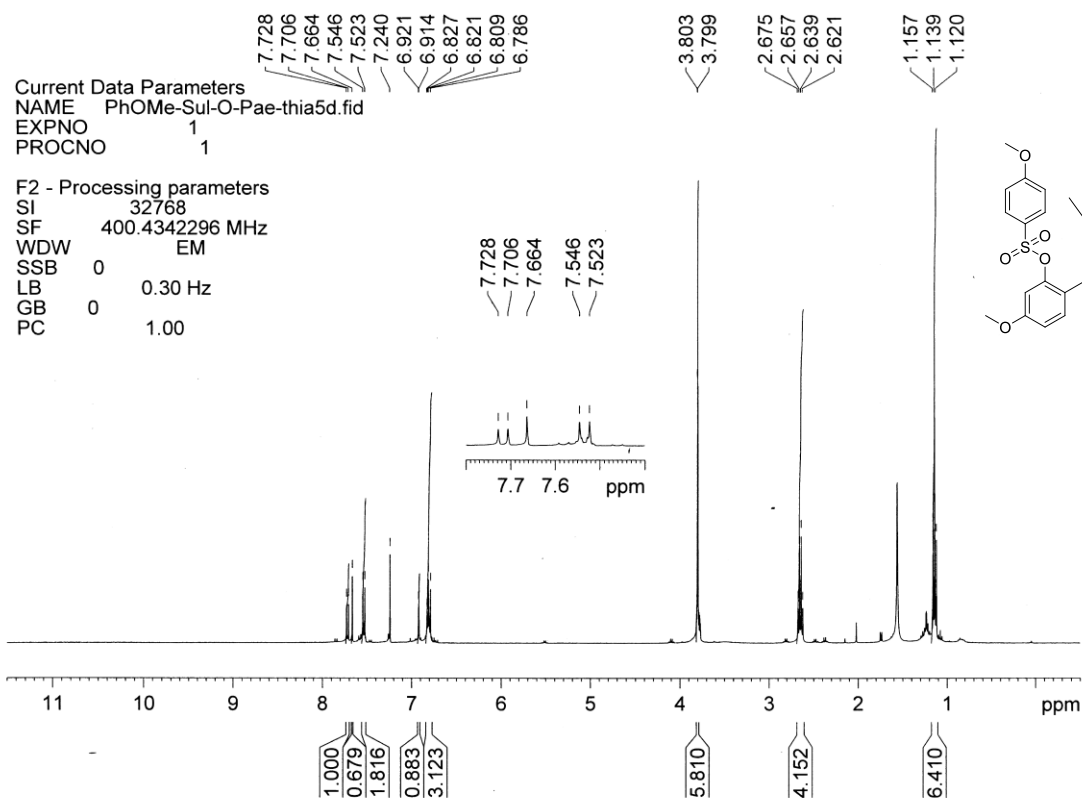
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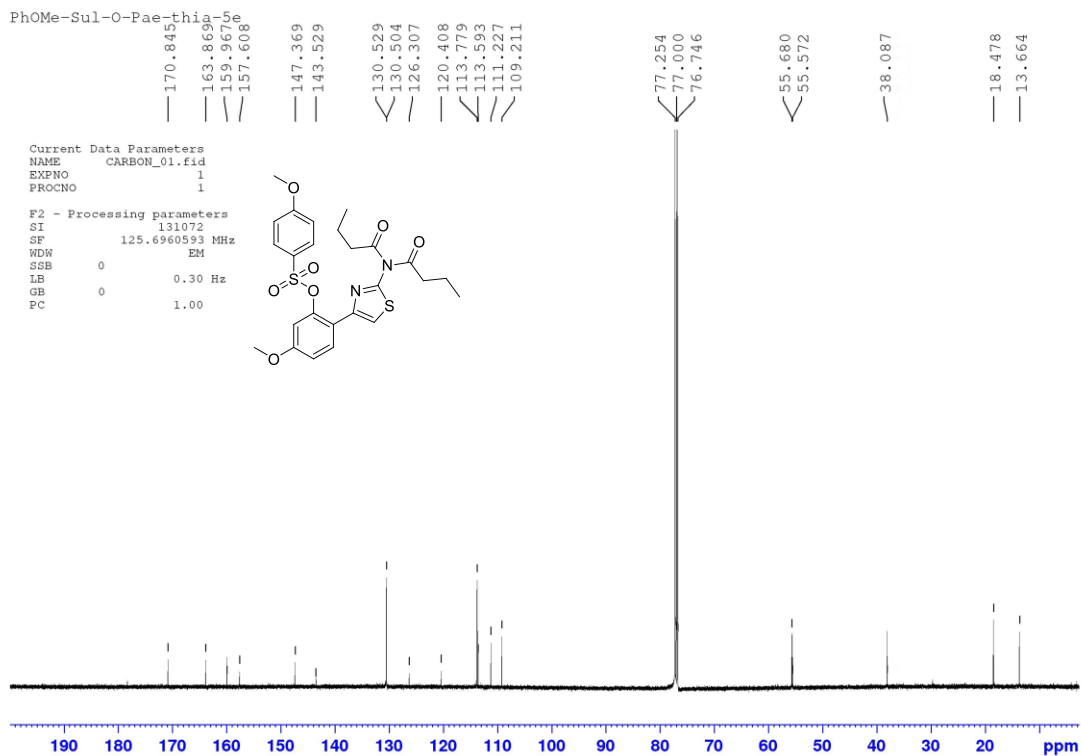
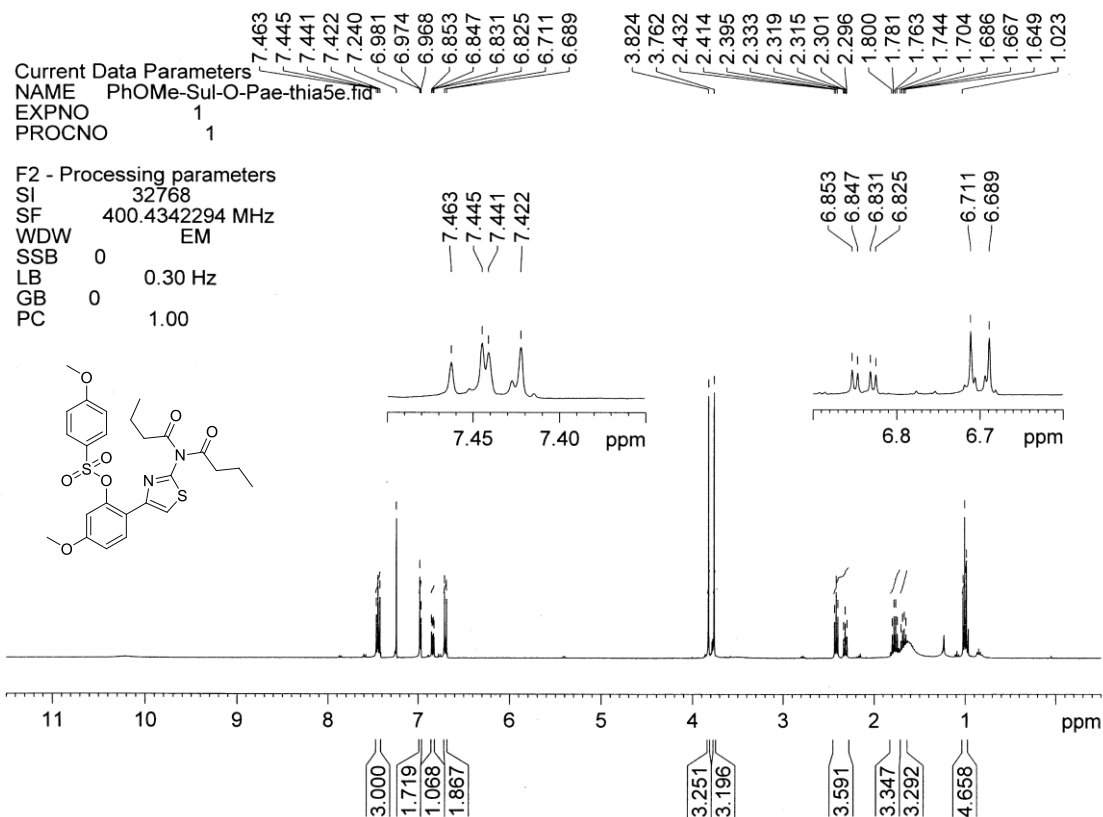
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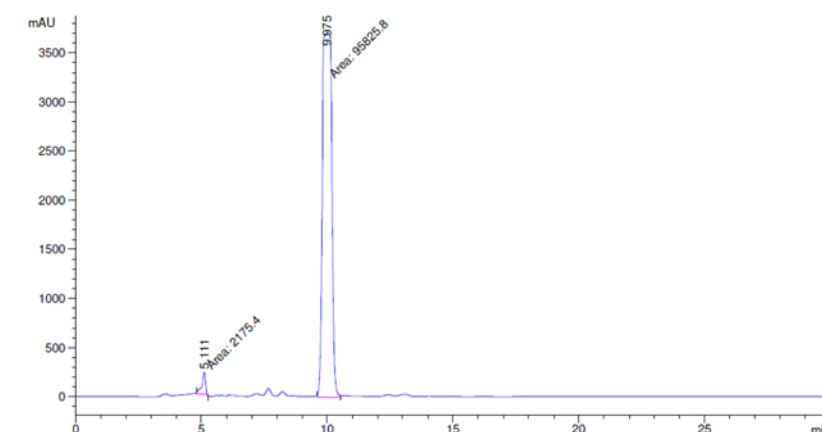
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¹H and ¹³C NMR of 9e



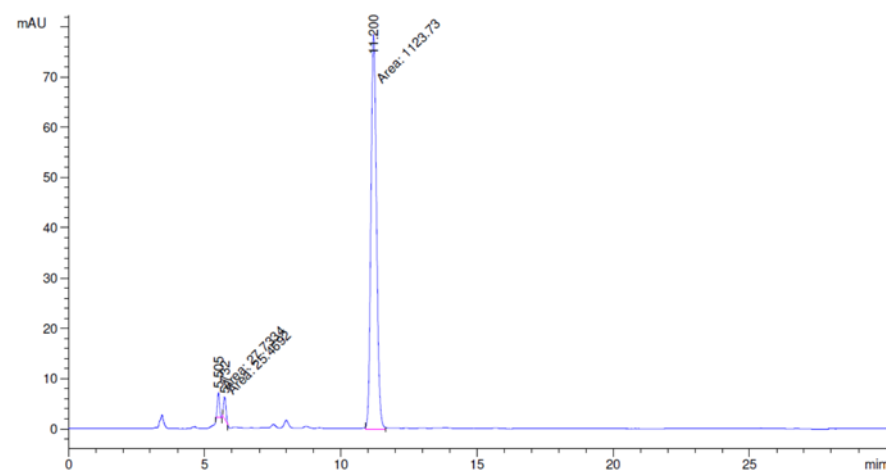
HPLC analysis of 8a



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.11	0.1632	2175.398	2.22
2	9.98	0.4316	9.58e4	97.78

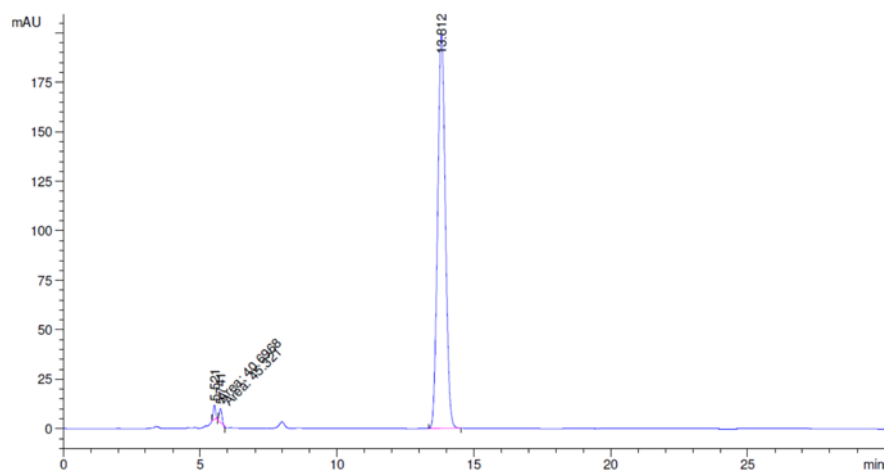
HPLC analysis of 8b



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.51	0.0938	27.733	2.36
2	5.73	0.0968	25.469	2.16
3	11.20	0.2383	1123.734	95.48

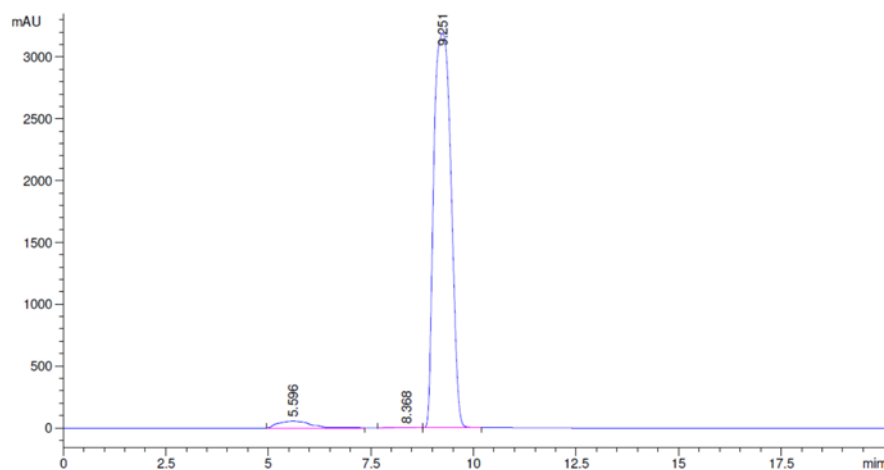
HPLC analysis of 8c



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.21	0.0960	40.697	1.02
2	5.74	0.1075	45.321	1.13
3	13.81	0.3081	3922.876	97.85

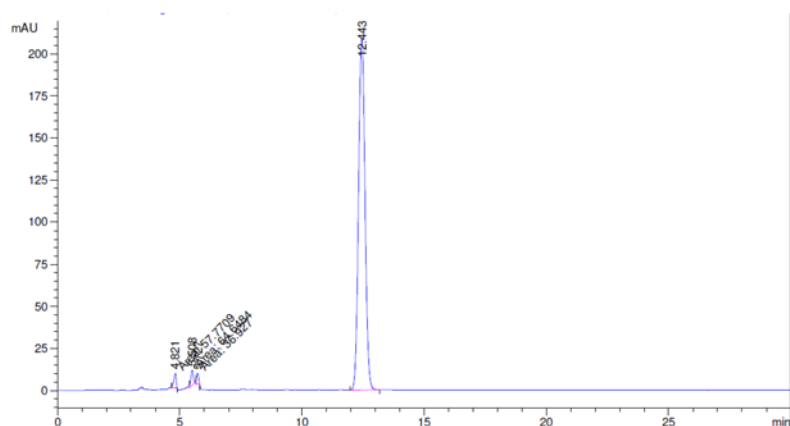
HPLC analysis of 8d



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.60	0.7979	2794.841	2.93
2	8.37	0.4470	54.367	0.06
3	9.25	0.4812	9.26e4	97.01

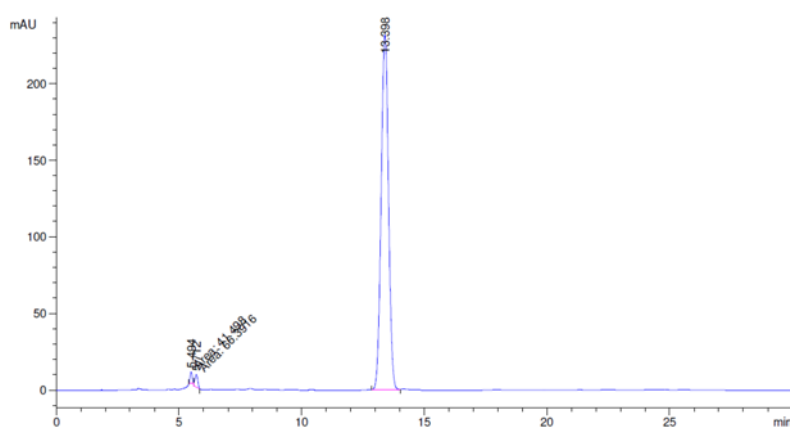
HPLC analysis of 8e



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	4.82	0.1099	57.771	1.44
2	5.51	0.1188	64.648	1.61
3	5.73	0.0959	36.927	0.91
4	12.44	0.2882	3862.217	96.04

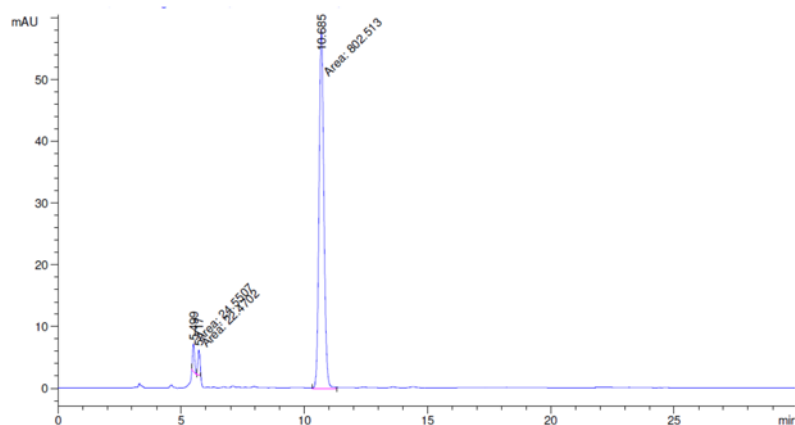
HPLC analysis of 8f



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.49	0.0962	41.498	0.84
2	5.71	0.1302	66.392	1.34
3	13.40	0.3276	4832.661	97.82

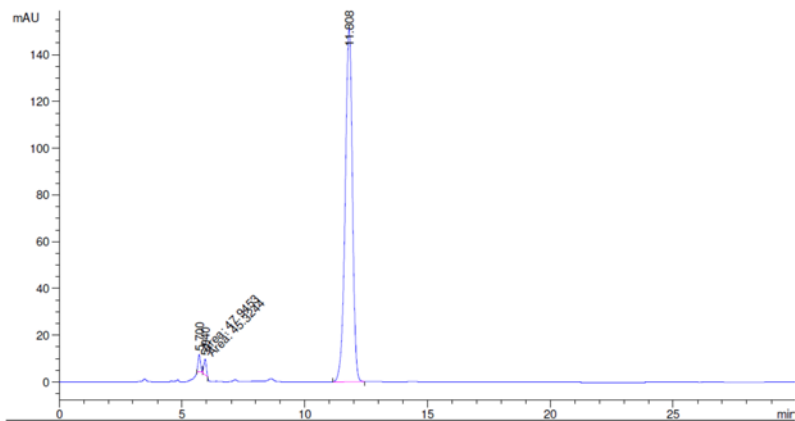
HPLC analysis of 8g



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.50	0.0905	24.551	2.80
2	5.72	0.0928	22.470	1.89
3	10.69	0.2315	802.513	95.31

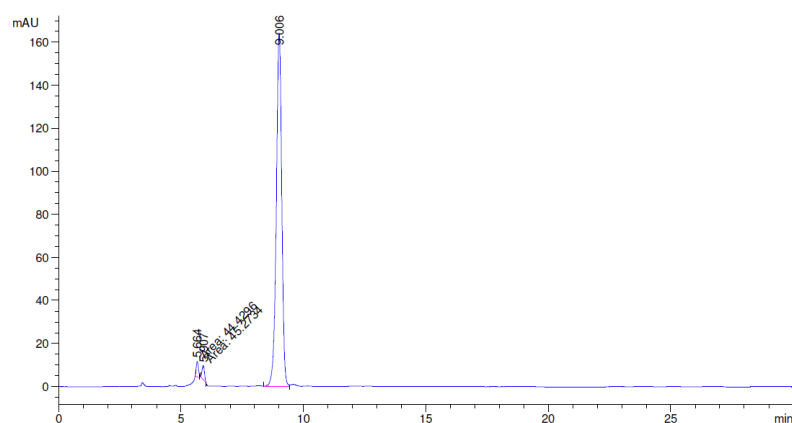
HPLC analysis of 8h



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.70	0.1072	47.945	1.51
2	5.94	0.1108	45.325	1.42
3	11.81	0.3157	3092.286	97.07

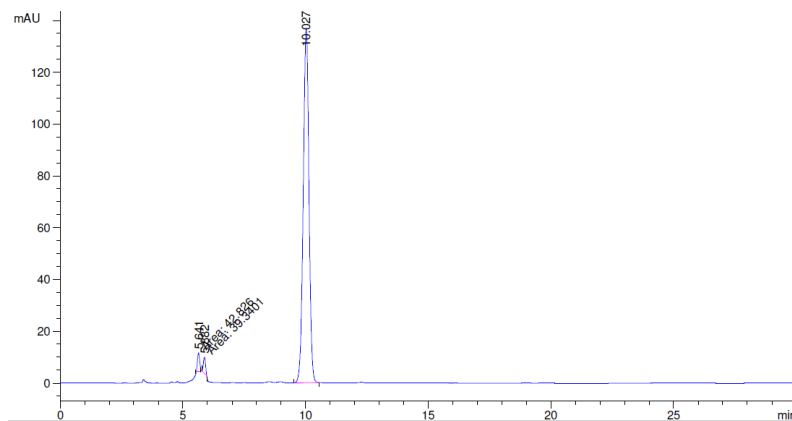
HPLC analysis of 9a



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.66	0.1022	44.430	1.70
2	5.91	0.1126	45.273	1.74
3	9.01	0.2345	2521.588	96.56

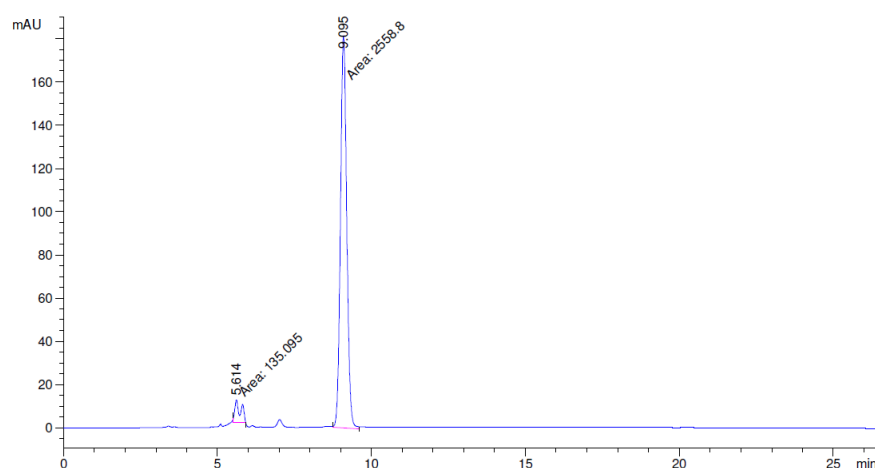
HPLC analysis of 9b



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.64	0.1006	42.826	1.87
2	5.88	0.1042	39.340	1.71
3	10.03	0.2501	2213.741	96.42

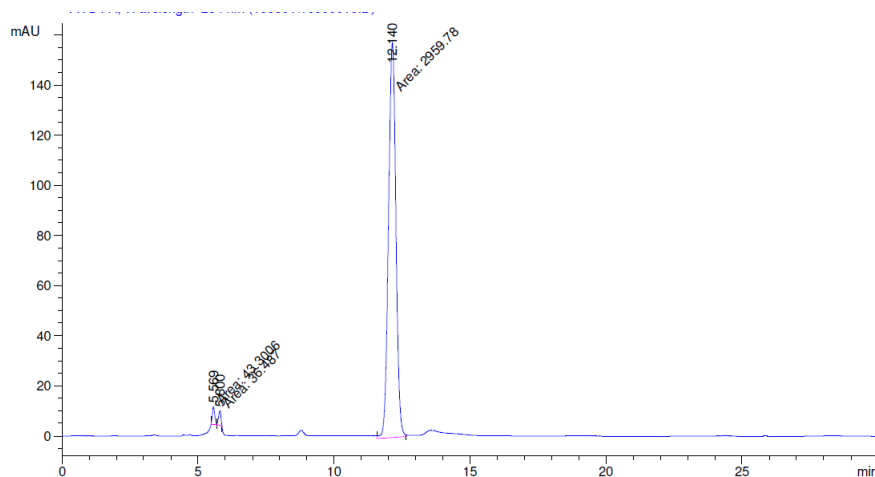
HPLC analysis of 9c



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.61	0.2178	135.095	5.01
2	9.10	0.2353	2558.805	94.99

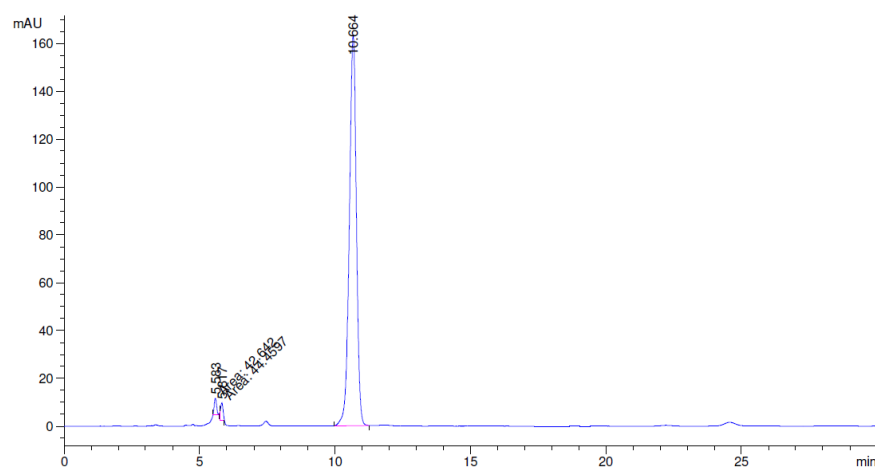
HPLC analysis of 9d



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.57	0.1014	43.301	1.42
2	5.80	0.1037	36.487	1.20
3	12.14	0.3133	2959.780	97.38

HPLC analysis of 9e



VWD1 A, Wavelength=254 nm; eluent: 20% DI water in acetonitrile; flow rate=0.5mL/min

Peak #	Ret Time (min)	Width (min)	Area mAu*s	Area %
1	5.58	0.1020	42.642	1.40
2	5.82	0.1030	44.460	1.46
3	10.66	0.2784	2961.159	97.14

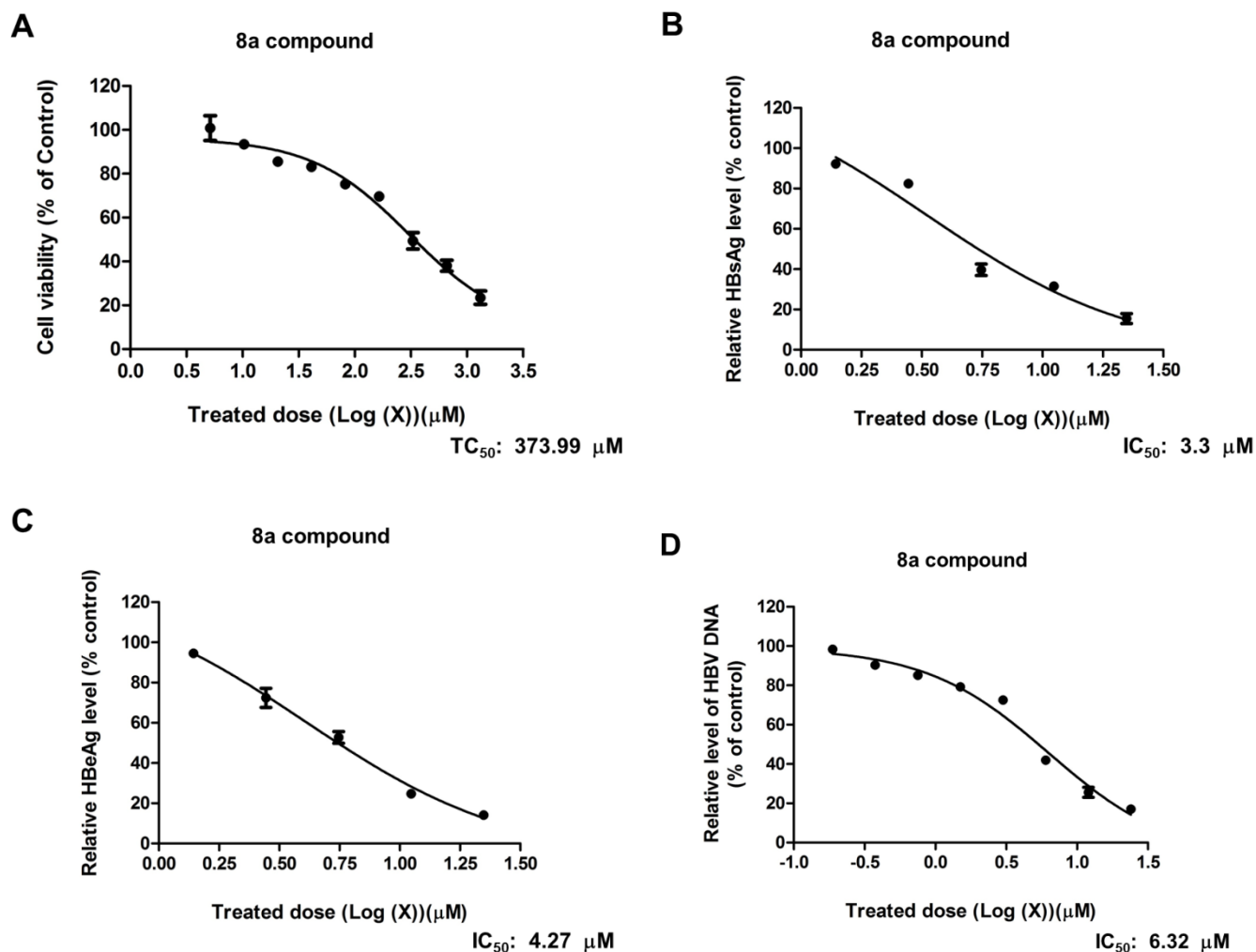


Figure S1 The representative dose-response graphic results of Paeonol-Phenylsufonyl derivative **8a** on (A) HepG2 2.15 cells' cytotoxicity, (B) hepatitis B virus (HBV) surface antigen (HBsAg) levels, (C) HB e antigen (HBeAg) levels, and (D) HBV viral DNA levels. The TC₅₀ or IC₅₀ value was analyzed with nonlinear regression fitting analysis using GraphPad Prism software (GraphPad Software Inc.). The presented values are known as mean±SD.

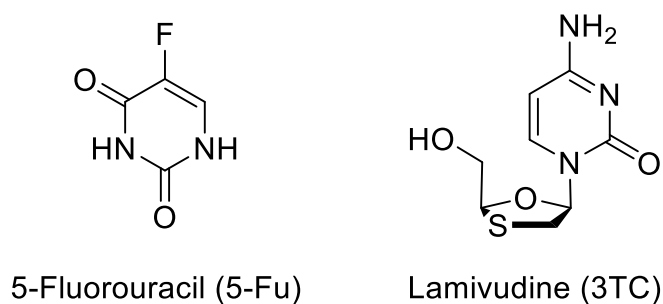


Figure S2 The structures of 5-Fluorouracil and Lamivudine, the reference compounds listed in Table 1.