Supporting Information for:

Three-component oxysulfenylation reaction: two simple and convenient approaches to β-alkoxy sulfides

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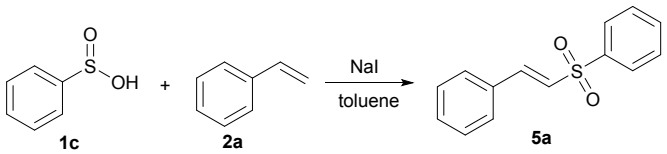
Table S1 Optimization of reaction conditions[a]

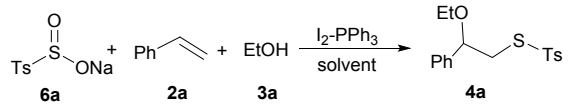


1c 2a 5a

Entry	**1c** (eq.)	NaI (eq.)	HBr (eq.)	Temp (℃)	Yield[b] (%)
1	1	1.8	1.5	110	11
2	1	1.8	-	110	45
3	1	1.5	-	110	47
4	1.5	1.5	-	110	60
5	2.0	1.5	-	110	59
6	1.5	1.5	-	80	42

[a]Reaction conditions: sodium arenesulfinates **1c**, alkene 2 (0.20 mmol) and NaI in toluene (2.0 mL), 12 h, in air. [b]Yield of isolated product.

Table S2 Optimization of reaction conditions[a]

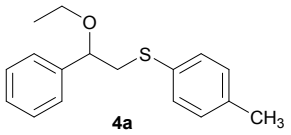


6a 2a 3a 4a

Entry	I_2 (eq.)	PPh_3 (eq.)	Solvent	Yield[b] (%)
1	1	1	DMF	trace
2	1	1	DMSO	trace
3	1	1	DCE	24
4	1	1	DME	15
5	1	1	EtOH	32
6	1	1	CH_3CN	27
7	1	1	Toluene	62
8	1	1.2	Toluene	65
9	1.2	1	Toluene	64
10[c]	1	1.2	Toluene	55

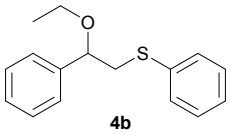
[a]Reaction conditions: sodium arenesulfinates **1** (0.20 mmol), alkene **2** (0.24 mmol), alcohol **3** (60 μL), I_2 , PPh_3, toluene (1.5 mL), 75℃, 24 h, in air. [b]Yield of isolated product. [c] 15h.

Analytical Data for the Products 4 and 5



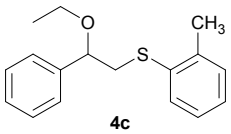
4a

4a[1]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.34-7.25 (m, 7H), 7.17-7.13 (m, 2H), 4.39-4.35 (m, 1H), 3.40-3.26 (m, 3H), 3.09-3.05 (m, 1H), 2.32 (s, 3H), 1.18 (t, J = 12.0 Hz, 3H).



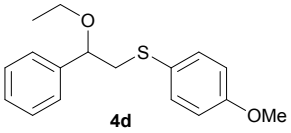
4b

4b[1]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.34-7.23 (m, 9H), 7.17-7.13 (m, 1H), 4.41-4.38 (m, 1H), 3.42-3.29 (m, 3H), 3.13-3.09 (m, 1H), 1.17 (t, J = 8.0 Hz, 3H).



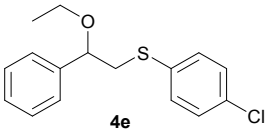
4c

4c: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.33-7.25 (m, 6H), 7.14-7.08 (m, 3H), 4.46-4.39 (m, 1H), 3.42-3.27 (m, 3H), 3.10-3.06 (m, 1H), 2.37 (s, 3H), 1.19 (t, J = 8.0 Hz, 3H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 141.4, 137.8, 136.0, 130.0, 128.5, 128.4, 127.9, 126.6, 126.3, 125.7, 80.7, 64.6, 41.1, 20.4, 15.2. HRMS (ESI) m/z: calcd for $C_{17}H_{19}OS$: 271.1162 $[M-H]^-$; found: 271.1167.



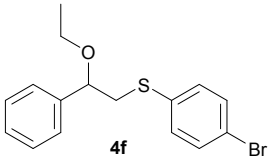
4d

4d[1]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.35-7.25 (m, 7H), 6.82 (d, J = 8.0 Hz, 2H), 4.34-4.31 (m, 1H), 3.79 (s, 3H), 3.40-3.20 (m, 3H), 3.03-2.98 (m, 1H), 1.17 (t, J = 8.0 Hz, 3H).



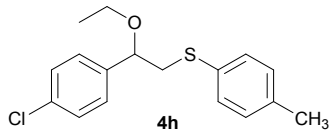
4e

4e: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.35-7.22 (m, 9H), 4.40-4.35 (m, 1H), 3.43-3.27 (m, 3H), 3.11-3.06 (m, 1H), 1.17 (t, J = 8.0 Hz, 3H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 141.0, 135.3, 131.8, 130.6, 128.9, 128.5, 128.1, 126.6, 80.66, 64.7, 41.8, 15.2. HRMS (ESI) m/z: calcd for $C_{16}H_{16}ClOS$: 291.0616 $[M-H]^-$; found: 291.0628.



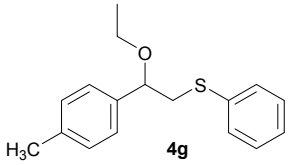
4f

4f[1]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.37-7.30 (m, 7H), 7.19 (d, J = 4.0 Hz, 2H), 4.40-4.35 (m, 1H), 3.43-3.27 (m, 3H), 3.11-3.07 (m, 1H), 1.17 (t, J = 4.0 Hz, 3H).



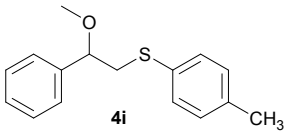
4h

4h[1]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.30-7.23 (m, 6H), 7.07 (m, 8.0 Hz, 2H), 4.34-4.31 (m, 1H), 3.36-3.23 (m, 3H), 3.04-3.00(m, 1H), 2.31 (s, 3H), 1.16 (t, J = 12.0 Hz, 3H).



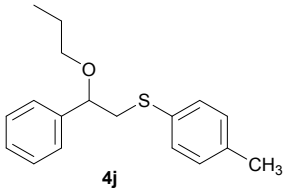
4g

4g[2]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.34 (d, J = 4.0 Hz, 2H), 7.27-7.14 (m, 7H), 4.38-4.33 (m, 1H), 3.42-3.30 (m, 3H), 3.12-3.08 (m, 1H), 2.34 (s,3H), 1.16 (t, J = 4.0 Hz, 3H).



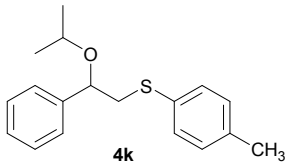
4i

4i[3]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.37-7.25 (m, 7H), 7.08 (d, J = 8.0 Hz, 2H), 4.27-4.24 (m,1H), 3.30-3.26 (m, 1H), 3.24 (s, 3H), 3.10-3.05 (m, 1H), 2.31 (s, 3H).



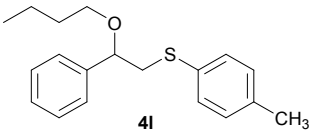
4j

4j: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.36-7.25 (m, 7H), 7.08 (d, J = 8.0Hz, 2H), 4.38-4.34 (m, 1H), 3.32-3.22(m, 3H), 3.09-3.05 (m, 1H), 2.31 (s, 3H), 1.61-1.55 (m, 2H), 0.90 (t, J = 4.0 Hz, 3H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 141.4, 136.0, 133.2, 130.0, 129.6, 128.4, 127.8, 126.7, 80.9, 71.0, 42.4, 23.0, 20.9, 10.6. HRMS (ESI) m/z: calcd for $C_{18}H_{21}OS$: 285.1319 $[M-H]^-$; found: 285.1314.



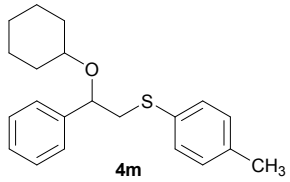
4k

4k[1]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.33-7.25 (m, 7H), 7.08 (d, J = 8.0 Hz, 2H), 4.50-4.47 (m, 1H), 3.52-3.49 (m, 1H), 3.25-3.22 (m, 1H), 3.08-3.04 (m, 1H), 2.31 (s, 3H), 1.15 (d, J = 4.0 Hz, 3H), 1.08 (d, J = 8.0 Hz, 3H).



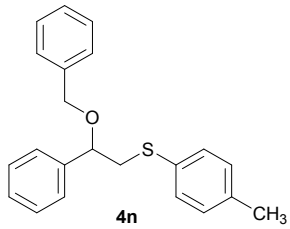
4l

4l[1]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.34-7.25 (m, 7H), 7.08 (d, J = 8.0 Hz, 2H), 4.37-4.34 (m, 1H), 3.35-3.26 (m, 3H), 3.09-3.05 (m, 1H), 2.31 (s, 3H), 1.56-1.52 (m, 2H), 1.37-1.36 (m, 2H), 0.88 (t, J = 8.0 Hz, 3H).



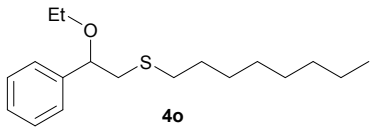
4m

4m: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.33-7.25 (m, 7H), 7.08 (d, J = 8.0 Hz, 2H), 4.56-4.53 (m, 1H), 3.28-3.17 (m, 3H), 3.08-3.04 (m, 1H), 2.31 (s, 3H), 1.90 (d, J = 8.0 Hz, 1H), 1.76-1.67 (m, 3H), 1.48-1.29 (m, 3H), 1.22-1.11 (m, 3H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 142.3, 135.8, 133.3, 129.6, 129.5, 128.3, 127.7, 126.6, 42.8, 33.3, 31.4, 25.8, 24.0, 21.0. HRMS (ESI) m/z: calcd for $C_{21}H_{25}OS$: 325.1632 [M-H]$^{-}$; found: 325.1628.



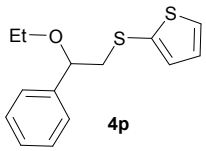
4n

4n[3]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.48-7.20 (m, 12H), 7.05 (d, J = 8.0Hz, 2H), 4.49 (d, J = 12.0Hz, 2H), 4.30 (d, J = 12.0Hz, 2H), 3.38-3.33 (m, 1H), 3.12-3.08 (m, 1H), 2.30 (s, 3H).



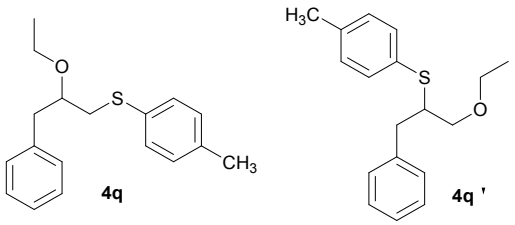
4o

4o[3]: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.37-7.27 (m, 5H), 4.39-4.36 (m, 1H), 3.40-3.38 (m, 2H), 2.95-2.90 (m, 1H), 2.71-2.66 (m, 1H), 2.47 (t, J = 8.0Hz, 2H), 1.62-1.50 (m, 2H), 1.29-1.16 (m, 13H), 0.87 (t, J = 8.0Hz, 3H).



4p

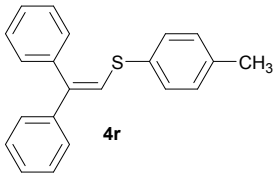
4p: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.35-7.25 (m, 6H), 7.11 (d, J = 4.0Hz, 1H), 6.97-6.94 (m, 1H), 4.40-4.37 (m, 1H), 3.42-3.36 (m, 2H), 3.18-3.16 (m, 1H), 3.01-2.96 (m, 1H), 1.20 (t, J = 4.0Hz, 3H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 141.1, 135.0, 133.4, 129.1, 128.5, 128.0, 127.5, 126.7, 80.5, 64.7, 46.5, 15.3 . HRMS (ESI) m/z: calcd for $C_{14}H_{15}OS_2$: 263.0570 [M-H]$^{-}$; found: 263.0571.



4q **4q '**

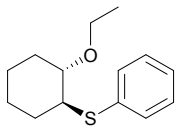
4q and **4q'**[1], obtained as a 1:2 mixture of regioisomers, colorless oil; **4p**: ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.31–7.18 (m, 7H), 7.08 (d, J = 8.0 Hz, 2H), 3.60–3.56 (m, 1H), 3.46–3.41 (m, 2H), 3.10–3.06 (m, 1H), 3.00–2.84 (m, 3H), 2.32 (s, 3H), 1.09 (t, J = 7.2 Hz, 3H). **4p'**: δ 7.31–7.18 (m, 7H), 7.08 (d, J =

8.4 Hz, 2H), 3.46–3.41 (m, 5H), 2.87–2.84 (m, 2H), 2.32 (s, 3H), 1.19 (t, J = 4.0 Hz, 3H).



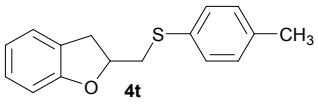
4r

4r[1]: white solid; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.43–7.12 (m, 12H), 7.13 (d, J = 8.0 Hz, 2H), 6.82 (s, 1H), 2.33 (s, 3H).



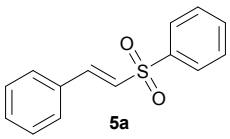
4s

4s: colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.45 (d, J = 4.0 Hz, 2H), 7.29-7.18 (d, J = 8.4 Hz, 3H), 3.64–3.60 (m, 1H), 3.52–3.48 (m, 1H), 3.21-3.16 (m, 2H), 2.11–2.02 (m, 2H), 1.71–1.63 (m, 2H), 1.41–1.26 (m, 4H), 1.16 (t, J = 8.0 Hz, 3H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 140.5, 135.8, 132.0, 128.6, 126.5, 80.4, 64.6, 51.4, 31.5, 31.0, 24.8, 23.5, 15.6. HRMS (ESI) m/z: calcd for $C_{14}H_{20}OSNa$: 259.1127 $[M+Na]^+$; found: 259.1113.



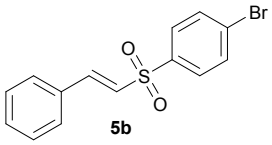
4t

4t[1], colorless oil; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.34 (d, J = 4.0 Hz, 2H), 7.16–7.11 (m, 4H), 6.87–6.83 (m, 1H), 6.77-6.74 (m, 1H), 4.92–4.86 (m, 1H), 3.35–3.31 (m, 2H), 3.07–3.03 (m, 2H), 2.33 (s, 3H).



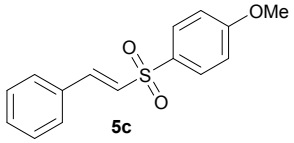
5a

5a[5], pale yellow liquid; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.97 (d, J = 12.0Hz, 2H), 7.69 (d, J = 16.0 Hz, 1H), 7.61 (d, J = 8.0Hz, 1H), 7.57–7.53 (m, 2H), 7.49–7.47 (m, 2H), 7.40–7.36 (m, 3H), 6.87 (d, J = 16 Hz, 1H).



5b

5b[6], white soild; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.81 (d, J = 8.0 Hz, 2H), 7.69 (d, J = 16.0 Hz, 3H), 7.49–7.40 (m, 5H), 6.83 (d, J = 16.0 Hz, 1H).



5c

5b[7], white soild; ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.86 (d, J = 8.0 Hz, 2H), 7.62 (d, J = 12.0 Hz, 1H), 7.45 (d, J = 4.0 Hz, 2H), 7.38 (s, 2H), 7.99 (d, J = 8.0 Hz, 2H), 6.84 (d, J = 16.0 Hz, 1H), 3.85 (s, 3H).

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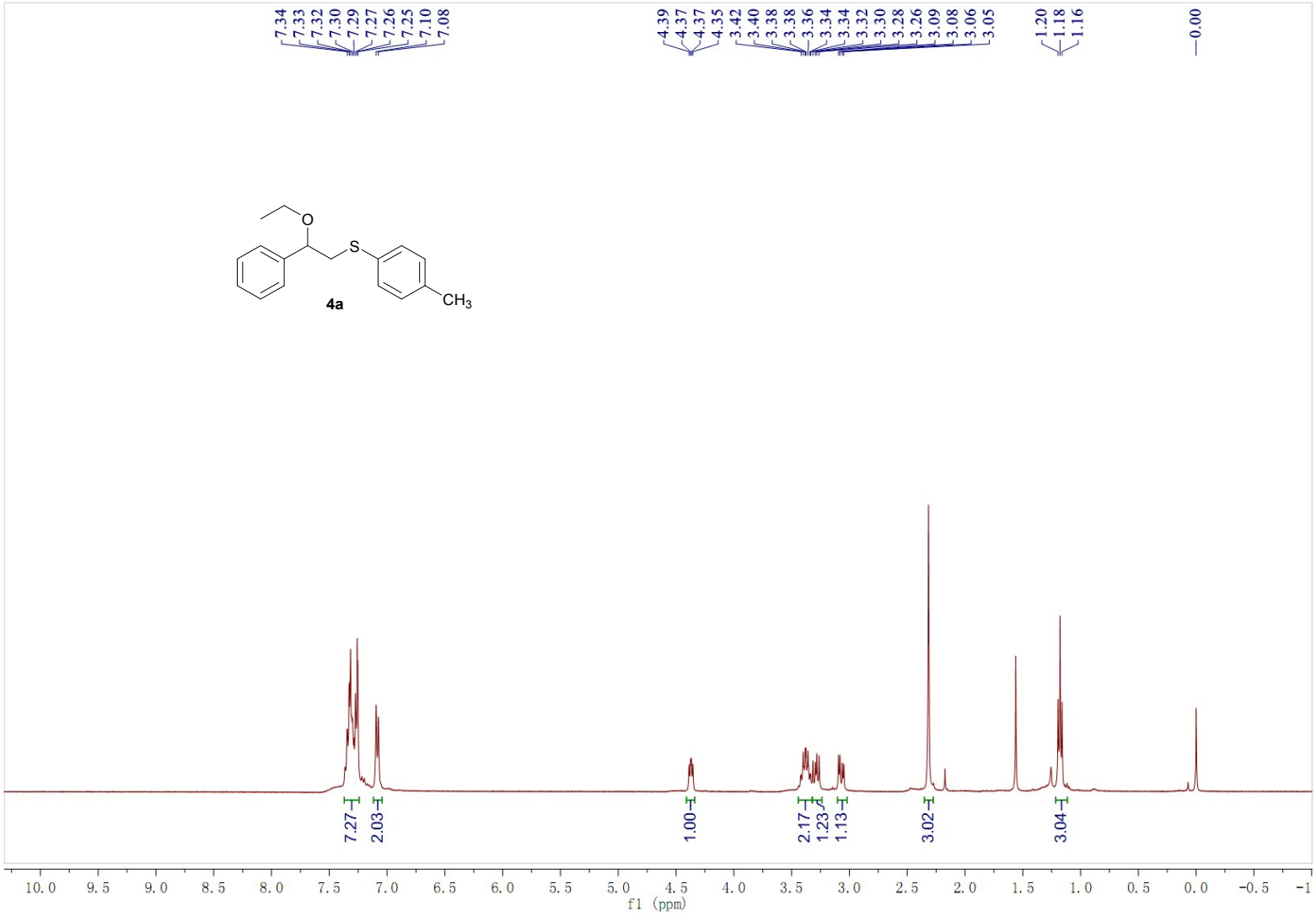
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3.34
3.32
3.30
3.28
3.26
3.09
3.08
3.06
3.05
1.20
1.18
1.16
0.00
O
S
CH3
4a
7.27
2.03
1.00
2.17
1.23
1.13
3.02
3.04
10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5 -1
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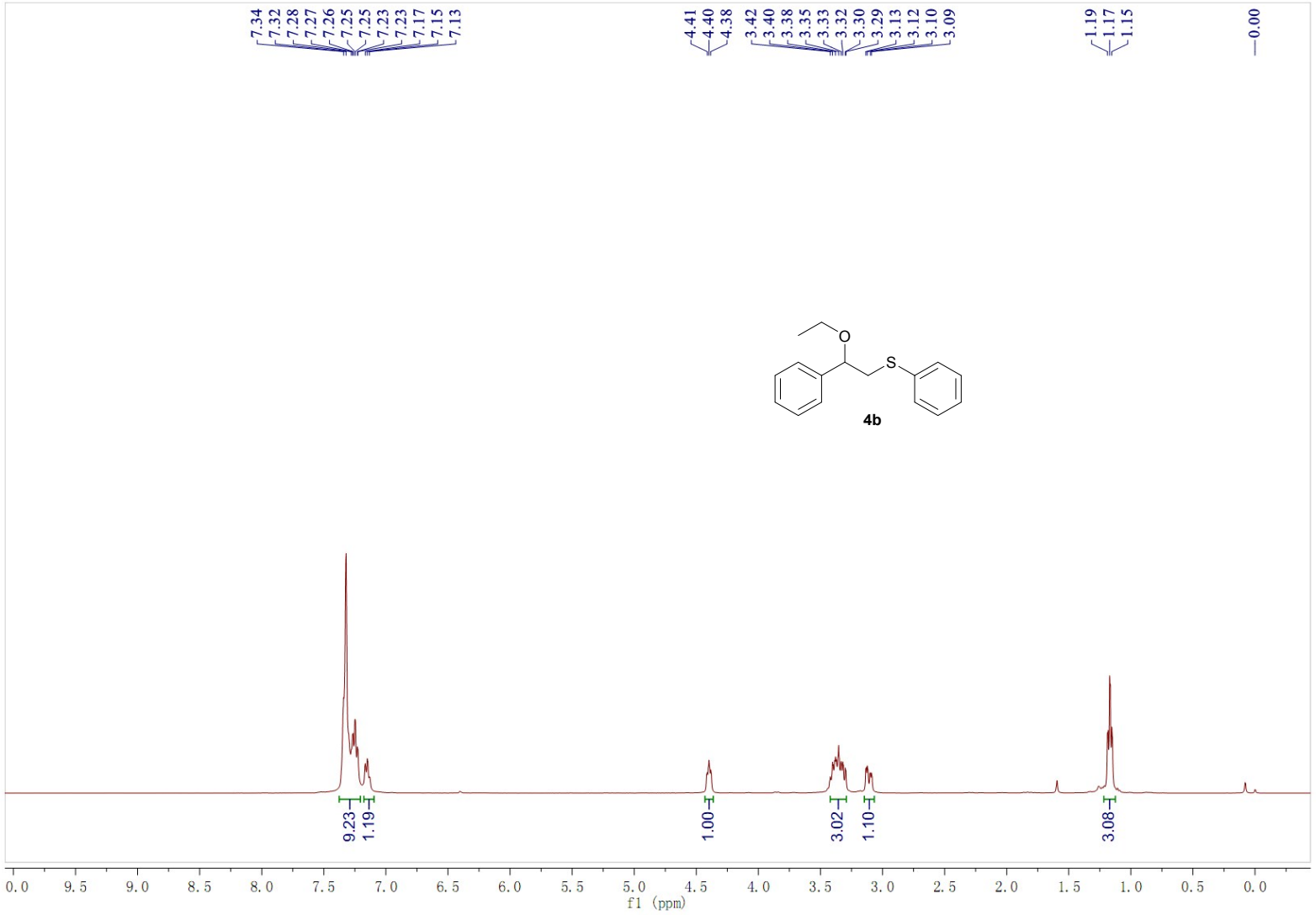
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3.38
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3.32
3.30
3.29
3.13
3.12
3.10
3.09
1.19
1.17
1.15
0.00
O
S
4b
9.23
1.19
1.00
3.02
1.10
3.08
0.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
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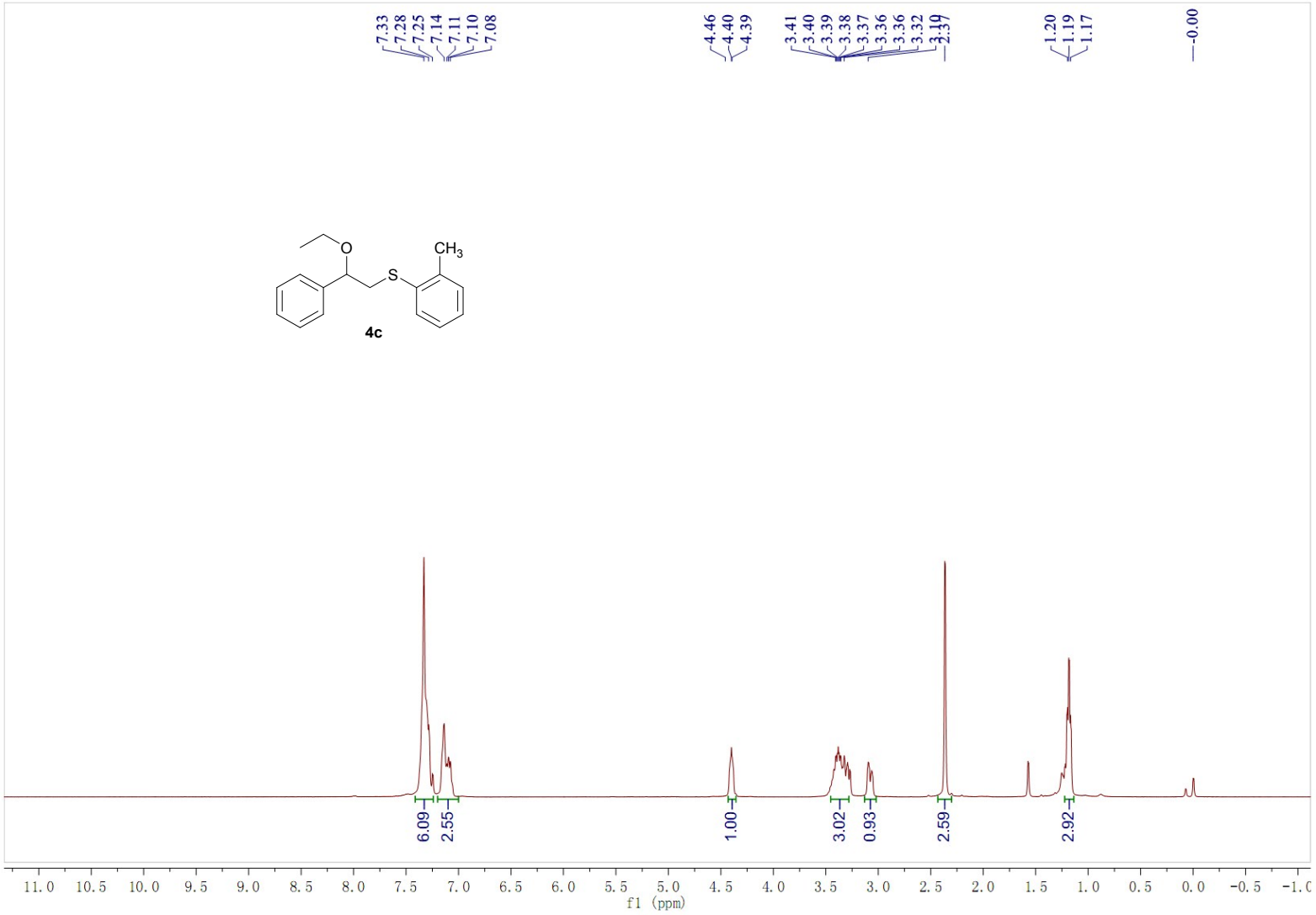
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3.36
3.36
3.32
3.19
2.37
1.20
1.19
1.17
0.00
O
CH3
S
4c
6.09
2.55
1.00
3.02
0.93
2.59
2.92
11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5 -1.0
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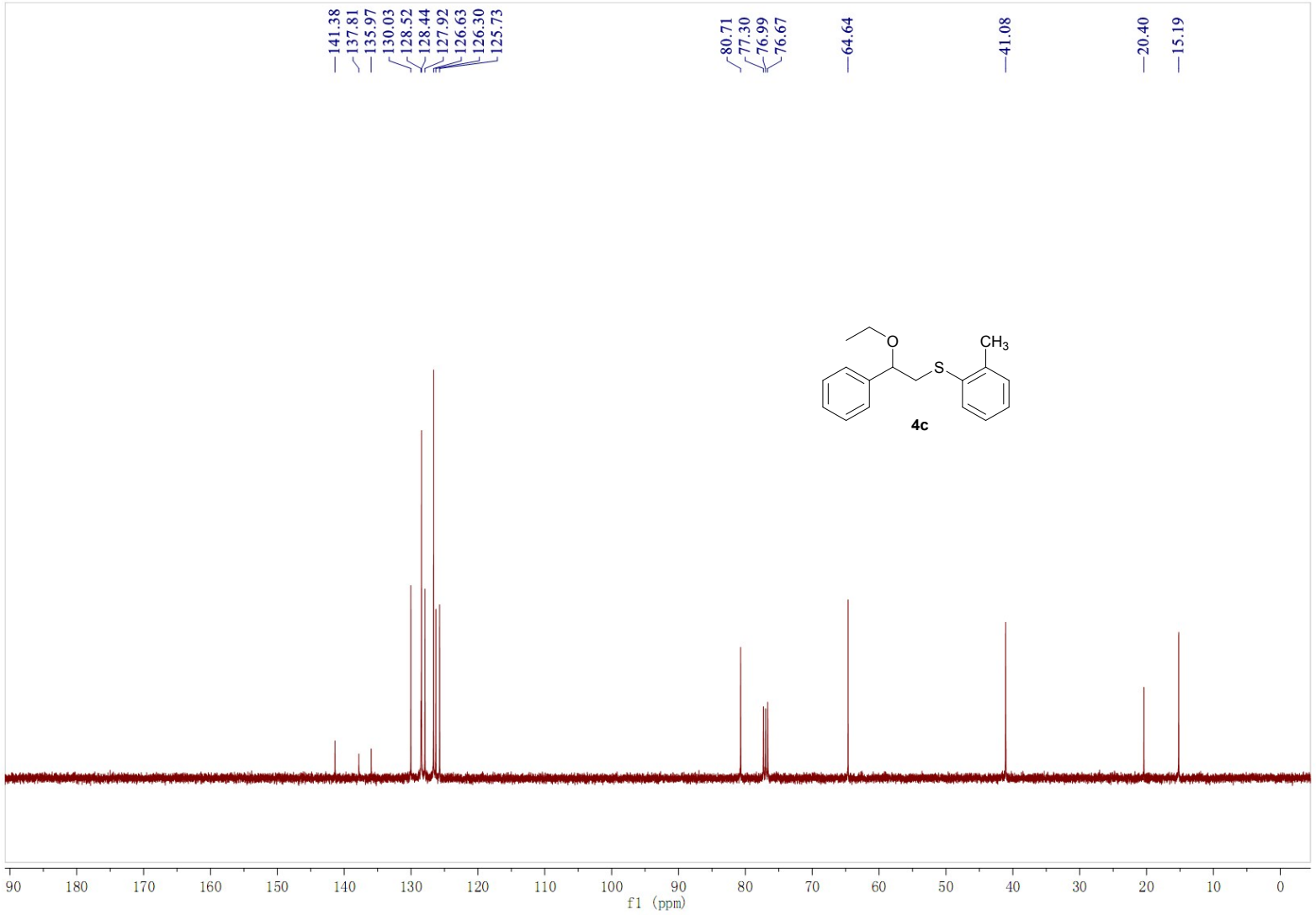
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76.67
64.64
41.08
20.40
15.19
O
S
CH3
4c
90
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90
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70
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50
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10
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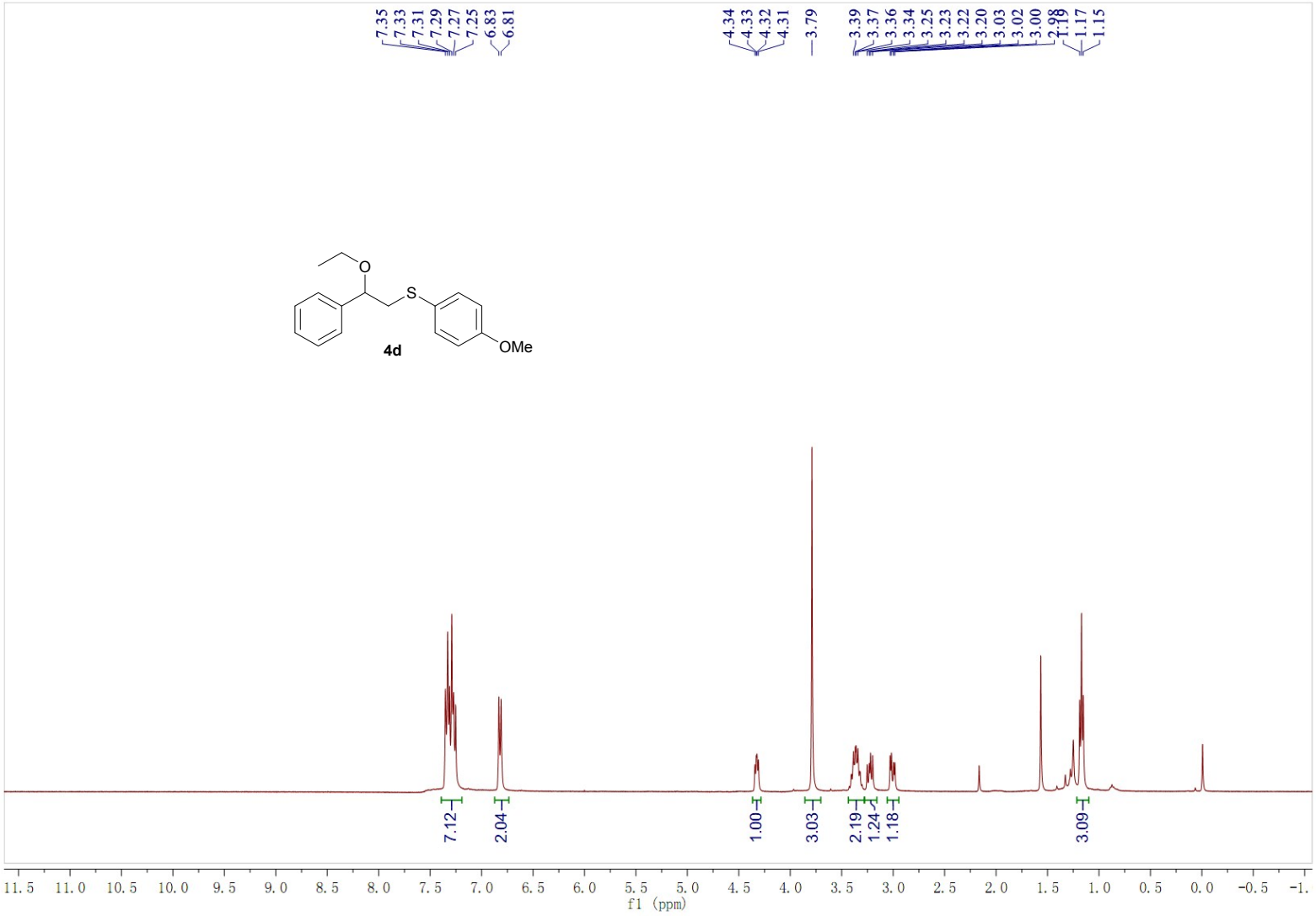
f1 (ppm)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4.32
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3.39
3.37
3.36
3.34
3.25
3.23
3.22
3.20
3.03
3.02
3.00
2.98
1.17
1.15
O
S
OMe
4d
7.12
2.04
1.00
3.03
2.19
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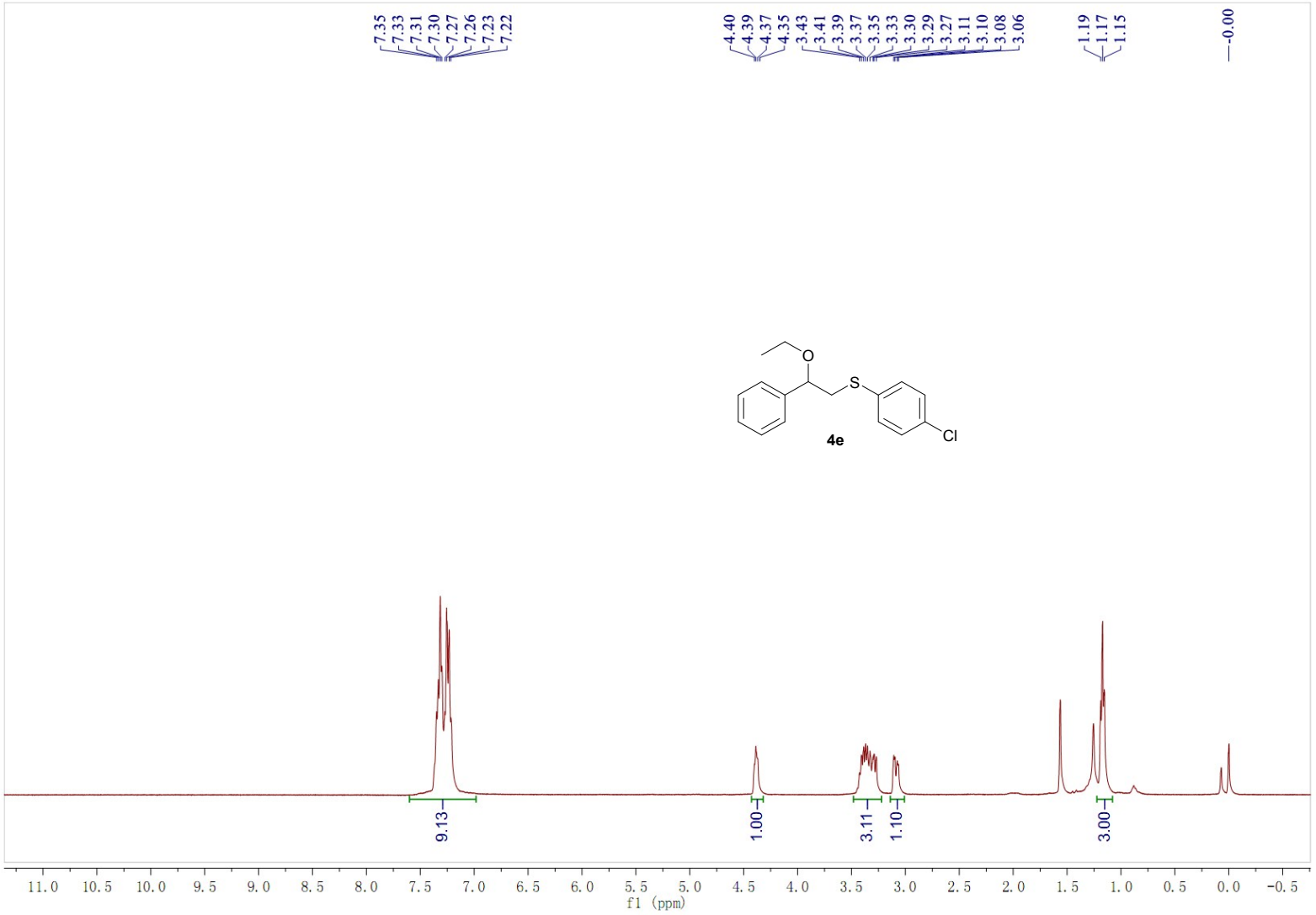
3.09
11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5 -1.
f1 (ppm)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3.10
3.08
3.06
1.19
1.17
1.15
-0.00
O
S
Cl
4e
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1.00
3.11
1.10
3.00
11.0
10.5
10.0
9.5
9.0
8.5
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7.0
6.5
6.0
5.5
5.0
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2.0
1.5
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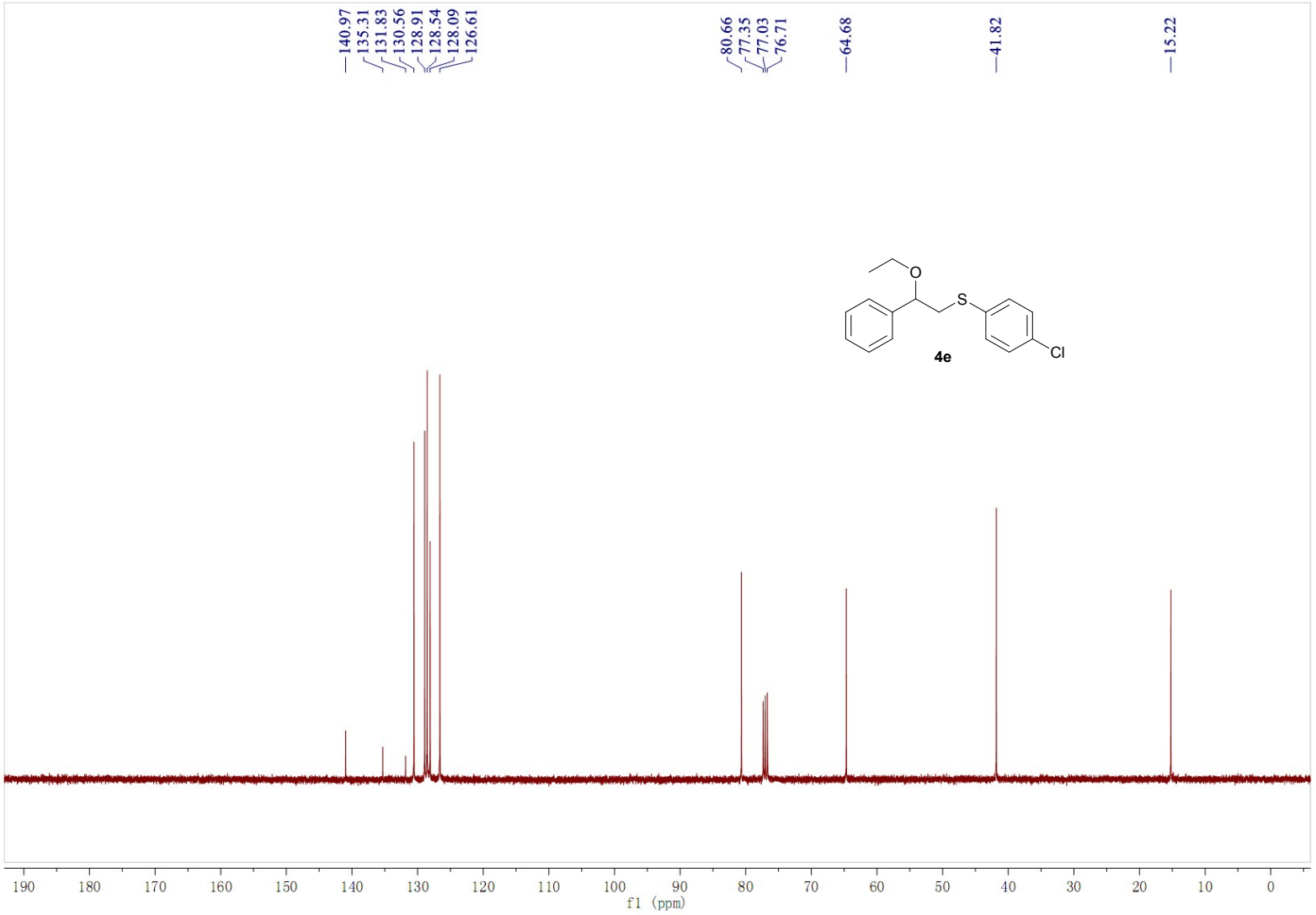
0.0
-0.5
f1 (ppm)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77.03
76.71
64.68
41.82
15.22
O
S
Cl
4e
190
180
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130
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110
100
90
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50
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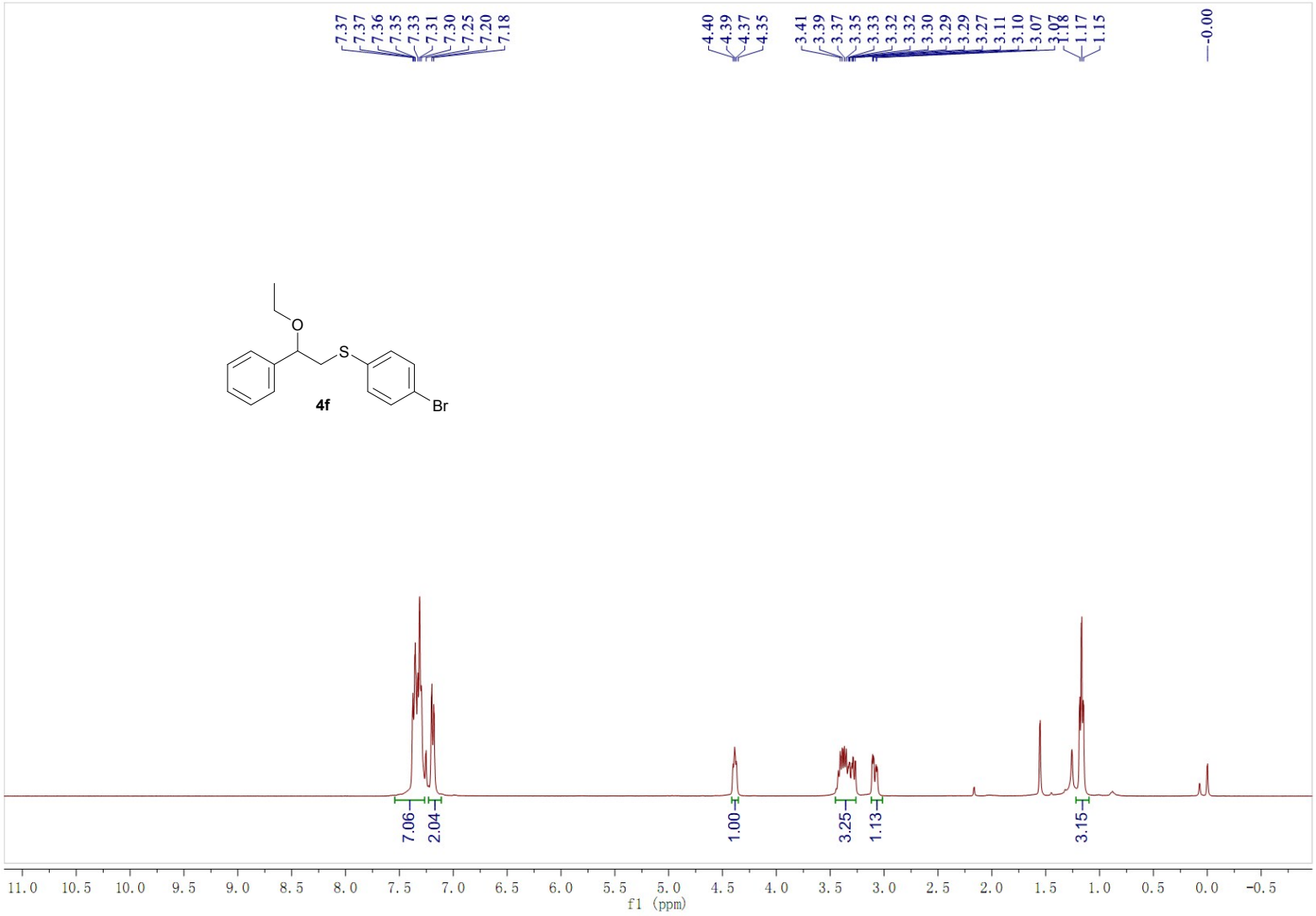
30
20
10
0
f1 (ppm)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4.35
3.41
3.39
3.37
3.35
3.33
3.32
3.32
3.30
3.29
3.29
3.27
3.11
3.10
3.07
3.07
1.18
1.17
1.15
-0.00
O
S
Br
4f
7.06
2.04
1.00
3.25
1.13
3.15
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10.5
10.0
9.5
9.0
8.5
8.0
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7.0
6.5
6.0
5.5
5.0
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2.5
2.0
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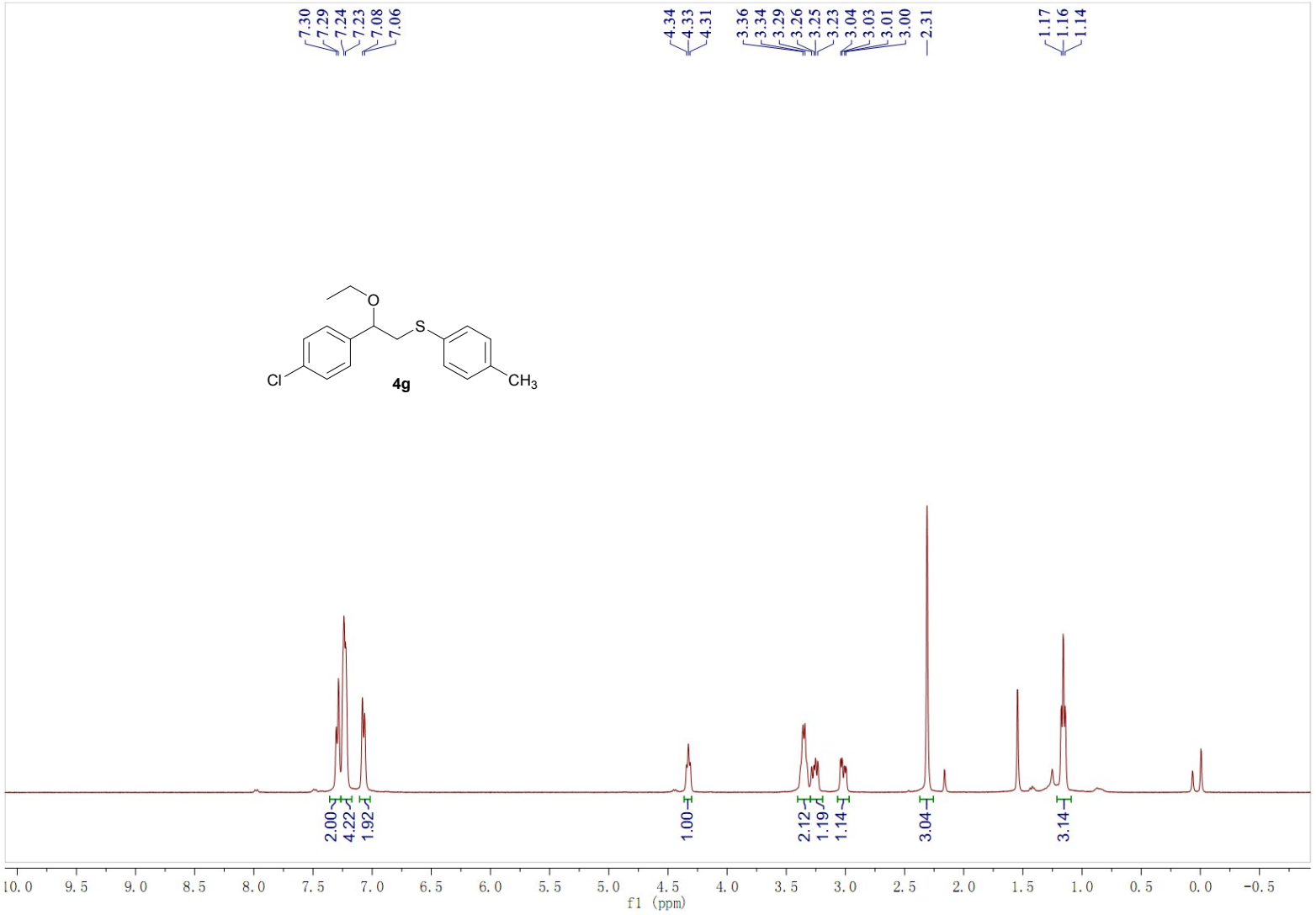
0.0
-0.5
f1 (ppm)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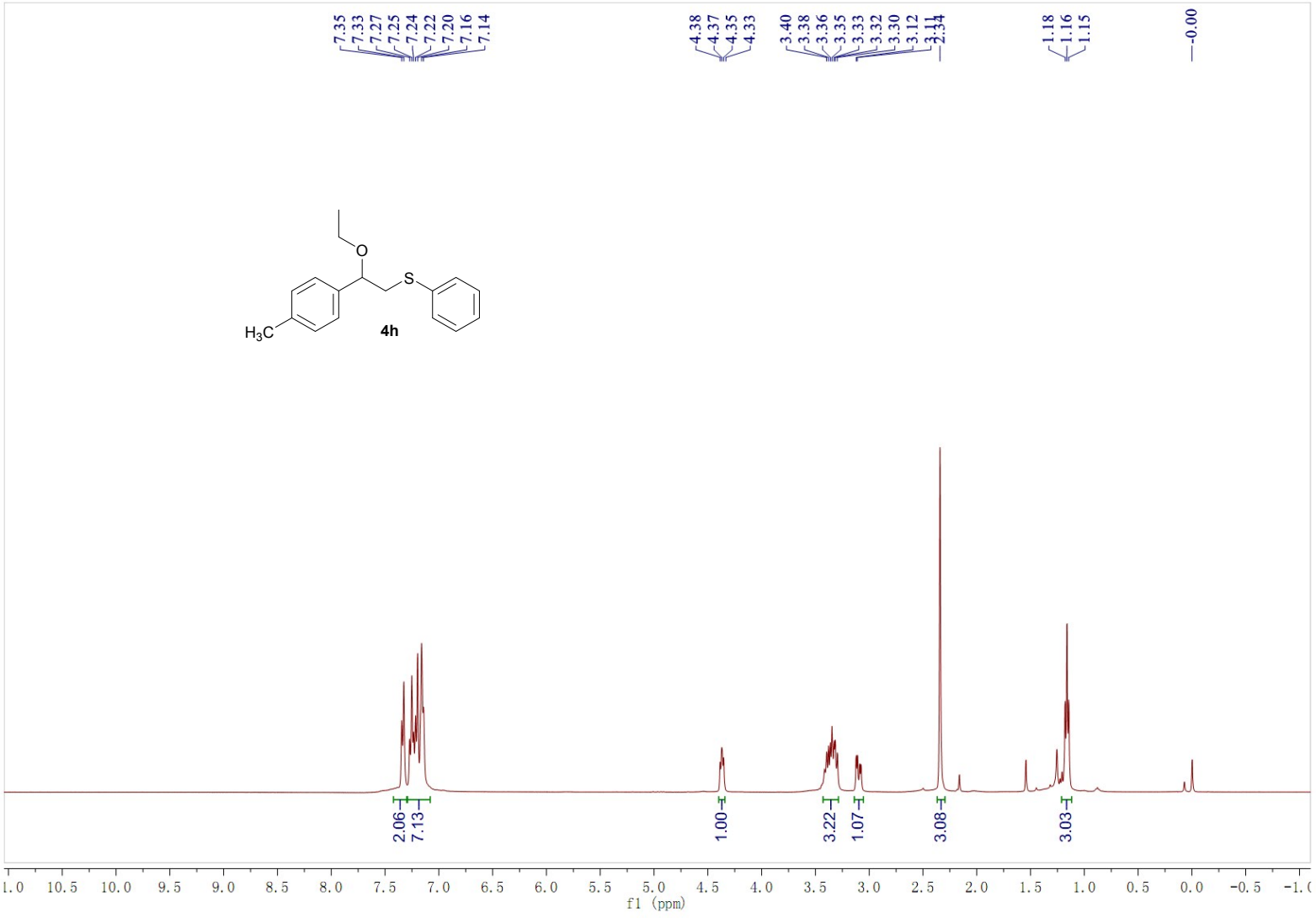
3.26
3.25
3.23
3.04
3.03
3.01
3.00
2.31
1.17
1.16
1.14
O
S
Cl
CH3
4g
2.00
4.22
1.92
1.00
2.12
1.19
1.14
3.04
3.14
10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)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3.40
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3.36
3.35
3.33
3.32
3.30
3.12
2.34
1.18
1.16
1.15
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4h
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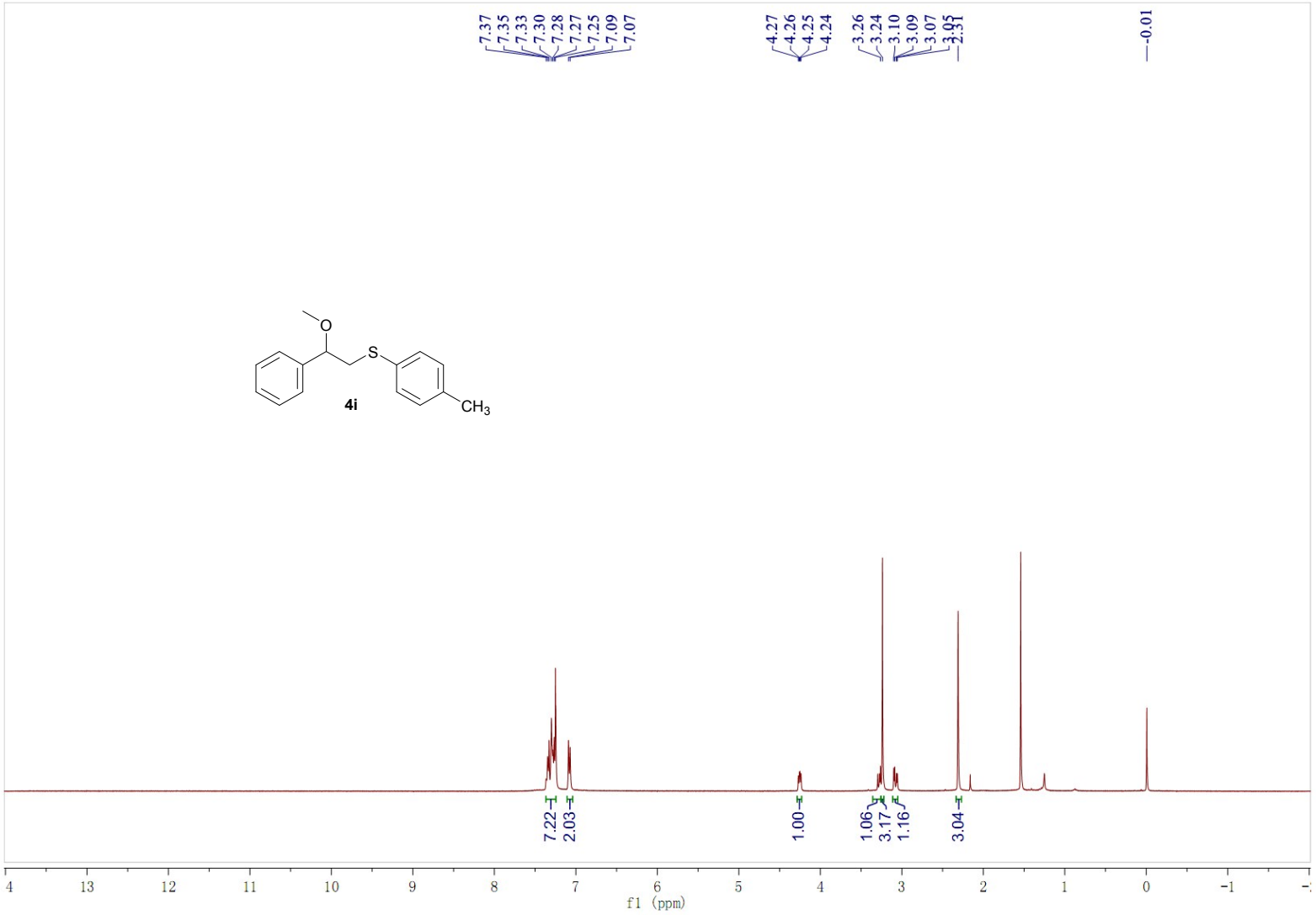
7.13
1.00
3.22
1.07
3.08
3.03
f1 (ppm)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4.27
4.26
4.25
4.24
3.26
3.24
3.10
3.09
3.07
3.05
2.31
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CH3
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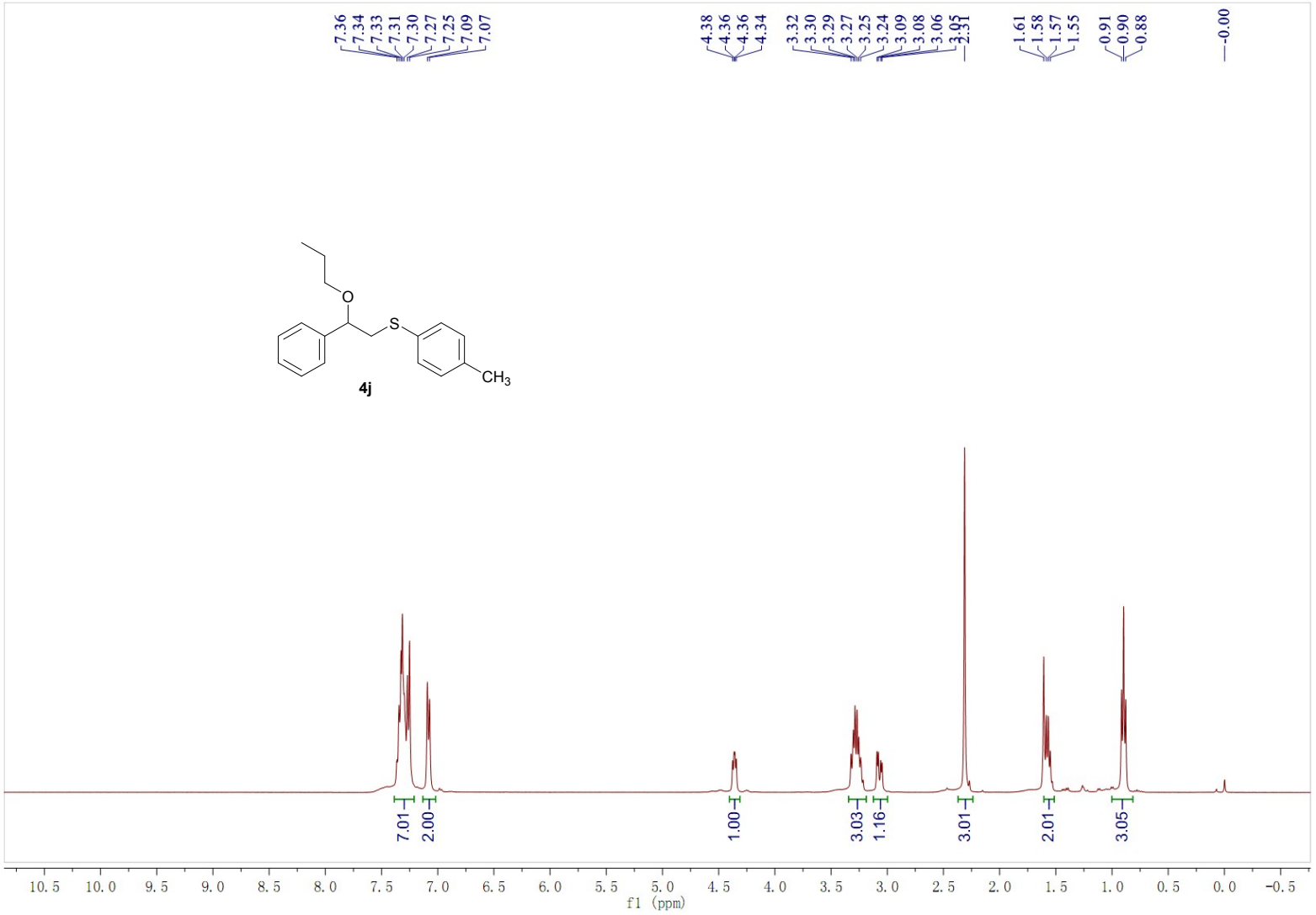
2.03
1.00
1.06
3.17
1.16
3.04
f1 (ppm)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7.27
7.25
7.09
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4.38
4.36
4.36
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3.30
3.29
3.27
3.25
3.24
3.09
3.08
3.06
2.91
1.61
1.58
1.57
1.55
0.91
0.90
0.88
-0.00
O
S
CH3
4j
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2.00
1.00
3.03
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3.01
2.01
3.05
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8.0
7.5
7.0
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6.0
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5.0
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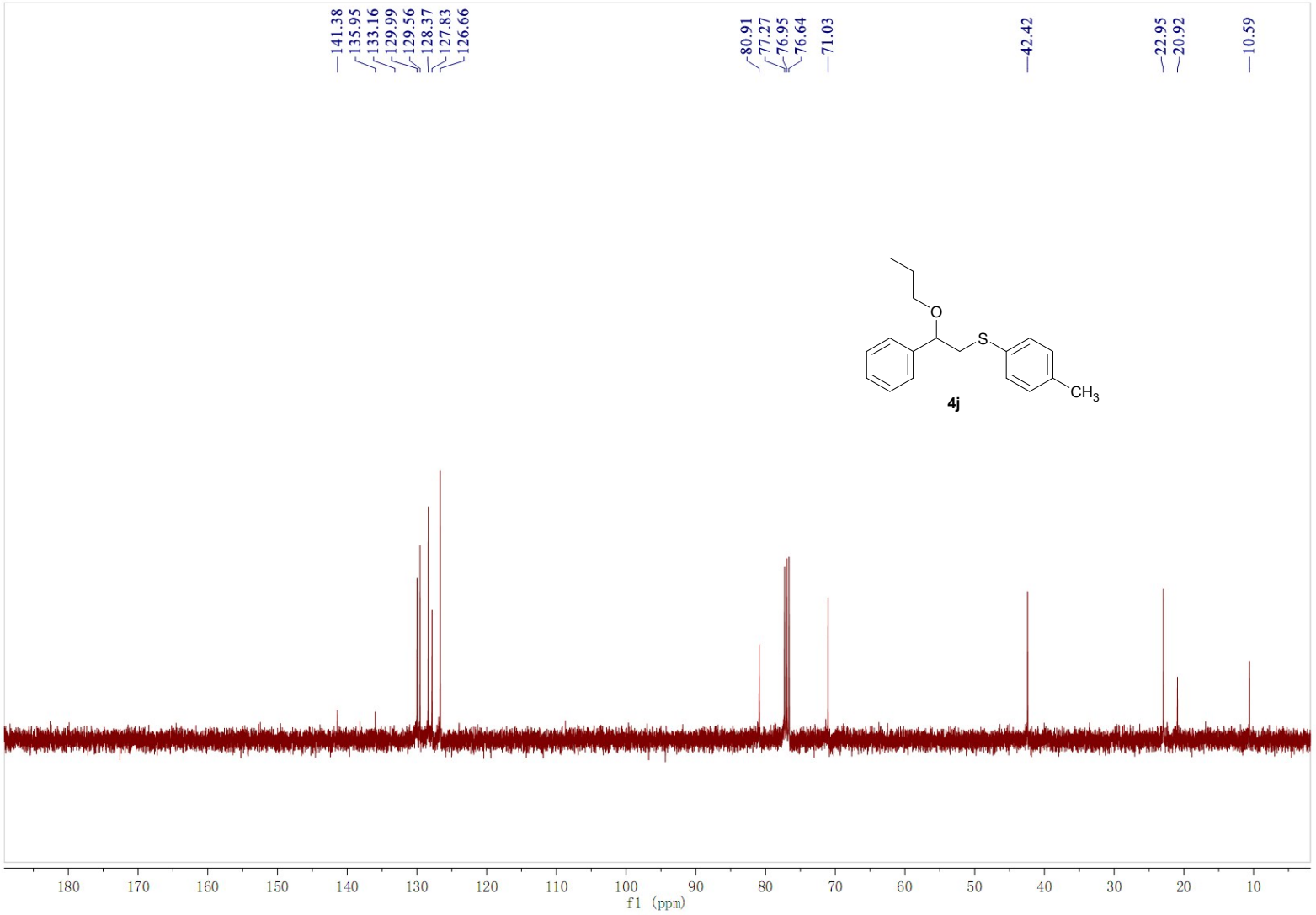
-0.5
f1 (ppm)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76.95
76.64
71.03
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22.95
20.92
10.59
O
S
CH3
4j
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140
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120
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100
90
80
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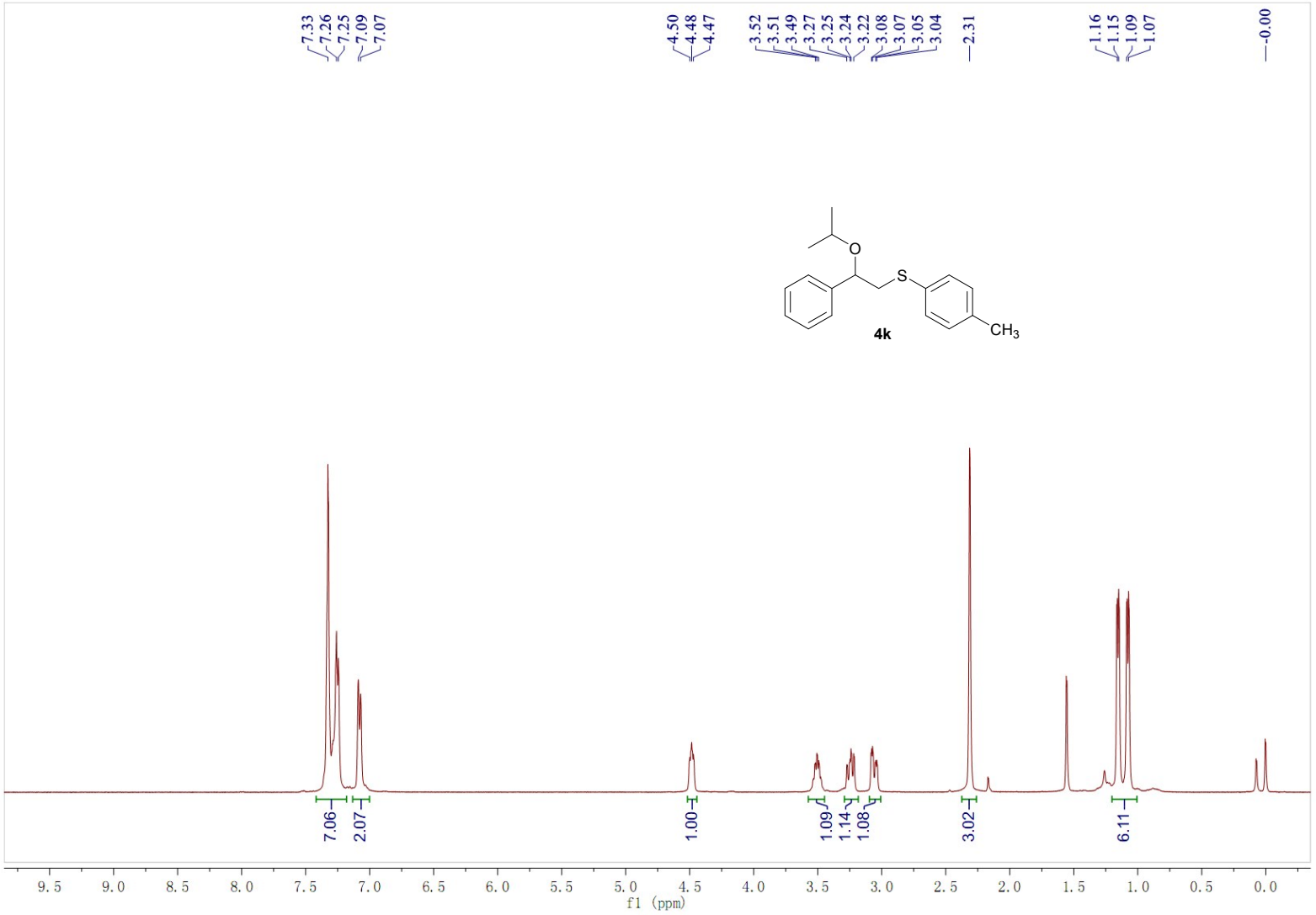
60
50
40
30
20
10
f1 (ppm)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3.24
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3.08
3.07
3.05
3.04
2.31
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1.09
1.07
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O
S
CH3
4k
7.06
2.07
1.00
1.09
1.14
1.08
3.02
6.11
9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0
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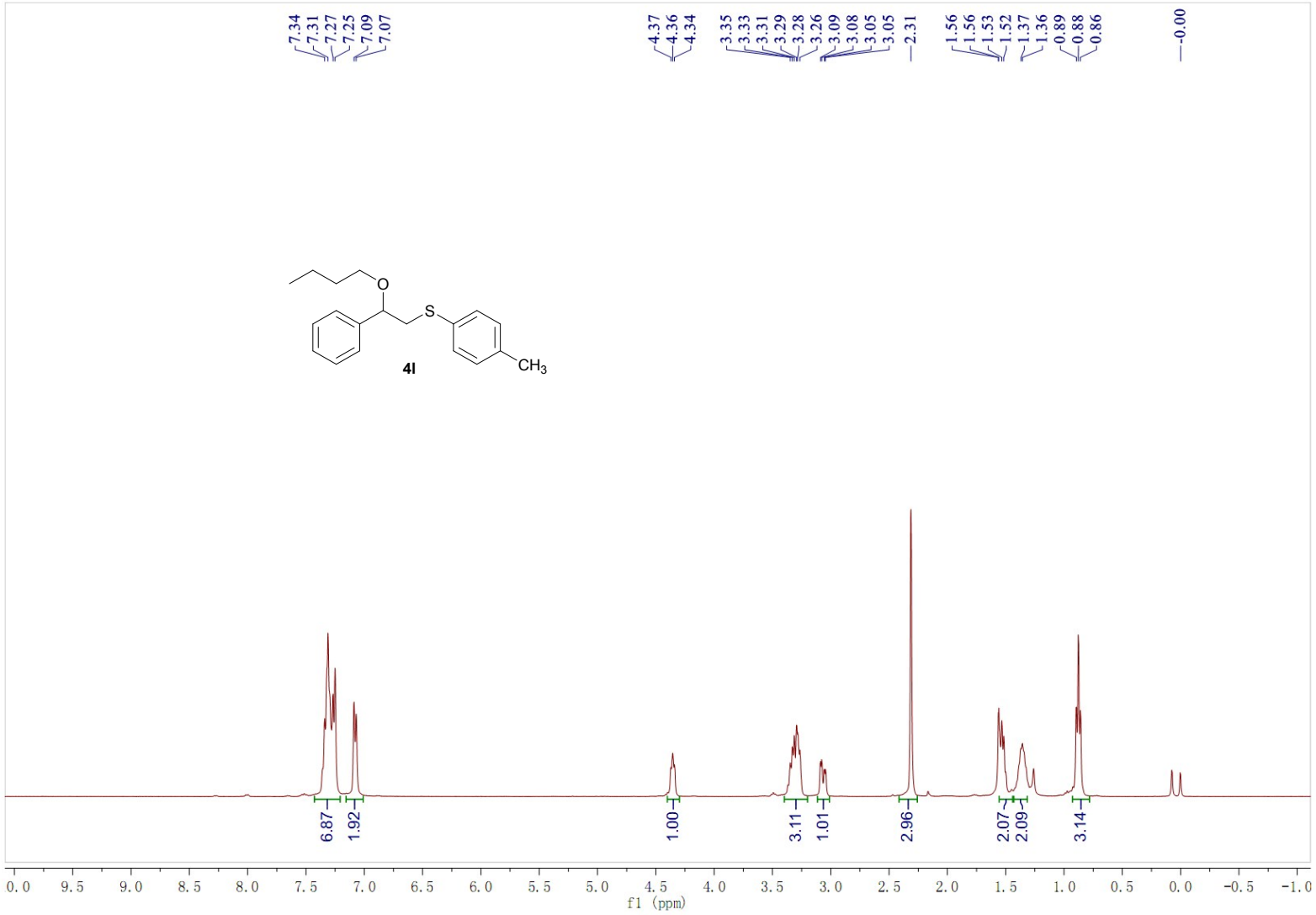
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7.07
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3.31
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3.28
3.26
3.09
3.08
3.05
3.05
2.31
1.56
1.56
1.53
1.52
1.37
1.36
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0.88
0.86
-0.00
O
S
CH3
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6.87
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1.00
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2.07
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6.5
6.0
5.5
5.0
4.5
4.0
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2.0
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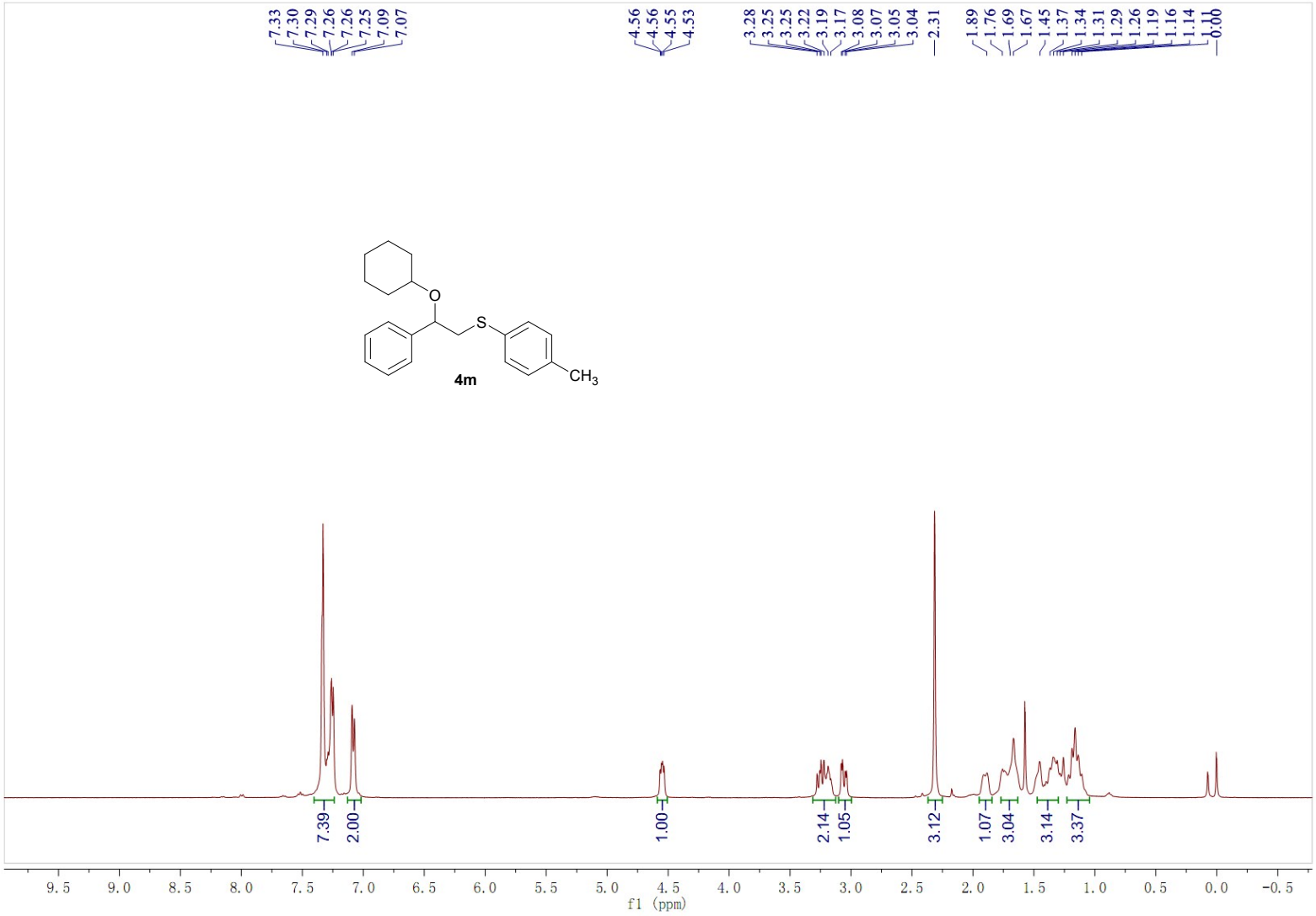
0.5
0.0
-0.5
-1.0
f1 (ppm)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4.56
4.55
4.53
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3.25
3.25
3.22
3.19
3.17
3.08
3.07
3.05
3.04
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1.29
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1.19
1.16
1.14
1.11
0.00
O
S
CH3
4m
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2.00
1.00
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3.12
1.07
3.04
3.14
3.37
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7.5
7.0
6.5
6.0
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5.0
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2.0
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0.5
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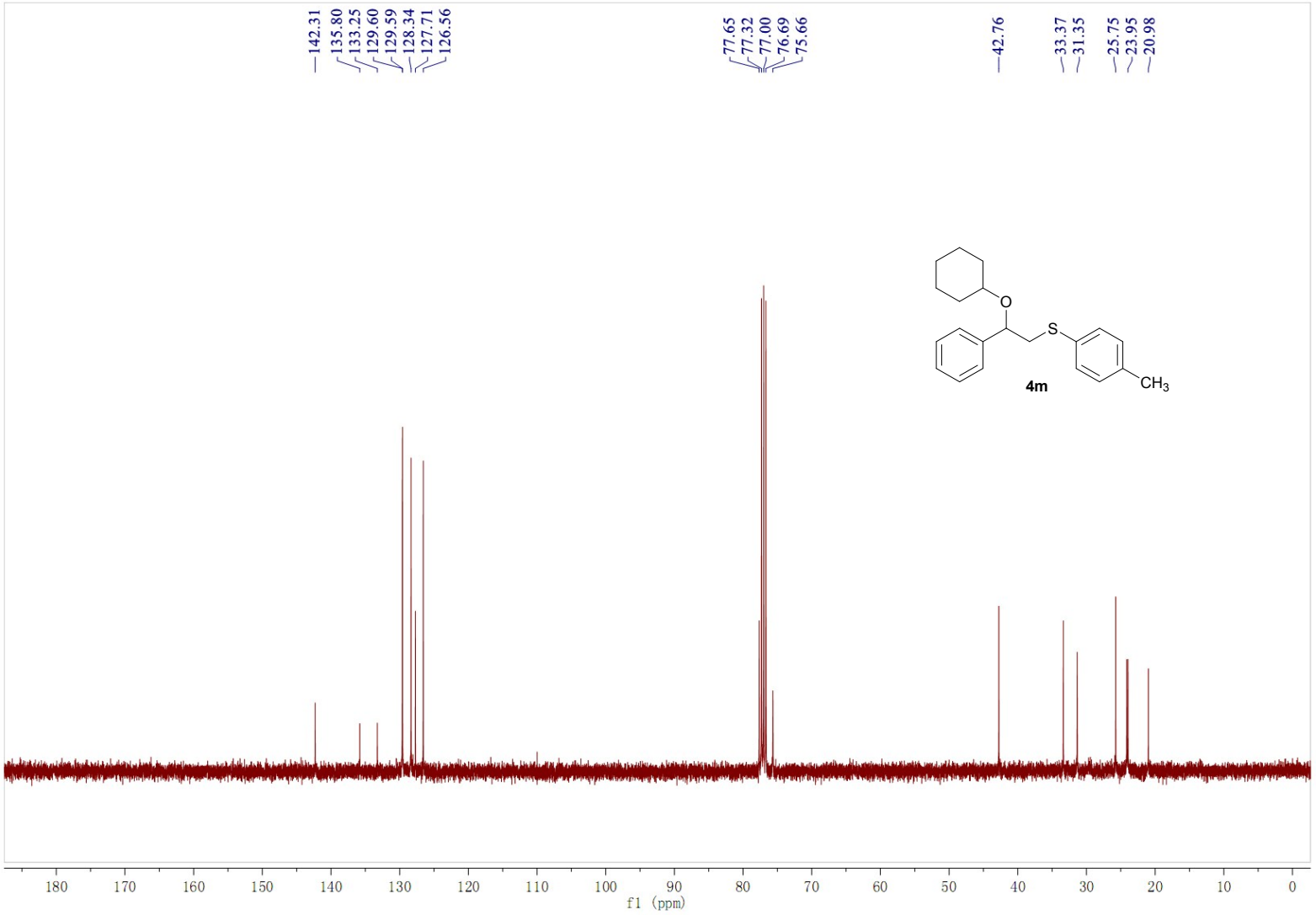
-0.5
f1 (ppm)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75.66
42.76
33.37
31.35
25.75
23.95
20.98
O
S
CH3
4m
180
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130
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110
100
90
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70
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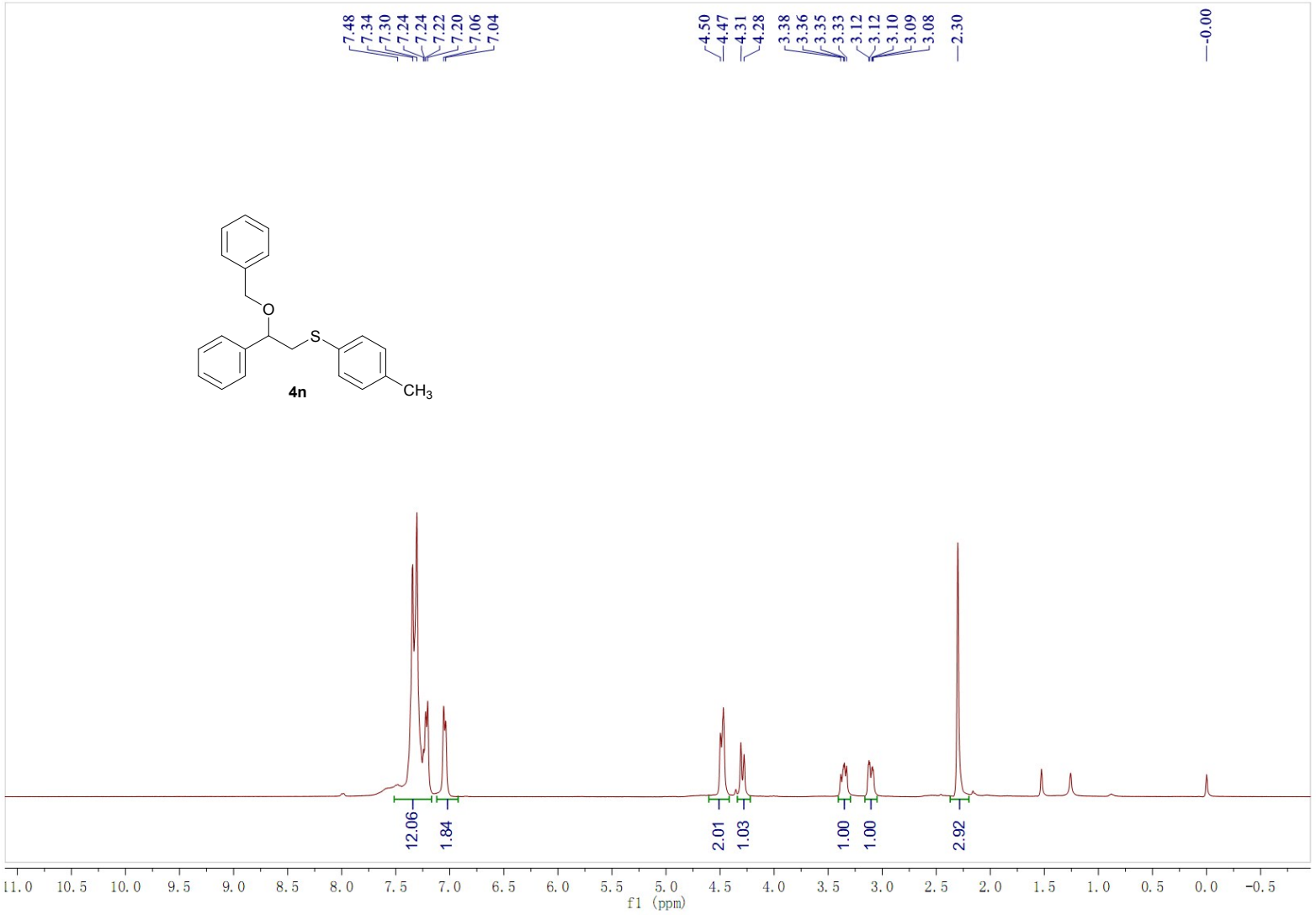
50
40
30
20
10
0
f1 (ppm)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3.35
3.33
3.12
3.12
3.10
3.09
3.08
2.30
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O
S
CH3
4n
12.06
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1.03
1.00
1.00
2.92
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10.0
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9.0
8.5
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7.5
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6.0
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5.0
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2.0
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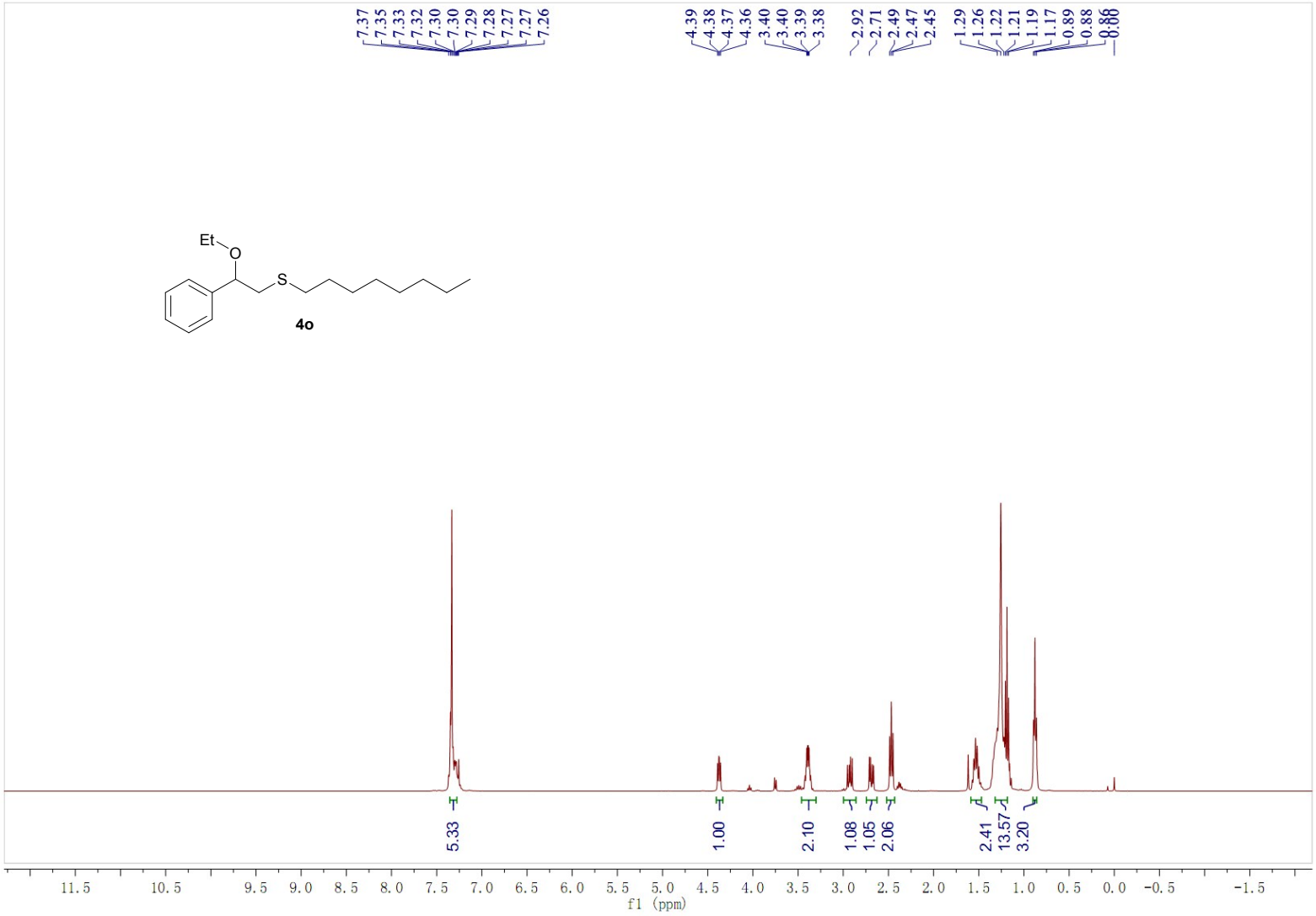
-0.5
f1 (ppm)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4.37
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3.40
3.39
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0.86
0.86
Et
O
S
4o
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1.08
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0.0
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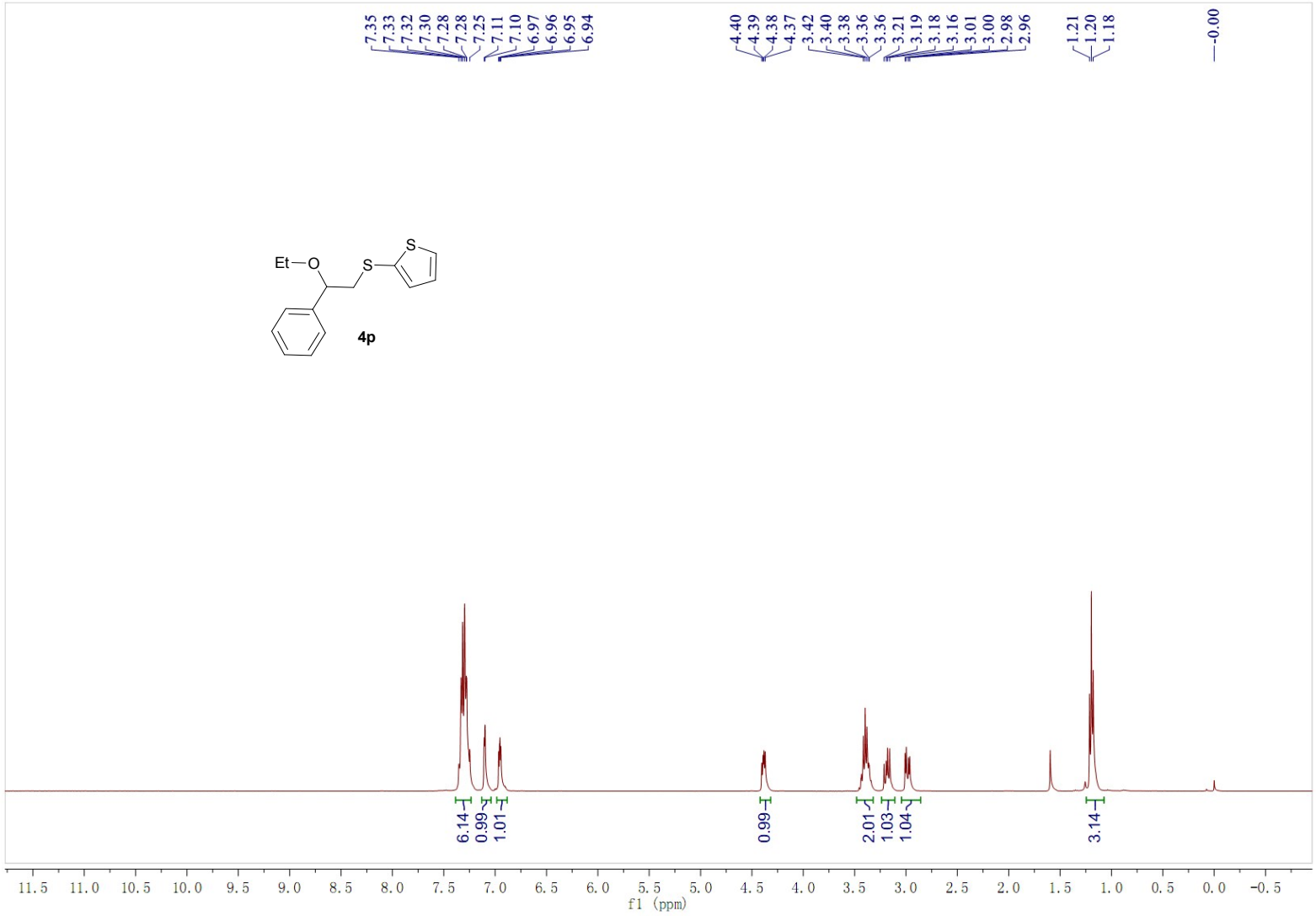
-1.5
f1 (ppm)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4.37
3.42
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3.38
3.36
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3.21
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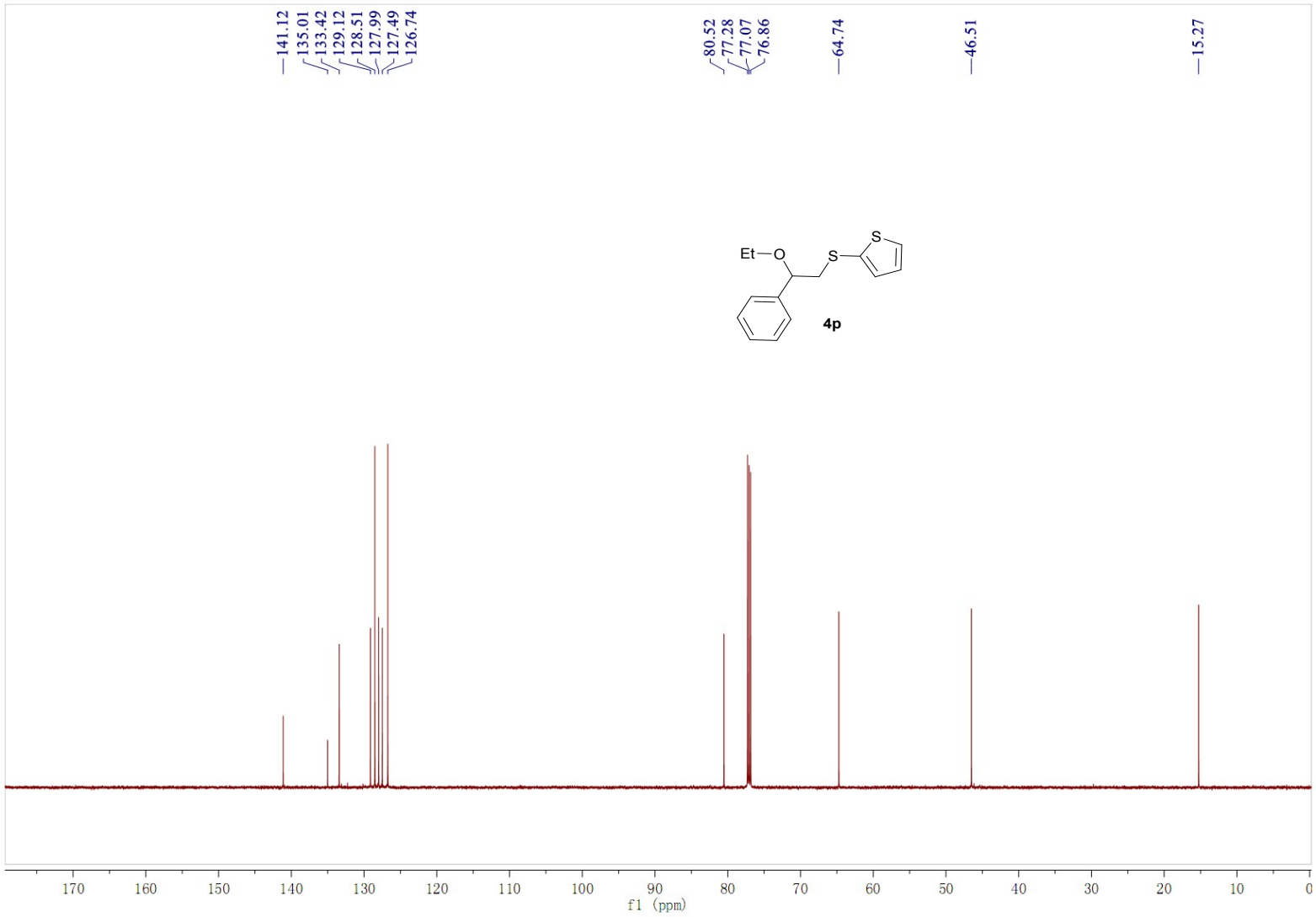
3.18
3.16
3.01
3.00
2.98
2.96
1.21
1.20
1.18
-0.00
Et
O
S
S
4p
6.14
0.99
1.01
0.99
2.01
1.03
1.04
3.14
11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)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80.52
77.28
77.07
76.86
64.74
46.51
15.27
Et—O
S
S
4p
170
160
150
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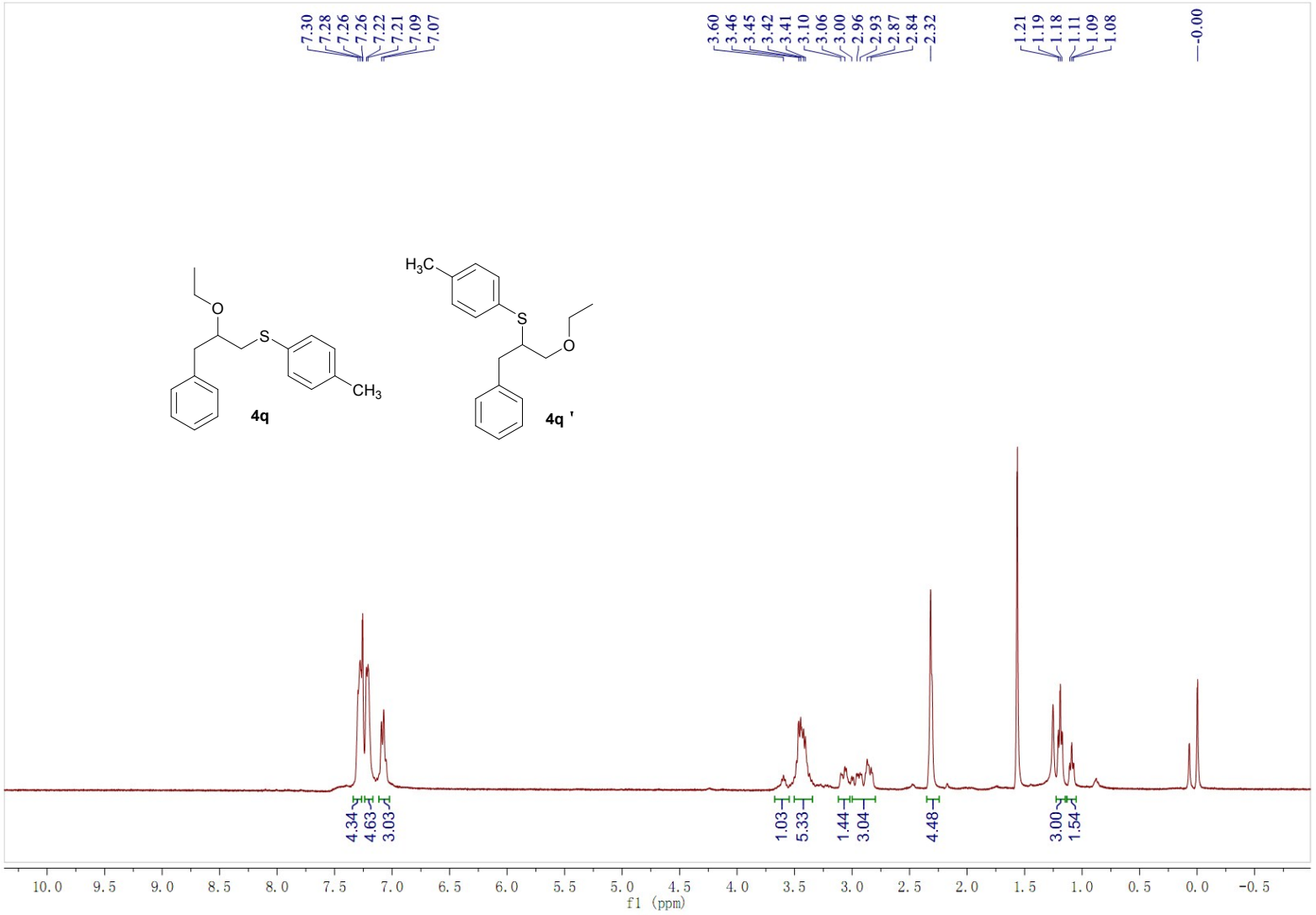
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)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3.10
3.06
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2.32
1.21
1.19
1.18
1.11
1.09
1.08
0.00
O
S
CH3
4q
H3C
S
O
4q '
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4.63
3.03
1.03
5.33
1.44
3.04
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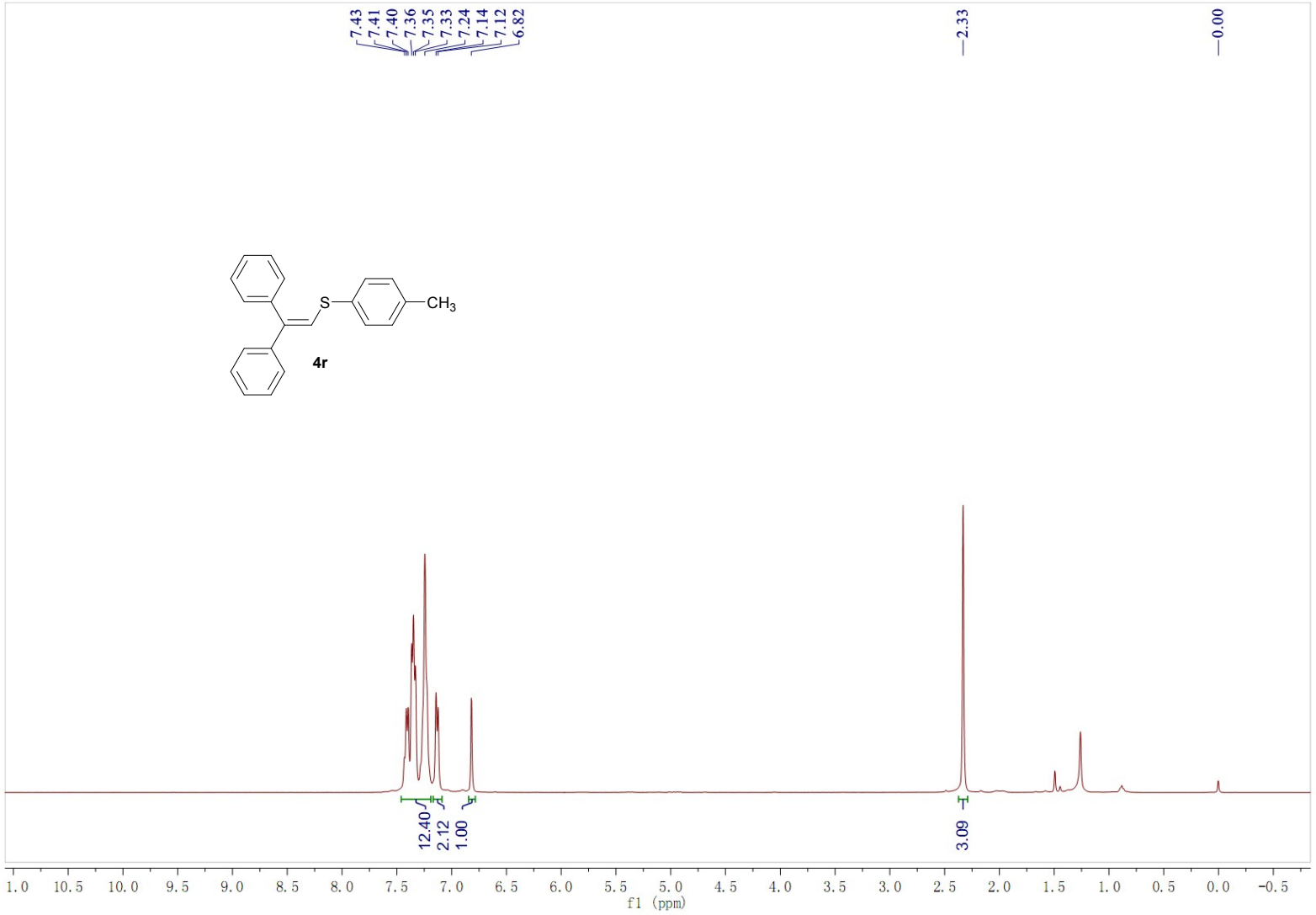
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
f1 (ppm)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7.41
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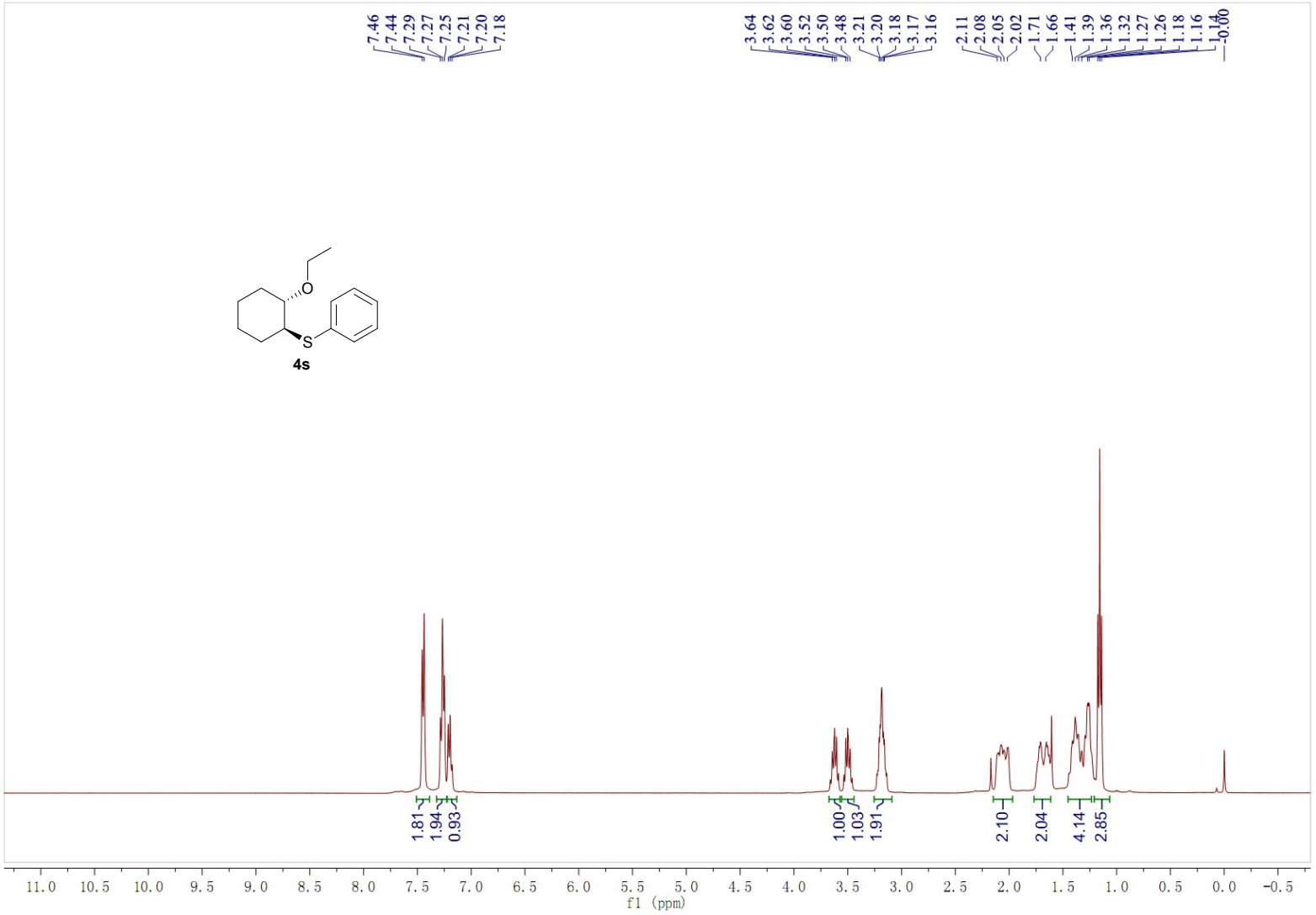
7.36
7.35
7.33
7.24
7.14
7.12
6.82
2.33
0.00
S
CH3
4r
12.40
2.12
1.00
3.09
1.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)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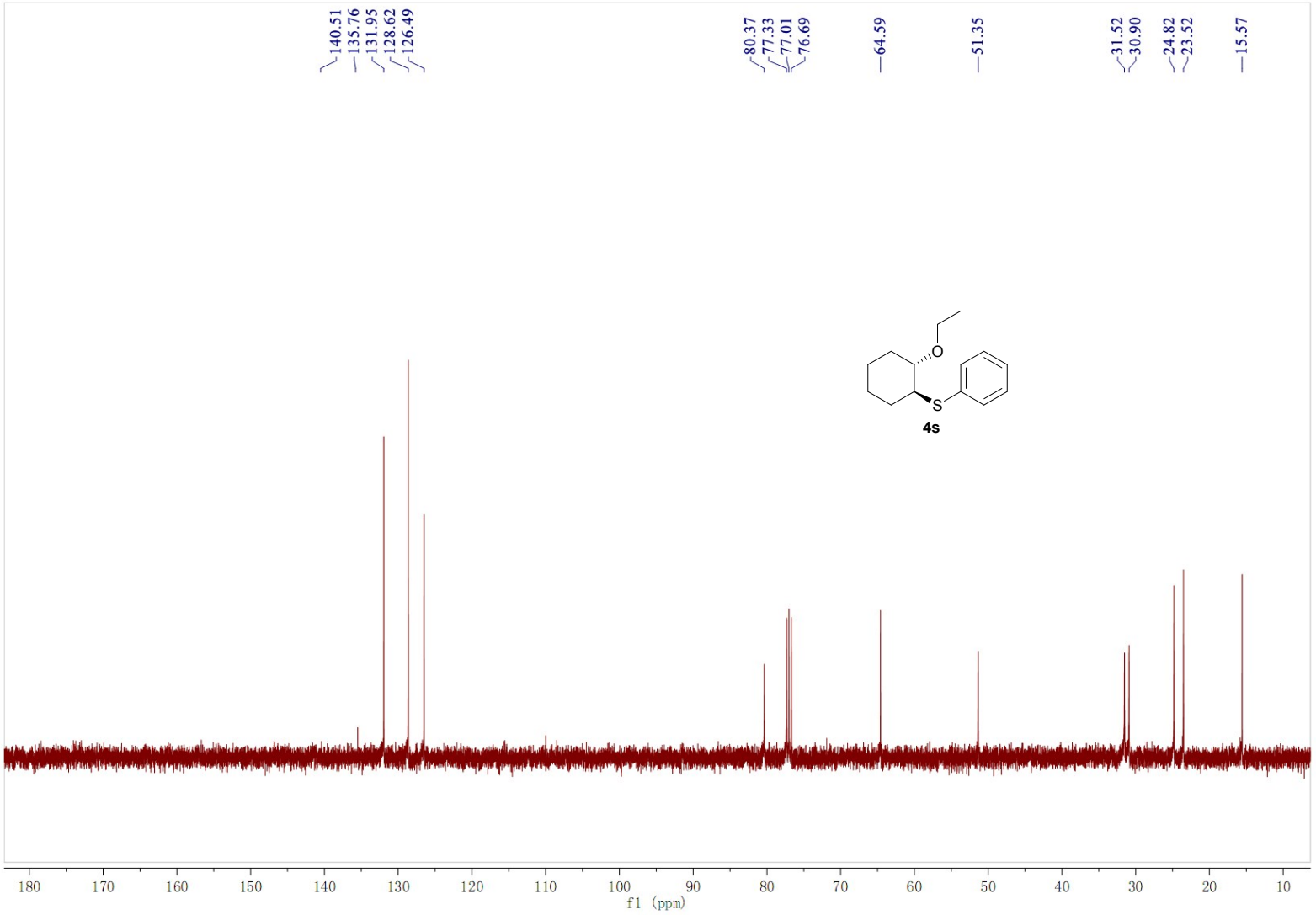
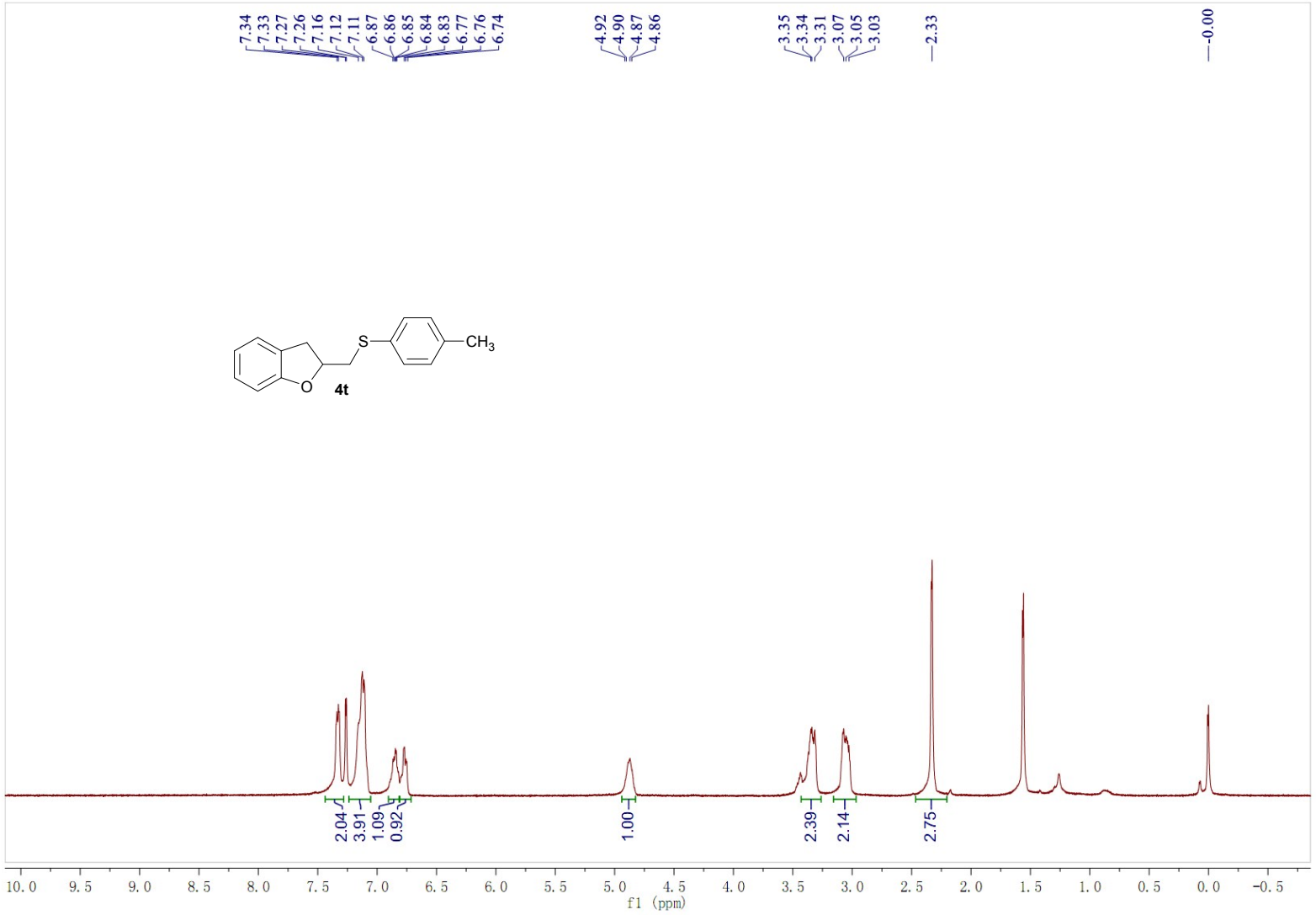
7.44
7.29
7.27
7.25
7.21
7.20
7.18
3.64
3.62
3.60
3.52
3.50
3.48
3.21
3.20
3.18
3.17
3.16
2.11
2.08
2.05
2.02
1.71
1.66
1.41
1.39
1.36
1.32
1.27
1.26
1.18
1.16
1.14
0.00
O
S
4s
1.81
1.94
0.93
1.00
1.03
1.91
2.10
2.04
4.14
2.85
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
f1 (ppm)


140.51
135.76
131.95
128.62
126.49
80.37
77.33
77.01
76.69
64.59
51.35
31.52
30.90
24.82
23.52
15.57
O
S
4s
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
f1 (ppm)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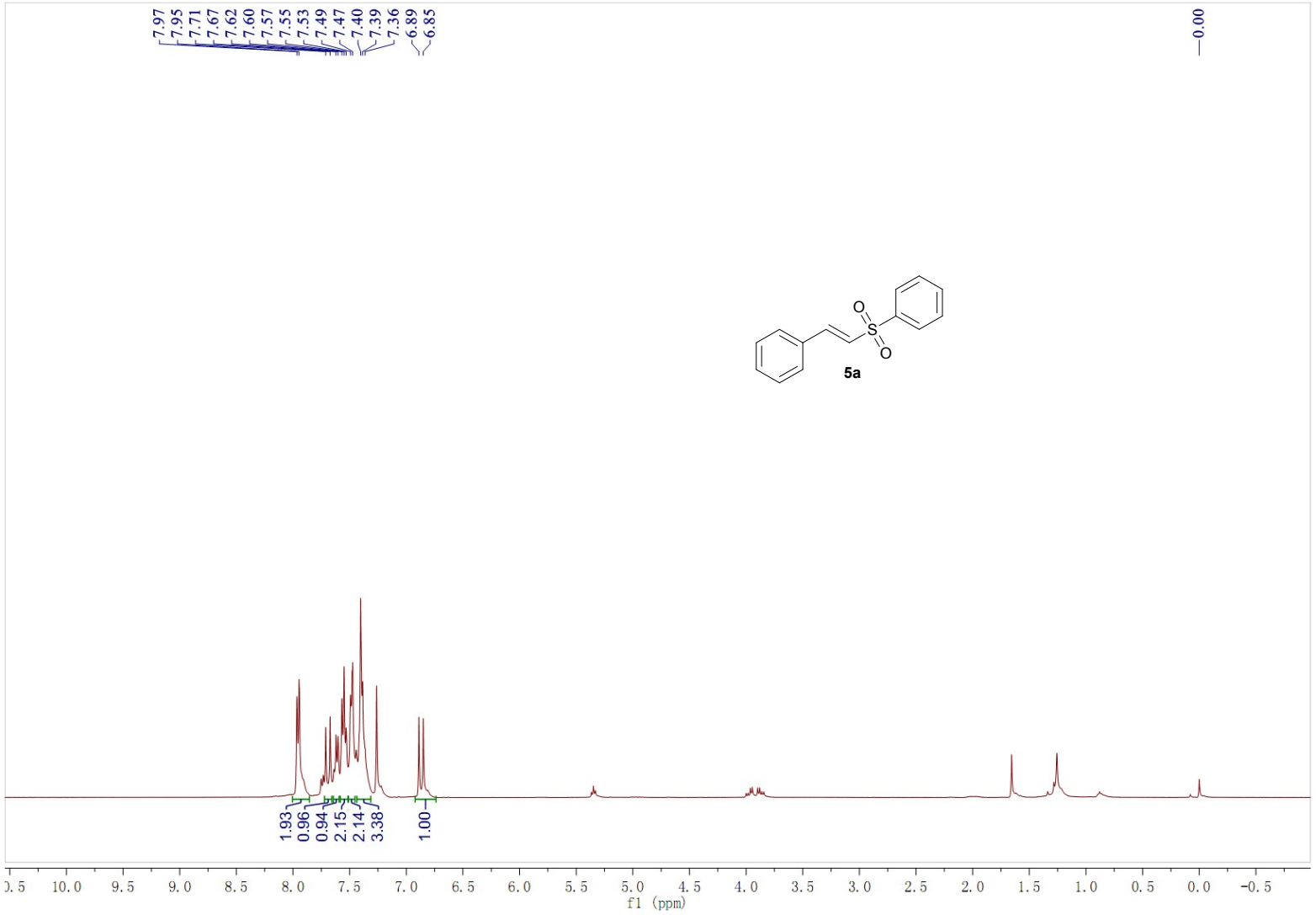
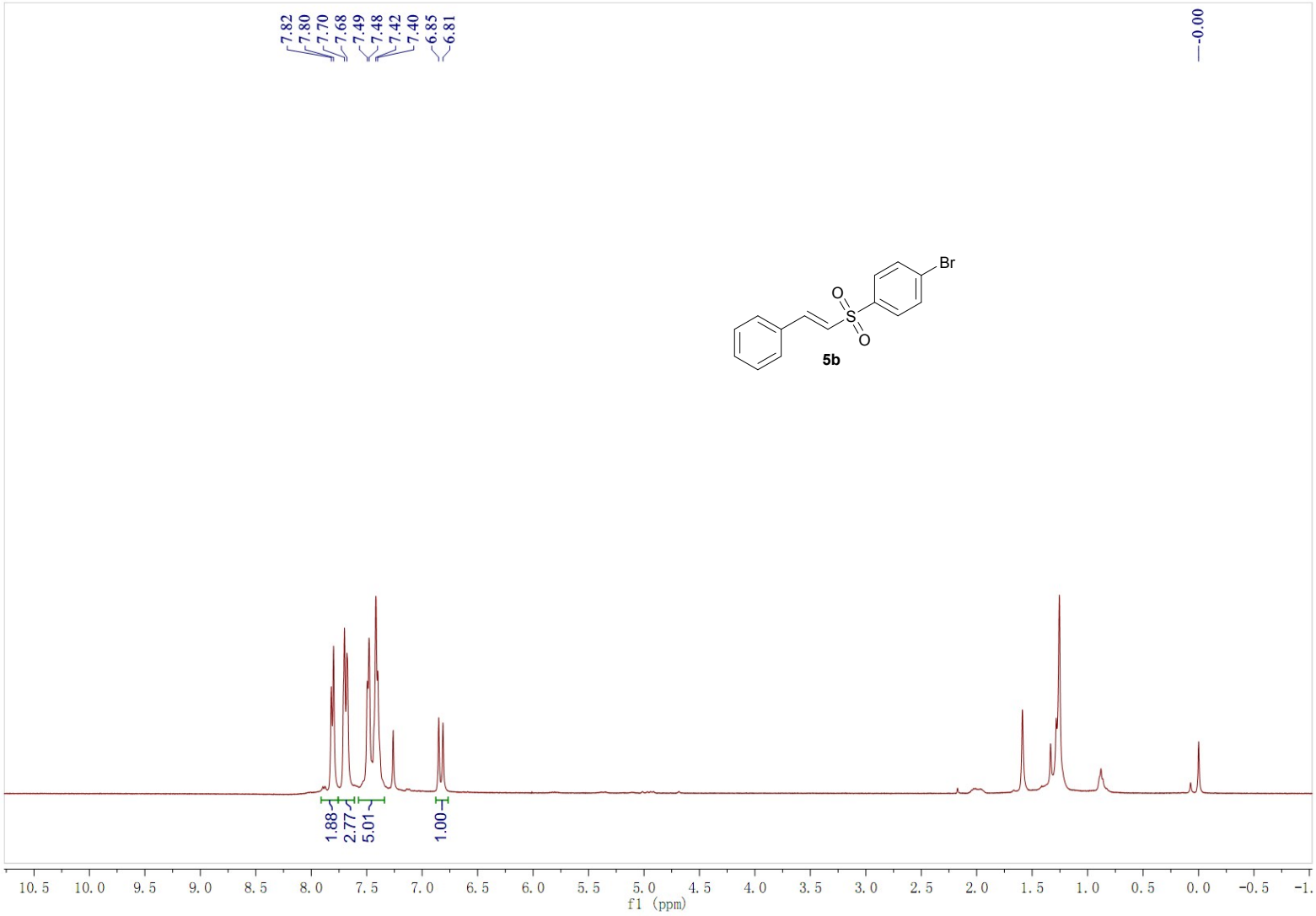
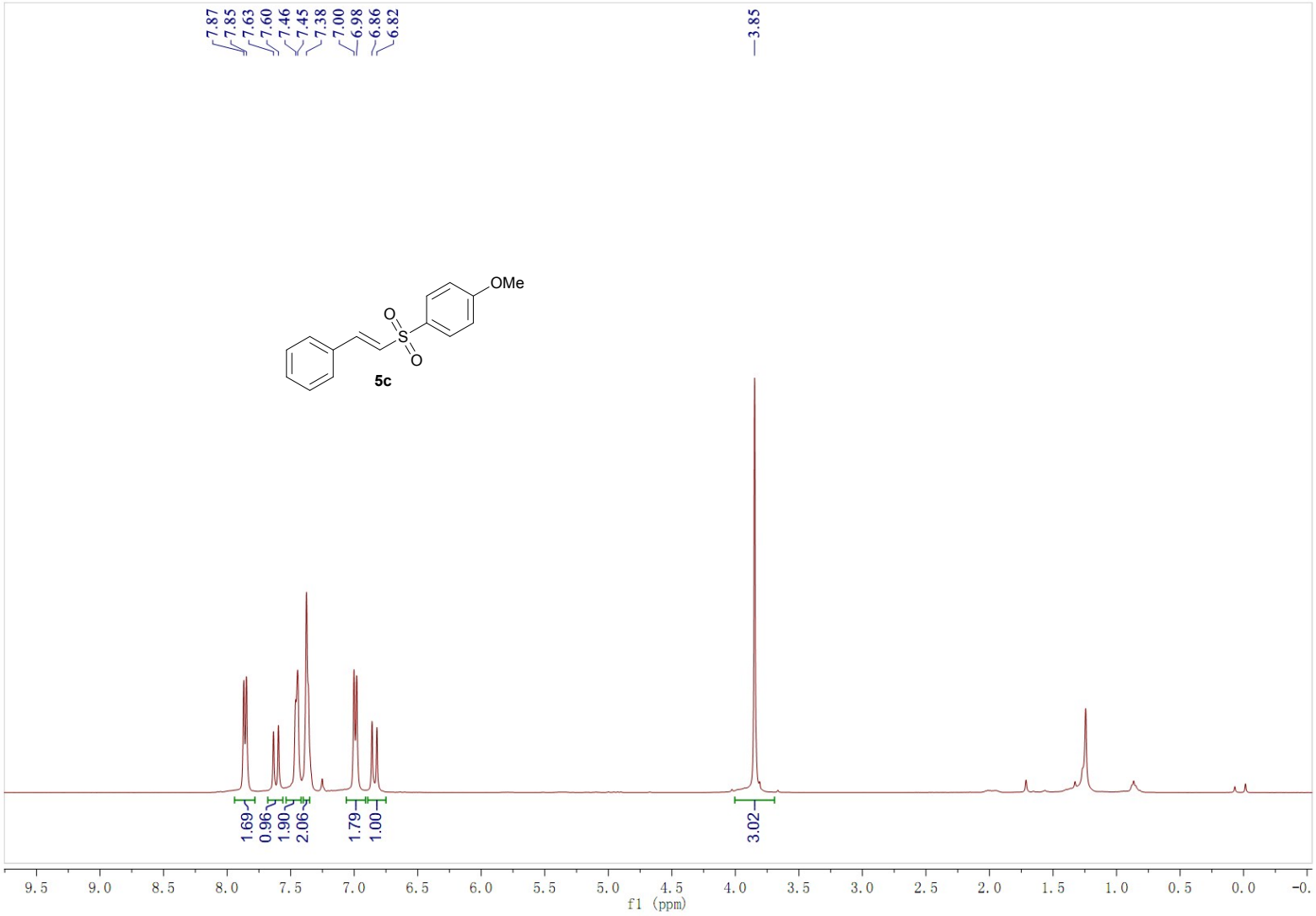
7.33
7.27
7.26
7.16
7.12
7.11
6.87
6.86
6.85
6.84
6.83
6.77
6.76
6.74
4.92
4.90
4.87
4.86
3.35
3.34
3.31
3.07
3.05
3.03
2.33
-0.00
S
CH3
O
4t
2.04
3.91
1.09
0.92
1.00
2.39
2.14
2.75
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
f1 (ppm)


7.97
7.95
7.71
7.67
7.62
7.60
7.57
7.55
7.53
7.49
7.47
7.40
7.39
7.36
6.89
6.85
0.00
O
S
O
5a
1.93
0.96
0.94
2.15
2.14
3.38
1.00
f1 (ppm)


7.82
7.80
7.70
7.68
7.49
7.48
7.42
7.40
6.85
6.81
-0.00
Br
O
S
O
5b
1.88
2.77
5.01
1.00
10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5 -1.
f1 (ppm)


7.87
7.85
7.63
7.60
7.46
7.45
7.38
7.00
6.98
6.86
6.82
3.85
OMe
O
S
O
5c
1.69
0.96
1.90
2.06
1.79
1.00
3.02
9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.
f1 (ppm)