

Supporting Information

Acetylation of Alcohols and Amines under Visible Light Irradiation: Diacetyl as an Acylation Reagent and Photosensitizer

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General information

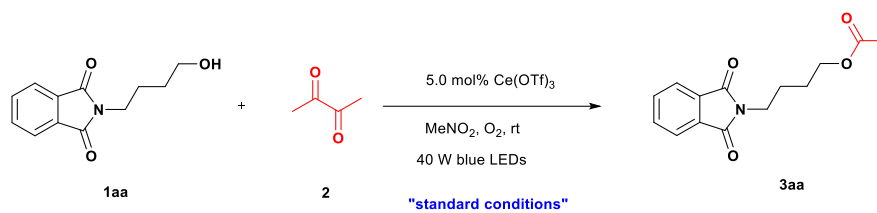
Column chromatography was generally performed on silica gel (300-400 mesh) and reactions were monitored by thin layer chromatography (TLC) using UV light to visualize the course of the reactions. The ^1H NMR (400 MHz) and ^{13}C NMR (100 MHz) and ^{19}F NMR (376 MHz) data were recorded with CDCl_3 or DMSO-d_6 as solvent at room temperature unless specified otherwise. The chemical shifts (δ) are reported in ppm and coupling constants (J) in Hz. ^1H NMR spectra was recorded with tetramethylsilane ($\delta = 0.00$ ppm) as internal reference; ^{13}C NMR spectra was recorded with CDCl_3 ($\delta = 77.00$ ppm) or DMSO ($\delta = 39.50$ ppm) as internal reference. IR and HRMS were performed by the State-authorized Analytical Center in Soochow University.

Acylation of Alcohols

To a 25 mL Schlenk tube, alcohols (0.2 mmol), Cerium (III) trifluoro methanesulfonate (0.01 mmol, 0.05 equiv., 5.9 mg) and 2,3-butanedione (0.8 mmol, 4.0 equiv., 68.9 mg) were dissolved in nitromethanol (0.5 mL). Under the irradiation of 40 W blue LEDs, the reaction mixture was stirred at room temperature under oxygen atmosphere for 24 h. After the reaction, the reaction system is quenched with sodium thiosulfate, then poured in brine solution (15 mL) and extracted with ethyl acetate (3 x 20 mL) and then dried over MgSO_4 . The solvent was removed under reduced pressure and the residue was purified by silica gel column chromatography (ethyl acetate/ petroleum ether ether) to afford desired products.

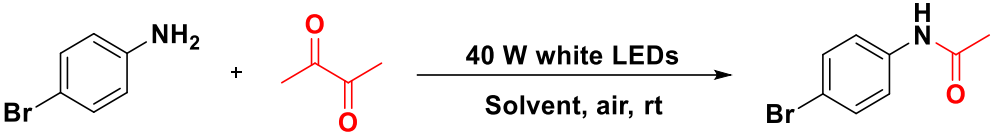
Acylation of Amines

To a 25 mL Schlenk tube, amines (0.2 mmol), 2,3-butanedione (1.2 mmol, 6.0 equiv., 103.3 mg) were dissolved in ethanol (95%, 0.5 mL). Under the irradiation of 40 W white LEDs, the reaction mixture was stirred at room temperature under air atmosphere for 6 h. After the reaction, the reaction system is quenched with sodium thiosulfate, then poured in brine solution (15 mL) and extracted with ethyl acetate (3 x 20 mL) and then dried over MgSO_4 . The solvent was removed under reduced pressure and the residue was purified by silica gel column chromatography (ethyl acetate/ petroleum ether ether) to afford desired products.

Table S1 Optimization of reaction conditions^a

Entry	Variation from the "standard conditions"	Yield (%) ^b
1	none	90
2	In the dark	< 5
3	MeCN instead of MeNO ₂	71
4	Cyclohexane instead of MeNO ₂	62
5	EA instead of MeNO ₂	56
6	Acetone instead of MeNO ₂	56
7	DMF instead of MeNO ₂	< 5
8	DMSO instead of MeNO ₂	< 5
9	^t BuOH instead of MeNO ₂	< 5
10	DCM instead of MeNO ₂	40
11	DCE instead of MeNO ₂	35
12	air instead of O ₂	66
13	N ₂ instead of O ₂	< 5
14	AgOAc instead of Ce(OTf) ₃	< 5
15	MnCl ₂ instead of Ce(OTf) ₃	27
16	Fe ₂ (SO ₄) ₃ instead of Ce(OTf) ₃	< 5
17	CeCl ₃ instead of Ce(OTf) ₃	< 5
18	Cu(OTf) ₂ instead of Ce(OTf) ₃	50

^a Reaction conditions: alcohols **1aa** (0.2 mmol), diacetyl **2** (0.8 mmol), catalyst (5.0 mol%) in solvent (0.5 mL) irradiation with 40 W blue LEDs at 28 °C for 24 h. ^b Isolated yield.

Table S2. Optimization for Acylation of Amines.^a

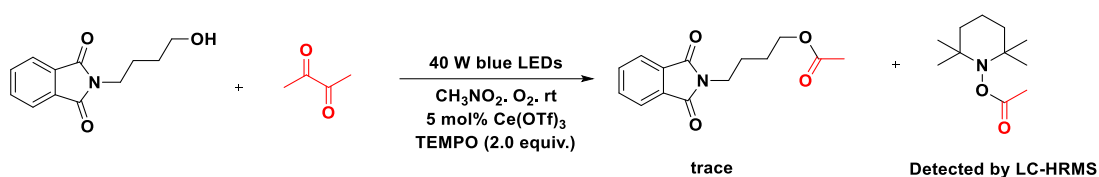
Reaction scheme: 4-bromoaniline + diacetyl $\xrightarrow[\text{Solvent, air, rt}]{40 \text{ W white LEDs}}$ N-(4-bromophenyl)acetamide

Entry ^a	Solvent	Yield (%) ^b
1	Methanol	57
2	Ethanol (95%)	85
3	Isopropyl alcohol	80
4	EA	54
5	Acetone	45
6	2-Butanone	52
7	DMF	61
8	CHCl ₃	30
9	CCl ₄	34
10	Benzene	71

^aReaction conditions: Under air, amine (0.2 mmol), diacetyl (6.0 equiv.) in solvent (0.5 mL) irradiation with 40 W white LEDs at ambient temperature for 6h, the reaction completed monitored by TLC. ^bisolated yield by column chromatography.

Mechanistic experiments:

Radical trapping experiments



Display Report

Analysis Info

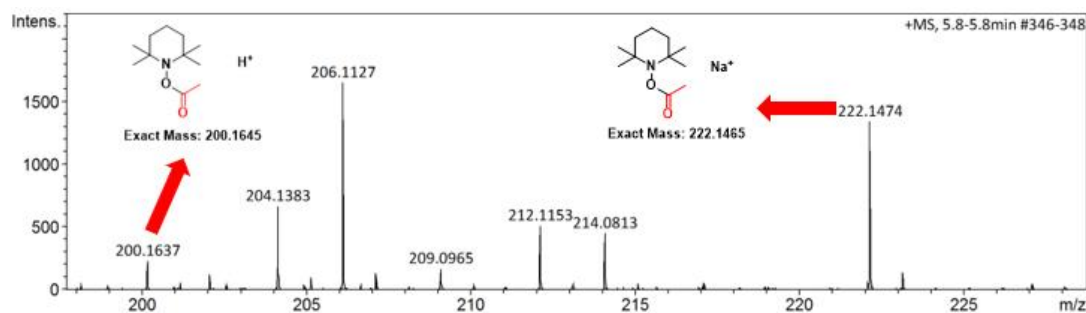
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Method 0919-MS-low-METHODS.m
Sample Name LPC1072-1
Comment

Acquisition Date 11/19/2020 5:41:57 PM

Operator brukr
Instrument micrOTOF-Q III 8228888.20487

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	1.0 Bar
Focus	Not active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	50 m/z	Set End Plate Offset	-500 V	Set Dry Gas	4.0 l/min
Scan End	3000 m/z	Set Collision Cell RF	200.0 Vpp	Set Divert Valve	Waste



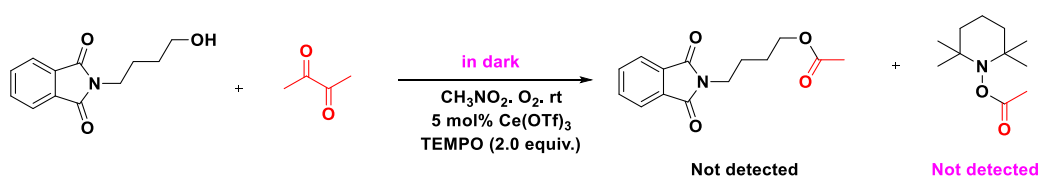
Bruker Compass DataAnalysis 4.2

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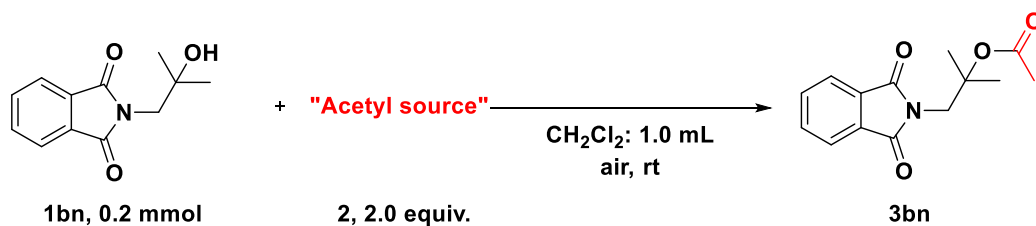
by: brukr

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Radical trapping experiments in dark



Acetylation of tertiary alcohols using Ac₂O or AcCl:



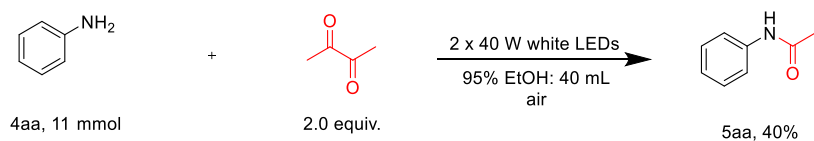
Reference: 1) M. Xie. *J. Chil. Chem. Soc.*, **2011**, 56, 884-886; 2) S. Ning, L. Zhang, J. Ma, L. Chen, G. Zeng, C. Yang, Y. Zhou, X. Guo, X. Deng, *Org. Biomol. Chem.* **2020**, 18, 4956-4961. (see Supporting Information)

Acetyl source	(CH ₃ CO) ₂ O	(CH ₃ CO) ₂ O + Et ₃ N
Yield	Not detected	Not detected

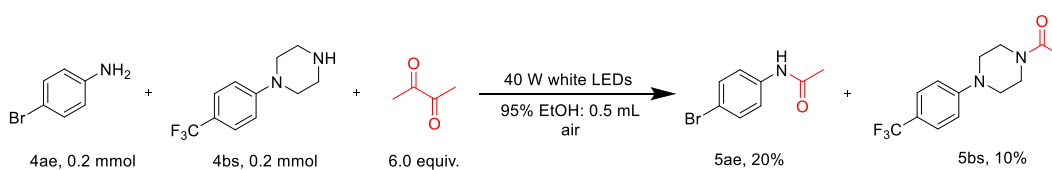
Reference: H. Li, P. Zhang, L. P. Smaga, R. A. Hoffman, J. Chan, *J. Am. Chem. Soc.* **2015**, 137, 15628-15631. (see Supporting Information)

Acetyl source	CH ₃ COCl	CH ₃ COCl + Et ₃ N
Yield	10%	15%

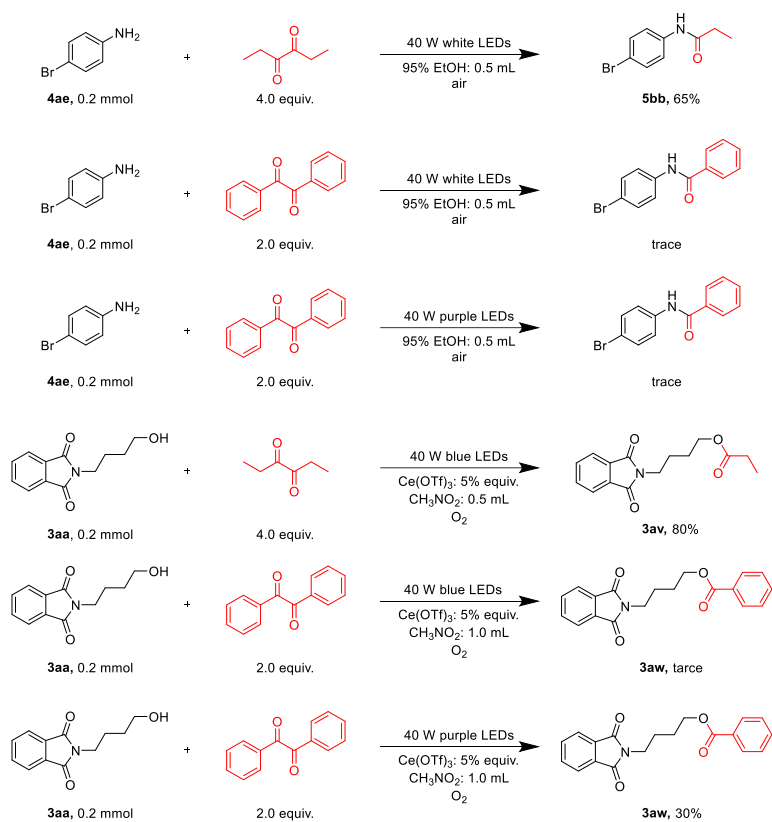
Scale-up experiment



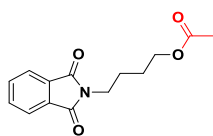
Compare the reactivity of aliphatic vs. aromatic substrates



The use of other 1,2-dicarbonyl compounds

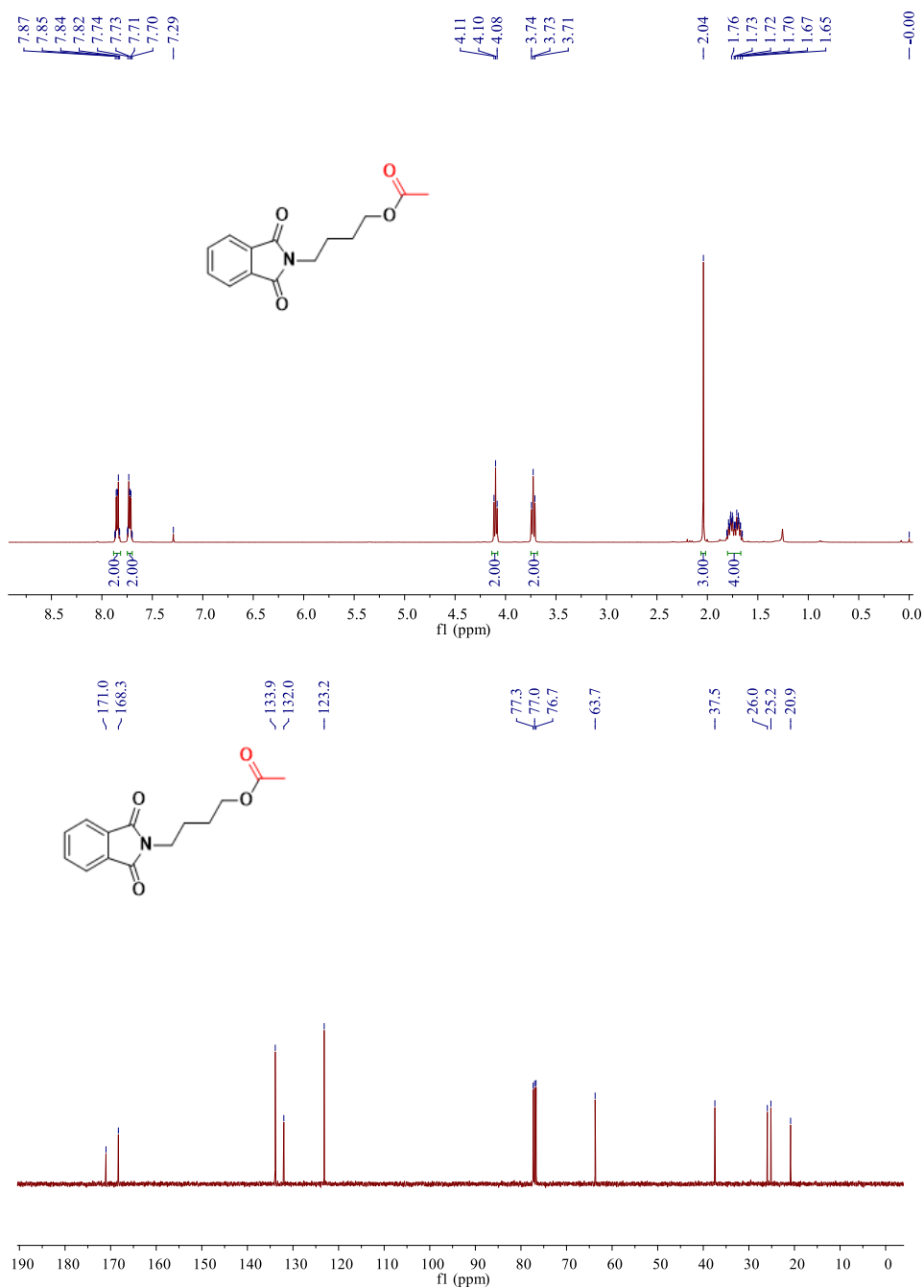


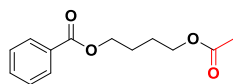
Spectral Data for Products



4-(1,3-Dioxoisindolin-2-yl)butyl acetate (3aa)

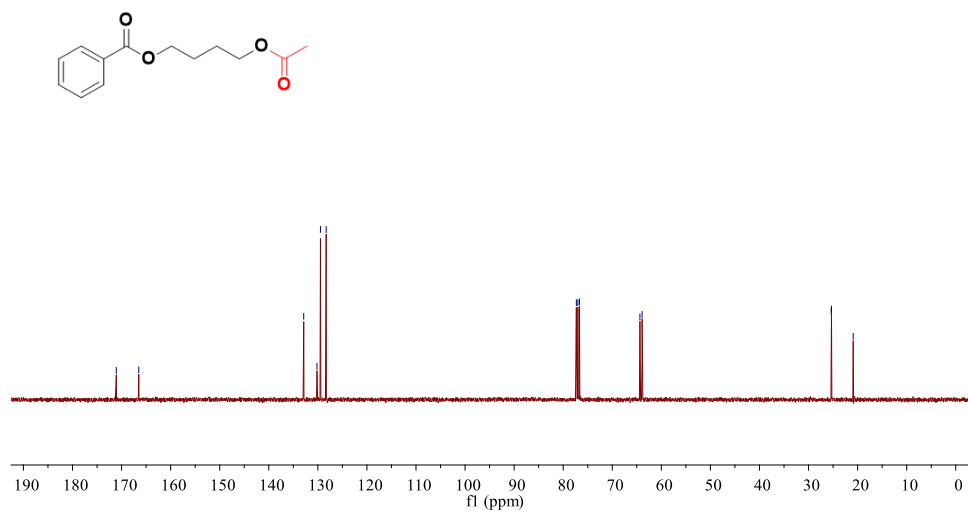
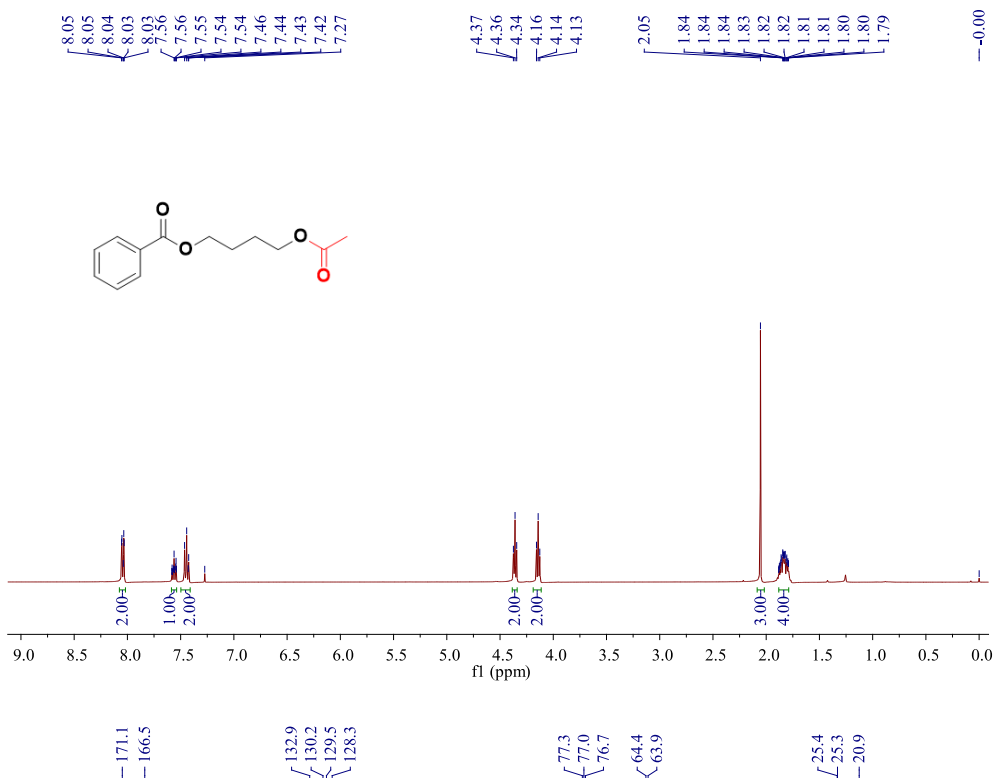
petroleum ether / ethyl acetate = 5:1, white solid, 90% yield (47.0 mg). mp: 63 – 66°C. $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.87 – 7.82 (m, 2H), 7.75 – 7.70 (m, 2H), 4.10 (t, $J = 6.3$ Hz, 2H), 3.73 (t, $J = 6.3$ Hz, 2H), 2.04 (s, 3H), 1.77 – 1.67 (m, 4H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.0, 168.3, 133.9, 132.0, 123.2, 63.7, 37.5, 26.0, 25.2, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{14}\text{H}_{15}\text{NO}_4 + \text{H}^+$: 276.1230, Found: 276.1227. **IR** (neat, cm^{-1}): ν 2850, 1751, 1600, 1535, 1460, 1380, 1202, 1008, 719, 620.

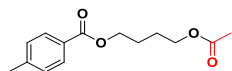




4-Acetoxybutyl benzoate (3ab)

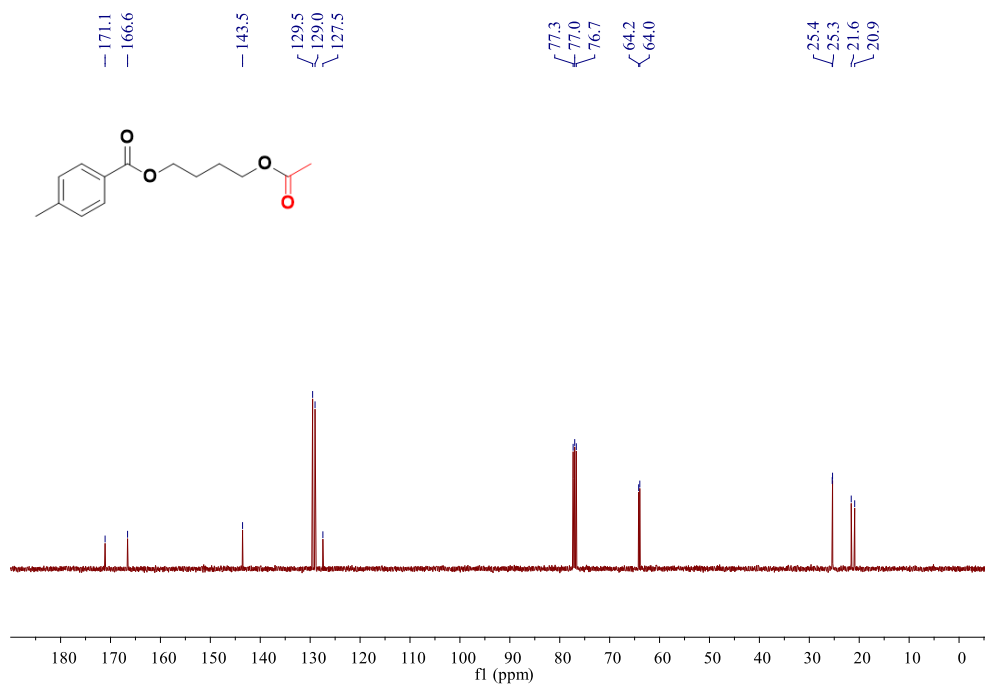
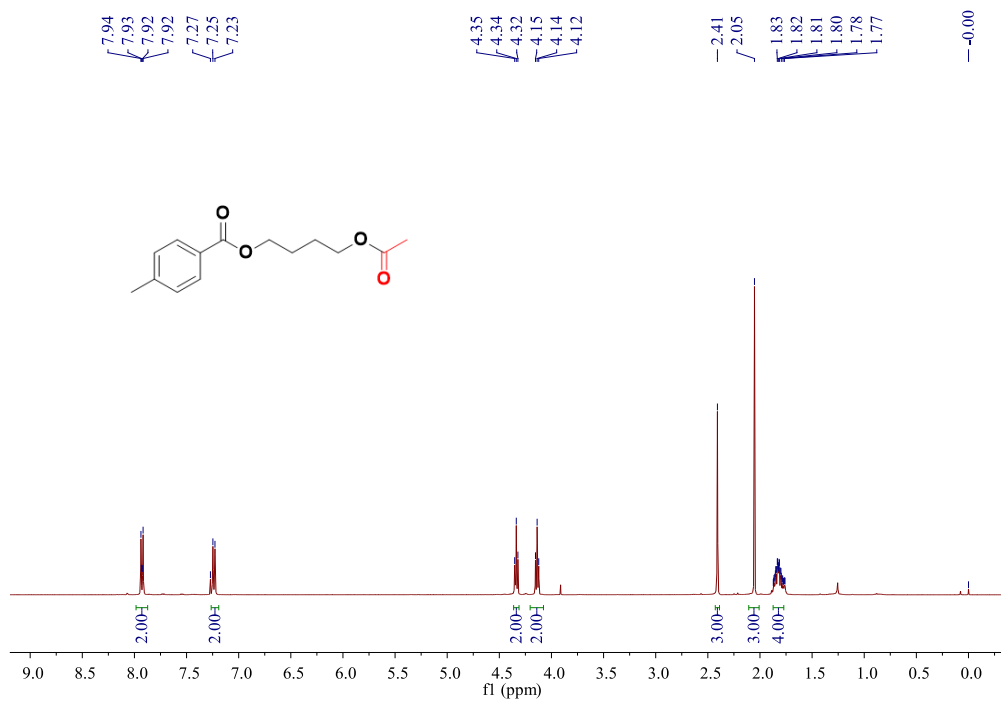
petroleum ether / ethyl acetate = 15:1, colorless oil, 85% yield (40.1 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.05 – 8.03 (m, 2H), 7.58 – 7.54 (m, 1H), 7.44 – 7.42 (m, 2H), 4.36 (t, *J* = 6.2 Hz, 2H), 4.14 (t, *J* = 6.2 Hz, 2H), 2.05 (s, 3H), 1.88 – 1.79 (m, 4H). **¹³C NMR** (100 MHz, CDCl₃) δ 171.1, 166.5, 132.9, 130.2, 129.5, 128.3, 64.4, 63.9, 25.4, 25.3, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₃H₁₆O₄+H⁺: 237.1121, Found: 237.1117. **IR** (neat, cm⁻¹): ν 2899, 1736, 1602, 1584, 1451, 1366, 1234, 1176, 1026, 915, 709.

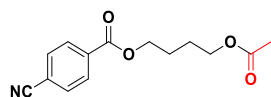




4-Acetoxybutyl 4-methylbenzoate (3ac)

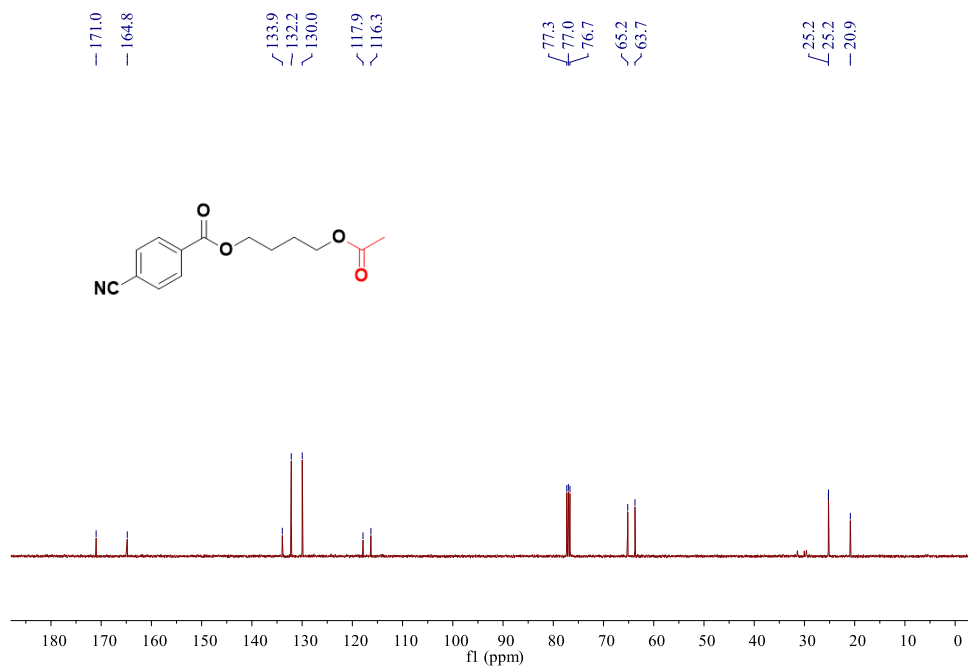
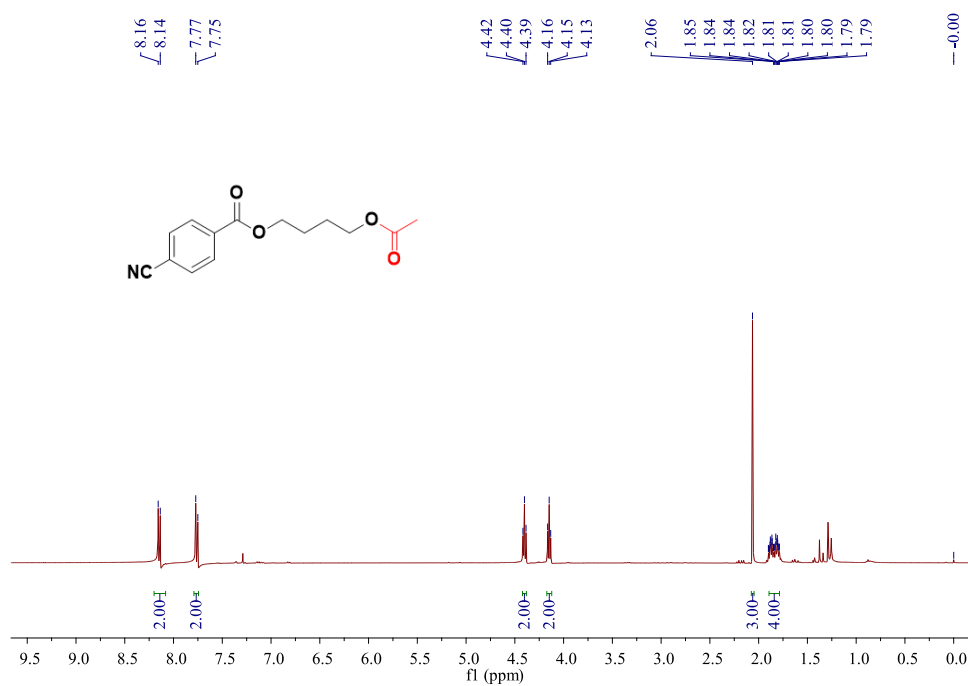
petroleum ether / ethyl acetate = 15:1, colorless oil, 85% yield (40.1 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.94 – 7.92 (m, 2H), 7.25 – 7.23 (m, 2H), 4.34 (t, $J = 6.2$ Hz, 2H), 4.14 (t, $J = 6.2$ Hz, 2H), 2.41 (s, 3H), 2.05 (s, 3H), 1.87 – 1.76 (m, 4H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.1, 166.6, 143.5, 129.5, 129.0, 127.5, 64.2, 64.0, 25.4, 25.3, 21.6, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. **IR** (neat, cm^{-1}): ν 2924, 1736, 1612, 1577, 1449, 1386, 1271, 1020, 920, 753, 690.

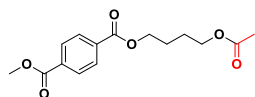




4-Acetoxybutyl 4-cyanobenzoate (3ad)

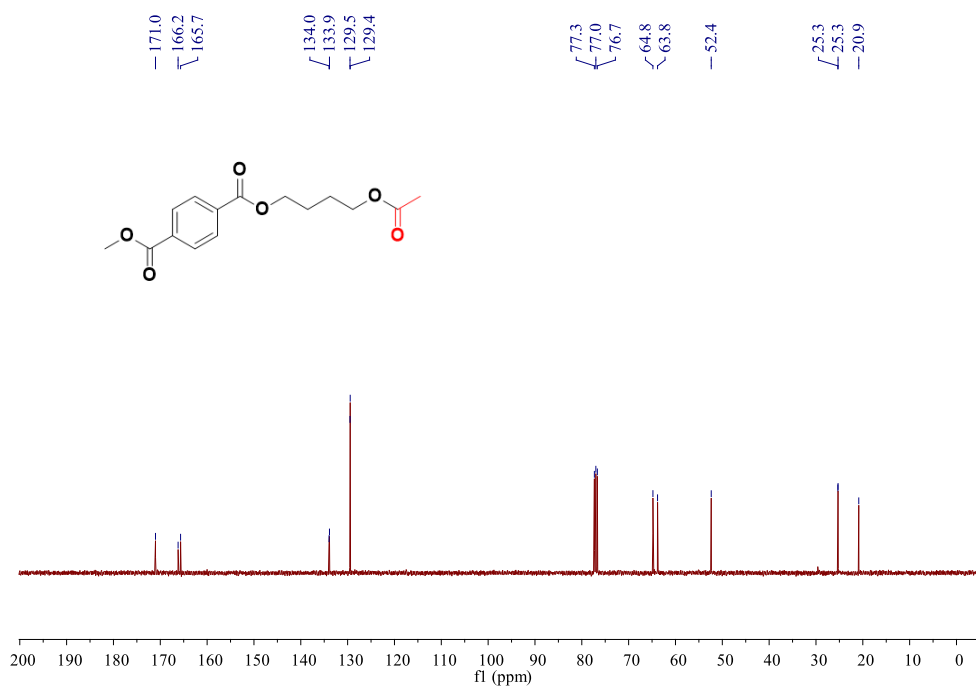
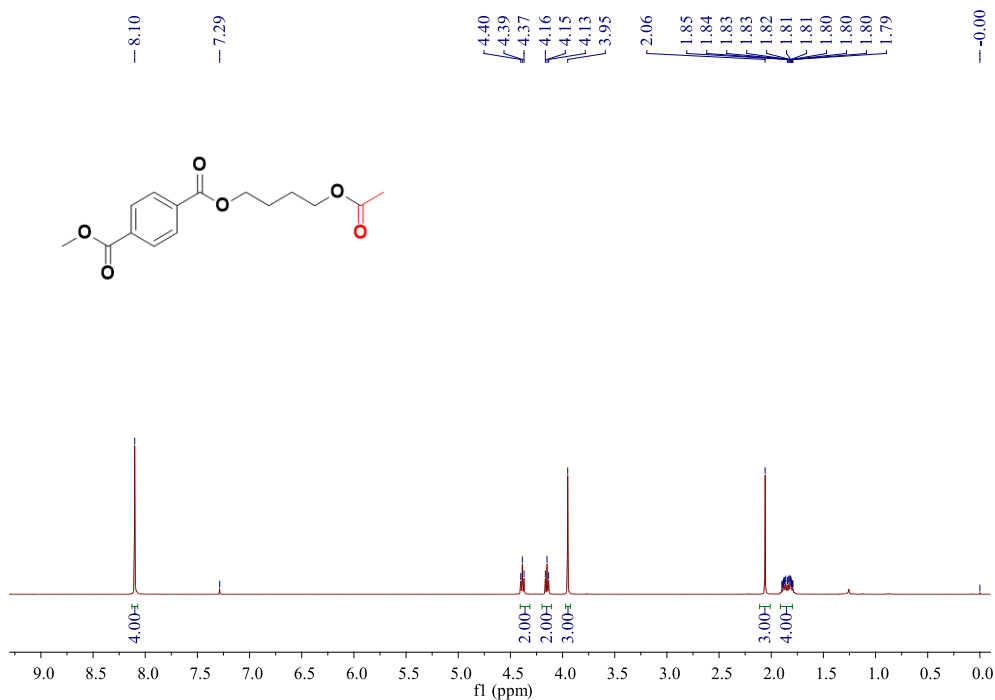
petroleum ether / ethyl acetate = 10:1, colorless oil, 85% yield (44.4 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.15 (d, $J = 8.6$ Hz, 2H), 7.76 (d, $J = 8.6$ Hz, 2H), 4.40 (t, $J = 6.3$ Hz, 2H), 4.15 (t, $J = 6.3$ Hz, 2H), 2.06 (s, 3H), 1.90 – 1.79 (m, 2H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.0, 164.8, 133.9, 132.2, 130.0, 117.9, 116.3, 65.2, 63.7, 25.5, 25.2, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{14}\text{H}_{15}\text{NO}_4 + \text{Na}^+$: 284.0893, Found: 284.0889. **IR** (neat, cm^{-1}): ν 2853, 2232, 1721, 1610, 1569, 1491, 1388, 1237, 1105, 729, 691.

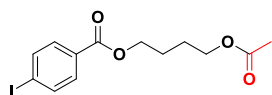




4-Acetoxybutyl methyl terephthalate (3ae)

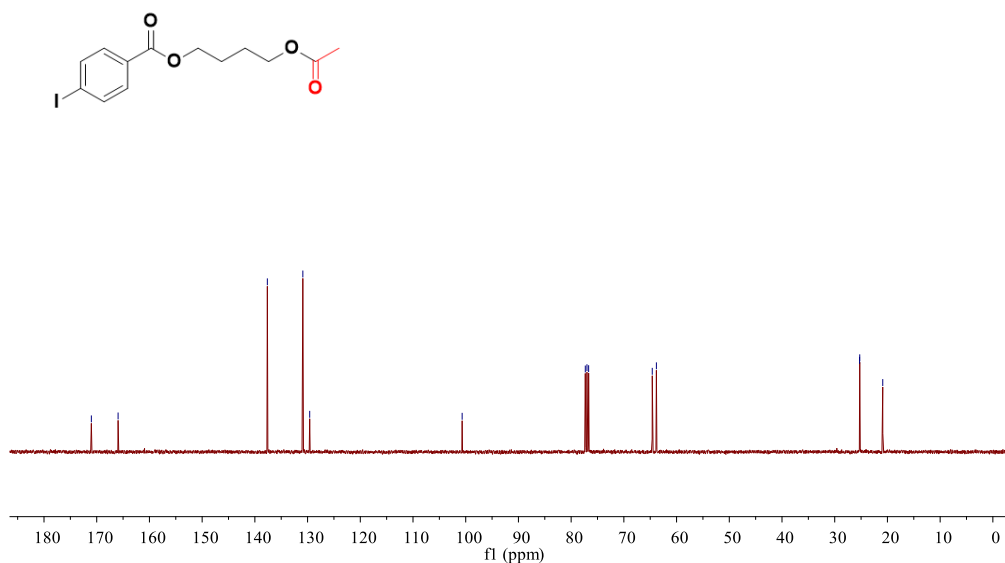
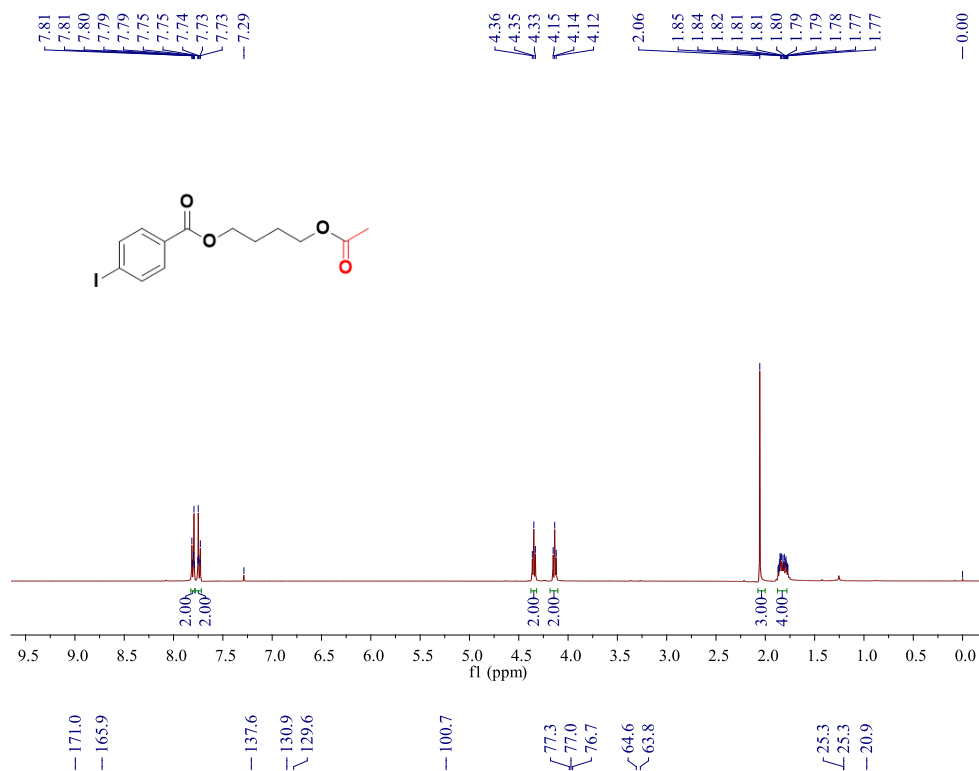
petroleum ether / ethyl acetate = 10:1, yellow oil, 80% yield (46.3 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.10 (s, 4H), 4.39 (t, $J = 6.3$ Hz, 2H), 4.15 (t, $J = 6.3$ Hz, 2H), 3.95 (s, 3H), 2.06 (s, 3H), 1.85 – 1.79 (m, 4H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.0, 166.2, 165.7, 134.0, 133.9, 129.5, 129.4, 64.8, 63.8, 52.4, 25.3, 25.3, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{15}\text{H}_{18}\text{O}_6 + \text{H}^+$: 295.1176, Found: 295.1173. **IR** (neat, cm^{-1}): ν 2853, 1716, 1615, 1577, 1408, 1268, 1235, 1102, 962, 728.

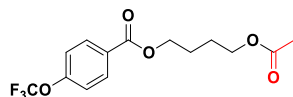




4-Acetoxybutyl 4-iodobenzoate (3af)

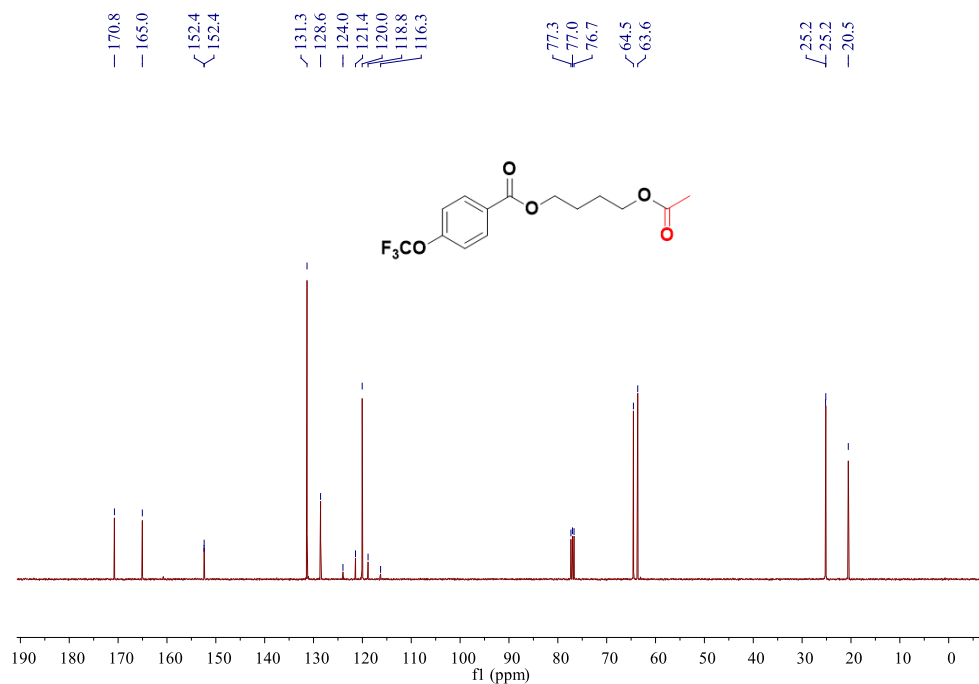
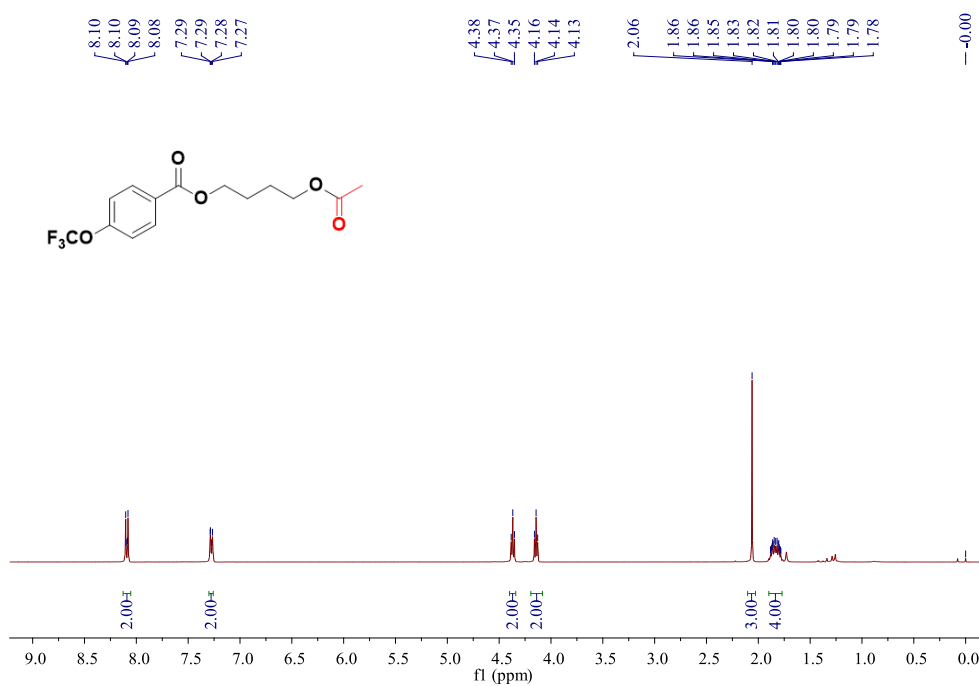
petroleum ether / ethyl acetate = 10:1, yellow oil, 78% yield (60.1 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.81 – 7.79 (m, 2H), 7.75 – 7.73 (m, 2H), 4.35 (t, $J = 6.2$ Hz, 2H), 4.14 (t, $J = 6.2$ Hz, 2H), 2.06 (s, 3H), 1.84 – 1.77 (m, 4H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.0, 165.9, 137.6, 130.9, 129.6, 100.7, 64.6, 63.8, 25.3, 25.3, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For: $\text{C}_{13}\text{H}_{15}\text{IO}_4 + \text{H}^+$: 363.0088, Found: 363.0081. **IR** (neat, cm^{-1}): ν 2853, 1716, 1585, 1470, 1364, 1232, 1006, 920, 752, 682.

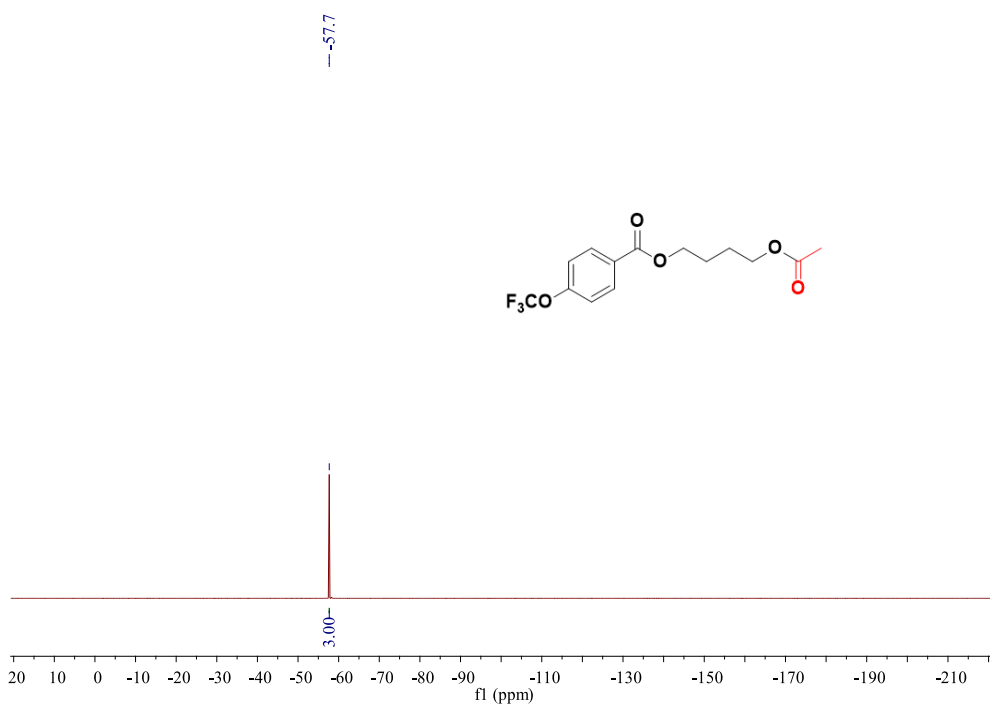


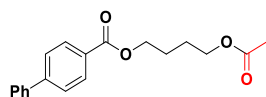


4-Acetoxybutyl 4-(trifluoromethoxy)benzoate (3ag)

petroleum ether / ethyl acetate = 10:1, yellow oil, 74% yield (47.1 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.10 – 8.08 (m, 2H), 7.29 – 7.27 (m, 2H), 4.37 (t, *J* = 6.2 Hz, 2H), 4.14 (t, *J* = 6.2 Hz, 2H), 2.06 (s, 3H), 1.86 – 1.78 (m, 2H). **¹³C NMR** (100 MHz, CDCl₃) δ 170.8, 165.0, 152.4, 131.3, 128.6, 120.1 (q, *J* = 257.0 Hz), 120.0, 64.5, 63.6, 25.2, 25.2, 20.5. **¹⁹F NMR** (377 MHz, CDCl₃) δ -57.7 (s, 1F). **HRMS** (ESI-TOF): Anal Calcd. For. C₁₄H₁₅F₃O₅+H⁺: 321.0944, Found: 321.0940. **IR** (neat, cm⁻¹): ν 2858, 1721, 1607, 1506, 1470, 1388, 1242, 1161, 951, 708, 634.

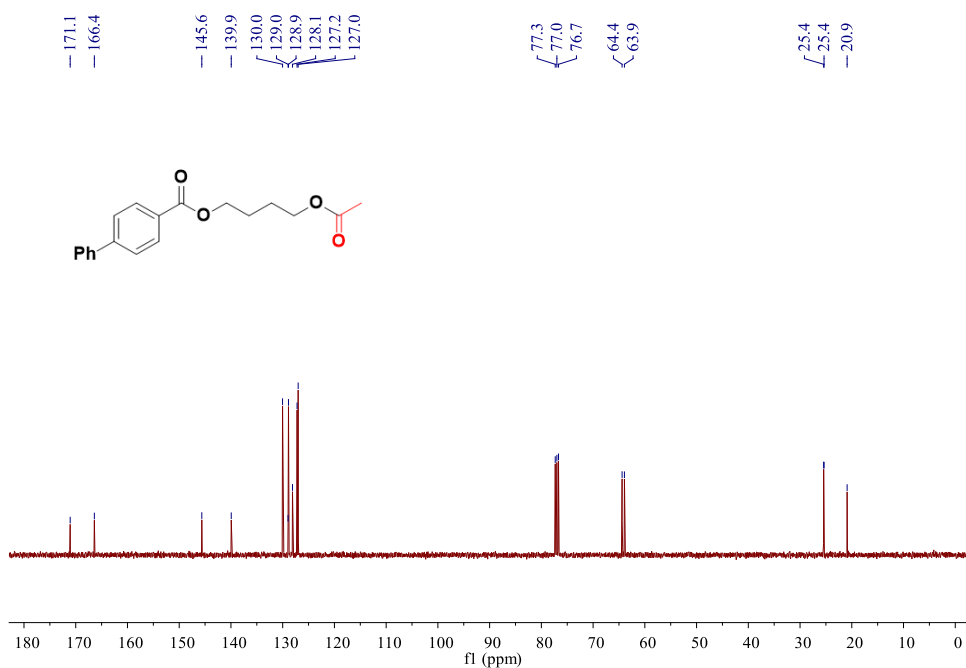
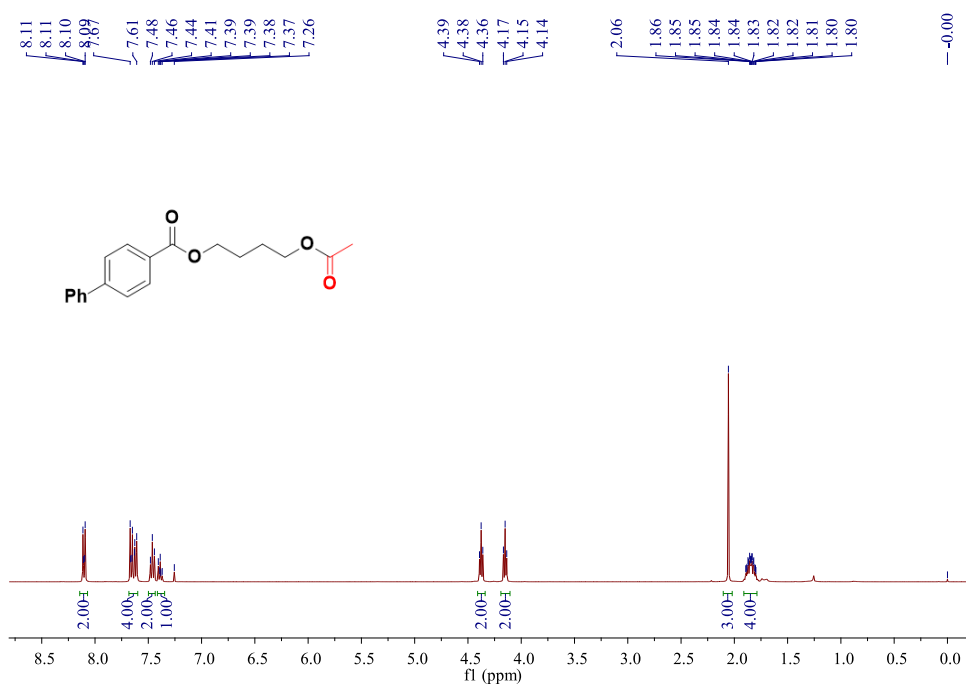


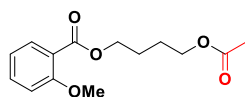




4-Acetoxybutyl [1,1'-biphenyl]-4-carboxylate (3ah)

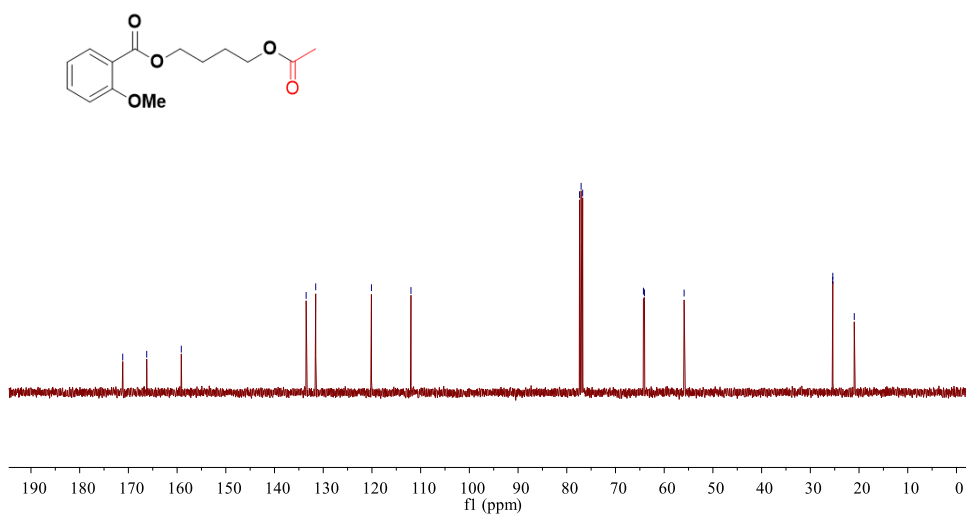
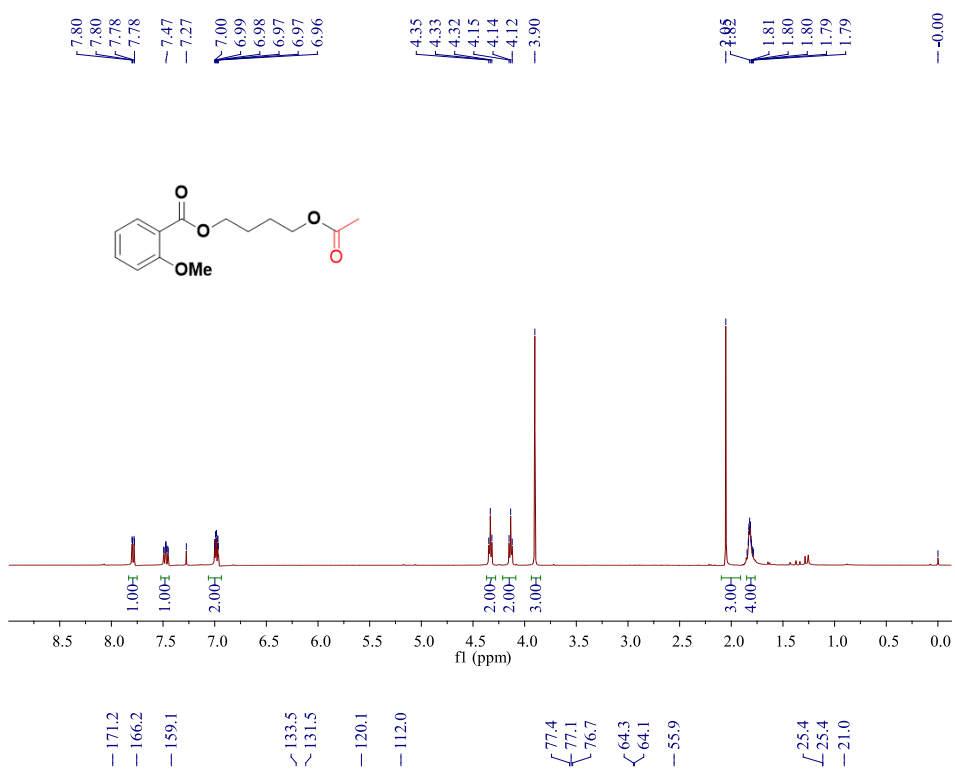
petroleum ether / ethyl acetate = 10:1, colorless oil, 80% yield (49.9 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.11 – 8.09 (m, 2H), 7.67 – 7.61 (m, 4H), 7.48 – 7.44 (m, 2H), 7.41 – 7.37 (m, 1H), 4.38 (t, *J* = 6.2 Hz, 2H), 4.15 (t, *J* = 6.2 Hz, 2H), 2.06 (s, 3H), 1.89 – 1.80 (m, 4H). **¹³C NMR** (100 MHz, CDCl₃) δ 171.1, 166.4, 145.6, 139.9, 130.0, 129.0, 128.9, 128.1, 127.2, 127.0, 64.4, 63.9, 25.4, 25.4, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₉H₂₀O₄+H⁺: 313.1434, Found: 313.1429. **IR** (neat, cm⁻¹): ν 2854, 1772, 1713, 1609, 1564, 1487, 1188, 907, 727, 647.

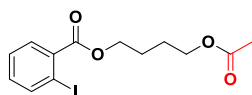




4-Acetoxybutyl 2-methoxybenzoate (3ai)

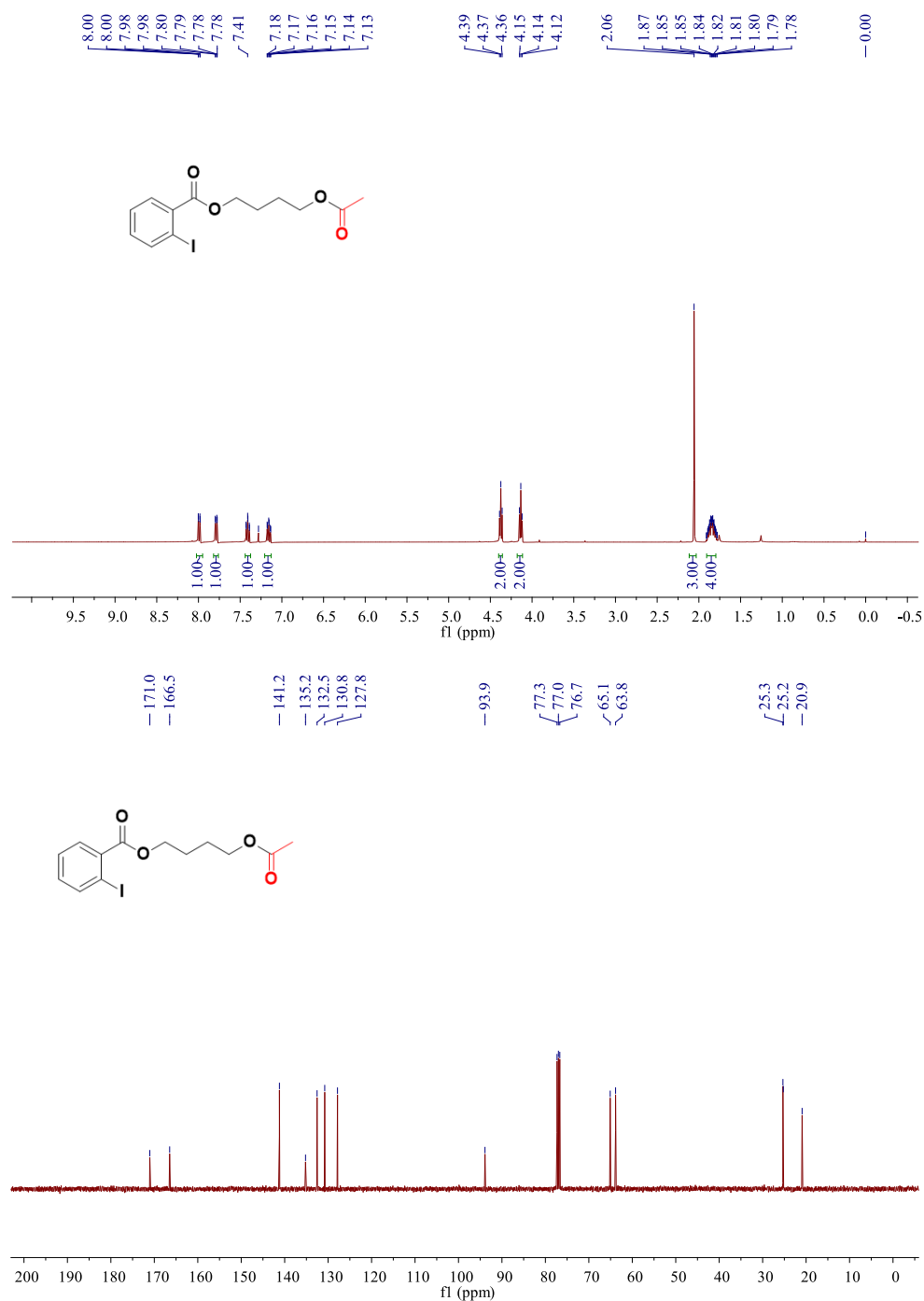
petroleum ether / ethyl acetate = 10:1, colorless oil, 63% yield (33.5 mg). **¹H NMR** (400 MHz, CDCl₃) δ 7.80 – 7.78 (m, 1H), 7.49 – 7.45 (m, 0H), 7.00 – 6.96 (m, 2H), 4.33 (t, *J* = 6.1 Hz, 2H), 4.14 (t, *J* = 6.1 Hz, 2H), 3.90 (s, 3H), 2.05 (s, 3H), 1.85 – 1.79 (m, 4H). **¹³C NMR** (100 MHz, CDCl₃) δ 171.2, 166.2, 159.1, 133.5, 131.5, 120.1, 112, 64.3, 64.1, 55.9, 25.4, 25.4, 21.0. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₄H₁₈O₅+H⁺: 267.1227, Found: 267.1222. **IR** (neat, cm⁻¹): ν 2840, 1723, 1601, 1583, 1465, 1240, 1131, 727, 647.

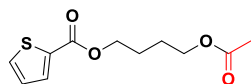




4-Acetoxybutyl 2-iodobenzoate (3aj)

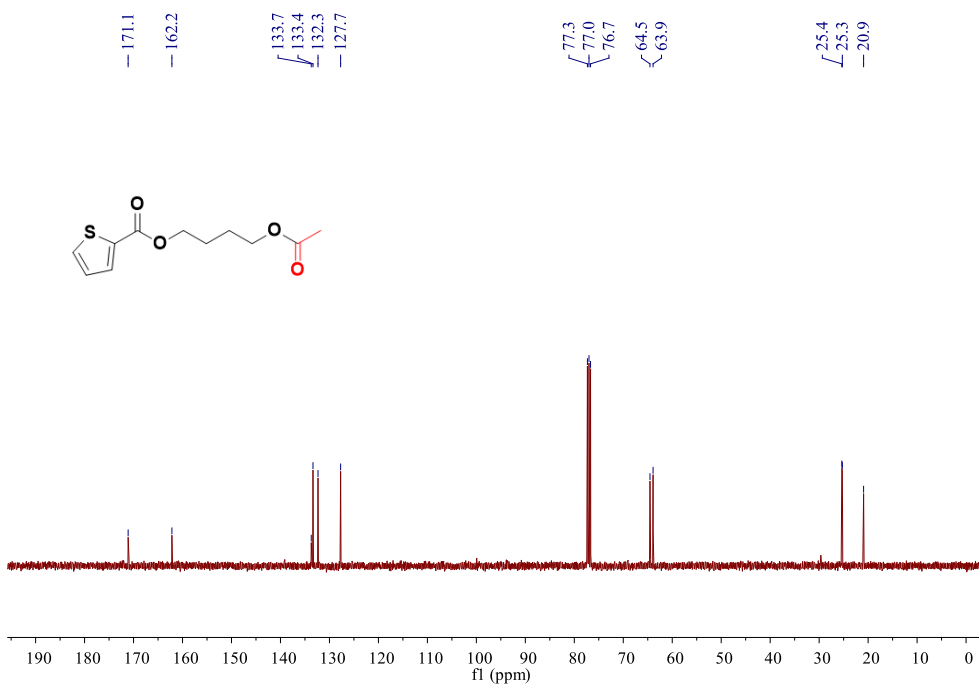
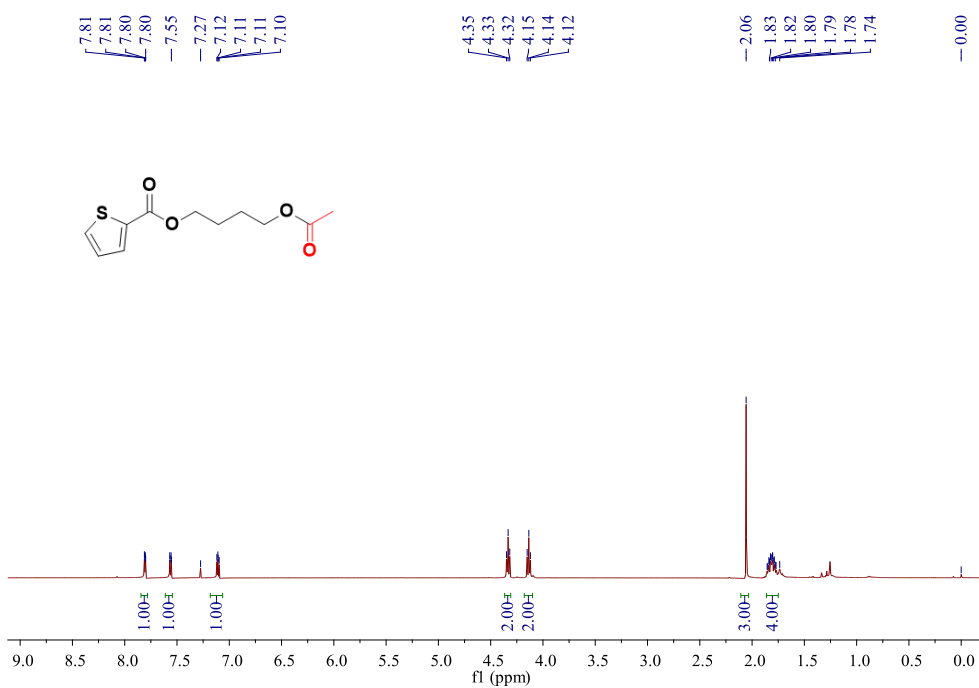
petroleum ether / ethyl acetate = 10:1, colorless oil, 76% yield (55.0 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.00 – 7.98 (m, 1H), 7.80 – 7.78 (m, 1H), 7.43 – 7.39 (m, 1H), 7.18 – 7.13 (m, 1H), 4.37 (t, *J* = 6.2 Hz, 2H), 4.14 (t, *J* = 6.2 Hz, 2H), 2.06 (s, 3H), 1.87 – 1.78 (m, 4H). **¹³C NMR** (100 MHz, CDCl₃) δ 171.0, 166.5, 141.2, 135.2, 132.5, 130.8, 127.8, 93.9, 65.1, 63.8, 25.3, 25.2, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₃H₁₅IO₄+H⁺: 363.0088, Found: 363.0082. **IR** (neat, cm⁻¹): ν 2853, 1724, 1583, 1463, 1388, 1234, 1014, 740, 606.

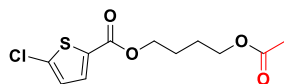




4-Acetoxybutyl thiophene-2-carboxylate (3ak)

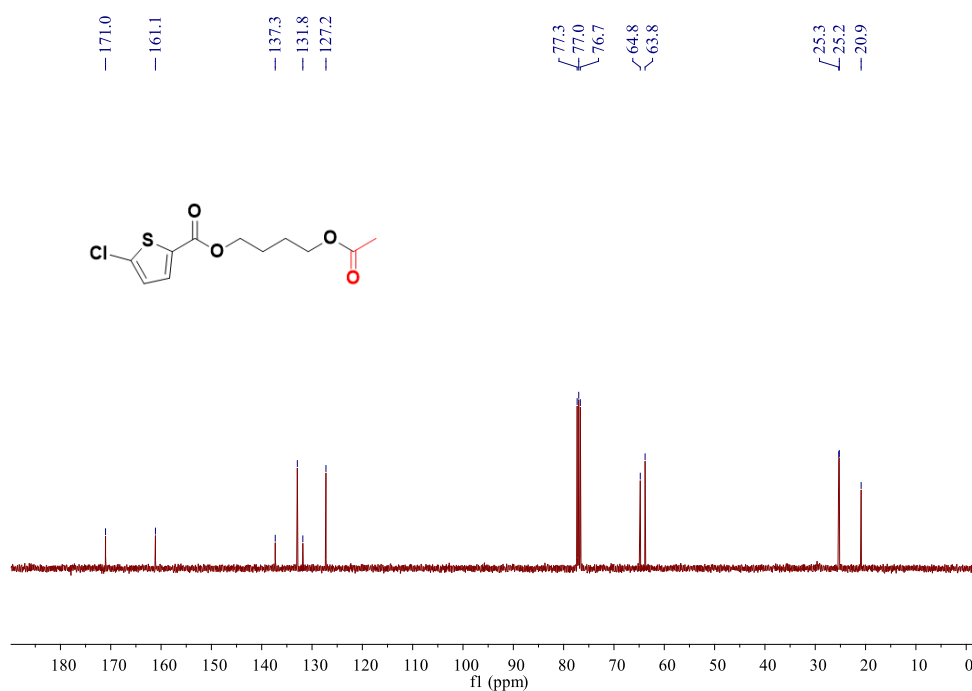
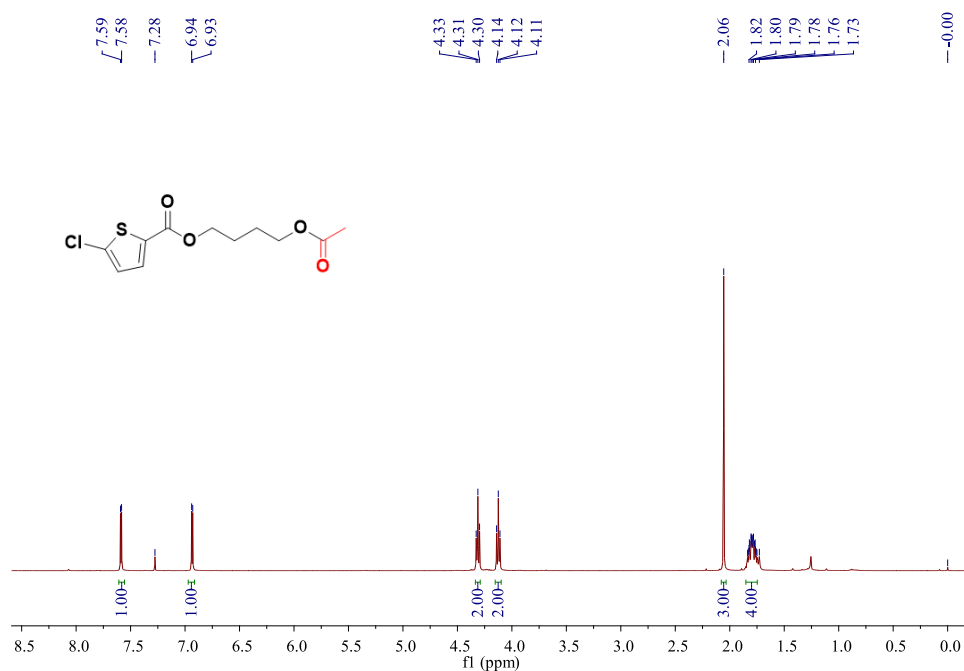
petroleum ether / ethyl acetate = 10:1, yellow oil, 63% yield (30.6 mg). **¹H NMR** (400 MHz, CDCl₃) δ 7.81 (dd, *J* = 3.7, 1.2 Hz, 1H), 7.56 (dd, *J* = 5.0, 1.2 Hz, 1H), 7.11 (dd, *J* = 5.0, 3.7 Hz, 1H), 4.33 (t, *J* = 6.2 Hz, 2H), 4.14 (t, *J* = 6.2 Hz, 2H), 2.06 (s, 3H), 1.83 – 1.74 (m, 4H). **¹³C NMR** (100 MHz, CDCl₃) δ 171.1, 162.2, 133.7, 133.4, 132.3, 127.7, 64.5, 63.9, 25.4, 25.3, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₁H₁₄O₄S+H⁺: 243.0686, Found: 243.0684. **IR** (neat, cm⁻¹): ν 2855, 1735, 1525, 1450, 1386, 1257, 1076, 948, 750, 635.

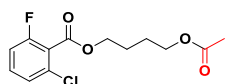




4-Acetoxybutyl 5-chlorothiophene-2-carboxylate (3a)

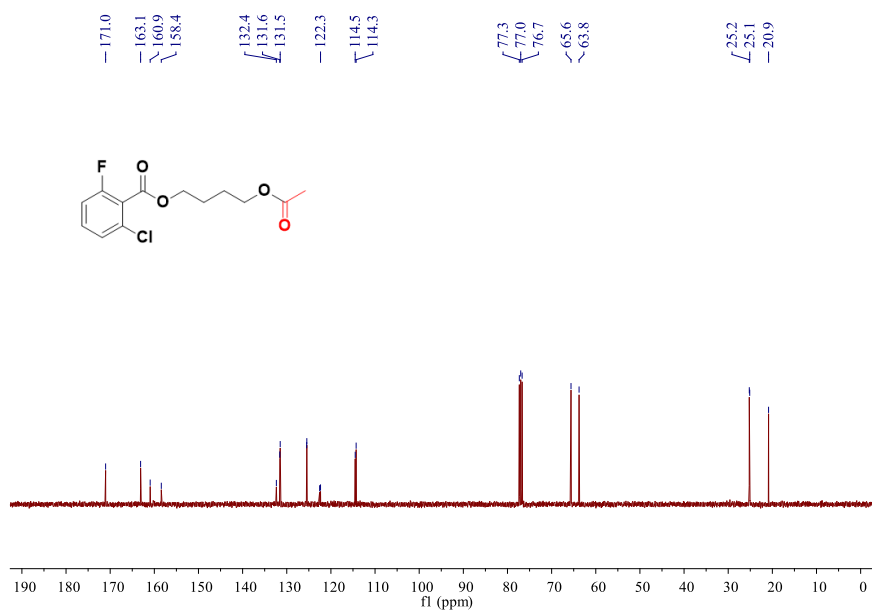
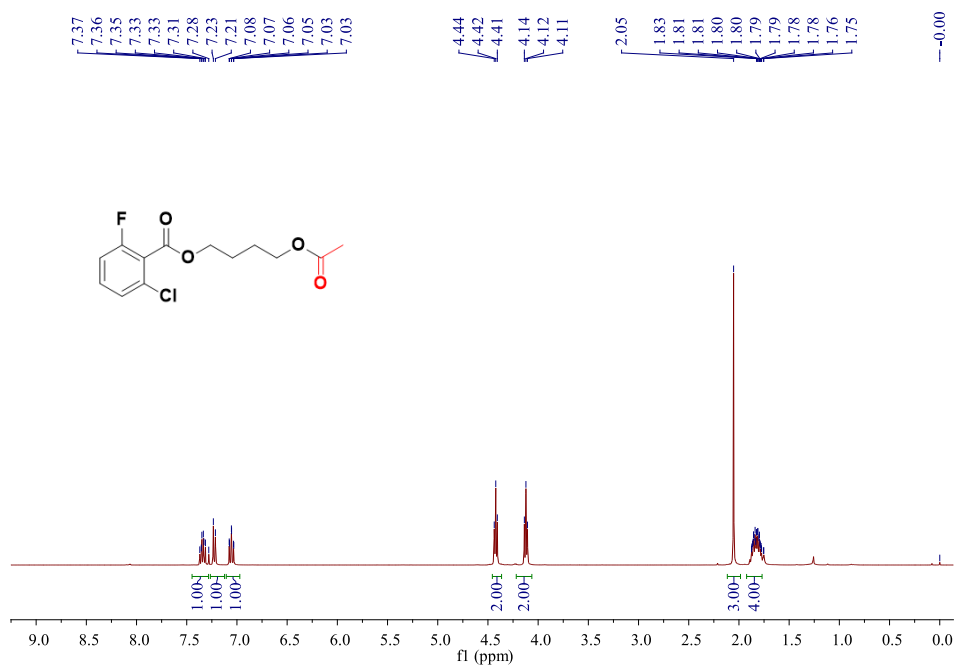
petroleum ether / ethyl acetate = 10:1, yellow oil, 70% yield (38.4 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.59 (d, $J = 4.0$ Hz, 1H), 6.93 (d, $J = 4.0$ Hz, 1H), 4.31 (t, $J = 6.2$ Hz, 2H), 4.12 (t, $J = 6.2$ Hz, 2H), 2.06 (s, 3H), 1.82 – 1.73 (m, 4H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.0, 161.1, 137.3, 132.9, 131.8, 127.2, 64.8, 63.8, 25.3, 25.2, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{11}\text{H}_{13}^{35}\text{ClO}_4\text{S}+\text{H}^+$: 277.0296, Found: 277.0294; Anal Calcd. For. $\text{C}_{11}\text{H}_{13}^{37}\text{ClO}_4\text{S}+\text{H}^+$: 279.0266, Found: 279.0264. **IR** (neat, cm^{-1}): ν 3103, 2854, 1736, 1536, 1423, 1233, 1058, 916, 811, 743, 606.

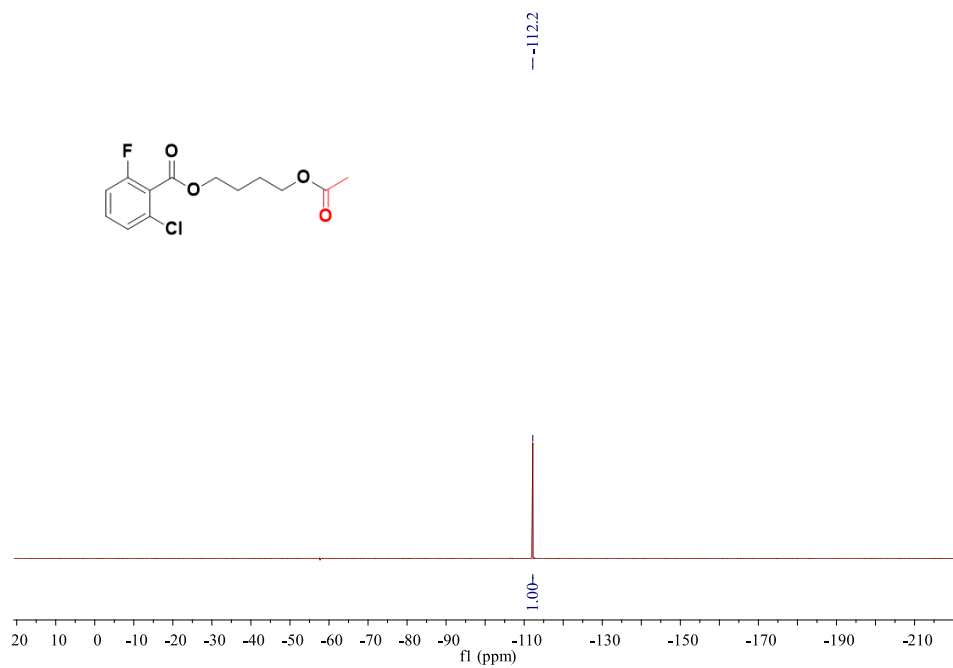
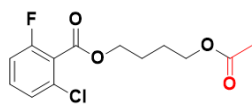


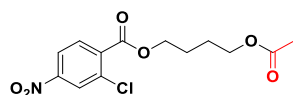


4-Acetoxybutyl 2-chloro-6-fluorobenzoate (3am)

petroleum ether / ethyl acetate = 10:1, yellow oil, 92% yield (53.0 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.37 – 7.31 (m, 1H), 7.23 – 7.2 (m, 1H), 7.08 – 7.03 (m, 1H), 4.42 (t, $J = 6.2$ Hz, 2H), 4.12 (t, $J = 6.2$ Hz, 2H), 2.05 (s, 1H), 1.83 – 1.75 (m, 1H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.0, 163.1, 159.7 (d, $J = 253.3$ Hz), 132.3 (d, $J = 5.0$ Hz), 131.5 (d, $J = 9.1$ Hz), 125.5 (d, $J = 3.5$ Hz), 122.5 (d, $J = 20.4$ Hz), 114.4 (d, $J = 21.5$ Hz), 65.6, 63.8, 25.2, 25.1, 20.9. $^{19}\text{F NMR}$ (377 MHz, CDCl_3) δ -112.2 (s, 1F). **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{13}\text{H}_{14}^{35}\text{ClFO}_4 + \text{H}^+$: 289.0637, Found: 289.0634; Anal Calcd. For. $\text{C}_{13}\text{H}_{14}^{37}\text{ClFO}_4 + \text{H}^+$: 291.0608, Found: 291.0605. **IR** (neat, cm^{-1}): ν 2856, 1732, 1602, 1576, 1450, 1387, 1268, 1055, 901, 787, 634.

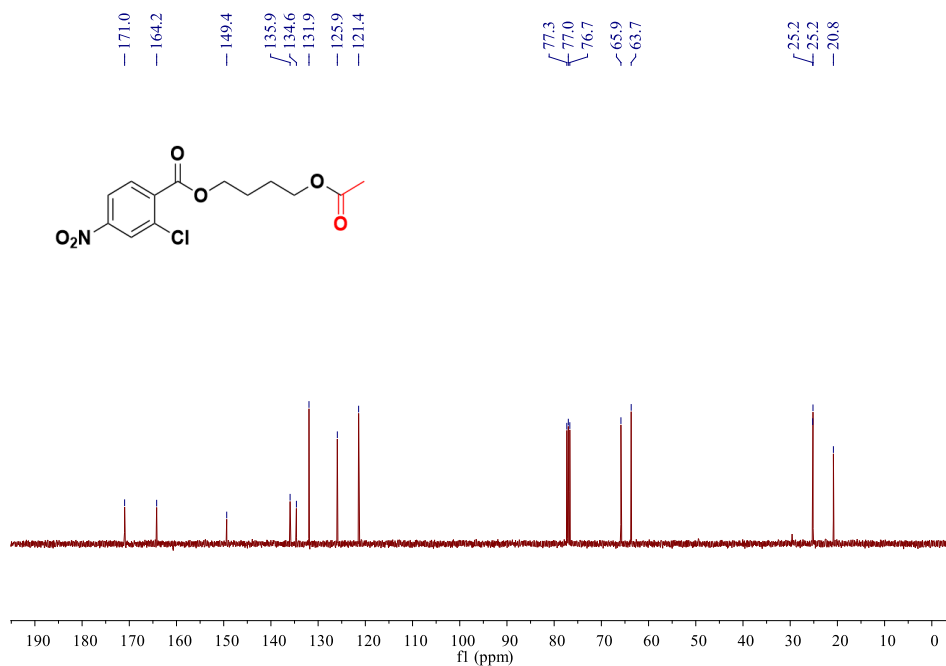
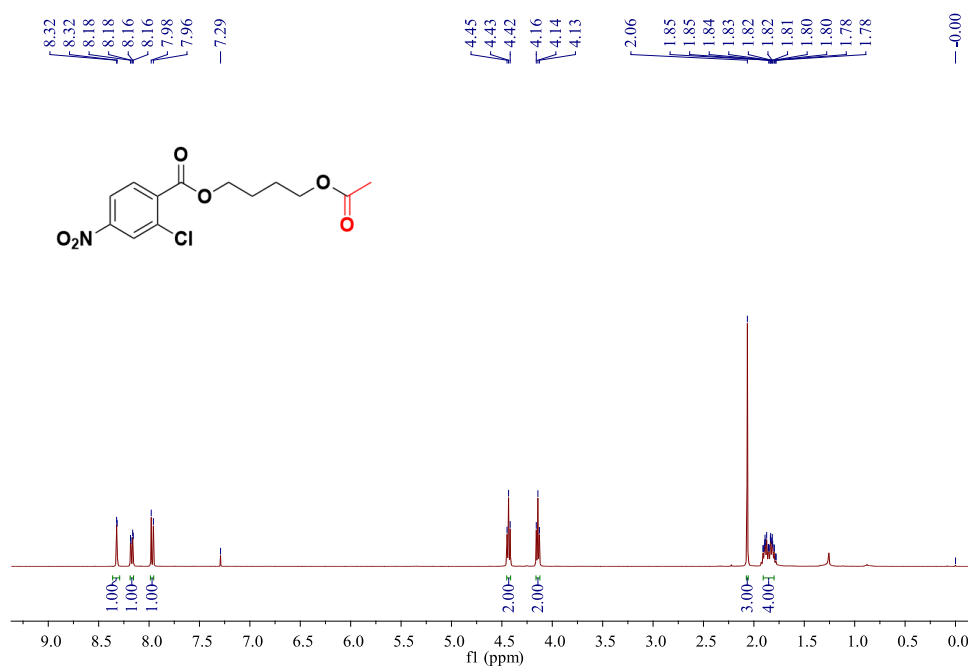


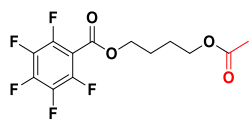




3-Acetoxypropyl 2-chloro-4-nitrobenzoate (3an)

petroleum ether / ethyl acetate = 10:1, yellow oil, 88% yield (52.8 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.32 (d, *J* = 2.1 Hz, 1H), 8.17 (dd, *J* = 8.6, 2.1 Hz, 1H), 7.97 (d, *J* = 8.6 Hz, 1H), 4.43 (t, *J* = 6.2 Hz, 2H), 4.14 (t, *J* = 6.2 Hz, 2H), 2.06 (s, 3H), 1.85 – 1.78 (m, 4H). **¹³C NMR** (100 MHz, CDCl₃) δ 171.0, 164.2, 149.4, 135.9, 134.6, 131.9, 125.9, 121.4, 65.9, 63.7, 25.2, 25.2, 20.8. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₃H₁₄³⁵ClNO₆+Na⁺: 338.0402, Found: 338.0400; Anal Calcd. For. C₁₃H₁₄³⁷ClNO₆+Na⁺: 340.0372, Found: 340.0370. **IR** (neat, cm⁻¹): ν 2853, 1731, 1600, 1589, 1349, 1236, 1044, 806, 731.

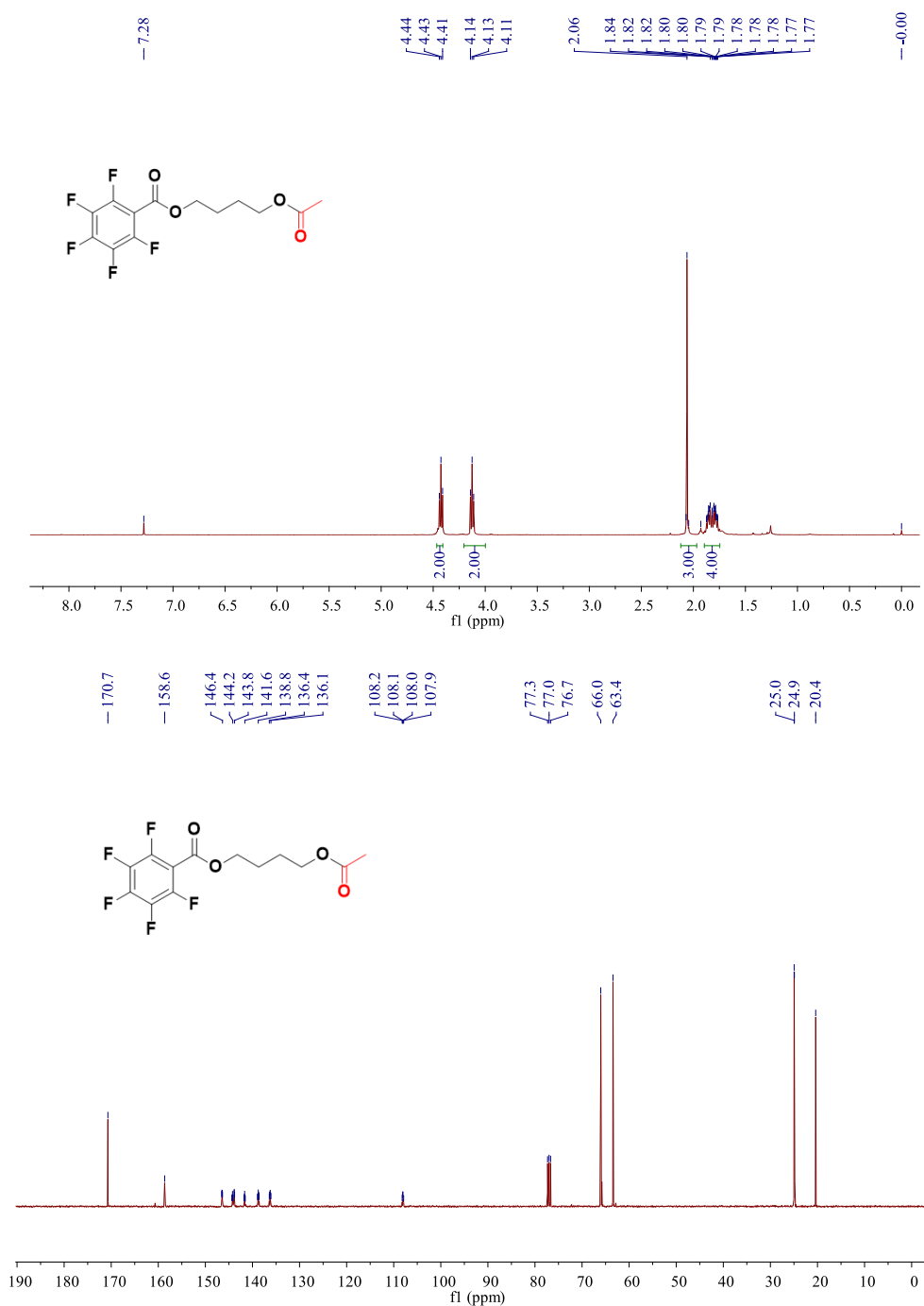


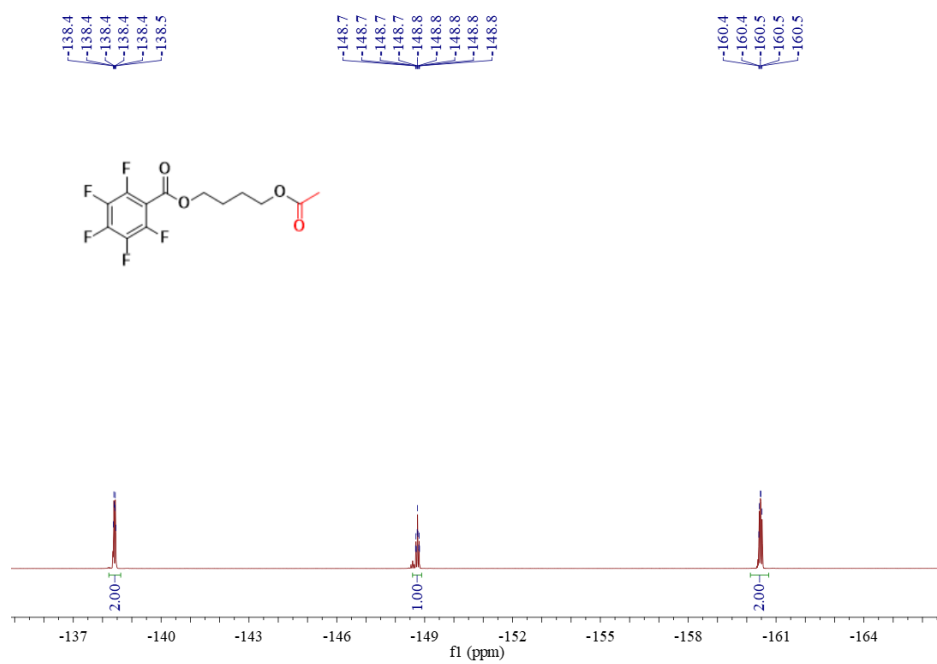


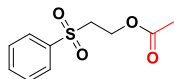
4-Acetoxybutyl 2,3,4,5,6-pentafluorobenzoate (3a)

petroleum ether / ethyl acetate = 10:1, yellow oil, 75% yield (48.9 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 4.43 (t, $J = 6.2$ Hz, 2H), 4.13 (t, $J = 6.2$ Hz, 2H), 2.06 (s, 3H), 1.82 – 1.77 (m, 4H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.7, 158.6, 145.2 (m), 142.9 (m), 137.5 (m), 108.1 (m), 66.0, 63.4, 25.0, 24.9, 20.4.

$^{19}\text{F NMR}$ (377 MHz, CDCl_3) δ -138.4 – -138.5 (m, 2F), -148.7 – -148.8 (m, 1F), -160.4 – -160.5 (m, 2F). **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{13}\text{H}_{11}\text{F}_5\text{O}_4 + \text{Na}^+$: 349.0470, Found: 349.0466. **IR** (neat, cm^{-1}): ν 2859, 1736, 1652, 1524, 1496, 1387, 1222, 1038, 754, 699.

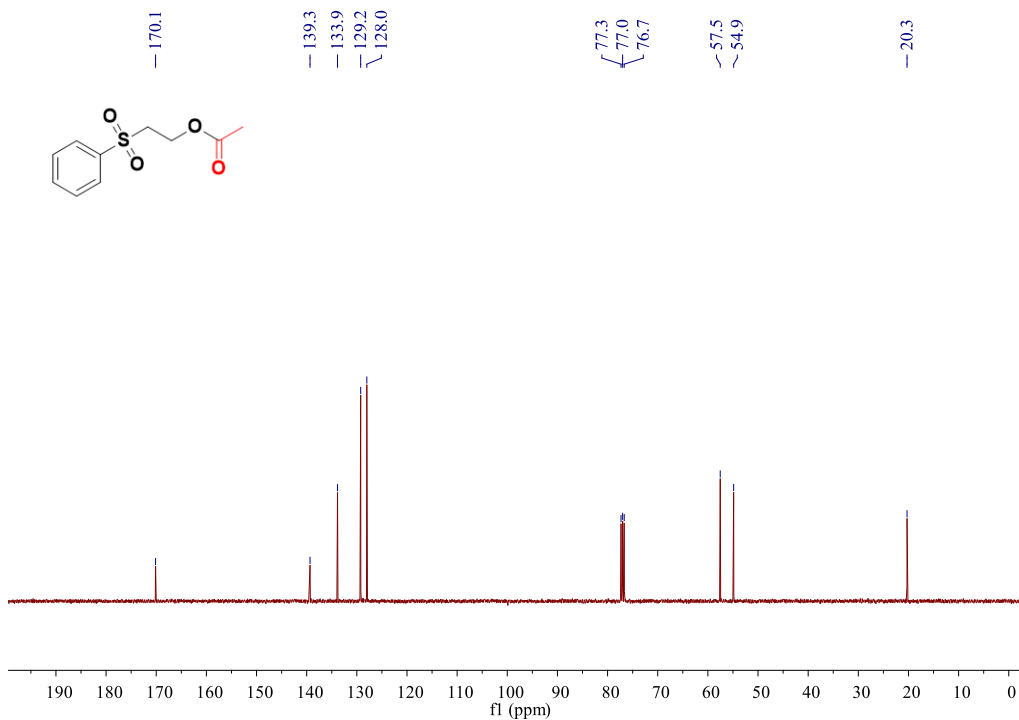
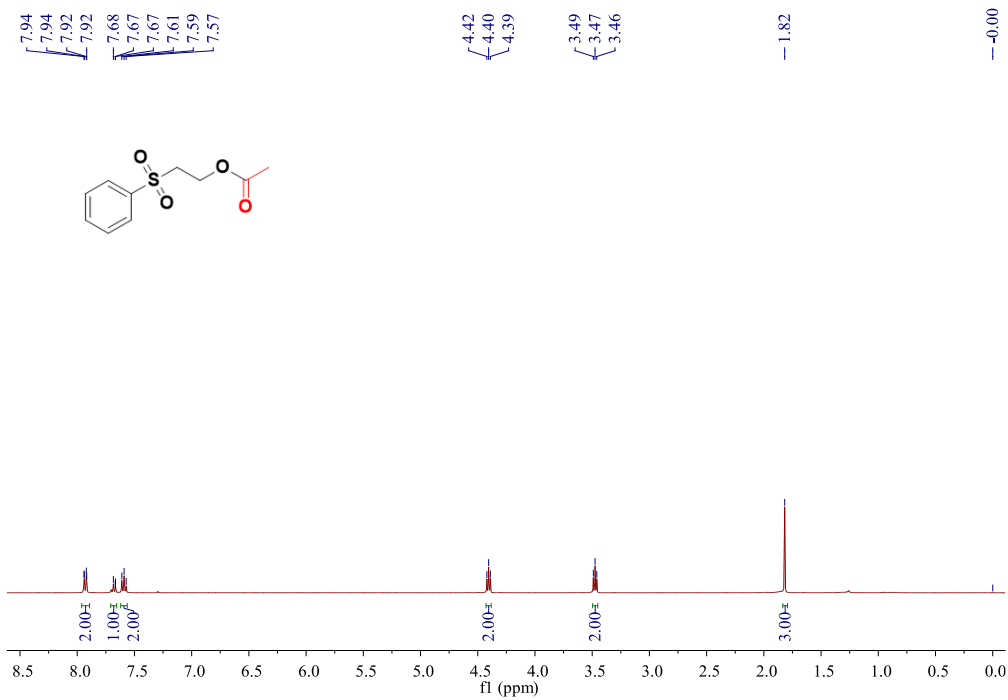


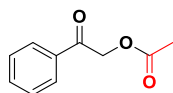




2-(Phenylsulfonyl)ethyl acetate (3ap)

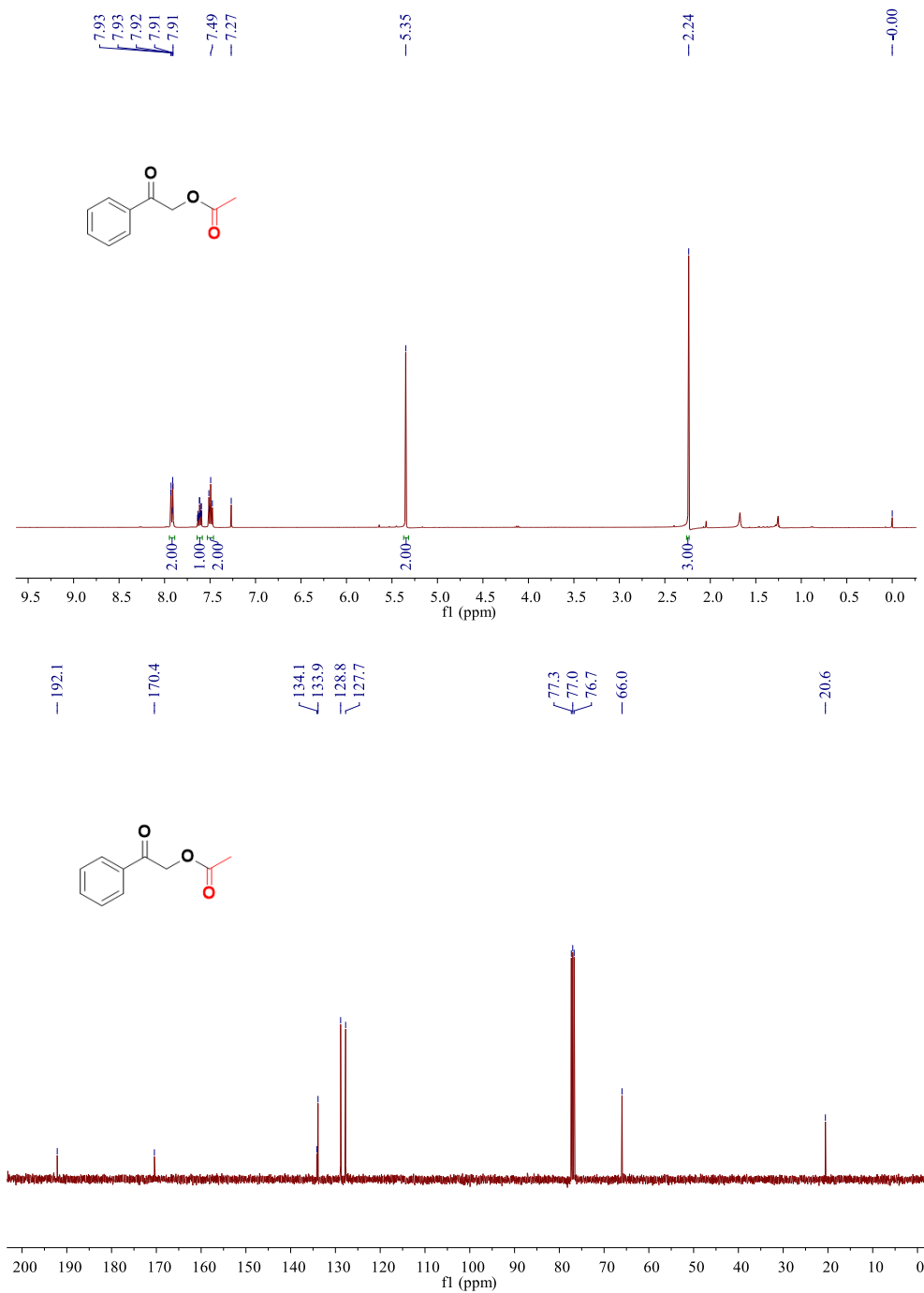
petroleum ether / ethyl acetate = 5:1, colorless oil, 99% yield (45.2 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.94 – 7.92 (m, 2H), 7.70 – 7.67 (m, 1H), 7.61 – 7.57 (m, 2H), 4.40 (t, $J = 6.1$ Hz, 2H), 3.48 (t, $J = 6.1$ Hz, 2H), 1.82 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.1, 139.3, 133.9, 129.2, 128.0, 57.5, 54.9, 20.3. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{10}\text{H}_{12}\text{O}_4\text{S} + \text{H}^+$: 229.0529, Found: 229.0525. **IR** (neat, cm^{-1}): ν 2900, 1605, 1580, 1350, 1251, 750.

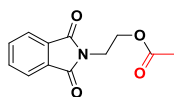




2-Oxo-2-phenylethyl acetate (3aq)

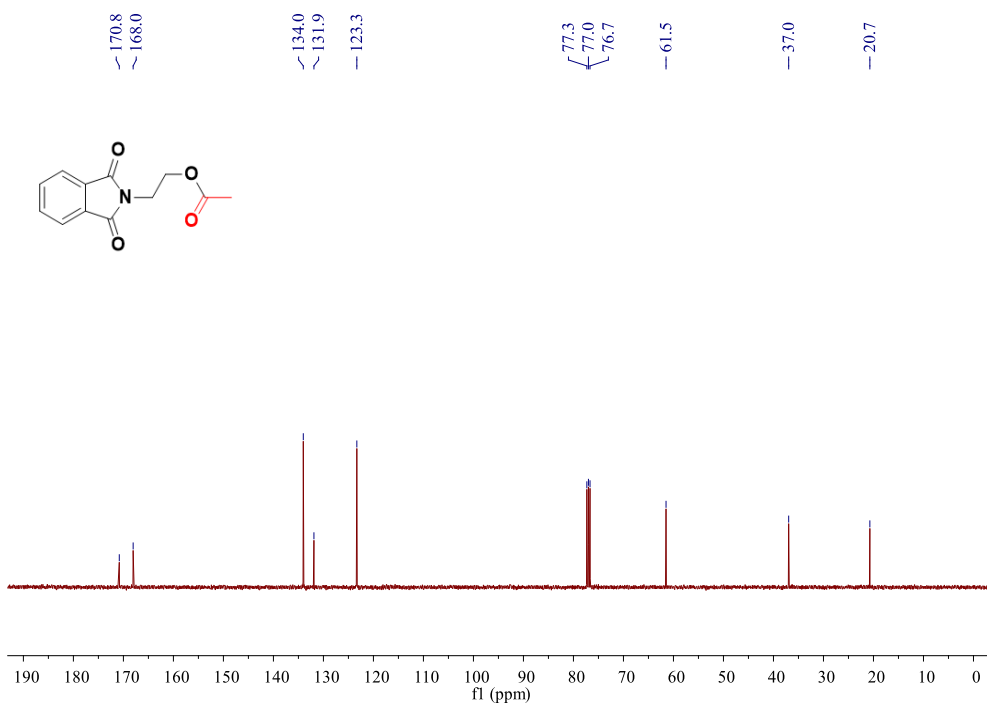
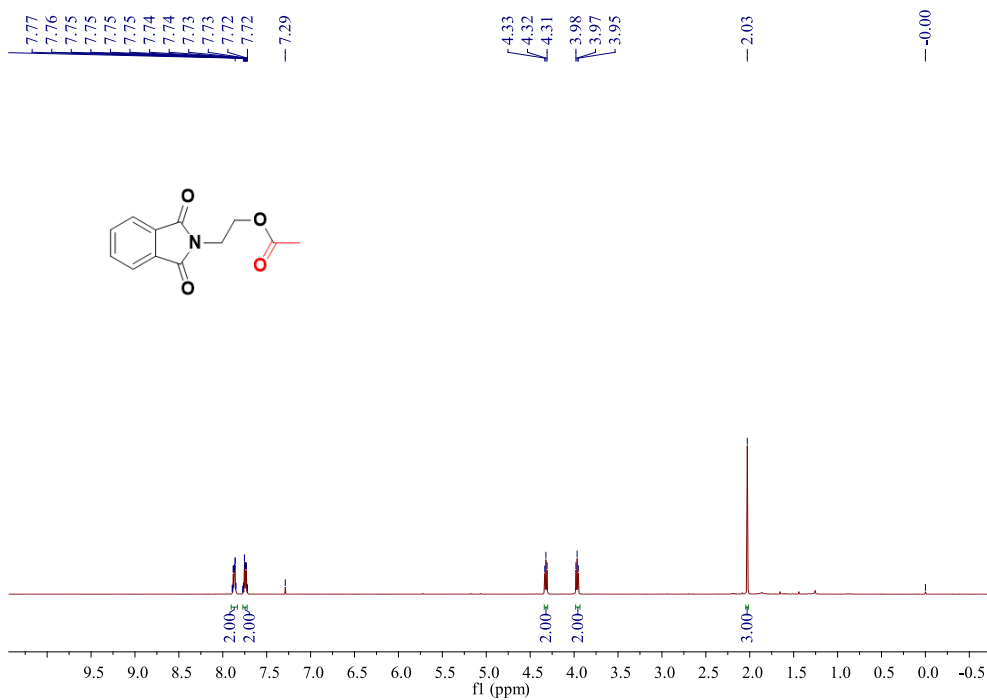
petroleum ether / ethyl acetate = 10:1, yellow oil, 50% yield (33.5 mg). **¹H NMR** (400 MHz, CDCl₃) δ 7.93 – 7.91 (m, 1H), 7.63 – 7.59 (m, 1H), 7.51 – 7.47 (m, 2H), 5.35 (s, 2H), 2.24 (s, 3H). **¹³C NMR** (100 MHz, CDCl₃) δ 192.1, 170.4, 134.1, 133.9, 128.8, 127.7, 66.0, 20.6. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₀H₁₀O₃+H⁺: 179.0703, Found: 179.0701. **IR** (neat, cm⁻¹): ν 2849, 1748, 1702, 1597, 1450, 1372, 1216, 912, 731, 647.

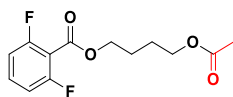




2-(1,3-Dioxisoindolin-2-yl)ethyl acetate (3ar)

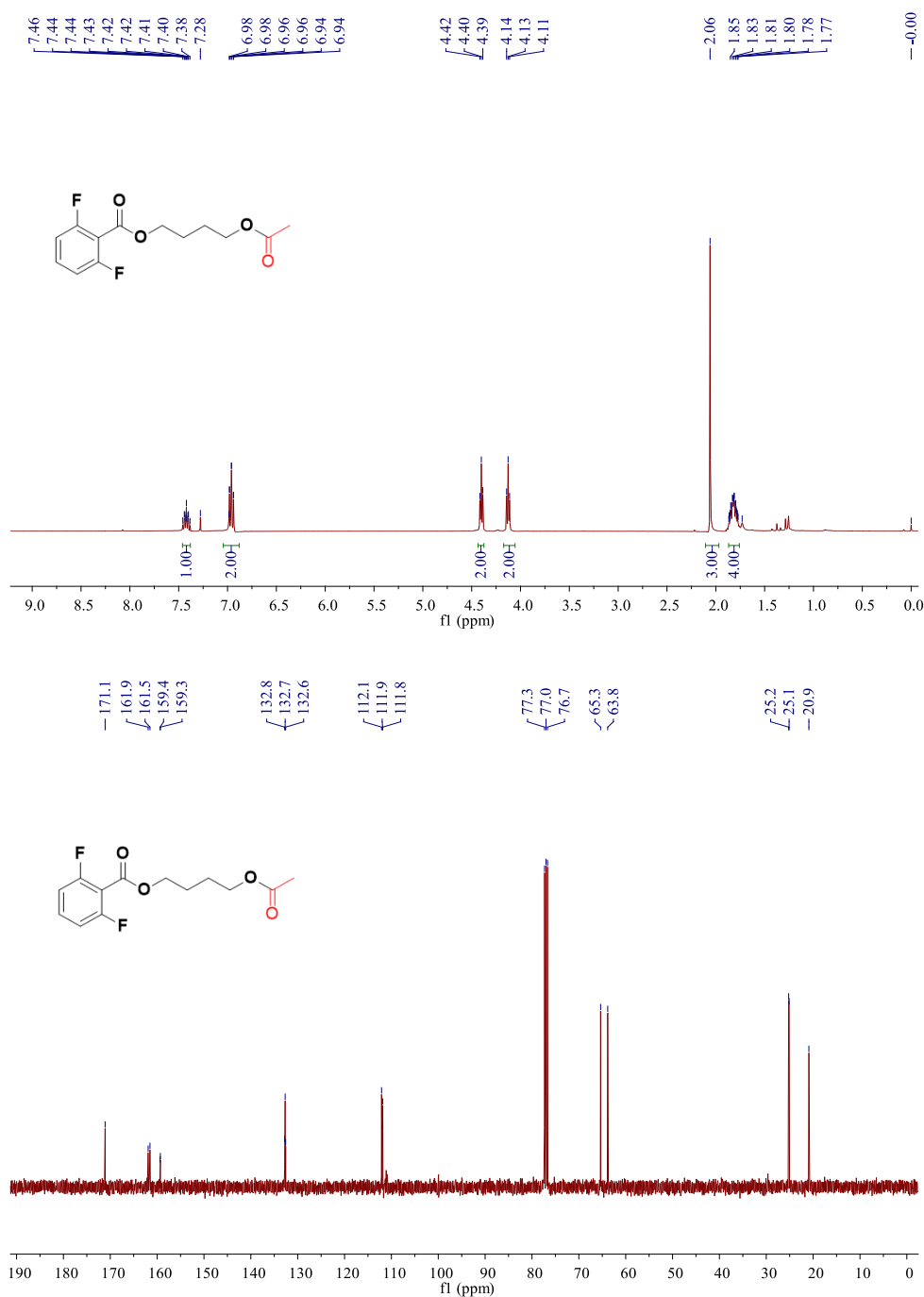
petroleum ether / ethyl acetate = 5:1, white solid, 97% yield (45.1 mg). mp: 77 – 80°C. ¹H NMR (400 MHz, CDCl₃) δ 7.89 – 7.85 (m, 2H), 7.77 – 7.72 (m, 2H), 4.32 (t, *J* = 5.3 Hz, 2H), 3.97 (t, *J* = 5.3 Hz, 2H), 2.03 (s, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 170.8, 168.0, 134.0, 131.9, 123.3, 61.5, 37.0, 20.7. HRMS (ESI-TOF): Anal Calcd. For. C₁₂H₁₁NO₄+H⁺: 234.0761, Found: 234.0758. IR (neat, cm⁻¹): ν 5825, 1772, 1705, 1615, 1559, 1369, 1273, 1153, 983, 717.

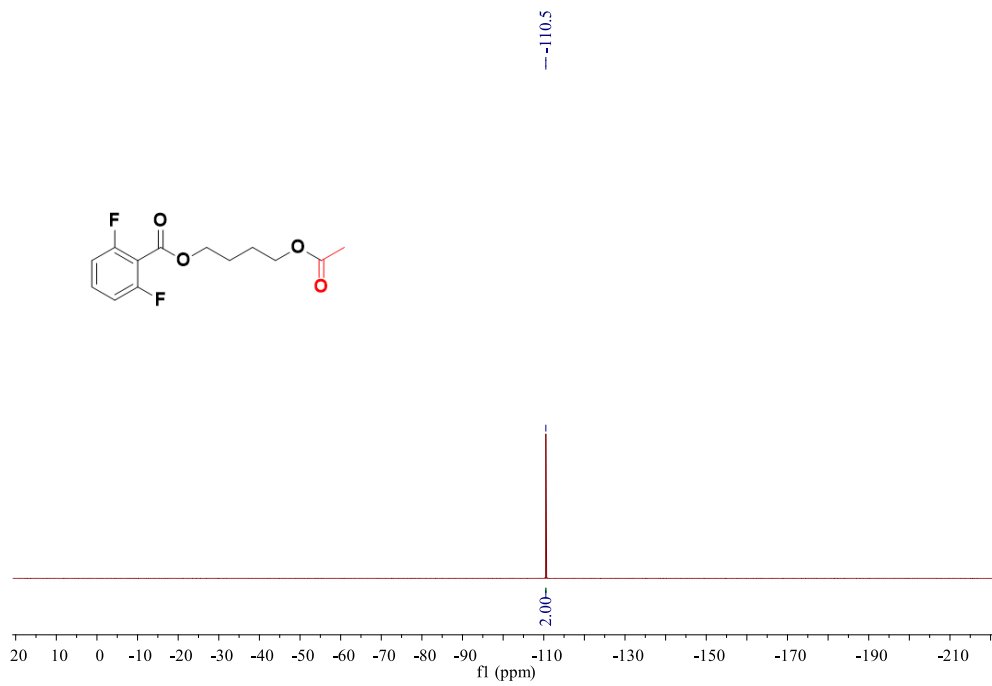


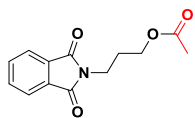


4-Acetoxybutyl 2,6-difluorobenzoate (3as)

petroleum ether / ethyl acetate = 10:1, yellow oil, 82% yield (44.5 mg). **¹H NMR** (400 MHz, CDCl₃) δ 7.46 – 7.38 (m, 1H), 6.98 – 6.94 (m, 2H), 4.40 (t, *J* = 6.1 Hz, 2H), 4.13 (t, *J* = 6.1 Hz, 2H), 2.06 (s, 3H), 1.85 – 1.73 (m, 7H). **¹³C NMR** (100 MHz, CDCl₃) δ 171.1, 161.7 (d, *J* = 39.2 Hz), 159.3 (d, *J* = 6.2 Hz), 132.7 (t, *J* = 10.5 Hz), 112.0 (dd, *J* = 24.3, 1.3 Hz), 65.4, 63.8, 25.2, 25.1, 20.9. **¹⁹F NMR** (377 MHz, CDCl₃) δ -110.5 (s, 2F). **HRMS** (ESI-TOF): Anal Calcd. For. C₁₃H₁₄F₂O₄+H⁺: 273.0933, Found: 273.0930. **IR** (neat, cm⁻¹): ν 2857, 1730, 1624, 1594, 1469, 1288, 1110, 768, 634.

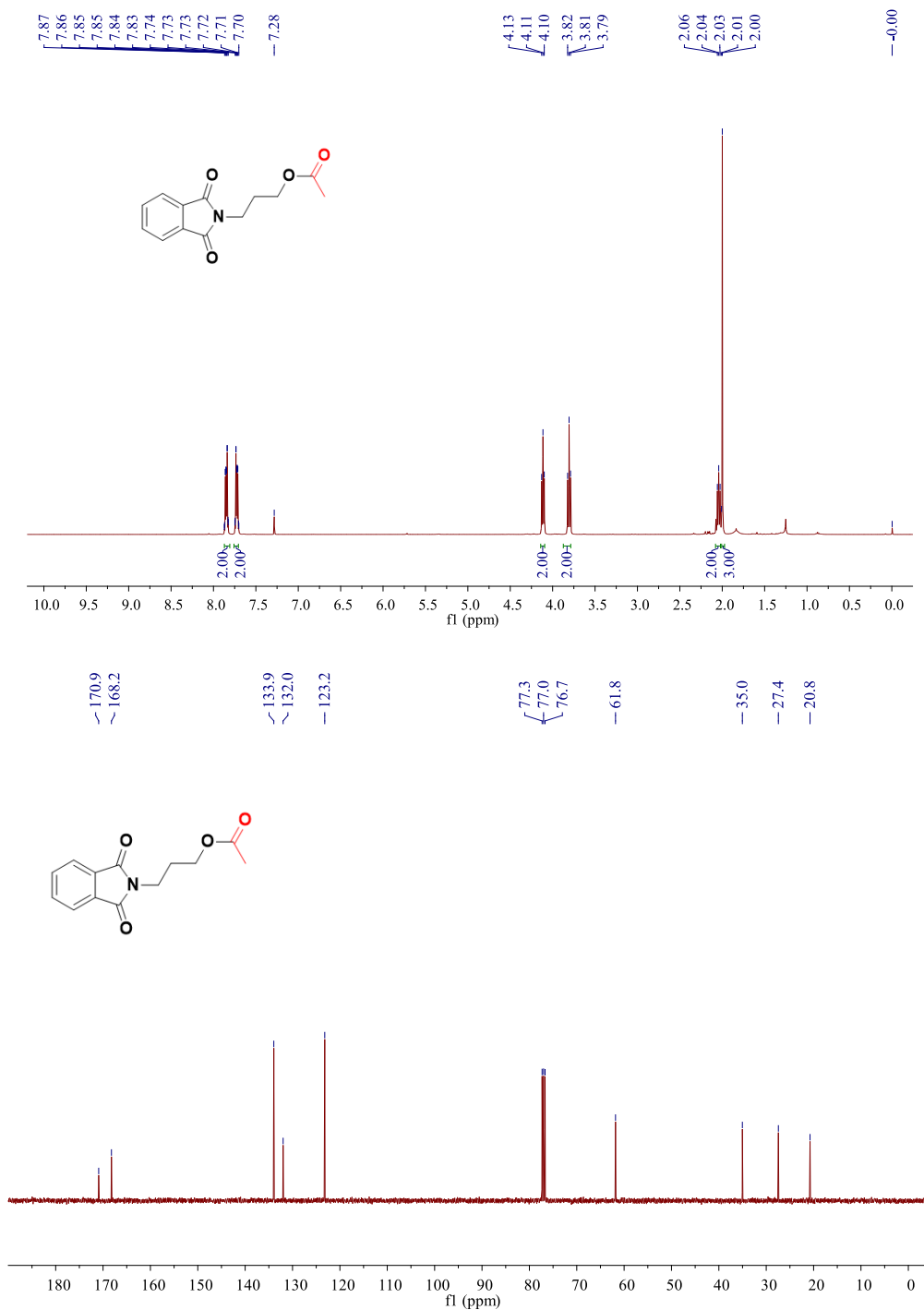


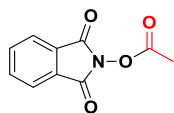




3-(1,3-Dioxisoindolin-2-yl)propyl acetate (3at)

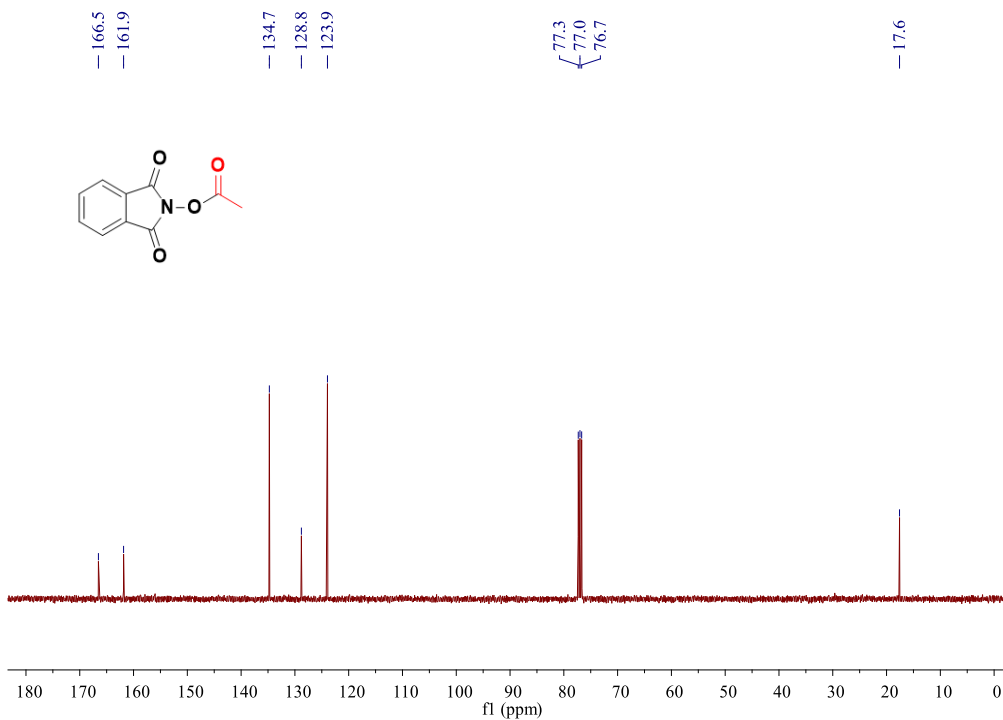
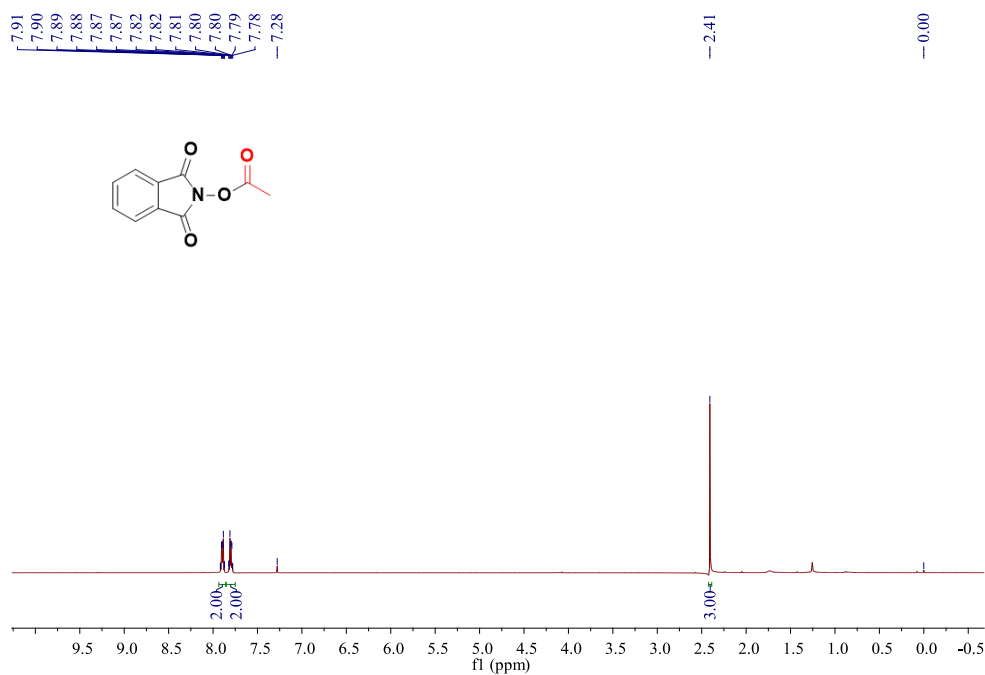
petroleum ether / ethyl acetate = 10:1, white solid, 88% yield (46.0 mg). mp: 63 – 66°C. $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.87 – 7.83 (m, 2H), 7.75 – 7.70 (m, 2H), 4.11 (t, $J = 6.1$ Hz, 2H), 3.81 (t, $J = 6.1$ Hz, 2H), 2.07 – 2.01 (m, 2H), 2.00 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.9, 168.2, 133.9, 132.0, 123.2, 61.8, 35.0, 27.4, 20.8. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{13}\text{H}_{13}\text{NO}_4 + \text{H}^+$: 248.0917, Found: 248.0913. **IR** (neat, cm^{-1}): ν 2900, 1771, 1614, 1527, 1467, 1365, 1188, 1001, 717, 605.

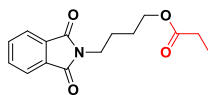




1,3-Dioxoisindolin-2-yl acetate (3au)

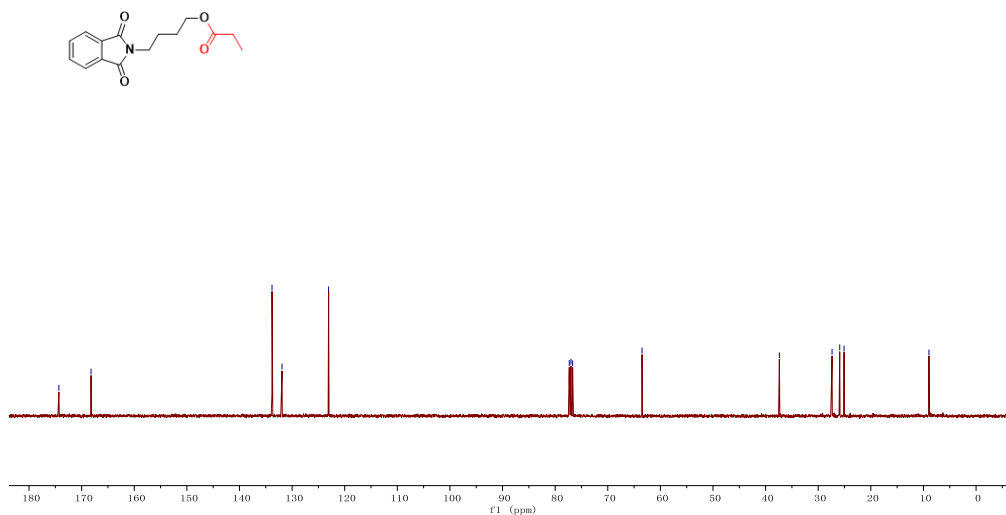
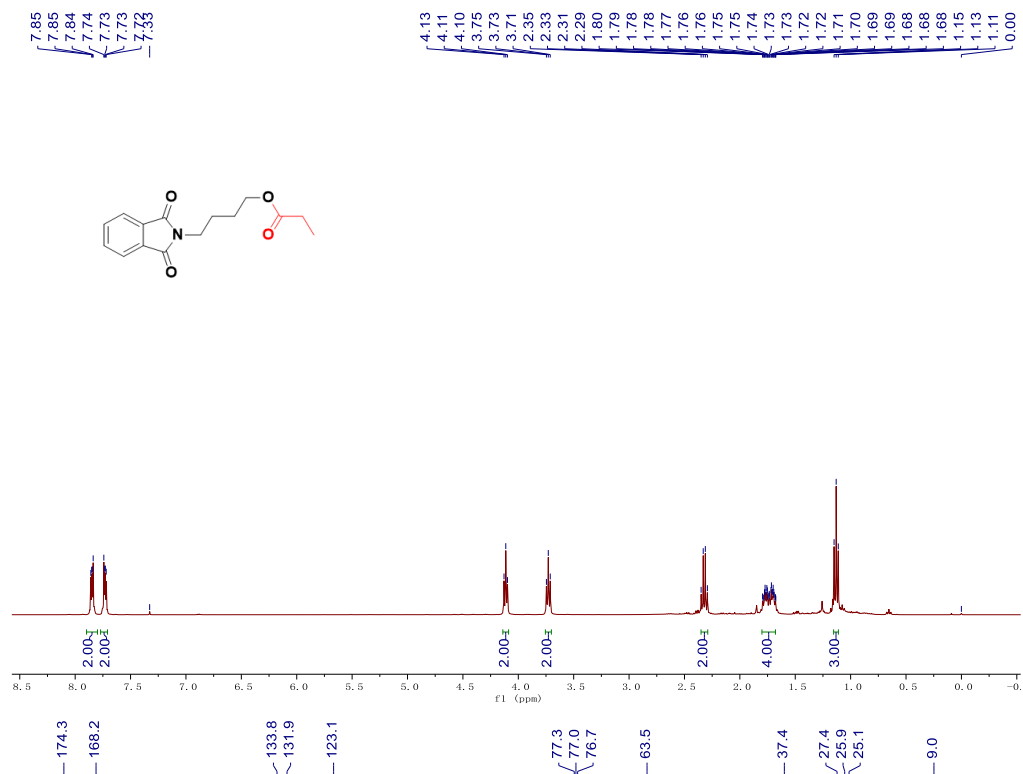
petroleum ether / ethyl acetate = 5:1, white solid, 61% yield (24.9 mg). mp: 183 – 185°C. $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.92 – 7.87 (m, 2H), 7.82 – 7.78 (m, 2H), 2.41 (s, 1H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 166.5, 161.9, 134.7, 128.8, 123.9, 17.6. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{10}\text{H}_7\text{NO}_4 + \text{H}^+$: 206.0448, Found: 206.0450. **IR** (neat, cm^{-1}): ν 2850, 1808, 1785, 1609, 1466, 1236, 967, 720, 694.

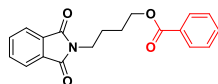




4-(1,3-Dioxisoindolin-2-yl)butyl propionate (3av)

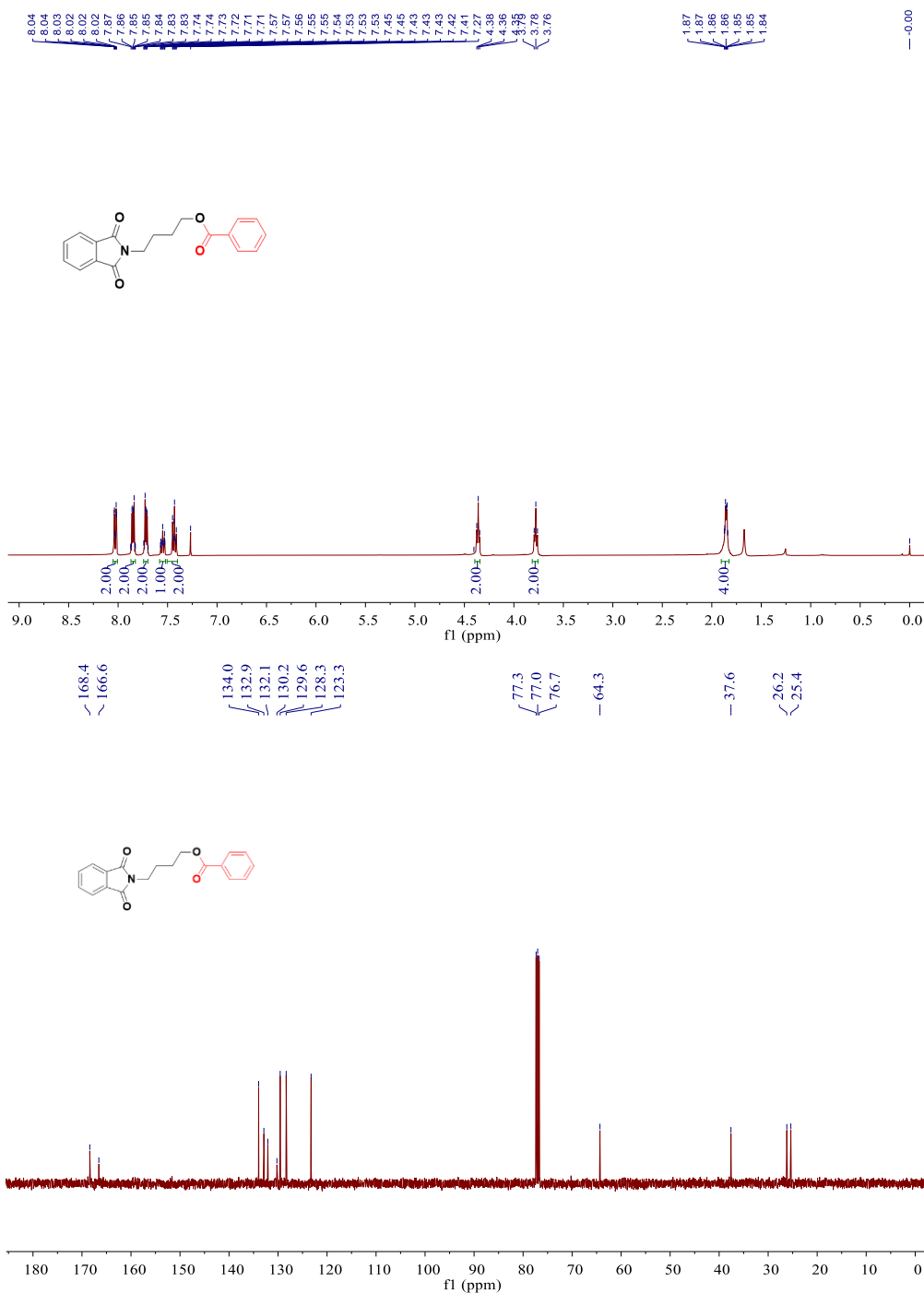
petroleum ether / ethyl acetate = 5:1, yellow liquid, 80% yield (44.0 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.8 – 7.84 (m, 2H), 7.74 – 7.72 (m, 2H), 4.11 (t, $J = 6.9$ Hz, 2H), 3.73 (t, $J = 6.9$ Hz, 2H), 2.32 (q, $J = 7.6$ Hz, 1H), 1.80 – 1.66 (m, 2H), 1.13 (t, $J = 7.6$ Hz, 2H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 174.3, 168.2, 133.8, 131.9, 123.1, 63.5, 37.4, 27.4, 25.9, 25.1, 9.0. **HRMS** (ESI-TOF): Anal Calcd. For $\text{C}_{15}\text{H}_{17}\text{NO}_4 + \text{Na}^+$: 298.1050, Found: 298.1055; **IR** (neat, cm^{-1}): ν 2859, 1720, 1610, 1555, 1438, 1190, 1008, 719.

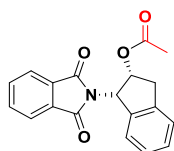




4-(1,3-dioxoisindolin-2-yl)butyl benzoate (3aw)

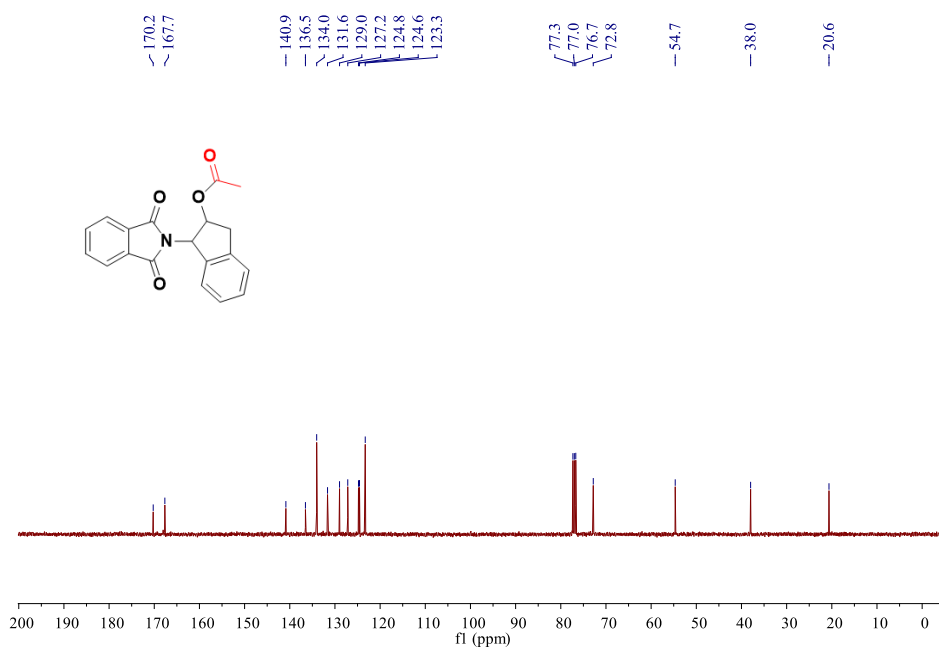
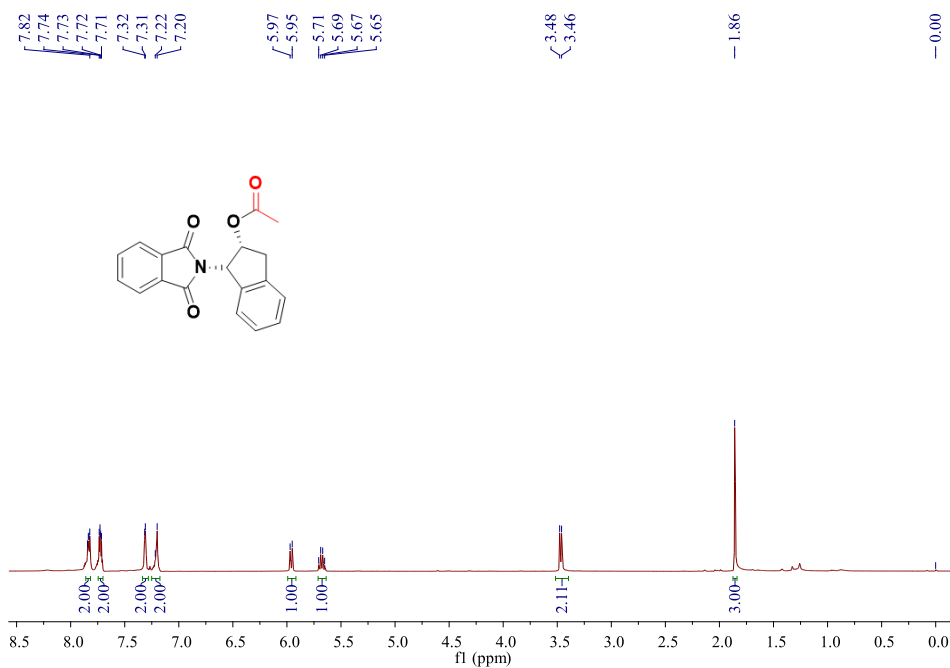
petroleum ether / ethyl acetate = 5:1, yellow liquid, 30% yield (19.4 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.05 – 8.00 (m, 2H), 7.87 – 7.83 (m, 2H), 7.74 – 7.70 (m, 2H), 7.57 – 7.53 (m, 1H), 7.45 – 7.41 (m, 2H), 4.37 (t, $J = 6.6$ Hz, 2H), 3.78 (t, $J = 6.6$ Hz, 2H), 1.87 – 1.84 (m, 4H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 168.4, 166.6, 134.0, 132.9, 132.1, 130.2, 129.6, 128.3, 123.3, 64.3, 37.6, 26.2, 25.4. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{19}\text{H}_{17}\text{NO}_4$: 346.1050, Found: 346.1054; **IR** (neat, cm^{-1}): ν 2790, 1760, 1610, 1499, 1223, 752.

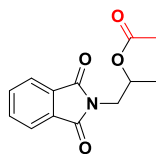




(1S,2R)-1-(1,3-Dioxisoindolin-2-yl)-2,3-dihydro-1H-inden-2-yl acetate (3ax)

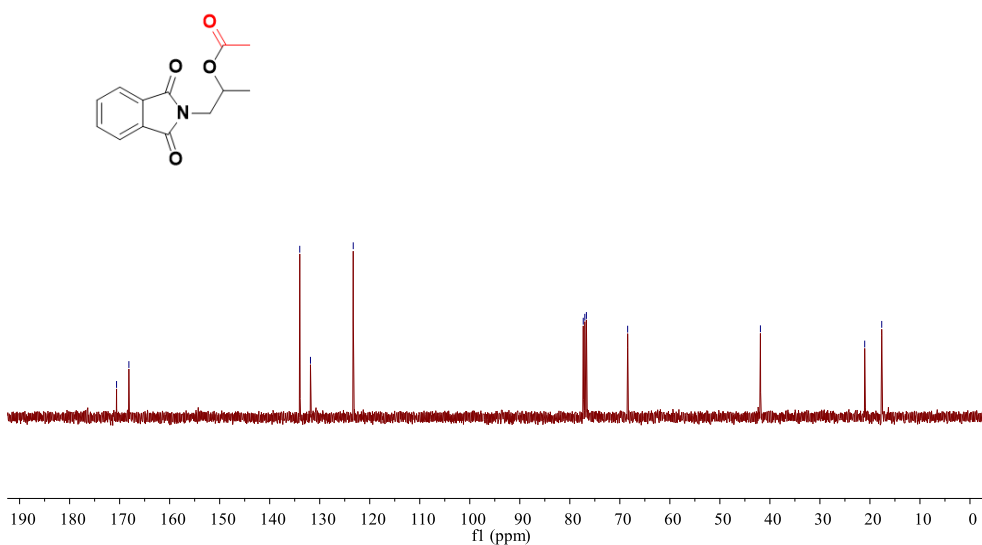
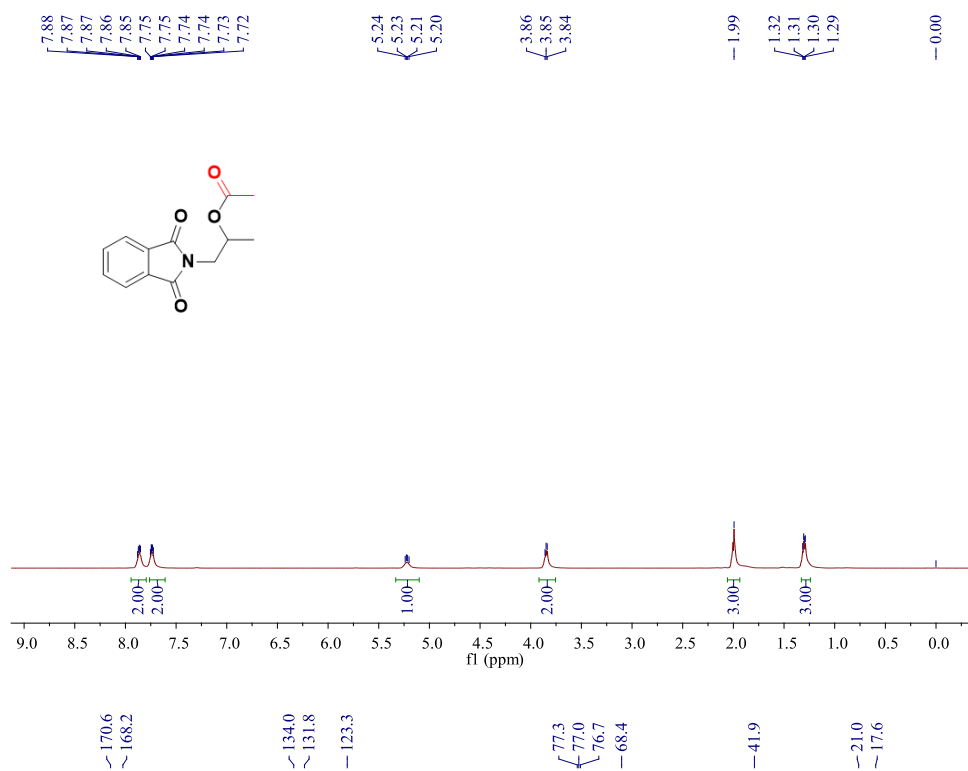
petroleum ether / ethyl acetate = 5:1, white solid, 62% yield (39.6 mg). mp: 135 – 137°C. $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.87 – 7.82 (m, 2H), 7.76 – 7.71 (m, 2H), 7.32 – 7.31 (m, 2H), 7.22 – 7.20 (m, 2H), 5.96 (d, $J = 7.8$ Hz, 1H), 5.68 (q, $J = 7.3$ Hz, 1H), 3.47 (d, $J = 7.1$ Hz, 2H), 1.86 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.2, 167.7, 140.9, 136.5, 134.0, 131.6, 129.0, 127.2, 124.8, 124.6, 123.3, 72.8, 54.7, 38.0, 20.6. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{19}\text{H}_{15}\text{NO}_4 + \text{H}^+$: 322.1074, Found: 322.1070. **IR** (neat, cm^{-1}): ν 2850, 1705, 1600, 1450, 1205, 905, 710.

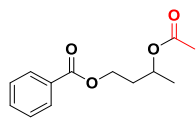




1-(1,3-Dioxisoindolin-2-yl)propan-2-yl acetate (3ay)

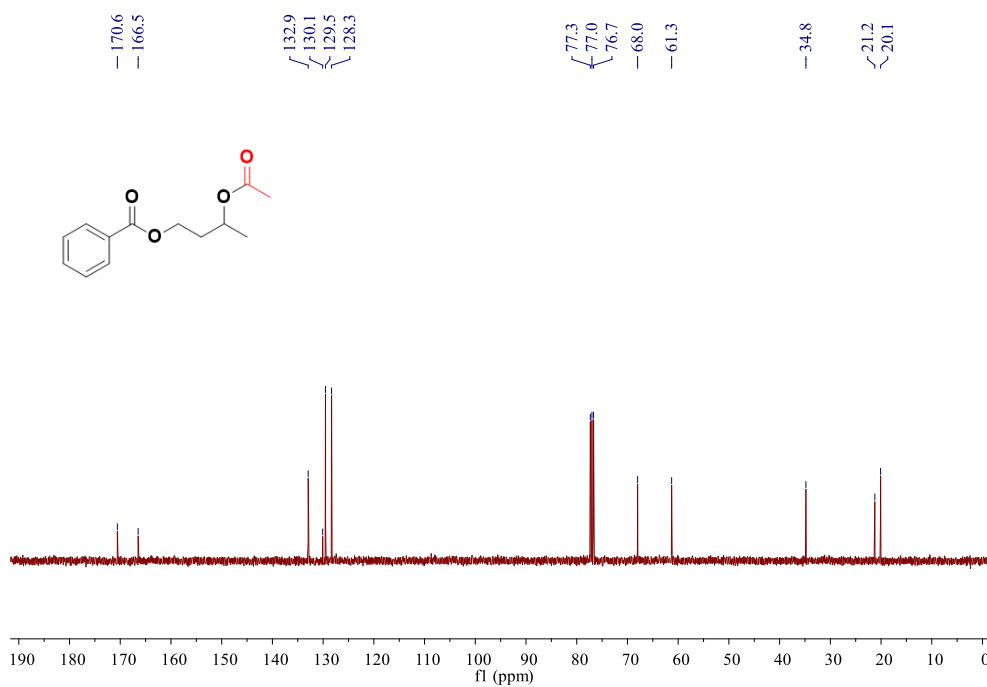
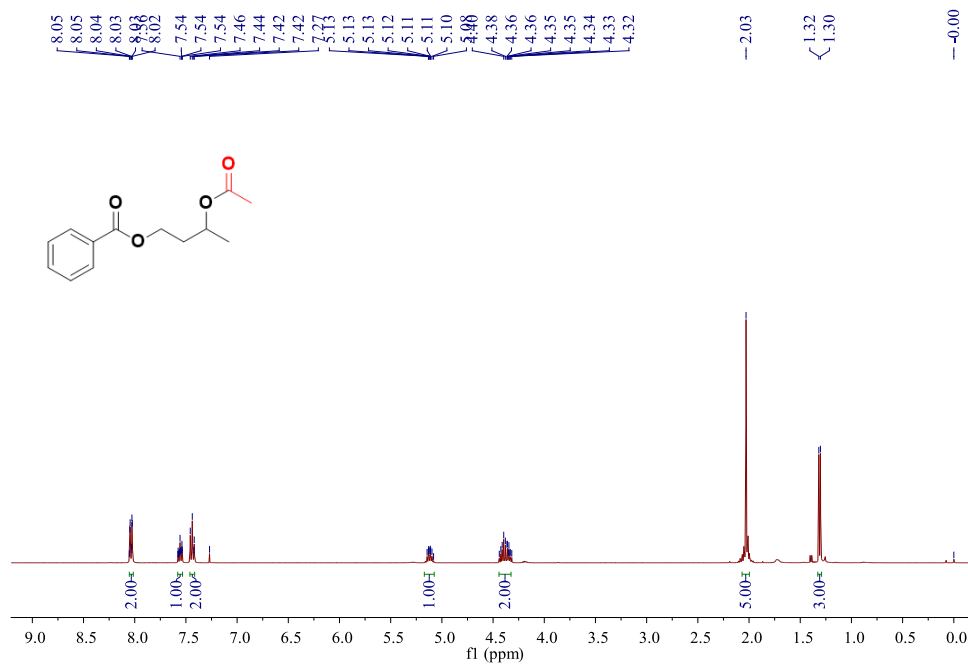
petroleum ether / ethyl acetate = 5:1, white solid, 91% yield (44.7 mg). mp: 80 – 83°C. $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.88 – 7.85 (m, 2H), 7.75 – 7.72 (m, 2H), 5.22 (dd, $J = 10.1, 5.2$ Hz, 1H), 3.86 – 3.84 (m, 2H), 1.99 (s, 3H), 1.32 – 1.29 (m, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.6, 168.2, 134.0, 131.8, 123.3, 68.4, 41.9, 21.1, 17.6. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{17}\text{H}_{20}\text{Cl}_2\text{O}_5 + \text{H}^+$: 248.0917, Found: 248.0913. **IR** (neat, cm^{-1}): ν 1775, 1713, 1615, 1468, 1397, 1241, 1036, 906, 723, 648.

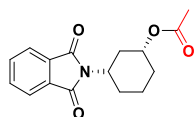




3-Acetoxybutyl benzoate (3az)

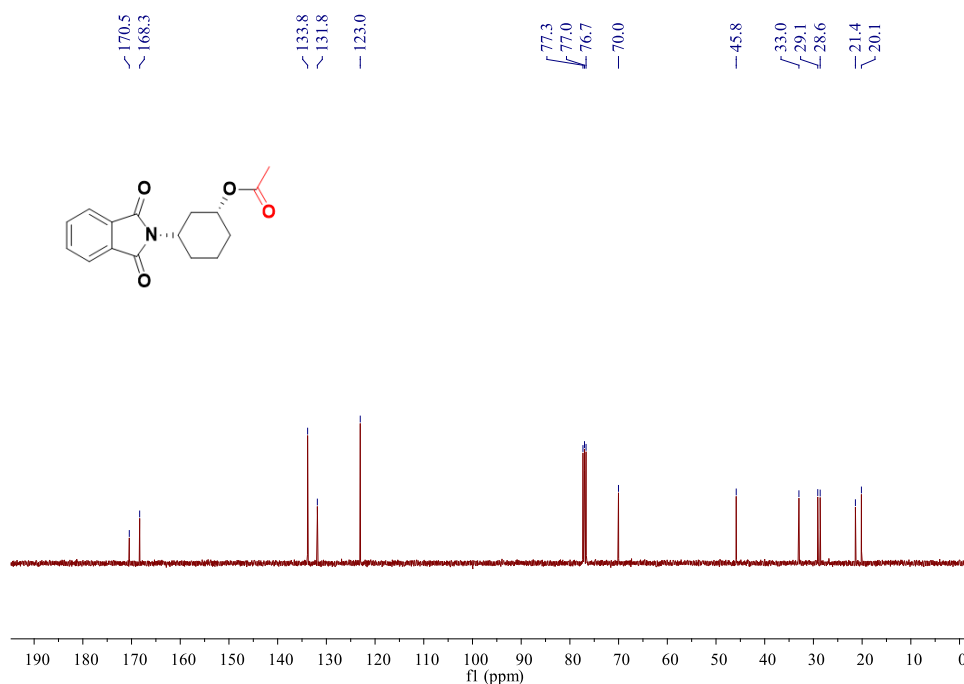
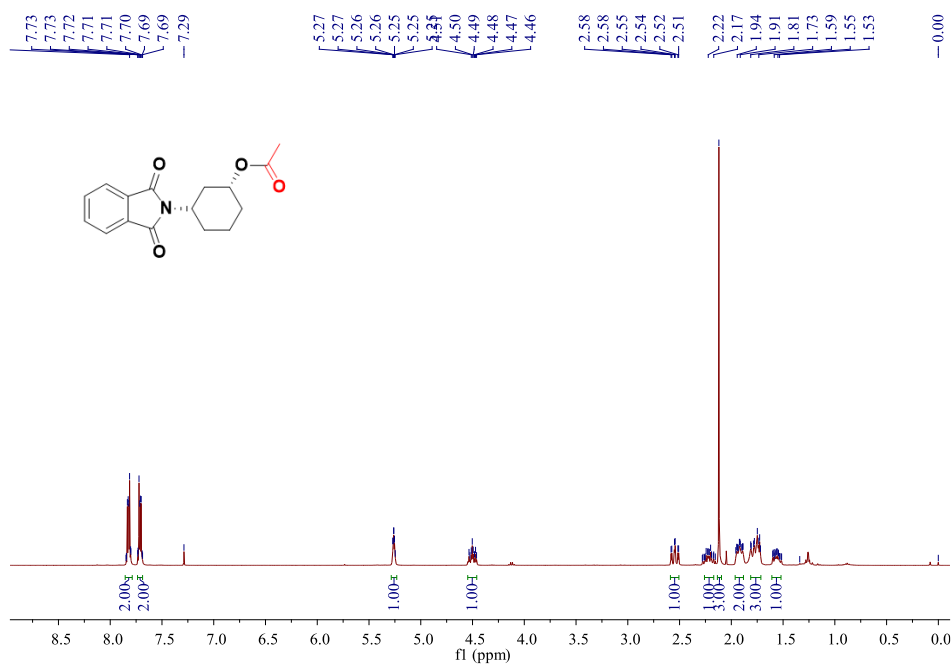
petroleum ether / ethyl acetate = 20:1, colorless oil, 82% yield (38.9 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.05–8.02 (m, 2H), 7.58–7.54 (m, 1H), 7.44–7.42 (m, 1H), 5.14–5.08 (m, 1H), 4.44–4.32 (m, 2H), 2.09–1.97 (m, 5H), 1.31 (d, *J* = 6.3 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃) δ 170.6, 166.5, 132.9, 130.1, 129.5, 128.3, 68.0, 61.3, 34.8, 21.2, 20.1. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₃H₁₆O₄ +H⁺: 237.1121, Found: 237.1118. **IR** (neat, cm⁻¹): ν 2869, 1709, 1613, 1586, 1396, 1240, 818, 676.

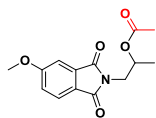




(1R,3S)-3-(1,3-dioxisoindolin-2-yl) cyclohexyl acetate (3ba)

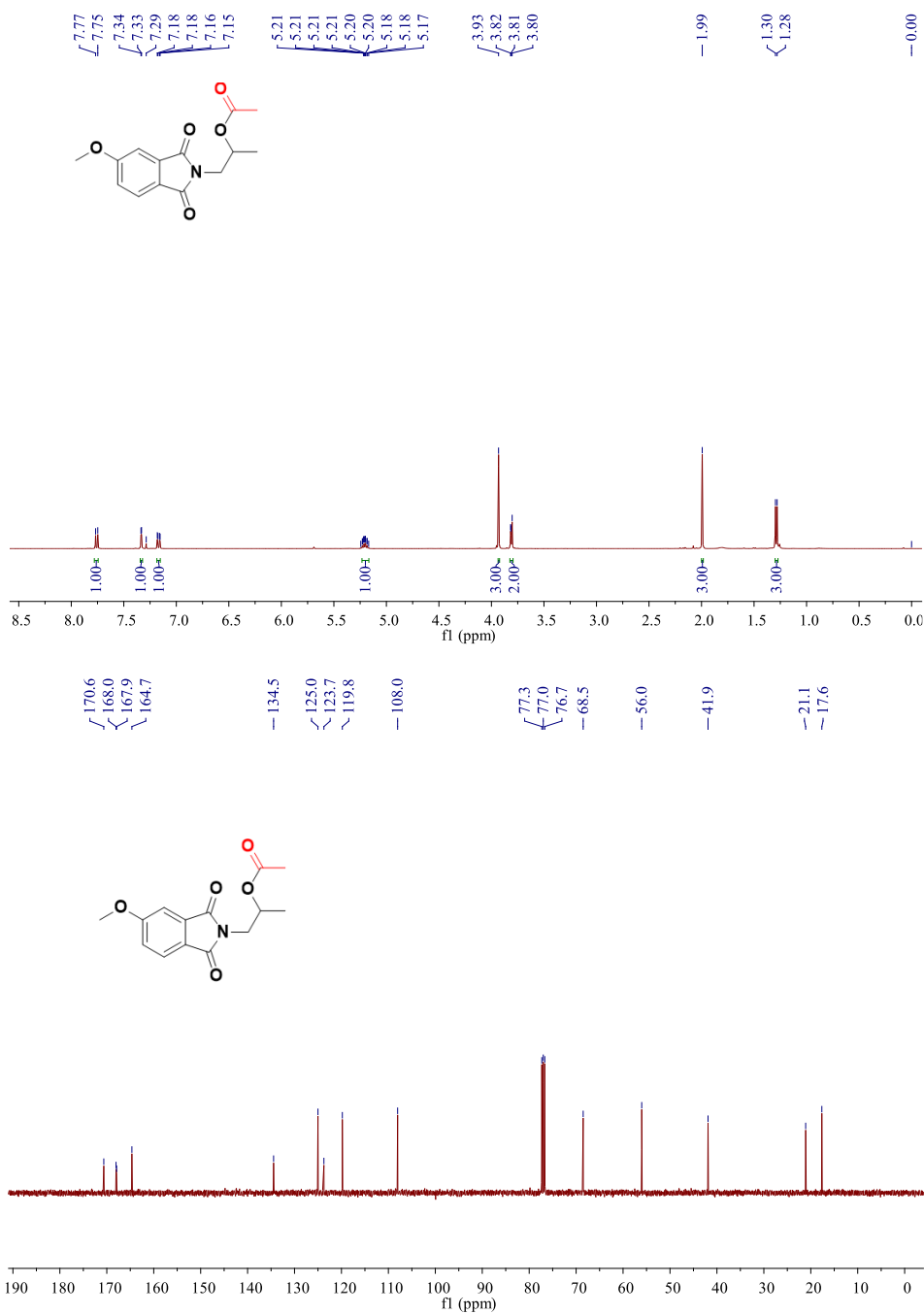
petroleum ether / ethyl acetate = 5:1, white solid, 77% yield (44.1 mg). mp: 100 – 105°C. ¹H NMR (400 MHz, CDCl₃) δ 7.85 – 7.80 (m, 2H), 7.73 – 7.69 (m, 2H), 5.27 – 5.25 (m, 1H), 4.53 – 4.46 (m, 1H), 2.58 – 2.51 (m, 1H), 2.24 – 2.15 (m, 1H), 2.12 (s, 3H), 1.95 – 1.89 (m, 2H), 1.81 – 1.72 (m, 3H), 1.60 – 1.51 (m, 1H). ¹³C NMR (100 MHz, CDCl₃) δ 170.5, 168.3, 133.8, 131.8, 123.0, 70.0, 45.8, 33.0, 29.1, 28.6, 21.4, 20.1. HRMS (ESI-TOF): Anal Calcd. For. C₁₆H₁₇NO₄+Na⁺: 310.1050, Found: 310.1048. IR (neat, cm⁻¹): ν 2868, 1760, 1702, 1613, 1455, 1397, 1211, 1075, 896, 714.

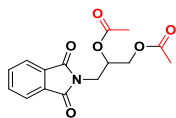




1-(5-Methoxy-1,3-dioxoisindolin-2-yl)propan-2-yl acetate (3bb)

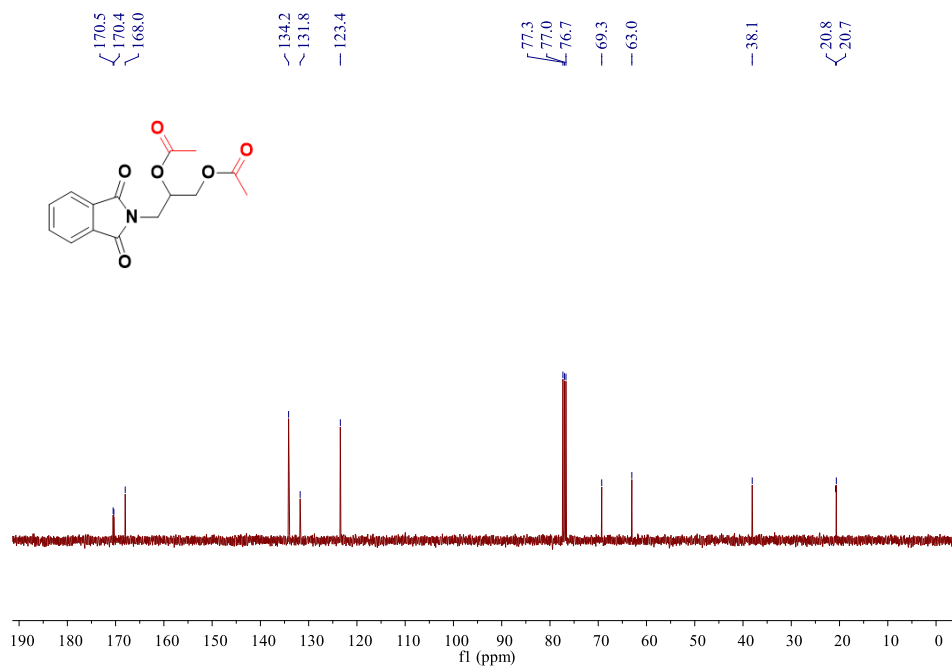
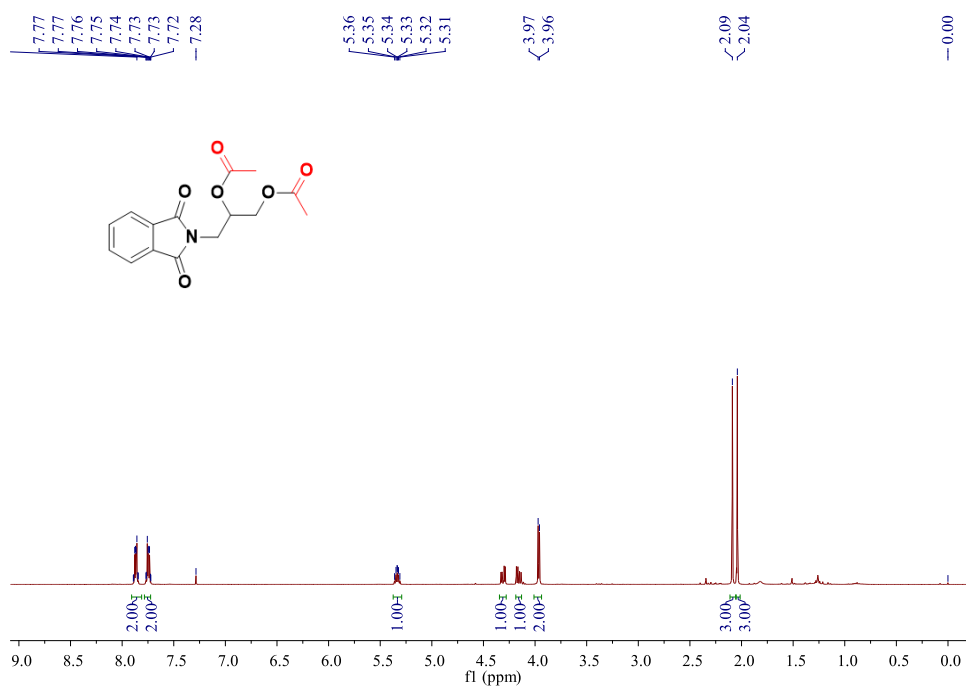
petroleum ether / ethyl acetate = 5:1, white solid, 80% yield (44.3 mg). mp: 80 – 82°C. ¹H NMR (400 MHz, CDCl₃) δ 7.76 (d, *J* = 8.3 Hz, 1H), 7.33 (d, *J* = 2.2 Hz, 1H), 7.17 (dd, *J* = 8.3, 2.2 Hz, 1H), 5.24 – 5.17 (m, 1H), 3.93 (s, 3H), 3.82 – 3.80 (m, 2H), 1.99 (s, 3H), 1.29 (d, *J* = 6.5 Hz, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 170.6, 168.0, 167.9, 164.7, 134.5, 125.0, 123.7, 119.8, 108.0, 68.5, 56.0, 41.9, 21.1, 17.6. HRMS (ESI-TOF): Anal Calcd. For. C₁₄H₁₅NO₅+H⁺: 278.1023, Found: 278.1020. IR (neat, cm⁻¹): ν 2844, 1770, 1616, 1489, 1286, 1093, 955, 769, 605.

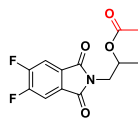




3-(1,3-Dioxoisindolin-2-yl)propane-1,2-diyl diacetate (3bc)

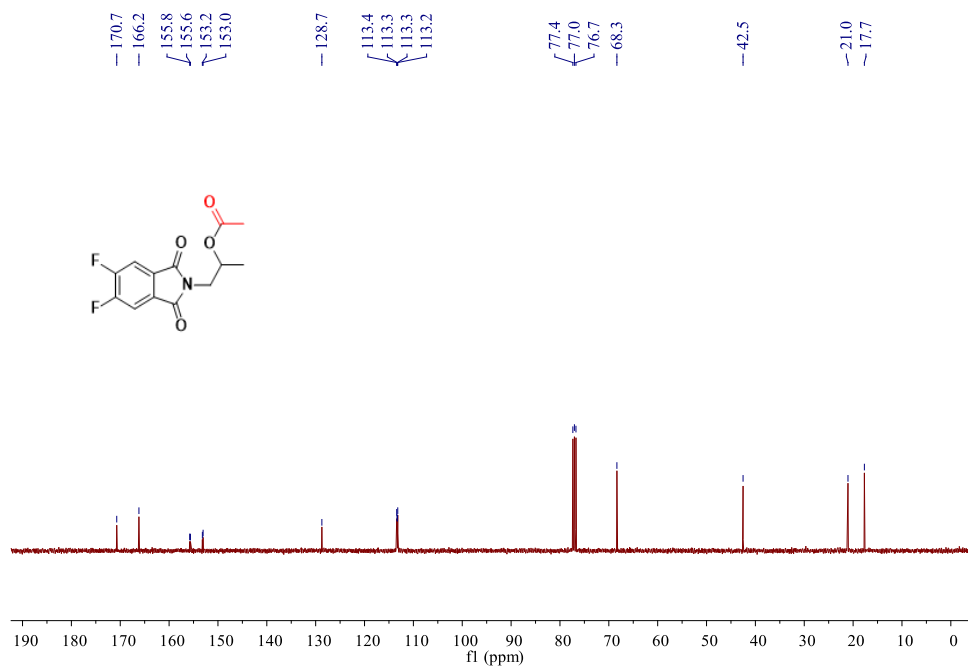
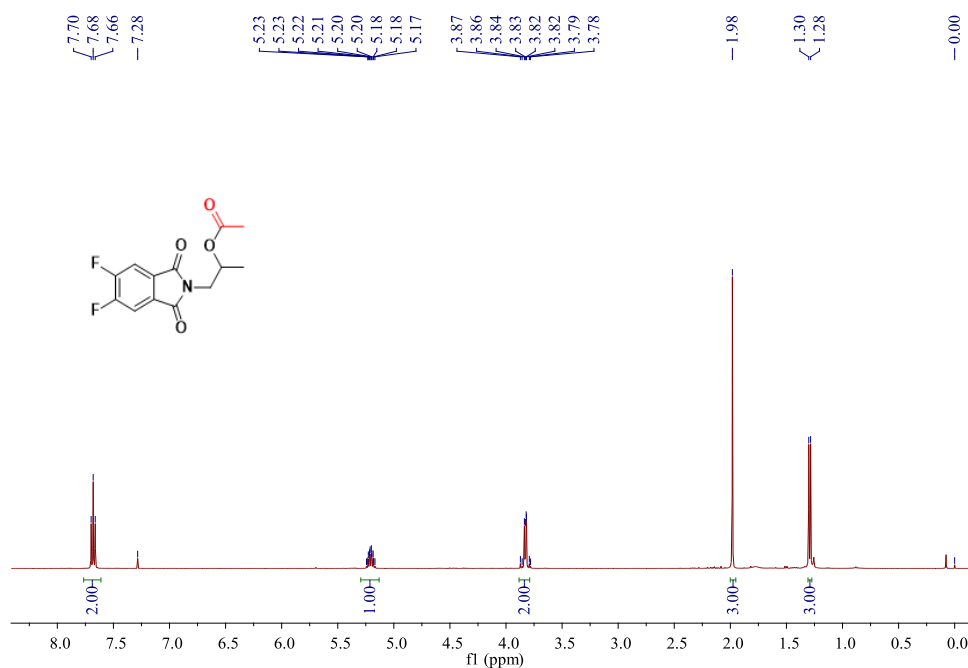
petroleum ether / ethyl acetate = 5:1, colorless oil, 60% yield (36.8 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.89 – 7.84 (m, 2H), 7.77 – 7.72 (m, 2H), 5.36 – 5.31 (m, 1H), 4.31 (dd, $J = 12.1, 4.1$ Hz, 1H), 4.16 (dd, $J = 12.1, 5.8$ Hz, 1H), 3.96 (d, $J = 5.2$ Hz, 2H), 2.09 (s, 3H), 2.04 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.5, 170.4, 168.0, 134.2, 131.8, 123.4, 69.3, 63.0, 38.1, 20.8, 20.7. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{15}\text{H}_{15}\text{NO}_6 + \text{H}^+$: 306.0972, Found: 306.0969. **IR** (neat, cm^{-1}): ν 2852, 1775, 1713, 1615, 1468, 1390, 1220, 1034, 794, 627.

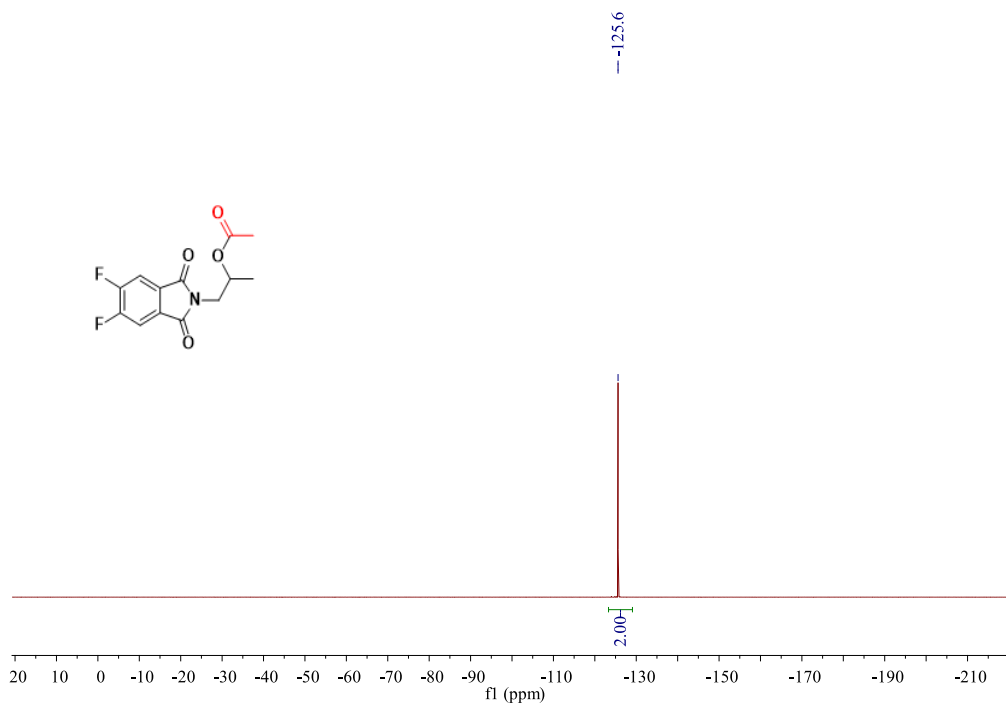


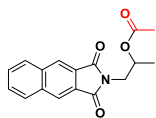


1-(5,6-Difluoro-1,3-dioxoisindolin-2-yl)propan-2-yl acetate (3bd)

petroleum ether / ethyl acetate = 5:1, colorless oil, 80% yield (45.1 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.68 (t, $J = 7.3$ Hz, 2H), 5.24 – 5.17 (m, 1H), 3.87 – 3.78 (m, 2H), 1.98 (s, 3H), 1.29 (d, $J = 6.5$ Hz, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.7, 166.2, 155.7 (d, $J = 15.3$ Hz), 153.1 (d, $J = 15.3$ Hz), 128.7 (t, $J = 6.0$ Hz), 113.3 (dd, $J = 14.6, 7.5$ Hz), 68.3, 42.5, 21.0, 17.7. $^{19}\text{F NMR}$ (377 MHz, CDCl_3) δ -125.6 (s, 2F). **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{13}\text{H}_{11}\text{F}_2\text{NO}_4 + \text{H}^+$: 284.0729, Found: 284.0725. **IR** (neat, cm^{-1}): ν 2850, 1780, 1714, 1622, 1494, 1397, 1295, 1030, 907, 727, 605.

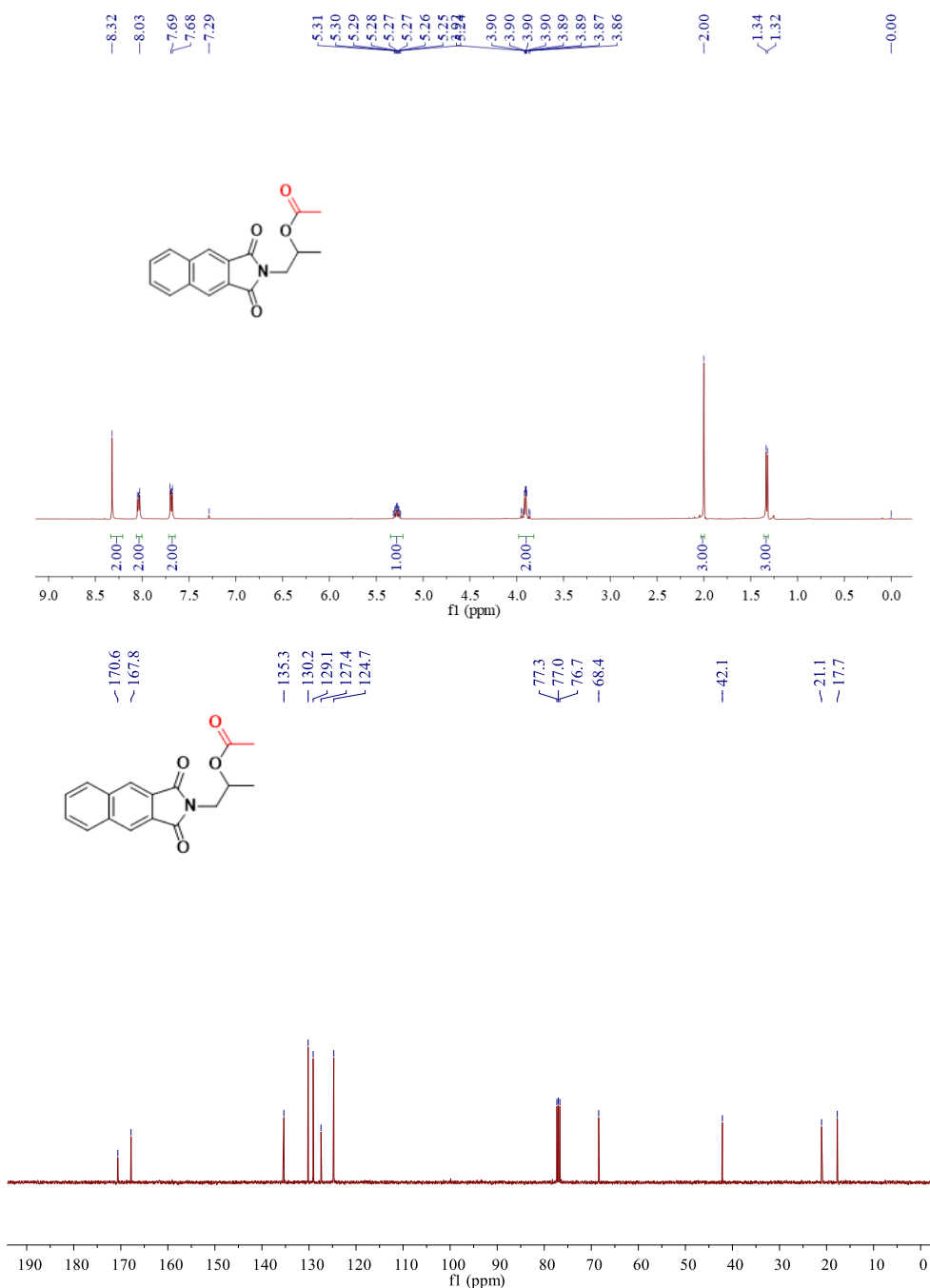


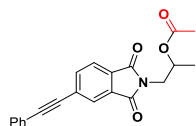




1-(1,3-Dioxo-1,3-dihydro-2H-benzo[f]isoindol-2-yl)propan-2-yl acetate (3be)

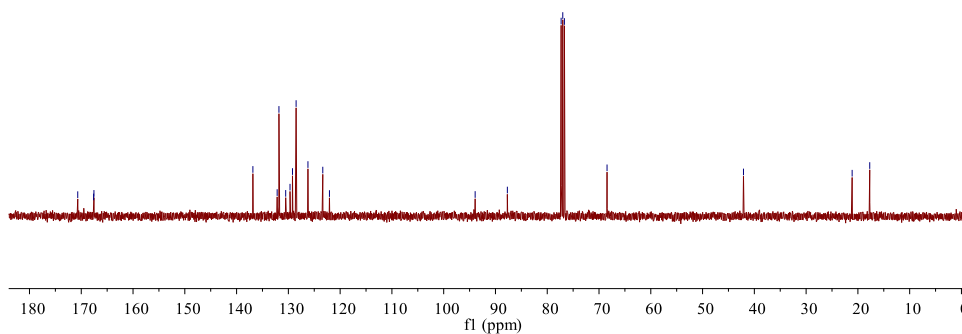
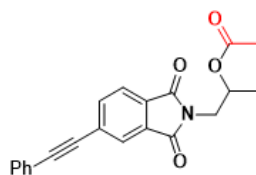
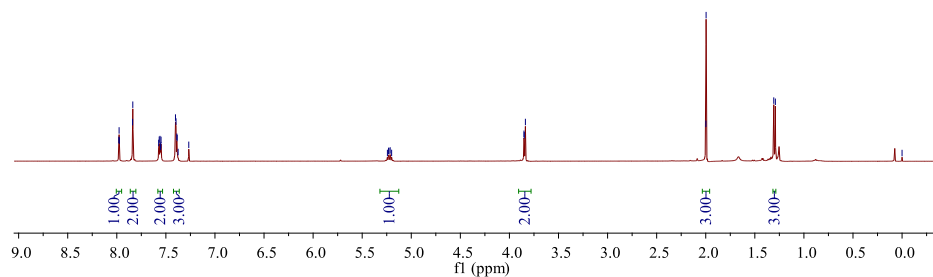
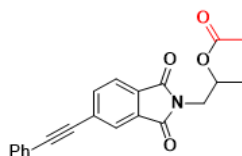
petroleum ether / ethyl acetate = 5:1, white solid, 85% yield (50.3 mg). mp: 116 – 118°C. ¹H NMR (400 MHz, CDCl₃) δ 8.32 (s, 1H), 8.04 (dd, *J* = 6.2, 3.3 Hz, 2H), 7.69 (dd, *J* = 6.2, 3.3 Hz, 2H), 5.32 – 5.24 (m, 1H), 3.95 – 3.86 (m, 2H), 2.00 (s, 3H), 1.33 (d, *J* = 6.5 Hz, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 170.6, 167.8, 135.3, 130.2, 129.1, 127.4, 124.7, 68.4, 42.1, 21.1, 17.7. HRMS (ESI-TOF): Anal Calcd. For. C₁₇H₁₅NO₄+H⁺: 298.1074, Found: 298.1070. IR (neat, cm⁻¹): ν 2852, 1766, 1602, 1515, 1376, 1242, 1182, 1032, 764.

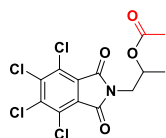




1-(1,3-Dioxo-5-(phenylethynyl)isoindolin-2-yl)propan-2-yl acetate (3bf)

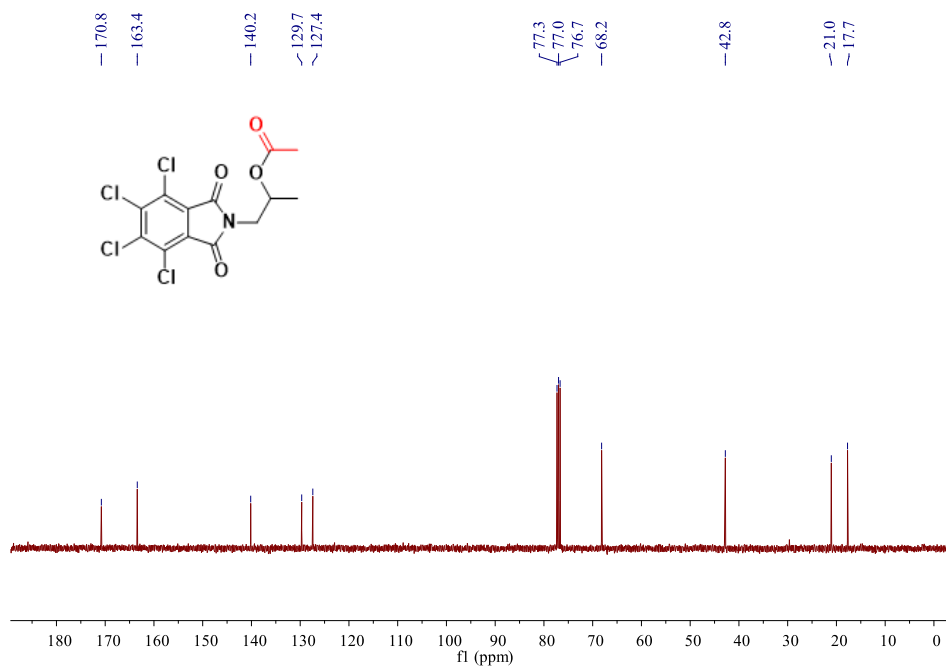
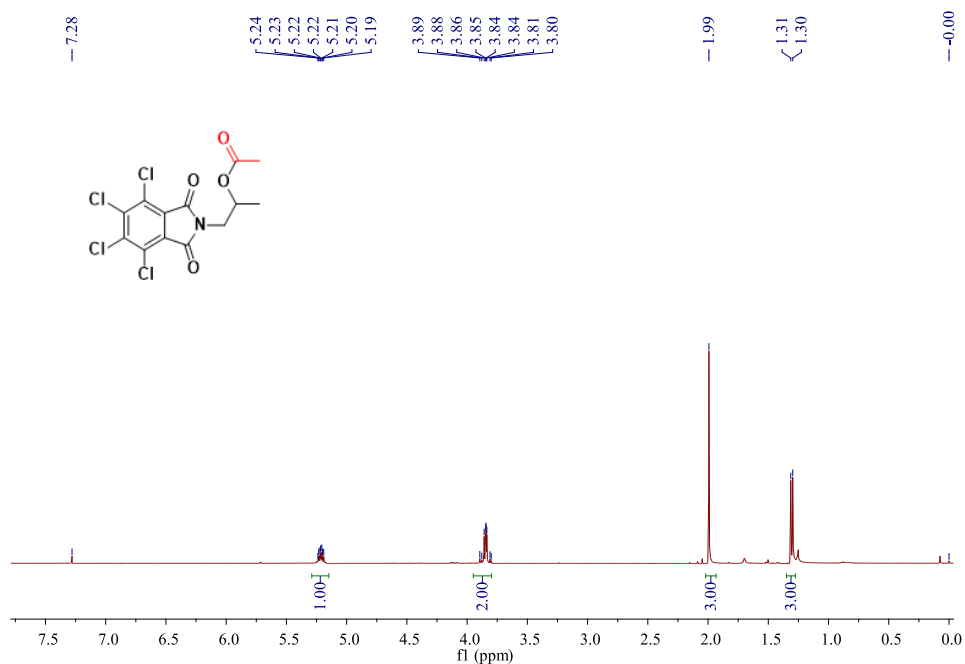
petroleum ether / ethyl acetate = 5:1, white solid, 35% yield (24.2 mg). mp: 78 – 80°C. $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.98 (t, $J = 1.0$ Hz, 1H), 7.84 (d, $J = 1.0$ Hz, 2H), 7.57 – 7.55 (m, 2H), 7.40 – 7.38 (m, 2H), 5.24 – 5.20 (m, 1H), 3.85 – 3.84 (m, 2H), 2.00 (s, 3H), 1.30 (d, $J = 6.5$ Hz, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.7, 167.6, 167.6, 136.9, 132.2, 131.8, 130.5, 129.7, 129.2, 128.5, 126.2, 123.4, 122.1, 93.9, 87.7, 68.4, 42.1, 21.1, 17.7. HRMS (ESI-TOF): Anal Calcd. For. $\text{C}_{21}\text{H}_{17}\text{NO}_4 + \text{H}^+$: 348.1230, Found: 348.1226. IR (neat, cm^{-1}): ν 2850, 2200, 1770, 1713, 1615, 1515, 1494, 1244, 1033, 906, 725.

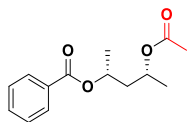




1-(4,5,6,7-Tetrachloro-1,3-dioxoisindolin-2-yl)propan-2-yl acetate (3bg)

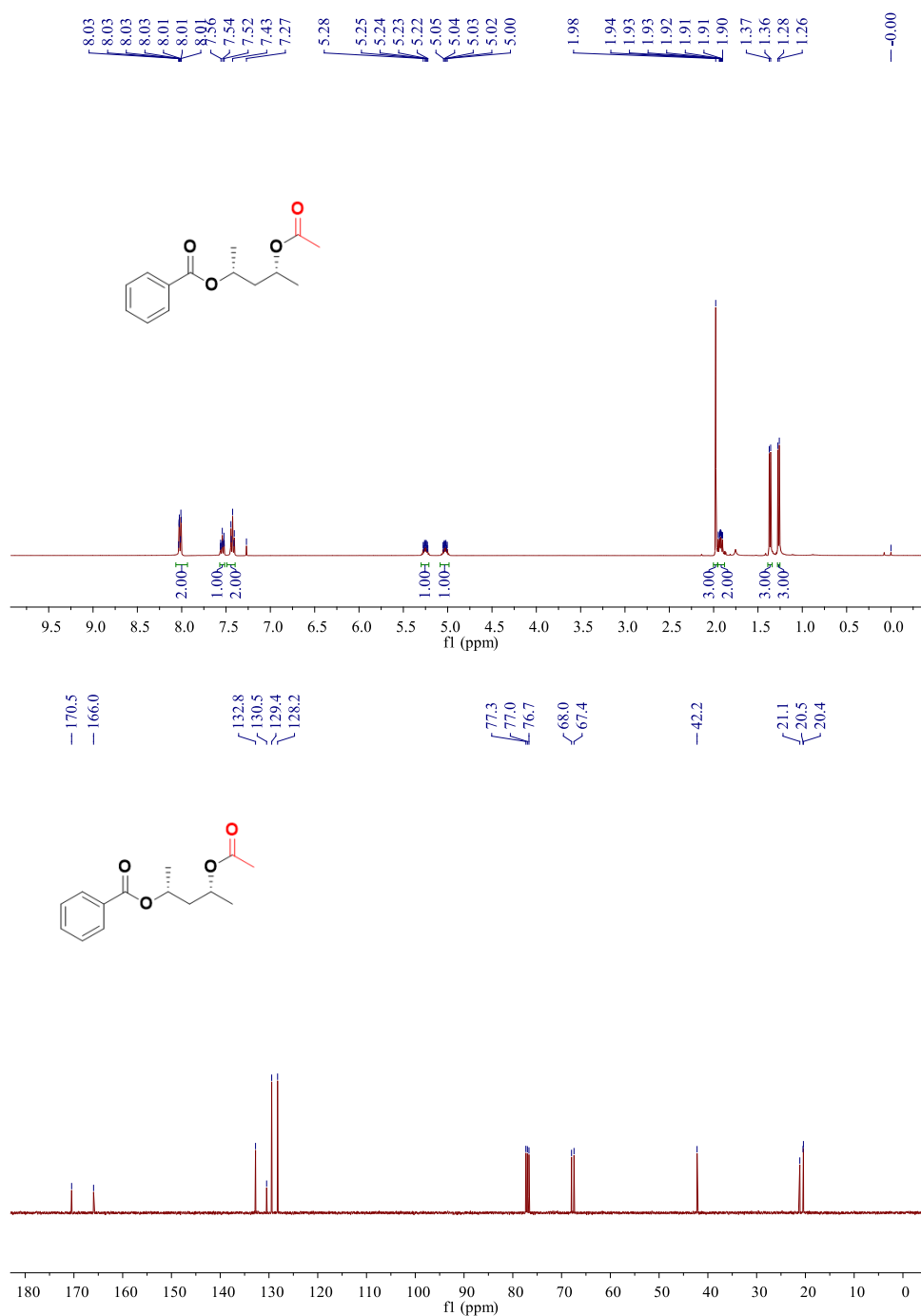
petroleum ether / ethyl acetate = 5:1, white solid, 83% yield (63.8 mg). mp: 151 – 153°C. $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 5.24 – 5.19 (m, 1H), 3.89 – 3.80 (m, 2H), 1.99 (s, 3H), 1.31 (d, $J = 6.5$ Hz, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.8, 163.4, 140.2, 129.7, 127.4, 68.2, 42.8, 21.0, 17.7. HRMS (ESI-TOF): Anal Calcd. For. $\text{C}_{13}\text{H}_9\text{Cl}_4\text{NO}_4 + \text{Na}^+$: 405.9178, Found: 405.9181. IR (neat, cm^{-1}): ν 2851, 1774, 1426, 1357, 1301, 1194, 1045, 740, 628.

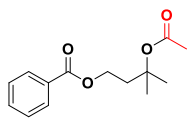




(2R,4R)-4-Acetoxy-pentan-2-yl benzoate (3bh)

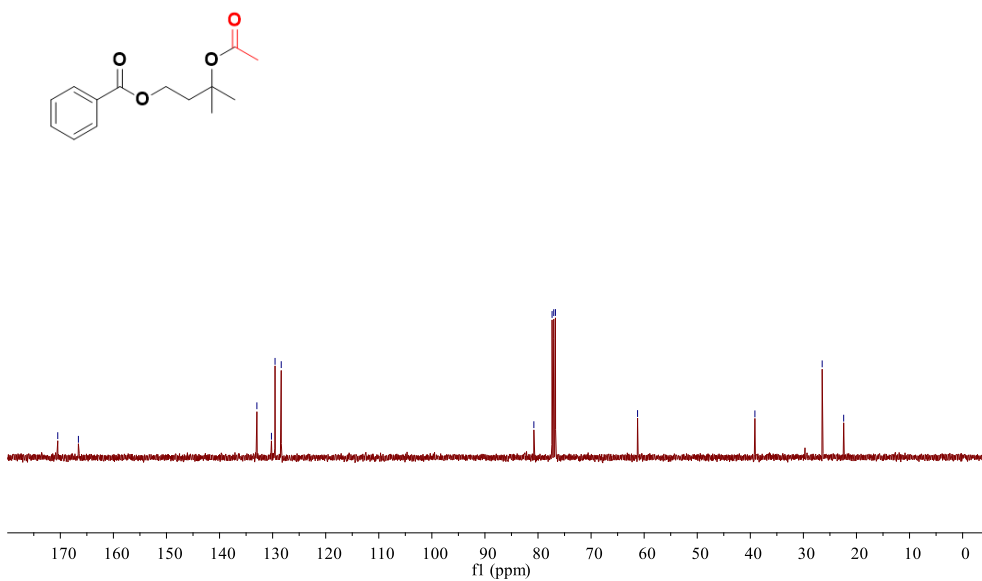
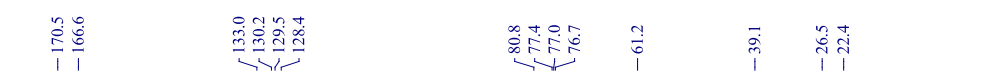
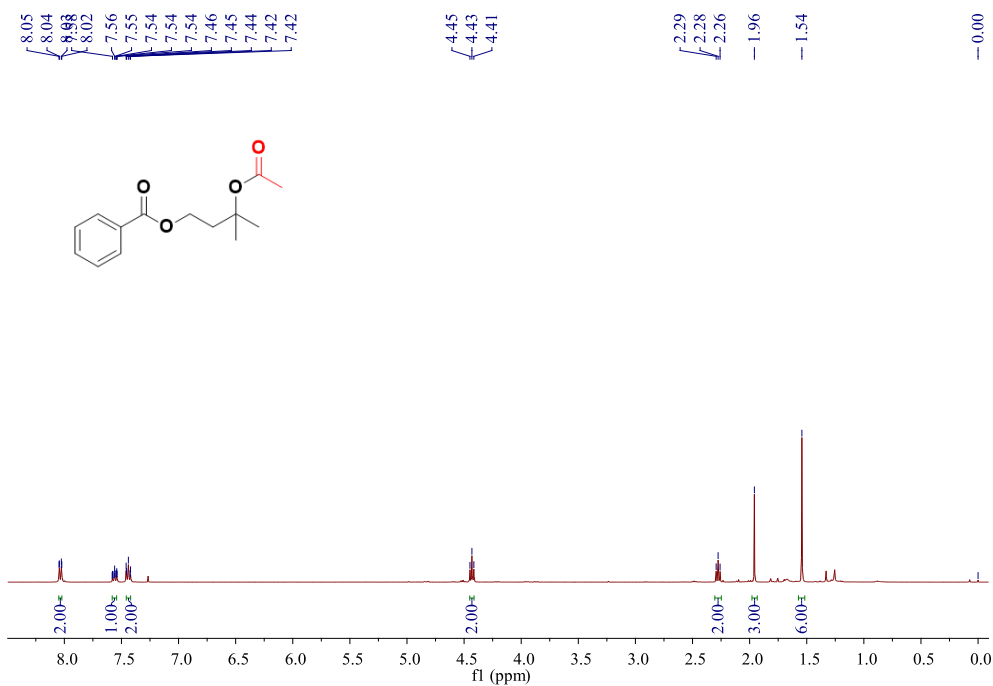
petroleum ether / ethyl acetate = 10:1, colorless oil, 80% yield (40.0 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.03 – 8.01 (m, 2H), 7.56 – 7.52 (m, 1H), 7.44 – 7.41 (m, 2H), 5.28 – 5.22 (m, 1H), 5.05 – 5.00 (m, 1H), 1.98 (s, 3H), 1.95 – 1.90 (m, 2H), 1.36 (d, *J* = 6.3 Hz, 2H), 1.27 (d, *J* = 6.3 Hz, 2H). **¹³C NMR** (100 MHz, CDCl₃) δ 170.5, 166.0, 132.8, 130.5, 129.4, 128.2, 68.0, 67.4, 42.2, 21.1, 20.5, 20.4. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₄H₁₈O₄+H⁺: 251.1278, Found: 251.1274. **IR** (neat, cm⁻¹): ν 2853, 1773, 1608, 1507, 1427, 1367, 1234, 986, 728.

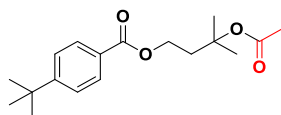




3-Acetoxy-3-methylbutyl benzoate (3bi)

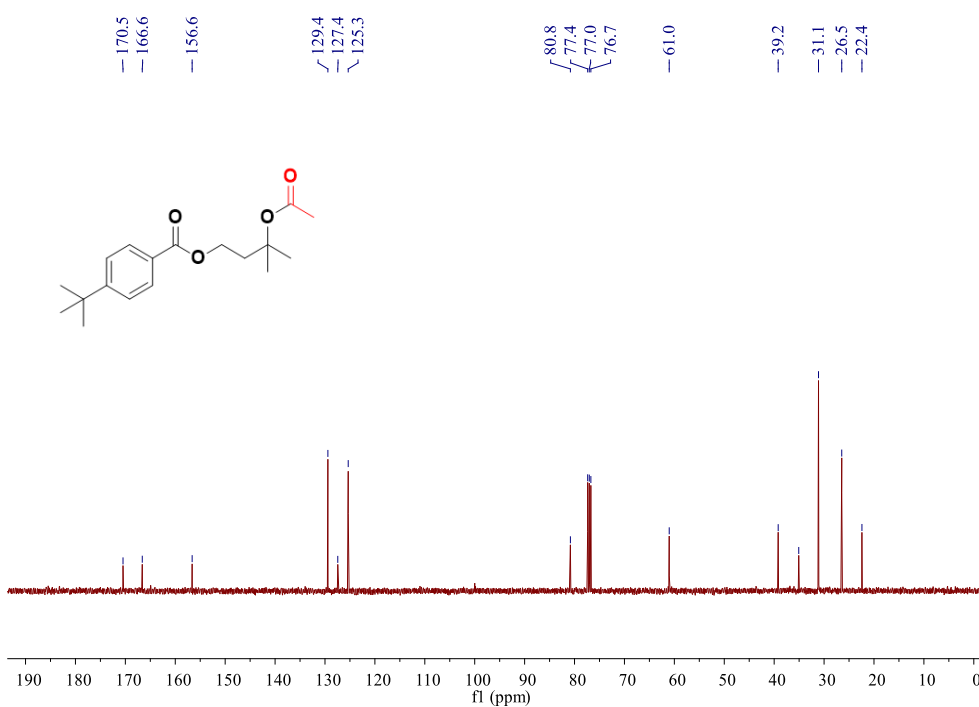
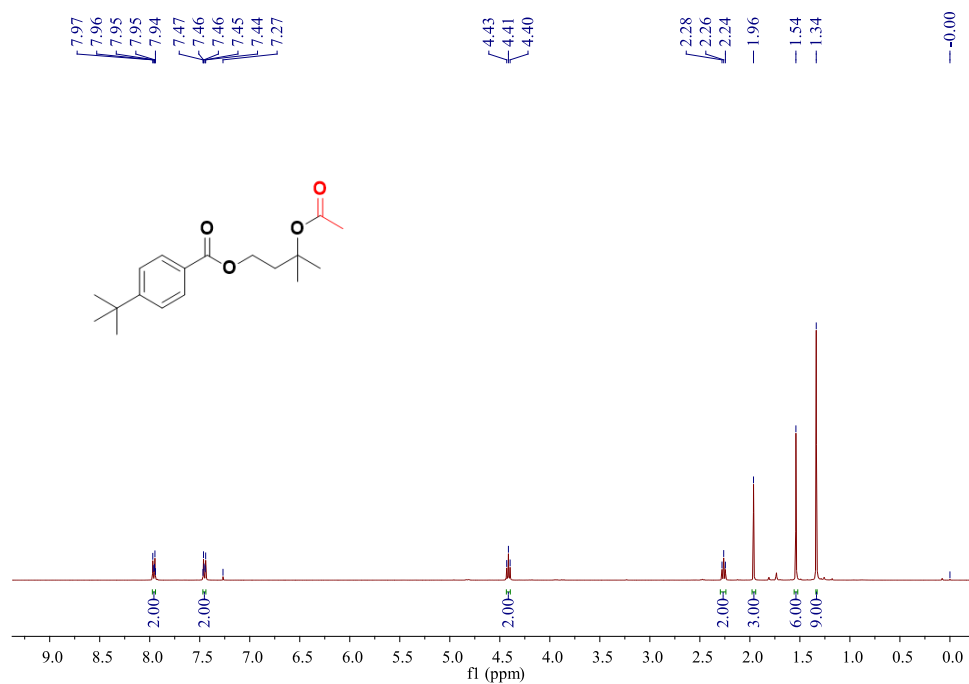
petroleum ether / ethyl acetate = 10:1, colorless oil, 70% yield (35.0 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.03 (dd, $J = 8.2, 1.2$ Hz, 2H), 7.58 – 7.54 (m, 1H), 7.46 – 7.42 (m, 2H), 4.43 (t, $J = 6.8$ Hz, 2H), 2.28 (t, $J = 6.8$ Hz, 2H), 1.96 (s, 3H), 1.54 (s, 6H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.5, 166.6, 133.0, 130.2, 129.5, 128.4, 80.8, 61.2, 39.1, 26.5, 22.4. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{14}\text{H}_{18}\text{O}_4 + \text{Na}^+$: 273.1097, Found: 273.1093. **IR** (neat, cm^{-1}): ν 2929, 1717, 1652, 1585, 1471, 1222, 1176, 903, 723 649.

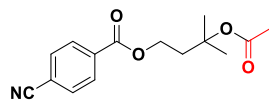




3-Acetoxy-3-methylbutyl 4-(tert-butyl)benzoate (3bj)

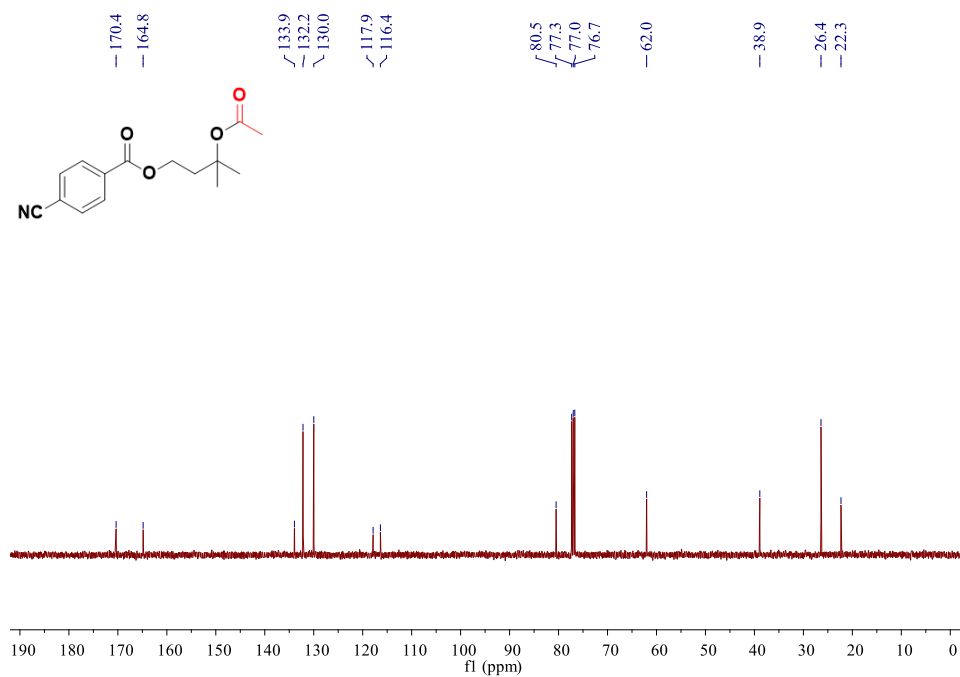
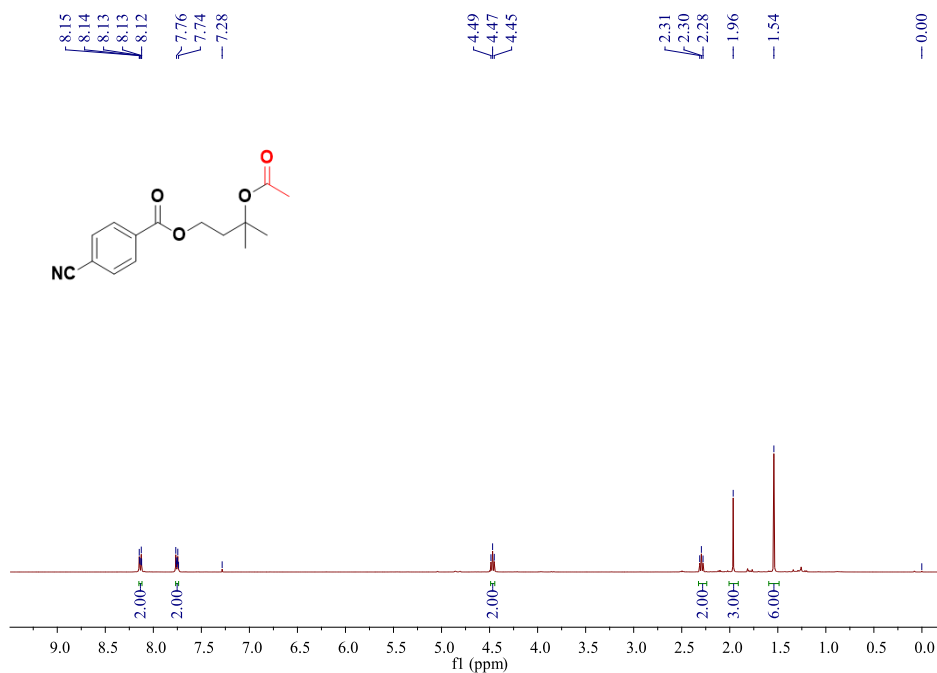
petroleum ether / ethyl acetate = 20:1, colorless oil, 75% yield (45.8 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.97 – 7.94 (m, 2H), 7.47 – 7.44 (m, 2H), 4.41 (t, $J = 6.8$ Hz, 2H), 2.26 (t, $J = 6.8$ Hz, 2H), 1.96 (s, 3H), 1.54 (s, 6H), 1.34 (s, 9H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.5, 166.6, 156.6, 129.4, 127.4, 125.3, 80.8, 61.0, 39.2, 35.1, 31.1, 26.5, 22.4. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{18}\text{H}_{26}\text{O}_4 + \text{Na}^+$: 329.1723, Found: 329.1713. **IR** (neat, cm^{-1}): ν 2870, 1716, 1610, 1570, 1472, 1388, 1277, 905, 725.

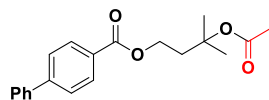




3-Acetoxy-3-methylbutyl 4-cyanobenzoate (3bk)

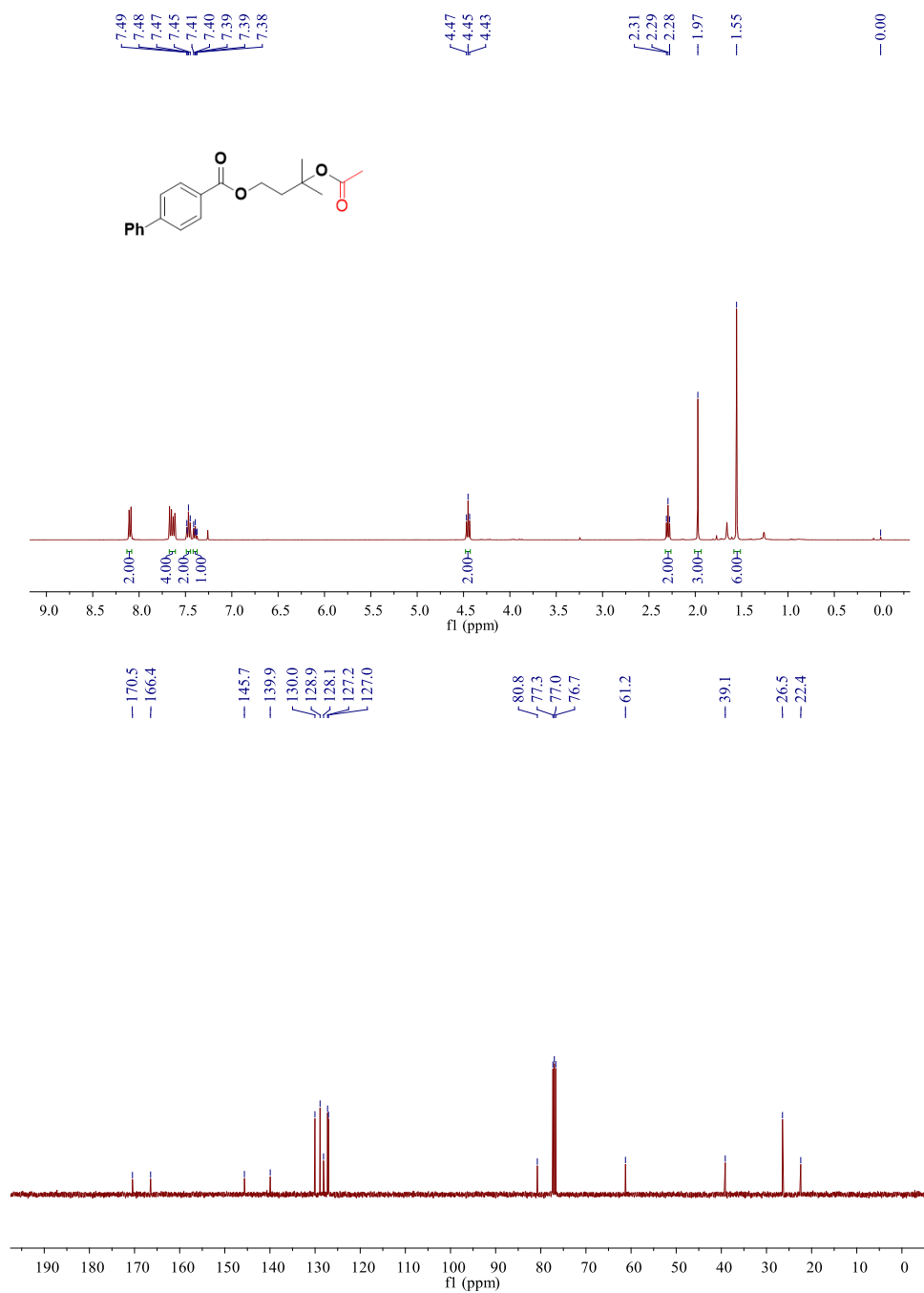
petroleum ether / ethyl acetate = 20:1, yellow oil, 66% yield (36.4 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.15 – 8.12 (m, 2H), 7.77 – 7.74 (m, 2H), 4.47 (t, $J = 6.9$ Hz, 2H), 2.30 (t, $J = 6.9$ Hz, 2H), 1.96 (s, 3H), 1.54 (s, 6H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.4, 164.8, 133.9, 132.2, 130.0, 117.9, 116.4, 80.5, 62.0, 38.9, 26.4, 22.3. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{15}\text{H}_{17}\text{NO}_4 + \text{Na}^+$: 298.1050, Found: 298.1049. **IR** (neat, cm^{-1}): ν 2931, 2205, 1770, 1611, 1514, 1465, 1368, 1249, 1045, 767, 691.

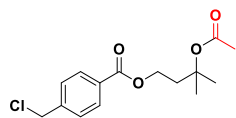




3-Acetoxy-3-methylbutyl [1,1'-biphenyl]-4-carboxylate (3bl)

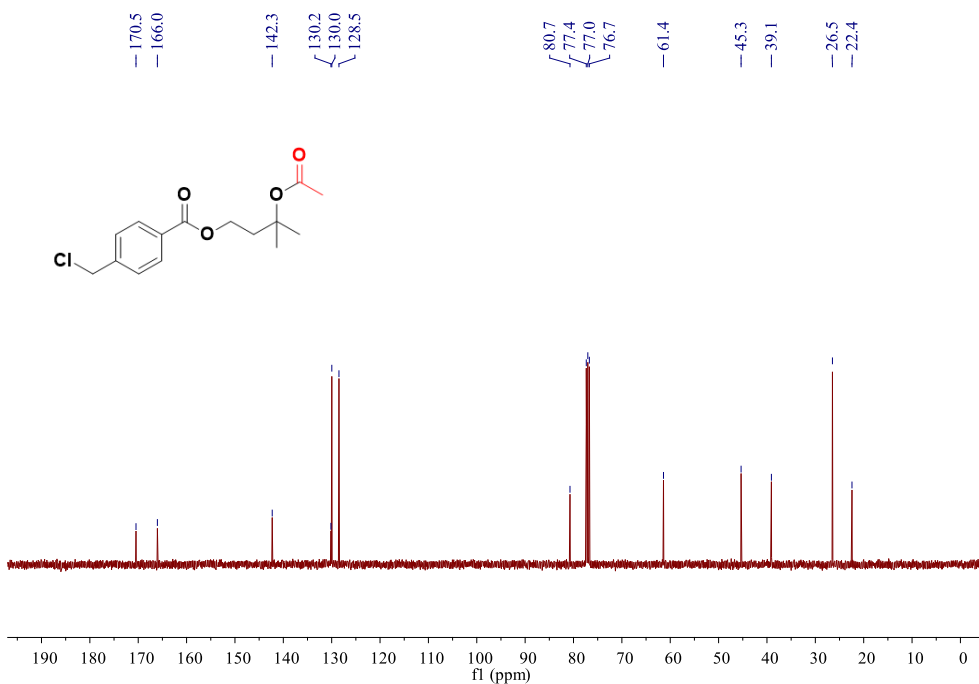
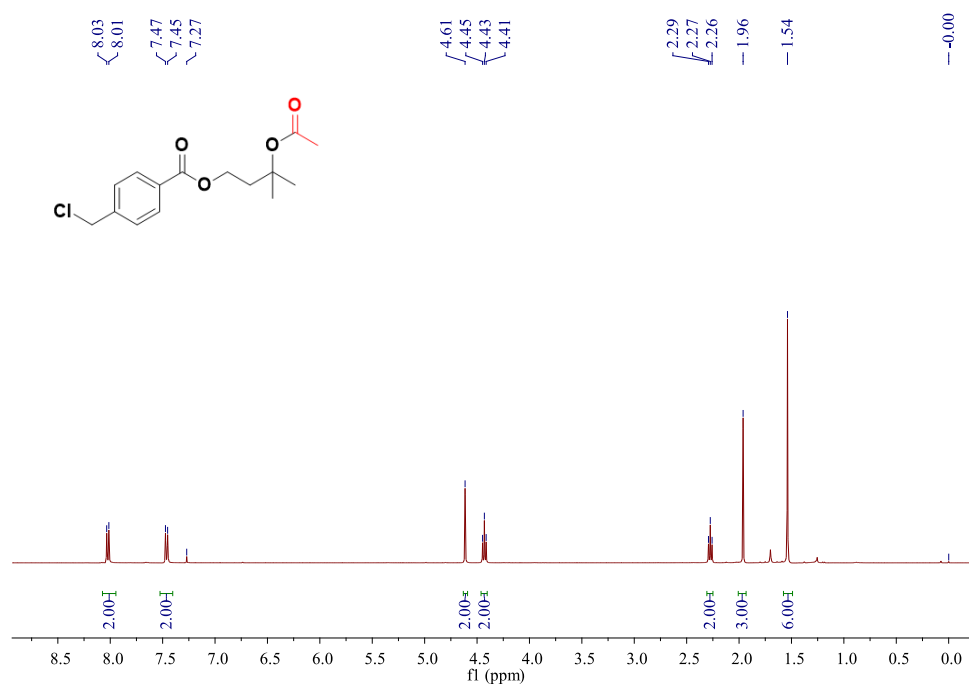
petroleum ether / ethyl acetate = 20:1, yellow oil, 40% yield (25.6 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.11 – 8.09 (m, 2H), 7.67 – 7.61 (m, 4H), 7.49 – 7.45 (m, 2H), 7.41 – 7.38 (m, 1H), 4.45 (t, $J = 6.8$ Hz, 2H), 2.29 (t, $J = 6.8$ Hz, 2H), 1.97 (s, 3H), 1.55 (s, 6H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.5, 166.4, 145.7, 139.9, 130.0, 128.9, 128.1, 127.2, 127.0, 80.8, 61.2, 39.1, 26.5, 22.4. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{20}\text{H}_{22}\text{O}_4 + \text{Na}^+$: 349.1410, Found: 349.1405. **IR** (neat, cm^{-1}): ν 2929, 1716, 1609, 1560, 1487, 1368, 1267, 1019, 727, 647.

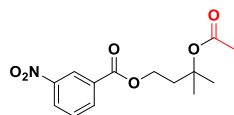




3-Acetoxy-3-methylbutyl 4-(chloromethyl)benzoate (3bm)

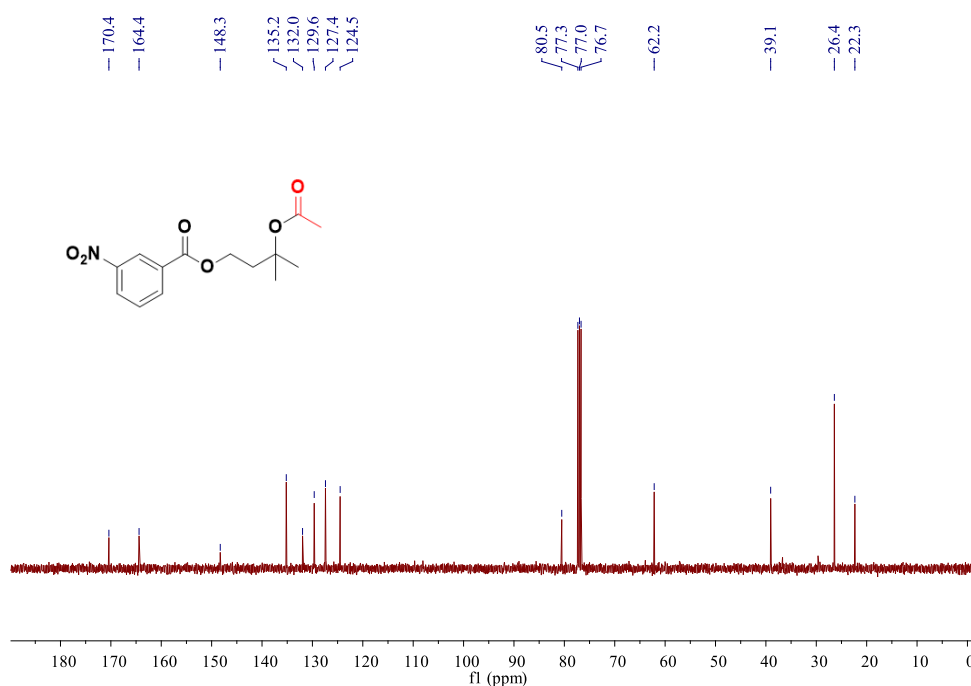
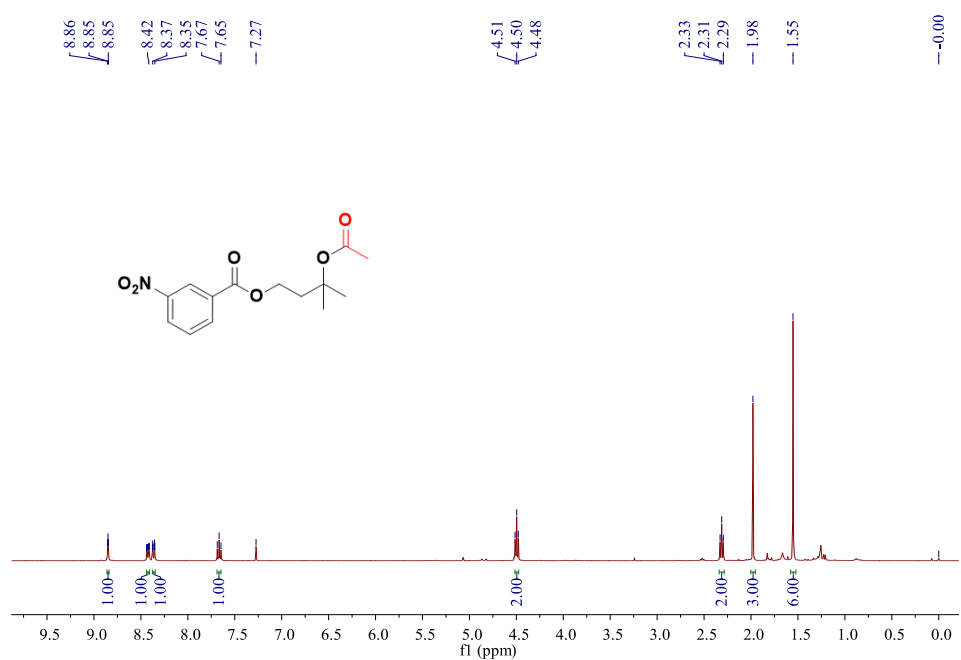
petroleum ether / ethyl acetate = 20:1, colorless oil, 65% yield (38.7 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.02 (d, *J* = 8.3 Hz, 2H), 7.46 (d, *J* = 8.3 Hz, 2H), 4.61 (s, 2H), 4.43 (t, *J* = 6.8 Hz, 2H), 2.27 (t, *J* = 6.8 Hz, 2H), 1.96 (s, 3H), 1.54 (s, 6H). **¹³C NMR** (100 MHz, CDCl₃) δ 170.5, 166.0, 142.3, 130.2, 130.0, 128.5, 80.7, 61.4, 45.3, 39.1, 26.5, 22.4. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₅H₁₉³⁵ClO₄ + Na⁺: 321.0864, Found: 321.0863; Anal Calcd. For. C₁₅H₁₉³⁷ClO₄ + Na⁺: 323.0835, Found: 323.0834. **IR** (neat, cm⁻¹): ν 2936, 1713, 1613, 1454, 1369, 1222, 948, 726.

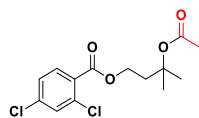




3-Acetoxy-3-methylbutyl 3-nitrobenzoate (3bn)

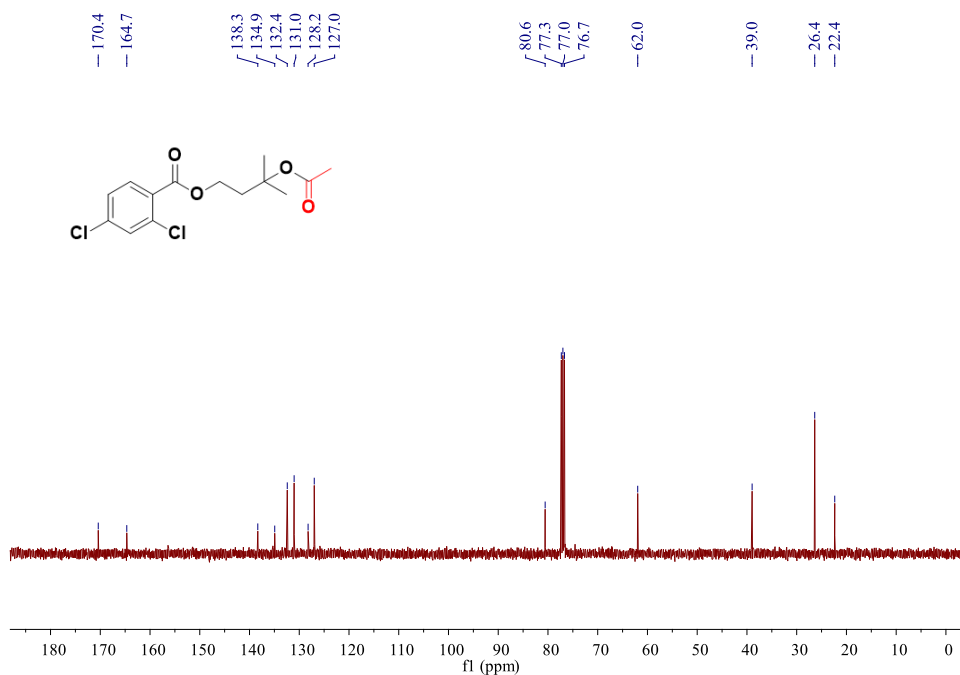
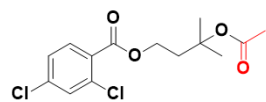
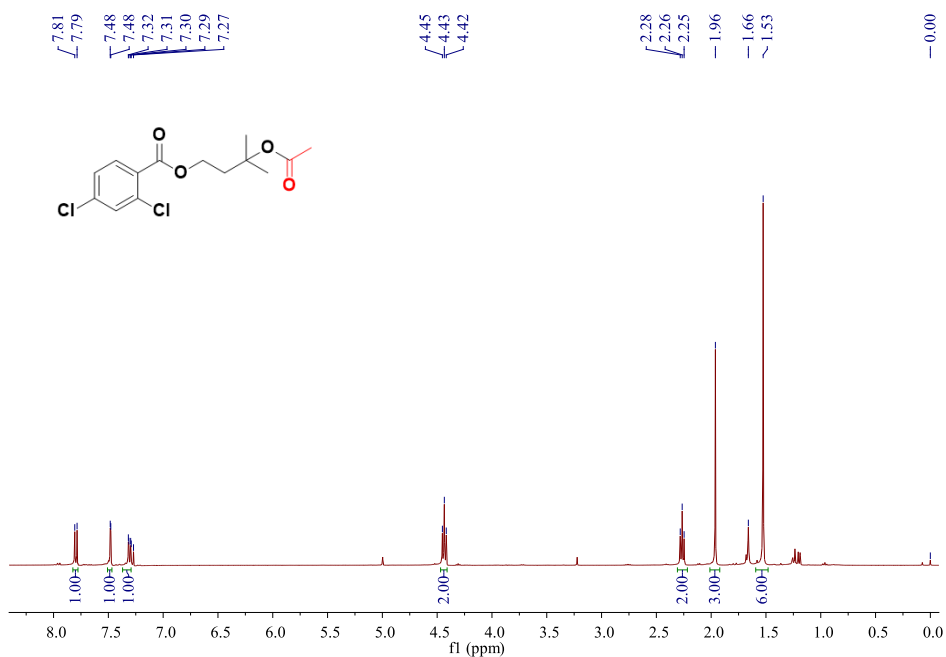
petroleum ether / ethyl acetate = 10:1, yellow oil, 65% yield (38.1 mg). **¹H NMR** (400 MHz, CDCl₃) δ 8.86 – 8.85 (m, 1H), 8.44 – 8.41 (m, 1H), 8.38 – 8.35 (m, 1H), 7.69 – 7.65 (m, 1H), 4.50 (t, *J* = 7.0 Hz, 2H), 2.31 (t, *J* = 7.0 Hz, 2H), 1.98 (s, 3H), 1.55 (s, 6H). **¹³C NMR** (100 MHz, CDCl₃) δ 170.4, 164.4, 148.3, 135.2, 132.0, 129.6, 127.4, 124.5, 80.5, 62.2, 39.1, 26.4, 22.3. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₄H₁₇NO₆+Na⁺: 318.0948, Found: 318.0947. **IR** (neat, cm⁻¹): ν 2932, 1722, 1617, 1532, 1440, 1387, 1294, 1096, 915, 822, 716, 652.

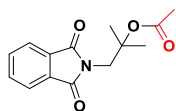




3-Acetoxy-3-methylbutyl 2,4-dichlorobenzoate (3bo)

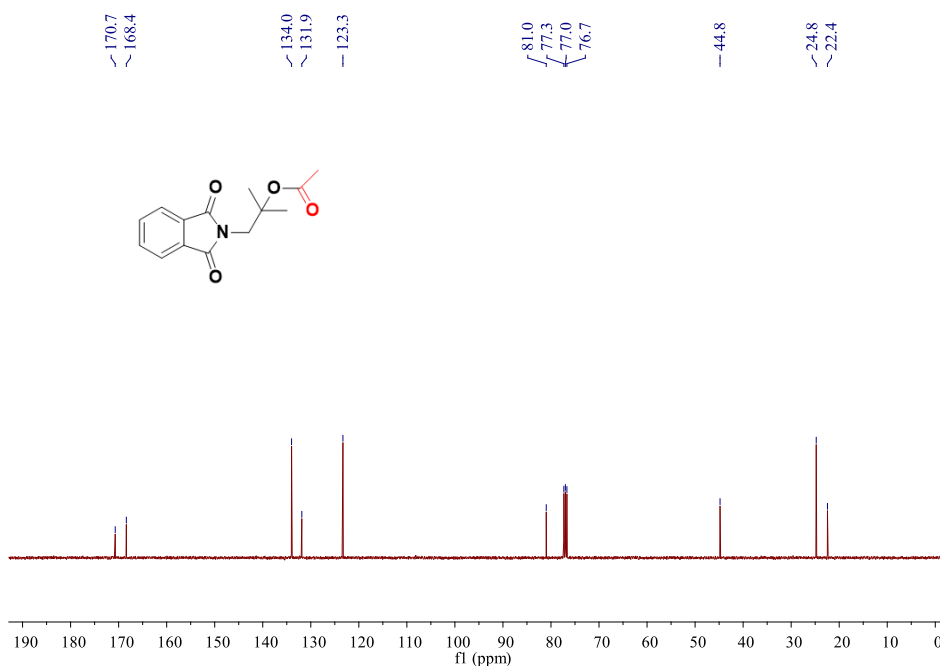
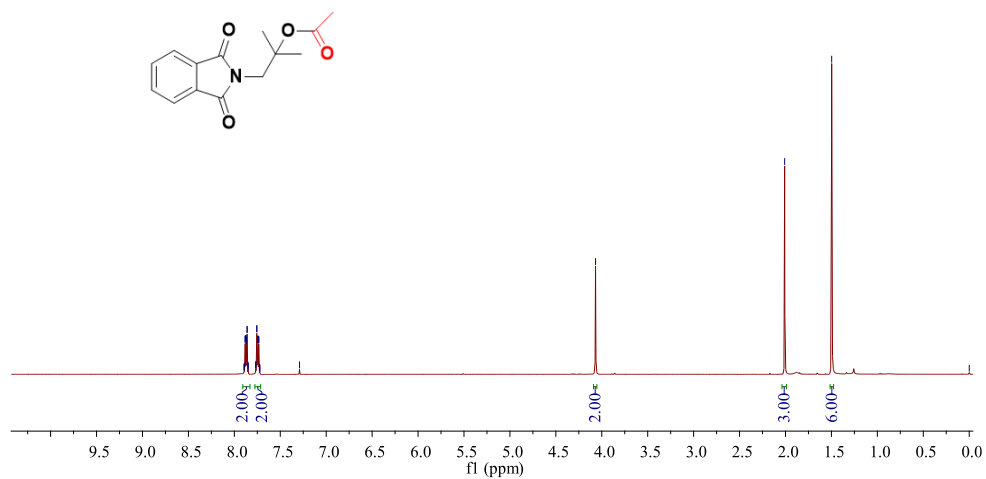
petroleum ether / ethyl acetate = 20:1, colorless oil, 60% yield (37.2 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.80 (d, $J = 8.4$ Hz, 1H), 7.48 (d, $J = 2.0$ Hz, 1H), 7.30 (dd, $J = 8.4, 2.0$ Hz, 1H), 4.43 (t, $J = 7.0$ Hz, 2H), 2.26 (t, $J = 7.0$ Hz, 2H), 1.96 (s, 3H), 1.53 (s, 6H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.4, 164.7, 138.3, 134.9, 132.4, 131.0, 128.2, 127.0, 80.6, 62.0, 39.0, 26.4, 22.4. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{14}\text{H}_{16}\text{Cl}_2\text{O}_4 + \text{Na}^+$: 341.0318, Found: 341.0313; Anal Calcd. For. $\text{C}_{14}\text{H}_{16}^{35}\text{Cl}^{37}\text{ClO}_4 + \text{Na}^+$: 343.0288, Found: 343.0284; Anal Calcd. For. $\text{C}_{14}\text{H}_{16}^{37}\text{Cl}_2\text{O}_4 + \text{Na}^+$: 345.0259, Found: 345.0254. **IR** (neat, cm^{-1}): ν 2900, 1736, 1624, 1582, 1418, 1228, 956, 727, 648.

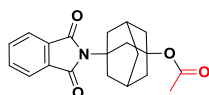




1-(1,3-Dioxisoindolin-2-yl)-2-methylpropan-2-yl acetate (3bp)

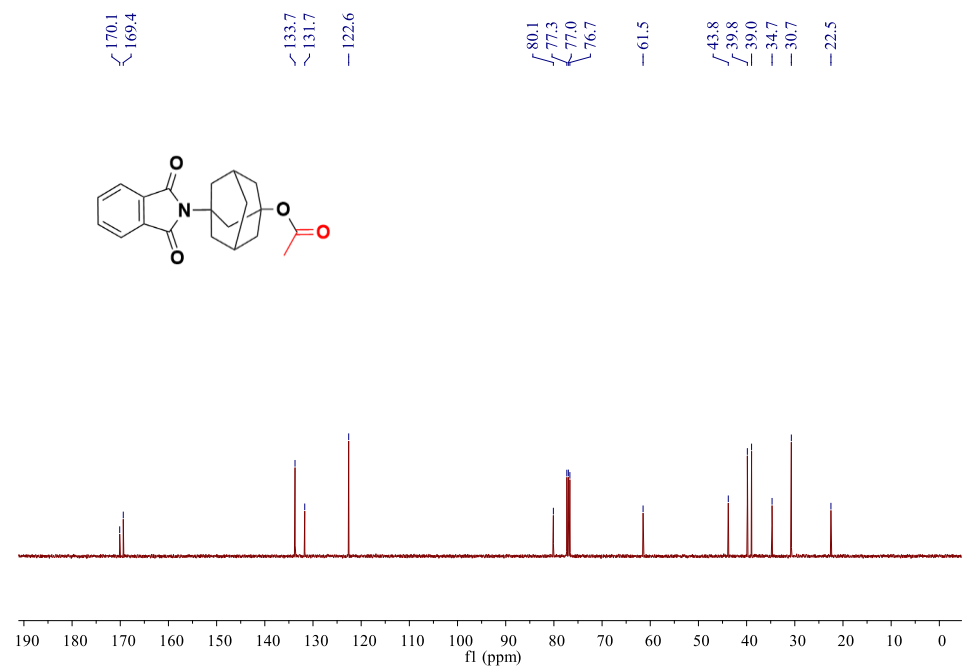
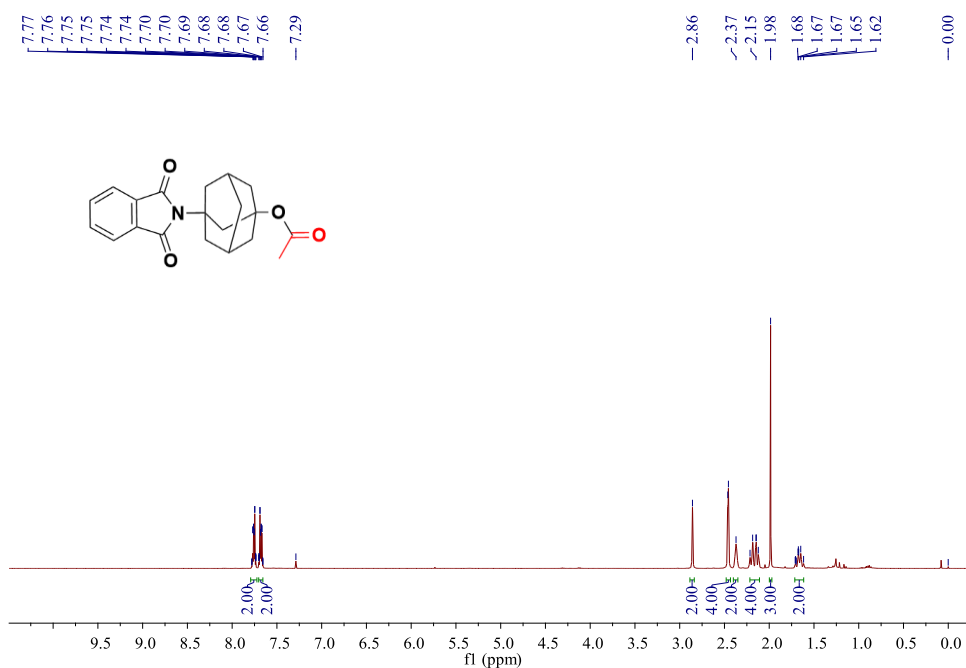
petroleum ether / ethyl acetate = 10:1, white solid, 70% yield (36.0 mg). mp: 90 – 92°C. ¹H NMR (400 MHz, CDCl₃) δ 7.90 – 7.85 (m, 2H), 7.77 – 7.72 (m, 2H), 4.07 (s, 2H), 2.01 (s, 3H), 1.50 (s, 6H). ¹³C NMR (100 MHz, CDCl₃) δ 170.7, 168.4, 134.0, 131.9, 123.3, 81.0, 44.8, 24.8, 22.4. HRMS (ESI-TOF): Anal Calcd. For. C₁₄H₁₅NO₄ + Na⁺: 284.0893, Found: 284.0892. IR (neat, cm⁻¹): ν 2850, 1769, 1614, 1515, 1464, 1339, 1224, 1076, 727, 606.

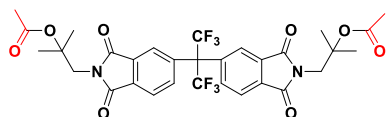




3-(1,3-Dioxoisindolin-2-yl)adamantan-1-yl acetate (3bq)

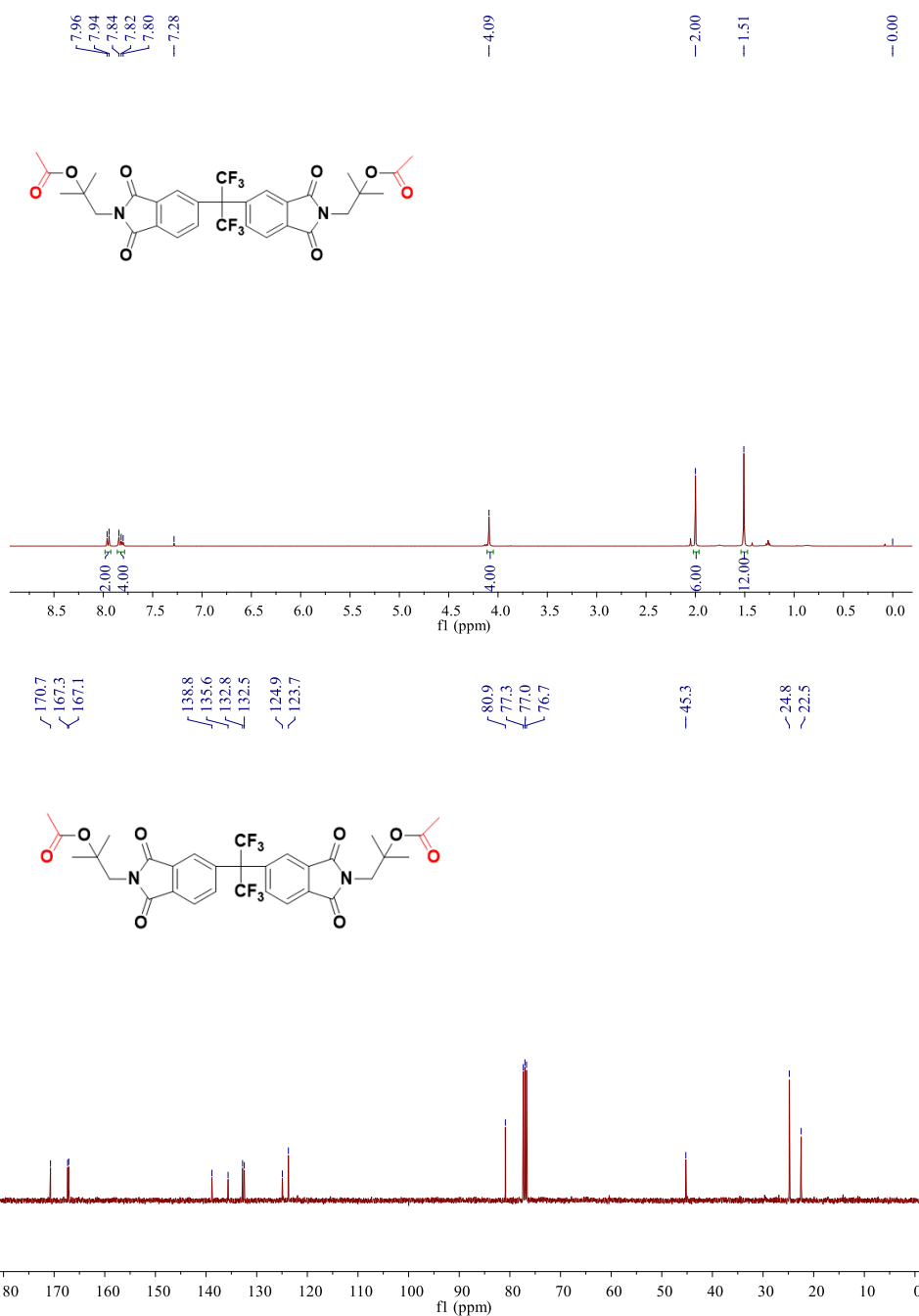
petroleum ether / ethyl acetate = 5:1, white solid, 80% yield (53.5 mg). mp: 103 – 105°C. **¹H NMR** (400 MHz, CDCl₃) δ 7.78 – 7.74 (m, 2H), 7.70 – 7.66 (m, 2H), 2.86 (s, 2H), 2.46 (d, *J* = 2.8 Hz, 4H), 2.37 (s, 2H), 2.21 – 2.12 (m, 4H), 1.98 (s, 3H), 1.71 – 1.62 (m, 2H). **¹³C NMR** (100 MHz, CDCl₃) δ 170.1, 169.4, 133.7, 131.7, 122.6, 80.1, 61.5, 43.8, 39.8, 39.0, 34.7, 30.7, 22.5. **HRMS** (ESI-TOF): Anal Calcd. For. C₂₀H₂₁NO₄ + Na⁺: 362.1363, Found: 362.1361. **IR** (neat, cm⁻¹): ν 2917, 1729, 1697, 1558, 1250, 958, 863, 711, 676.



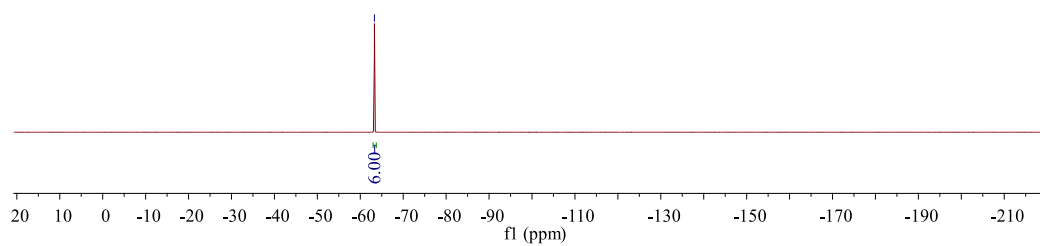
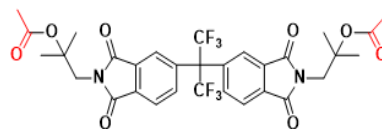


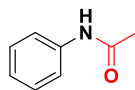
((Perfluoropropane-2,2-diyl)bis(1,3-dioxoisindoline-5,2-diyl))bis(2-methylpropane-1,2-diyl) diacetate (3br)

petroleum ether / ethyl acetate = 5:1, white solid, 60% yield (78.4 mg). mp: 145 – 147°C. $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.95 (d, $J = 8.0$ Hz, 2H), 7.84 – 7.80 (m, 4H), 4.09 (s, 4H), 2.00 (s, 6H), 1.51 (s, 12H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.7, 167.3, 167.1, 138.8, 135.6, 132.8, 132.5, 124.9, 123.7, 80.9, 45.3, 24.8, 22.5. $^{19}\text{F NMR}$ (377 MHz, CDCl_3) δ -63.3 (s, 6F). **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{31}\text{H}_{28}\text{F}_6\text{N}_2\text{O}_8 + \text{Na}^+$: 693.1642, Found: 693.1632. **IR** (neat, cm^{-1}): ν 2942, 1778, 1465, 1426, 1202, 1168, 1016, 727, 606.



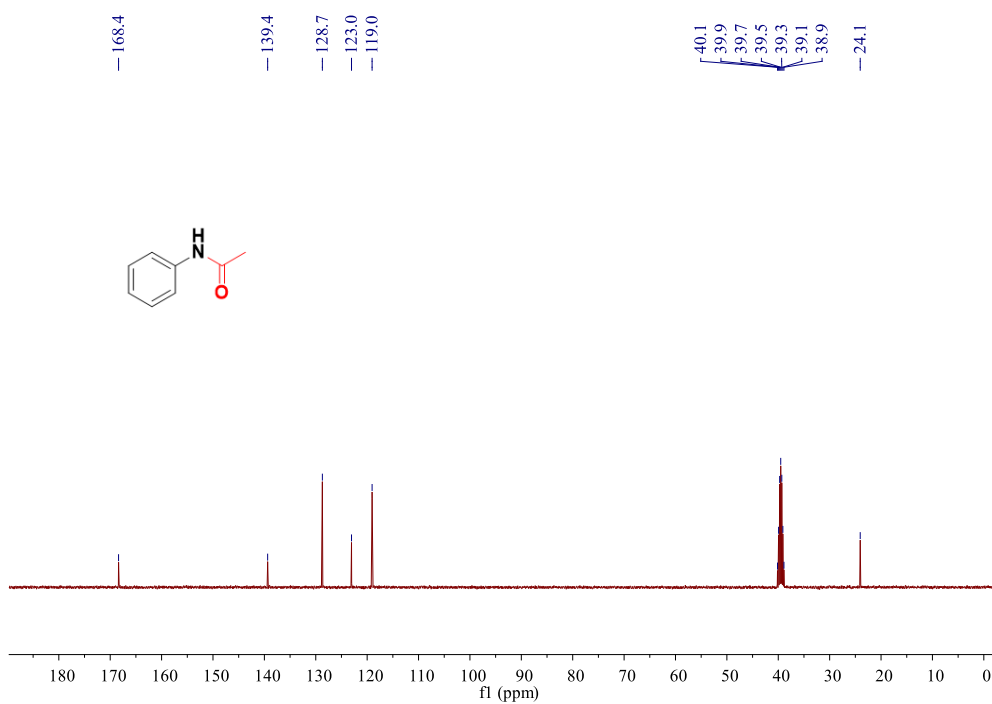
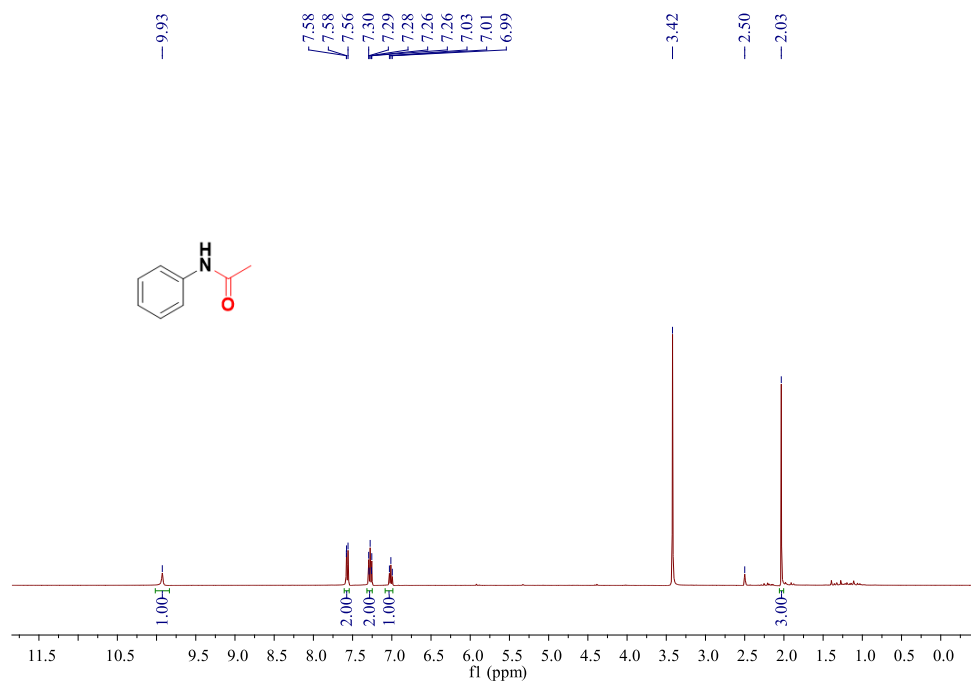
-63.3

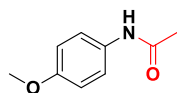




***N*-Phenylacetamide (5aa)**

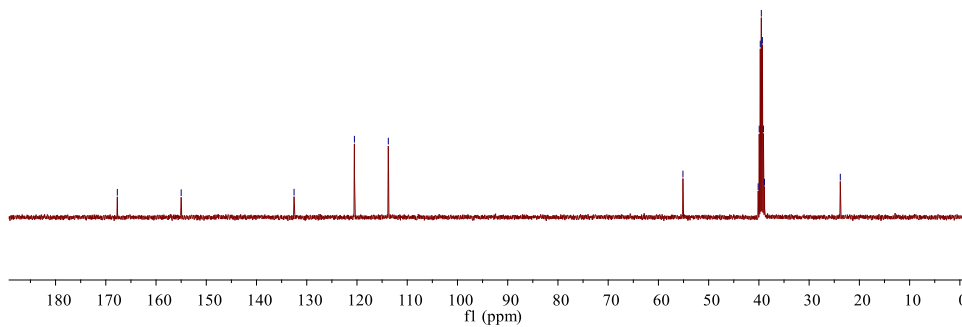
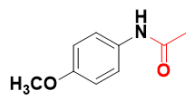
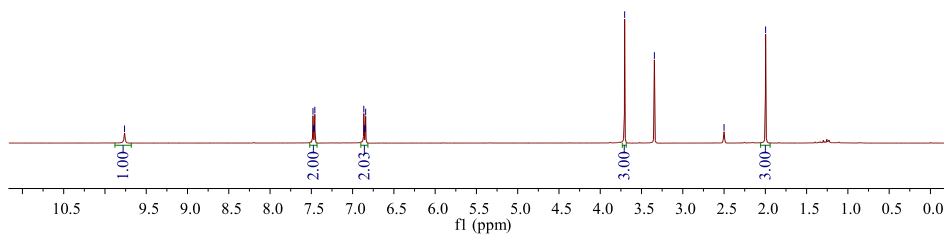
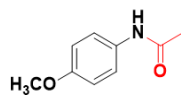
dichloromethane / ethyl acetate = 5:1, white solid, 93% yield (22.0 mg). mp: 113 – 115°C. **¹H NMR** (400 MHz, DMSO) δ 9.93 (s, 1H), 7.58 – 7.56 (m, 2H), 7.30 – 7.26 (m, 2H), 7.01 (t, *J* = 7.4 Hz, 1H), 2.03 (s, 3H). **¹³C NMR** (100 MHz, DMSO) δ 168.4, 139.4, 128.7, 123.0, 119.0, 24.1. **HRMS** (ESI-TOF): Anal Calcd. For. C₈H₉NO +H⁺: 136.0757, Found: 136.0757. **IR** (neat, cm⁻¹): ν 3587, 2900, 1732, 1683, 1598, 1496, 1373, 1023, 822, 759, 696.

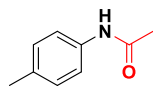




N-(4-Methoxyphenyl)acetamide (5ab)

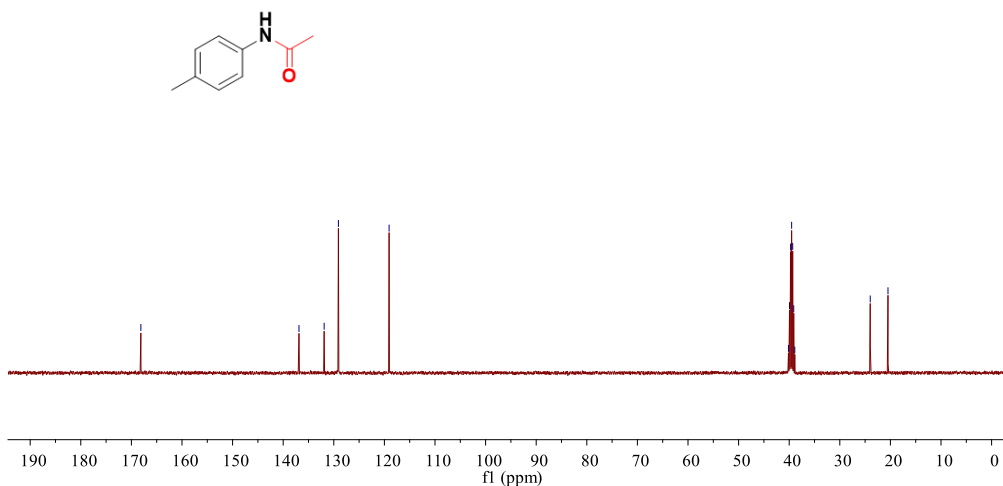
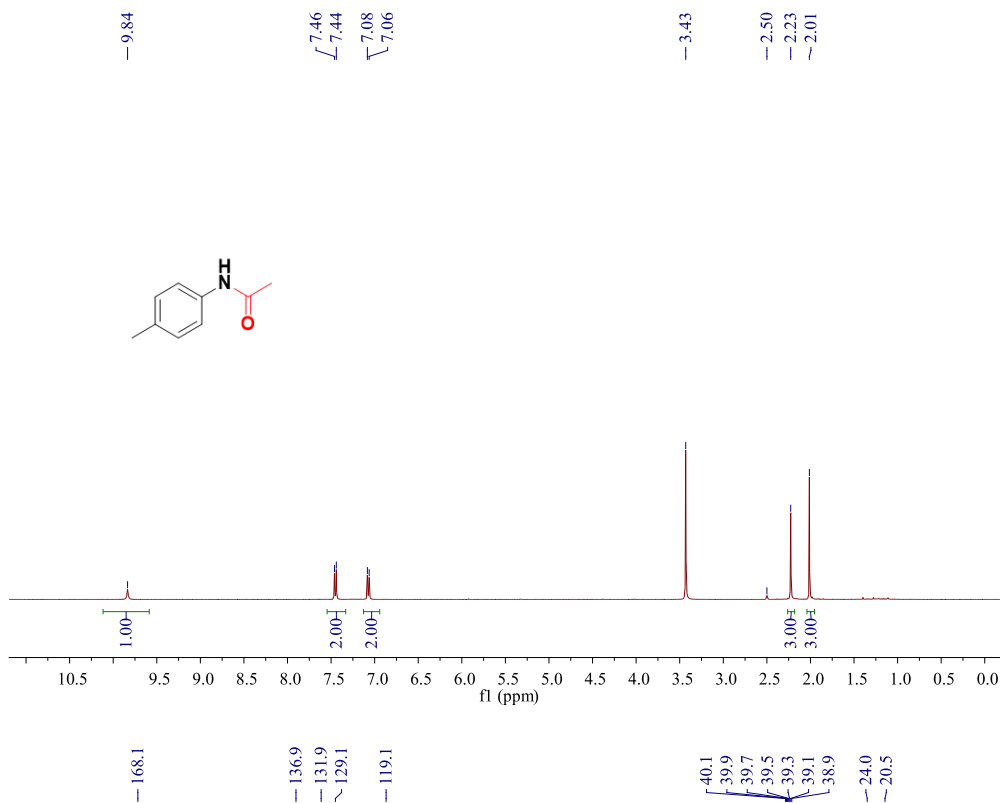
dichloromethane / ethyl acetate = 5:1, yellow solid, 69% yield (20.3 mg). mp: 126 – 128°C. ¹H NMR (400 MHz, DMSO) δ 9.76 (s, 1H), 7.48 – 7.46 (m, 2H), 6.86 – 6.84 (m, 2H), 3.70 (s, 3H), 2.00 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 167.7, 155.0, 132.5, 120.5, 113.8, 55.1, 23.8. HRMS (ESI-TOF): Anal Calcd. For. C₉H₁₁NO₂+H⁺: 166.0863, Found: 166.0862. IR (neat, cm⁻¹): ν 3365, 1645, 1553, 1512, 1246, 1024, 990, 826, 763.

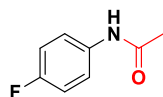




N-(*p*-Tolyl)acetamide (**5ac**)

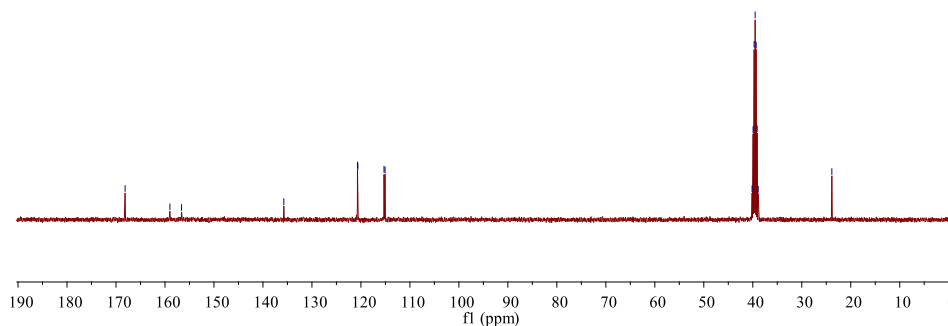
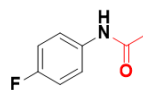
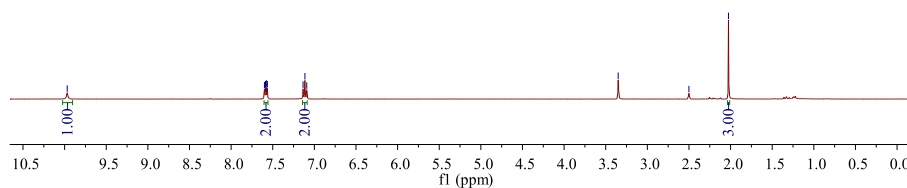
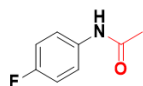
dichloromethane / ethyl acetate = 5:1, yellow solid, 93% yield (23.6 mg). mp: 151 – 153°C. ¹H NMR (400 MHz, DMSO) δ 9.84 (s, 1H), 7.45 (d, *J* = 8.4 Hz, 2H), 7.07 (d, *J* = 8.4 Hz, 2H), 2.23 (s, 3H), 2.01 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.1, 136.9, 131.9, 129.1, 119.1, 24.0, 20.5. HRMS (ESI-TOF): Anal Calcd. For. C₉H₁₁NO+H⁺: 150.0913, Found: 150.0913. IR (neat, cm⁻¹): ν 3298, 2976, 1662, 1590, 1488, 922, 816, 729.

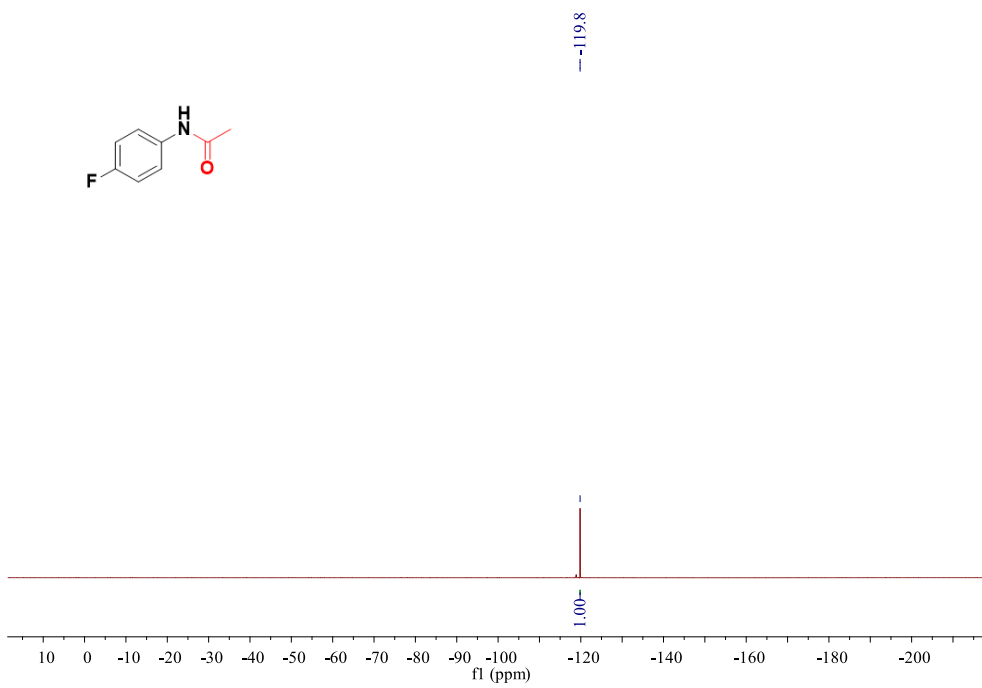
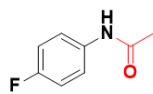


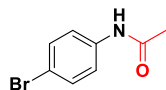


N-(4-Fluorophenyl)acetamide (5ad)

dichloromethane / ethyl acetate = 5:1, yellow solid, 83% yield (24.2 mg). mp: 150 – 152°C. ¹H NMR (400 MHz, DMSO) δ 9.97 (s, 1H), 7.60 – 7.56 (m, 2H), 7.14-7.09 (m, 2H), 2.03 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.1, 157.8 (d, *J* = 237.0 Hz), 135.7 (d, *J* = 3.0 Hz), 120.7 (d, *J* = 7.0 Hz), 115.2 (d, *J* = 22 Hz), 23.9. ¹⁹F NMR (377 MHz, DMSO) δ -119.8 (s, 1F). HRMS (ESI-TOF): Anal Calcd. For. C₈H₈FNO+H⁺: 154.0663, Found: 154.0661: IR (neat, cm⁻¹): ν 3360, 1645, 1509, 1406, 1377, 1213, 1024, 989, 826.

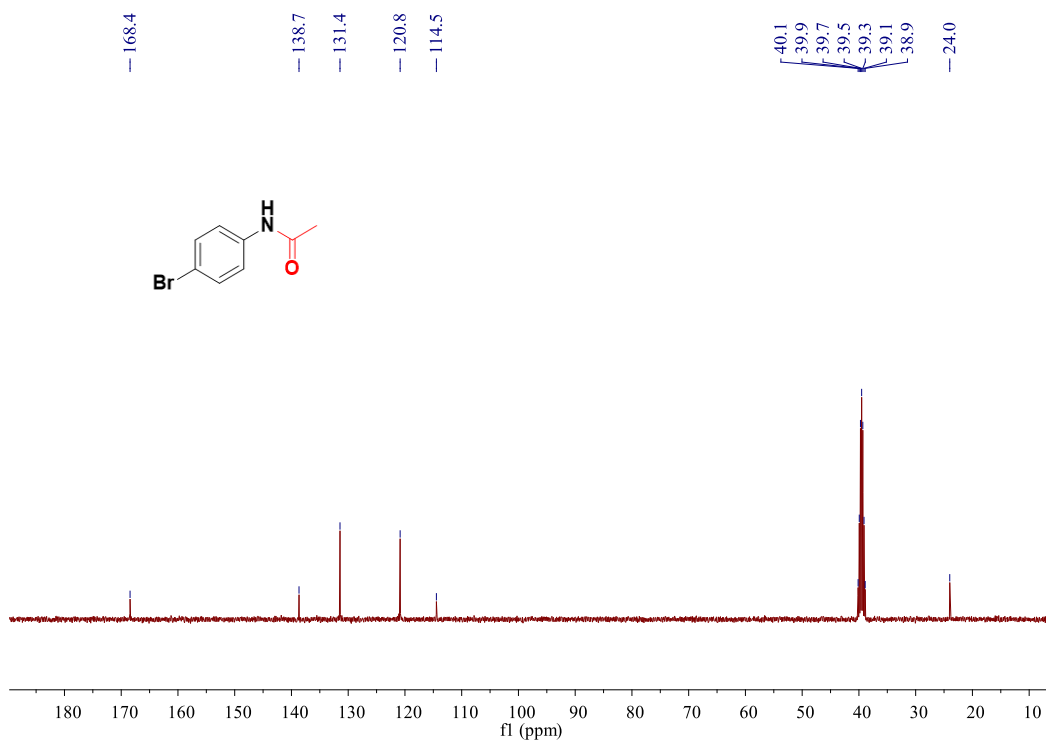
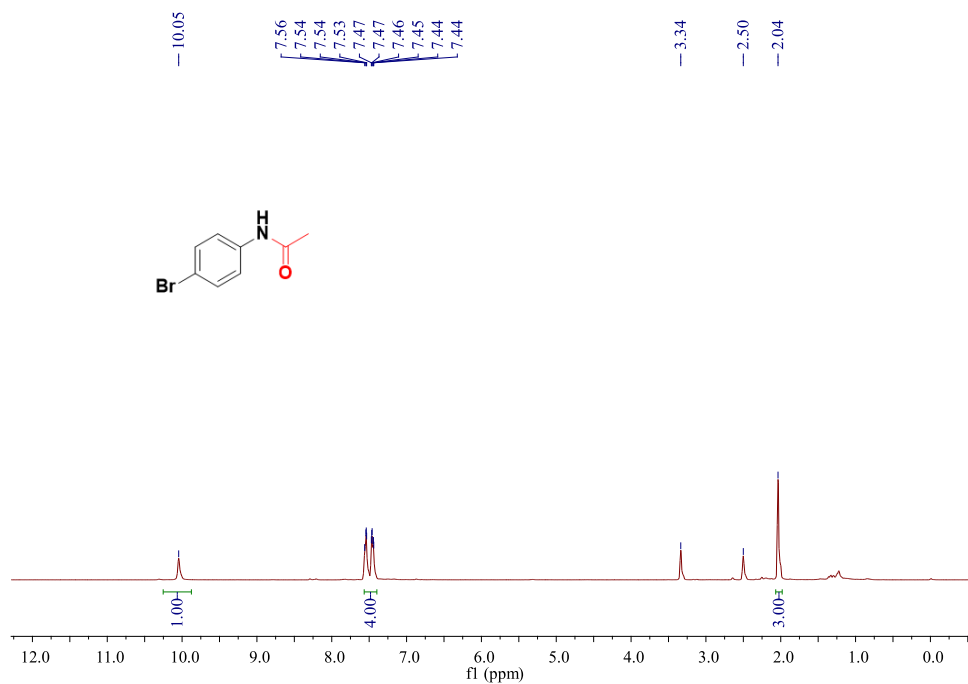


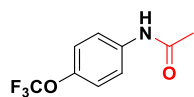




N-(4-Bromophenyl)acetamide (5ae)

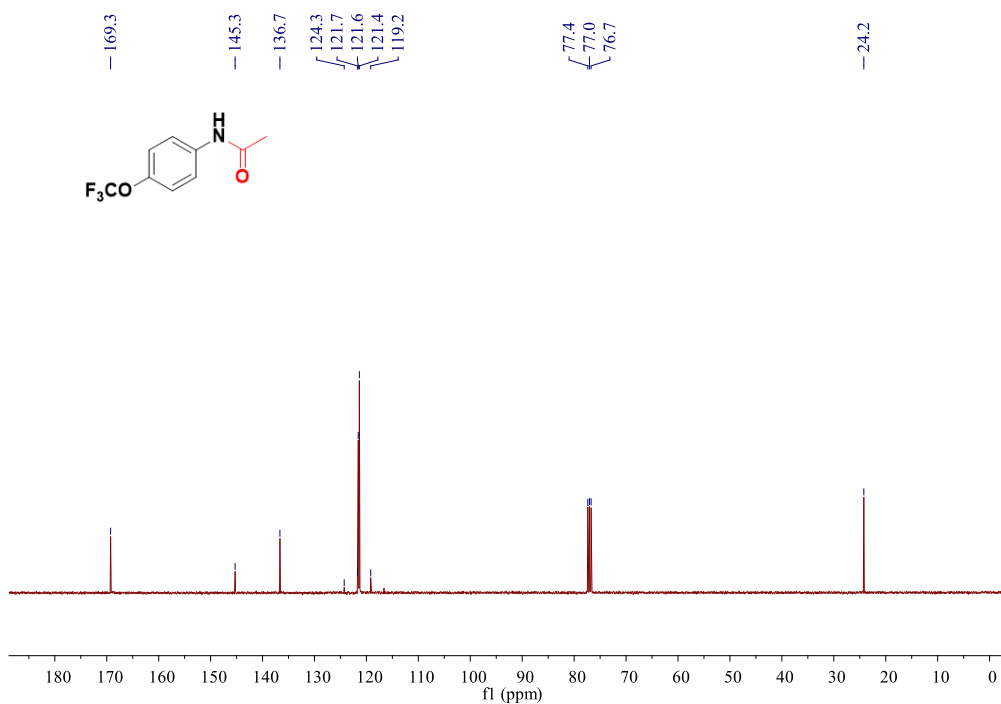
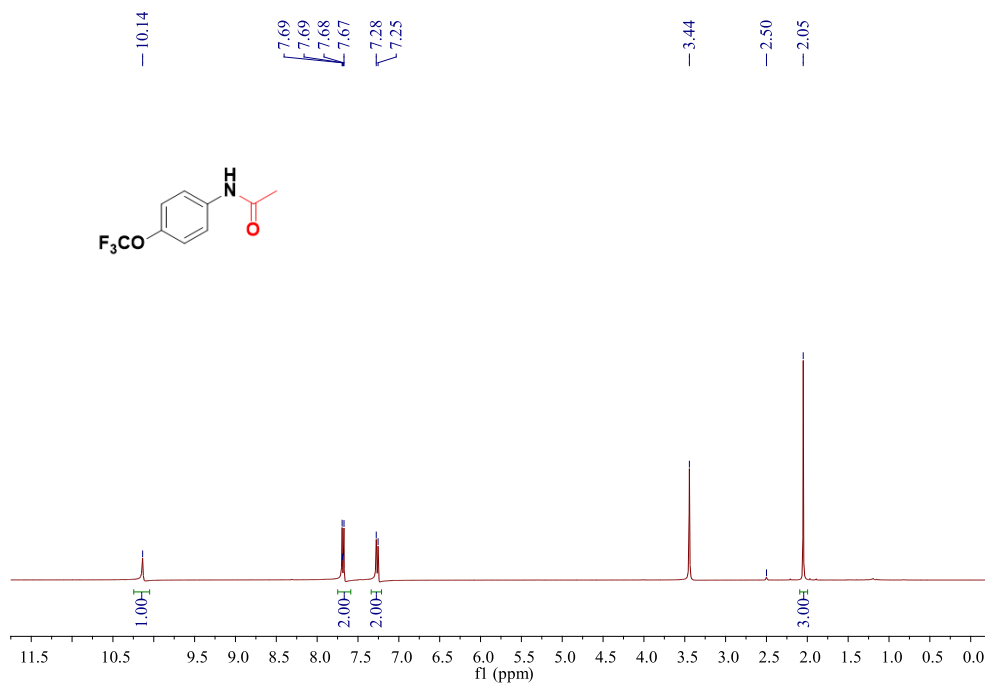
dichloromethane / ethyl acetate = 5:1, yellow solid, 85% yield (36.2 mg). mp: 168 – 170°C. **¹H NMR** (400 MHz, DMSO) δ 10.05 (s, 1H), 7.56 – 7.44 (m, 4H), 2.04 (s, 3H). **¹³C NMR** (100 MHz, DMSO) δ 168.4, 138.7, 131.4, 120.8, 114.5, 24.0. **HRMS** (ESI-TOF): Anal Calcd. For. C₈H₈⁷⁹BrNO+H⁺: 213.9862, Found: 213.9860; C₈H₈⁸¹BrNO+H⁺: 215.9842, Found: 215.9840. **IR** (neat, cm⁻¹): ν 3376, 2851, 1649, 1538, 1491, 1396, 1258, 1046, 991, 825, 763.

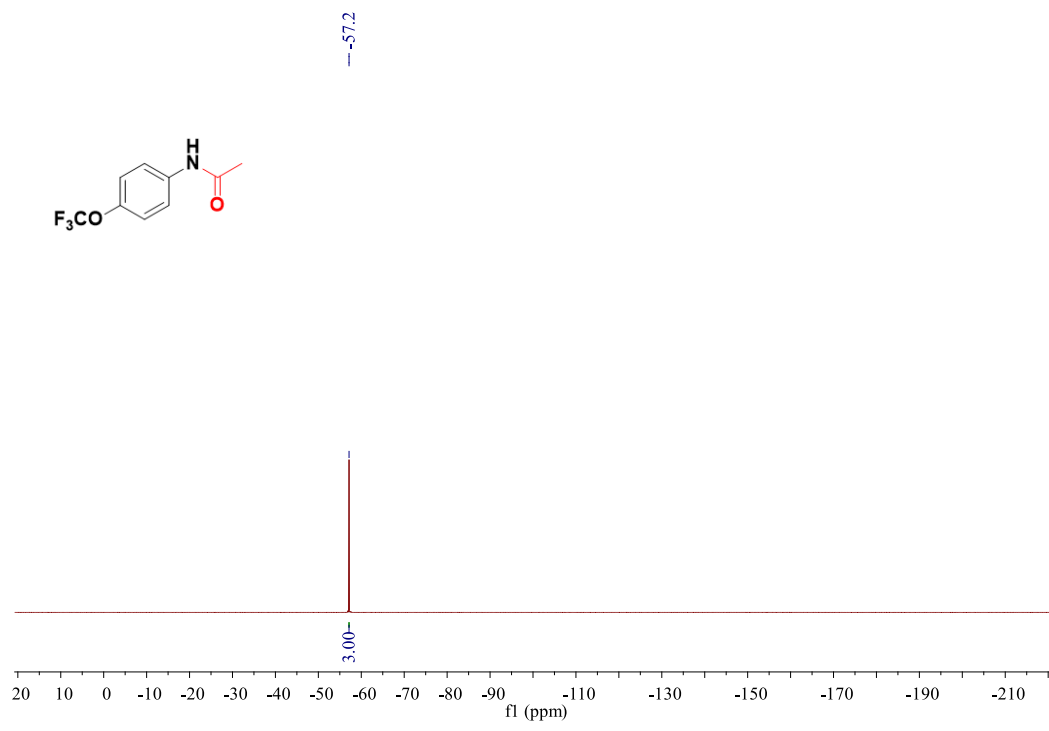


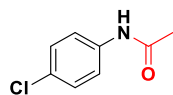


***N*-(4-(Trifluoromethoxy)phenyl)acetamide (5af)**

dichloromethane / ethyl acetate = 5:1, yellow solid, 90% yield (39.6 mg). mp: 113 – 115°C. ¹H NMR (400 MHz, DMSO) δ 10.14 (s, 1H), 7.69 – 7.67 (m, 2H), 7.28 – 7.25 (m, 2H), 2.05 (s, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 169.3, 145.3, 136.7, 121.6, 121.4, 120.5 (q, *J* = 255 Hz), 24.2. ¹⁹F NMR (377 MHz, DMSO) δ -57.1 (s, 1F). **HRMS** (ESI-TOF): Anal Calcd. For. C₉H₈F₃NO₂+H⁺: 220.0580, Found: 220.0578. **IR** (neat, cm⁻¹): ν 3378, 3270, 1665, 1618, 1556, 1508, 1154, 992, 825, 762, 659.

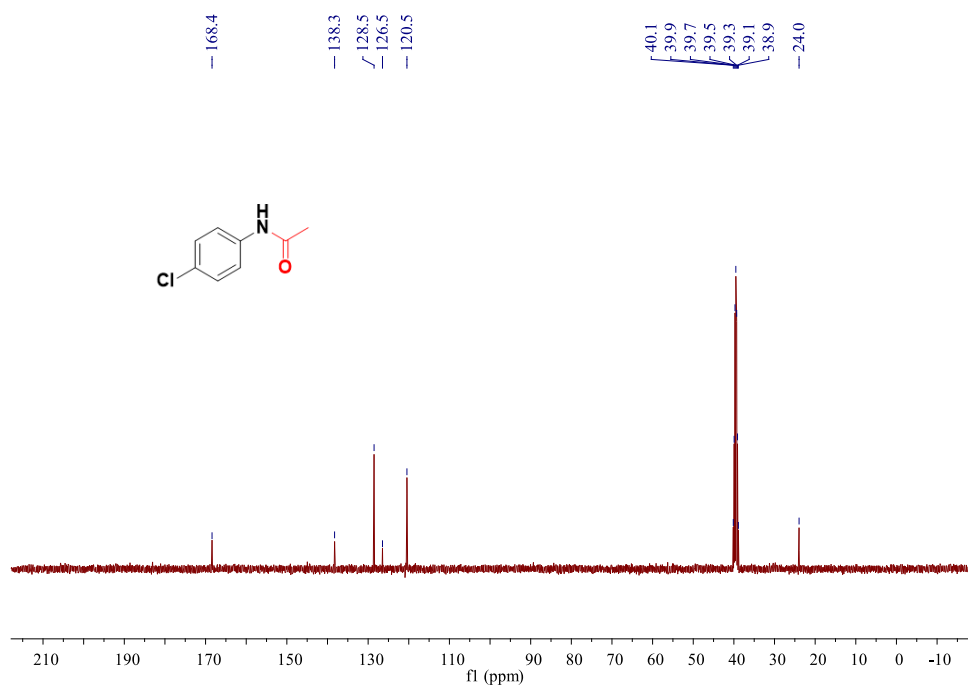
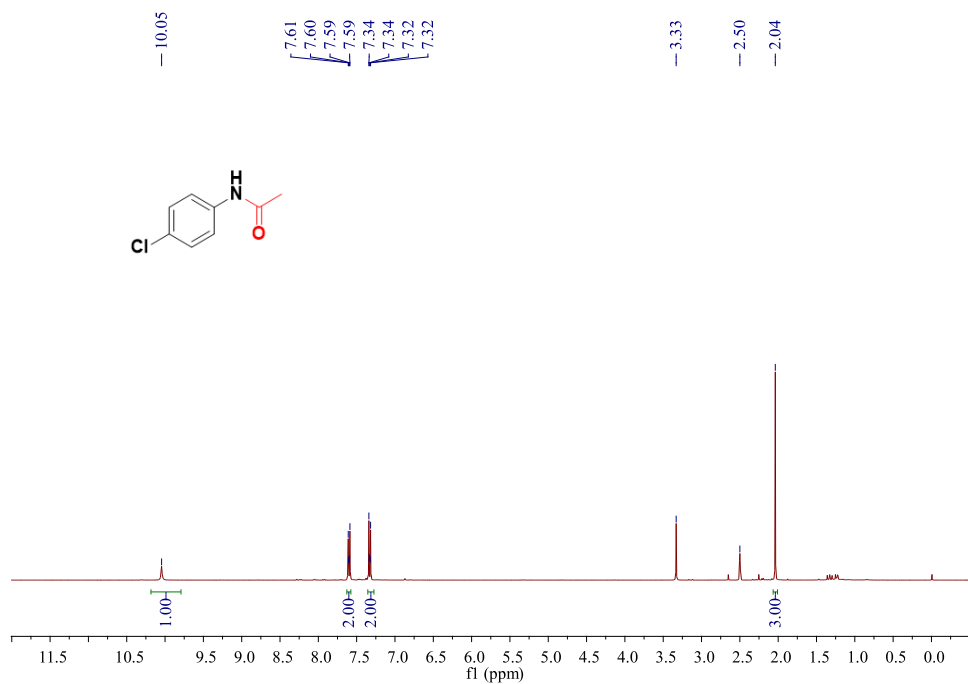


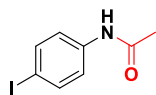




***N*-(4-Chlorophenyl)acetamide (5ag)**

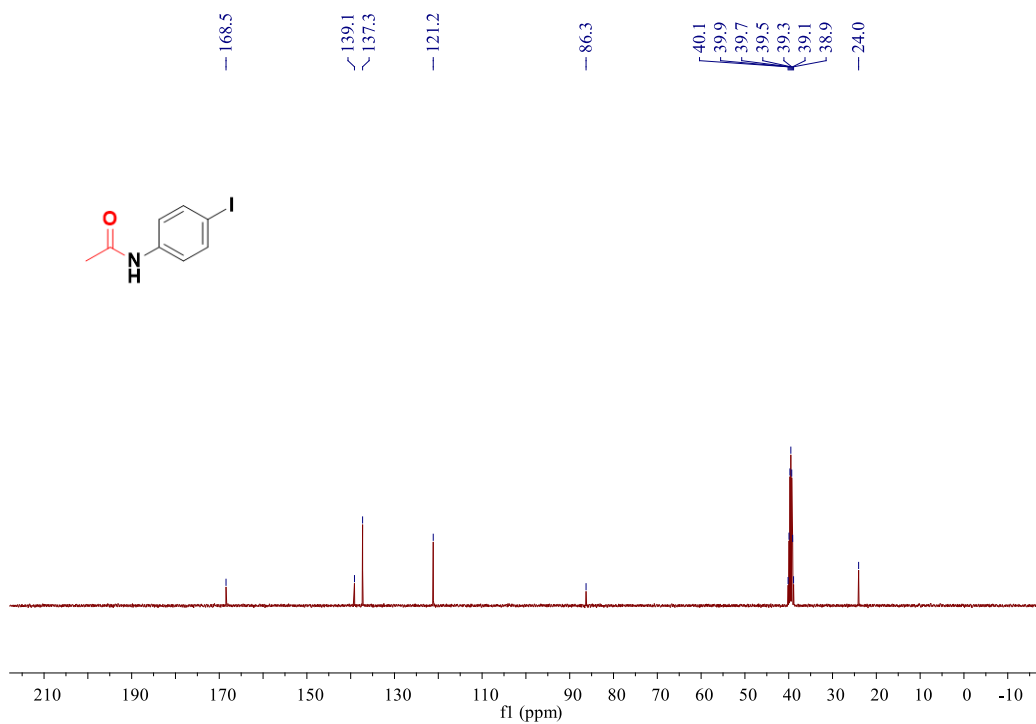
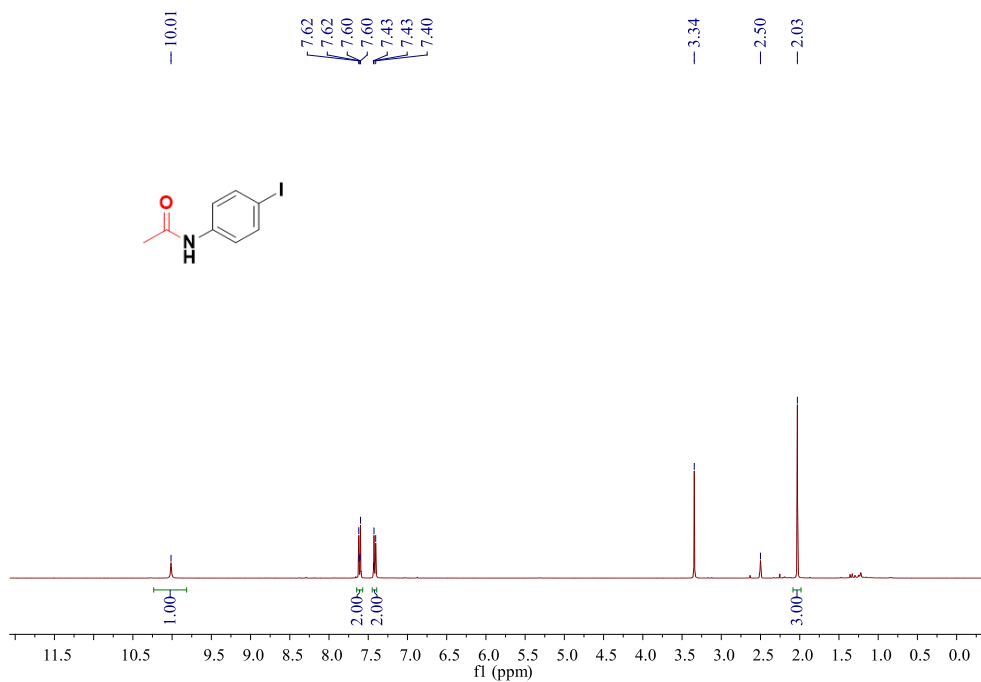
dichloromethane / ethyl acetate = 5:1, yellow solid, 86% yield (29.0 mg). mp: 177 – 179°C. ¹H NMR (400 MHz, DMSO) δ 10.05 (s, 1H), 7.61 – 7.59 (m, 2H), 7.34 – 7.32 (m, 2H), 2.04 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.4, 138.3, 128.5, 126.5, 120.5, 24.0. HRMS (ESI-TOF): Anal Calcd. For. C₈H₈³⁵ClNO+H⁺: 170.0367, Found: 170.0366; C₈H₈³⁷ClNO+H⁺: 172.0338, Found: 172.0340. IR (neat, cm⁻¹): ν 3393, 2920, 1658, 1547, 1487, 1392, 1258, 1092, 996, 821, 709.

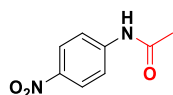




***N*-(4-Iodophenyl)acetamide (5ah)**

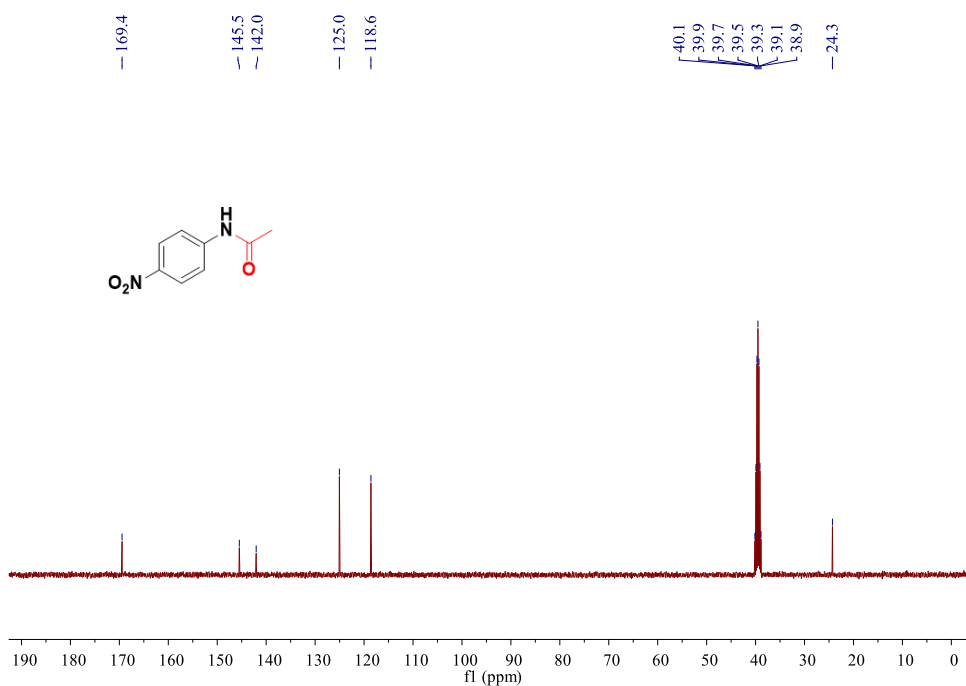
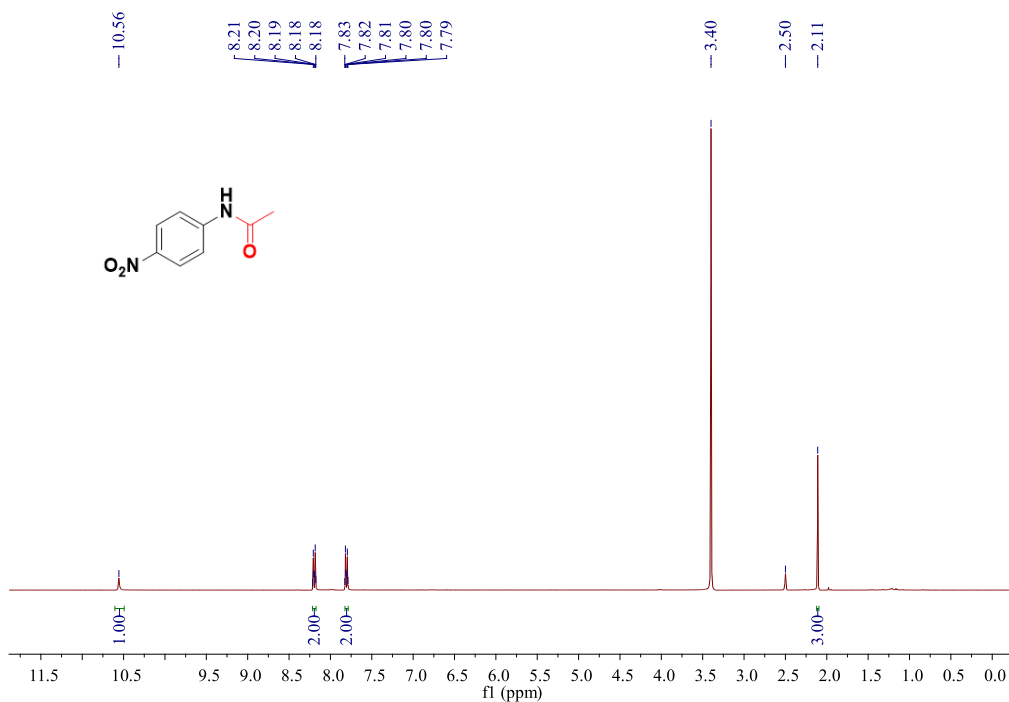
dichloromethane / ethyl acetate = 5:1, yellow solid, 77% yield (40.0 mg). mp: 180 – 182°C. **¹H NMR** (400 MHz, DMSO) δ 10.01 (s, 1H), 7.62 – 7.60 (m, 2H), 7.43 – 7.40 (m, 2H), 2.03 (s, 3H). **¹³C NMR** (100 MHz, DMSO) δ 168.5, 139.1, 137.3, 121.2, 86.3, 24.0. **HRMS** (ESI-TOF): Anal Calcd. For. C₈H₈I₁NO+H⁺: 261.9723, Found: 261.9721. **IR** (neat, cm⁻¹): ν 3392, 2958, 2849, 1663, 1596, 1579, 1482, 1253, 1024, 992, 814, 731, 679.

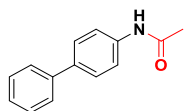




N-(4-Nitrophenyl)acetamide (5ai)

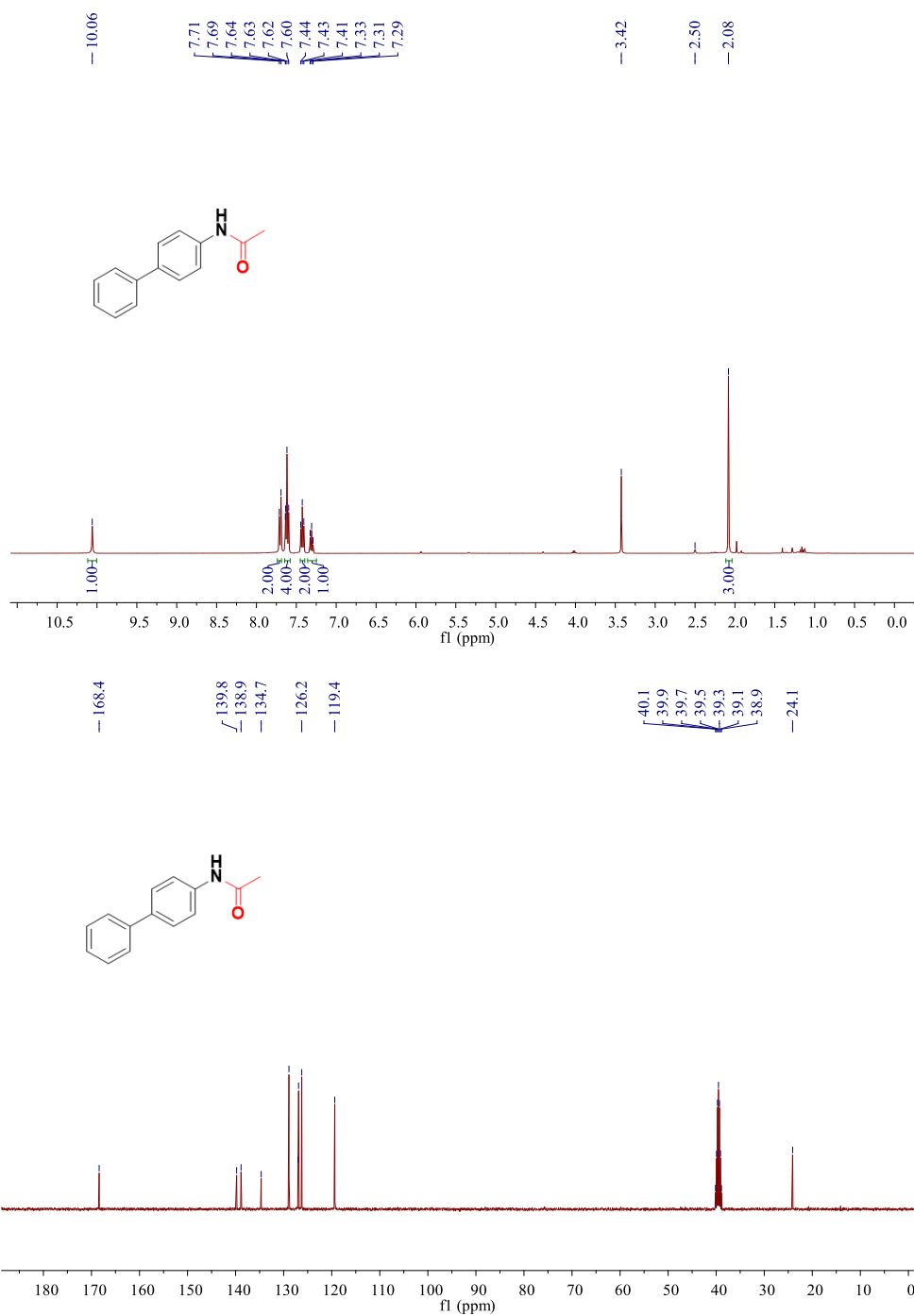
dichloromethane / ethyl acetate = 5:1, yellow solid, 46% yield (16.7 mg). mp: 208 – 210°C. ¹H NMR (400 MHz, DMSO) δ 10.56 (s, 1H), 8.21 – 8.18 (m, 2H), 7.83 – 7.79 (m, 2H), 2.11 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 169.4, 145.5, 142.0, 125.0, 118.6, 24.3. HRMS (ESI-TOF): Anal Calcd. For. C₈H₈N₂O₃+H⁺: 181.0608, Found: 181.0606. IR (neat, cm⁻¹): ν 3414, 1654, 1616, 1597, 1264, 1023, 859, 759.

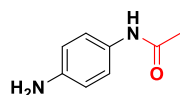




N-([1,1'-Biphenyl]-4-yl)acetamide (5aj)

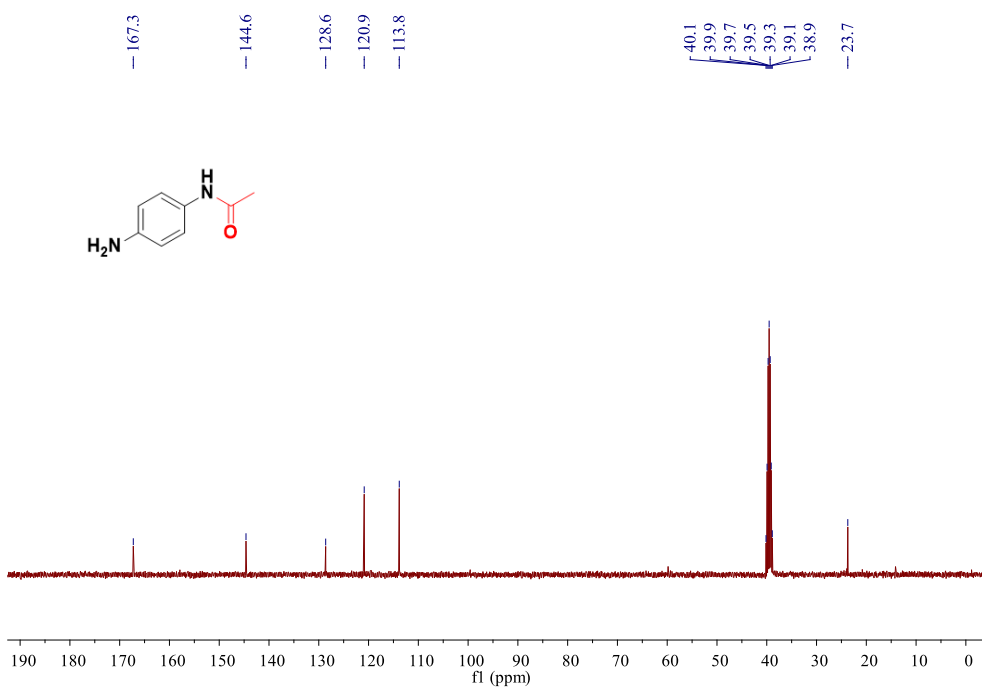
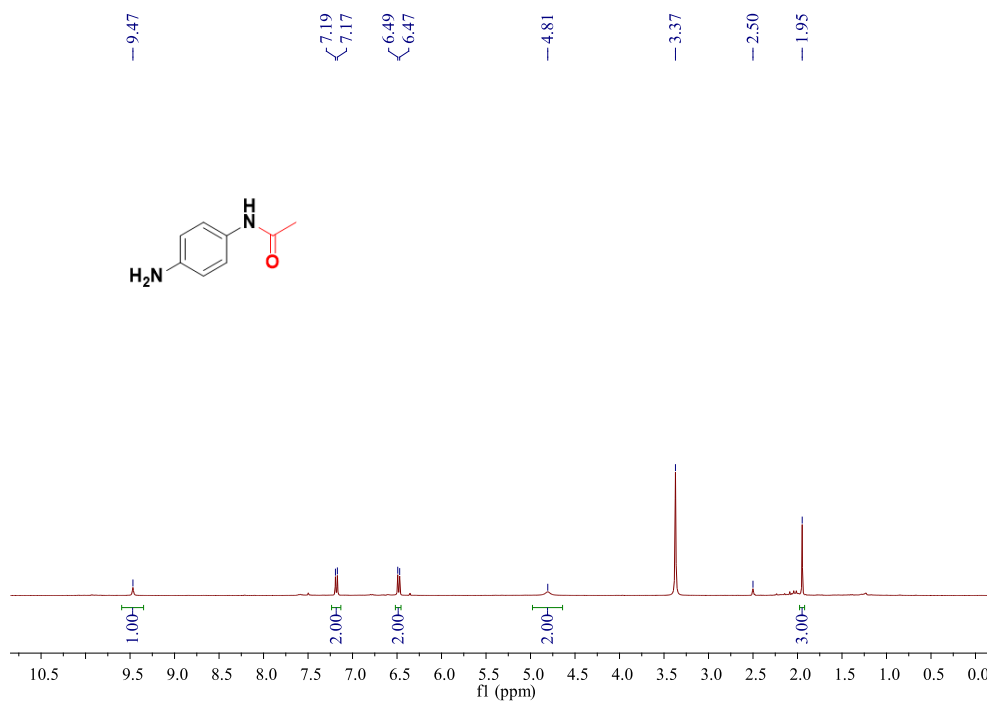
petroleum ether / ethyl acetate = 10:1, yellow solid, 67% yield (28.3 mg). mp: 171 – 173°C. ¹H NMR (400 MHz, DMSO) δ 10.06 (s, 1H), 7.70 (d, *J* = 8.7 Hz, 2H), 7.64 – 7.60 (m, 4H), 7.43 (t, *J* = 7.7 Hz, 2H), 7.31 (t, *J* = 7.7 Hz, 1H), 2.08 (s, 1H). ¹³C NMR (100 MHz, DMSO) δ 168.4, 139.8, 138.9, 134.7, 128.9, 127.0, 126.9, 126.2, 119.4, 24.1. HRMS (ESI-TOF): Anal Calcd. For. C₁₄H₁₃NO+H⁺: 212.1070, Found: 212.1069. IR (neat, cm⁻¹): ν 3354, 2963, 1672, 1600, 1538, 1452, 1199, 1007, 895, 758, 685.

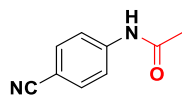




N-(4-Aminophenyl)acetamide (5ak)

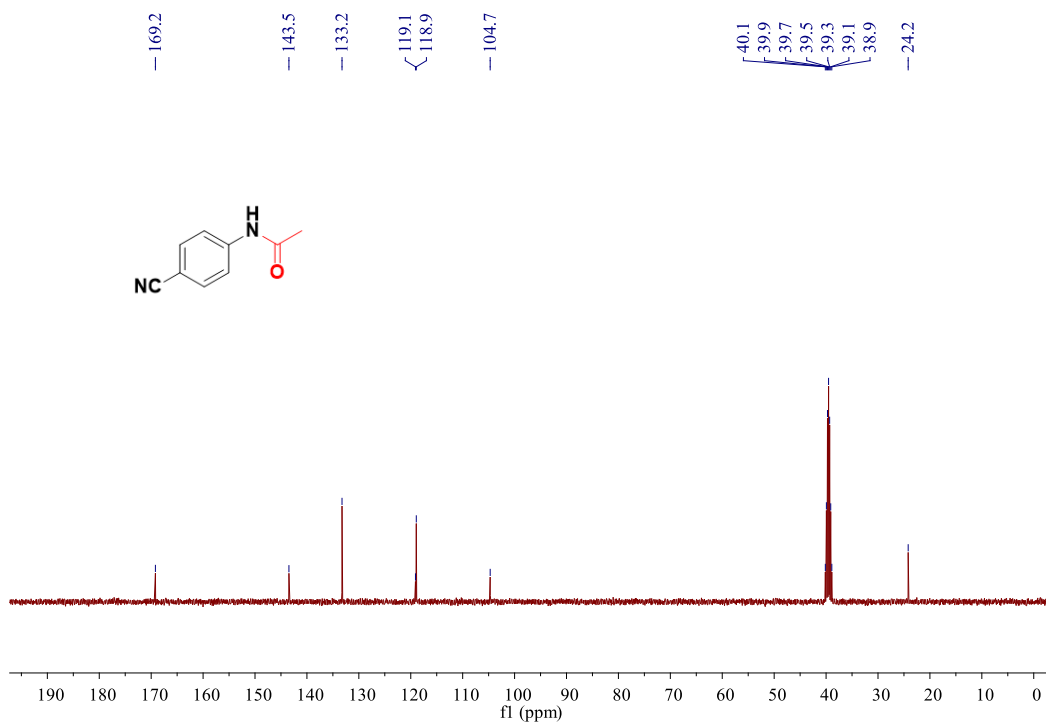
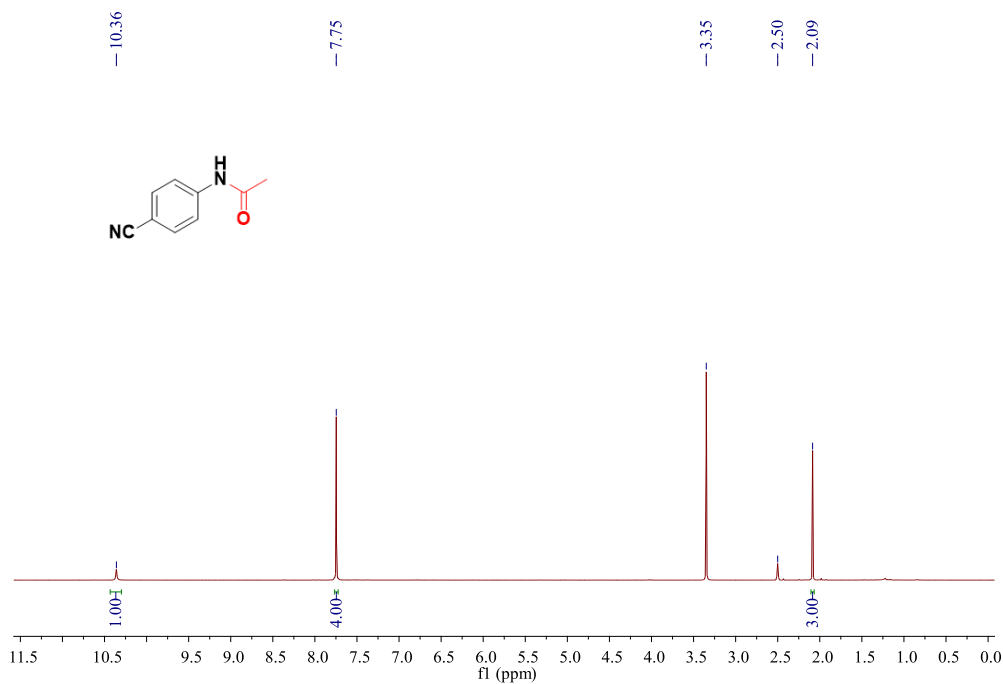
petroleum ether / ethyl acetate = 2:1, yellow solid, 64% yield (19.2 mg). mp: 126 – 128°C. ¹H NMR (400 MHz, DMSO) δ 9.47 (s, 1H), 7.18 (d, *J* = 8.7 Hz, 2H), 6.48 (d, *J* = 8.7 Hz, 2H), 4.81 (s, 2H), 1.95 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 167.3, 144.6, 128.6, 120.9, 113.8, 23.7. HRMS (ESI-TOF): Anal Calcd. For. C₈H₁₀N₂O+H⁺: 151.0866, Found: 151.0865. IR (neat, cm⁻¹): ν 3357, 3305, 1641, 1553, 1429, 1264, 1024, 989, 826.

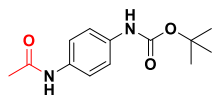




***N*-(4-Cyanophenyl)acetamide (5a1)**

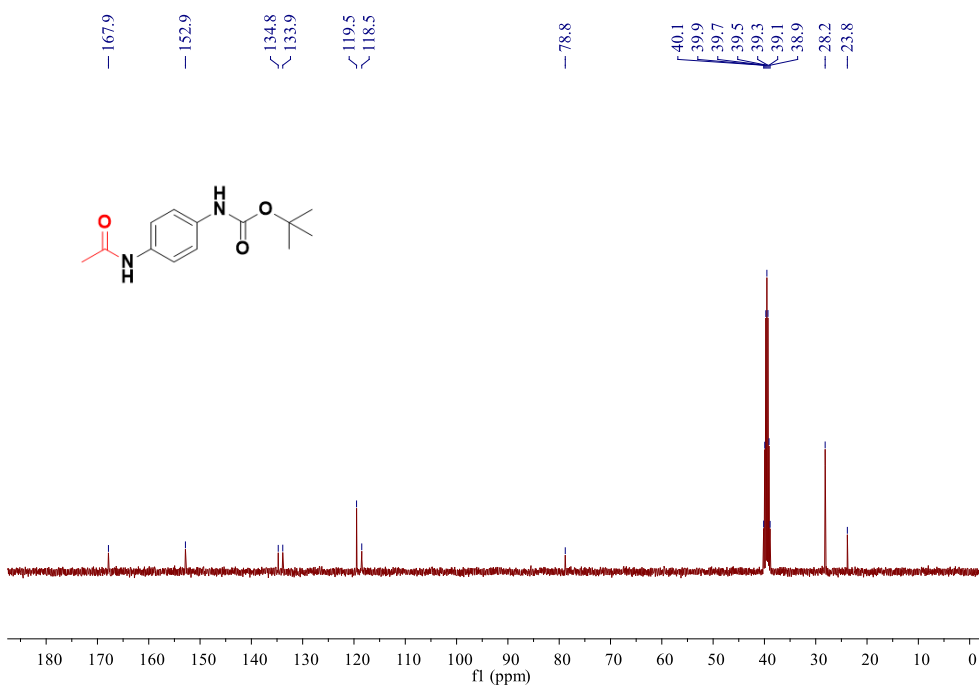
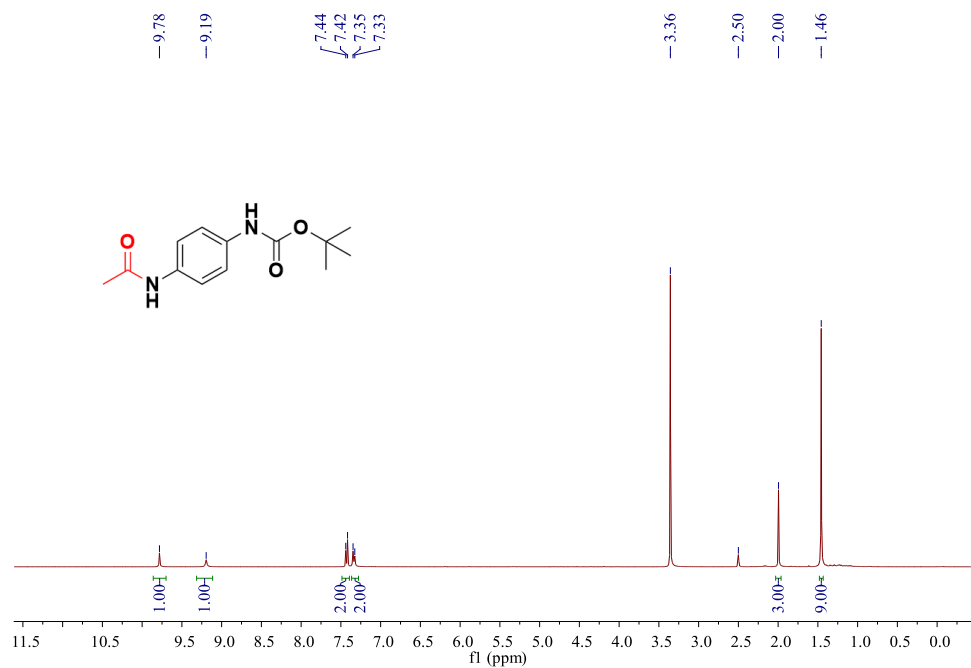
petroleum ether / ethyl acetate = 2:1, yellow solid, 73% yield (23.5 mg). mp: 200 – 203°C. **¹H NMR** (400 MHz, DMSO) δ 10.36 (s, 1H), 7.75 (s, 4H), 2.09 (s, 3H). **¹³C NMR** (100 MHz, DMSO) δ 169.2, 143.5, 133.2, 119.1, 118.9, 104.7, 24.2. **HRMS** (ESI-TOF): Anal Calcd. For. C₉H₈N₂O+H⁺: 161.0709, Found: 161.0710. **IR** (neat, cm⁻¹): ν 3301, 3257, 2924, 2221, 1666, 1596, 1403, 1319, 1203, 1024, 996, 818, 714, 648.

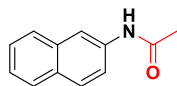




Tert-butyl (4-acetamidophenyl)carbamate (5am)

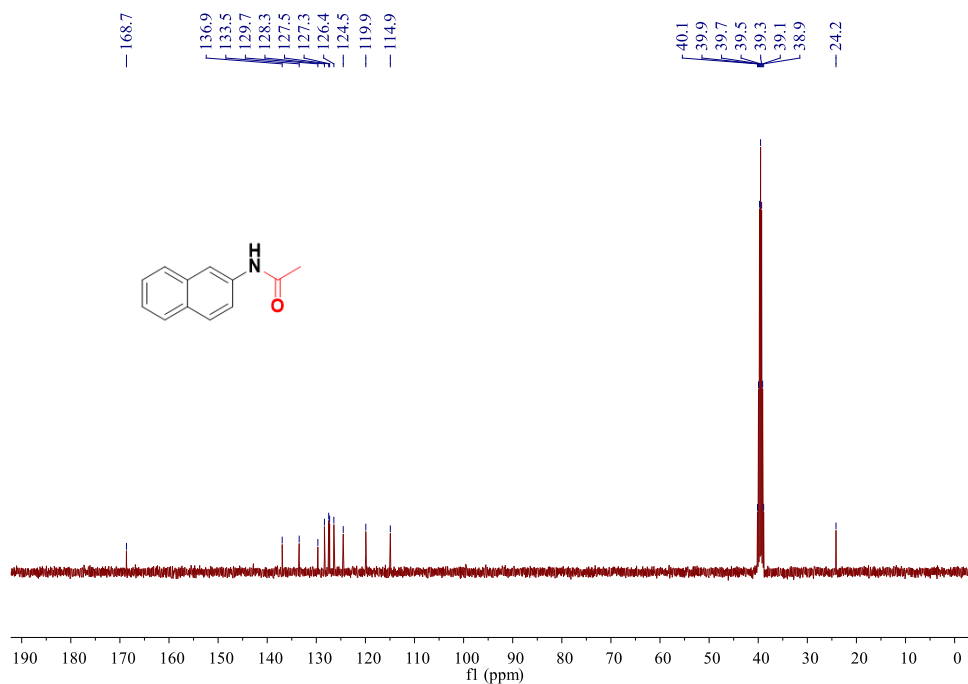
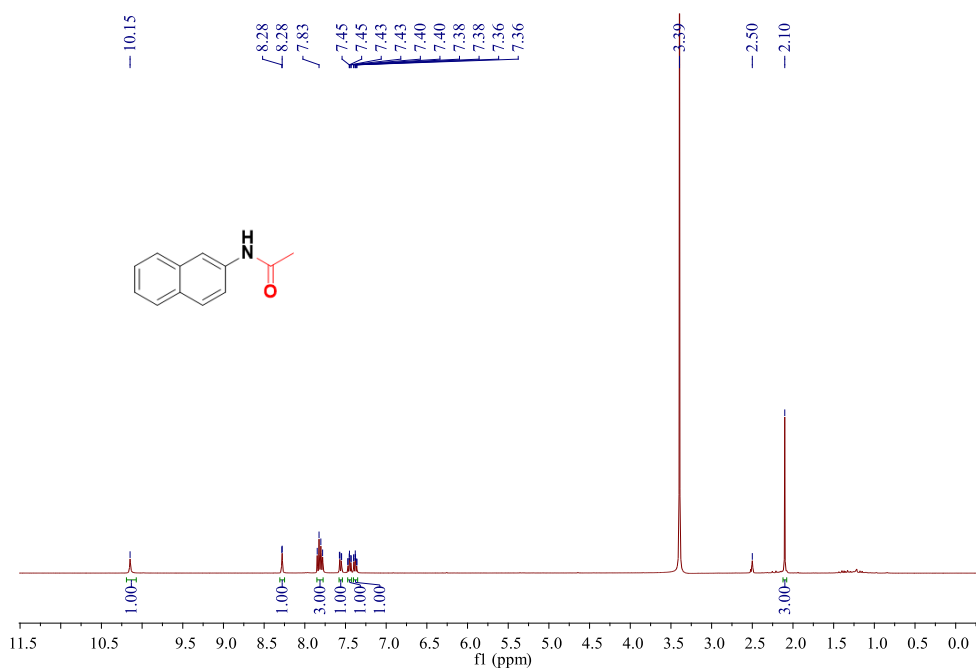
petroleum ether / ethyl acetate = 2:1, yellow solid, 45% yield (22.5 mg). mp: 161 – 163°C. **¹H NMR** (400 MHz, DMSO) δ 9.78 (s, 1H), 9.19 (s, 1H), 7.43 (d, *J* = 9.0 Hz, 2H), 7.34 (d, *J* = 9.0 Hz, 2H), 2.00 (s, 3H), 1.46 (s, 9H). **¹³C NMR** (100 MHz, DMSO) δ 167.9, 152.9, 134.8, 133.9, 119.5, 118.5, 78.8, 28.2, 23.8. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₃H₁₈N₂O₃+H⁺: 251.1390, Found: 251.1388. **IR** (neat, cm⁻¹): ν 3426, 2850, 1716, 1671, 1518, 1404, 1242, 1026, 909, 727, 646.

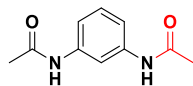




***N*-(Naphthalen-2-yl)acetamide (5an)**

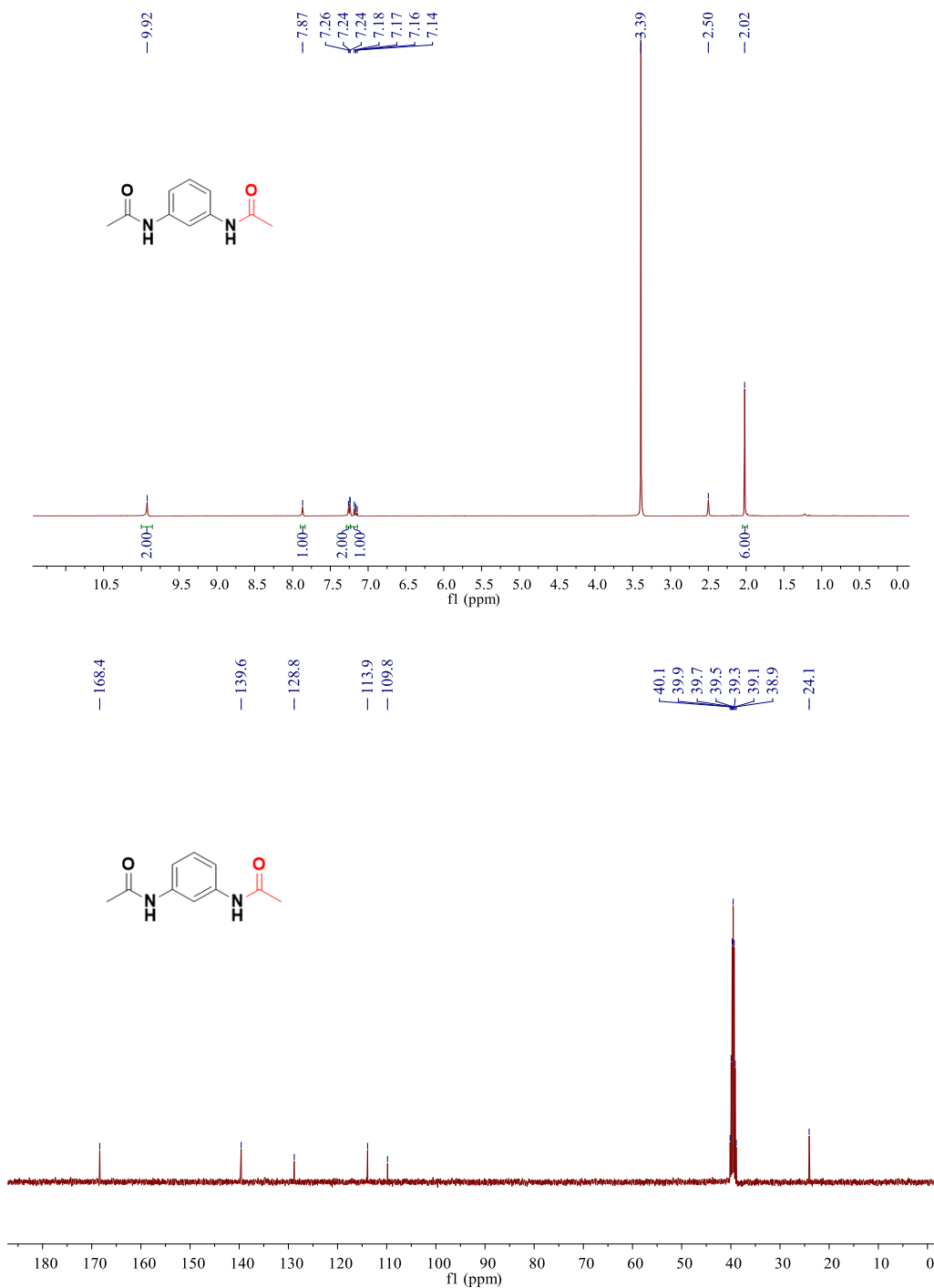
dichloromethane / ethyl acetate = 5:1, yellow solid, 90% yield (33.4 mg). mp: 134 – 136°C. ¹H NMR (400 MHz, DMSO) δ 10.15 (s, 1H), 8.28 (d, *J* = 2.0 Hz, 1H), 7.81 (dd, *J* = 17.7, 8.8 Hz, 3H), 7.56 (dd, *J* = 8.8, 2.0 Hz, 1H), 7.47 – 7.43 (m, 1H), 7.40 – 7.36 (m, 1H), 2.10 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.7, 136.9, 133.5, 129.7, 128.3, 127.5, 127.3, 126.4, 124.5, 119.9, 114.9, 24.2. HRMS (ESI-TOF): Anal Calcd. For. C₁₂H₁₁NO+H⁺: 186.0913, Found: 186.0913. IR (neat, cm⁻¹): ν 3405, 3293, 1670, 1527, 1489, 1393, 1258, 1049, 823, 760.

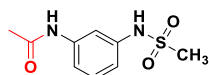




***N,N'*-(1,3-Phenylene) diacetamide (5ao)**

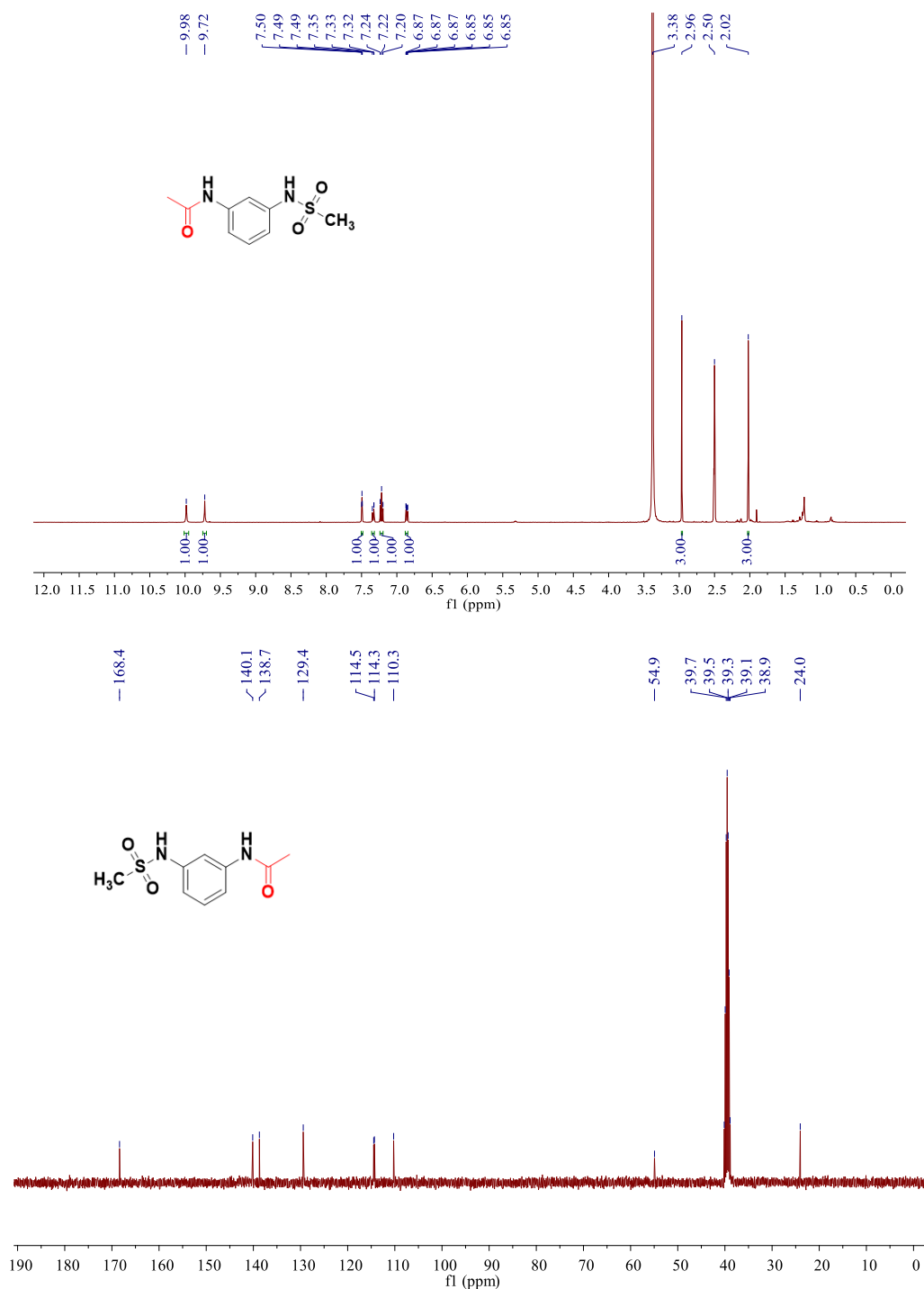
ethyl acetate, yellow solid, 66% yield (25.4 mg). mp: 180 – 182°C. ¹H NMR (400 MHz, DMSO) δ 9.92 (s, 2H), 7.87 (s, 1H), 7.26 – 7.24 (m, 2H), 7.16 (dd, *J* = 8.7, 7.2 Hz, 0H), 2.02 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.4, 139.6, 128.8, 113.9, 109.8, 24.1. HRMS (ESI-TOF): Anal Calcd. For. C₁₀H₁₂N₂O₂+H⁺: 193.0972, Found: 193.0971. IR (neat, cm⁻¹): ν 3404, 1665, 1550, 1485, 1419, 1373, 1049, 823, 761.

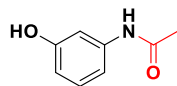




***N*-(3-(Methylsulfonamido)phenyl)acetamide (5ap)**

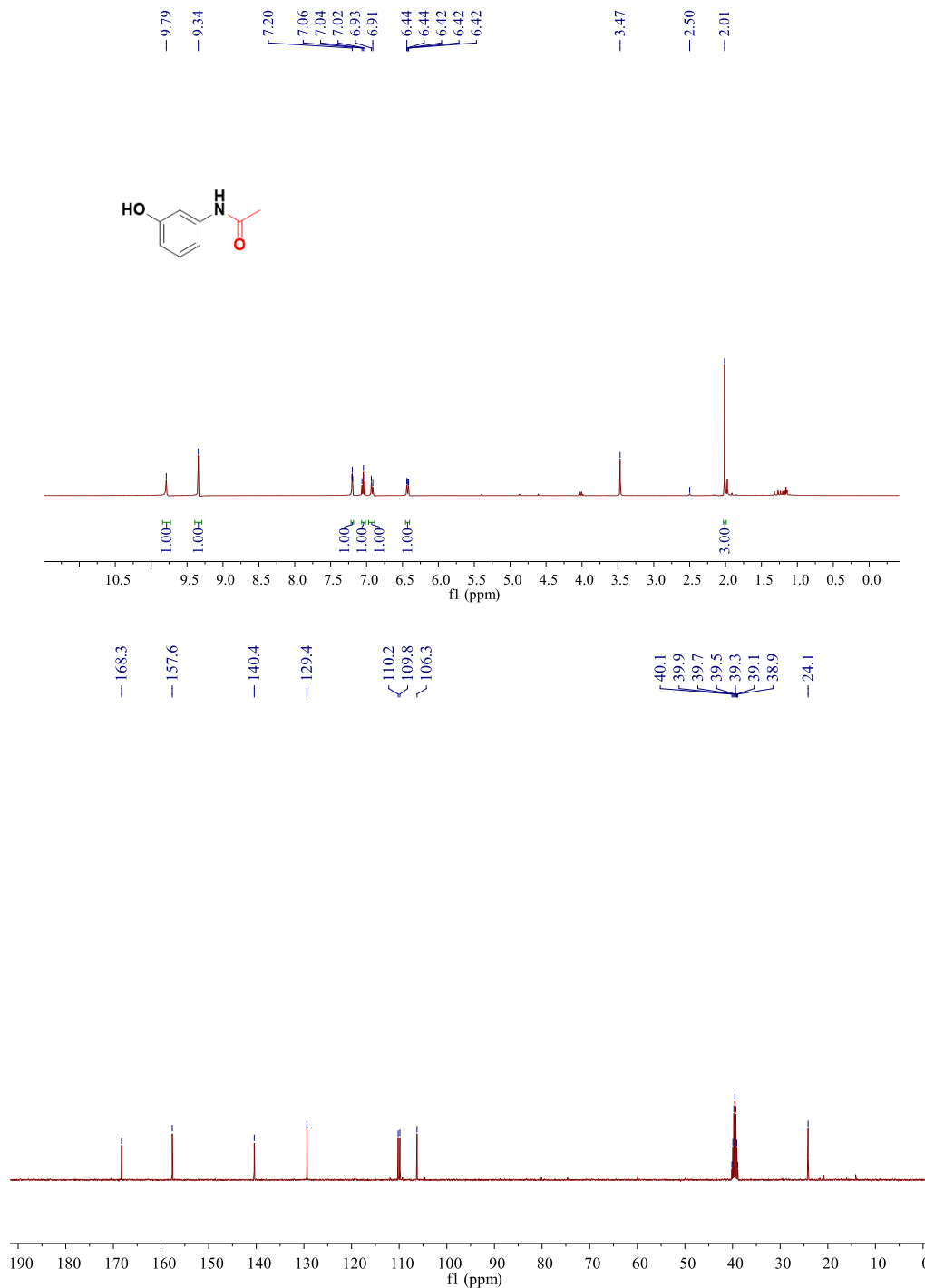
dichloromethane / ethyl acetate = 2:1, yellow oil, 74% yield (33.7 mg). $^1\text{H NMR}$ (400 MHz, DMSO) δ 9.98 (s, 1H), 9.72 (s, 1H), 7.50 – 7.49 (m, 1H), 7.35 – 7.32 (m, 1H), 7.24 – 7.20 (m, 1H), 6.87 – 6.85 (m, 1H), 2.96 (s, 3H), 2.02 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, DMSO) δ 168.4, 140.1, 138.7, 129.4, 114.5, 114.3, 110.3, 54.9, 24.0. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_9\text{H}_{12}\text{N}_2\text{O}_3\text{S}+\text{H}^+$: 229.0641, Found: 229.0640. **IR** (neat, cm^{-1}): ν 3398, 3274, 2240, 1674, 1608, 1542, 1471, 1301, 1200, 1053, 904, 820, 724, 648.

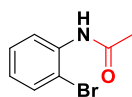




N-(3-Hydroxyphenyl)acetamide (5aq)

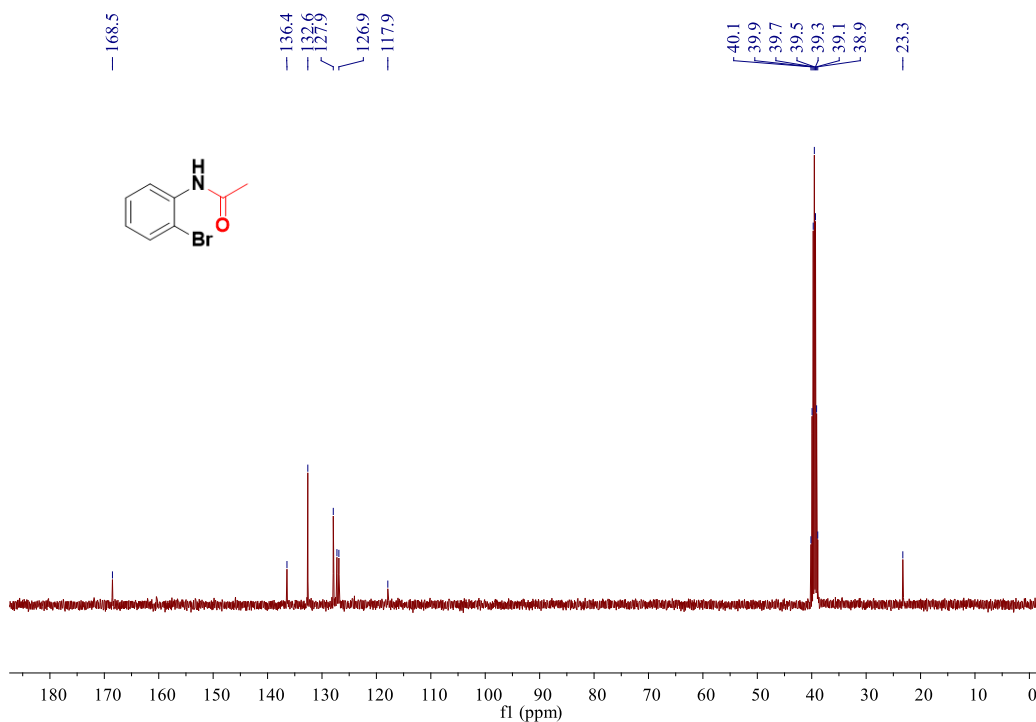
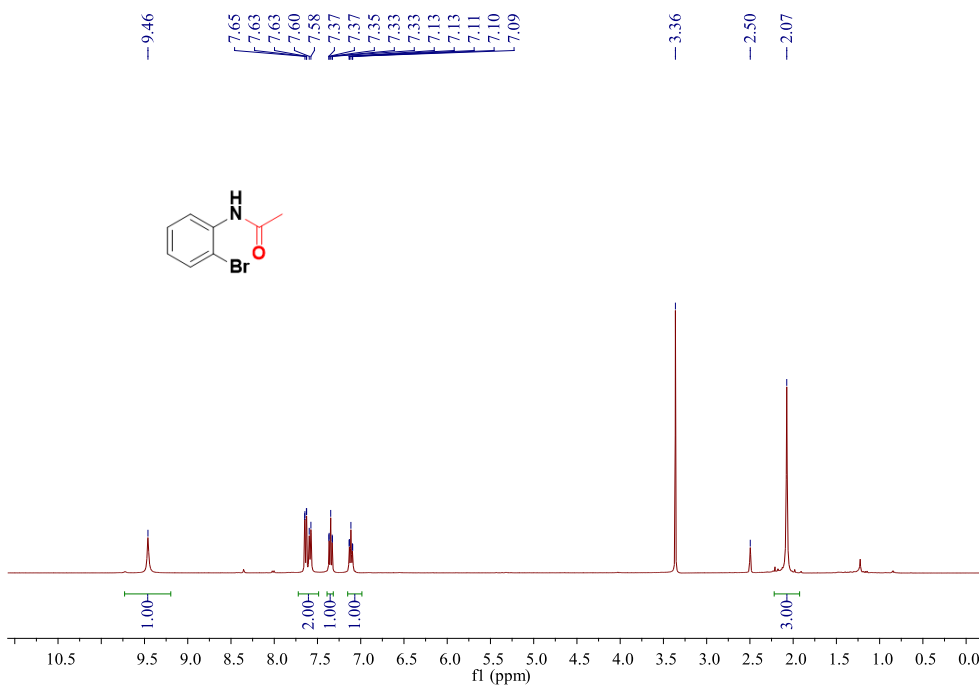
dichloromethane / ethyl acetate = 2:1, yellow solid, 53% yield (16.1 mg). mp: 150 – 153°C. ¹H NMR (400 MHz, DMSO) δ 9.79 (s, 1H), 9.34 (s, 1H), 7.20 (t, *J* = 2.0 Hz, 1H), 7.04 (t, *J* = 8.1 Hz, 1H), 6.92 (d, *J* = 8.1 Hz, 1H), 6.44 – 6.42 (m, 1H), 2.01 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.3, 157.6, 140.4, 129.4, 110.2, 109.8, 106.3, 24.1. HRMS (ESI-TOF): Anal Calcd. For. C₈H₉NO₂+H⁺: 152.0706, Found: 152.0706. IR (neat, cm⁻¹): ν 3299, 3261, 2926, 1661, 1513, 1453, 1371, 908, 816, 729, 647.

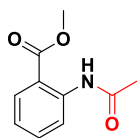




N-(2-Bromophenyl)acetamide (5ar)

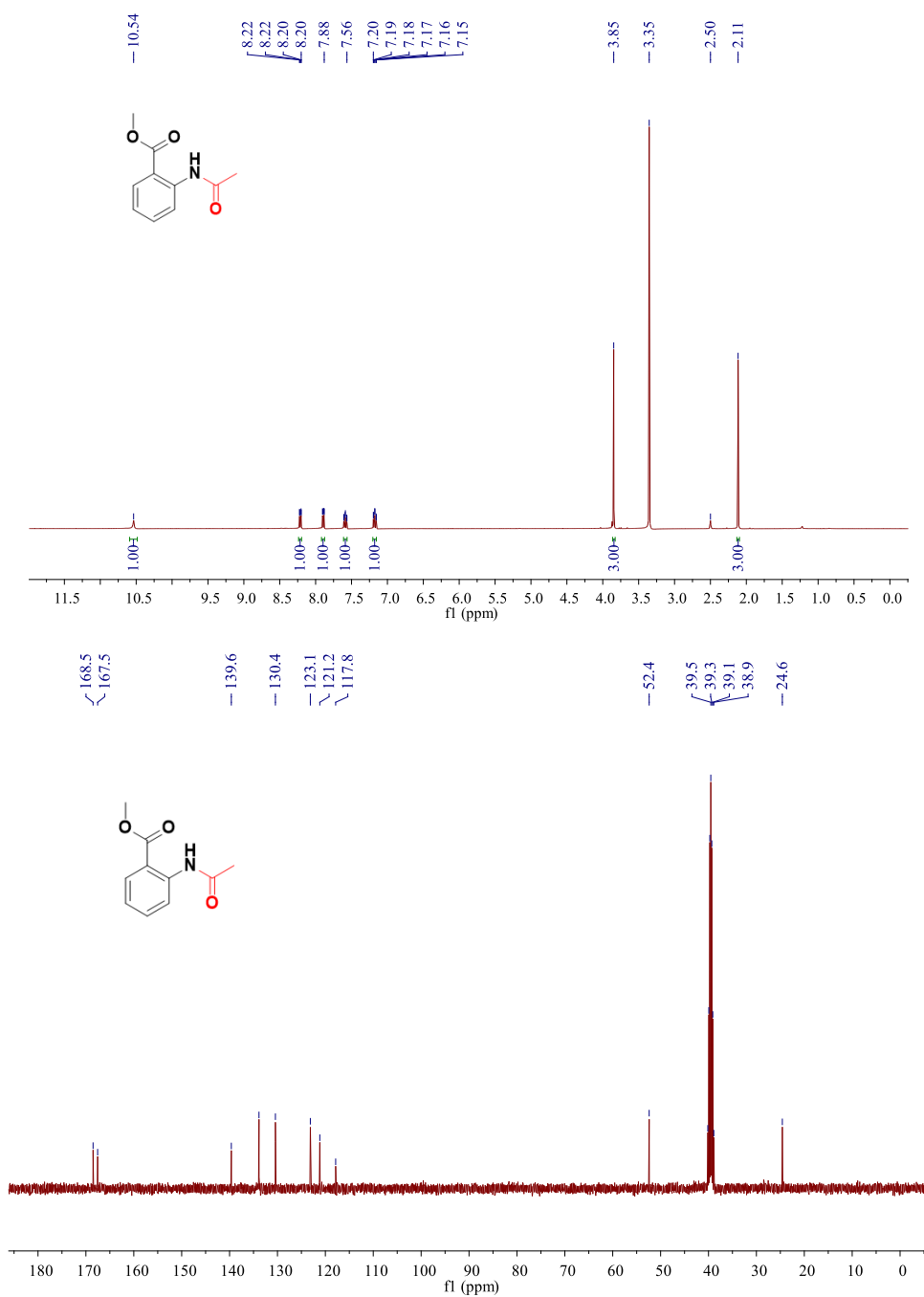
dichloromethane, yellow solid, 64% yield (27.3 mg). mp: 90 – 92°C. $^1\text{H NMR}$ (400 MHz, DMSO) δ 9.46 (s, 1H), 7.67 – 7.58 (m, 2H), 7.27 – 7.33 (m, 1H), 7.13 – 7.09 (m, 1H), 2.07 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, DMSO) δ 168.5, 136.4, 132.6, 127.9, 127.3, 126.9, 117.9, 23.3. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_8\text{H}_8^{79}\text{BrNO}+\text{H}^+$: 213.9862, Found: 213.9861; $\text{C}_8\text{H}_8^{81}\text{BrNO}+\text{H}^+$: 215.9842, Found: 215.9841. **IR** (neat, cm^{-1}): ν 3410, 1660, 1510, 1430, 1207, 1005, 785, 690.

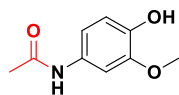




Methyl 2-acetamidobenzoate (5as)

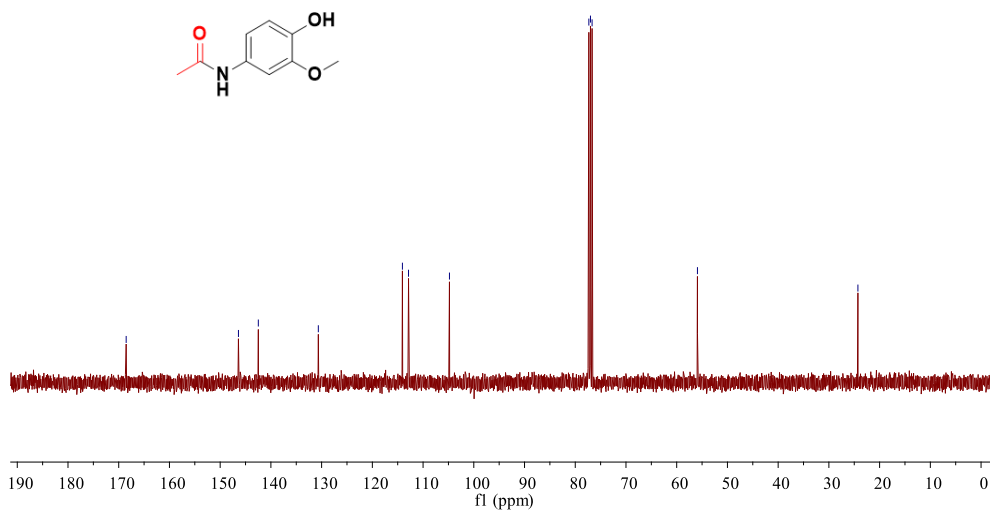
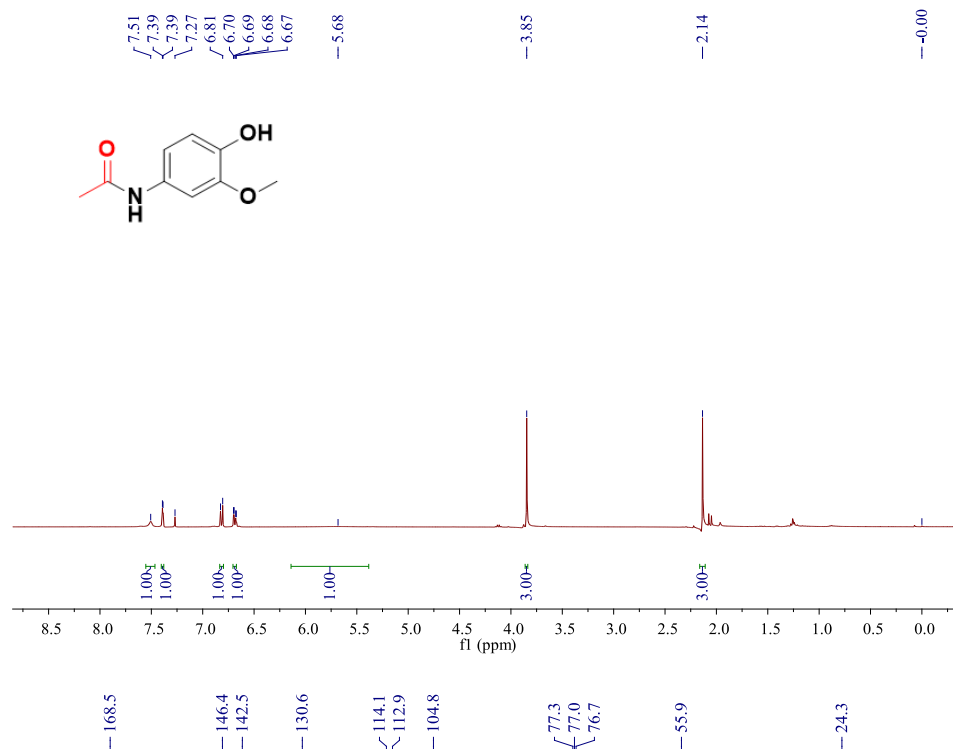
petroleum ether / ethyl acetate = 10:1, yellow solid, 60% yield (23.0 mg). mp: 98 – 100°C. $^1\text{H NMR}$ (400 MHz, DMSO) δ 10.54 (s, 1H), 8.22 – 8.20 (m, 1H), 7.90 – 7.88 (m, 1H), 7.61 – 7.56 (m, 1H), 7.20 – 7.15 (m, 1H), 3.85 (s, 3H), 2.11 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, DMSO) δ 168.5, 167.5, 139.6, 133.9, 130.4, 123.1, 121.2, 117.8, 52.4, 24.6. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{10}\text{H}_{11}\text{NO}_3 + \text{H}^+$: 194.0812, Found: 194.0812. **IR** (neat, cm^{-1}): ν 3385, 2955, 1684, 1588, 1524, 1368, 1296, 993, 824, 760.

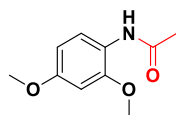




***N*-(4-Hydroxy-3-methoxyphenyl)acetamide (5at)**

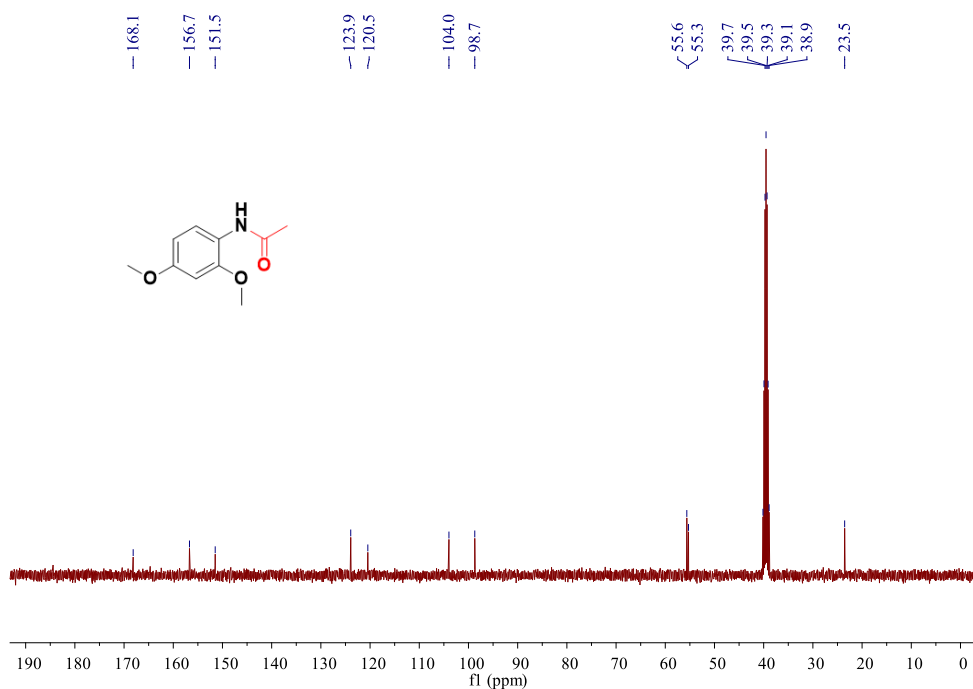
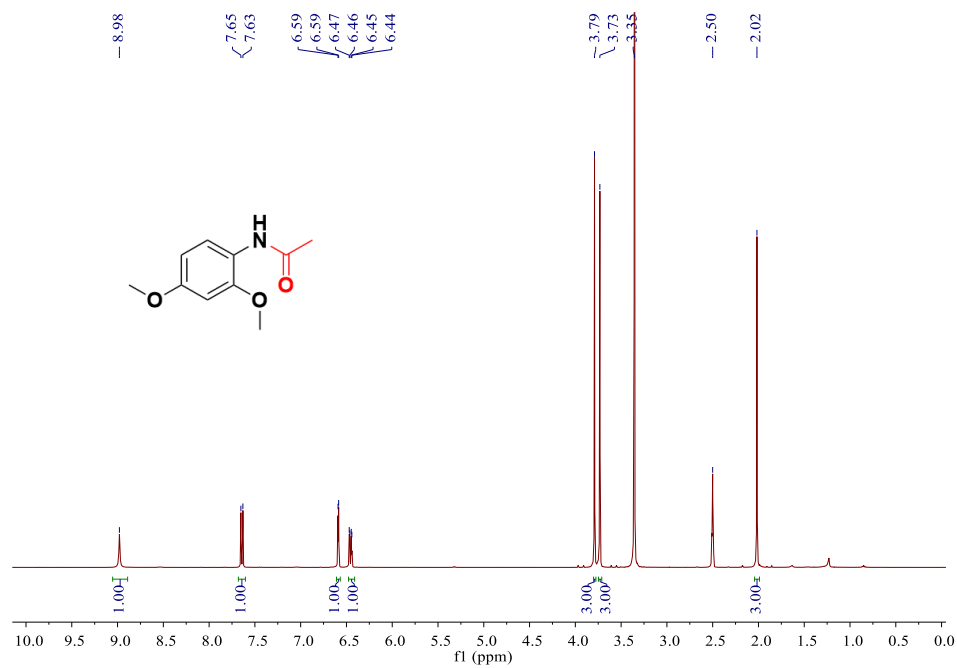
petroleum ether / ethyl acetate = 1:1, yellow solid, 48% yield (17.2 mg). mp: 110 – 112°C. ¹H NMR (400 MHz, CDCl₃) δ 7.51 (s, 1H), 7.39 (d, *J* = 2.2 Hz, 1H), 6.82 (d, *J* = 8.5 Hz, 1H), 6.69 (dd, *J* = 8.5, 2.2 Hz, 1H), 5.68 (s, 1H), 3.85 (s, 3H), 2.14 (s, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 168.5, 146.4, 142.5, 130.6, 114.1, 112.9, 104.8, 55.9, 24.3. HRMS (ESI-TOF): Anal Calcd. For. C₉H₁₁NO₃+H⁺: 182.0812, Found: 182.0810. IR (neat, cm⁻¹): ν 3298, 3261, 2926, 1661, 1513, 1453, 1371, 1200, 907, 816, 729, 647.

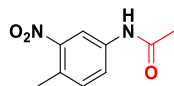




N-(2,4-Dimethoxyphenyl)acetamide (5au)

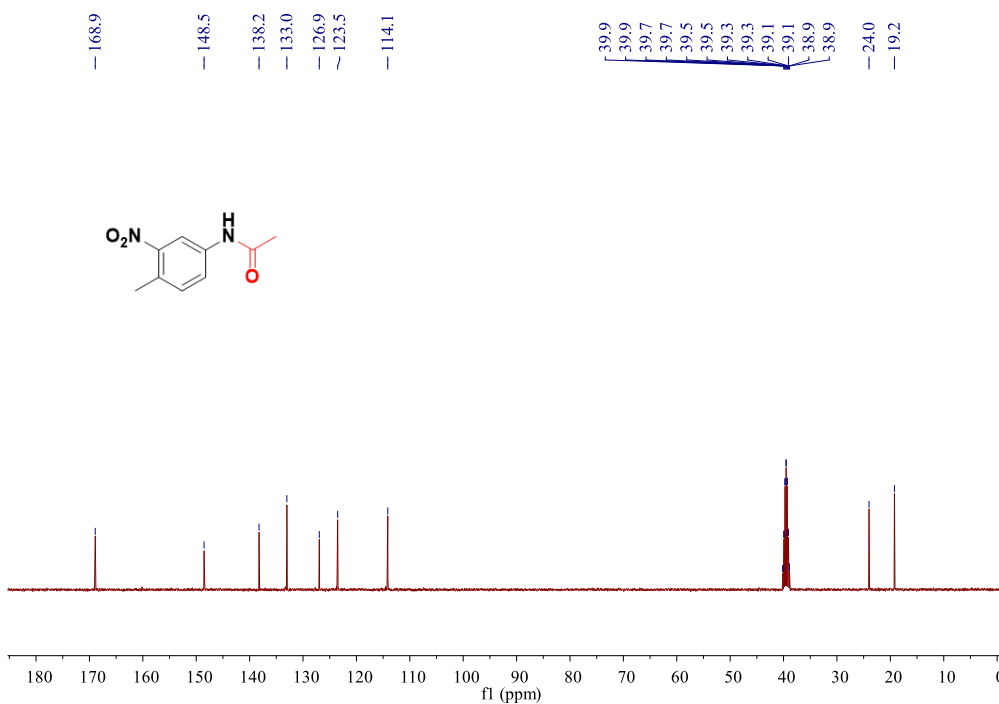
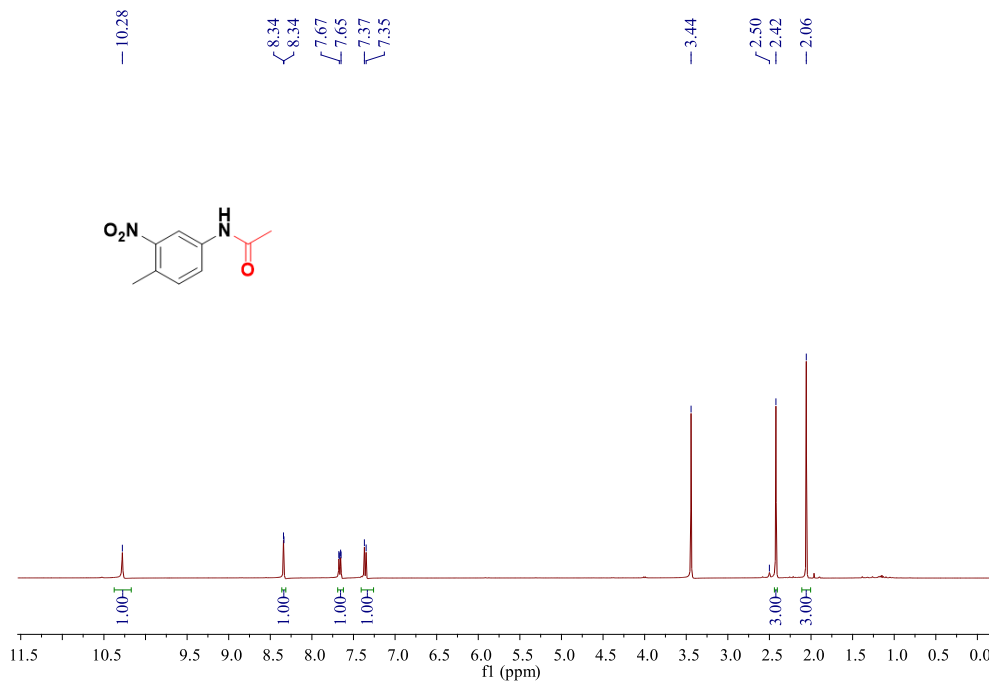
dichloromethane / ethyl acetate = 5:1, yellow solid, 80% yield (31.2 mg). mp: 113 – 115°C. **¹H NMR** (400 MHz, DMSO) δ 8.98 (s, 1H), 7.64 (d, *J* = 8.7 Hz, 1H), 6.59 (d, *J* = 2.6 Hz, 1H), 6.46 (dd, *J* = 8.7, 2.6 Hz, 1H), 3.79 (s, 3H), 3.73 (s, 3H), 2.02 (s, 3H). **¹³C NMR** (100 MHz, DMSO) δ 168.2, 156.7, 151.5, 123.9, 120.5, 104.0, 98.7, 55.6, 55.3, 23.5. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₀H₁₃NO₃+H⁺: 196.0968, Found: 196.0968. **IR** (neat, cm⁻¹): ν 3421, 1731, 1670, 1528, 1455, 137, 1247, 1049, 822, 760.

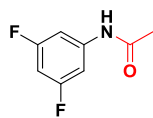




N-(4-Methyl-3-nitrophenyl)acetamide (5av)

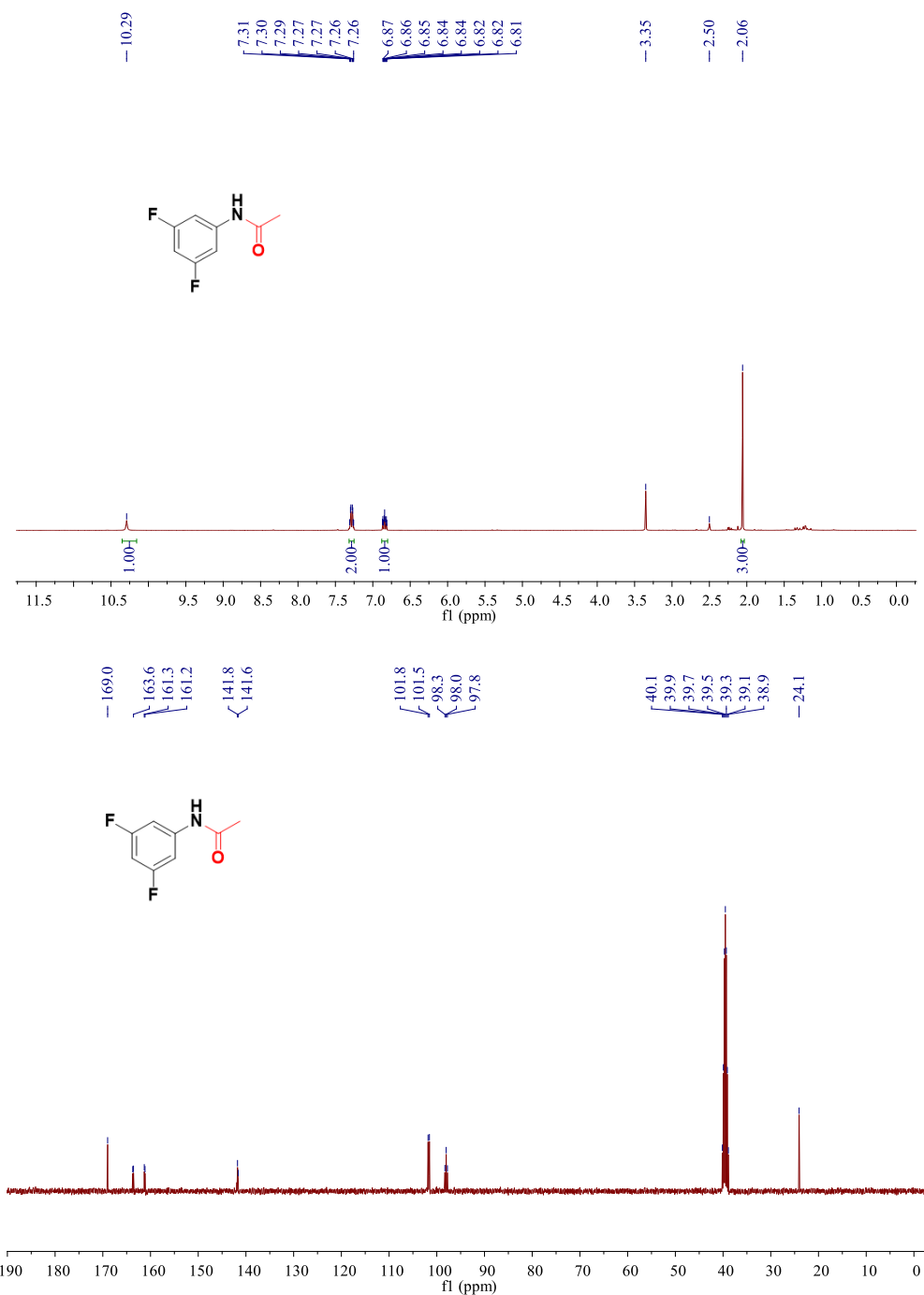
dichloromethane / ethyl acetate = 5:1, yellow solid, 78% yield (30.3 mg). mp: 141 – 143°C. ¹H NMR (400 MHz, DMSO) δ 10.28 (s, 1H), 8.34 (d, *J* = 2.2 Hz, 1H), 7.66 (dd, *J* = 8.4, 2.2 Hz, 1H), 7.36 (d, *J* = 8.4 Hz, 1H), 2.42 (s, 3H), 2.06 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.9, 148.5, 138.2, 133.0, 126.9, 123.5, 114.1, 24.0, 19.2. HRMS (ESI-TOF): Anal Calcd. For. C₉H₁₀N₂O₃+H⁺: 195.0764, Found: 195.0764. IR (neat, cm⁻¹): ν 3353, 1672, 1537, 1489, 1392, 1198, 990, 894, 758, 684.

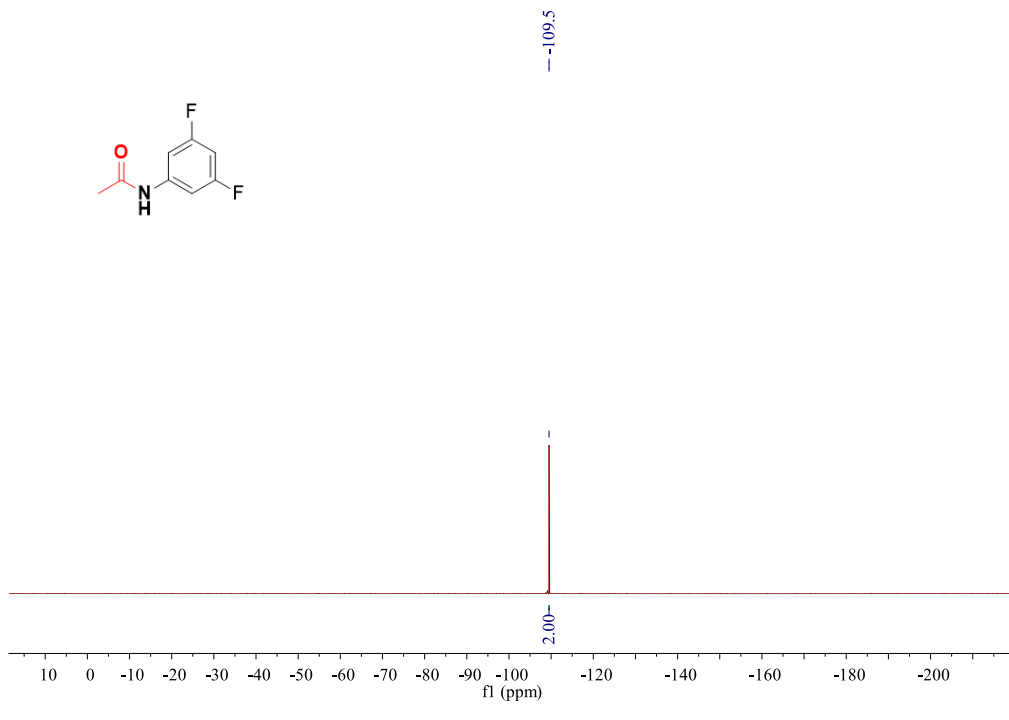


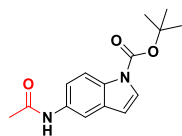


N-(3,5-Difluorophenyl)acetamide (5aw)

dichloromethane / ethyl acetate = 7:1, yellow solid, 97% yield (33.2 mg). mp: 125 – 127°C. ¹H NMR (400 MHz, DMSO) δ 10.29 (s, 1H), 7.31 – 7.26 (m, 2H), 6.87 – 6.81 (m, 1H), 2.06 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 169.0, 162.4 (dd, *J* = 242.8, 15.3 Hz), 141.7 (t, *J* = 14.0 Hz), 101.7 (d, *J* = 29.2 Hz), 98.0 (t, *J* = 26.2 Hz), 24.1. ¹⁹F NMR (377 MHz, DMSO) δ -109.5 (s, 2F). HRMS (ESI-TOF): Anal Calcd. For. C₈H₇F₂NO+H⁺: 172.0568, Found: 172.0568. IR (neat, cm⁻¹): ν 3450, 1700, 1653, 1500, 1051, 655.

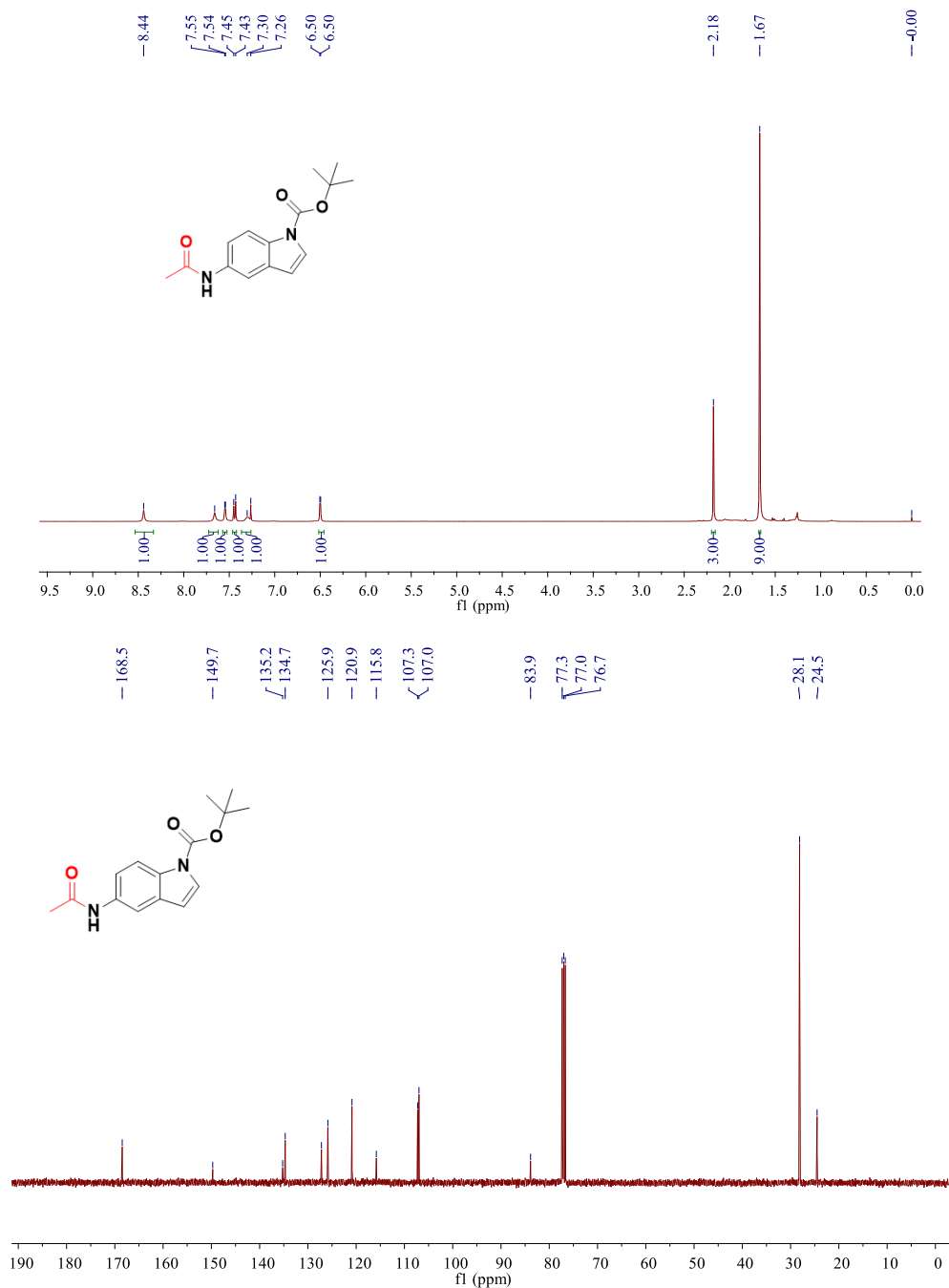


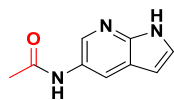




Tert-butyl 5-acetamido-1H-indole-1-carboxylate (5ax)

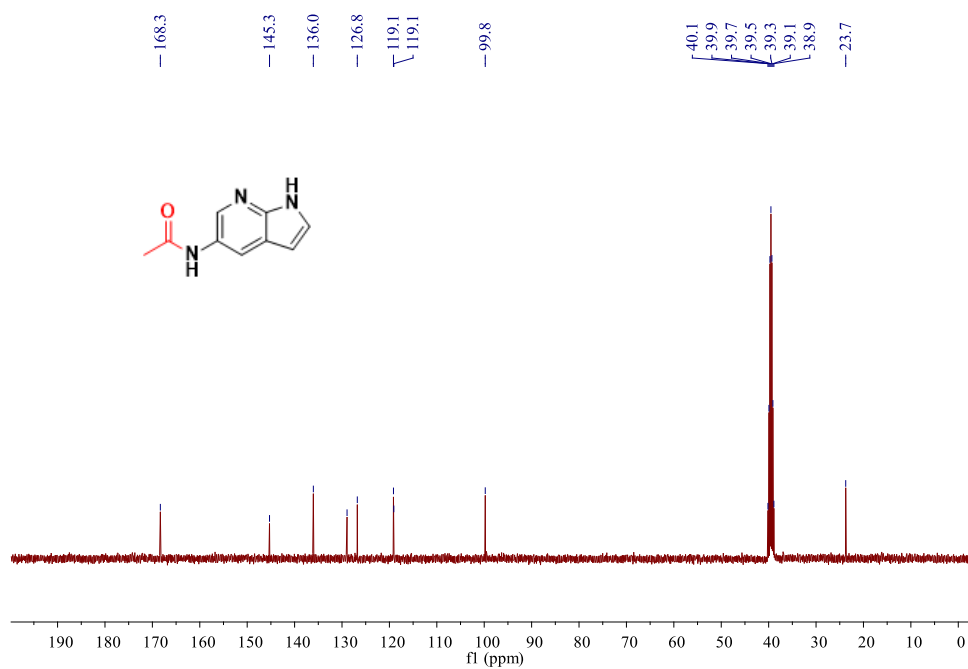
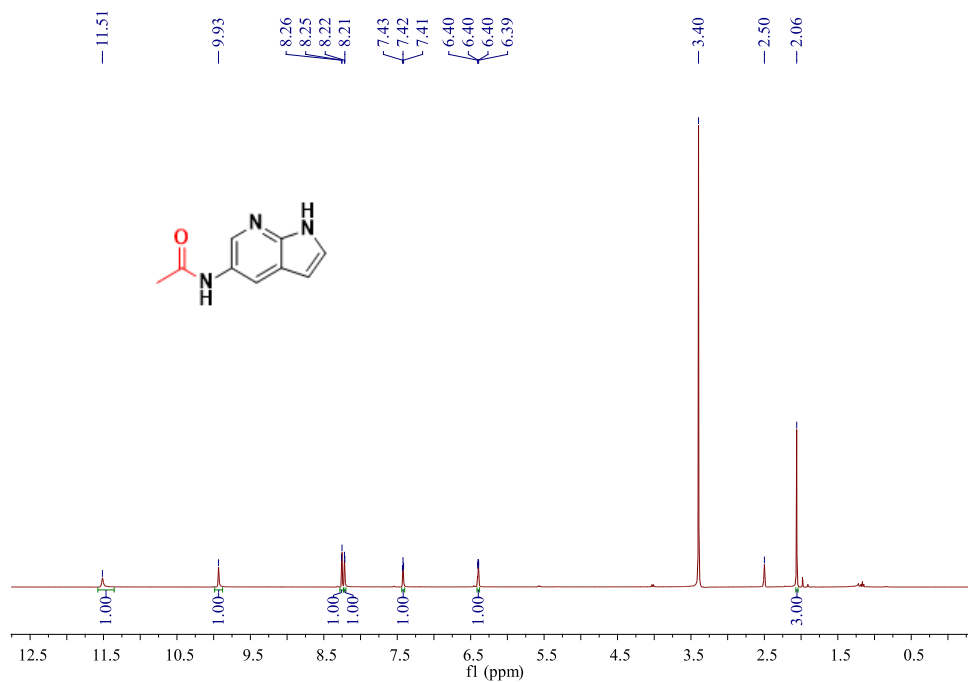
petroleum ether / ethyl acetate = 5:1, yellow oil, 57% yield (31.3 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.44 (s, 1H), 7.66 (s, 1H), 7.54 (d, $J = 3.5$ Hz, 1H), 7.44 (d, $J = 8.4$ Hz, 1H), 7.30 (s, 1H), 6.50 (d, $J = 3.5$ Hz, 1H), 2.18 (s, 3H), 1.67 (s, 9H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 168.5, 149.7, 135.2, 134.7, 127.2, 125.9, 120.9, 115.8, 107.3, 107.0, 83.9, 28.1, 24.5. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{15}\text{H}_{18}\text{N}_2\text{O}_3 + \text{H}^+$: 275.1390, Found: 275.1388. **IR** (neat, cm^{-1}): ν 3300, 2933, 1731, 1662, 1524, 1433, 1214, 1024, 906, 726, 647.

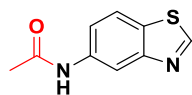




N-(1H-pyrrolo[2,3-b]pyridin-5-yl)acetamide (5ay)

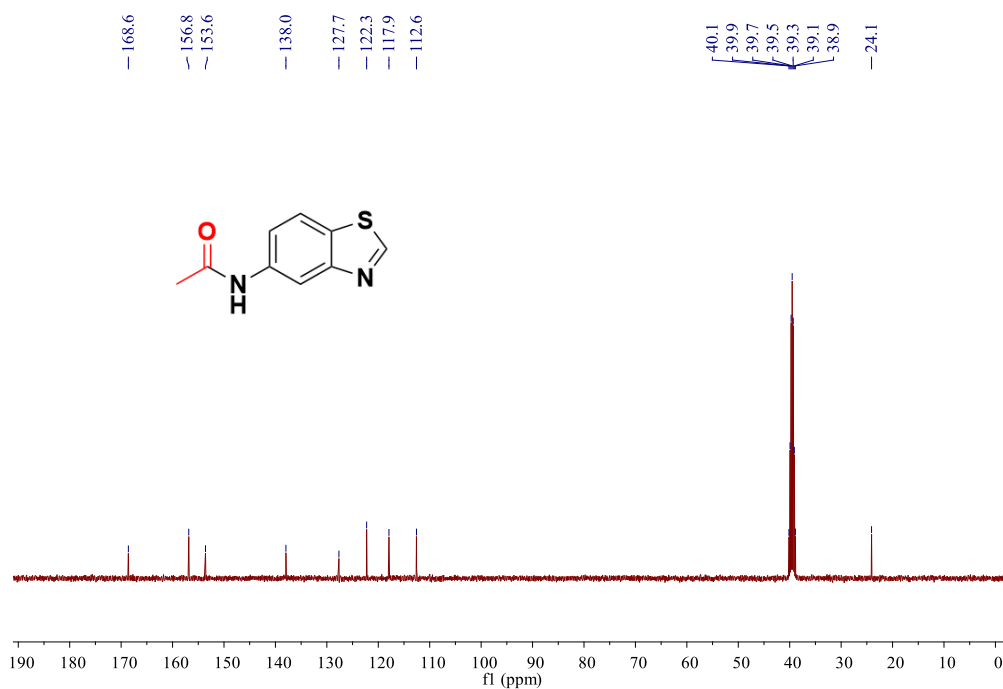
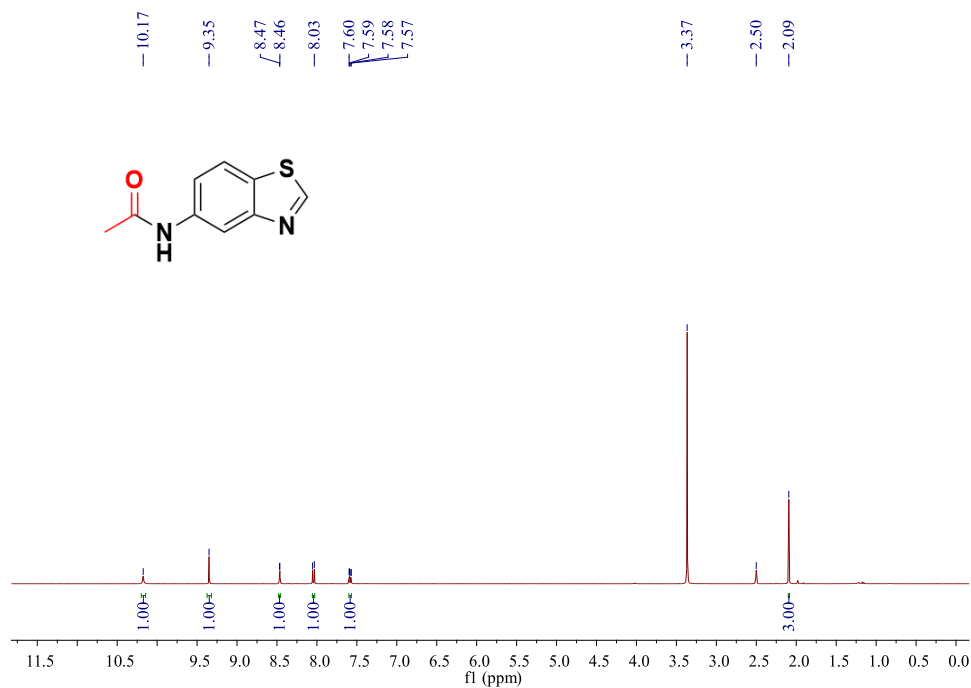
petroleum ether / ethyl acetate = 1:1, yellow oil, 55% yield (19.2 mg). **¹H NMR** (400 MHz, DMSO) δ 11.51 (s, 1H), 9.93 (s, 1H), 8.25 (d, $J = 2.3$ Hz, 1H), 8.22 (d, $J = 2.3$ Hz, 1H), 7.43 – 7.31 (m, 1H), 6.40 (dd, $J = 3.4, 1.9$ Hz, 1H), 2.06 (s, 3H). **¹³C NMR** (100 MHz, DMSO) δ 168.3, 145.3, 136.0, 126.8, 119.1, 119.1, 99.8, 23.7. **HRMS** (ESI-TOF): Anal Calcd. For. C₉H₉N₃O+H⁺: 176.0818, Found: 176.0817. **IR** (neat, cm⁻¹): ν 3415, 2922, 1620, 1548, 1210, 1005, 745.

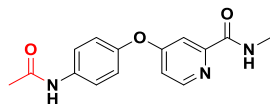




N-(Benzo[d]thiazol-5-yl)acetamide (5az)

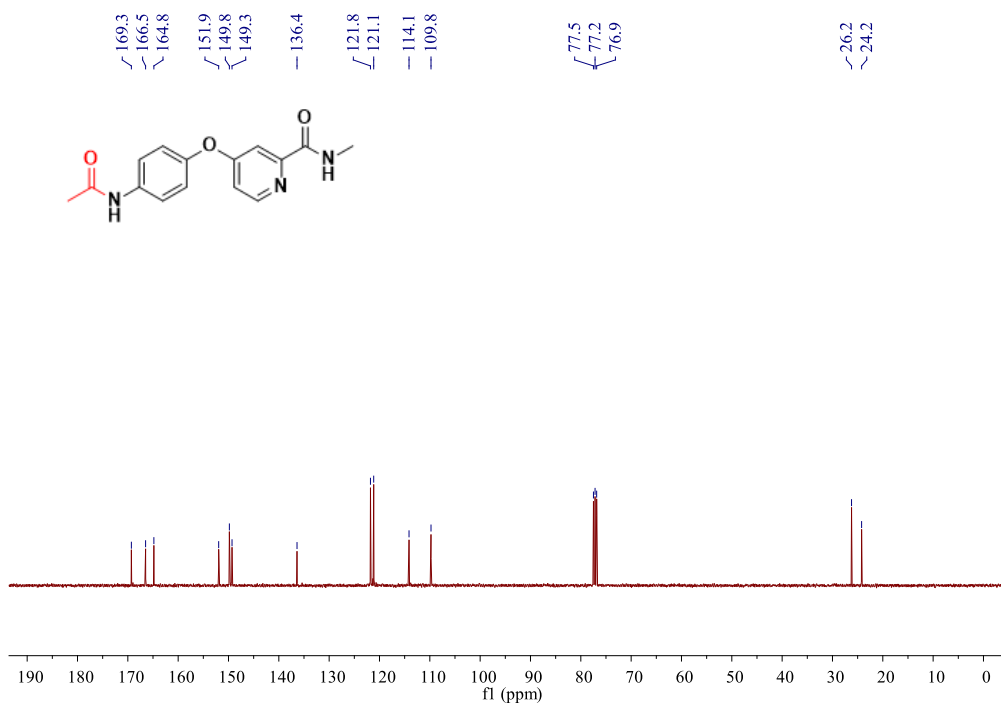
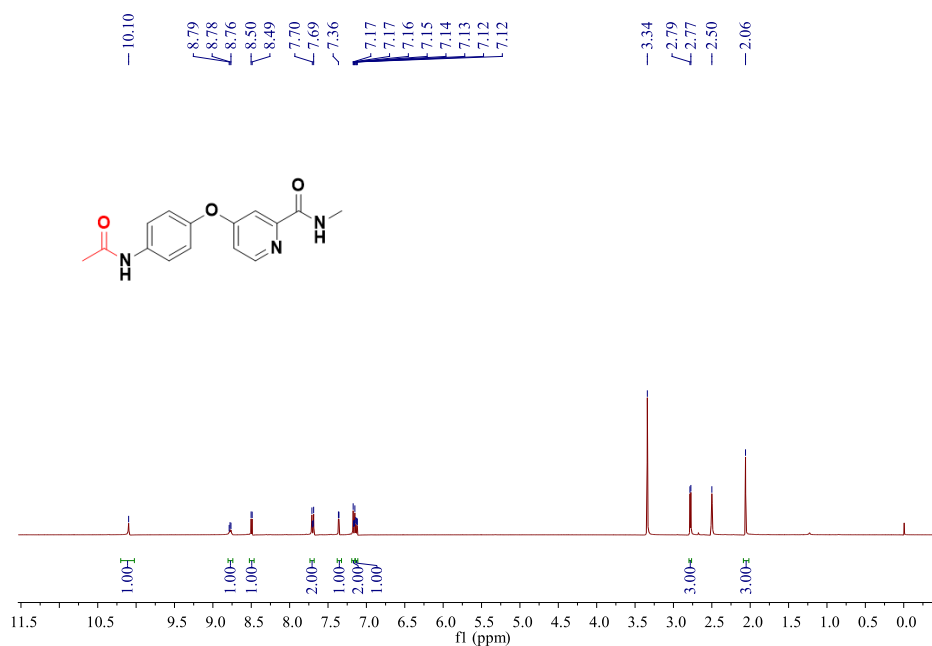
petroleum ether / ethyl acetate = 1:1, yellow solid, 63% yield (24.0 mg). mp: 185 – 187°C. ¹H NMR (400 MHz, DMSO) δ 10.17 (s, 1H), 9.35 (s, 1H), 8.47 (d, *J* = 1.9 Hz, 1H), 8.03 (d, *J* = 8.7 Hz, 1H), 7.58 (dd, *J* = 8.7, 1.9 Hz, 1H), 2.09 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.6, 156.8, 153.6, 138.0, 127.7, 122.3, 117.9, 112.6, 24.1. HRMS (ESI-TOF): Anal Calcd. For. C₉H₈N₂OS+H⁺: 193.0430, Found: 193.0430. IR (neat, cm⁻¹): ν 3414, 1731, 1665, 1526, 1444, 1374, 1247, 1023, 823, 760.

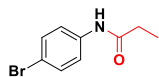




4-(4-Acetamidobenzyl)-*N*-methylpicolinamide (5ba)

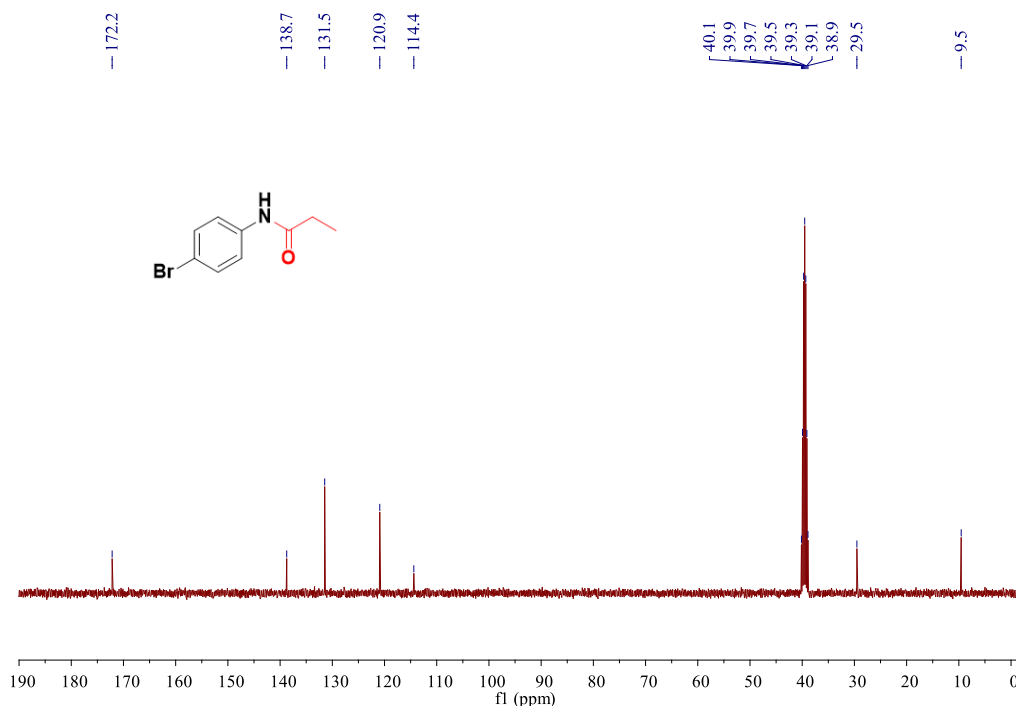
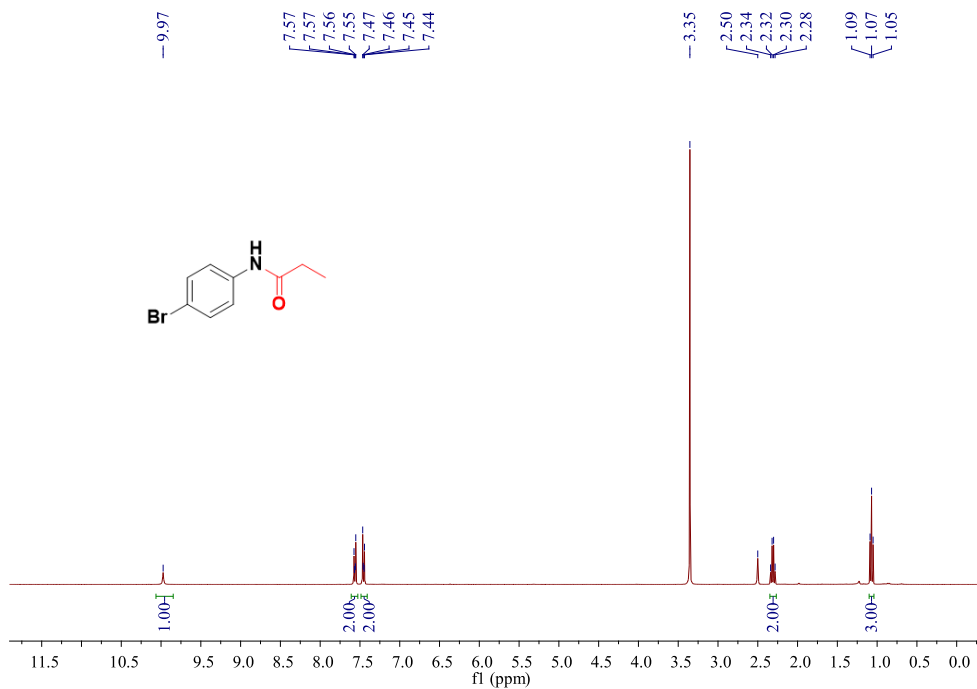
ethyl acetate, yellow oil, 64% yield (36.5 mg). $^1\text{H NMR}$ (400 MHz, DMSO) δ 10.10 (s, 1H), 8.79 – 8.76 (m, 1H), 8.50-8.49 (m, 1H), 7.70 – 7.69 (m, 2H), 7.36 (d, $J = 0.6$ Hz, 1H), 7.17 – 7.15 (m, 2H), 7.14 – 7.12 (m, 1H), 2.78 (d, $J = 4.9$ Hz, 3H), 2.06 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 169.3, 166.5, 164.8, 151.9, 149.8, 149.3, 136.4, 121.8, 121.1, 114.1, 109.8, 26.2, 24.2. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{15}\text{H}_{15}\text{N}_3\text{O}_3+\text{H}^+$: 286.1186, Found: 286.1184. **IR** (neat, cm^{-1}): ν 3354, 2921, 1672, 1538, 1454, 1369, 1254, 1065, 894, 758, 685.





***N*-(4-Bromophenyl)-*N*-methylpropionamide (5bb)**

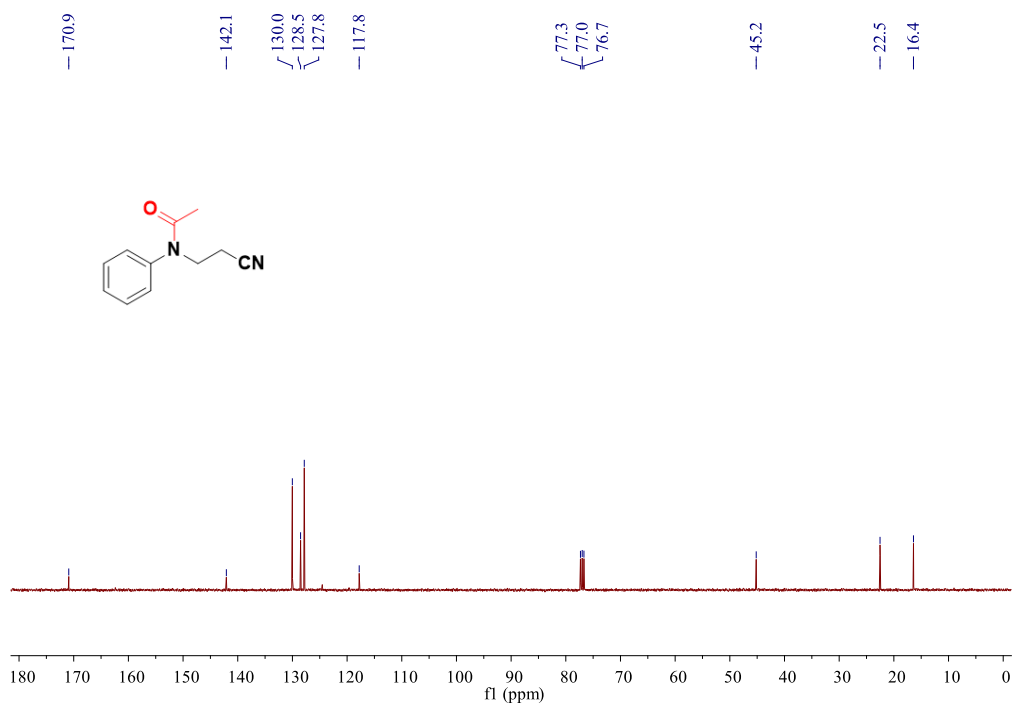
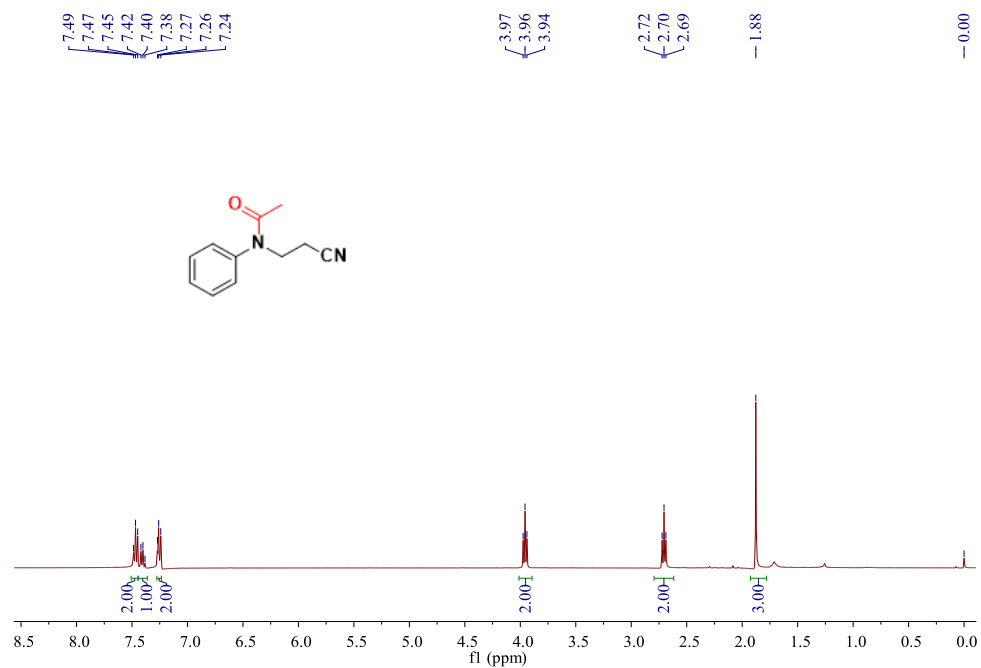
petroleum ether / ethyl acetate = 5:1, yellow liquid, 65% yield (31.5 mg). $^1\text{H NMR}$ (400 MHz, DMSO) δ 9.97 (s, 1H), 7.57 – 7.55 (m, 2H), 7.47 – 7.44 (m, 2H), 2.31 (q, $J = 7.5$ Hz, 2H), 1.07 (t, $J = 7.5$ Hz, 3H). $^{13}\text{C NMR}$ (100 MHz, DMSO) δ 172.2, 138.7, 131.5, 120.9, 114.4, 29.5, 9.5. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_9\text{H}_{10}^{79}\text{BrNO}+\text{H}^+$: 228.0019, Found: 228.0014; $\text{C}_9\text{H}_{10}^{81}\text{BrNO}+\text{Na}^+$: 229.9998, Found: 229.9994. **IR** (neat, cm^{-1}): ν 3298, 2977, 1661, 1603, 1590, 1487, 921, 726, 682.

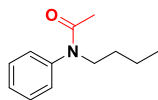




***N*-(2-Cyanoethyl)-*N*-phenylacetamide (5bc)**

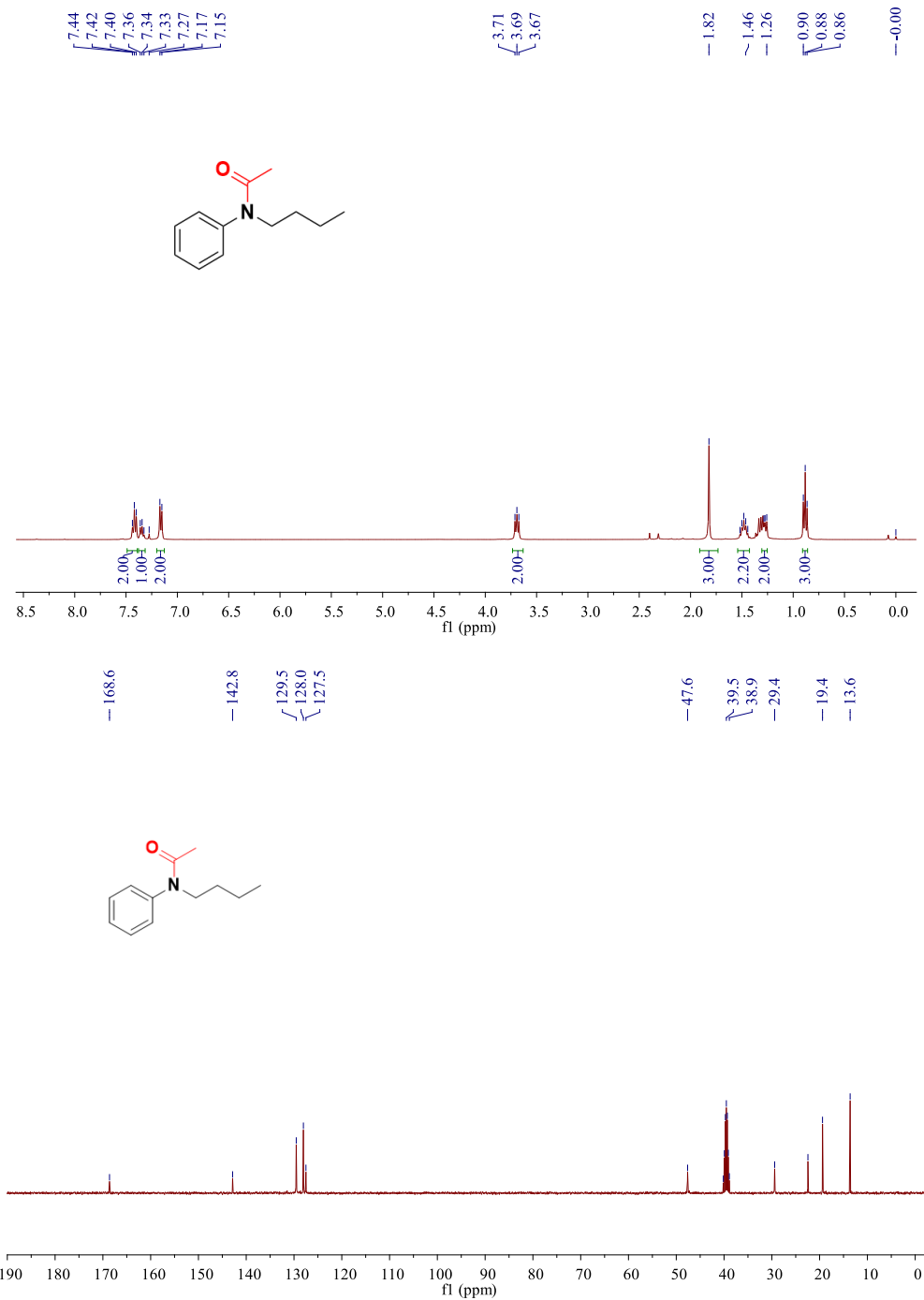
petroleum ether / ethyl acetate =2:1, light yellow oil, 45% yield (16.9 mg). ¹H NMR (400 MHz, CDCl₃) δ 7.47 (t, *J* = 7.5 Hz, 2H), 7.40 (t, *J* = 7.5 Hz, 1H), 7.27 – 7.24 (m, 2H), 3.96 (t, *J* = 6.8 Hz, 2H), 2.70 (t, *J* = 6.8 Hz, 2H), 1.88 (s, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 170.9, 142.1, 130.0, 128.5, 127.8, 117.8, 45.2, 22.5, 16.4. HRMS (ESI-TOF): Anal Calcd. For. C₁₁H₁₂N₂O+H⁺: 189.1022, Found: 189.1020. IR (neat, cm⁻¹): ν 2934, 2251, 1655, 1596, 1494, 1395, 1202, 1025, 908, 726, 646.

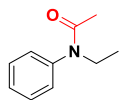




***N*-Butyl-*N*-phenylacetamide (5bd)**

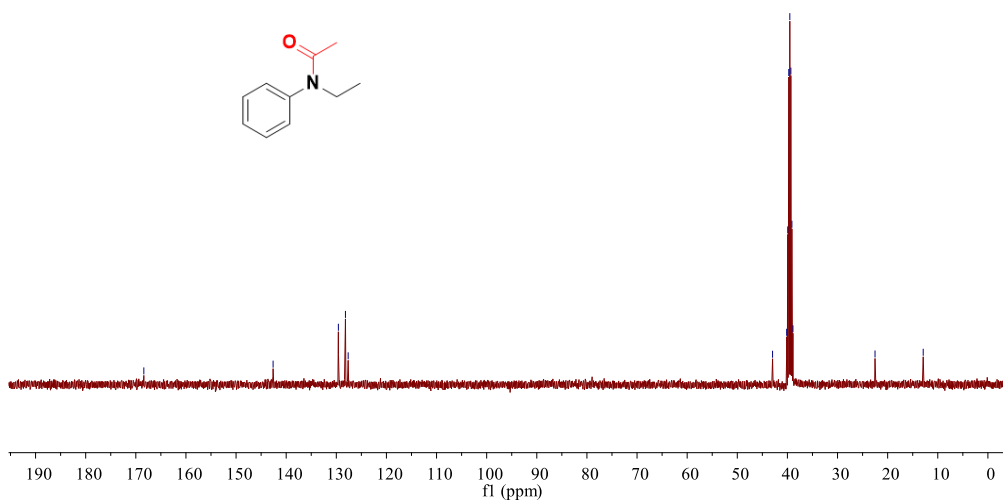
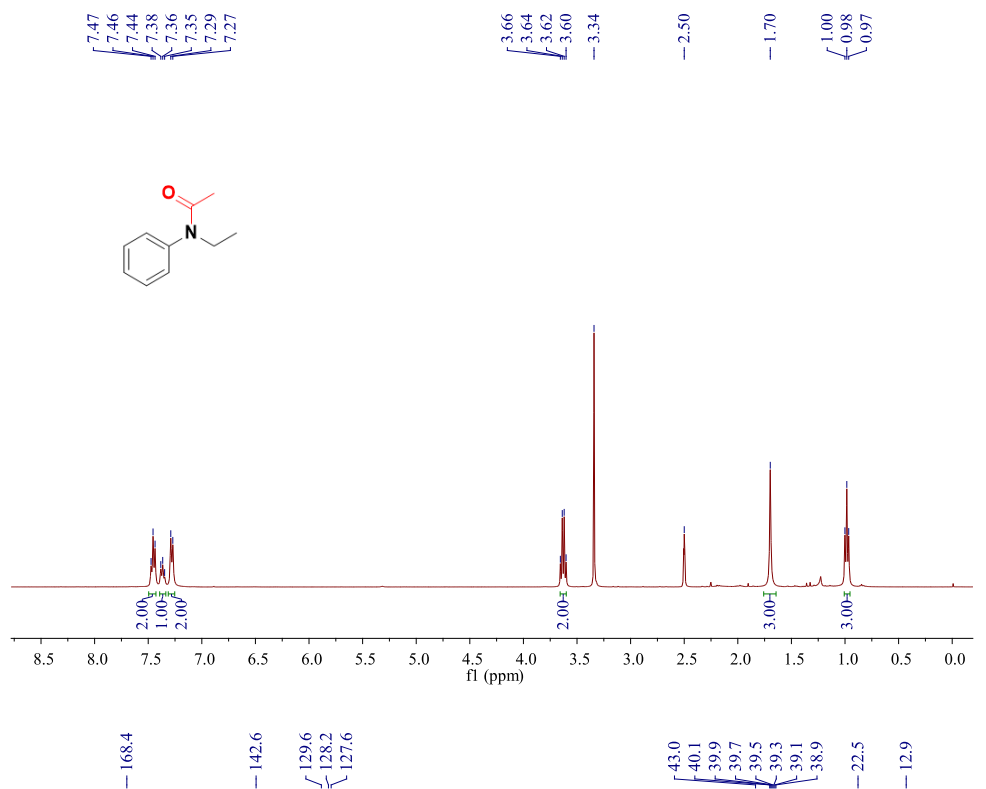
dichloromethane / ethyl acetate = 1:1, yellow oil, 70% yield (26.7 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.44 – 7.40 (m, 2H), 7.36 – 7.33 (m, 1H), 7.17 – 7.15 (m, 1H), 3.71 – 3.67 (m, 2H), 1.82 (s, 3H), 1.52 – 1.44 (m, 2H), 1.29 – 1.26 (m, 2H), 0.88 (t, $J = 7.3$ Hz, 2H). $^{13}\text{C NMR}$ (100 MHz, DMSO) δ 168.6, 142.8, 129.5, 128.0, 127.5, 47.6, 29.4, 22.5, 19.4, 13.6. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{12}\text{H}_{17}\text{NO}+\text{H}^+$: 192.1383, Found: 192.1380. **IR** (neat, cm^{-1}): ν 2956, 1649, 1516, 1455, 1383, 1261, 1083, 908, 826, 732.

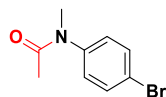




N-Ethyl-N-phenylacetamide (5be)

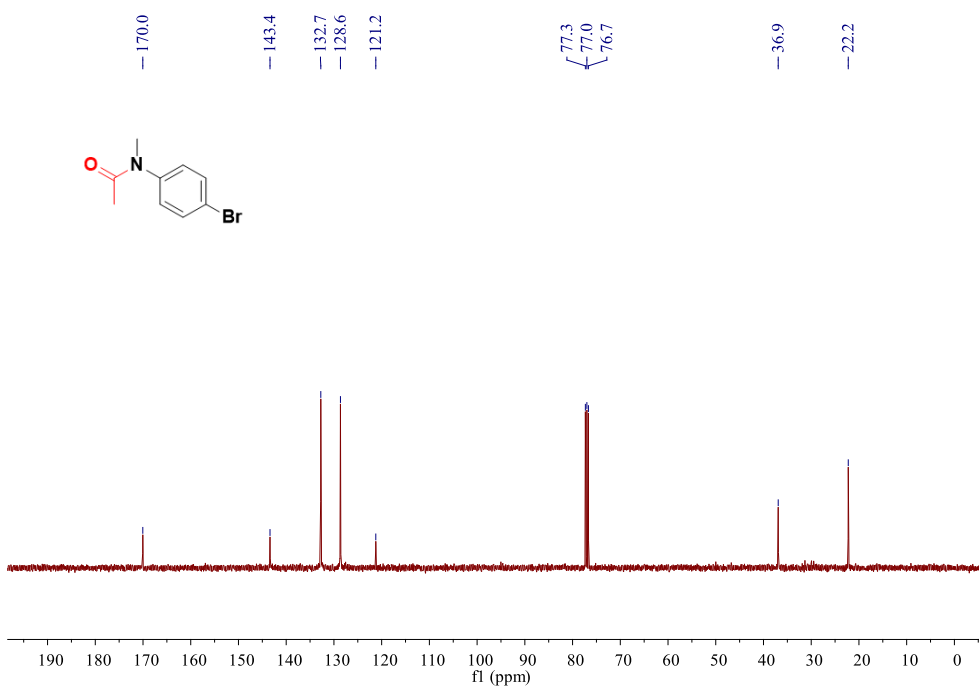
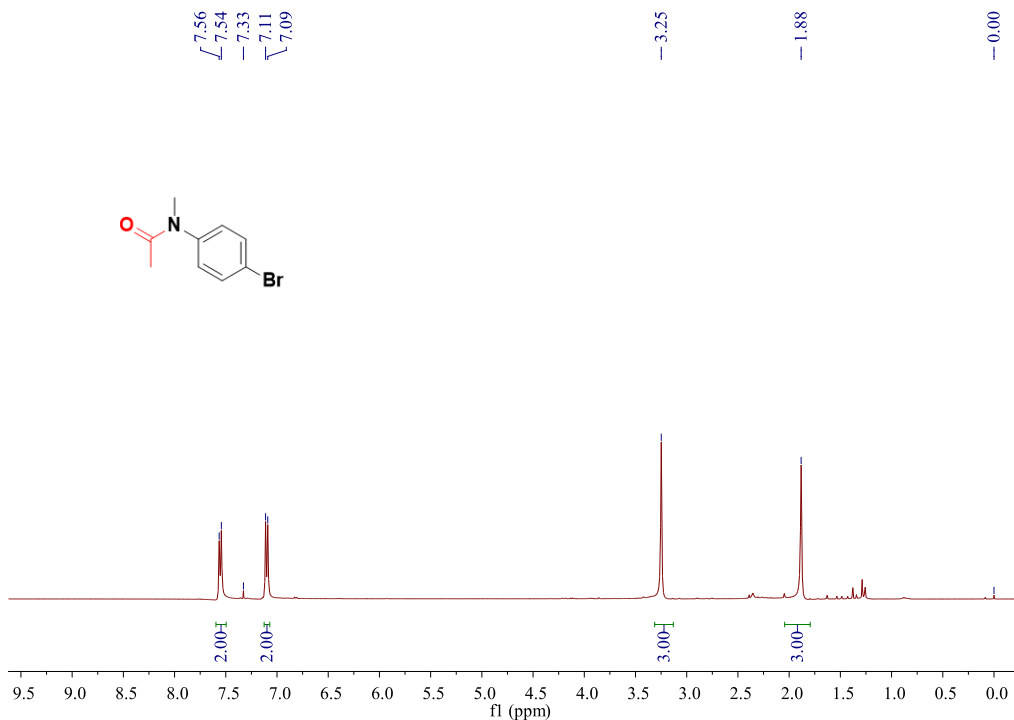
dichloromethane / ethyl acetate = 1:1, yellow solid, 73% yield (23.7 mg). mp: 48 – 50°C. ¹H NMR (400 MHz, DMSO) δ 7.47 – 7.44 (m, 2H), 7.38 – 7.35 (m, 1H), 7.29 – 7.27 (m, 1H), 3.63 (q, *J* = 7.1 Hz, 2H), 1.70 (s, 3H), 0.98 (t, *J* = 7.1 Hz, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.4, 142.61, 129.6, 128.2, 127.6, 43.0, 22.5, 12.9. HRMS (ESI-TOF): Anal Calcd. For. C₁₀H₁₃NO+H⁺: 164.1070, Found: 164.1068. IR (neat, cm⁻¹): ν 3368, 2932, 1640, 1594, 1496, 1300, 1259, 1046, 990, 826, 765.

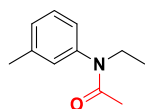




***N*-(4-bromophenyl)-*N*-methylacetamide (5bf)**

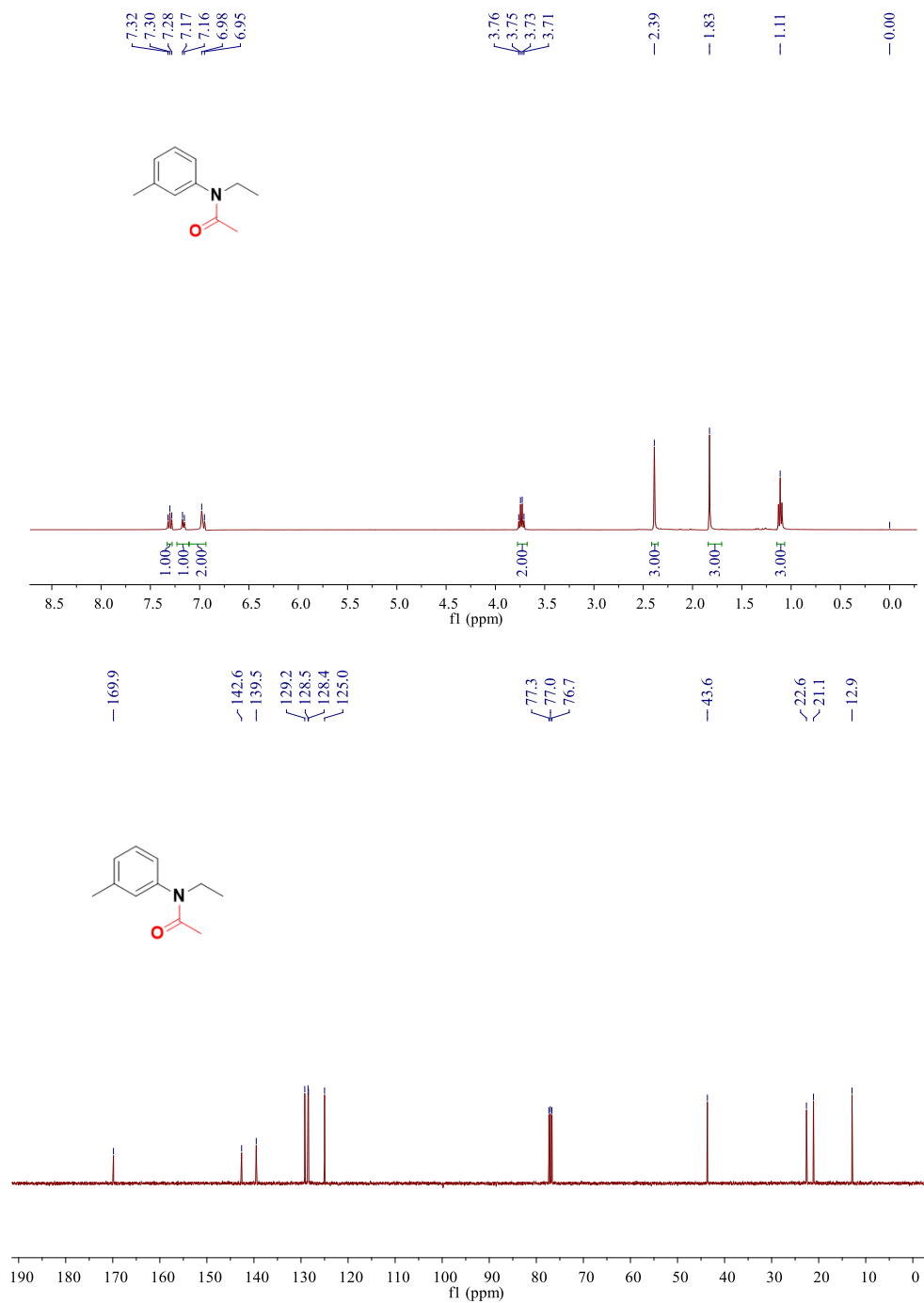
petroleum ether / ethyl acetate = 2:1, yellow solid, 80% yield (36.5 mg). mp: 95 – 97°C. ¹H NMR (400 MHz, CDCl₃) δ 7.55 (d, *J* = 8.4 Hz, 2H), 7.10 (d, *J* = 8.4 Hz, 2H), 3.25 (s, 3H), 1.88 (s, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 170.0, 143.4, 132.7, 128.6, 121.2, 36.9, 22.2. HRMS (ESI-TOF): Anal Calcd. For. C₉H₁₀⁷⁹BrNO+H⁺: 228.0019, Found: 228.0014; C₉H₁₀⁸¹BrNO+H⁺: 229.9998, Found: 229.9994. IR (neat, cm⁻¹): ν 3395, 3060, 2932, 1649, 1587, 1484, 1371, 1179, 1084, 837, 722, 643.

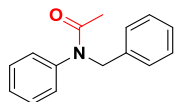




N-Ethyl-N-(m-tolyl)acetamide (5bg)

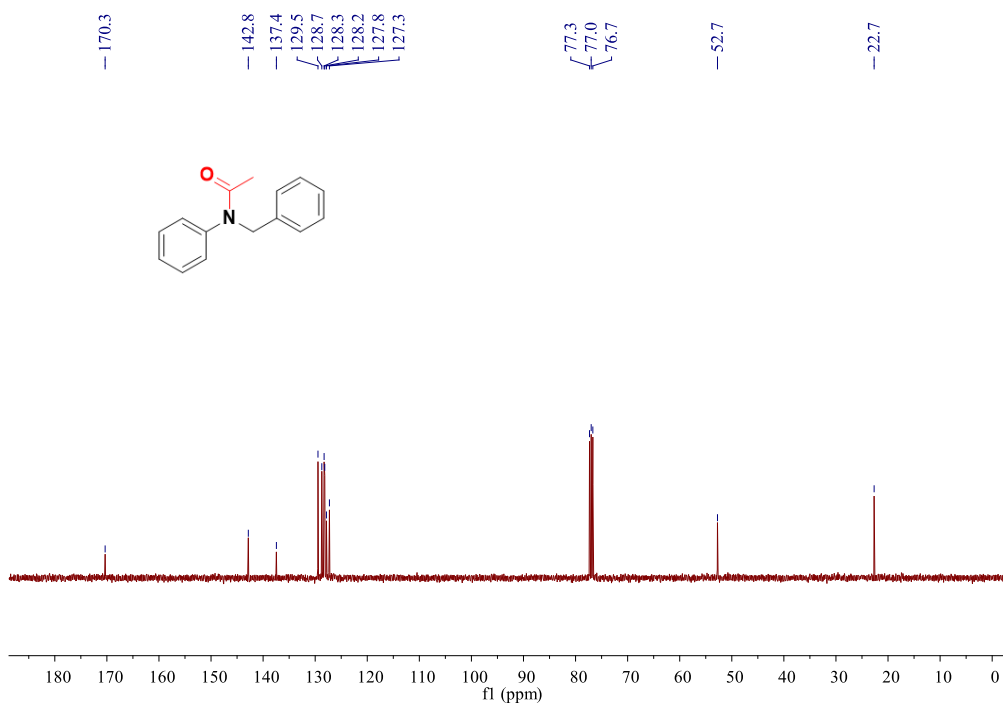
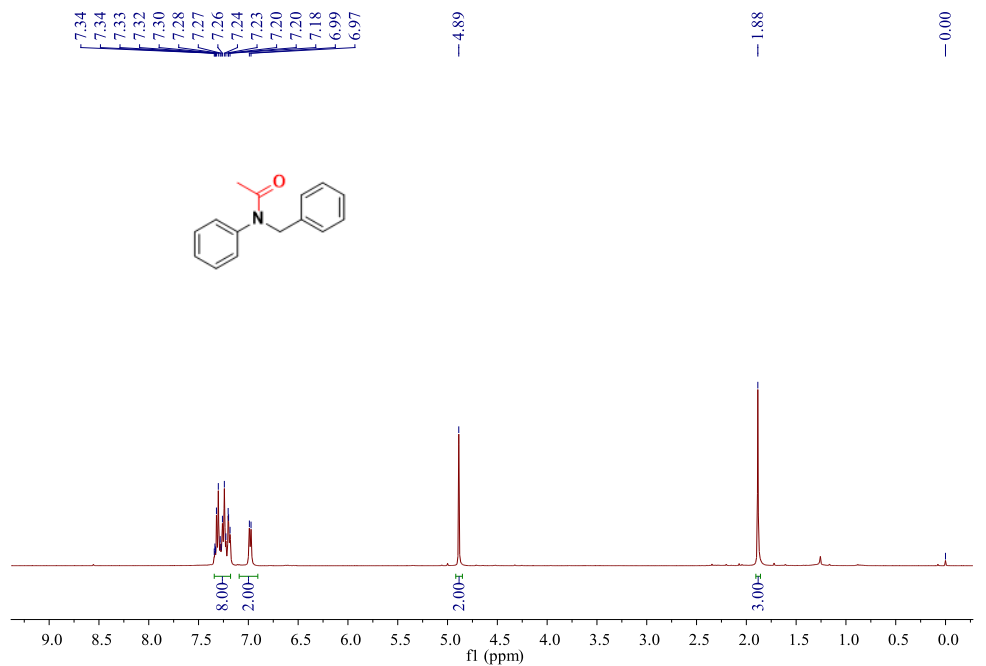
petroleum ether / ethyl acetate = 5:1, yellow oil, 70% yield (24.6 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.30 (t, $J = 7.6$ Hz, 1H), 7.16 (d, $J = 7.6$ Hz, 1H), 6.98 – 6.95 (m, 2H), 3.74 (q, $J = 7.2$ Hz, 2H), 2.39 (s, 3H), 1.83 (s, 3H), 1.11 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 169.9, 142.6, 139.5, 129.2, 128.5, 128.4, 125.0, 43.6, 22.6, 21.1, 12.9. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{11}\text{H}_{15}\text{NO}+\text{H}^+$: 178.1226, Found: 178.1223. **IR** (neat, cm^{-1}): ν 3481, 2974, 2874, 1653, 1586, 1445, 1395, 1299, 1192, 838, 706, 626.

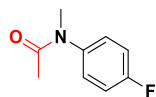




***N*-Benzyl-*N*-phenylacetamide (5bh)**

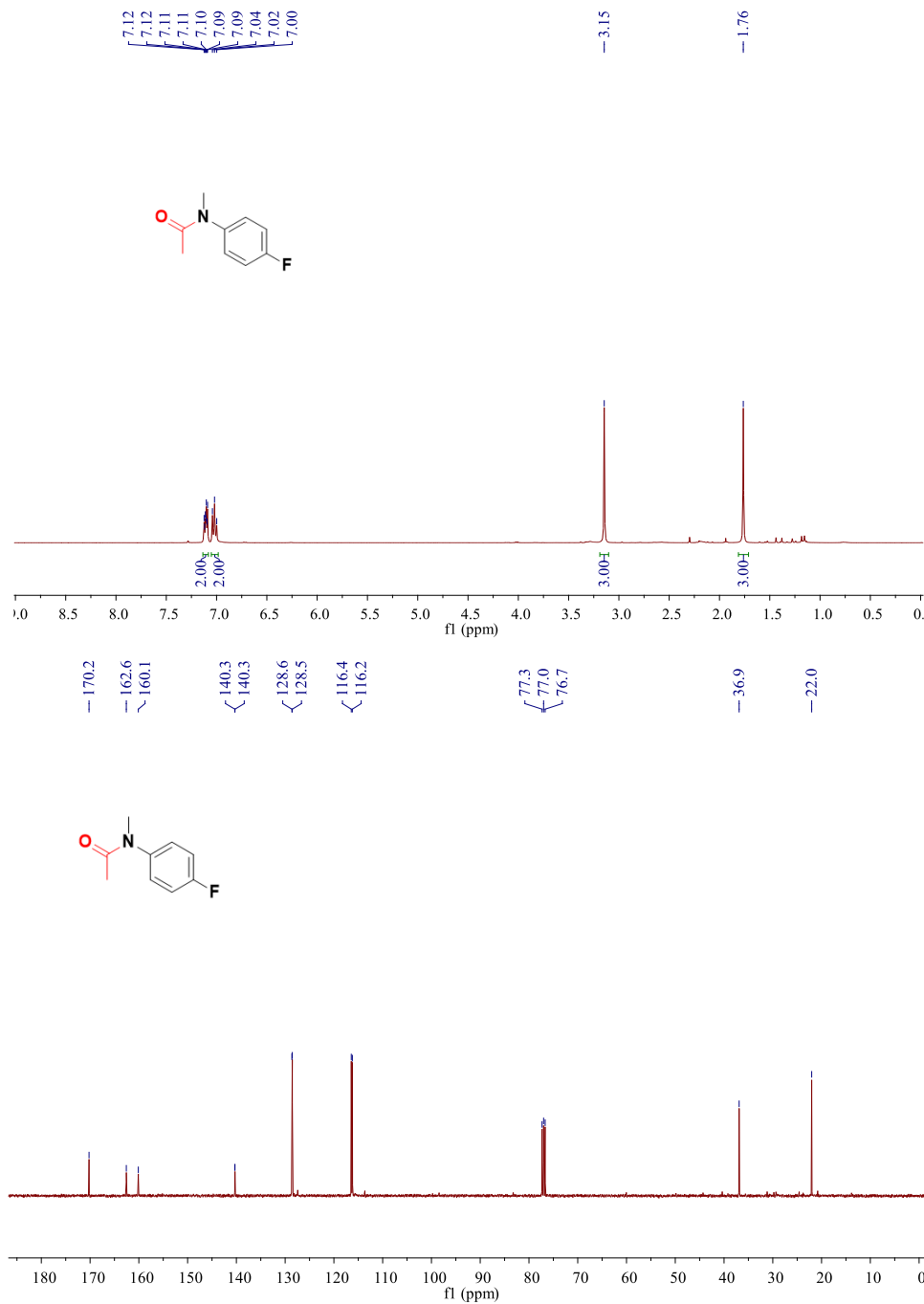
petroleum ether / ethyl acetate = 1:1, yellow solid, 69% yield (31.0 mg). mp: 55 – 57°C. ¹H NMR (400 MHz, CDCl₃) δ 7.34 – 7.18 (m, 8H), 6.99 – 6.97 (m, 2H), 4.89 (s, 2H), 1.88 (s, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 170.3, 142.8, 137.4, 129.5, 128.7, 128.3, 128.2, 127.8, 127.3, 52.7, 22.7. HRMS (ESI-TOF): Anal Calcd. For. C₁₅H₁₅NO+H⁺: 226.1226, Found:226.1222. IR (neat, cm⁻¹): ν 2931, 1650, 1596, 1496, 1397, 1212, 1029, 906, 726, 647.

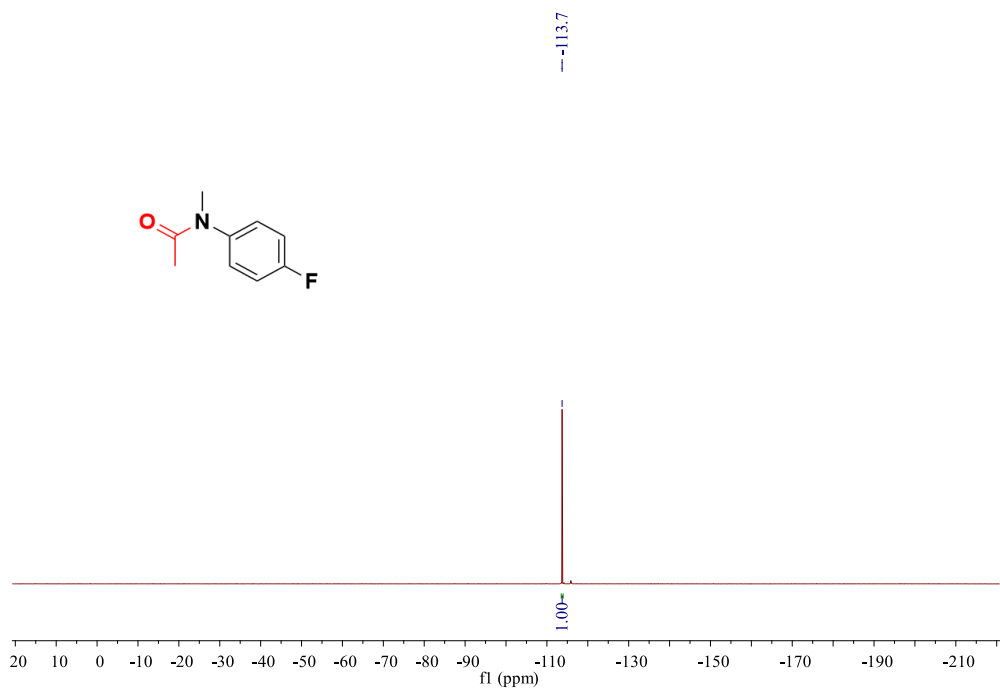


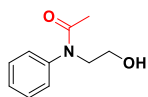


***N*-(4-Fluorophenyl)-*N*-methylacetamide (Sbi)**

petroleum ether / ethyl acetate = 2:1, yellow solid, 74% yield (25.5 mg). mp: 60 – 63°C. ¹H NMR (400 MHz, CDCl₃) δ 7.12 – 7.09 (m, 2H), 7.04 – 7.00 (m, 2H), 3.15 (s, 3H), 1.76 (s, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 170.2, 161.3 (d, *J* = 247.7 Hz), 140.3 (d, *J* = 3.2 Hz), 128.6 (d, *J* = 8.6 Hz), 116.3 (d, *J* = 22.7 Hz), 36.9, 22.0. ¹⁹F NMR (377 MHz, CDCl₃) δ -113.7. HRMS (ESI-TOF): Anal Calcd. For. C₉H₁₀FNO+H⁺: 168.0819, Found: 168.0817. IR (neat, cm⁻¹): ν 2934, 1767, 1652, 1509, 1423, 1354, 1222, 910, 726, 645.

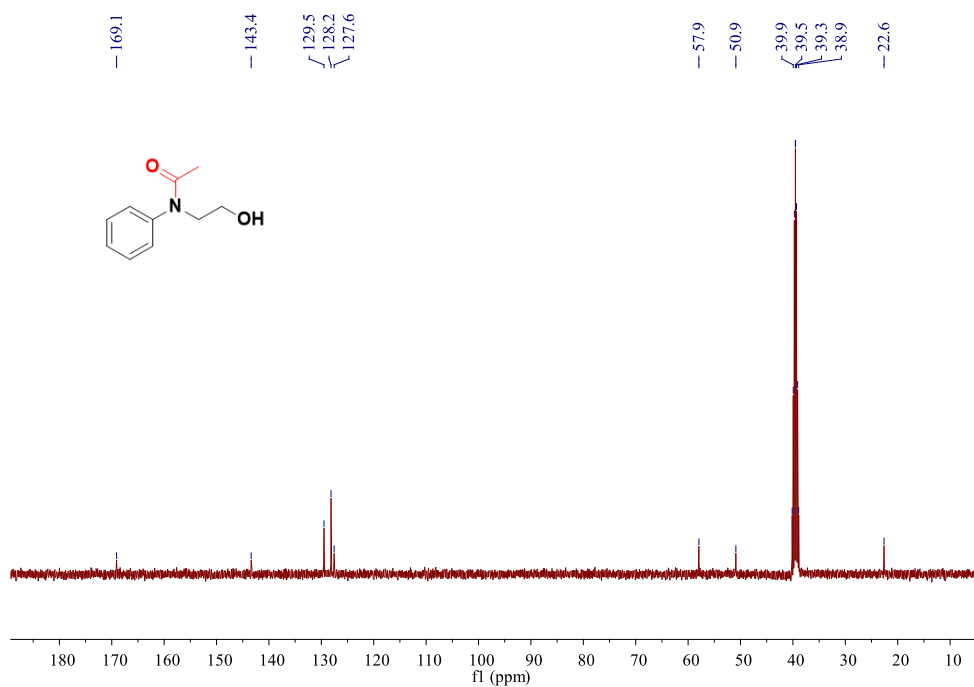
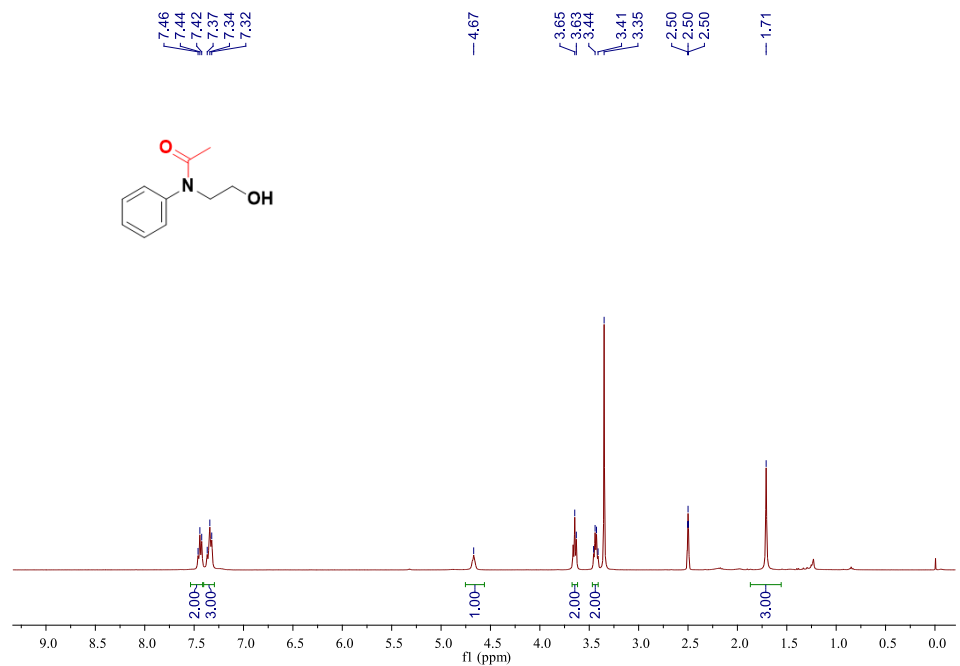


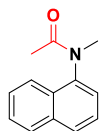




N-(2-Hydroxyethyl)-N-phenylacetamide (5bj)

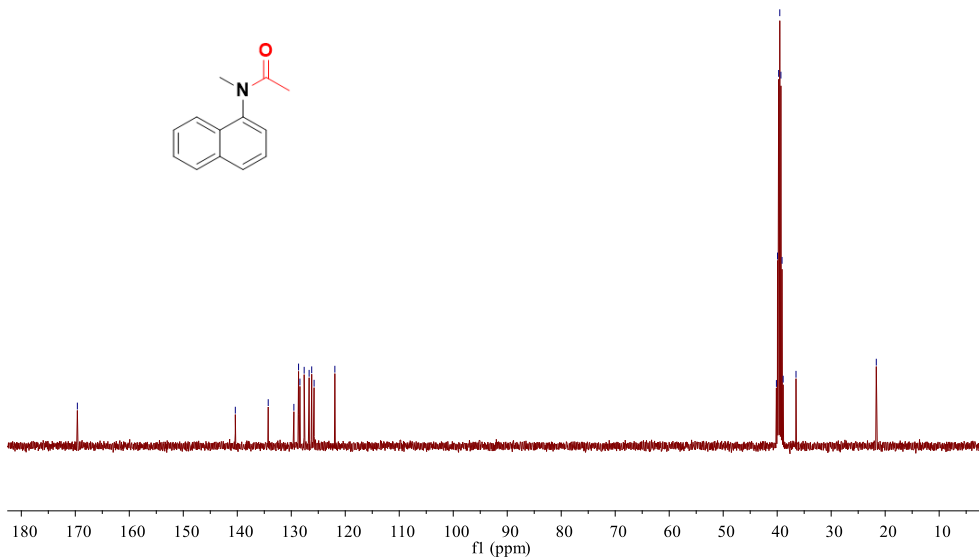
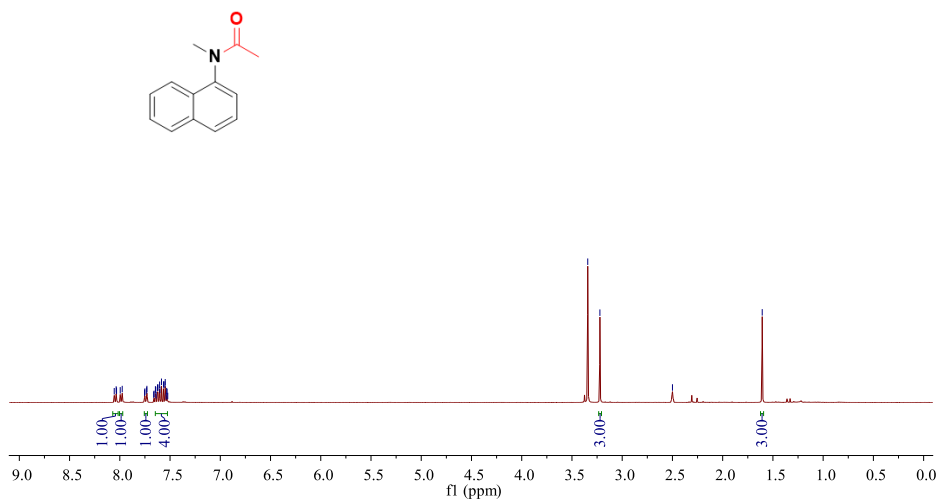
dichloromethane / ethyl acetate = 1:1, yellow solid, 63% yield (22.5 mg). mp: 59 – 61°C. ¹H NMR (400 MHz, DMSO) δ 7.46 – 7.42 (m, 2H), 7.37 – 7.32 (m, 3H), 4.67 (s, 1H), 3.65 (t, *J* = 6.5 Hz, 2H), 3.43 (dd, *J* = 11.9, 6.5 Hz, 2H), 1.71 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 169.1, 143.4, 129.5, 128.2, 127.6, 57.9, 50.9, 22.6. HRMS (ESI-TOF): Anal Calcd. For. C₁₀H₁₃NO₂+H⁺: 180.1019, Found: 180.1016. IR (neat, cm⁻¹): ν 3384, 3063, 2927, 2878, 1716, 1630, 1593, 1494, 1397, 1279, 996, 852, 733.

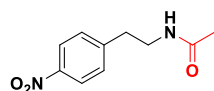




***N*-Methyl-*N*-(naphthalen-1-yl)acetamide (5bk)**

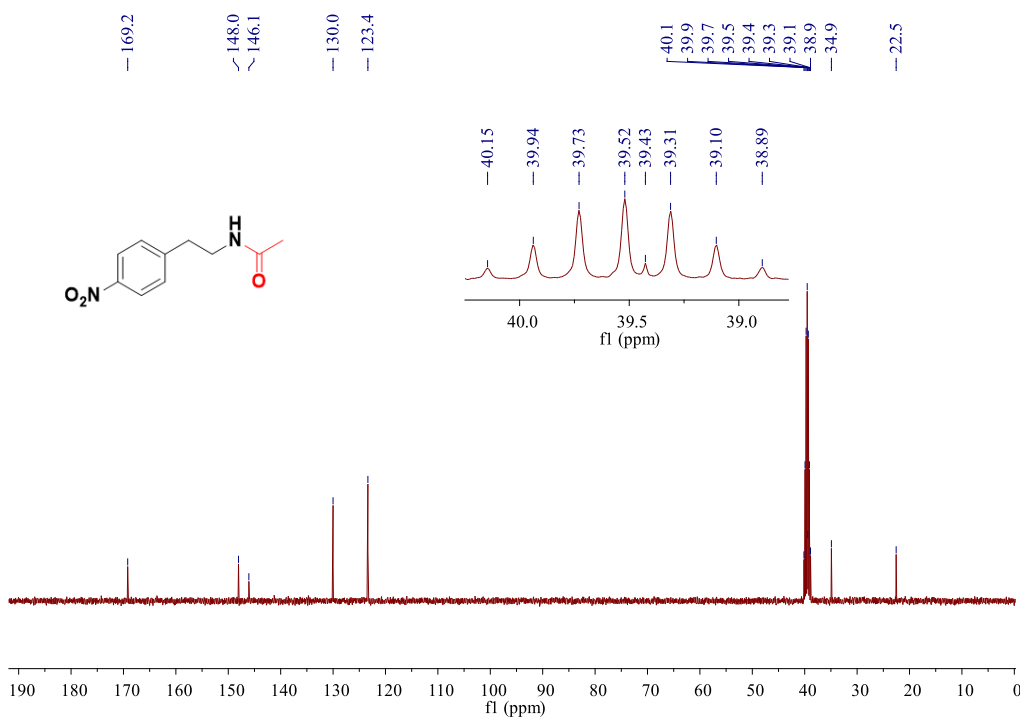
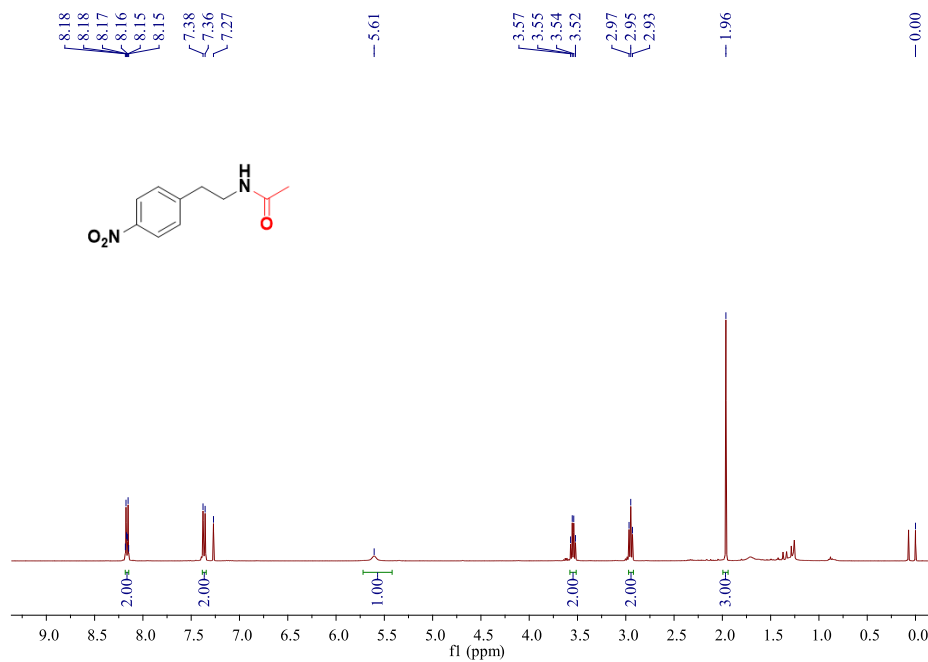
petroleum ether / ethyl acetate = 2:1, yellow solid, 52% yield (20.5 mg). mp: 90 – 93°C. ¹H NMR (400 MHz, DMSO) δ 8.06 – 8.03 (m, 1H), 8.00 – 7.98 (m, 1H), 7.75 – 7.73 (m, 1H), 7.66-7.52 (m, 4H), 3.22 (s, 3H), 1.61 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 169.6, 140.4, 134.3, 129.5, 128.4, 127.6, 126.7, 126.2, 125.8, 121.9, 36.5, 21.6. HRMS (ESI-TOF): Anal Calcd. For. C₁₃H₁₃NO+H⁺: 200.1070, Found: 200.1067. IR (neat, cm⁻¹): ν 1652, 1541, 1488, 1379, 823, 761, 626.

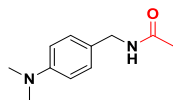




***N*-(4-Nitrophenethyl)acetamide (5bl)**

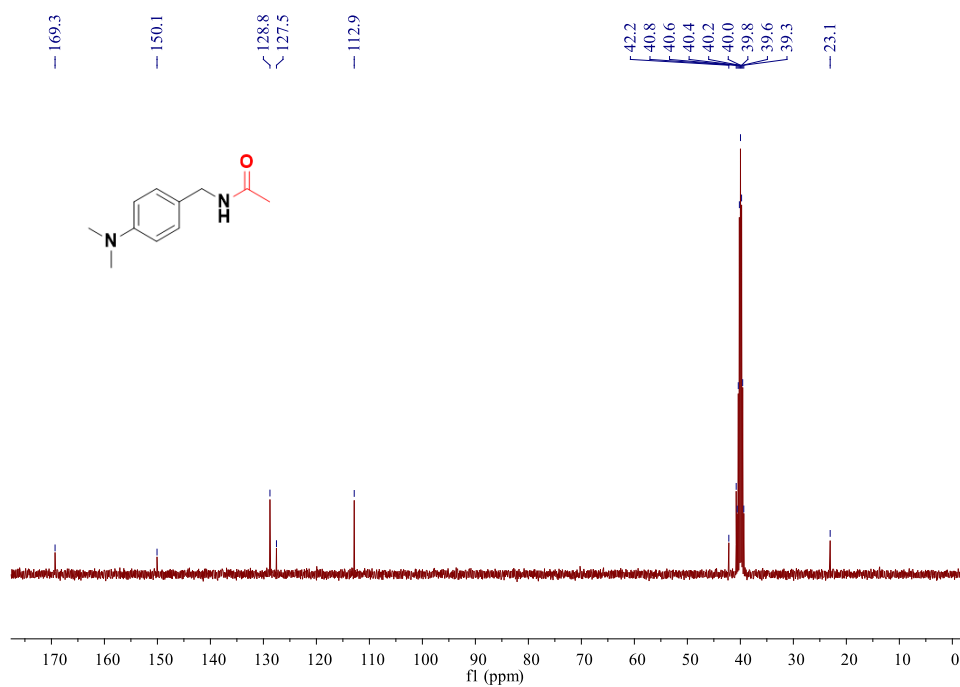
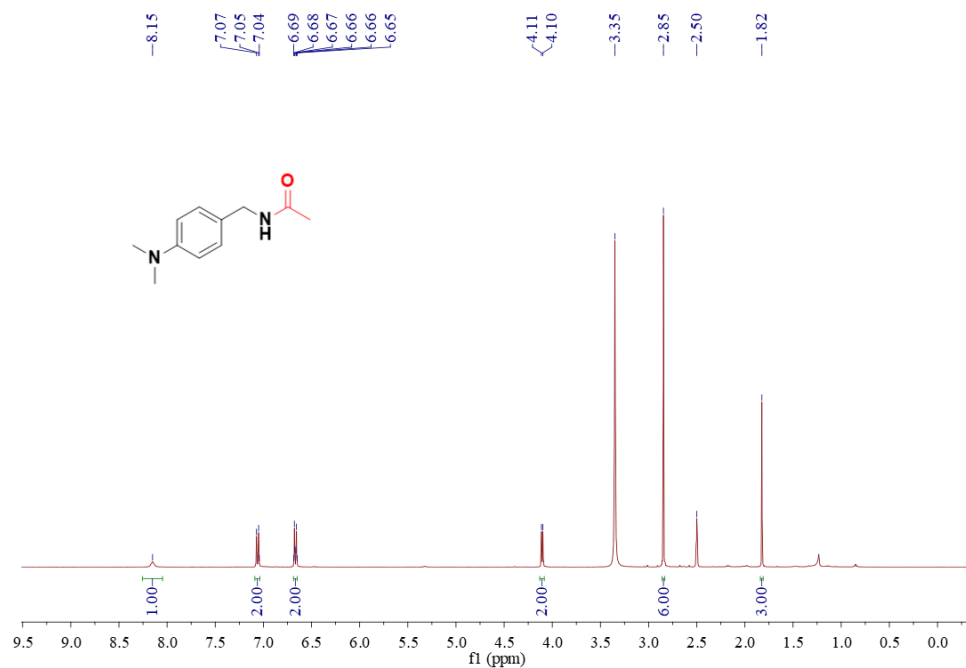
ethyl acetate, dark red oil, 55% yield (33.2 mg). ¹H NMR (400 MHz, CDCl₃) δ 8.18 – 8.15 (m, 2H), 7.38 – 7.27 (m, 2H), 5.61 (s, 1H), 3.55 (dd, *J* = 13.2, 6.9 Hz, 2H), 2.95 (t, *J* = 6.9 Hz, 2H), 1.96 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 169.2, 148.1, 146.1, 130.0, 123.4, 34.9, 22.5. HRMS (ESI-TOF): Anal Calcd. For. C₁₀H₁₂N₂O₃+Na⁺: 231.0740, Found: 231.0737. IR (neat, cm⁻¹): ν 3299, 2854, 1711, 1661, 1516, 1344, 1256, 855, 746, 697.

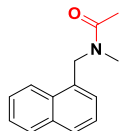




***N*-4-(Dimethylamino)benzylacetamide (5bm)**

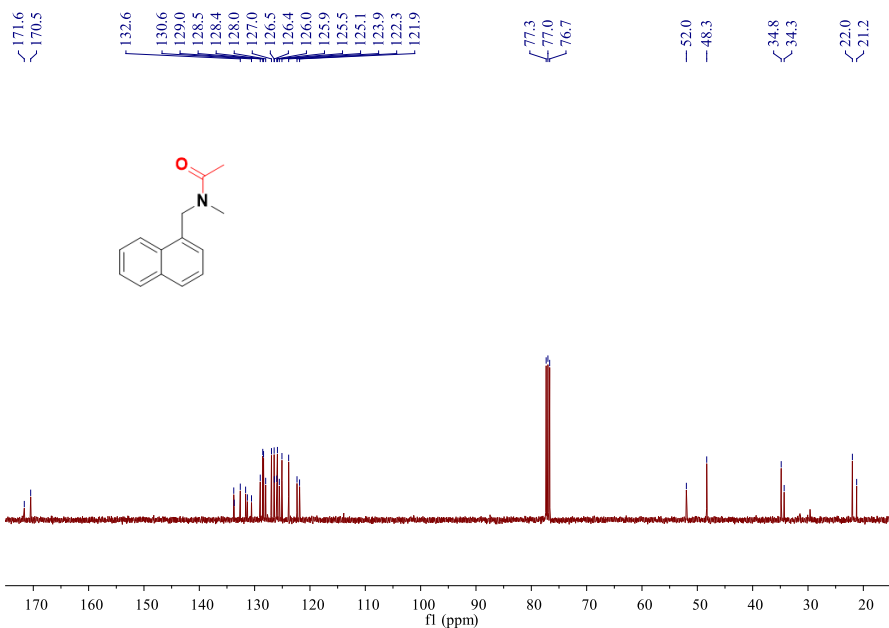
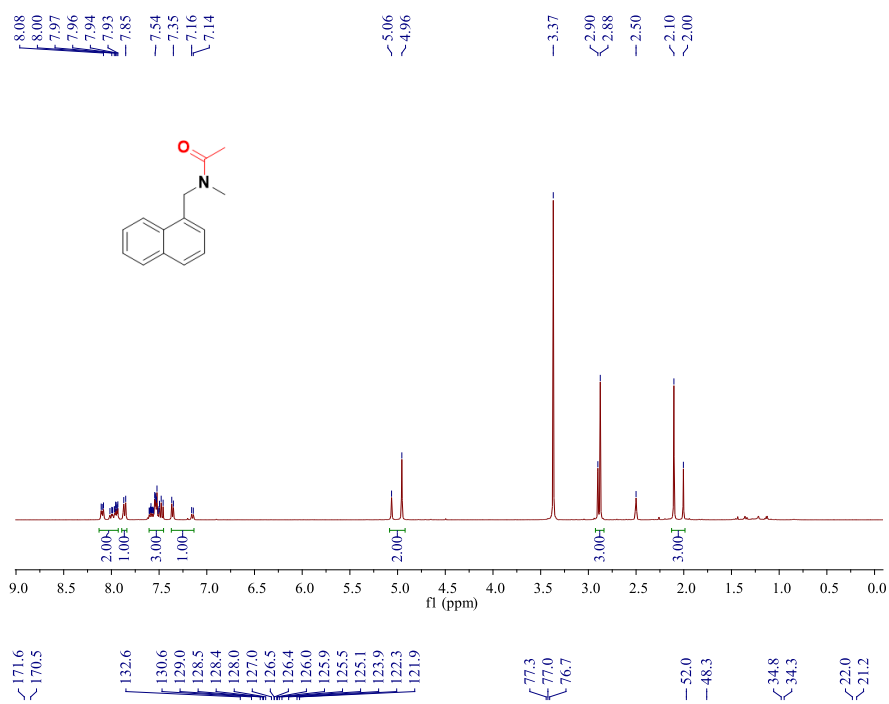
petroleum ether / ethyl acetate = 2:1, yellow oil, 55% yield (21.1 mg). ¹H NMR (400 MHz, DMSO) δ 8.15 (s, 1H), 7.07 – 7.04 (m, 2H), 6.69 – 6.65 (m, 2H), 4.11 (d, *J* = 5.8 Hz, 2H), 2.85 (s, 6H), 1.82 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 169.3, 150.1, 128.8, 127.5, 112.9, 42.2, 40.8, 40.6, 40.4, 40.2, 40.0, 39.8, 39.6, 39.3, 23.1. HRMS (ESI-TOF): Anal Calcd. For. C₁₁H₁₆N₂O+H⁺: 193.1335, Found: 193.1333. IR (neat, cm⁻¹): ν 3393, 2958, 1652, 1541, 1457, 1362, 1229, 1048, 993, 824, 762, 628.

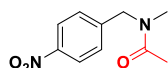




***N*-Methyl-*N*-(naphthalen-1-ylmethyl)acetamide (5bn)**

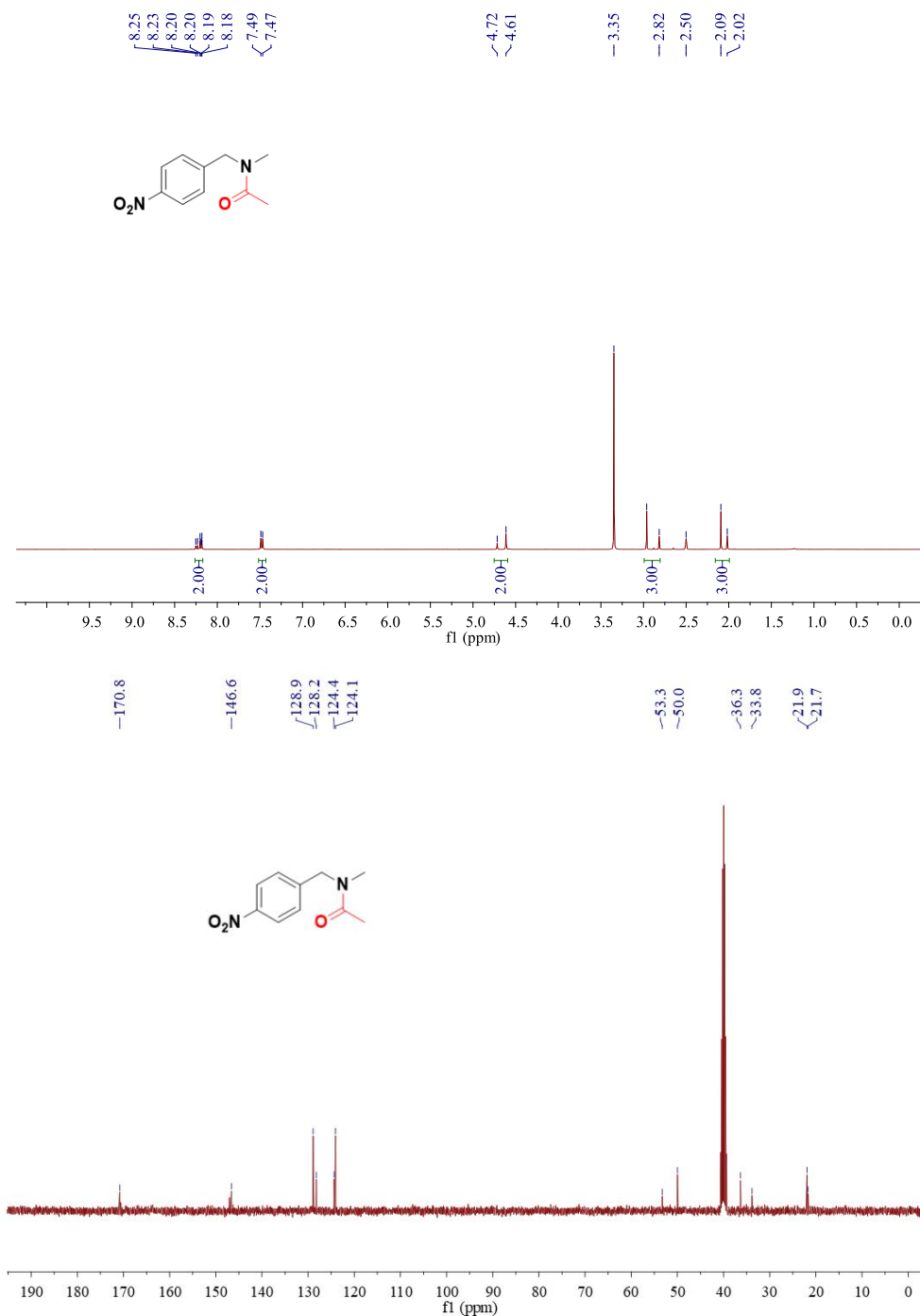
dichloromethane / ethyl acetate = 10:1, yellow oil, 50% yield (20.9 mg). **¹H NMR** (400 MHz, DMSO) δ 8.11 – 7.93 (m, 2H), 7.86 (d, *J* = 8.2 Hz, 1H), 7.59 – 7.46 (m, 3H), 7.37 – 7.14 (m, 1H), 5.06 (minor isomer, s, 2H), 4.96 (major isomer, s, 3H), 2.90 (minor isomer, s, 3H), 2.90 (minor isomer, s, 3H), 2.10 (major isomer, s, 3H), 2.00 (minor isomer, s, 3H). **¹³C NMR** (100 MHz, CDCl₃) δ 171.6, 170.5, 133.8, 133.7, 132.6, 131.6, 131.3, 130.6, 129.0, 128.5, 128.4, 128.0, 127.0, 126.5, 126.4, 126.0, 125.9, 125.5, 125.1, 123.9, 122.3, 121.9, 52.0, 48.3, 34.8, 34.3, 22.0, 21.2. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₄H₁₅NO+H⁺: 214.1226, Found: 214.1222. **IR** (neat, cm⁻¹): ν 2961, 1636, 1510, 1485, 1398, 1260, 906, 725, 645.

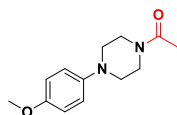




***N*-methyl-*N*-(4-nitrobenzyl)acetamide (5bo)**

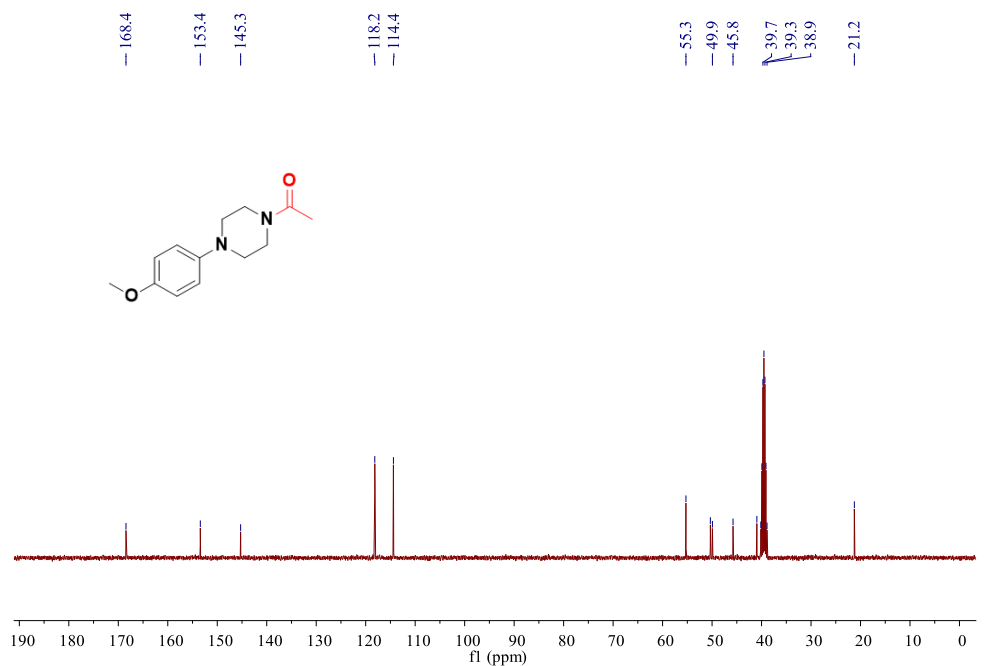
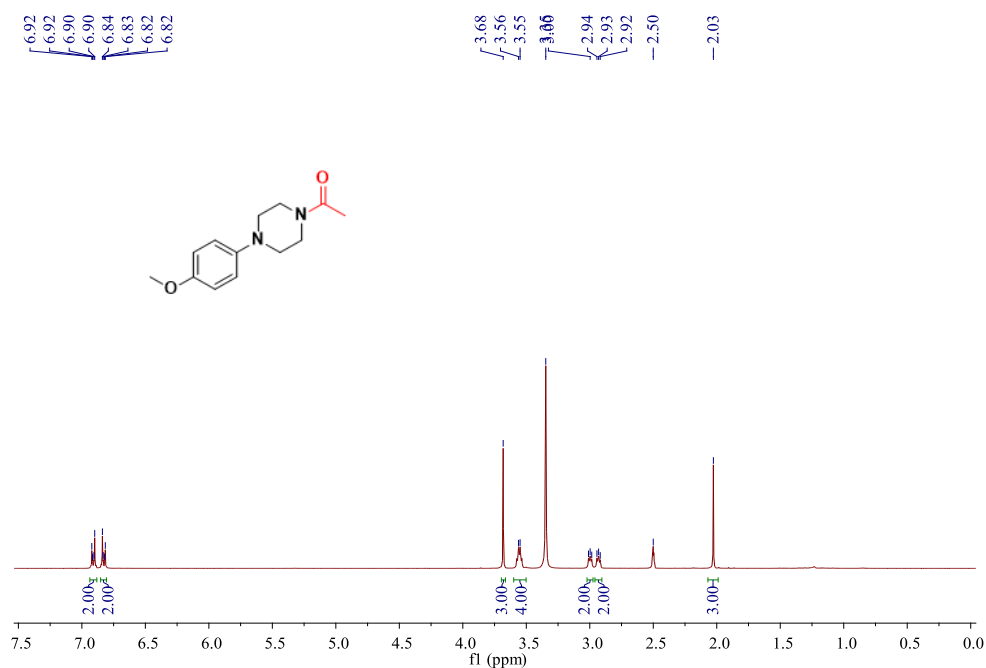
petroleum ether / ethyl acetate = 1:1, yellow solid, 65% yield (26.4 mg). mp: 80 – 83°C. **¹H NMR** (400 MHz, DMSO) δ 8.25 – 8.18 (m, 2H), 7.49 – 7.47 (m, 2H), 4.72 (minor isomer, s, 2H), 4.61 (major isomer, s, 2H), 2.96 (major isomer, s, 3H), 2.82 (minor isomer, s, 3H), 2.09 (major isomer, s, 3H), 2.02 (minor isomer, s, 3H). **¹³C NMR** (100 MHz, DMSO) δ 170.8, 170.5, 147.1, 146.6, 128.9, 128.2, 124.4, 124.1, 53.3, 50.0, 36.3, 33.8, 21.9, 21.7. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₀H₁₂N₂O₃+H⁺: 209.0921, Found: 209.0918. **IR** (neat, cm⁻¹): ν 1635, 1519, 1473, 1407, 1346, 1249, 1049, 858, 736.

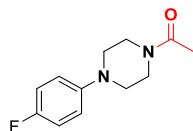




1-(4-(4-Methoxyphenyl)piperazin-1-yl)ethan-1-one (5bp)

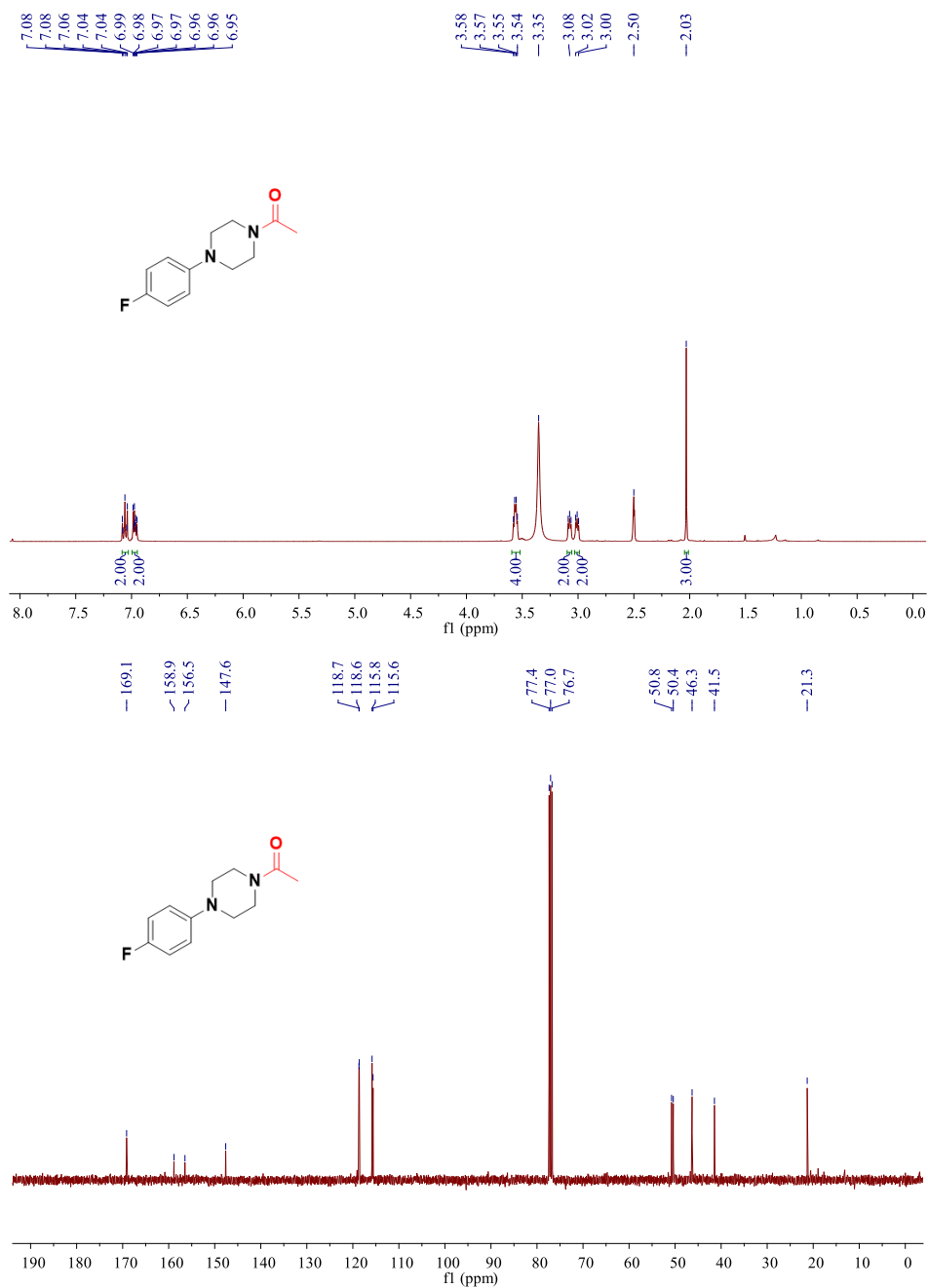
petroleum ether / ethyl acetate = 1:1, yellow solid, 60% yield (27.7 mg). mp: 74 – 76°C. ¹H NMR (400 MHz, DMSO) δ 6.92 – 6.90 (m, 2H), 6.84 – 6.82 (m, 2H), 3.68 (s, 3H), 3.55 (dd, *J* = 10.3, 5.5 Hz, 4H), 3.01 – 2.98 (m, 2H), 2.94 – 2.92 (m, 2H), 2.03 (s, 3H). ¹³C NMR (100 MHz, DMSO) δ 168.45, 153.4, 145.3, 118.2, 114.4, 55.3, 50.3, 49.9, 45.8, 40.9, 21.2. HRMS (ESI-TOF): Anal Calcd. For. C₁₃H₁₈N₂O₂+H⁺: 235.1441, Found: 235.1438. IR (neat, cm⁻¹): ν 2988, 1626, 1512, 1445, 1331, 1233, 909, 823, 761.

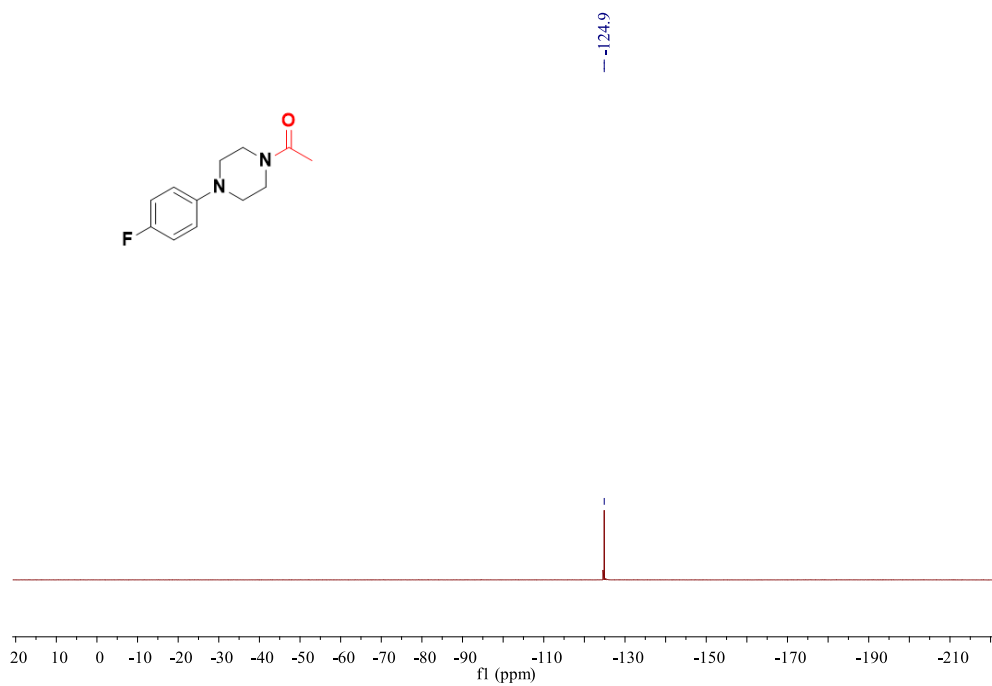
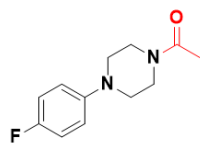


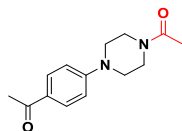


1-(4-(4-Fluorophenyl)piperazin-1-yl)ethan-1-one (5bq)

petroleum ether / ethyl acetate = 1:1, yellow solid, 40% yield (17.8 mg). mp: 80 – 82°C. **¹H NMR** (400 MHz, DMSO) δ 7.08 – 7.04 (m, 2H), 6.99 – 6.95 (m, 2H), 3.58 – 3.54 (m, 2H), 3.09 – 3.06 (m, 2H), 3.02 – 3.00 (m, 2H), 2.03 (s, 3H). **¹³C NMR** (100 MHz, CDCl₃) δ 169.1, 157.8 (d, *J* = 239.8 Hz), 147.6, 118.6 (d, *J* = 7.9 Hz), 115.7 (d, *J* = 22.2 Hz), 50.8, 50.4, 46.3, 41.5, 21.3. **¹⁹F NMR** (377 MHz, DMSO) δ -124.9 (s, 1F). **HRMS** (ESI-TOF): Anal Calcd. For. C₁₂H₁₅FN₂O+H⁺: 223.1241, Found: 223.1238. **IR** (neat, cm⁻¹): ν 1652, 1541, 1488, 1379, 1314, 1823, 761, 626.

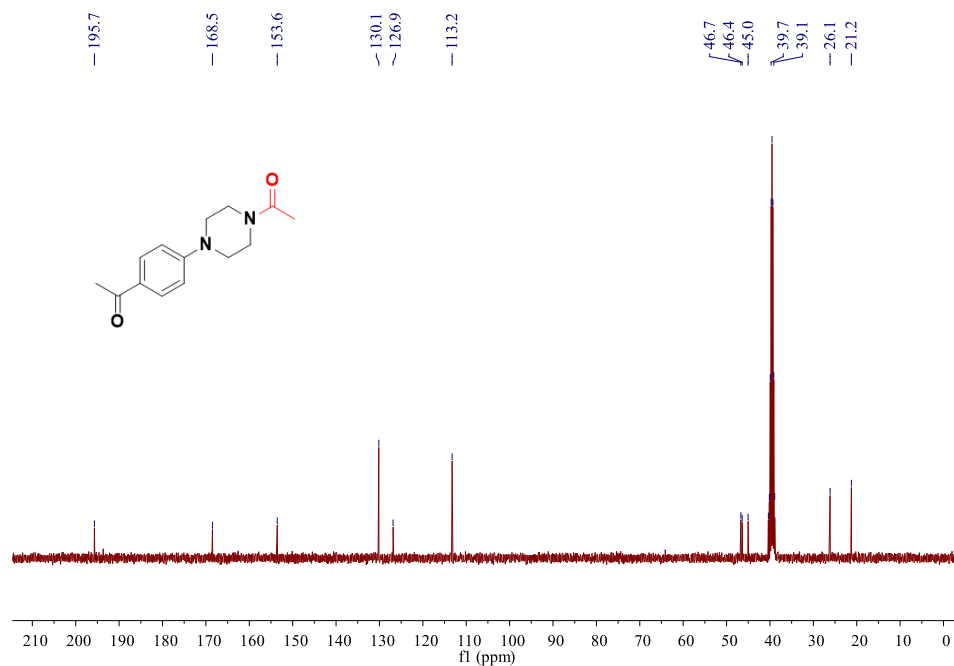
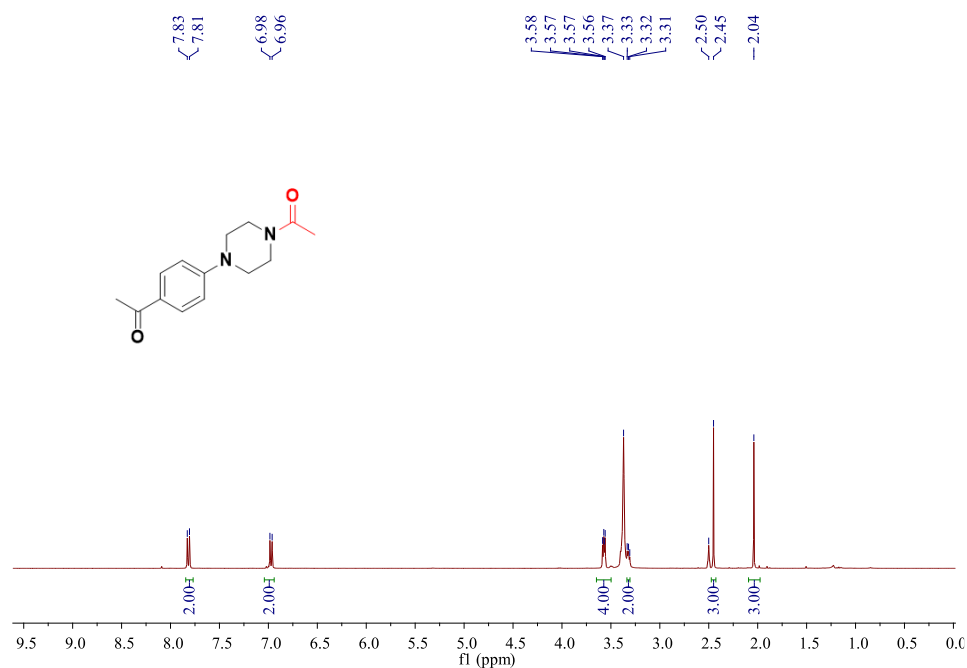


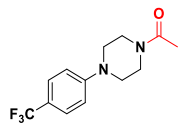




1-(4-(4-Acetylphenyl)piperazin-1-yl)ethan-1-one (5br)

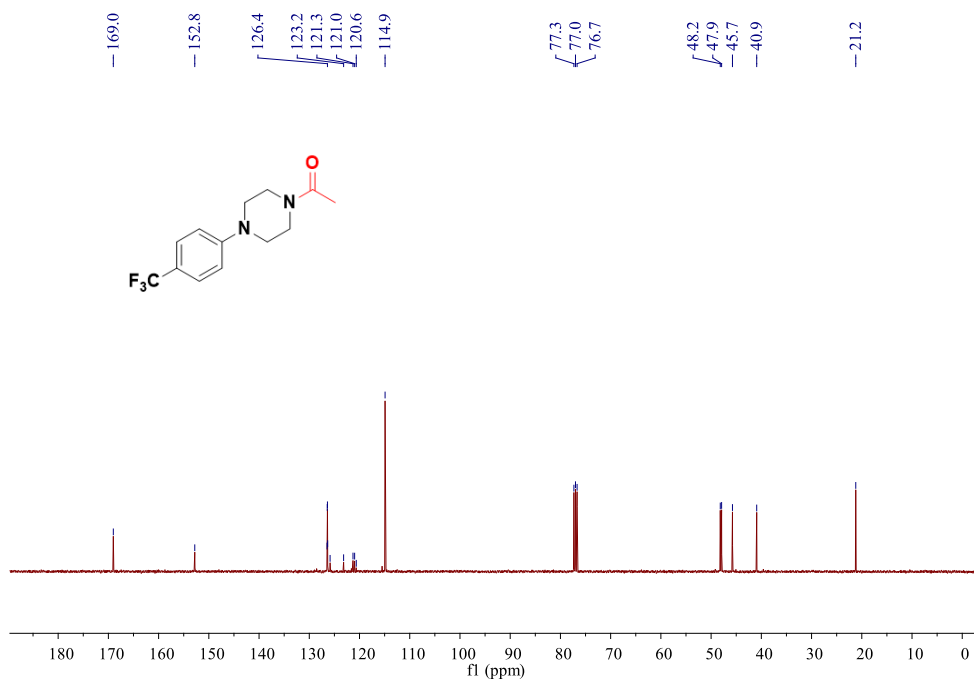
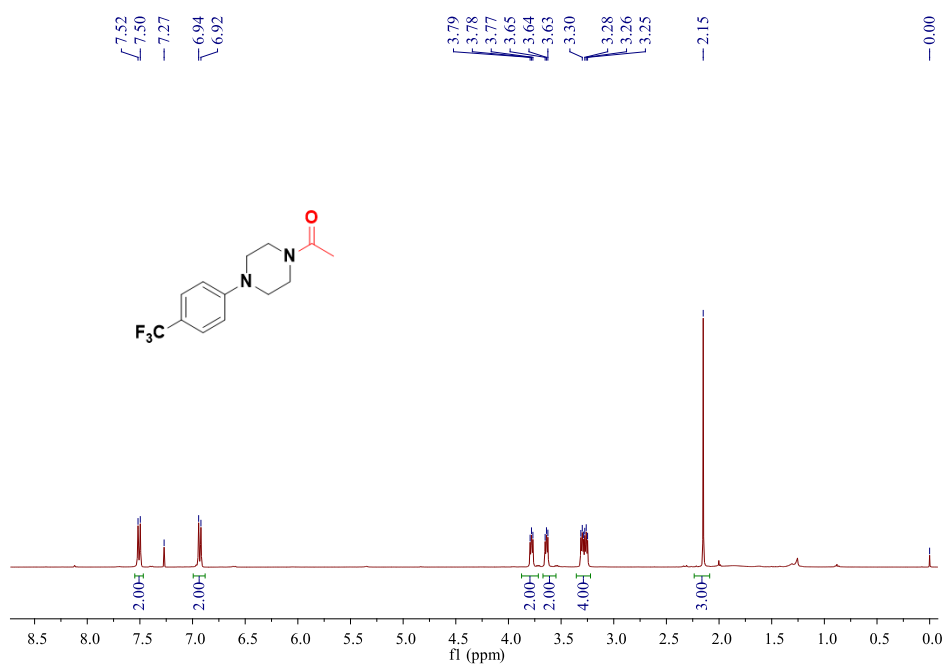
petroleum ether / ethyl acetate = 1:2, yellow oil, 45% yield (22.1 mg). $^1\text{H NMR}$ (400 MHz, DMSO) δ 7.82 (d, $J = 9.0$ Hz, 2H), 6.97 (d, $J = 9.0$ Hz, 2H), 3.57 (dd, $J = 6.2, 4.3$ Hz, 4H), 3.35 – 3.31 (m, 2H), 2.45 (s, 3H), 2.04 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, DMSO) δ 195.7, 168.5, 153.6, 130.1, 126.9, 113.2, 46.7, 46.4, 45.0, 26.1, 21.2. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{14}\text{H}_{18}\text{N}_2\text{O}_2 + \text{H}^+$: 247.1441, Found: 247.1437. **IR** (neat, cm^{-1}): ν 2950, 1596, 1541, 1498, 1395, 1047, 992, 825, 763.

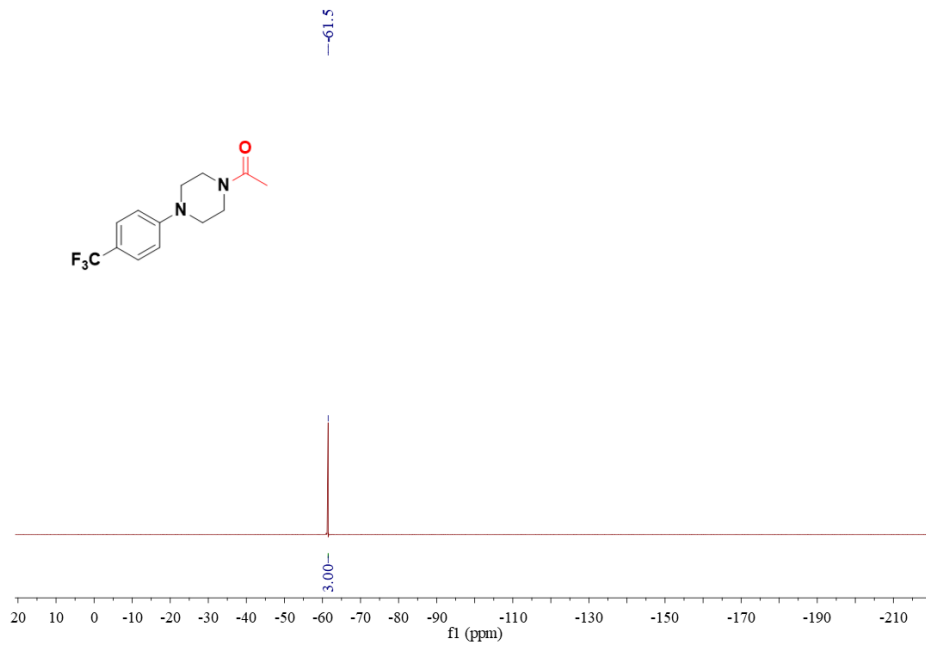


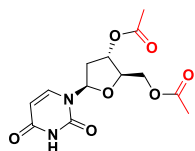


1-(4-(4-(Trifluoromethyl)phenyl)piperazin-1-yl)ethan-1-one (5bs)

petroleum ether / ethyl acetate = 2:1, yellow solid, 70% yield (38.1 mg). mp: 75 – 77°C. ¹H NMR (400 MHz, CDCl₃) δ 7.51 (d, *J* = 8.7 Hz, 2H), 6.93 (d, *J* = 8.7 Hz, 2H), 3.79 – 3.77 (m, 2H), 3.65 – 3.63 (m, 2H), 3.31 – 3.25 (m, 4H), 2.15 (s, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 169.0, 152.8, 126.4 (q, *J* = 3.8 Hz), 124.5 (q, *J* = 270.0 Hz), 121.1 (q, *J* = 30.6 Hz), 114.9, 48.2, 47.9, 45.7, 40.9, 21.2. ¹⁹F NMR (377 MHz, CDCl₃) δ -61.5 (s, 1F). HRMS (ESI-TOF): Anal Calcd. For. C₁₃H₁₅F₃N₂O+H⁺: 273.1209, Found: 273.1204. IR (neat, cm⁻¹): ν 2989, 1614, 1523, 1442, 1329, 1231, 1098, 979, 819, 647.

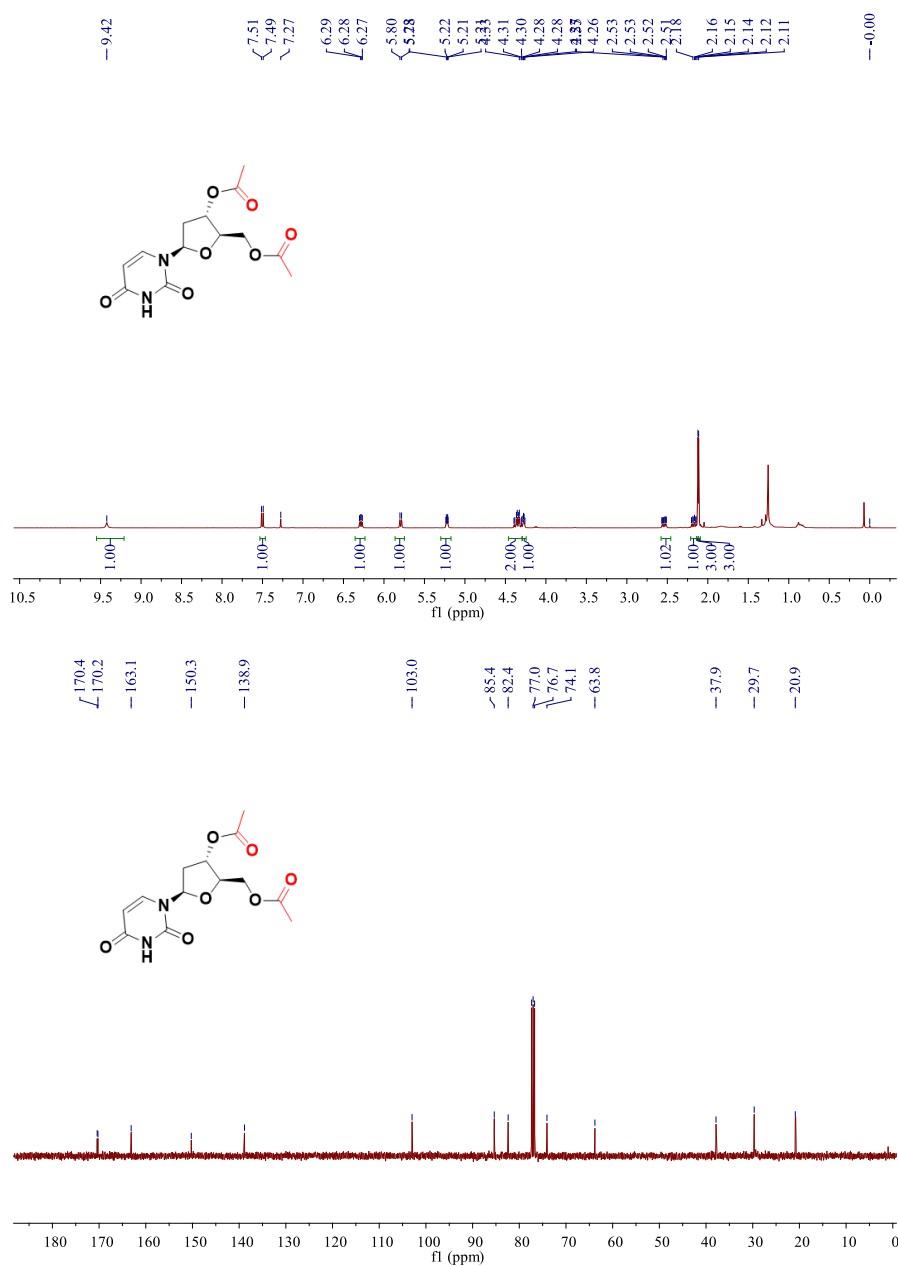


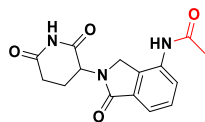




((2R,3S,5R)-3-Acetoxy-5-(2,4-dioxo-3,4-dihydropyrimidin-1(2H)-yl)tetrahydrofuran-2-yl)methyl acetate (6)

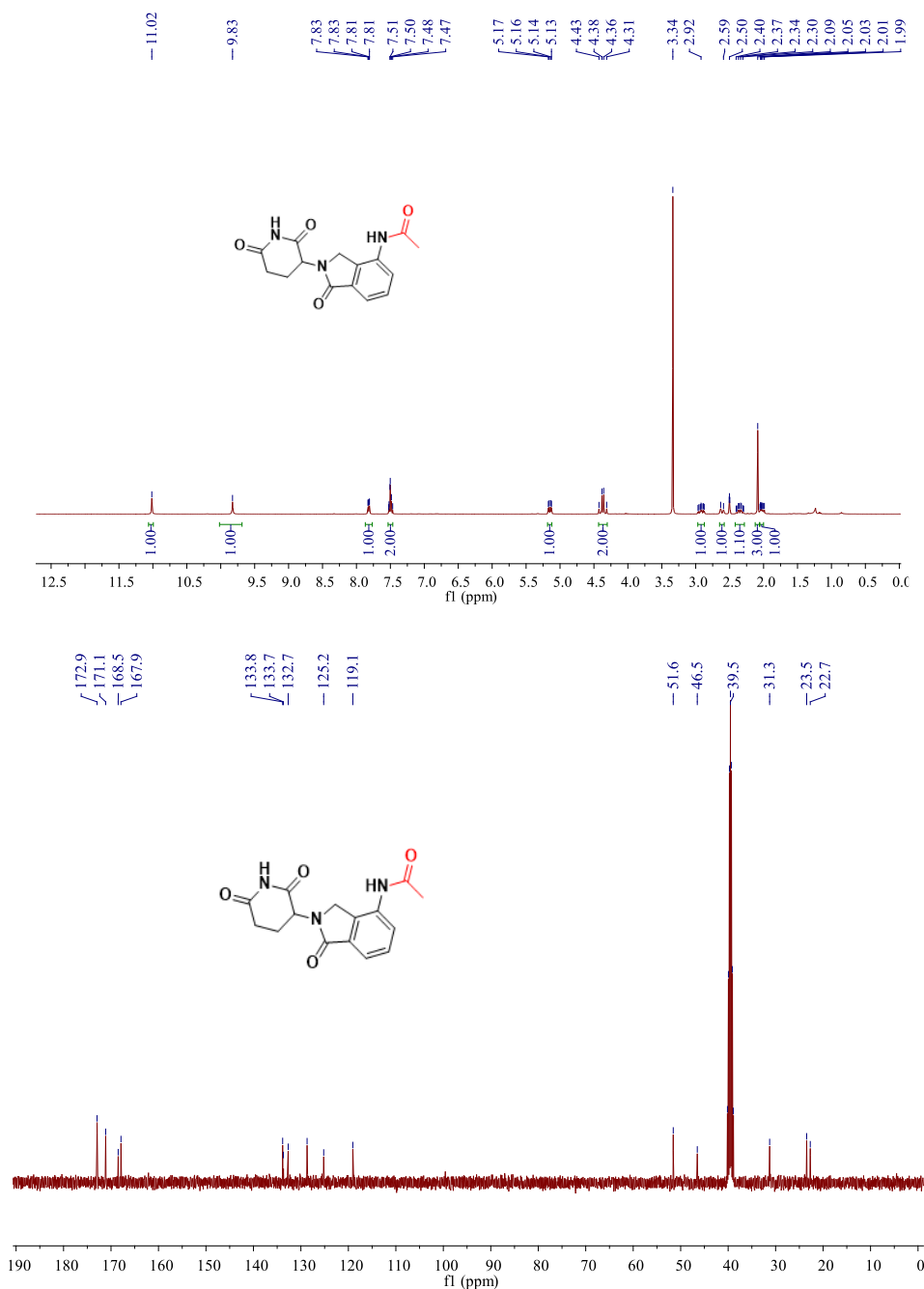
petroleum ether / ethyl acetate = 1:1, yellow oil, 40% yield (24.8 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 9.42 (s, 1H), 7.50 (d, $J = 8.2$ Hz, 1H), 6.28 (dd, $J = 8.2, 5.7$ Hz, 1H), 5.79 (d, $J = 8.2$ Hz, 1H), 5.23 – 5.21 (m, 1H), 4.39 – 4.30 (m, 2H), 4.28 – 4.26 (m, 1H), 2.57 – 2.51 (m, 1H), 2.20 – 2.14 (m, 1H), 2.12 (s, 3H), 2.11 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.4, 170.2, 163.1, 150.3, 138.9, 103.0, 85.4, 82.4, 74.1, 63.8, 37.9, 29.7, 20.9. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{13}\text{H}_{16}\text{N}_2\text{O}_7 + \text{H}^+$: 313.1030, Found: 313.1030. **IR** (neat, cm^{-1}): ν 2956, 2851, 1740, 1689, 1460, 1379, 1232, 1197, 905, 726, 648.

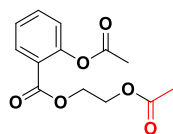




***N*-(2-(2,6-Dioxopiperidin-3-yl)-1-oxoisindolin-4-yl)acetamide (7)**

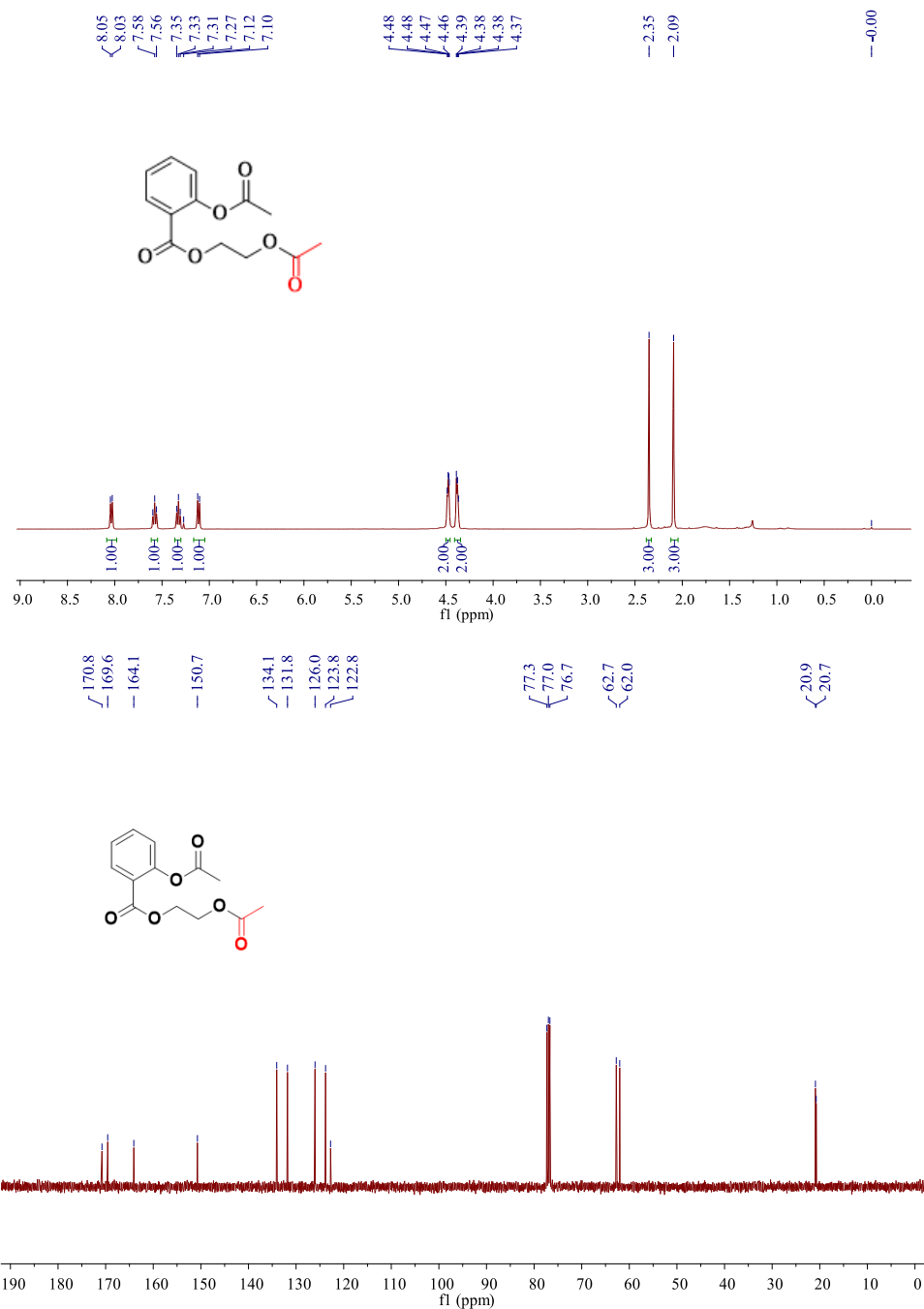
ethyl acetate, yellow solid, 50% yield (30.0 mg). mp: 235 – 237°C. **¹H NMR** (400 MHz, DMSO) δ 11.02 (s, 1H), 9.83 (s, 1H), 7.83-7.81 (m, 1H), 7.52 – 7.47 (m, 2H), 5.15 (dd, *J* = 13.3, 5.1 Hz, 1H), 4.43 – 4.31 (q, *J* = 17.5 Hz, 2H), 2.97 – 2.88 (m, 1H), 2.63 – 2.59 (m, 1H), 2.40 – 2.29 (m, 1H), 2.09 (s, 3H), 2.05 – 1.99 (m, 1H). **¹³C NMR** (100 MHz, DMSO) δ 172.9, 171.1, 168.5, 167.9, 133.8, 133.7, 132.7, 128.7, 125.20, 119.1, 51.6, 46.5, 31.3, 23.5, 22.7. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₅H₁₅N₃O₄+Na⁺: 324.0955, Found: 324.0953. **IR** (neat, cm⁻¹): ν 3379, 2960, 1662, 1545, 1462, 1322, 1267, 1046, 991, 826, 763.

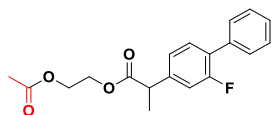




2-Acetoxyethyl 2-acetoxybenzoate (8)

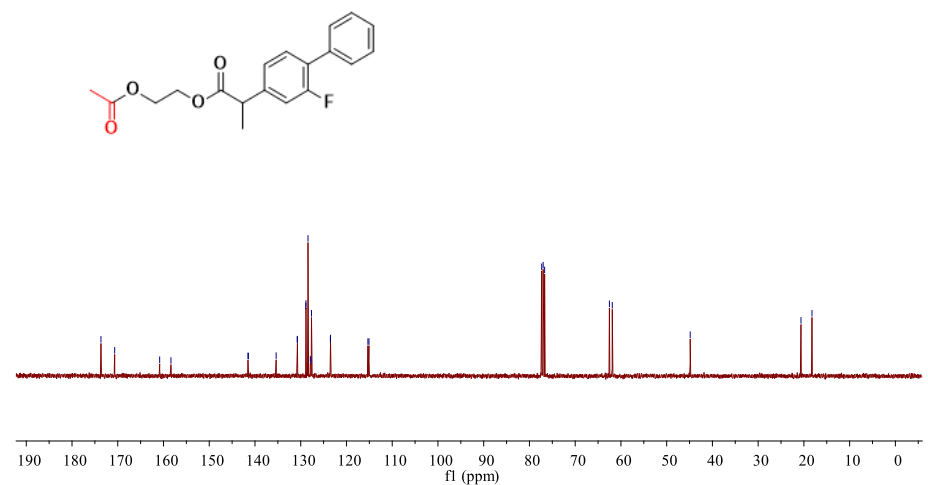
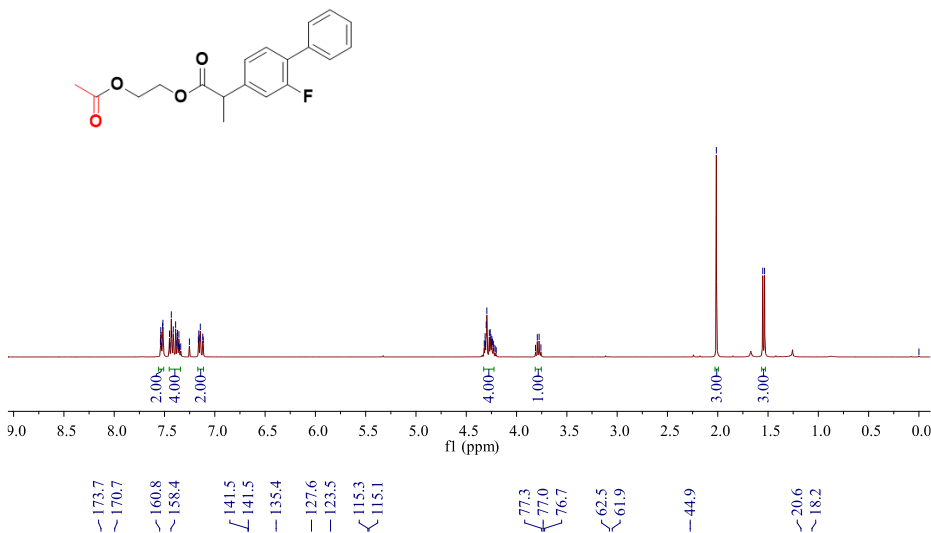
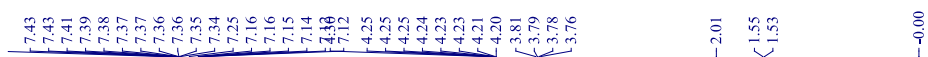
petroleum ether / ethyl acetate = 5:1, colorless oil, 76% yield (40.6 mg). $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.04 (d, $J = 7.8$ Hz, 1H), 7.58 (t, $J = 7.7$ Hz, 1H), 7.33 (t, $J = 7.6$ Hz, 1H), 7.11 (d, $J = 8.1$ Hz, 1H), 4.47 (dd, $J = 5.4, 3.5$ Hz, 2H), 4.38 (dd, $J = 5.4, 3.5$ Hz, 2H), 2.35 (s, 3H), 2.09 (s, 3H). $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 170.8, 169.6, 164.1, 150.7, 134.1, 131.8, 126.0, 123.8, 122.8, 62.7, 62.0, 20.9, 20.7. **HRMS** (ESI-TOF): Anal Calcd. For. $\text{C}_{13}\text{H}_{14}\text{O}_6 + \text{Na}^+$: 289.0683, Found: 289.0682. **IR** (neat, cm^{-1}): ν 1729, 1608, 1485, 1371, 1230, 1161, 905, 726, 648.

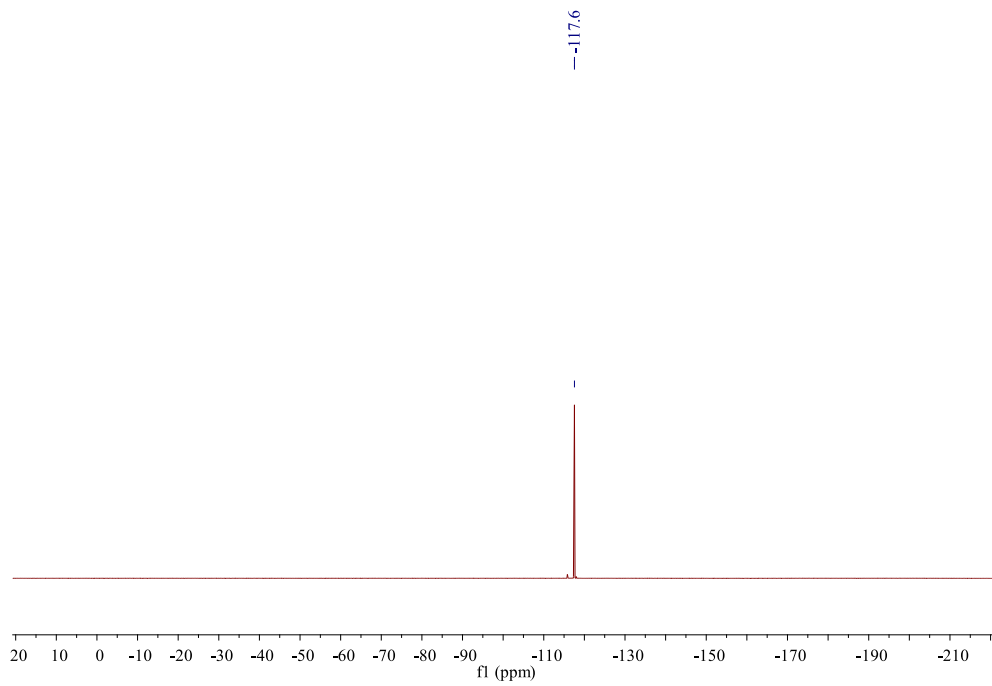


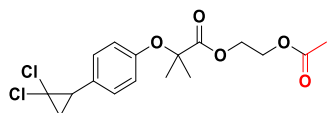


2-Acetoxyethyl 2-(2-fluoro-[1,1'-biphenyl]-4-yl)propanoate (9)

petroleum ether / ethyl acetate = 5:1, yellow oil, 85% yield (46.0 mg). ¹H NMR (400 MHz, CDCl₃) δ 7.54 – 7.52 (m, 2H), 7.45 – 7.34 (m, 4H), 7.16 – 7.12 (m, 2H), 4.32 – 4.20 (m, 4H), 3.78 (q, *J* = 7.2 Hz, 1H), 2.01 (s, 3H), 1.54 (d, *J* = 7.2 Hz, 3H). ¹³C NMR (100 MHz, CDCl₃) δ 173.7, 170.7, 159.60 (d, *J* = 248.2 Hz), 141.5 (d, *J* = 7.7 Hz), 135.4 (d, *J* = 1.4 Hz), 130.7 (d, *J* = 4.0 Hz), 128.9 (d, *J* = 2.9 Hz), 128.4, 127.8 (d, *J* = 13.7 Hz), 127.6, 123.5 (d, *J* = 3.3 Hz), 115.2 (d, *J* = 23.7 Hz), 62.5, 61.9, 44.9, 20.6, 18.2. ¹⁹F NMR (377 MHz, CDCl₃) δ -117.6 (s, 1F). HRMS (ESI-TOF): Anal Calcd. For. C₁₉H₁₉FO₄ + Na⁺: 353.1160, Found: 353.1157. IR (neat, cm⁻¹): ν 2855, 1735, 1600 1515, 1402, 1237, 915, 822, 723.







2-Acetoxyethyl 2-(4-(2,2-dichlorocyclopropyl)phenoxy)-2-methylpropanoate (10)

petroleum ether / ethyl acetate = 5:1, yellow oil, 40% yield (29.9 mg). **¹H NMR** (400 MHz, CDCl₃) δ 7.12 – 7.09 (m, 2H), 6.84 – 6.80 (m, 2H), 4.39 – 4.36 (m, 2H), 4.27 – 4.24 (m, 2H), 2.82 (dd, *J* = 10.6, 8.4 Hz, 1H), 1.99 (s, 3H), 1.94 (dd, *J* = 10.6, 7.4 Hz, 1H), 1.77 (dd, *J* = 8.4, 7.4 Hz, 1H), 1.61 (s, 6H). **¹³C NMR** (100 MHz, CDCl₃) δ 174.1, 170.7, 154.8, 129.6, 128.3, 118.8, 118.7, 79.1, 62.9, 61.8, 34.8, 25.8, 25.4, 25.4, 20.7. **HRMS** (ESI-TOF): Anal Calcd. For. C₁₇H₂₀³⁵Cl₂O₅+Na⁺:397.0580, Found: 397.0579. Anal Calcd. For. C₁₇H₂₀³⁵Cl³⁷ClO₅+Na⁺:399.0551, Found: 399.0548. Anal Calcd. For. C₁₇H₂₀³⁷Cl₂O₅+Na⁺:401.0521, Found: 401.0518. **IR** (neat, cm⁻¹): ν 2849, 1737, 1611, 1581, 1464, 1374, 1229, 1140, 1048, 754, 760.

