

Four-Component Synthesis of 3-Aminomethylated Imidazoheterocycles in EtOH under Catalyst-, Oxidant-Free and Mild Conditions

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1. General Information

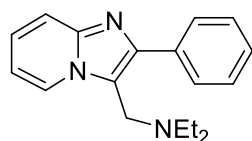
All reactions were carried out in anhydrous solvent and commercially available reagents were used as received unless otherwise stated. Analytical thin layer chromatography (TLC) was performed on precoated aluminum-backed silica gel 60 F₂₅₄ plates (EMD Millipore, 200 μ m thickness). TLC plates were visualized with ultraviolet light and treatment with KMnO₄ or vanillin stains followed by heating. Flash column chromatography was performed using Tsingdao silica gel (200-300). ¹H and ¹³C NMR spectras were recorded on a Bruker Avance DRX-600 spectrometers; chemical shifts (δ) are given in ppm and calibrated using the signal of residual undeuterated solvent as internal reference (CHCl₃: δ_{H} = 7.26 ppm and δ_{C} = 77.00 ppm). Data for ¹H NMR and ¹³C NMR are reported as follows: chemical shift (δ , ppm), multiplicity, integration, and coupling constant (Hz).

2. Experimental Section

General experimental procedures for compound **5**

A mixture of 2-aminopyridine or 2-aminothiazole (**1**, 1 mmol), α -holemethyl ketones (**2**, 1 mmol), amines (**3**, 1 mmol) and dichloromethane (**4**, 1 mmol) in 1.0 mL EtOH was put into a Schlenk tube at room temperature under magnetic stirring for 1 h. After the reaction was completed, the solvent was removed under reduced pressure and the residue was purified by column chromatography (petroleum ether /EtOAc, 2:1) to gain the desired compound **5**.

3. Characterization data of products

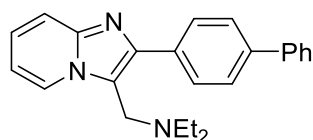


5aaa, *N-ethyl-N-((2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.51 (d, *J* = 6.8Hz, 1H), 7.77 (d, *J* = 7.2Hz, 2H), 7.62 (d, *J* = 9.2Hz, 1H), 7.44 (t, *J* = 7.4Hz, 2H), 7.35 (t, *J* = 7.4Hz, 1H), 7.20-7.16 (m, 1H), 6.77 (t, *J* = 7.2Hz, 1H), 4.03 (s, 2H), 2.49 (q, *J* = 7.2Hz, 4H), 0.97 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 144.9, 144.7, 134.6, 128.8, 128.3, 127.5, 125.7, 124.3, 117.4, 117.0, 111.5, 47.4, 46.4, 11.6.

HRMS (ESI⁺): calcd for C₁₈H₂₂N₃ [M+H]⁺: 280.1808, found: 280.1816.

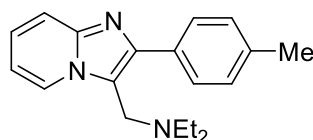


5aba, *N-((2-([1,1'-biphenyl]-4-yl)imidazo[1,2-a]pyridin-3-yl)methyl)-N-ethylethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.53 (d, *J* = 6.8Hz, 1H), 7.88 (d, *J* = 8.0Hz, 2H), 7.72-7.63 (m, 5H), 7.45 (t, *J* = 7.6Hz, 2H), 7.35 (t, *J* = 8.0Hz, 1H), 7.23-7.19 (m, 1H), 6.80 (t, *J* = 6.8Hz, 1H), 4.10 (s, 2H), 2.54 (q, *J* = 7.2Hz, 4H), 1.01 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 145.0, 144.3, 140.7, 140.2, 133.7, 129.2, 128.7, 127.3, 127.0, 127.0, 125.7, 124.4, 117.6, 117.0, 111.5, 47.5, 46.5, 11.7.

HRMS (ESI⁺): calcd for C₂₄H₂₆N₃ [M+H]⁺: 356.2121, found: 356.2128.

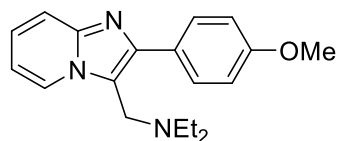


5aca, *N-ethyl-N-((2-(p-tolyl)imidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.50 (d, *J* = 7.2Hz, 1H), 7.67 (d, *J* = 7.6Hz, 2H), 7.62 (d, *J* = 9.2Hz, 1H), 7.26 (d, *J* = 7.2Hz, 2H), 7.17 (t, *J* = 7.8Hz, 1H), 6.76 (t, *J* = 6.6Hz, 1H), 4.03 (s, 2H), 2.50 (q, *J* = 7.2Hz, 4H), 2.40 (s, 3H), 0.97 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 144.7, 144.6, 137.0, 131.7, 128.9, 128.6, 125.5, 123.9, 117.1, 116.8, 111.2, 47.4, 46.3, 21.1, 11.5.

HRMS (ESI⁺): calcd for C₁₉H₂₄N₃ [M+H]⁺: 294.1965, found: 294.1974.

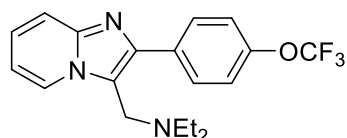


5ada, *N*-ethyl-*N*-((2-(4-methoxyphenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.46 (d, *J* = 6.8Hz, 1H), 7.69 (d, *J* = 8.4Hz, 2H), 7.58 (d, *J* = 9.2Hz, 1H), 7.15 (t, *J* = 8.4Hz, 1H), 6.96 (d, *J* = 8.8Hz, 2H), 6.75 (t, *J* = 7.2Hz, 1H), 4.00 (s, 2H), 3.83 (s, 3H), 2.48 (q, *J* = 7.2Hz, 4H), 0.96 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 159.1, 144.7, 144.5, 129.9, 127.2, 125.5, 124.0, 116.9, 116.7, 113.7, 111.2, 55.1, 47.4, 46.3, 11.5.

HRMS (ESI⁺): calcd for C₁₉H₂₄N₃O [M+H]⁺: 310.1914, found: 310.1924.

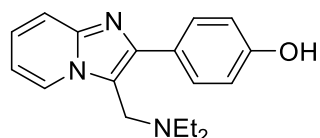


5aea, *N*-ethyl-*N*-((2-(4-(trifluoromethoxy)phenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.50 (d, *J* = 6.8Hz, 1H), 7.84 (d, *J* = 8.4Hz, 2H), 7.62 (d, *J* = 8.8Hz, 1H), 7.30 (d, *J* = 8.4Hz, 2H), 7.21 (t, *J* = 7.8Hz, 1H), 6.80 (t, *J* = 6.6Hz, 1H), 4.02 (s, 2H), 2.51 (q, *J* = 7.2Hz, 4H), 0.99 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 148.6 (d, *J* = 1.7Hz), 144.9, 143.3, 133.4, 130.1, 125.6, 124.6, 121.7, 120.8, 119.2, 117.4 (d, *J* = 73.8Hz), 111.7, 47.3, 46.4, 11.5.

HRMS (ESI⁺): calcd for C₁₉H₂₁F₃N₃O [M+H]⁺: 364.1631, found: 364.1638.



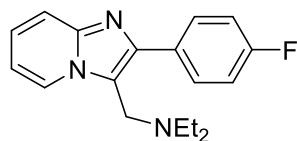
5afa, 4-(3-((diethylamino)methyl)imidazo[1,2-*a*]pyridin-2-yl)phenol

¹H NMR (400 MHz, CDCl₃) δ 8.53 (d, *J* = 6.8Hz, 1H), 7.64 (d, *J* = 9.2Hz, 2H), 7.47 (d, *J* = 8.4Hz, 1H), 7.19 (t, *J* = 8.0Hz, 1H), 6.84-6.78 (m, 3H), 4.00 (s, 2H), 2.49 (q, *J* = 7.2Hz, 4H), 0.97 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 158.0, 144.4, 144.4, 130.1, 125.7, 124.8, 124.0, 116.7, 116.1, 115.9,

111.8, 47.2, 46.4, 11.5.

HRMS (ESI⁺): calcd for C₁₈H₂₂N₃O [M+H]⁺: 296.1757, found: 296.1765.

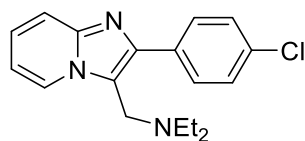


5aga, *N-ethyl-N-((2-(4-fluorophenyl)imidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.50 (d, *J* = 6.8Hz, 1H), 7.76-7.72 (m, 2H), 7.61 (d, *J* = 9.2Hz, 1H), 7.20 (t, *J* = 7.8Hz, 1H), 7.13 (t, *J* = 8.6Hz, 2H), 6.80 (t, *J* = 7.2Hz, 1H), 4.02 (s, 2H), 2.50 (q, *J* = 7.2Hz, 4H), 0.97 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 163.7, 161.3, 144.9, 143.9, 130.7 (d, *J* = 3.1Hz), 130.5 (d, *J* = 8.2Hz), 125.6, 124.6, 117.0 (d, *J* = 16.8Hz), 115.3 (d, *J* = 21.5Hz), 111.7, 47.2, 46.4, 11.5.

HRMS (ESI⁺): calcd for C₁₈H₂₁FN₃ [M+H]⁺: 298.1714, found: 298.1720.

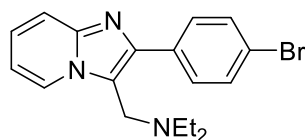


5aha, *N-((2-(4-chlorophenyl)imidazo[1,2-a]pyridin-3-yl)methyl)-N-ethylethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.50 (d, *J* = 6.8Hz, 1H), 7.73 (d, *J* = 8.4Hz, 2H), 7.61 (d, *J* = 9.2Hz, 1H), 7.42 (d, *J* = 8.4Hz, 2H), 7.21 (t, *J* = 7.8Hz, 1H), 6.80 (t, *J* = 6.8Hz, 1H), 4.01 (s, 2H), 2.50 (q, *J* = 7.2Hz, 4H), 0.98 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 145.0, 143.6, 133.6, 133.2, 130.1, 128.6, 125.7, 124.6, 117.6, 117.1, 111.7, 47.3, 46.4, 11.6.

HRMS (ESI⁺): calcd for C₁₈H₂₁ClN₃ [M+H]⁺: 314.1419, found: 314.1428.

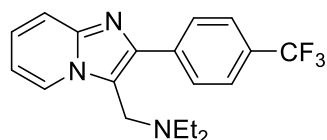


5aia, *N-((2-(4-bromophenyl)imidazo[1,2-a]pyridin-3-yl)methyl)-N-ethylethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.47 (d, *J* = 6.8Hz, 1H), 7.66 (d, *J* = 8.4Hz, 2H), 7.59 (d, *J* = 9.2Hz, 1H), 7.55 (d, *J* = 8.4Hz, 2H), 7.19 (t, *J* = 7.8Hz, 1H), 6.72 (t, *J* = 6.8Hz, 1H), 3.98 (s, 2H), 2.47 (q, *J* = 7.2Hz, 4H), 0.96 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 144.9, 143.5, 133.6, 131.5, 130.4, 125.6, 124.6, 121.7, 117.6, 117.0, 111.7, 47.3, 46.4, 11.6.

HRMS (ESI⁺): calcd for C₁₈H₂₁BrN₃ [M+H]⁺: 358.0913, found: 358.0919.

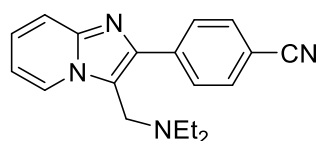


5aja, *N*-ethyl-*N*-((2-(4-(trifluoromethyl)phenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.51 (d, *J* = 6.8Hz, 1H), 7.92 (d, *J* = 8.0Hz, 2H), 7.69 (d, *J* = 8.4Hz, 2H), 7.62 (d, *J* = 8.8Hz, 1H), 7.21 (t, *J* = 8.4Hz, 1H), 6.81 (t, *J* = 6.8Hz, 1H), 4.03 (s, 2H), 2.50 (q, *J* = 7.2Hz, 4H), 0.98 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 145.1, 143.2, 138.4, 129.4 (d, *J* = 32.7Hz), 129.0, 125.6 (d, *J* = 6.0Hz), 125.2 (q, *J* = 5.6Hz), 124.8, 122.9, 118.4, 117.2, 111.8, 47.4, 46.5, 11.6.

HRMS (ESI⁺): calcd for C₁₉H₂₁F₃N₃ [M+H]⁺: 348.1682, found: 348.1690.

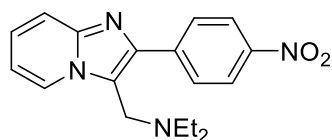


5aka, 4-(3-((diethylamino)methyl)imidazo[1,2-*a*]pyridin-2-yl)benzonitrile

¹H NMR (400 MHz, CDCl₃) δ 8.48 (d, *J* = 7.2Hz, 1H), 7.94 (d, *J* = 8.0Hz, 2H), 7.71-7.67 (m, 2H), 7.60 (d, *J* = 9.2Hz, 1H), 7.22 (t, *J* = 7.8Hz, 1H), 6.82 (t, *J* = 6.8Hz, 1H), 4.00 (s, 2H), 2.48 (q, *J* = 7.2Hz, 4H), 0.97 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 145.1, 142.5, 139.4, 132.0, 129.1, 126.2, 125.6, 124.9, 118.8, 117.2, 112.0, 110.8, 47.4, 46.4, 11.6.

HRMS (ESI⁺): calcd for C₁₉H₂₁N₄ [M+H]⁺: 305.1761, found: 305.1768.



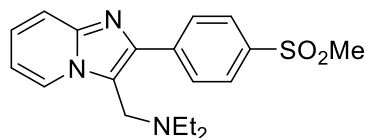
5ala, *N*-ethyl-*N*-((2-(4-nitrophenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.56 (d, *J* = 6.4Hz, 1H), 8.33 (d, *J* = 8.4Hz, 2H), 8.05 (d, *J* = 8.4Hz, 2H), 7.66 (d, *J* = 9.2Hz, 1H), 7.28 (t, *J* = 7.8Hz, 1H), 6.89 (t, *J* = 6.8Hz, 1H), 4.10 (s, 2H), 2.56 (q,

$J = 7.2\text{Hz}$, 4H), 1.03 (t, $J = 7.2\text{Hz}$, 6H);

$^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 147.0, 145.3, 142.3, 141.4, 129.3, 125.7, 125.2, 123.7, 119.3, 117.4, 112.2, 47.5, 46.5, 11.6.

HRMS (ESI^+): calcd for $\text{C}_{18}\text{H}_{21}\text{N}_4\text{O}_2$ $[\text{M}+\text{H}]^+$: 325.1659, found: 325.1665.

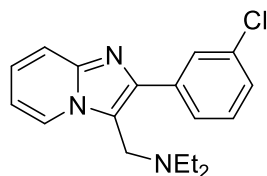


5ama, *N-ethyl-N-((2-(4-(methylsulfonyl)phenyl)imidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

$^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.49 (d, $J = 6.8\text{Hz}$, 1H), 8.01 (dd, $J_1 = 18.4\text{Hz}$, $J_2 = 8.4\text{Hz}$, 4H), 7.60 (d, $J = 9.2\text{Hz}$, 1H), 7.22 (t, $J = 7.8\text{Hz}$, 1H), 6.81 (t, $J = 6.8\text{Hz}$, 1H), 6.89 (t, $J = 6.8\text{Hz}$, 1H), 4.02 (s, 2H), 3.07 (s, 3H), 2.48 (q, $J = 7.2\text{Hz}$, 4H), 0.97 (t, $J = 7.0\text{Hz}$, 6H);

$^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 145.1, 142.4, 140.3, 139.1, 129.4, 127.3, 125.6, 125.0, 118.9, 117.2, 112.0, 47.3, 46.4, 44.5, 11.6.

HRMS (ESI^+): calcd for $\text{C}_{19}\text{H}_{24}\text{N}_3\text{O}_2\text{S}$ $[\text{M}+\text{H}]^+$: 358.1584, found: 358.1588.

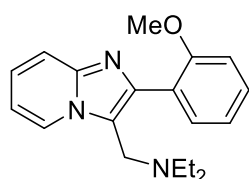


5ana, *N-((2-(3-chlorophenyl)imidazo[1,2-a]pyridin-3-yl)methyl)-N-ethylethanamine*

$^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.47 (d, $J = 7.6\text{Hz}$, 1H), 7.84 (s, 1H), 7.66 (dd, $J_1 = 7.6\text{Hz}$, $J_2 = 1.2\text{Hz}$, 1H), 7.59 (dd, $J_1 = 8.8\text{Hz}$, $J_2 = 0.8\text{Hz}$, 1H), 7.37-7.29 (m, 2H), 7.19 (t, $J = 8.0\text{Hz}$, 1H), 6.78 (t, $J = 6.8\text{Hz}$, 1H), 4.00 (s, 2H), 2.49 (q, $J = 7.2\text{Hz}$, 4H), 0.97 (t, $J = 7.0\text{Hz}$, 6H);

$^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 144.9, 143.3, 136.5, 134.2, 129.5, 128.8, 127.5, 126.8, 125.6, 124.6, 117.9, 117.1, 111.7, 47.2, 46.4, 11.6.

HRMS (ESI^+): calcd for $\text{C}_{18}\text{H}_{21}\text{ClN}_3$ $[\text{M}+\text{H}]^+$: 314.1419, found: 314.1426.

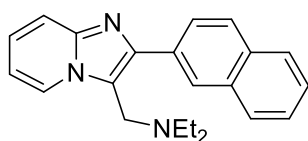


5a0a, *N*-ethyl-*N*-((2-(2-methoxyphenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.55 (d, *J* = 6.8 Hz, 1H), 7.60 (d, *J* = 9.2 Hz, 1H), 7.45 (dd, *J*₁ = 7.2 Hz, *J*₂ = 1.2 Hz, 1H), 7.36 (t, *J* = 7.8 Hz, 1H), 7.16 (t, *J* = 7.8 Hz, 1H), 7.03 (t, *J* = 7.2 Hz, 1H), 6.97 (d, *J* = 8.4 Hz, 1H), 6.77 (t, *J* = 6.4 Hz, 1H), 3.83 (s, 2H), 3.78 (s, 3H), 2.42 (q, *J* = 7.2 Hz, 4H), 0.91 (t, *J* = 7.2 Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 157.1, 145.0, 141.7, 132.2, 129.4, 125.8, 123.8, 123.7, 120.5, 118.8, 117.1, 111.3, 110.9, 55.4, 47.3, 46.3, 11.4.

HRMS (ESI⁺): calcd for C₁₉H₂₄N₃O [M+H]⁺: 310.1914, found: 310.1920.

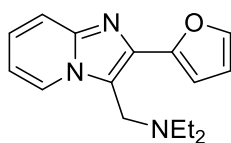


5a0a, *N*-ethyl-*N*-((2-(naphthalen-2-yl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.52 (d, *J* = 6.8 Hz, 1H), 8.27 (s, 1H), 7.98-7.85 (m, 4H), 7.67 (d, *J* = 9.2 Hz, 1H), 7.49-7.47 (m, 2H), 7.22-7.18 (m, 1H), 6.79 (td, *J*₁ = 6.8 Hz, *J*₂ = 0.8 Hz, 1H), 4.10 (s, 2H), 2.52 (q, *J* = 7.2 Hz, 4H), 0.98 (t, *J* = 7.2 Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 133.3, 132.6, 132.0, 128.1, 127.9, 127.7, 127.5, 126.8, 126.0, 125.9, 125.6, 124.4, 177.8, 116.9, 111.5, 47.3, 46.3, 11.5.

HRMS (ESI⁺): calcd for C₂₂H₂₄N₃ [M+H]⁺: 330.1965, found: 330.1970.

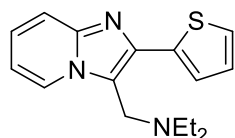


5aqa, *N*-ethyl-*N*-((2-(furan-2-yl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.45 (d, *J* = 6.8 Hz, 1H), 7.58 (d, *J* = 8.8 Hz, 1H), 7.51 (s, 1H), 7.21-7.17 (m, 1H), 6.91 (d, *J* = 3.2 Hz, 1H), 7.78 (d, *J* = 6.6 Hz, 1H), 6.52-6.51 (m, 1H), 4.19 (s, 2H), 2.56 (q, *J* = 7.2 Hz, 4H), 1.03 (t, *J* = 7.2 Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 150.3, 145.5, 142.1, 135.9, 125.9, 125.0, 117.5, 117.0, 111.9, 111.5, 108.1, 47.2, 46.6, 11.7.

HRMS (ESI⁺): calcd for C₁₆H₂₀N₃O [M+H]⁺: 270.1601, found: 270.1608.

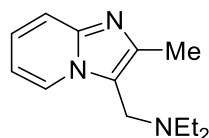


5ara, *N*-ethyl-*N*-((2-(thiophen-2-yl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.44 (d, *J* = 6.8Hz, 1H), 7.59 (d, *J* = 9.2Hz, 1H), 7.51 (d, *J* = 4.8Hz, 1H), 7.33 (d, *J* = 4.4Hz, 1H), 7.20-7.16 (m, 1H), 7.12-7.10 (m, 1H), 6.77 (t, *J* = 6.8Hz, 1H), 4.11 (s, 2H), 2.56 (q, *J* = 7.2Hz, 4H), 1.02 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 144.9, 138.9, 137.5, 127.4, 125.5, 125.4, 125.3, 124.7, 116.8, 111.7, 47.6, 46.5, 11.7.

HRMS (ESI⁺): calcd for C₁₆H₂₀N₃S [M+H]⁺: 286.1372, found: 286.1378.

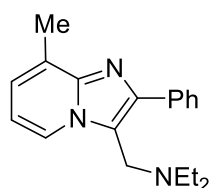


5asa, *N*-ethyl-*N*-((2-methylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.29 (d, *J* = 6.8Hz, 1H), 7.48 (d, *J* = 9.2Hz, 1H), 7.11 (t, *J* = 8.0Hz, 1H), 6.72 (t, *J* = 6.6Hz, 1H), 3.78 (s, 2H), 2.48 (q, *J* = 7.2Hz, 4H), 2.41 (s, 3H), 1.00 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 144.3, 141.2, 124.9, 124.0, 116.8, 116.1, 111.3, 46.6, 46.2, 13.2, 11.3.

HRMS (ESI⁺): calcd for C₁₃H₂₀N₃ [M+H]⁺: 218.1652, found: 218.1659.

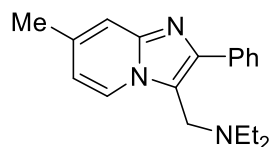


5baa, *N*-ethyl-*N*-((8-methyl-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.39 (d, *J* = 6.8Hz, 1H), 7.75 (d, *J* = 7.2Hz, 2H), 7.44 (t, *J* = 7.6Hz, 2H), 7.35 (t, *J* = 7.4Hz, 1H), 6.98 (d, *J* = 6.8Hz, 1H), 6.71 (t, *J* = 6.8Hz, 1H), 4.01 (s, 2H), 2.66 (s, 3H), 2.49 (q, *J* = 7.2Hz, 4H), 0.96 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 145.3, 144.4, 134.9, 129.1, 128.3, 127.4, 126.8, 123.5, 123.2, 117.8, 111.6, 47.3, 46.4, 17.1, 11.5.

HRMS (ESI⁺): calcd for C₁₉H₂₄N₃ [M+H]⁺: 294.1965, found:294.1970.

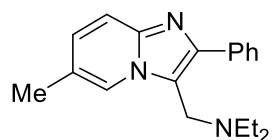


5caa, *N*-ethyl-*N*-((7-methyl-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.40 (d, *J* = 7.2Hz, 1H), 7.75 (d, *J* = 7.6Hz, 2H), 7.43 (t, *J* = 7.6Hz, 2H), 7.39-7.34 (m, 2H), 6.62 (d, *J* = 7.2Hz, 1H), 4.03 (s, 2H), 2.50 (q, *J* = 7.2Hz, 4H), 2.40 (s, 3H), 0.97 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 145.3, 144.3, 135.5, 134.6, 128.8, 128.3, 127.5, 124.9, 116.7, 115.3, 114.3, 47.3, 46.3, 21.3, 11.5.

HRMS (ESI⁺): calcd for C₁₉H₂₄N₃ [M+H]⁺: 294.1965, found: 294.1968.

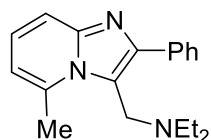


5daa, *N*-ethyl-*N*-((6-methyl-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.27 (s, 1H), 7.75 (d, *J* = 7.2Hz, 2H), 7.53 (d, *J* = 9.2Hz, 1H), 7.44 (t, *J* = 7.6Hz, 2H), 7.34 (t, *J* = 7.4Hz, 1H), 7.05 (d, *J* = 8.4Hz, 1H), 4.03 (s, 2H), 2.52 (q, *J* = 7.2Hz, 4H), 2.35 (s, 3H), 0.98 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 144.6, 144.0, 134.7, 128.8, 128.3, 127.6, 127.5, 123.2, 121.1, 117.0, 116.3, 47.2, 46.4, 18.5, 11.5.

HRMS (ESI⁺): calcd for C₁₉H₂₄N₃ [M+H]⁺: 294.1965, found: 294.1972.



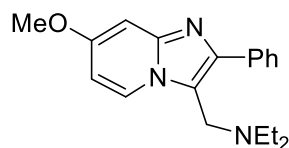
5eaa, *N*-ethyl-*N*-((5-methyl-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 7.61 (d, *J* = 7.2Hz, 2H), 7.49-7.41 (m, 3H), 7.36 (t, *J* = 7.2Hz, 1H), 7.08 (t, *J* = 7.8Hz, 1H), 6.51 (d, *J* = 6.8Hz, 1H), 4.04 (s, 2H), 3.09 (s, 3H), 2.34 (q, *J* = 7.2Hz, 4H), 0.72 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 147.7, 146.9, 138.0, 135.3, 129.9, 128.2, 127.5, 124.8, 119.3, 115.2,

113.0, 48.0, 44.5, 19.6, 10.6.

HRMS (ESI⁺): calcd for C₁₉H₂₄N₃ [M+H]⁺: 294.1965, found: 294.1972.

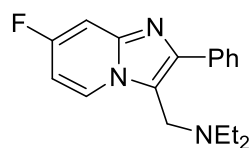


5faa, *N-ethyl-N-((7-methoxy-2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.14 (d, *J* = 6.8Hz, 1H), 7.79 (d, *J* = 9.2Hz, 2H), 7.41 (t, *J* = 7.6Hz, 2H), 7.32 (t, *J* = 7.4Hz, 1H), 6.69 (t, *J* = 7.2Hz, 1H), 6.48 (d, *J* = 7.6Hz, 1H), 4.00 (s, 5H), 2.49 (q, *J* = 7.2Hz, 4H), 0.95 (t, *J* = 7.0Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 148.7, 144.0, 139.3, 134.6, 129.0, 128.1, 127.4, 118.5, 118.4, 111.3, 100.5, 55.6, 47.3, 46.4, 11.5.

HRMS (ESI⁺): calcd for C₁₉H₂₄N₃O [M+H]⁺: 310.1914, found: 310.1920.

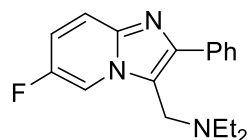


5gaa, *N-ethyl-N-((7-fluoro-2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.54 (t, *J* = 6.6Hz, 1H), 7.72 (d, *J* = 7.2Hz, 2H), 7.44 (d, *J* = 7.4Hz, 2H), 7.35 (t, *J* = 7.4Hz, 1H), 7.26-7.22 (m, 1H), 6.67 (td, *J*₁ = 7.6Hz, *J*₂ = 2.4Hz, 1H), 4.03 (s, 2H), 2.50 (q, *J* = 7.2Hz, 4H), 0.97 (t, *J* = 7.2Hz, 6H);

¹³C NMR (101 MHz, CDCl₃) δ 161.5, 159.0, 145.6, 145.0 (d, *J* = 13.6Hz), 134.4, 128.6 (d, *J* = 39.5Hz), 127.7, 127.3 (d, *J* = 10.3Hz), 117.3, 103.7 (d, *J* = 29.0Hz), 100.5 (d, *J* = 23.2Hz), 47.5, 46.4, 11.6.

HRMS (ESI⁺): calcd for C₁₈H₂₁FN₃ [M+H]⁺: 298.1714, found: 298.1722.



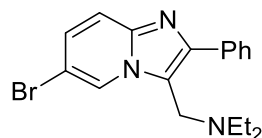
5haa, *N-ethyl-N-((6-fluoro-2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.54 (dd, *J*₁ = 4.4Hz, *J*₂ = 2.4Hz, 1H), 7.73 (d, *J* = 7.2Hz, 2H), 7.58 (dd, *J*₁ = 9.6Hz, *J*₂ = 5.2Hz, 1H), 7.45 (t, *J* = 7.4Hz, 2H), 7.37 (t, *J* = 7.4Hz, 1H), 7.15-7.10 (m, 1H),

4.05 (s, 2H), 2.51 (q, $J = 7.2\text{Hz}$, 4H), 0.99 (t, $J = 7.0\text{Hz}$, 6H);

^{13}C NMR (101 MHz, CDCl_3) δ 153.8, 151.4, 146.1, 142.6, 134.3, 128.6 (d, $J = 35.9\text{Hz}$), 127.8, 118.8, 117.3 (d, $J = 9.2\text{Hz}$), 116.3 (d, $J = 25.9\text{Hz}$), 112.5 (d, $J = 42.0\text{Hz}$), 47.5, 46.4, 11.5.

HRMS (ESI^+): calcd for $\text{C}_{18}\text{H}_{21}\text{FN}_3$ $[\text{M}+\text{H}]^+$: 298.1714, found: 298.1718.

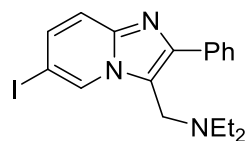


5iaa, *N-((6-bromo-2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)-N-ethylethanamine*

^1H NMR (400 MHz, CDCl_3) δ 8.64 (s, 1H), 7.65 (d, $J = 7.2\text{Hz}$, 2H), 7.42 (d, $J = 9.6\text{Hz}$, 1H), 7.36 (t, $J = 7.4\text{Hz}$, 2H), 7.28 (t, $J = 7.2\text{Hz}$, 1H), 7.18-7.15 (m, 1H), 3.95 (s, 2H), 2.42 (q, $J = 7.2\text{Hz}$, 4H), 0.90 (t, $J = 7.0\text{Hz}$, 6H);

^{13}C NMR (101 MHz, CDCl_3) δ 145.5, 143.3, 134.2, 128.8, 128.4, 127.8, 127.6, 126.0, 117.9, 117.6, 106.1, 47.3, 46.4, 11.5.

HRMS (ESI^+): calcd for $\text{C}_{18}\text{H}_{21}\text{BrN}_3$ $[\text{M}+\text{H}]^+$: 358.0913, found: 358.0919.

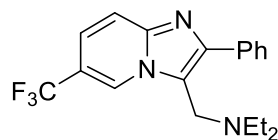


5jaa, *N-ethyl-N-((6-iodo-2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

^1H NMR (400 MHz, CDCl_3) δ 8.83 (s, 1H), 7.73 (d, $J = 8.4\text{Hz}$, 2H), 7.45-7.39 (m, 3H), 7.37-7.32 (m, 2H), 4.01 (s, 2H), 2.49 (q, $J = 7.2\text{Hz}$, 4H), 0.97 (t, $J = 7.2\text{Hz}$, 6H);

^{13}C NMR (101 MHz, CDCl_3) δ 145.0, 143.3, 134.1, 132.0, 130.9, 128.8, 128.4, 127.7, 118.0, 117.4, 74.2, 47.3, 46.4, 11.5.

HRMS (ESI^+): calcd for $\text{C}_{18}\text{H}_{21}\text{IN}_3$ $[\text{M}+\text{H}]^+$: 406.0775, found: 406.0782.



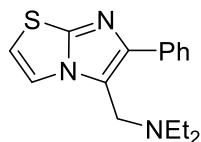
5kaa, *N-ethyl-N-((2-phenyl-6-(trifluoromethyl)imidazo[1,2-a]pyridin-3-yl)methyl)ethanamine*

^1H NMR (400 MHz, CDCl_3) δ 9.06 (s, 1H), 7.74 (d, $J = 7.2\text{Hz}$, 2H), 7.69 (d, $J = 9.6\text{Hz}$, 1H), 7.46 (t, $J = 7.6\text{Hz}$, 2H), 7.38 (t, $J = 6.8\text{Hz}$, 1H), 7.33 (dd, $J_1 = 9.6\text{Hz}$, $J_2 = 2.0\text{Hz}$, 1H), 4.10 (s, 2H), 2.51

(q, $J = 7.2\text{Hz}$, 4H), 0.99 (t, $J = 7.0\text{Hz}$, 6H);

$^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 146.4, 144.6, 133.9, 128.6 (d, $J = 32.5\text{Hz}$), 128.0, 125.2 (q, $J = 10.0\text{Hz}$), 122.5, 120.1 (d, $J = 2.5\text{Hz}$), 118.8, 117.6, 115.6 (q, $J = 51.0\text{Hz}$), 47.4, 46.5, 11.7.

HRMS (ESI^+): calcd for $\text{C}_{19}\text{H}_{21}\text{F}_3\text{N}_3$ [$\text{M}+\text{H}$] $^+$: 348.1682, found: 348.1688.

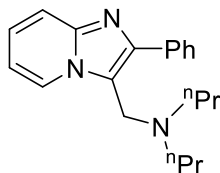


5laa, *N-ethyl-N-((6-phenylimidazo[2,1-b]thiazol-5-yl)methyl)ethanamine*

$^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.68 (d, $J = 4.4\text{Hz}$, 1H), 7.61 (d, $J = 7.6\text{Hz}$, 2H), 7.33 (t, $J = 7.6\text{Hz}$, 2H), 7.24-7.20 (m, 1H), 6.65 (d, $J = 4.4\text{Hz}$, 1H), 3.84 (s, 2H), 2.42 (q, $J = 7.2\text{Hz}$, 4H), 0.91 (t, $J = 7.0\text{Hz}$, 6H);

$^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 148.7, 145.1, 135.0, 128.3, 128.0, 127.0, 120.1, 119.4, 111.1, 48.1, 46.5, 11.7.

HRMS (ESI^+): calcd for $\text{C}_{16}\text{H}_{20}\text{N}_3\text{S}$ [$\text{M}+\text{H}$] $^+$: 286.1372, found: 286.1376.

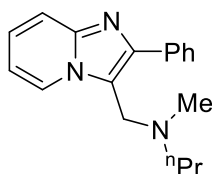


5aab, *N-((2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)-N-propylpropan-1-amine*

$^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.49 (d, $J = 6.8\text{Hz}$, 1H), 7.77 (d, $J = 8.4\text{Hz}$, 2H), 7.62 (d, $J = 9.2\text{Hz}$, 1H), 7.44 (t, $J = 7.6\text{Hz}$, 2H), 7.35 (t, $J = 7.4\text{Hz}$, 1H), 7.20-7.16 (m, 1H), 6.77 (t, $J = 6.8\text{Hz}$, 1H), 4.04 (s, 2H), 2.37 (t, $J = 7.4\text{Hz}$, 4H), 1.46-1.37 (m, 4H), 0.76 (t, $J = 7.4\text{Hz}$, 6H);

$^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 144.8, 144.7, 134.6, 128.8, 128.3, 127.5, 125.6, 124.3, 117.5, 117.0, 111.4, 55.4, 48.5, 19.8, 11.8.

HRMS (ESI^+): calcd for $\text{C}_{20}\text{H}_{26}\text{N}_3$ [$\text{M}+\text{H}$] $^+$: 308.2121, found: 308.2126.

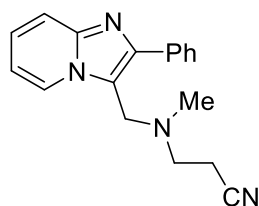


5aac, *N*-methyl-*N*-((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)propan-1-amine

¹H NMR (400 MHz, CDCl₃) δ 8.47 (d, *J* = 6.8Hz, 1H), 7.80 (d, *J* = 8.0Hz, 2H), 7.63 (d, *J* = 9.2Hz, 1H), 7.45 (t, *J* = 7.6Hz, 2H), 7.36 (t, *J* = 7.4Hz, 1H), 7.22-7.18 (m, 1H), 6.80 (t, *J* = 7.4Hz, 1H), 3.96 (s, 2H), 2.37 (t, *J* = 7.2Hz, 2H), 2.17 (s, 3H), 1.50 (q, *J* = 7.2Hz, 2H), 0.84 (t, *J* = 7.2Hz, 3H);

¹³C NMR (101 MHz, CDCl₃) δ 144.9, 144.7, 134.6, 128.9, 128.4, 127.6, 125.6, 124.5, 117.3, 117.1, 111.7, 59.0, 51.6, 41.4, 20.4, 11.8.

HRMS (ESI⁺): calcd for C₁₈H₂₂N₃ [M+H]⁺: 280.1808, found: 280.1812.

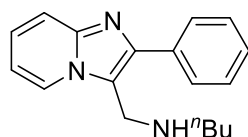


5aad, 3-(methyl((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)amino)propanenitrile

¹H NMR (400 MHz, CDCl₃) δ 8.46 (d, *J* = 6.8Hz, 1H), 7.72 (d, *J* = 7.2Hz, 2H), 7.63 (d, *J* = 8.8Hz, 1H), 7.45 (t, *J* = 7.6Hz, 2H), 7.36 (t, *J* = 7.4Hz, 1H), 7.26-7.21 (m, 1H), 6.85 (t, *J* = 6.8Hz, 1H), 4.04 (s, 2H), 2.70 (t, *J* = 6.6Hz, 2H), 2.42 (t, *J* = 6.6Hz, 2H), 2.24 (s, 3H);

¹³C NMR (101 MHz, CDCl₃) δ 145.1, 134.2, 128.8, 128.4, 127.7, 125.5, 124.8, 118.5, 117.0, 115.9, 112.0, 52.4, 51.8, 51.0, 40.8, 16.2.

HRMS (ESI⁺): calcd for C₁₈H₁₉N₄ [M+H]⁺: 291.1604, found: 291.1611.

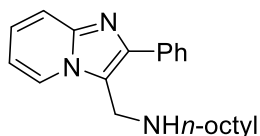


5aae, *N*-((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)butan-1-amine

¹H NMR (400 MHz, CDCl₃) δ 8.34 (d, *J* = 6.8Hz, 1H), 7.73 (d, *J* = 7.2Hz, 2H), 7.61 (d, *J* = 9.2Hz, 1H), 7.45 (t, *J* = 7.4Hz, 2H), 7.35 (t, *J* = 7.4Hz, 1H), 7.20-7.15 (m, 1H), 6.80 (t, *J* = 7.2Hz, 1H), 4.21 (s, 2H), 2.68 (t, *J* = 7.0Hz, 2H), 1.51-1.44 (m, 2H), 1.36-1.30 (m, 2H), 0.88 (t, *J* = 7.4Hz, 3H);

¹³C NMR (101 MHz, CDCl₃) δ 144.8, 143.8, 134.4, 128.5, 128.4, 127.6, 124.8, 124.4, 118.4, 117.1, 111.8, 49.1, 42.9, 31.9, 20.3, 13.8.

HRMS (ESI⁺): calcd for C₁₈H₂₂N₃ [M+H]⁺: 280.1808, found: 280.1812.

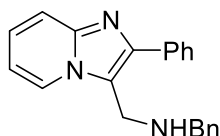


5aaf, *N-((2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)octan-1-amine*

¹H NMR (400 MHz, CDCl₃) δ 8.35 (d, *J* = 7.2Hz, 1H), 7.75 (d, *J* = 7.2Hz, 2H), 7.62 (d, *J* = 9.2Hz, 1H), 7.46 (t, *J* = 7.4Hz, 2H), 7.36 (t, *J* = 6.8Hz, 1H), 7.22-7.17 (m, 1H), 6.81 (t, *J* = 7.4Hz, 1H), 4.23 (s, 2H), 2.68 (t, *J* = 7.2Hz, 2H), 1.53-1.46 (m, 2H), 1.31-1.23 (m, 10H), 0.87 (t, *J* = 6.8Hz, 3H);

¹³C NMR (101 MHz, CDCl₃) δ 144.9, 143.9, 134.4, 128.5, 128.5, 127.7, 124.8, 124.5, 118.3, 117.2, 111.9, 49.4, 42.8, 31.7, 29.7, 29.4, 29.2, 27.2, 22.6, 14.0.

HRMS (ESI⁺): calcd for C₂₂H₃₀N₃ [M+H]⁺: 336.2434, found: 336.2439.

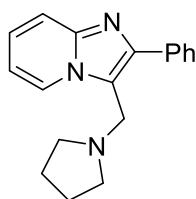


5aag, *N-benzyl-1-((2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)methanamine*

¹H NMR (400 MHz, CDCl₃) δ 8.31 (d, *J* = 6.8Hz, 1H), 7.71 (d, *J* = 7.2Hz, 2H), 7.66 (d, *J* = 8.8Hz, 1H), 7.45 (t, *J* = 7.2Hz, 2H), 7.39 (d, *J* = 7.2Hz, 1H), 7.35-7.28 (m, 5H), 7.24 (t, *J* = 8.2Hz, 1H), 6.85 (t, *J* = 6.8Hz, 1H), 4.25 (s, 2H), 3.88 (s, 2H), 1.98 (s, 1H);

¹³C NMR (101 MHz, CDCl₃) δ 144.9, 143.9, 139.6, 134.2, 129.2, 128.5, 128.4, 128.2, 127.6, 127.1, 124.8, 124.6, 118.1, 117.1, 111.9, 53.2, 41.9.

HRMS (ESI⁺): calcd for C₂₁H₂₀N₃ [M+H]⁺: 314.1652, found 314.1658.

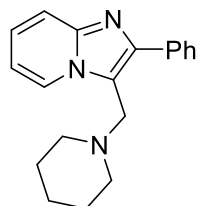


5aah, *2-phenyl-3-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine*

¹H NMR (400 MHz, CDCl₃) δ 8.46 (d, *J* = 6.8Hz, 1H), 7.79 (d, *J* = 7.2Hz, 2H), 7.61 (d, *J* = 8.8Hz, 1H), 7.44 (t, *J* = 7.6Hz, 2H), 7.35 (t, *J* = 7.4Hz, 1H), 7.19 (t, *J* = 8.0Hz, 1H), 6.79 (t, *J* = 6.8Hz, 1H), 4.08 (s, 2H), 2.50 (s, 4H), 1.73 (s, 4H);

¹³C NMR (101 MHz, CDCl₃) δ 144.8, 144.0, 134.7, 129.0, 128.3, 127.5, 125.4, 124.3, 118.0, 117.0, 111.7, 53.7, 48.7, 23.6.

HRMS (ESI⁺): calcd for C₁₈H₂₀N₃ [M+H]⁺: 278.1652, found: 278.1659.

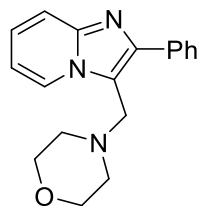


5aai, 2-phenyl-3-(piperidin-1-ylmethyl)imidazo[1,2-a]pyridine

¹H NMR (400 MHz, CDCl₃) δ 8.48 (d, *J* = 6.8Hz, 1H), 7.80 (d, *J* = 7.2Hz, 2H), 7.61 (d, *J* = 8.8Hz, 1H), 7.44 (t, *J* = 6.6Hz, 2H), 7.34 (t, *J* = 7.4Hz, 1H), 7.18 (t, *J* = 8.0Hz, 1H), 6.78 (t, *J* = 6.8Hz, 1H), 3.91 (s, 2H), 2.40 (s, 4H), 1.55-1.50 (m, 4H), 1.41 (s, 2H);

¹³C NMR (101 MHz, CDCl₃) δ 144.9, 144.7, 134.5, 128.8, 128.3, 127.5, 125.6, 124.4, 116.9, 116.8, 111.6, 54.1, 52.3, 25.9, 24.2.

HRMS (ESI⁺): calcd for C₁₉H₂₂N₃ [M+H]⁺: 292.1808, found: 292.1815.

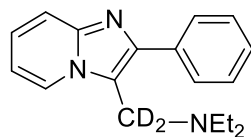


5aaj, 4-((2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)morpholine

¹H NMR (400 MHz, CDCl₃) δ 8.39 (d, *J* = 6.8Hz, 1H), 7.78 (d, *J* = 7.2Hz, 2H), 7.61 (d, *J* = 8.8Hz, 1H), 7.43 (t, *J* = 7.4Hz, 2H), 7.34 (t, *J* = 7.4Hz, 1H), 7.20-7.16 (m, 1H), 6.79 (t, *J* = 6.8Hz, 1H), 3.93 (s, 2H), 3.63 (t, *J* = 4.6Hz, 4H), 2.44 (t, *J* = 4.4Hz, 4H);

¹³C NMR (101 MHz, CDCl₃) δ 145.0, 144.9, 134.2, 128.7, 128.2, 127.6, 125.1, 124.4, 117.0, 115.7, 111.7, 66.7, 53.0, 51.8.

HRMS (ESI⁺): calcd for C₁₈H₂₀N₃O [M+H]⁺: 294.1601, found: 294.1610.



D-5aaa, N-ethyl-N-((2-phenylimidazo[1,2-a]pyridin-3-yl)methyl-d2)ethanamine

¹H NMR (400 MHz, CDCl₃) δ 8.47 (d, *J* = 7.2Hz, 1H), 7.76 (d, *J* = 6.8Hz, 2H), 7.59 (d, *J* = 8.8Hz,

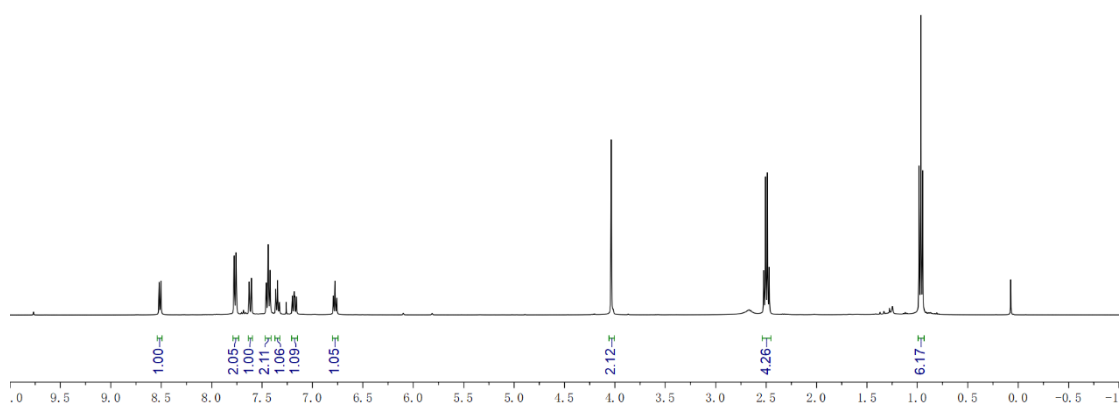
1H), 7.41 (t, $J = 7.4\text{Hz}$, 2H), 7.31 (t, $J = 7.4\text{Hz}$, 1H), 7.15-7.11 (m, 1H), 6.73 (t, $J = 7.4\text{Hz}$, 1H), 2.46 (q, $J = 7.2\text{Hz}$, 4H), 0.93 (t, $J = 7.0\text{Hz}$, 6H);

$^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 144.8, 144.6, 134.6, 128.7, 128.2, 127.4, 125.6, 124.1, 117.3, 116.9, 111.3, 60.2, 46.3, 11.5.

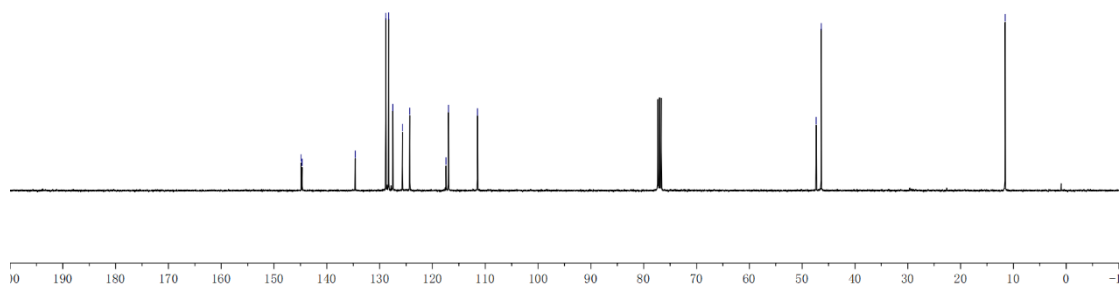
HRMS (ESI^+): calcd for $\text{C}_{18}\text{H}_{20}\text{D}_2\text{N}_3$ $[\text{M}+\text{H}]^+$: 282.1934, found: 282.1941.

4. H and C NMR spectra of products

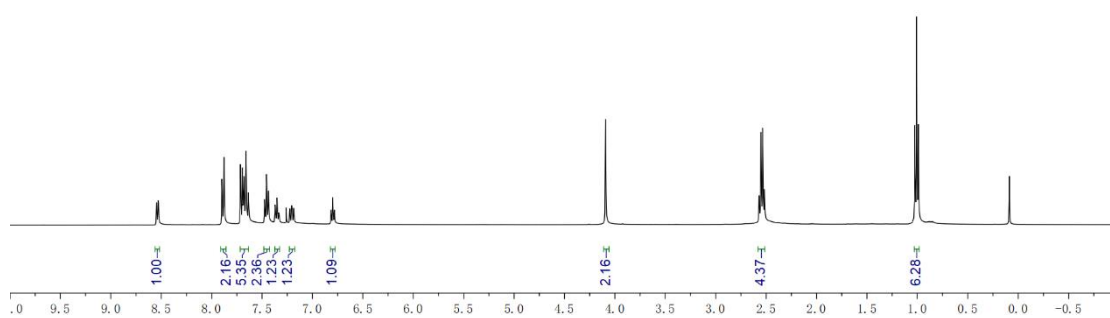
N-ethyl-*N*-((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5aaa)



144.86
144.69
134.63
128.84
128.29
127.60
125.69
124.30
117.44
116.97
111.47
47.35
46.38
11.56



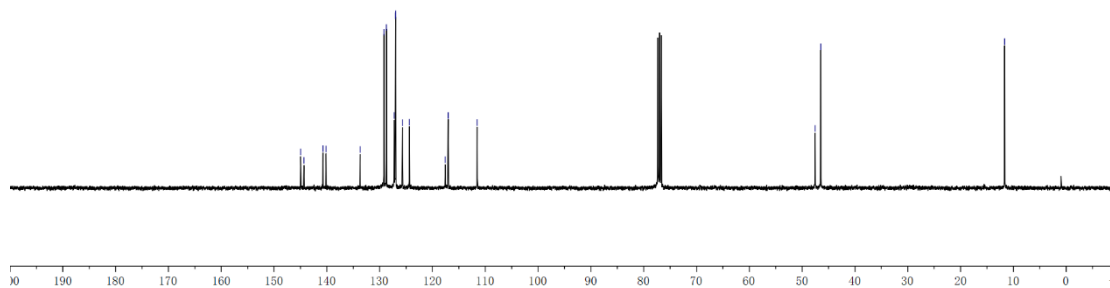
N-((2-([1,1'-biphenyl]-4-yl)imidazo[1,2-*a*]pyridin-3-yl)methyl)-*N*-ethylethanamine (5aba)



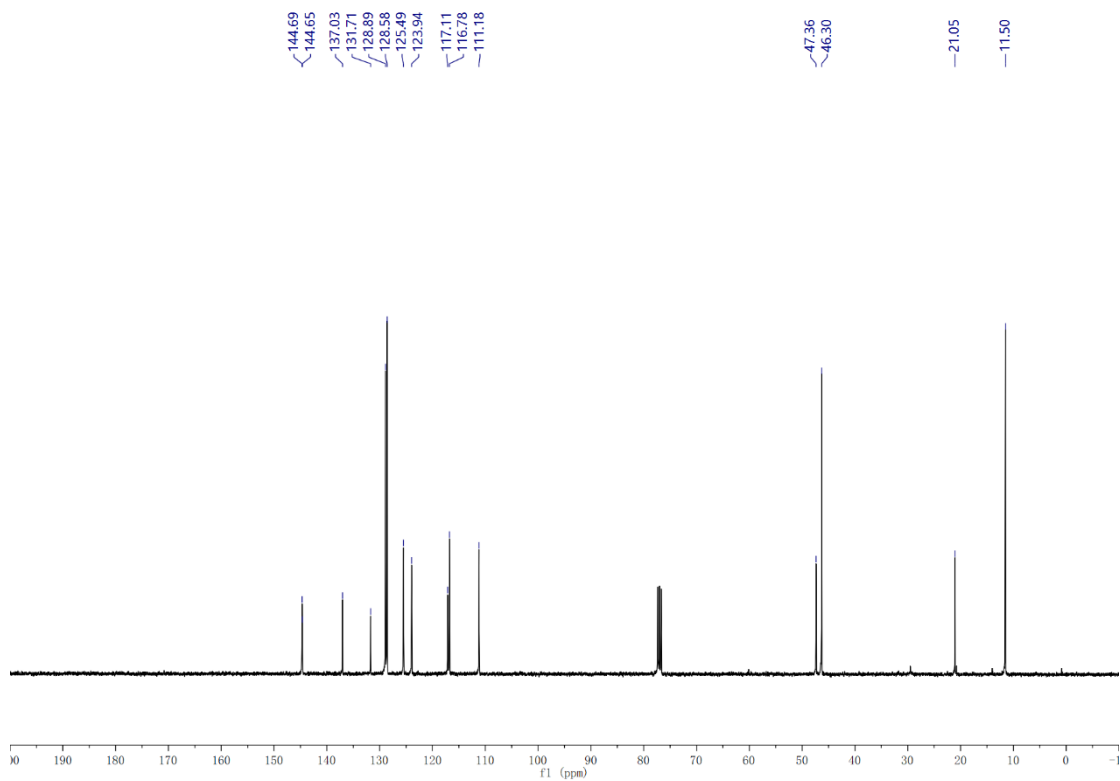
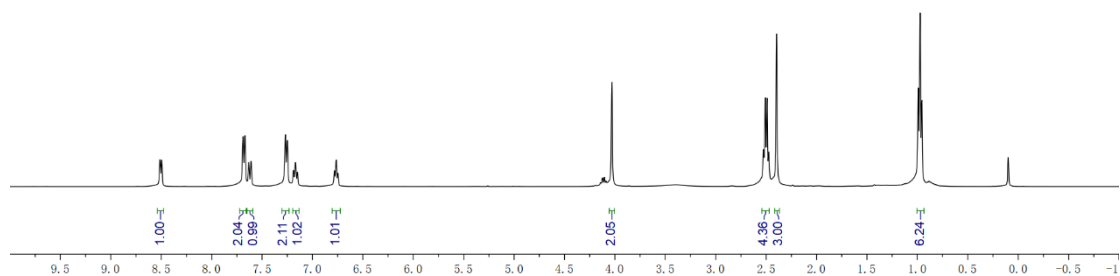
144.97
144.33
140.72
140.16
133.69
128.73
127.25
127.02
126.98
125.70
124.36
117.59
117.02
111.53

47.54
46.47

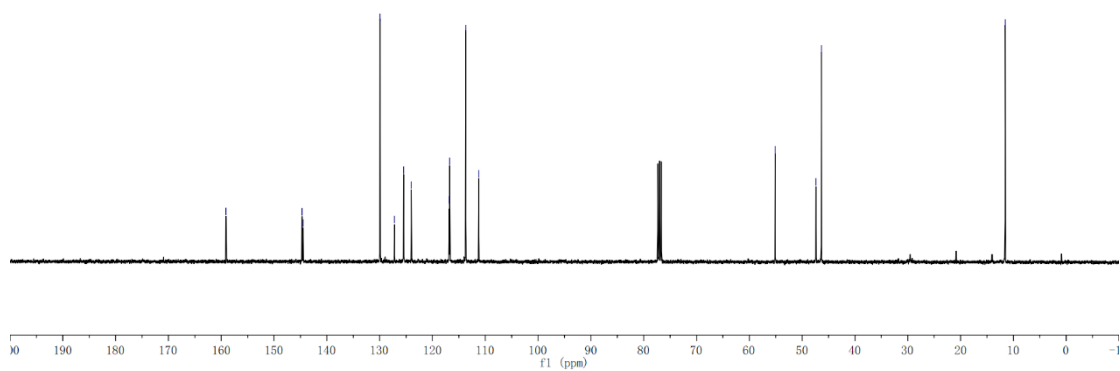
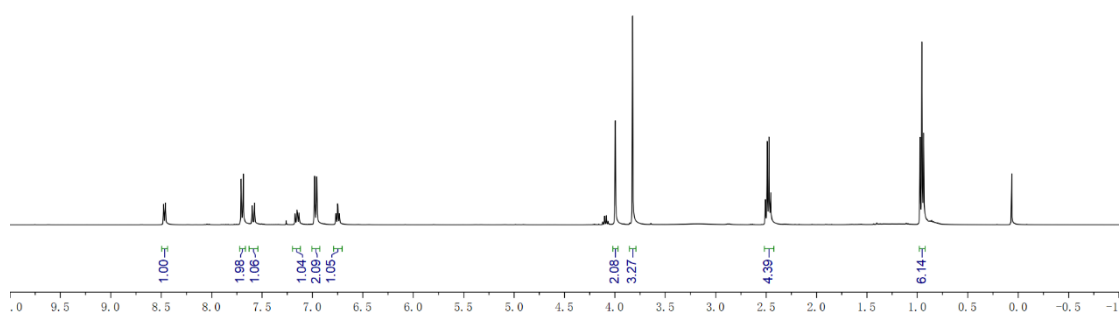
11.66



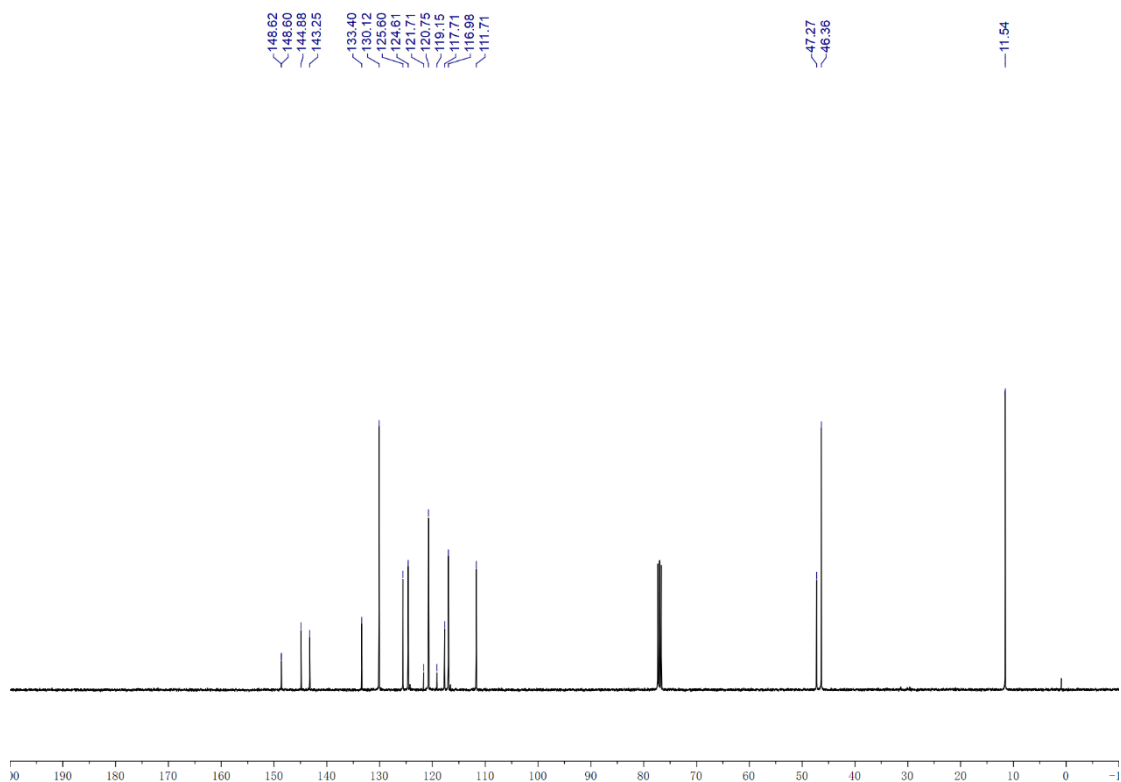
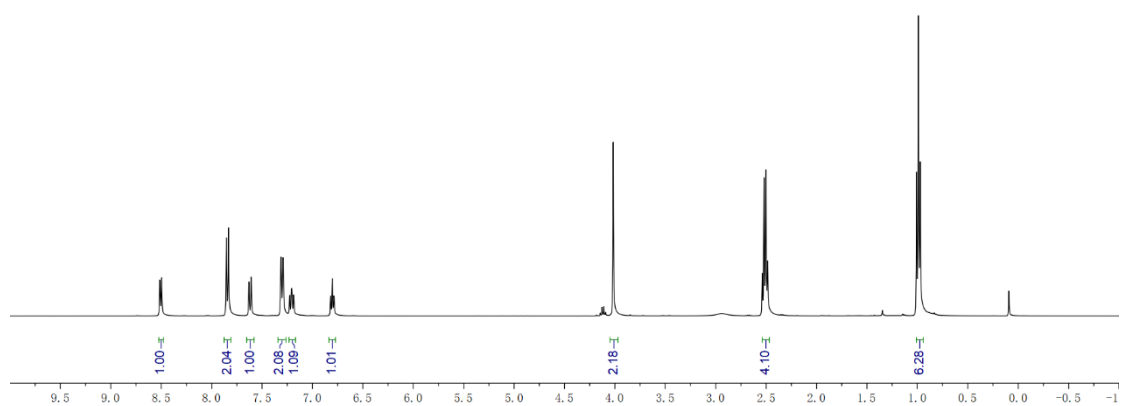
N-ethyl-*N*-((2-(*p*-tolyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5aca)



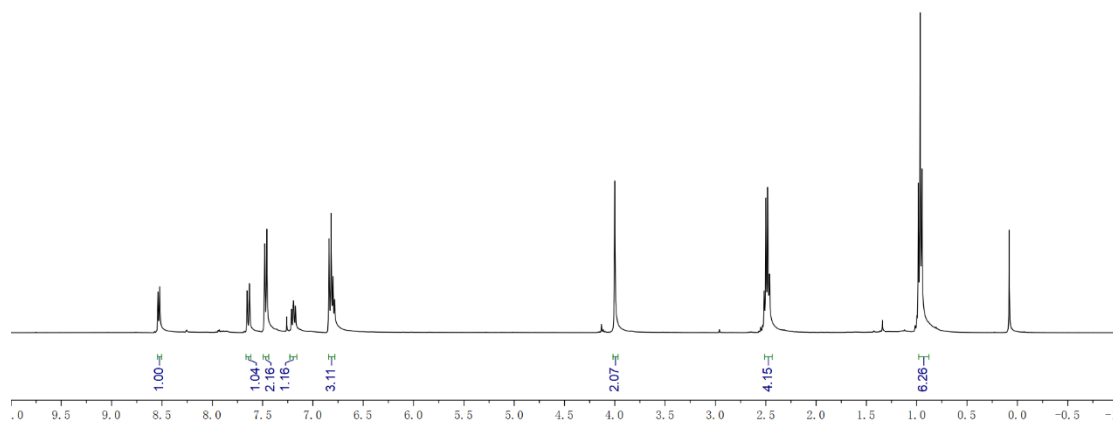
N-ethyl-*N*-((2-(4-methoxyphenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5ada)



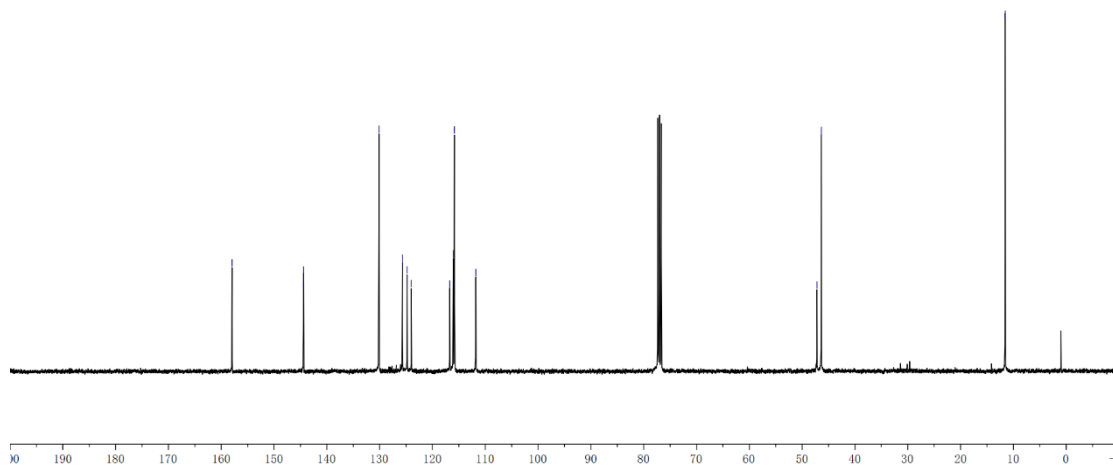
N-ethyl-*N*-((2-(4-(trifluoromethoxy)phenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5aea)



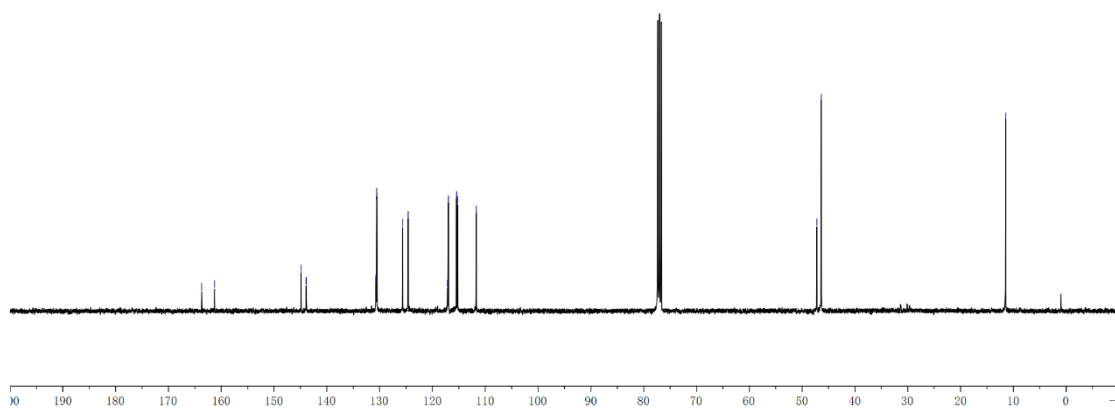
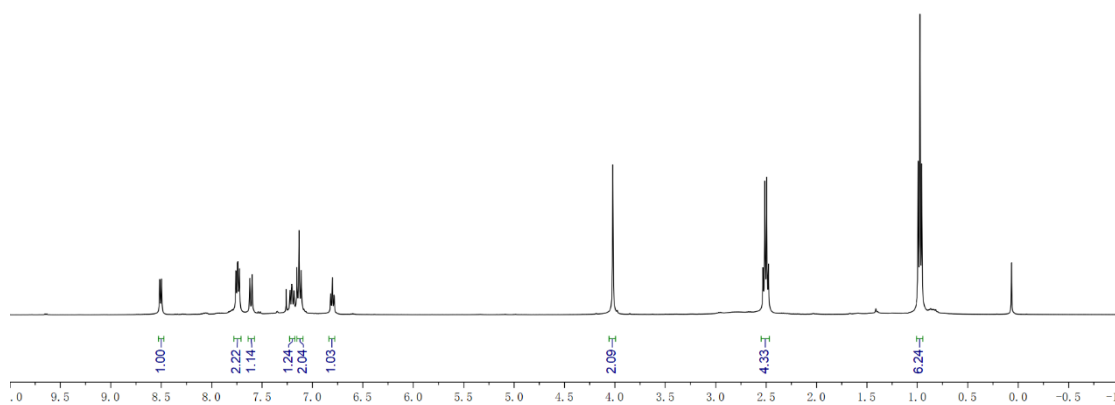
4-(3-((diethylamino)methyl)imidazo[1,2-a]pyridin-2-yl)phenol (5afa)



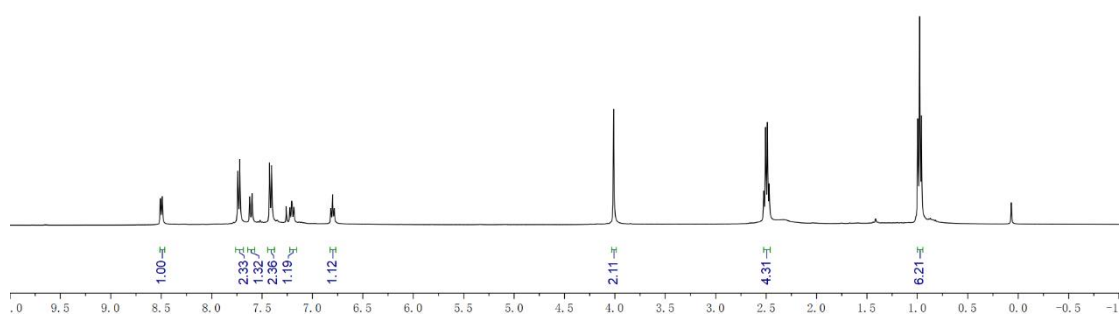
157.94
144.43
144.39
130.13
125.70
124.78
124.00
116.72
115.95
111.79
47.19
46.36
11.54



N-ethyl-*N*-((2-(4-fluorophenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5ga)



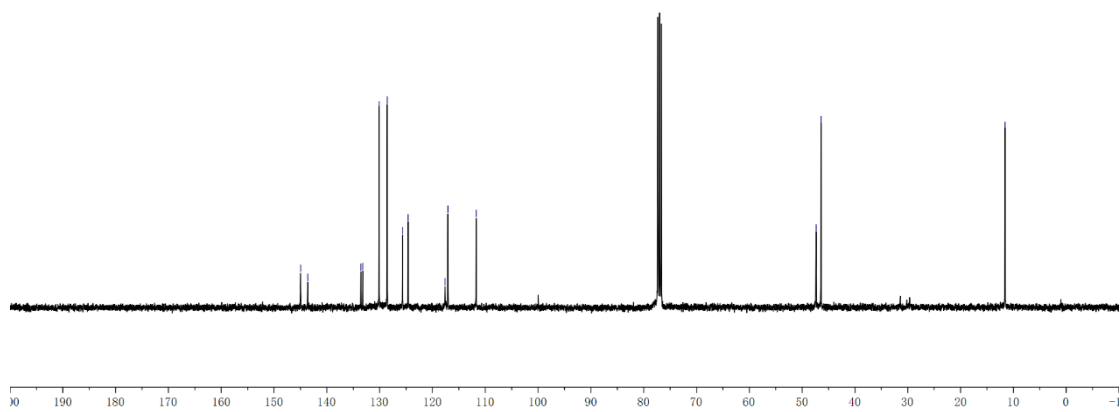
N-((2-(4-chlorophenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)-*N*-ethylethanamine (5aha)



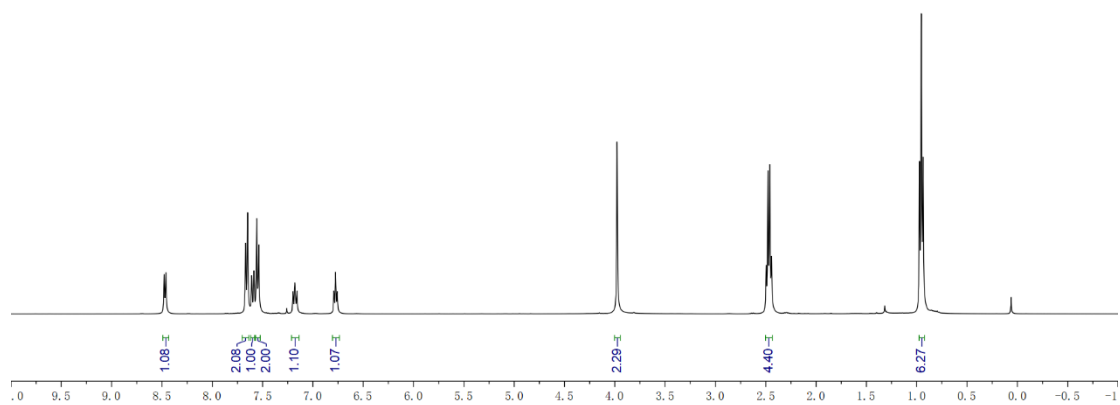
144.96
143.80
133.55
133.20
130.47
126.87
125.66
124.82
117.62
117.07
111.73

47.34
46.43

11.58



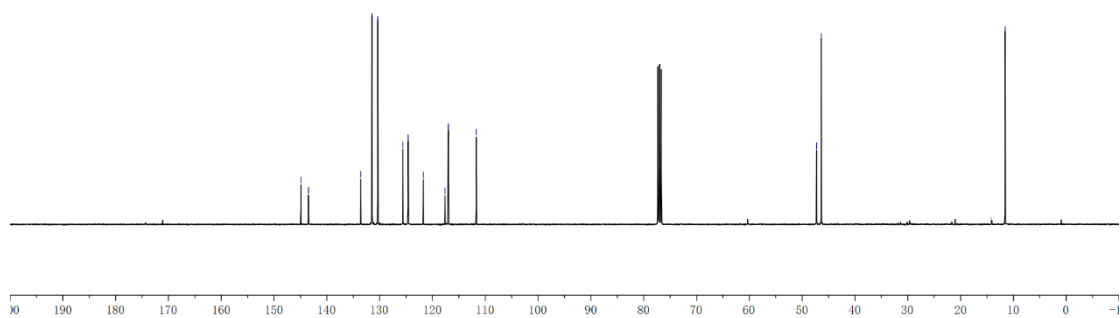
N-((2-(4-bromophenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)-*N*-ethylethanamine (5aia)



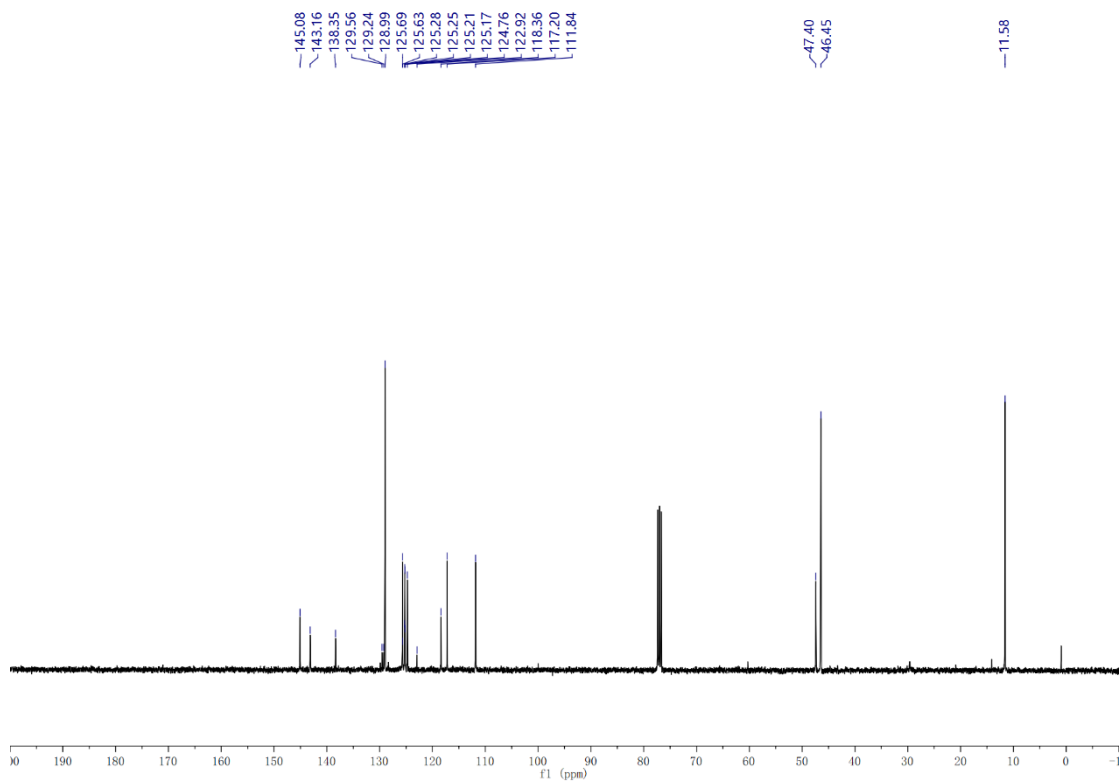
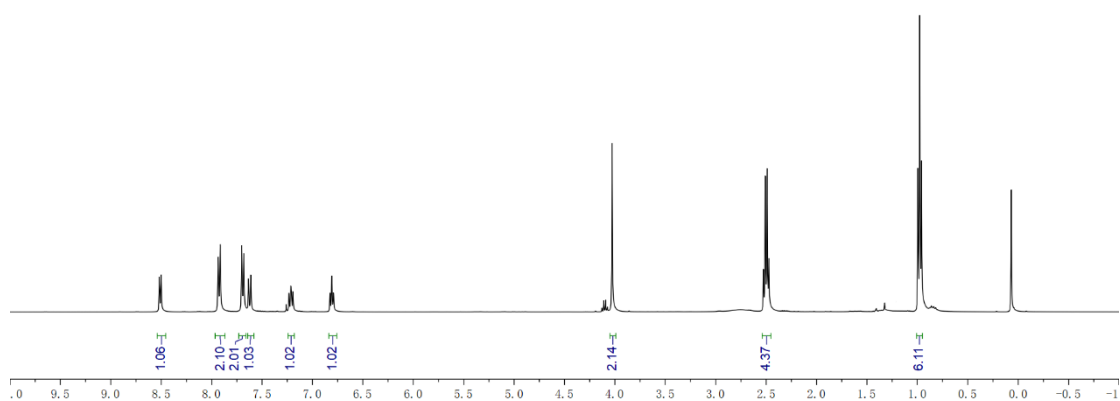
144.90
143.48
132.58
131.46
130.35
126.60
124.60
121.74
117.63
111.70

47.27
46.36

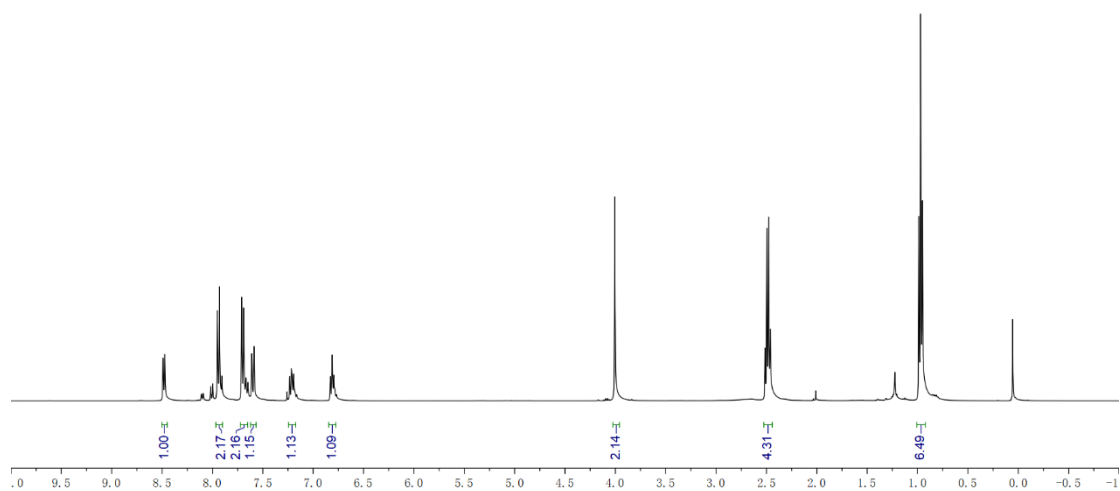
11.55



N-ethyl-*N*-((2-(4-(trifluoromethyl)phenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5aja)



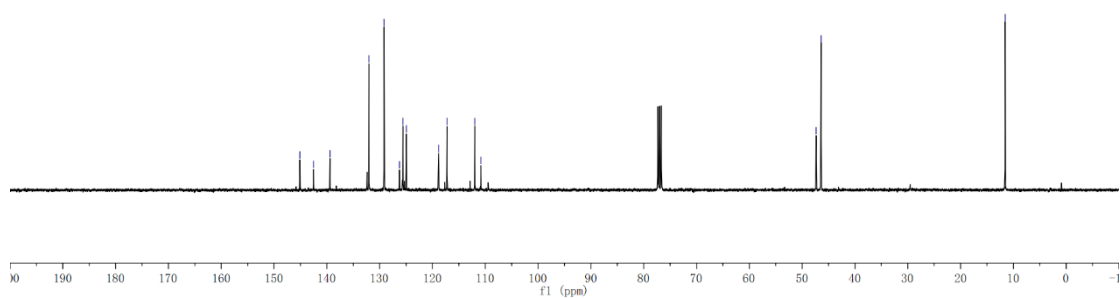
4-(3-((diethylamino)methyl)imidazo[1,2-a]pyridin-2-yl)benzotrile (5aka)



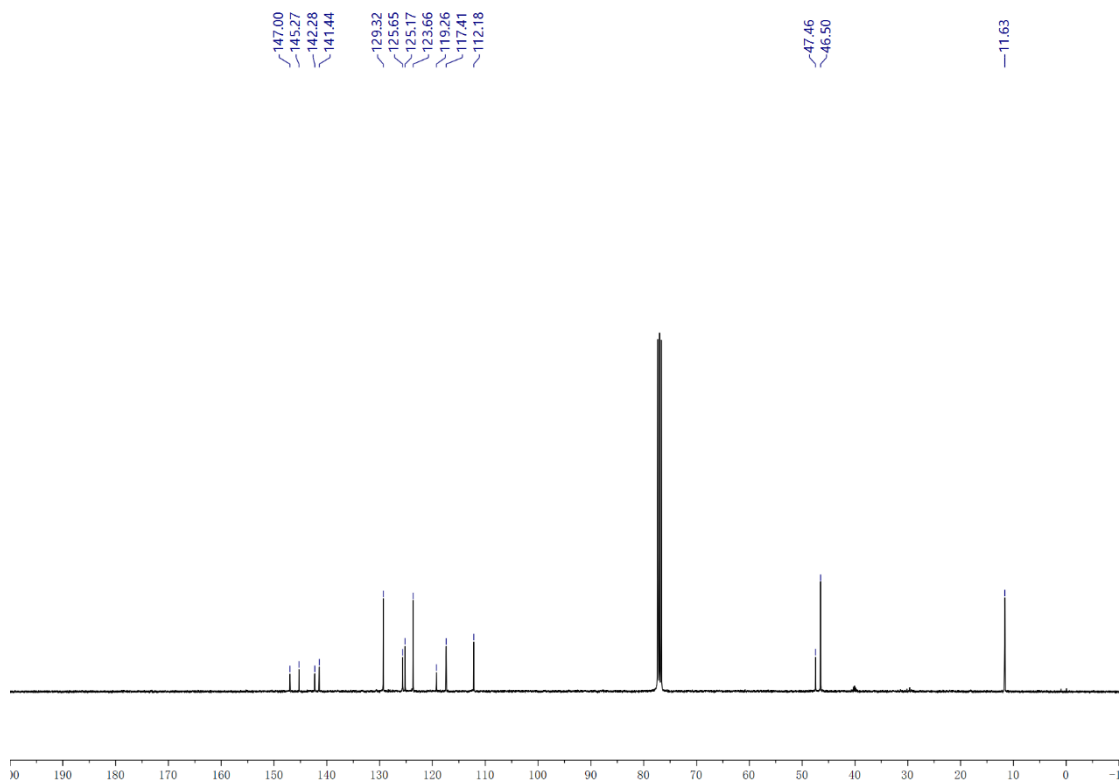
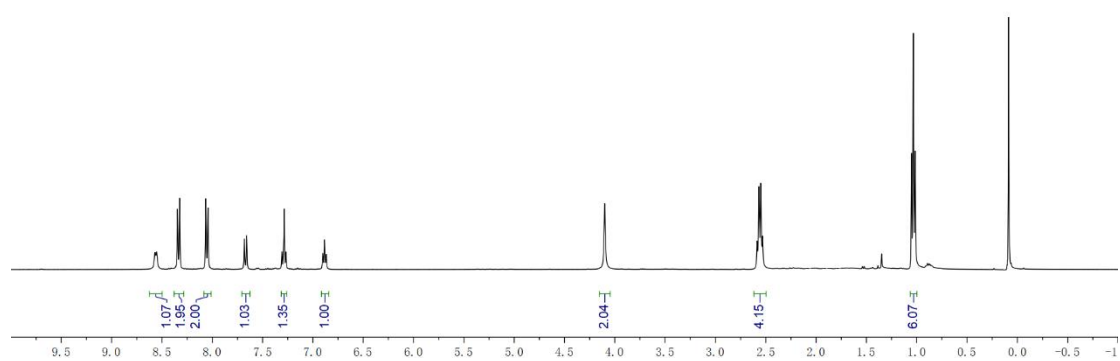
145.11
142.52
139.41
132.04
129.15
126.24
125.59
124.94
118.82
117.24
111.99
110.83

47.35
46.42

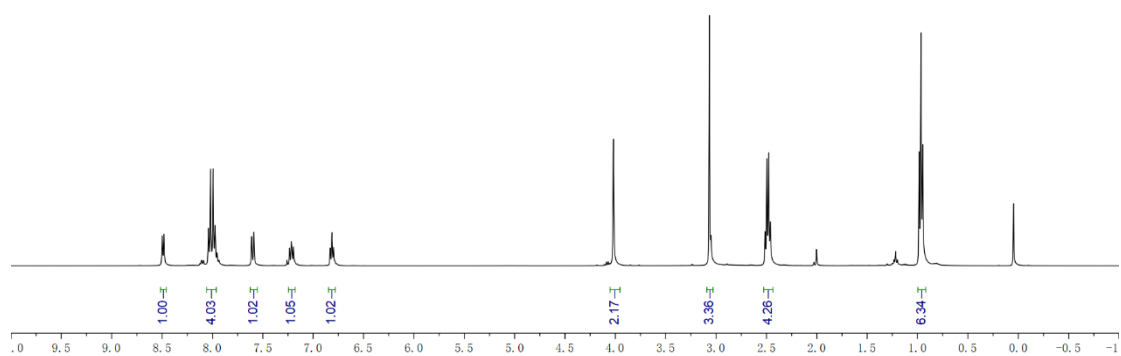
11.55



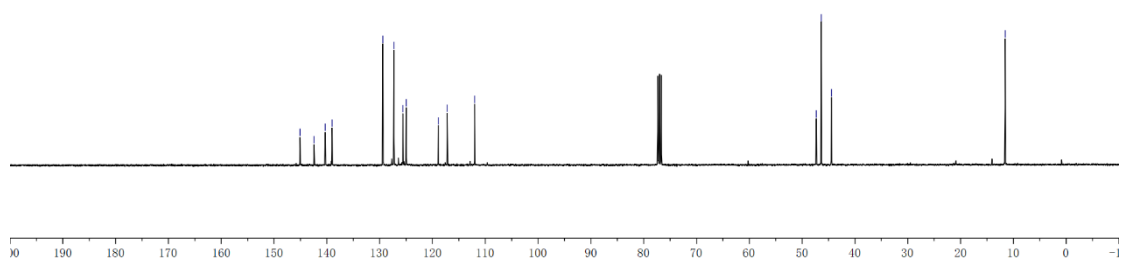
N-ethyl-*N*-((2-(4-nitrophenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5a)



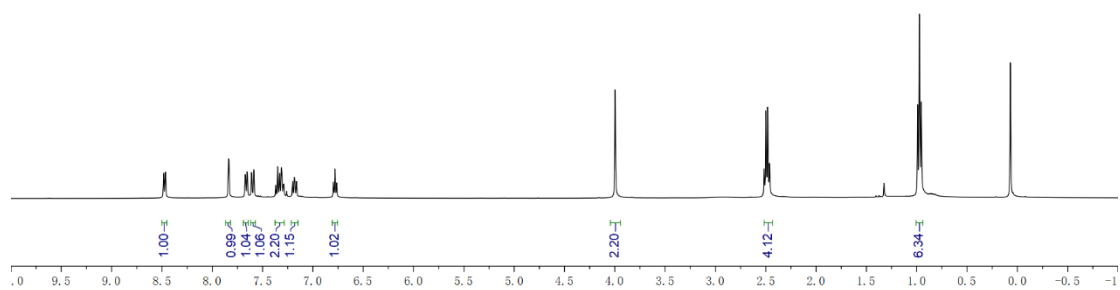
N-ethyl-*N*-((2-(4-(methylsulfonyl)phenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5ama)



145.08
142.41
140.31
139.01
129.40
127.32
125.60
124.98
118.91
117.19
112.01
47.33
46.39
44.46
11.55



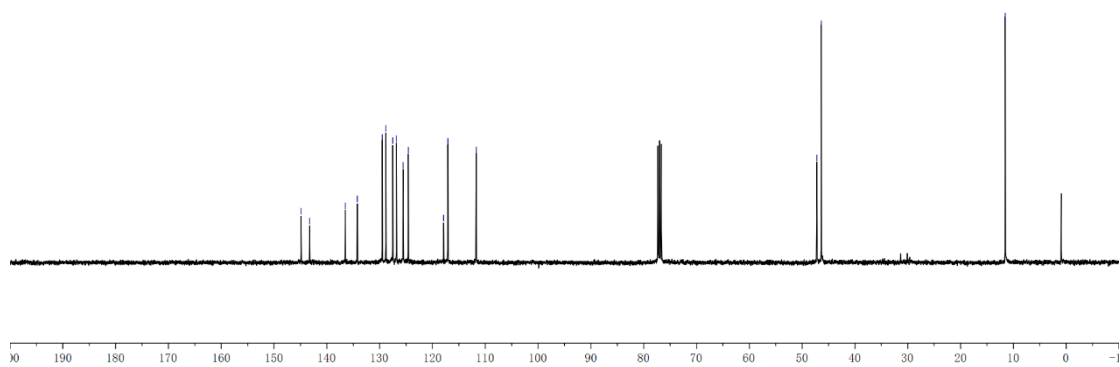
N-((2-(3-chlorophenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)-*N*-ethylethanamine (5ana)



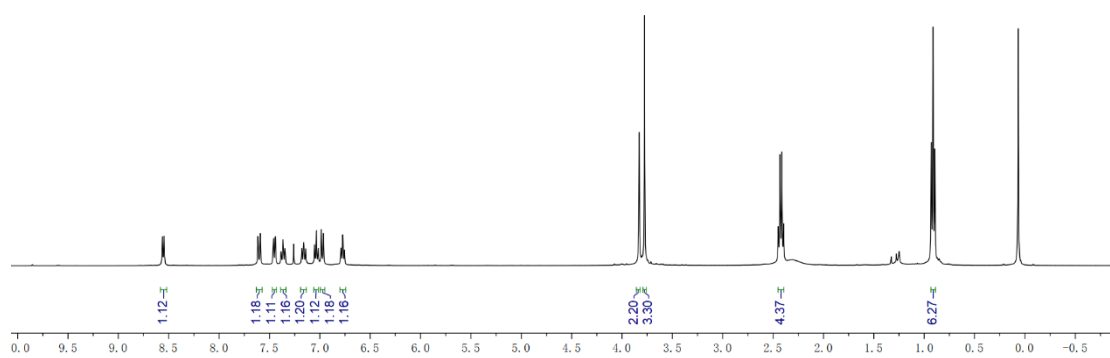
144.88
139.55
136.55
134.23
129.51
128.82
127.51
126.81
125.56
124.58
117.89
117.08
111.72

47.22
46.37

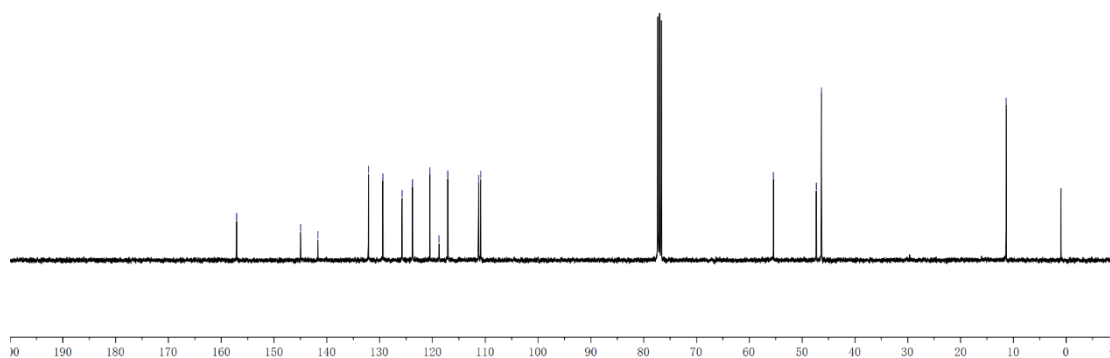
11.55



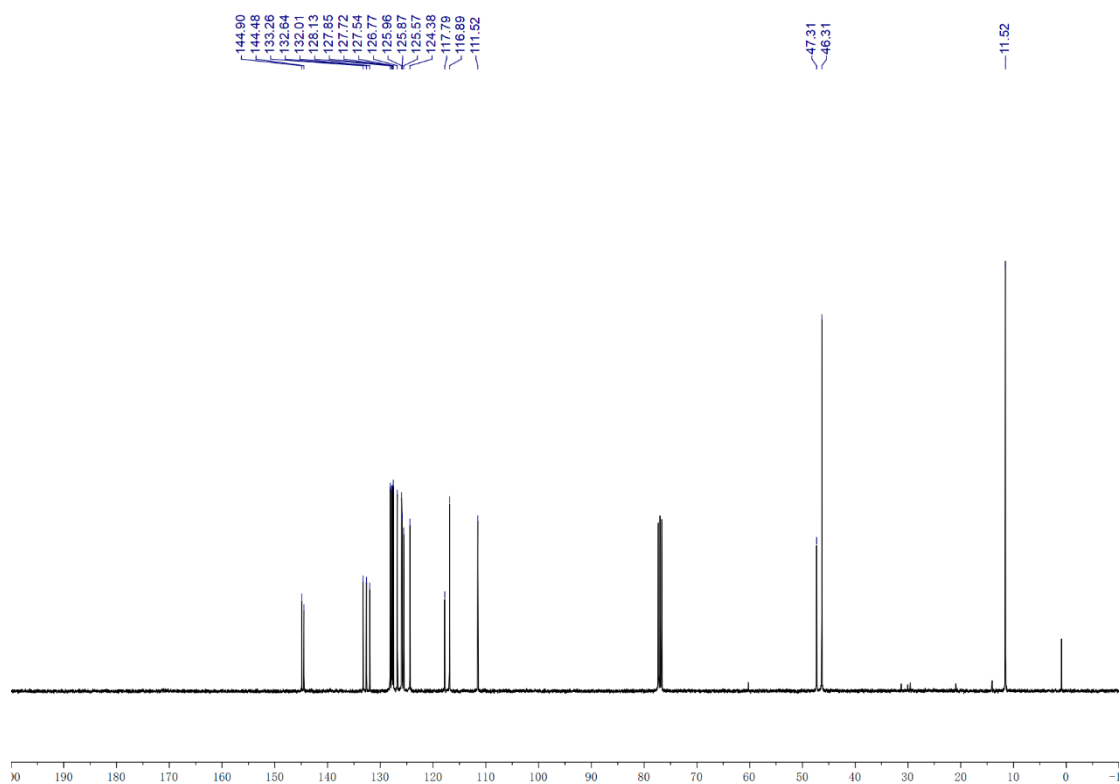
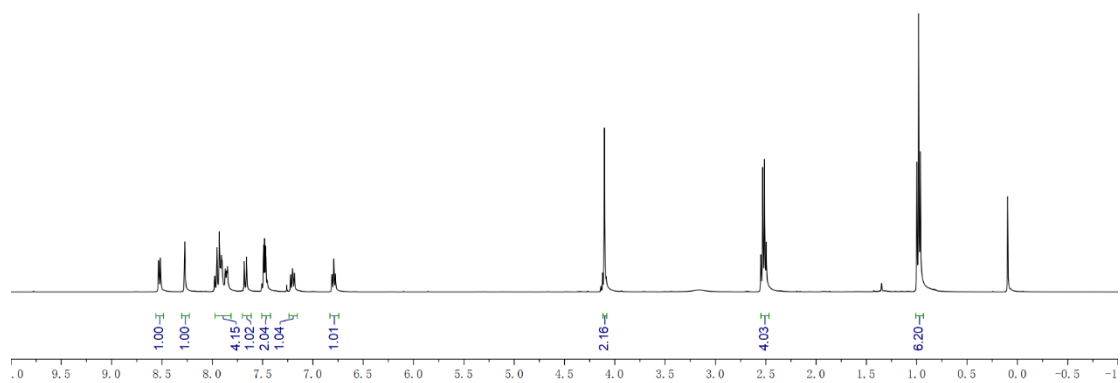
N-ethyl-*N*-((2-(2-methoxyphenyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5a0a)



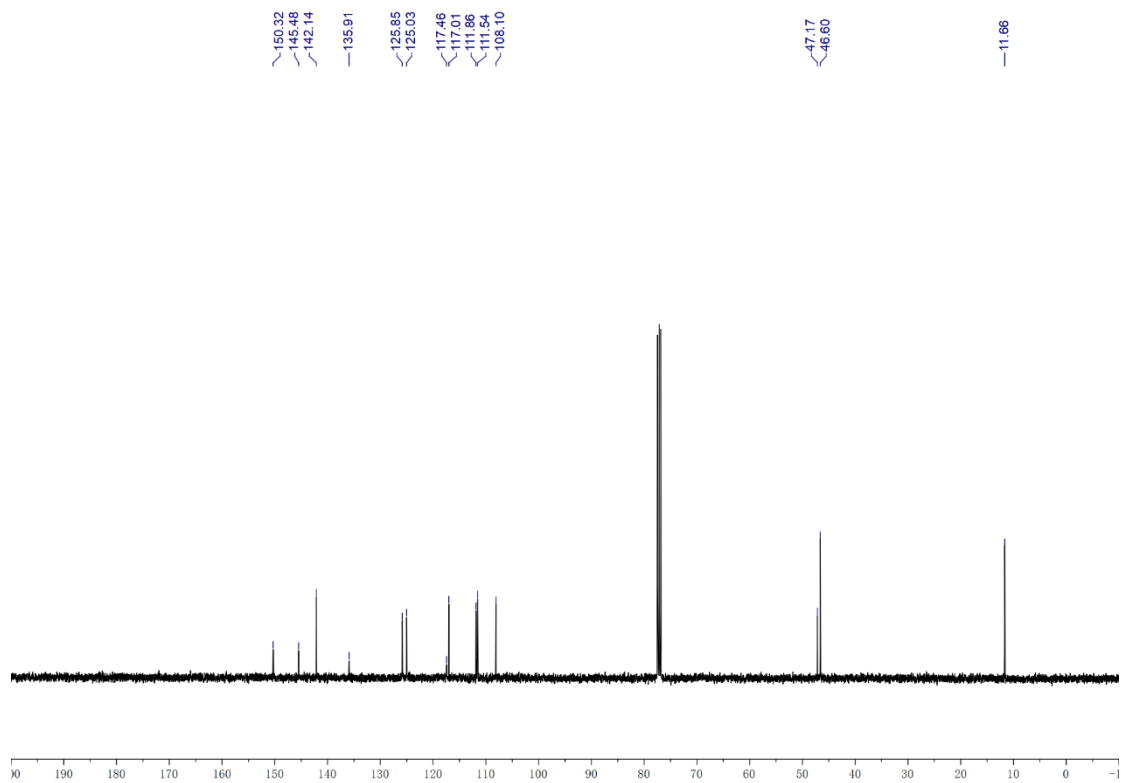
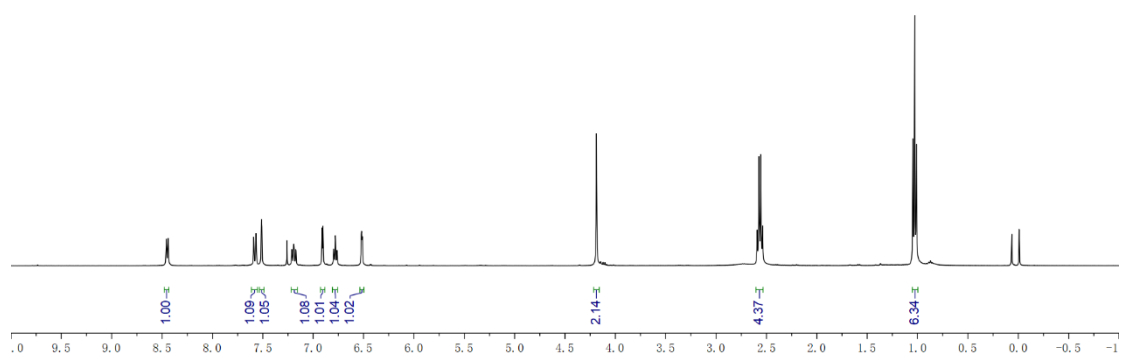
157.09, 144.97, 141.68, 132.15, 129.40, 125.75, 123.78, 123.74, 120.90, 118.76, 117.10, 111.28, 110.86, 55.44, 47.31, 46.34, 11.37



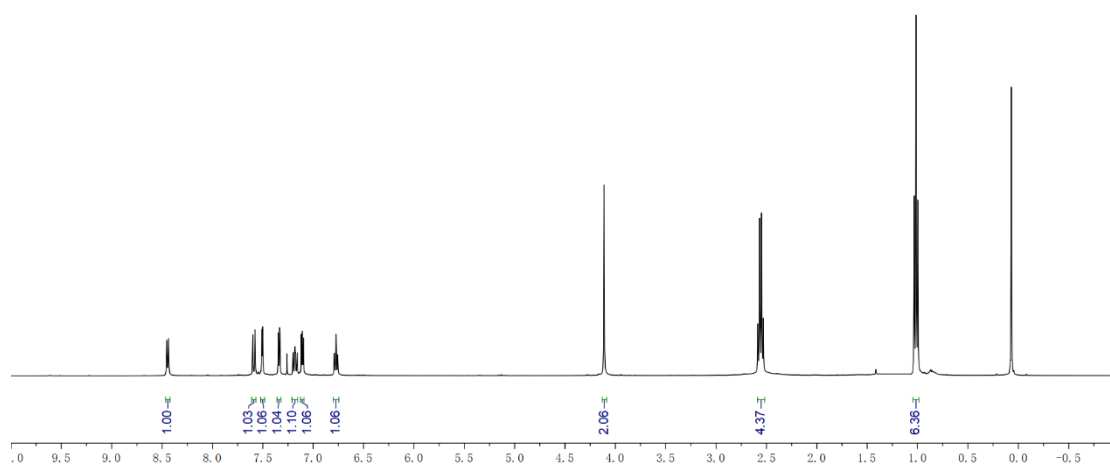
N-ethyl-*N*-((2-(naphthalen-2-yl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5apa)



N-ethyl-*N*-((2-(furan-2-yl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5aqa)



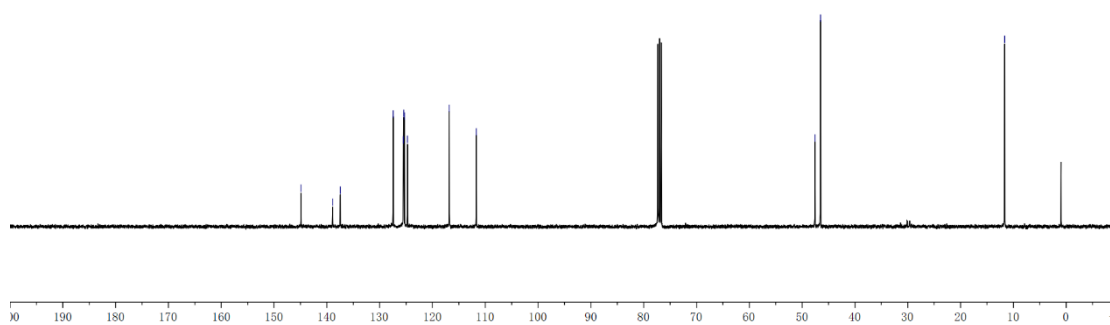
N-ethyl-*N*-((2-(thiophen-2-yl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5ara)



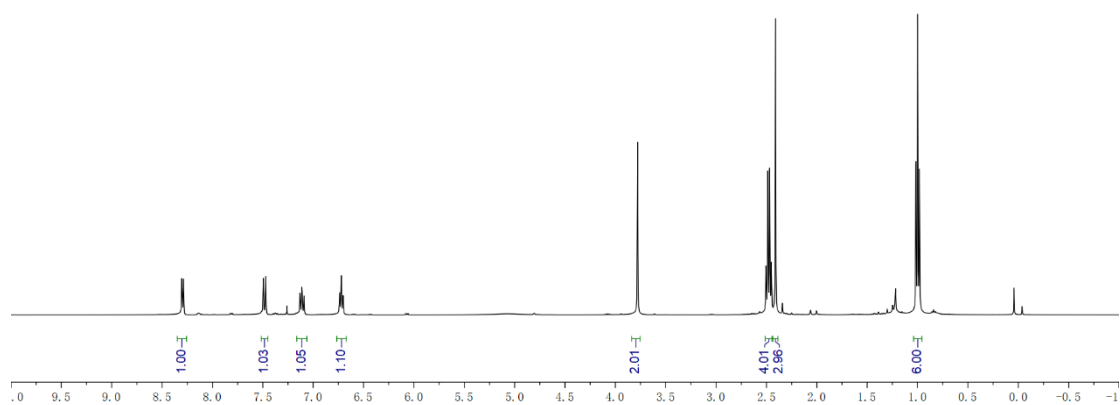
144.91
138.91
137.46
127.44
125.51
125.44
125.28
124.74
116.82
111.71

47.59
46.51

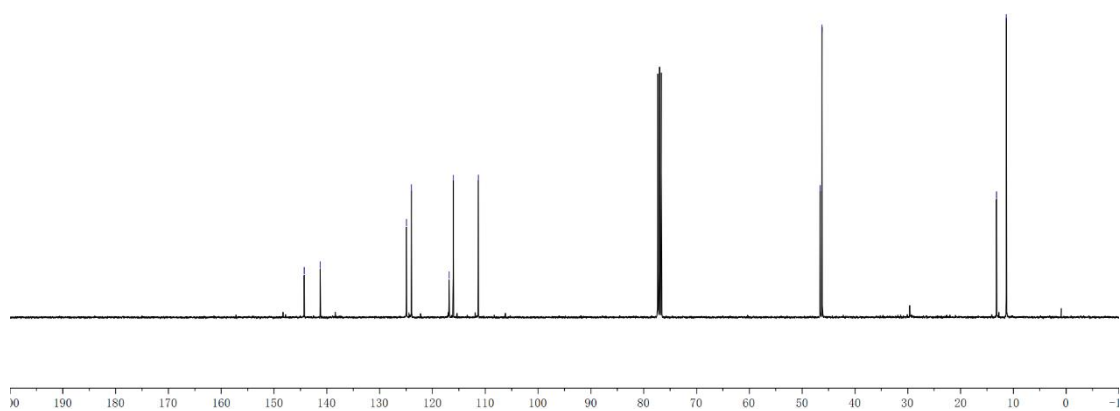
11.85



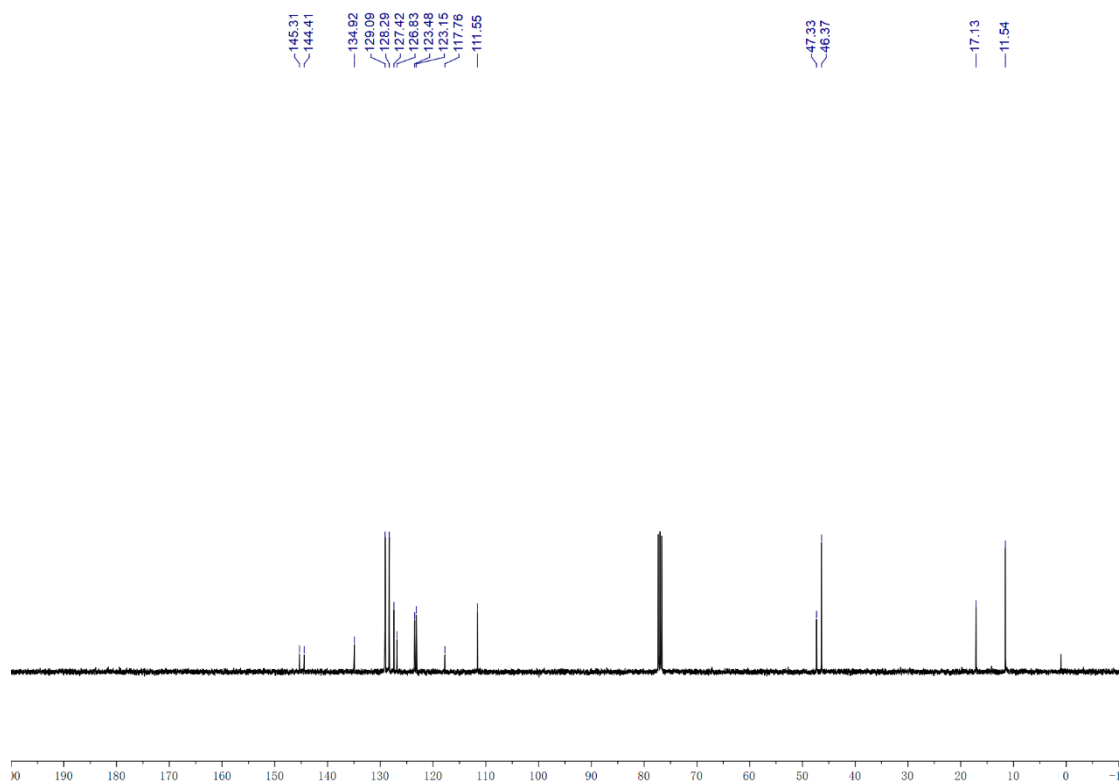
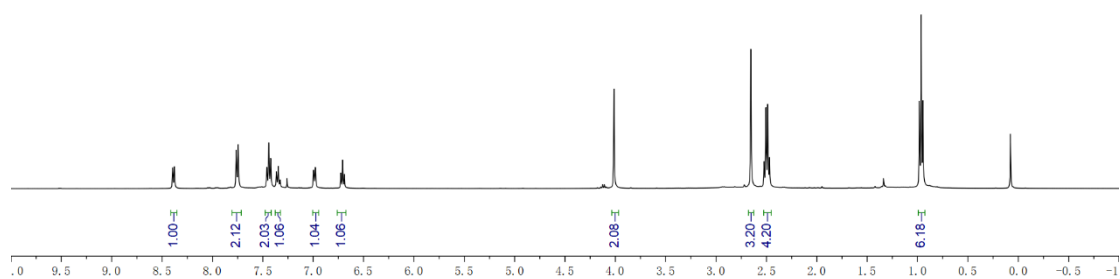
N-ethyl-*N*-((2-methylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5asa)



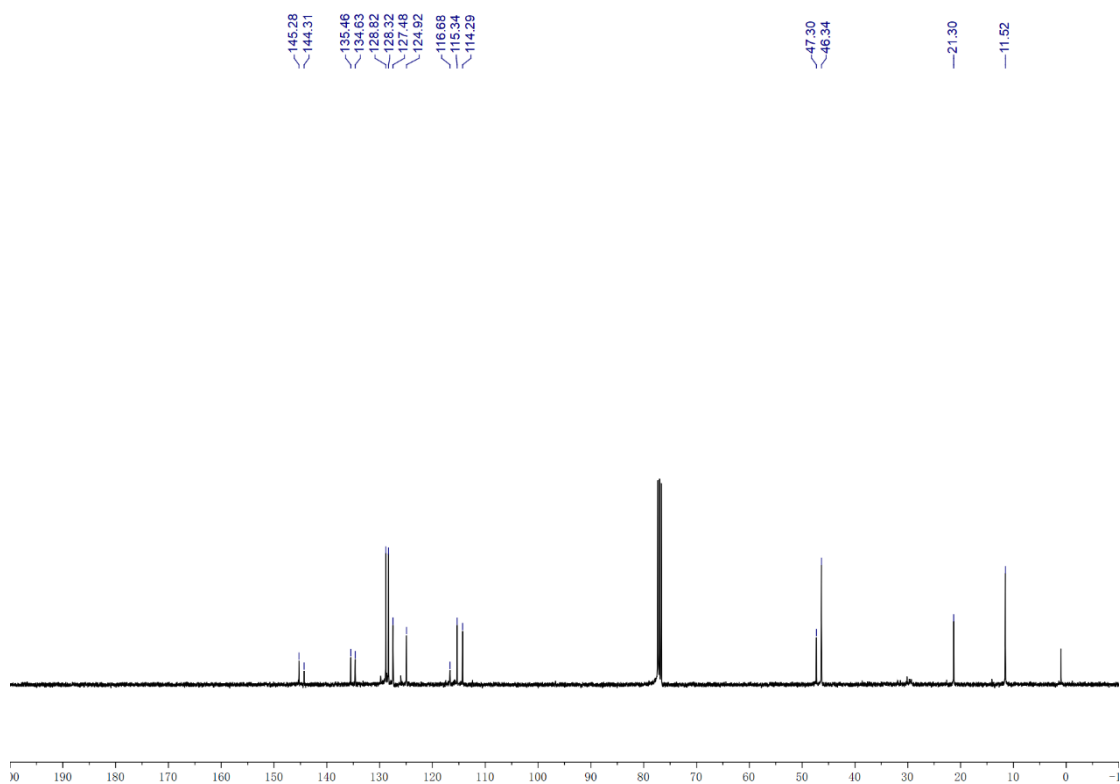
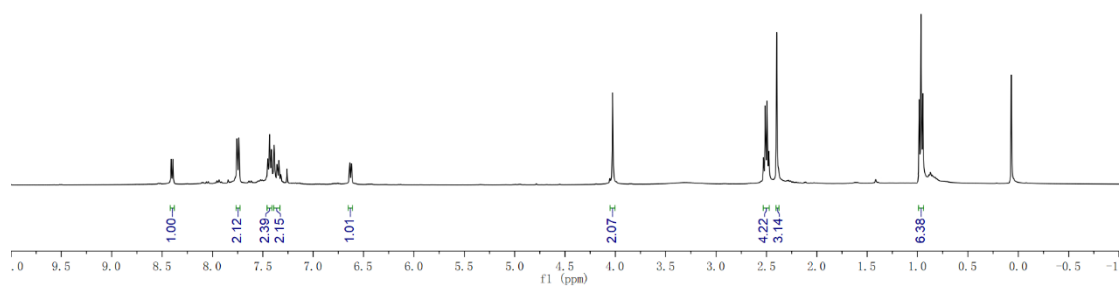
144.29
141.22
124.93
123.96
116.84
116.06
111.31
46.57
46.22
13.19
11.34



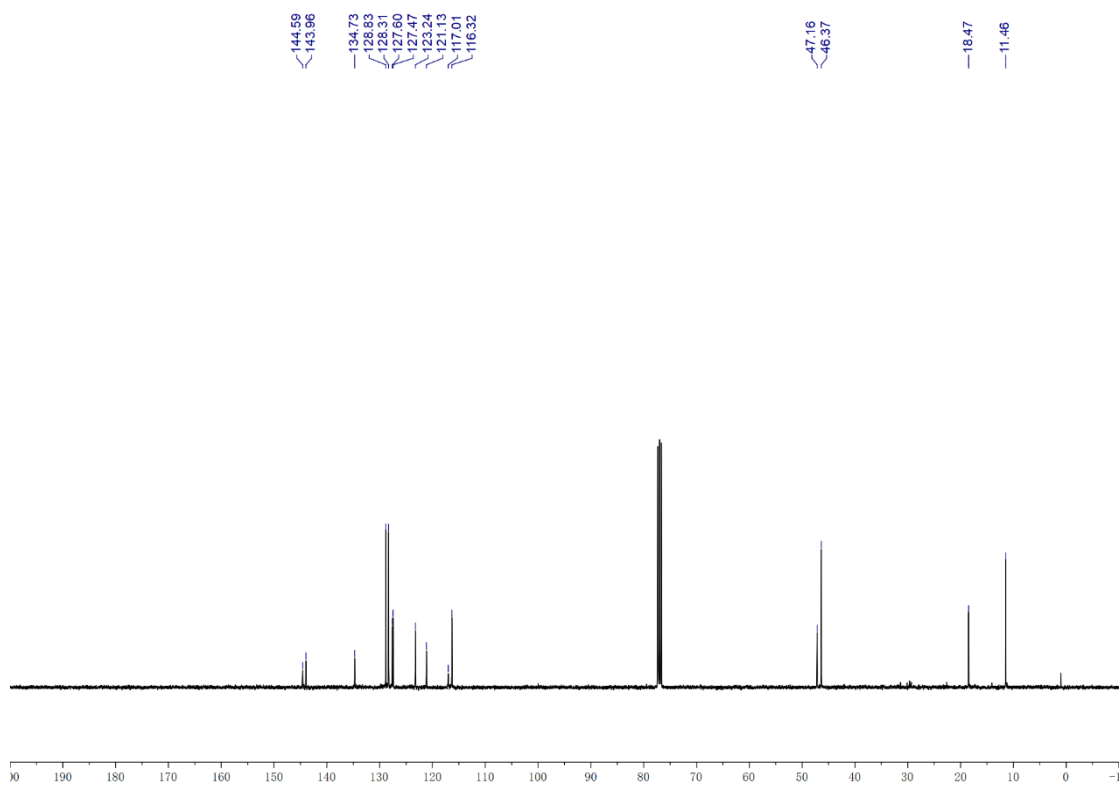
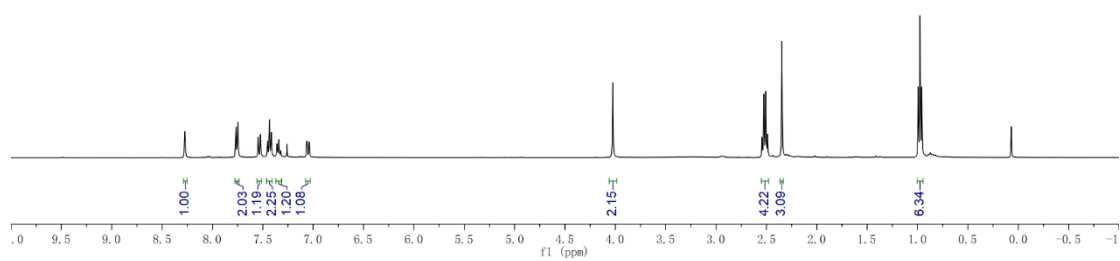
N-ethyl-*N*-((8-methyl-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5baa)



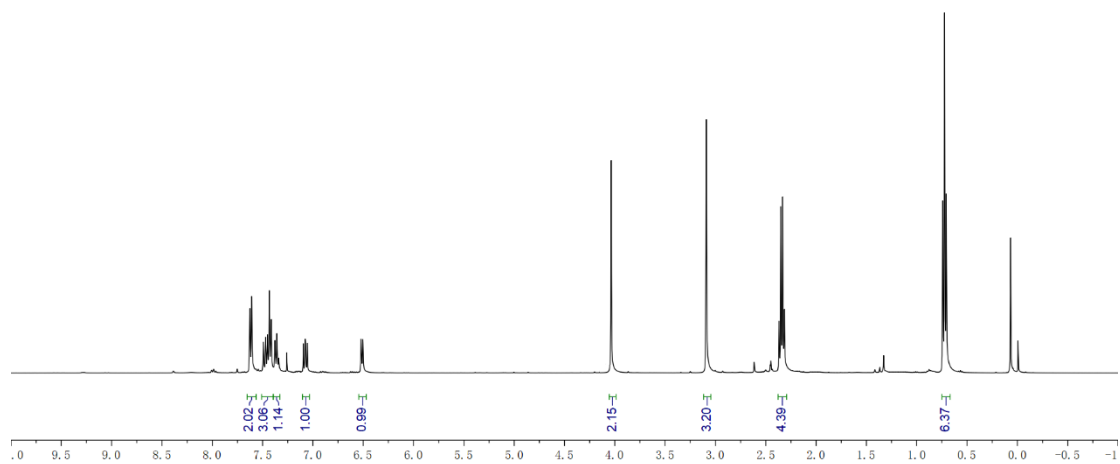
N-ethyl-*N*-((7-methyl-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5ca)



N-ethyl-*N*-((6-methyl-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5daa)



N-ethyl-*N*-((5-methyl-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5aa)

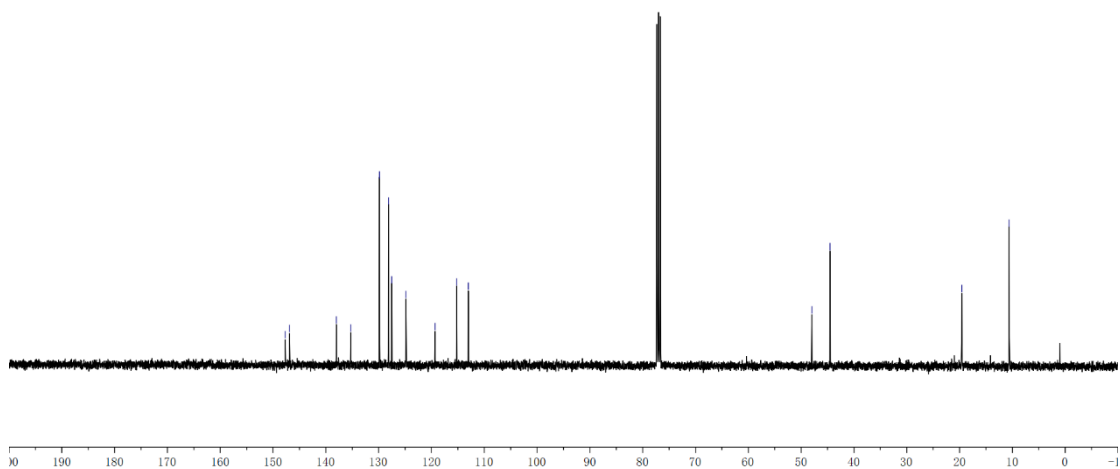


147.70
146.88
139.01
135.29
129.85
128.15
127.52
124.83
119.33
115.22
113.02

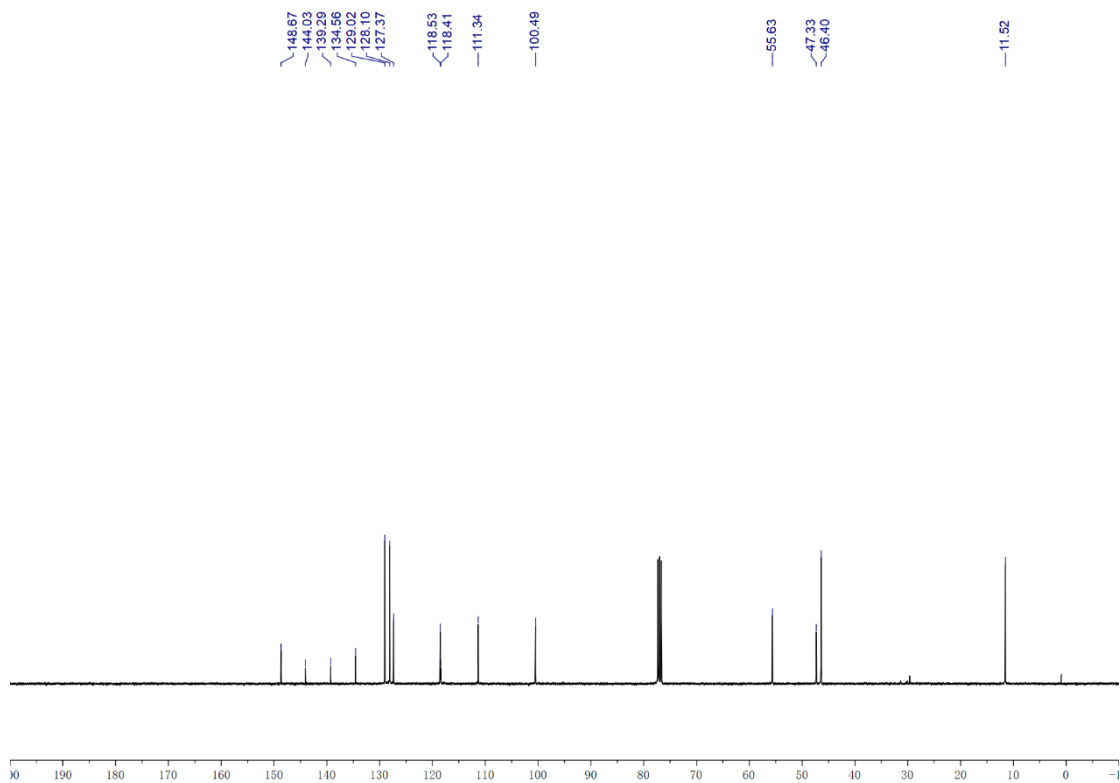
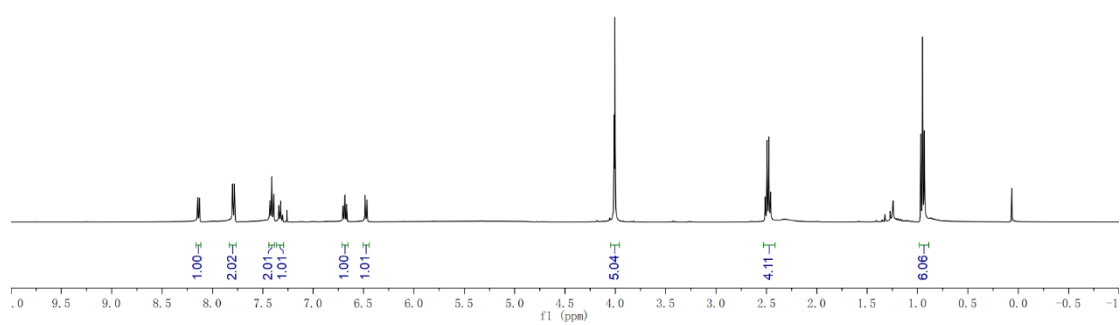
47.98
44.53

19.59

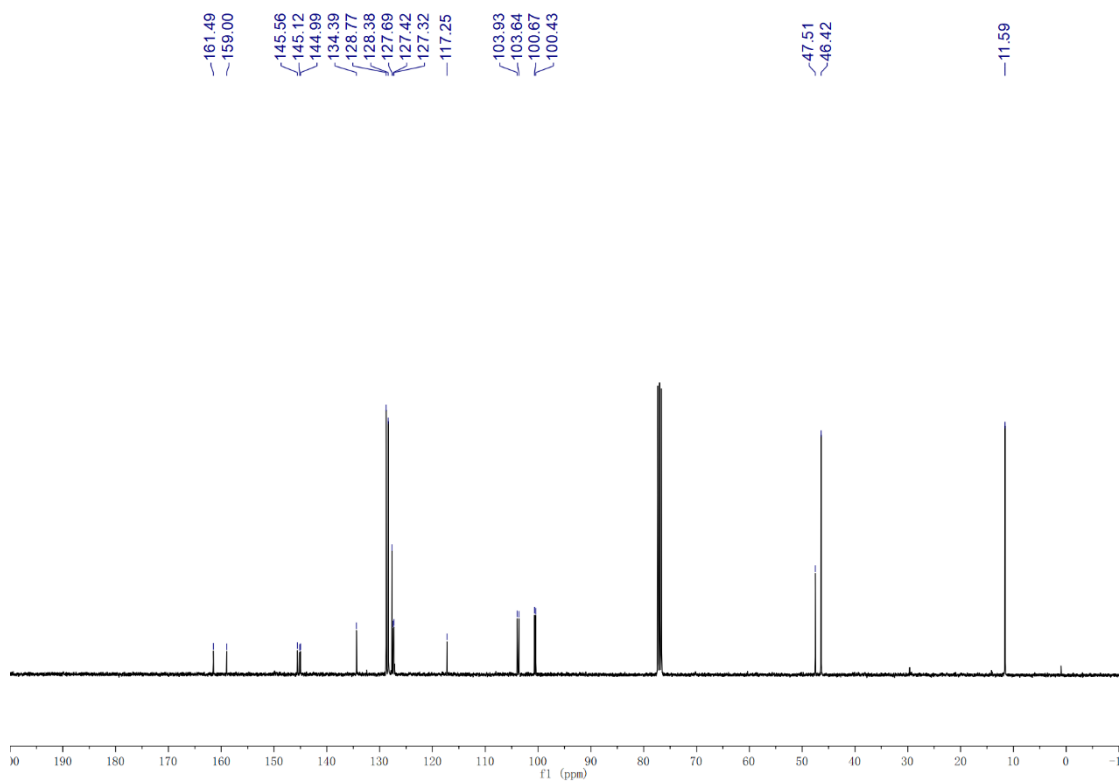
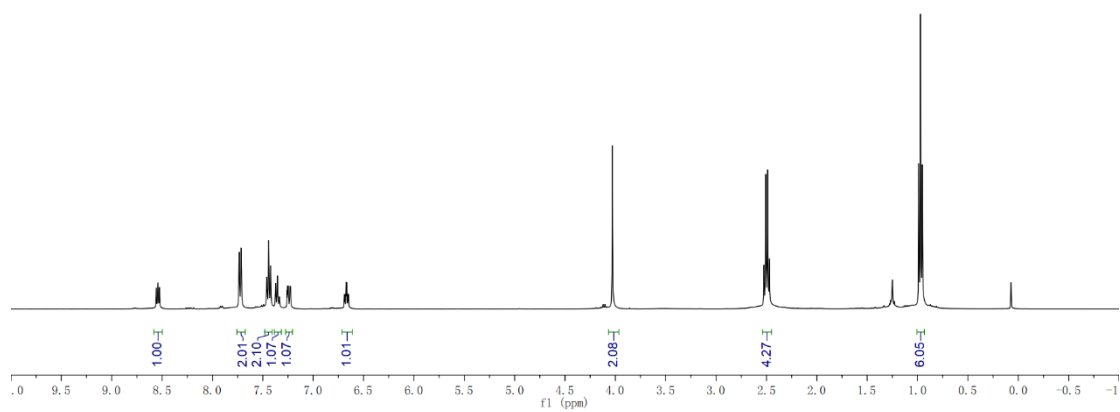
10.61



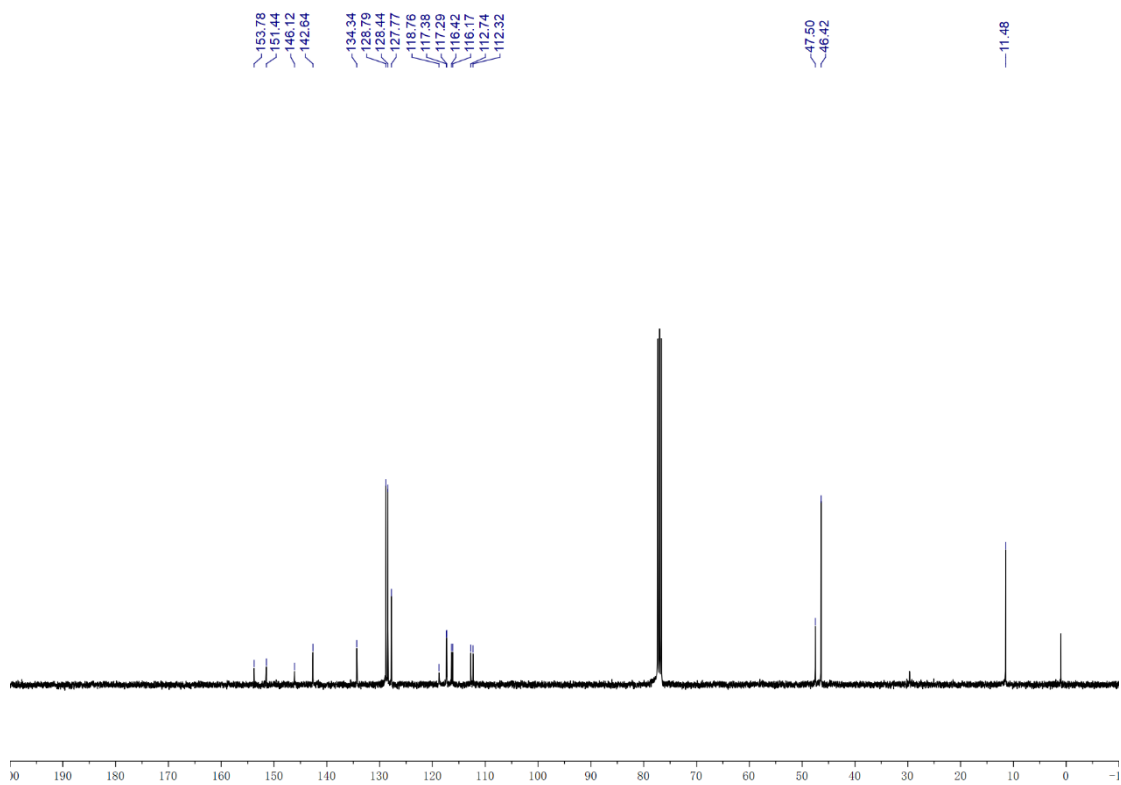
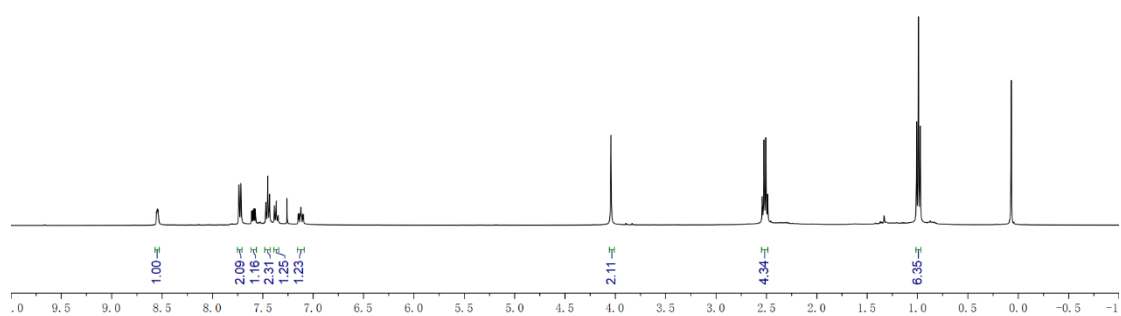
N-ethyl-*N*-((7-methoxy-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5faa)



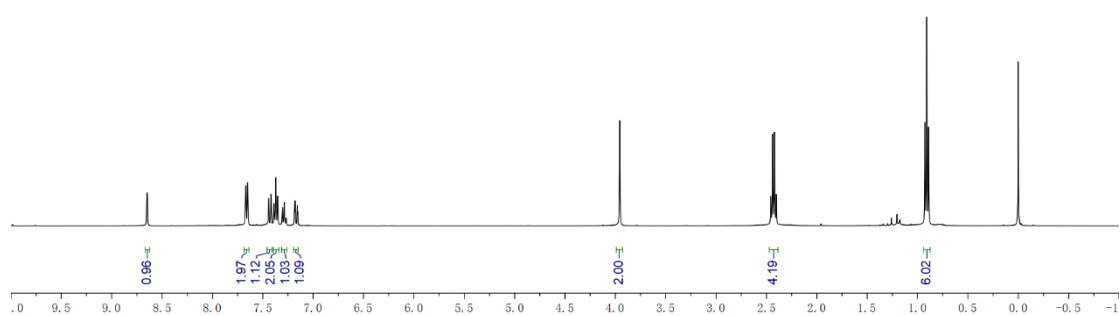
N-ethyl-*N*-((7-fluoro-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5ga)



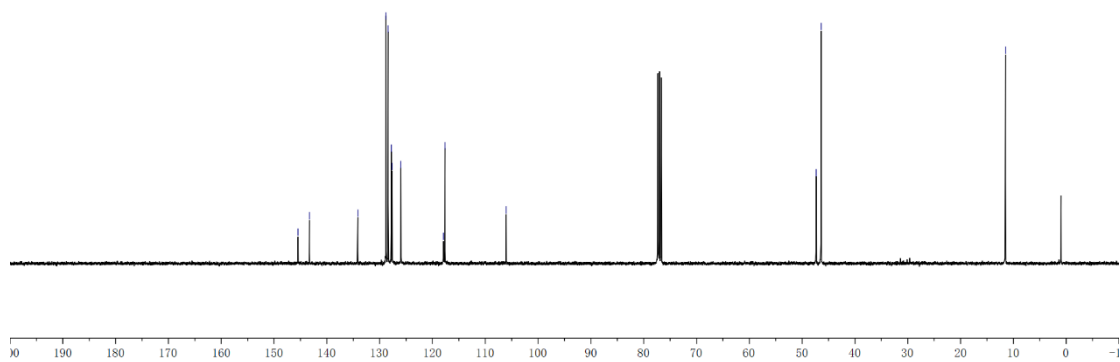
N-ethyl-*N*-((6-fluoro-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5haa)



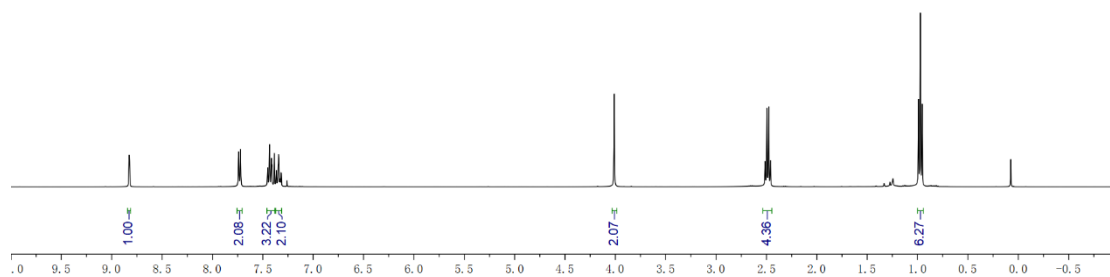
N-((6-bromo-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)-*N*-ethylethanamine (5iaa)



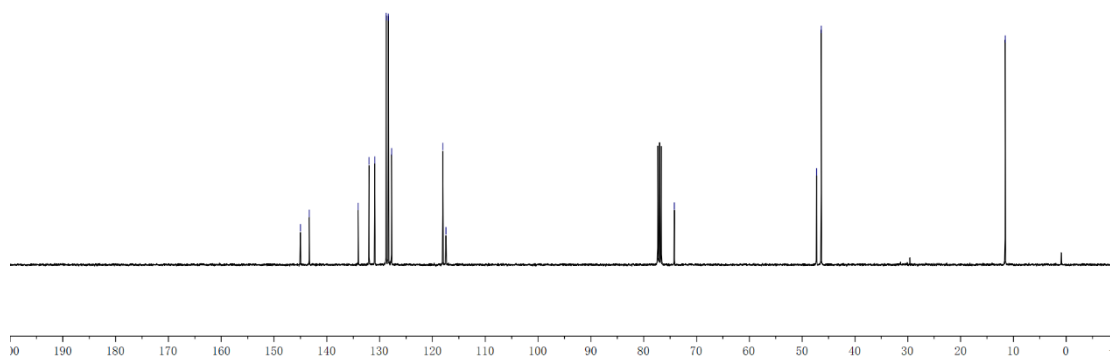
145.47
143.30
134.15
128.78
128.40
127.80
127.63
125.87
117.92
117.63
106.05
47.34
46.40
11.50



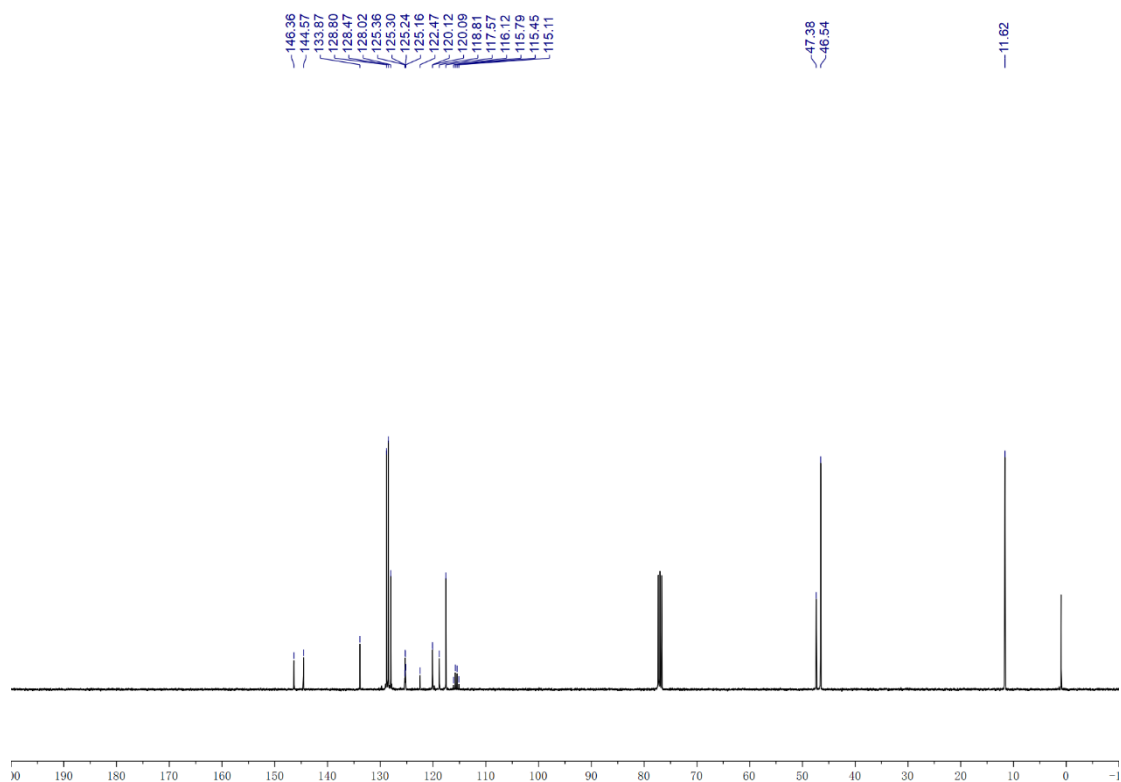
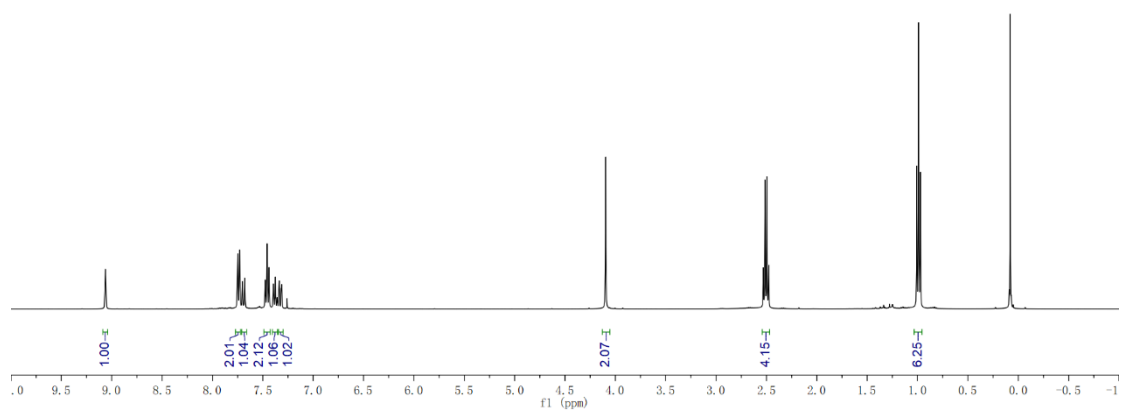
N-ethyl-*N*-((6-iodo-2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5jaa)



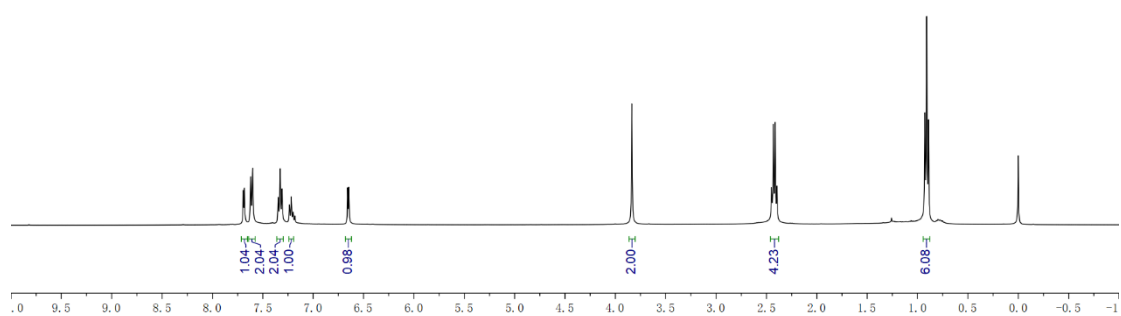
145.00
143.33
134.07
132.02
130.93
128.76
128.35
127.74
118.03
117.44
74.20
47.27
46.38
11.54



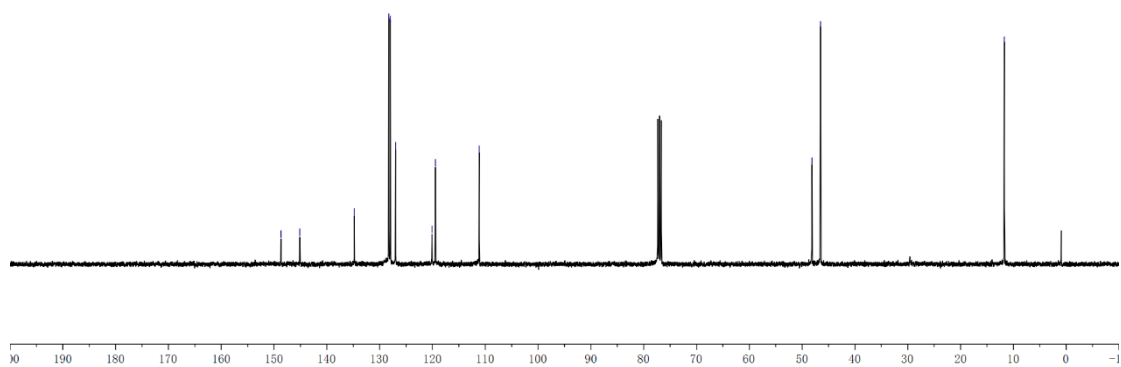
N-ethyl-*N*-((2-phenyl-6-(trifluoromethyl)imidazo[1,2-*a*]pyridin-3-yl)methyl)ethanamine (5kaa)



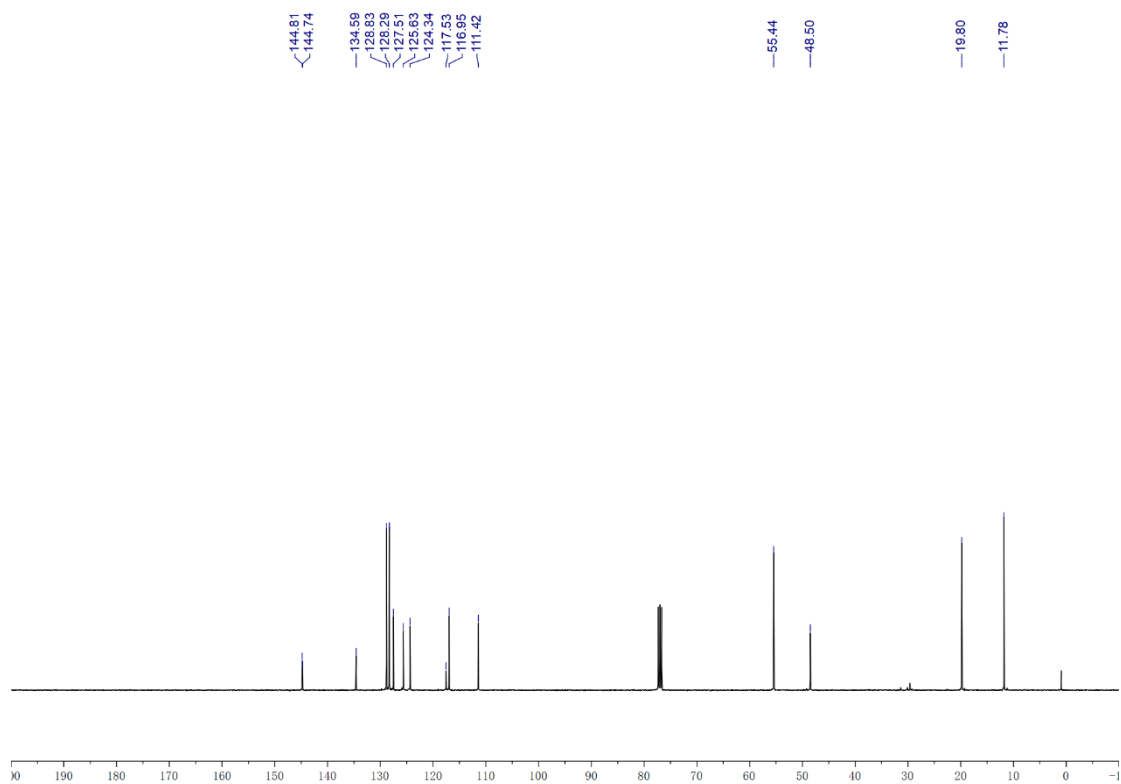
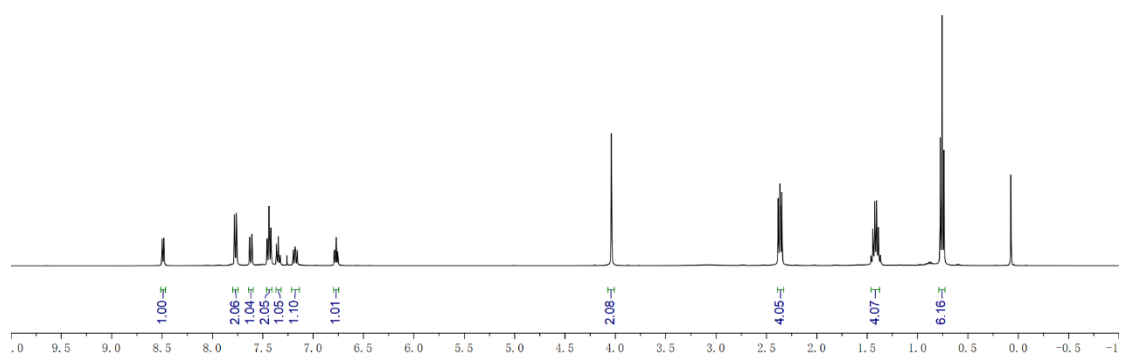
N-ethyl-*N*-((6-phenylimidazo[2,1-*b*]thiazol-5-yl)methyl)ethanamine (51aa)



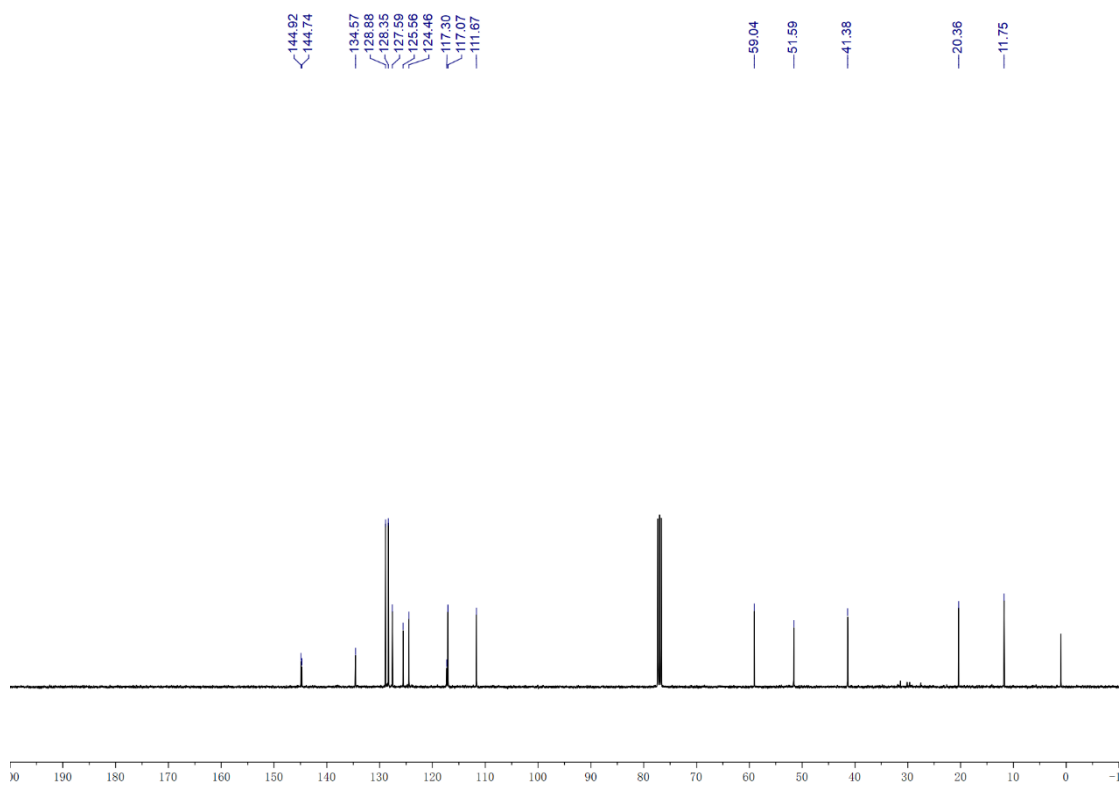
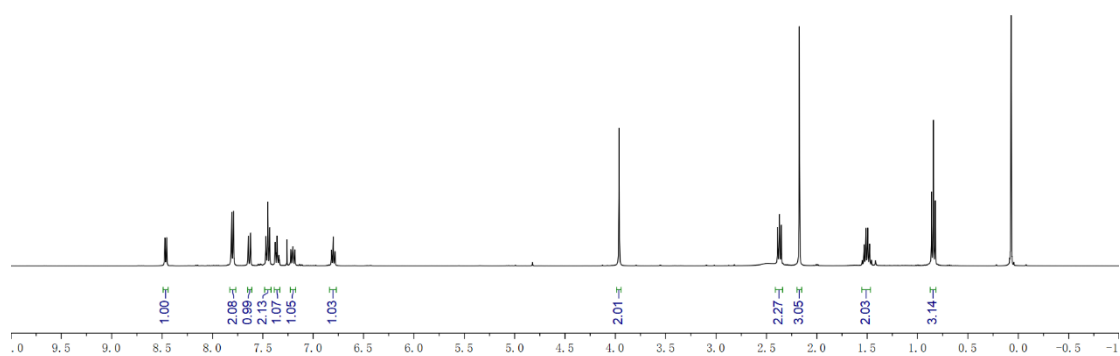
148.69, 145.13, 134.79, 128.27, 127.86, 126.86, 120.09, 119.44, 111.14, 48.14, 46.52, 11.72



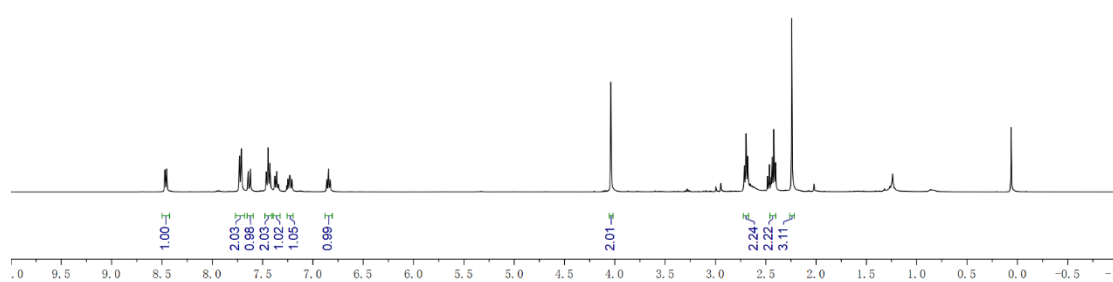
N-((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)-*N*-propylpropan-1-amine (5aab)



N-methyl-*N*-((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)propan-1-amine (5aac)



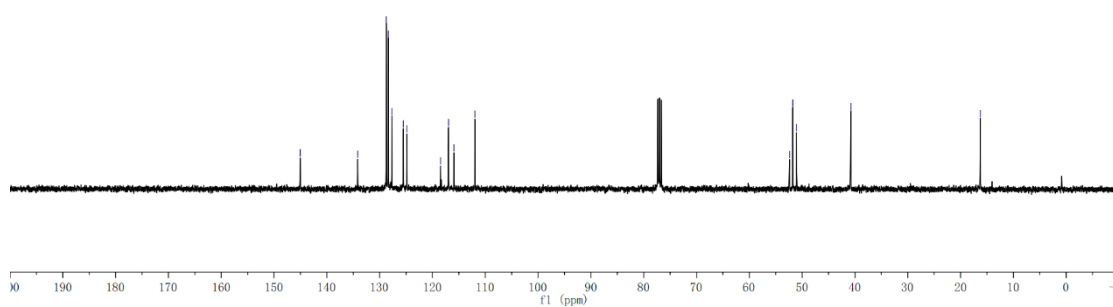
3-(methyl((2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)amino)propanenitrile (5aad)



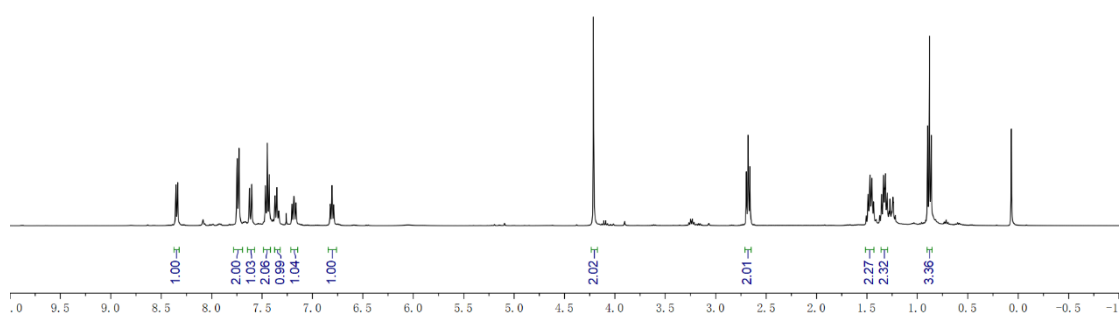
145.05
134.17
128.75
128.36
127.70
125.52
124.84
118.46
116.96
115.93
111.96

52.39
51.76
51.05
40.76

16.24

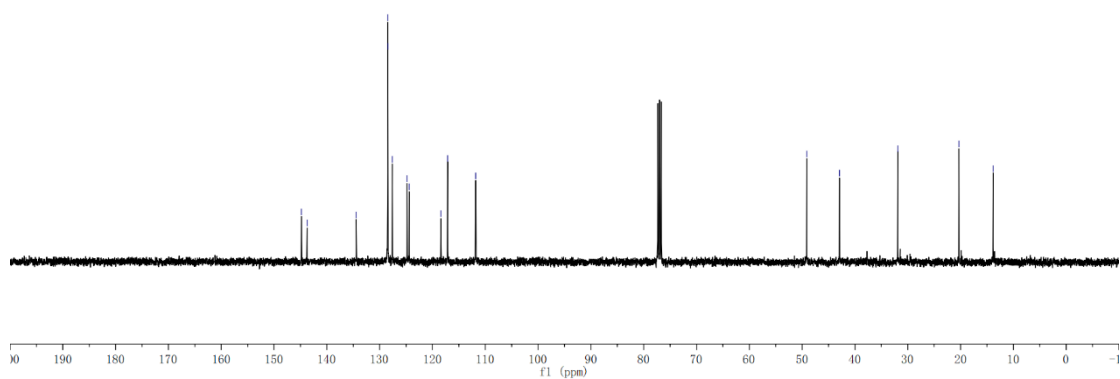


N-((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)butan-1-amine (5a_{ae})

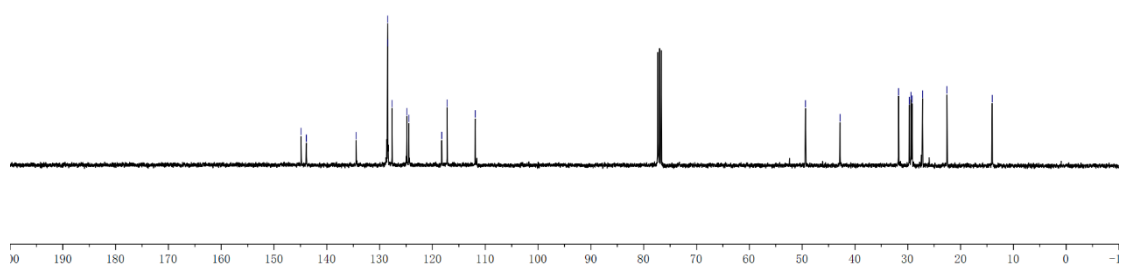
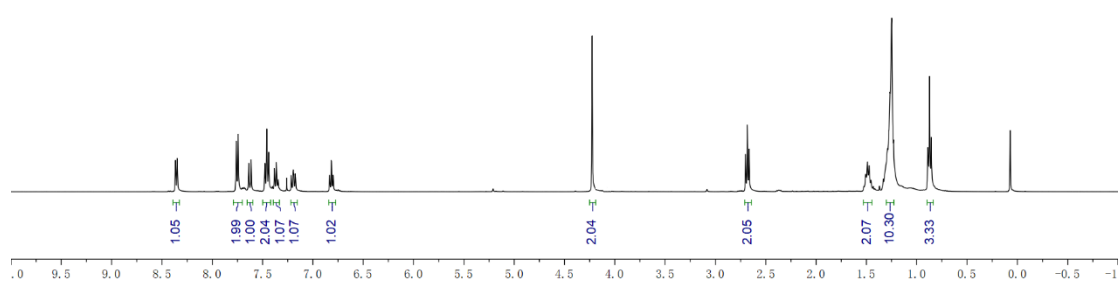


144.92
143.76
134.43
128.47
128.42
127.59
124.80
124.40
118.40
117.13
111.82

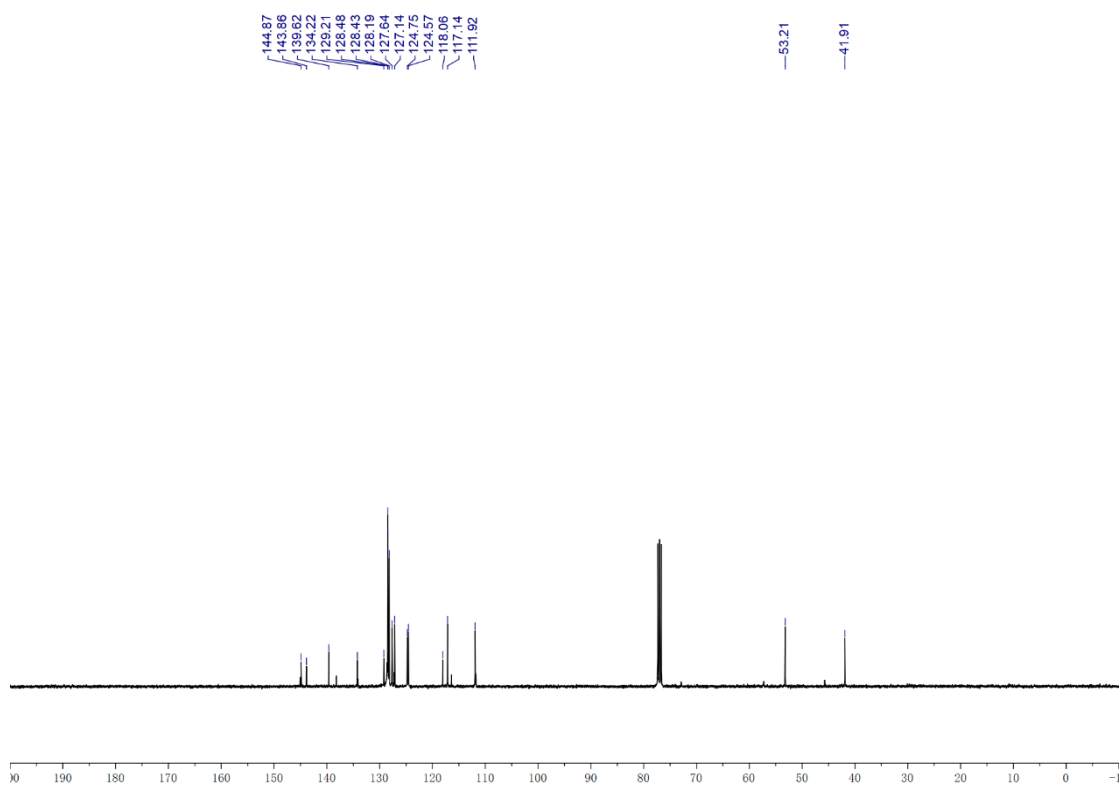
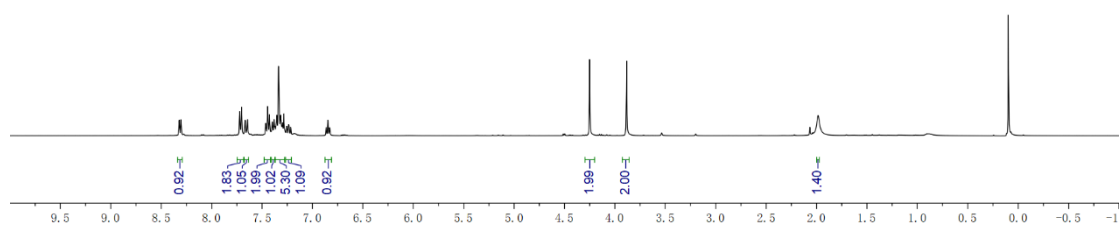
49.13
42.92
31.88
20.32
13.83



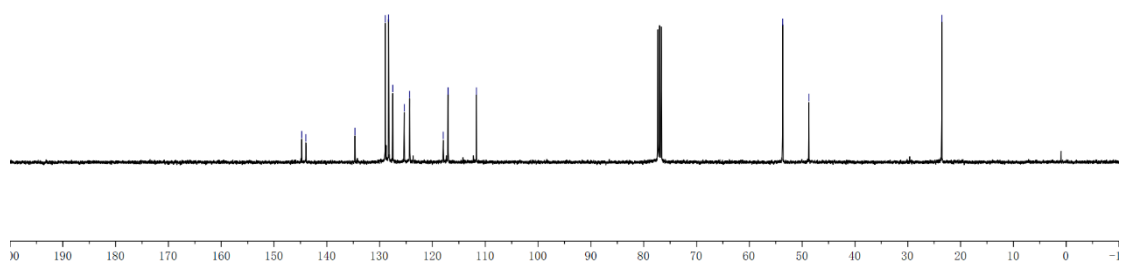
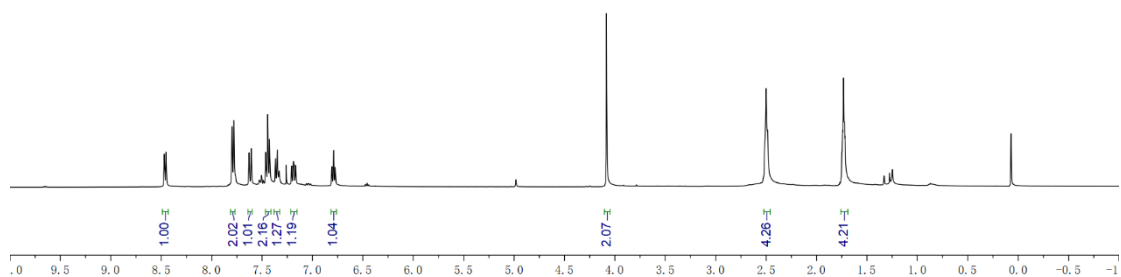
N-((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl)octan-1-amine (5aaf)



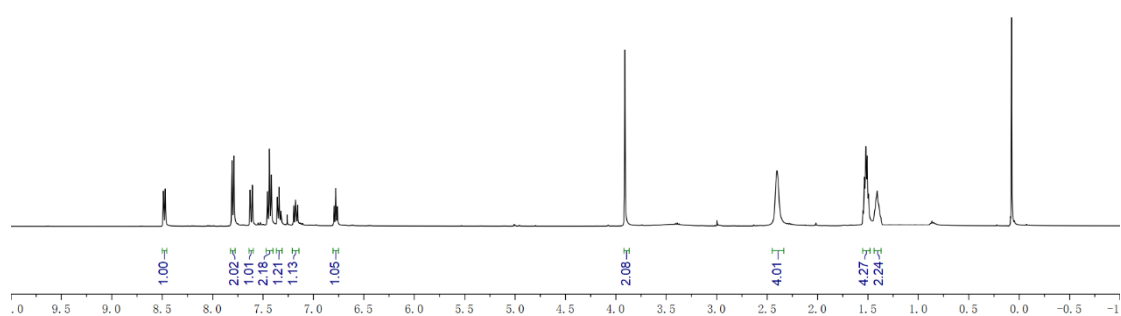
N-benzyl-1-(2-phenylimidazo[1,2-*a*]pyridin-3-yl)methanamine (5aag)



2-phenyl-3-(pyrrolidin-1-ylmethyl)imidazo[1,2-a]pyridine (5aah)



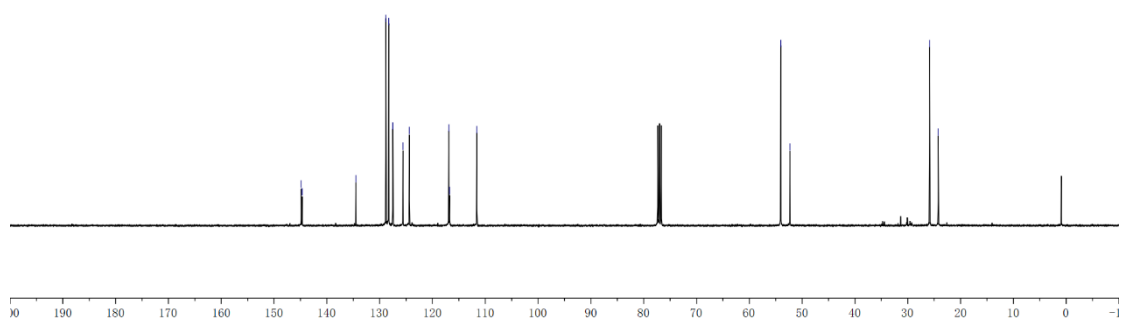
2-phenyl-3-(piperidin-1-ylmethyl)imidazo[1,2-a]pyridine (5aai)



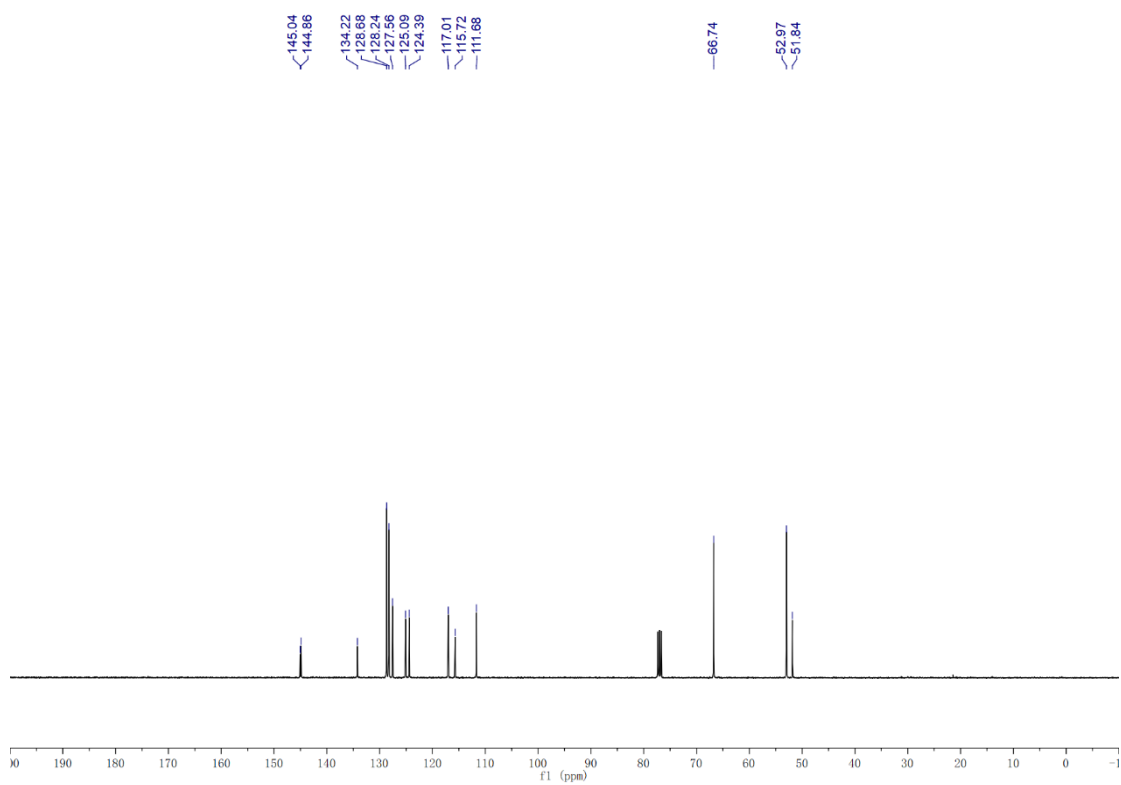
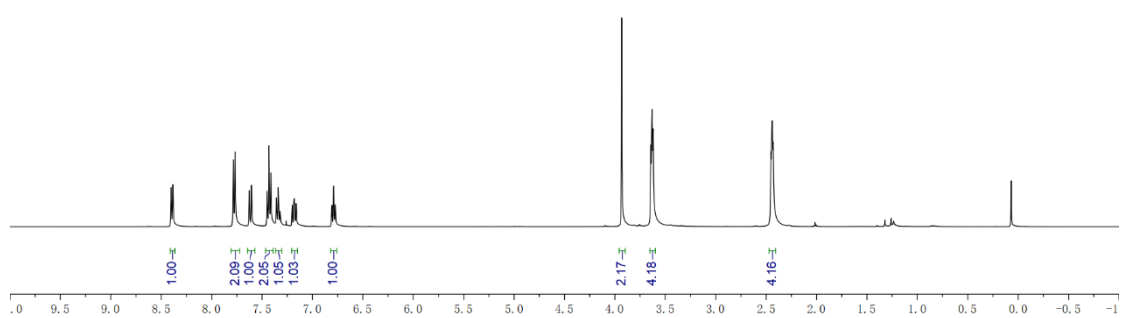
144.86
144.88
134.51
128.81
128.28
127.51
125.58
124.37
116.92
116.76
111.59

54.06
52.31

25.86
24.21



4-((2-phenylimidazo[1,2-a]pyridin-3-yl)methyl)morpholine (5aaj)



N-ethyl-*N*-((2-phenylimidazo[1,2-*a*]pyridin-3-yl)methyl-*d*₂)ethanamine (D-5aaa)

