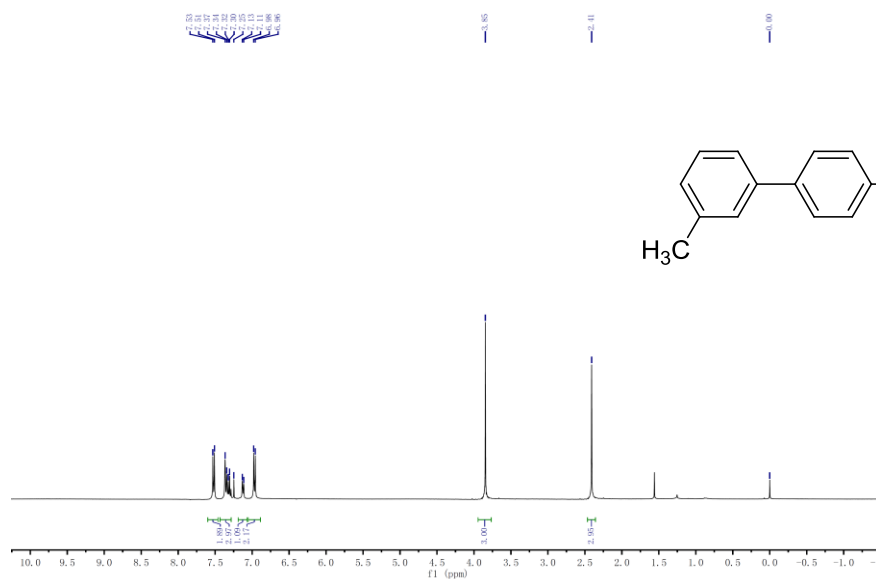
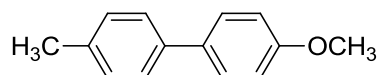


4'-Methoxy-3-methyl-1,1'-biphenyl

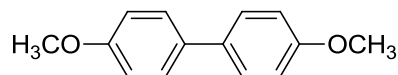
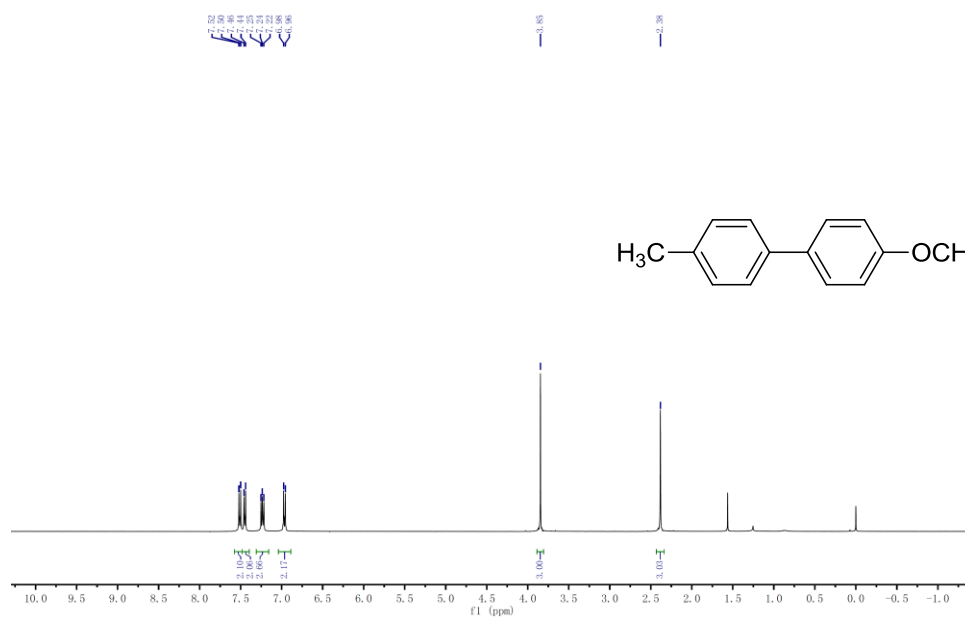
White solid, m.p. 48-49°C. ¹H NMR (400 MHz, CDCl₃): δ 7.52 (d, *J* = 8.4 Hz, 2H), 7.37-7.31 (m, 3H), 7.12 (d, *J* = 7.2 Hz, 1H), 6.97 (d, *J* = 8.4 Hz, 2H), 3.86 (s, 3H), 2.41 (s, 3H) ppm. Data is consistent with that reported in the literature.²





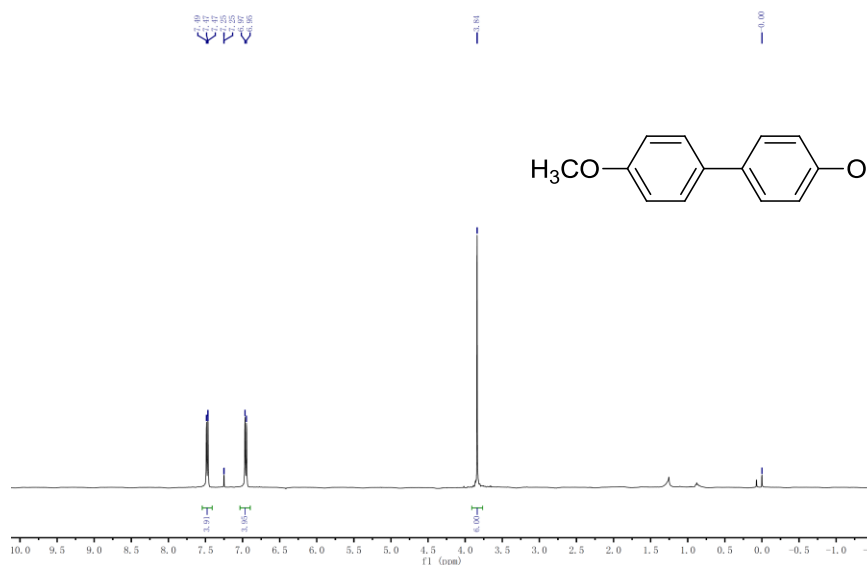
4-Methoxy-4-methyl biphenyl

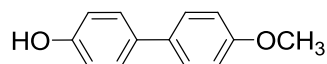
White solid, m.p. 102-104°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 7.51 (d, $J = 8.0$ Hz, 2H), 7.45 (d, $J = 8.0$ Hz, 2H), 7.23 (d, $J = 8.0$ Hz, 2H), 6.97 (d, $J = 8.0$ Hz, 2H), 3.85 (s, 3H), 2.38 (s, 3H) ppm. Data is consistent with that reported in the literature.¹



4, 4'-Dimethoxy-1, 1'-biphenyl

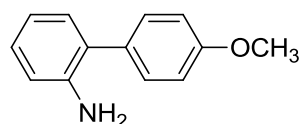
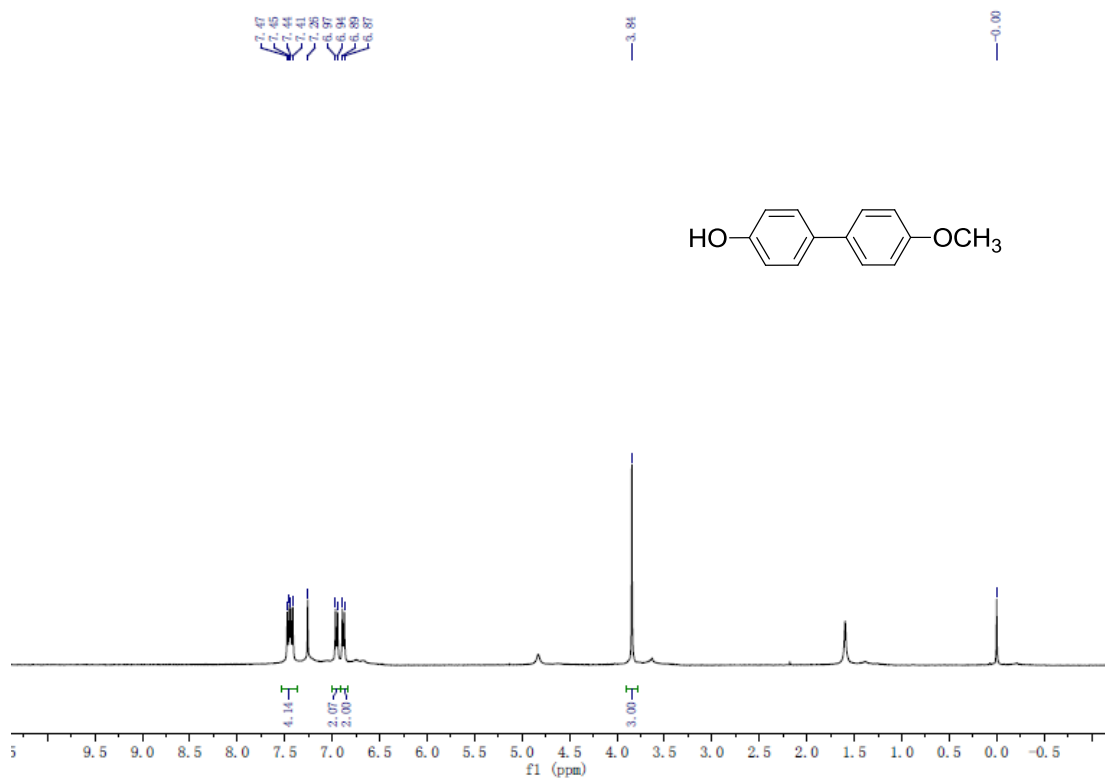
White solid, m.p. 170-172°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 7.48 (d, $J = 7.6$ Hz, 4H), 6.96 (d, $J = 8.0$ Hz, 4H), 3.84 (s, 3H) ppm. Data is consistent with that reported in the literature.²





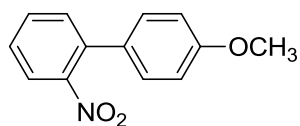
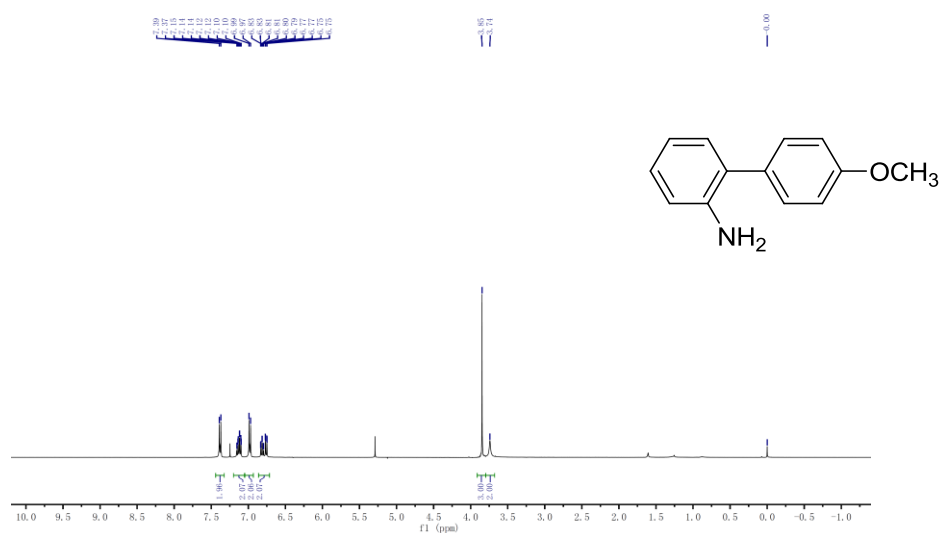
4'-methoxy-[1, 1'-biphenyl]-4-ol

White solid, m.p. 172-174°C. ¹H NMR (400 MHz, CDCl₃): δ 7.47 (d, *J* = 8.0 Hz, 2H), 7.43 (d, *J* = 8.0 Hz, 2H), 6.96 (d, *J* = 8.0 Hz, 2H), 6.89 (d, *J* = 8.0 Hz, 2H), 3.86 (s, 3H) ppm. Data is consistent with that reported in the literature.³



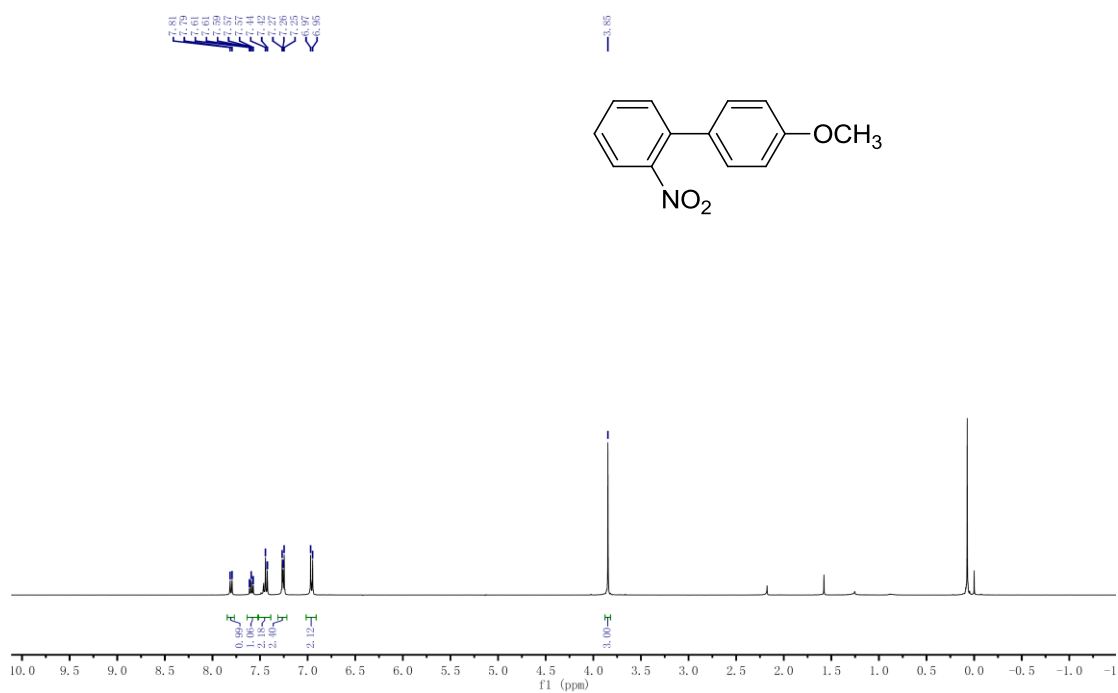
4-Methoxy-2'-aminobiphenyl

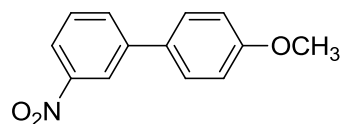
Yellow oil. ¹H NMR (400 MHz, CDCl₃): δ 7.38 (d, *J* = 8.0 Hz, 2H), 7.15-7.10 (m, 2H), 6.98 (d, *J* = 8.0 Hz, 2H), 6.83-6.75 (m, 2H), 3.85 (s, 3H), 3.74 (s, 2H) ppm. Data is consistent with that reported in the literature.⁴



4'-Methoxy-2-nitrobiphenyl

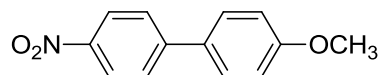
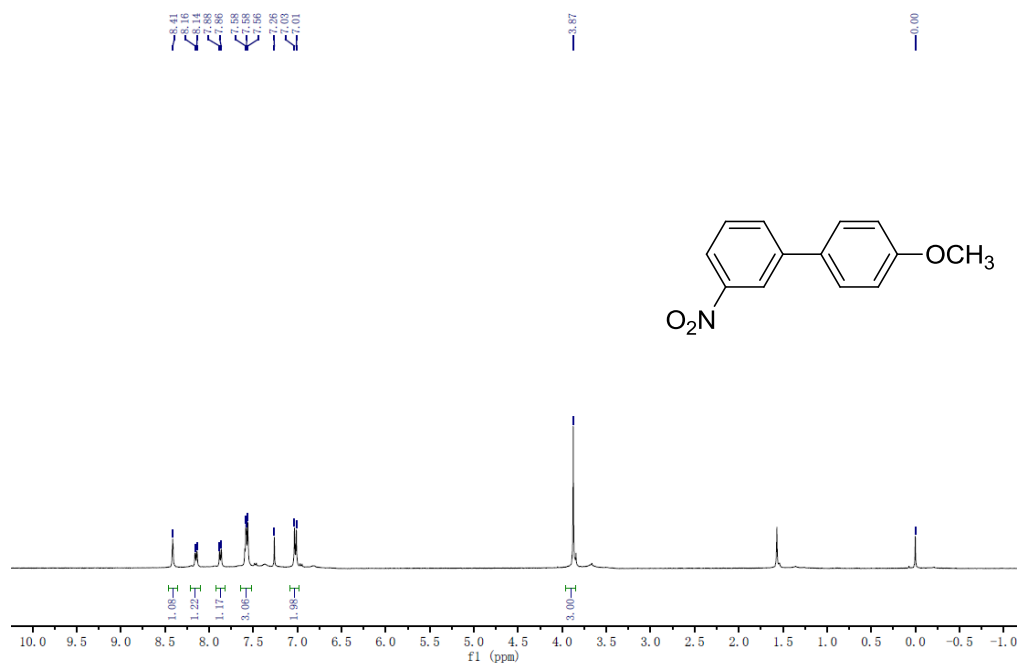
Yellow solid, m.p. 55-57°C. ¹H NMR (400 MHz, CDCl₃): δ 7.80 (d, *J* = 8.0 Hz, 1H), 7.59 (t, *J* = 8.0 Hz, 1H), 7.43 (d, *J* = 8.0 Hz, 2H), 7.27-7.25 (m, 2H), 6.96 (d, *J* = 8.0 Hz, 2H), 3.85 (s, 3H) ppm. Data is consistent with that reported in the literature.⁵





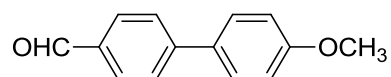
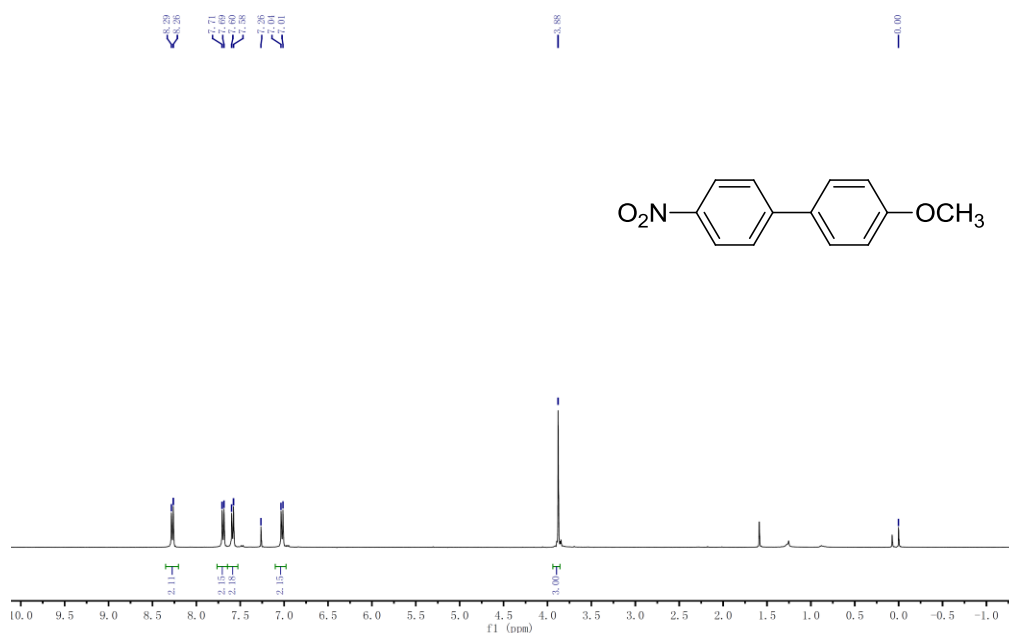
4-Methoxy-3'-nitrobiphenyl

Yellow solid, m.p. 67-69°C. ¹H NMR (400 MHz, CDCl₃): δ 8.41 (s, 1H), 8.15 (d, *J* = 8.0 Hz, 1H), 7.87 (d, *J* = 7.6 Hz, 1H), 7.60-7.56 (m, 3H), 7.02 (d, *J* = 8.0 Hz, 2H), 3.88 (s, 3H) ppm. Data is consistent with that reported in the literature.⁶



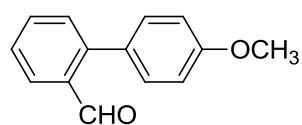
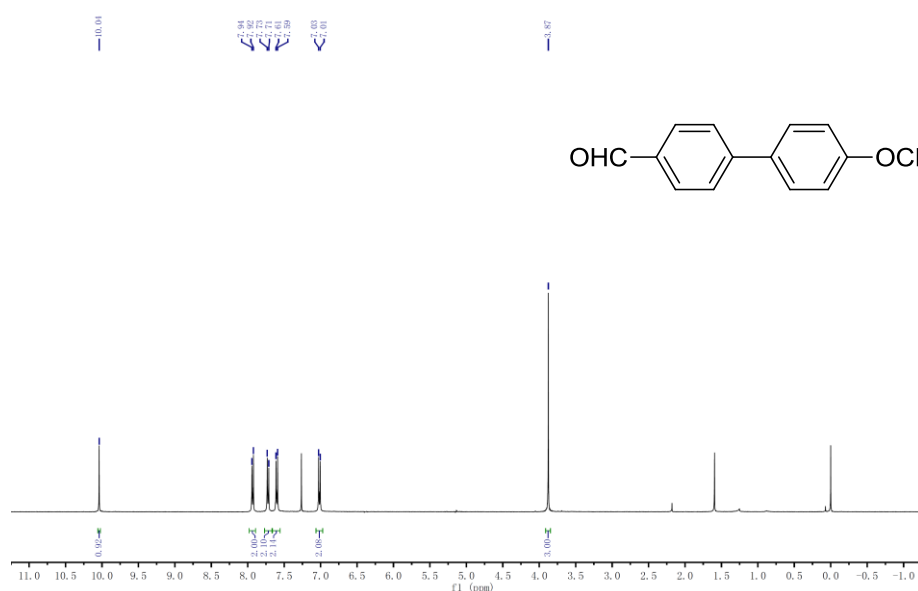
4-Methoxy-4'-nitro-1, 1'-biphenyl

Yellow solid, m.p. 97-99°C. ¹H NMR (400 MHz, CDCl₃): δ 8.27 (d, *J* = 8.8 Hz, 2H), 7.69 (d, *J* = 8.8 Hz, 2H), 7.59 (d, *J* = 8.8 Hz, 2H), 7.02 (d, *J* = 8.8 Hz, 2H), 3.88 (s, 3H) ppm. Data is consistent with that reported in the literature.³



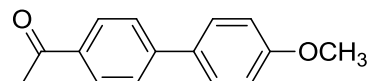
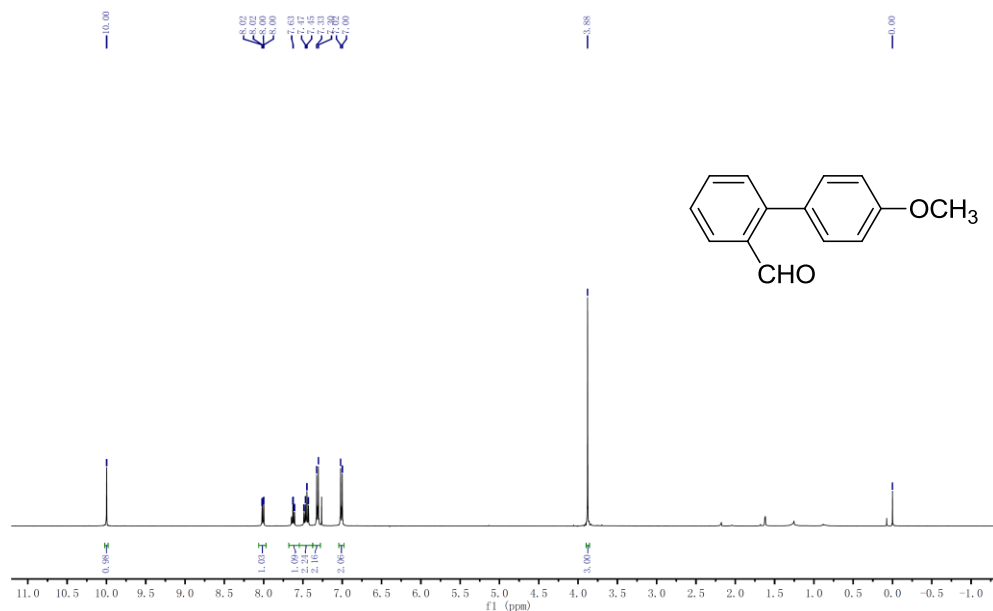
4'-Methoxy-[1, 1'-biphenyl]-4-carboxaldehyde

White solid, m.p. 100-101°C. ¹H NMR (400 MHz, CDCl₃): δ 10.04 (s, 1H), 7.93 (d, *J* = 8.0 Hz, 2H), 7.72 (d, *J* = 8.0 Hz, 2H), 7.60 (d, *J* = 8.0 Hz, 2H), 7.02 (d, *J* = 8.0 Hz, 2H), 3.87 (s, 3H) ppm. Data is consistent with that reported in the literature.³



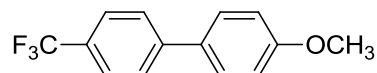
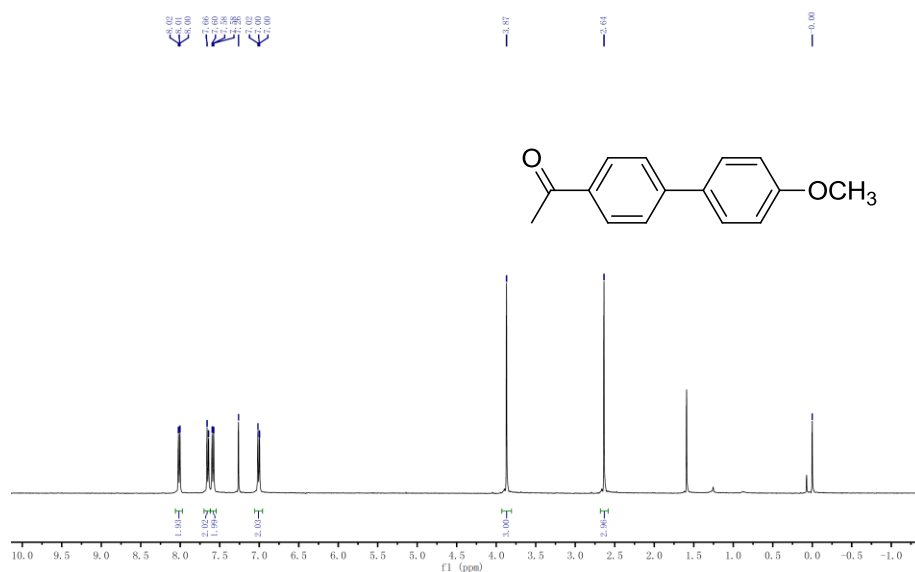
4'-Methoxybiphenyl-2-carbaldehyde

White solid, m.p. 47-49°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 10.00 (s, 1H), 8.01 (d, $J = 8.0$ Hz, 1H), 7.63 (t, $J = 1.2$ Hz, 1H), 7.47-7.45 (m, 2H), 7.32 (d, $J = 12.0$ Hz, 2H), 7.01 (d, $J = 8.0$ Hz, 2H), 3.88 (s, 3H) ppm. Data is consistent with that reported in the literature.⁷



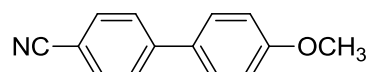
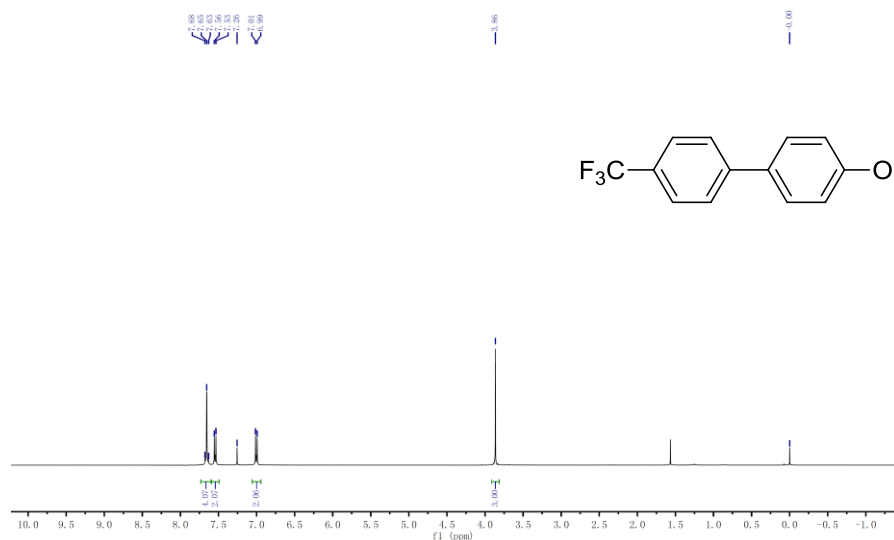
1-(4'-Methoxy-[1,1'-biphenyl]-4-yl) ethanone

White solid, m.p. 149-151°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.01 (d, $J = 7.2$ Hz, 2H), 7.65 (d, $J = 7.2$ Hz, 2H), 7.59 (d, $J = 7.2$ Hz, 2H), 7.01 (d, $J = 7.6$ Hz, 2H), 3.87 (s, 3H), 2.64 (s, 3H) ppm. Data is consistent with that reported in the literature.²



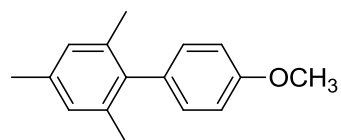
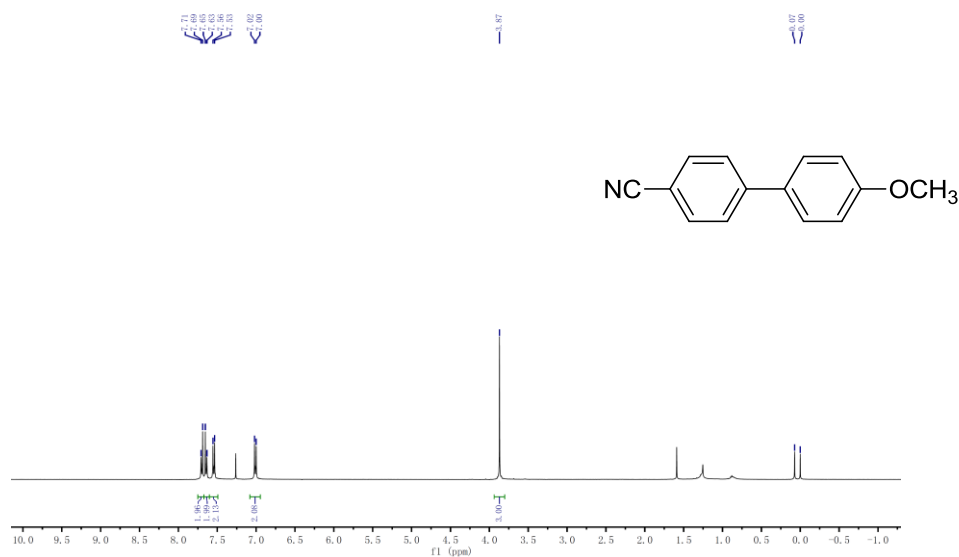
4-Methoxy-4'-trifluoromethylphenyl

White solid, m.p. 116-117°C. ¹H NMR (400 MHz, CDCl₃): δ 7.68-7.63 (m, 4H), 7.54 (d, *J* = 8.4 Hz, 2H), 7.00 (d, *J* = 8.8 Hz, 2H), 3.86 (s, 3H) ppm. Data is consistent with that reported in the literature.⁸



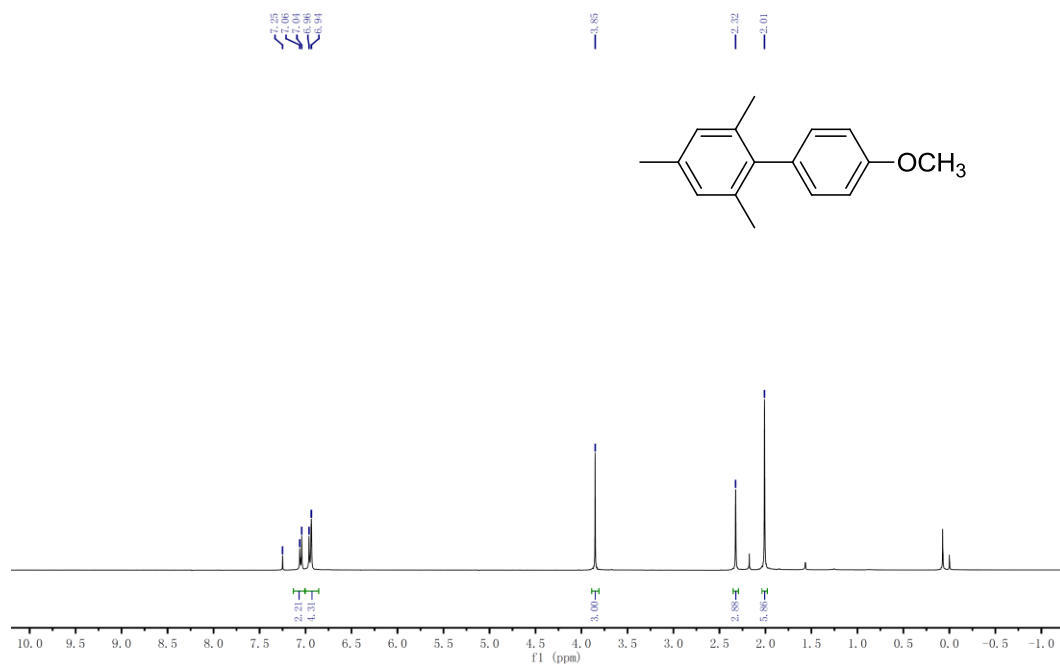
4'-Methoxy-1,1'-biphenyl-4-carbonitrile

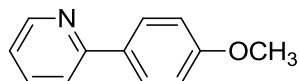
White solid, m.p. 93-95°C. ¹H NMR (400 MHz, CDCl₃): δ 7.70 (d, *J* = 8.0 Hz, 2H), 7.64 (d, *J* = 8.0 Hz, 2H), 7.55 (d, *J* = 8.8 Hz, 2H), 7.01 (d, *J* = 8.4 Hz, 2H), 3.87 (s, 3H) ppm. Data is consistent with that reported in the literature.³



4'-methoxy-2,4,6-trimethyl-1,1'-biphenyl

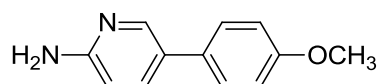
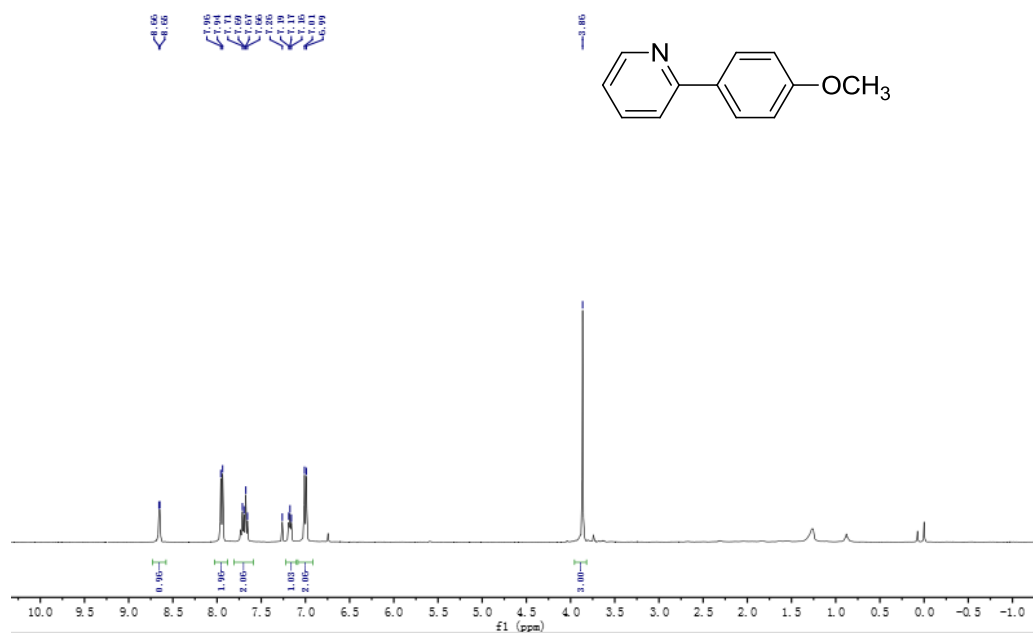
White solid, m.p. 69-71°C. ¹H NMR (400 MHz, CDCl₃): δ 7.05 (d, *J* = 8.0 Hz, 2H), 6.95 (d, *J* = 8.0 Hz, 4H), 3.85 (s, 3H), 2.32 (s, 3H), 2.01 (s, 6H) ppm. Data is consistent with that reported in the literature.⁹





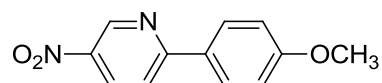
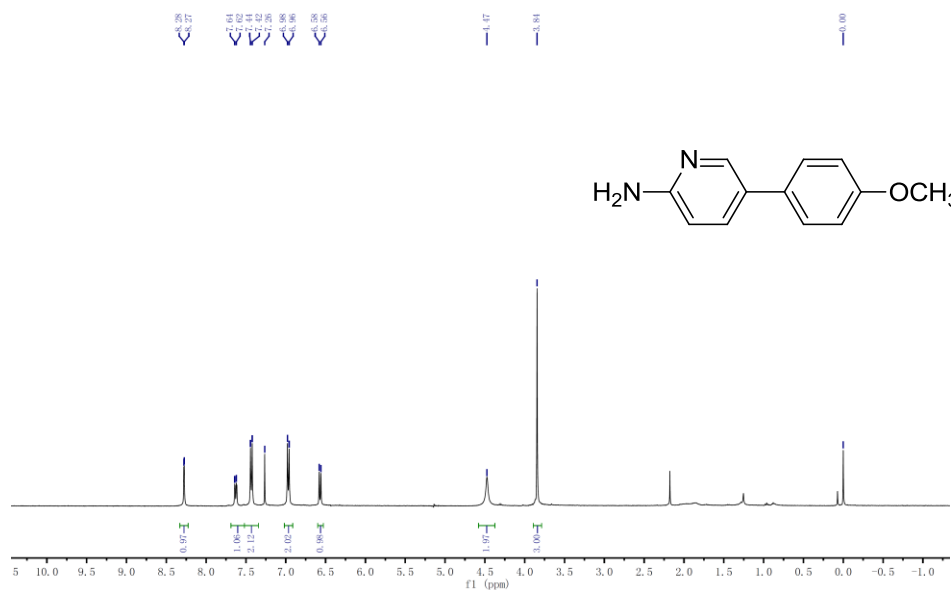
2-(*p*-Methoxyphenyl) pyridine

White solid, m.p. 43-45°C. ¹H NMR (400 MHz, CDCl₃): δ 8.65 (d, *J* = 4.4 Hz, 1H), 7.95 (d, *J* = 8.8 Hz, 2H), 7.73-7.66 (m, 2H), 7.17 (t, *J* = 6.0 Hz, 1H), 7.00 (d, *J* = 8.4 Hz, 2H), 3.86 (s, 3H) ppm. Data is consistent with that reported in the literature.¹⁰



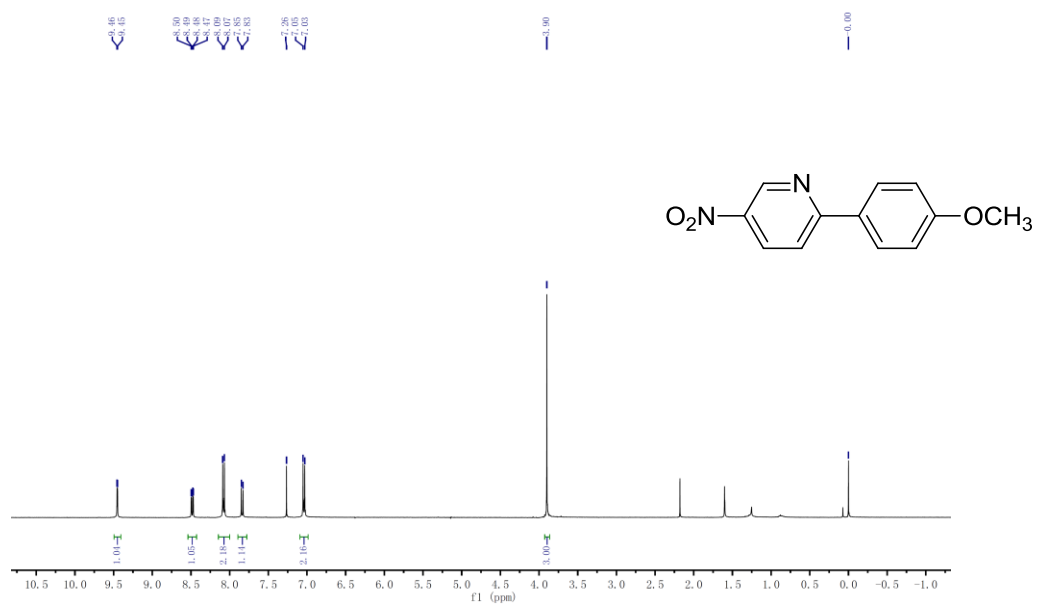
5-(4-methoxyphenyl)-pyridin-2-yl amine

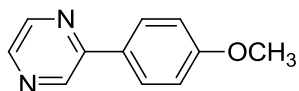
White solid, m.p. 169-171°C. ¹H NMR (400 MHz, CDCl₃): δ 8.28 (d, *J* = 4.0 Hz, 1H), 7.63 (d, *J* = 8.0 Hz, 1H), 7.43 (d, *J* = 8.4 Hz, 2H), 6.97 (d, *J* = 8.4 Hz, 2H), 6.57 (d, *J* = 8.4 Hz, 1H), 4.47 (br, 2H), 3.84 (s, 3H) ppm. Data is consistent with that reported in the literature.¹¹



2-(4-methoxyphenyl)-5-nitropyridine

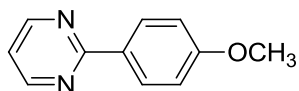
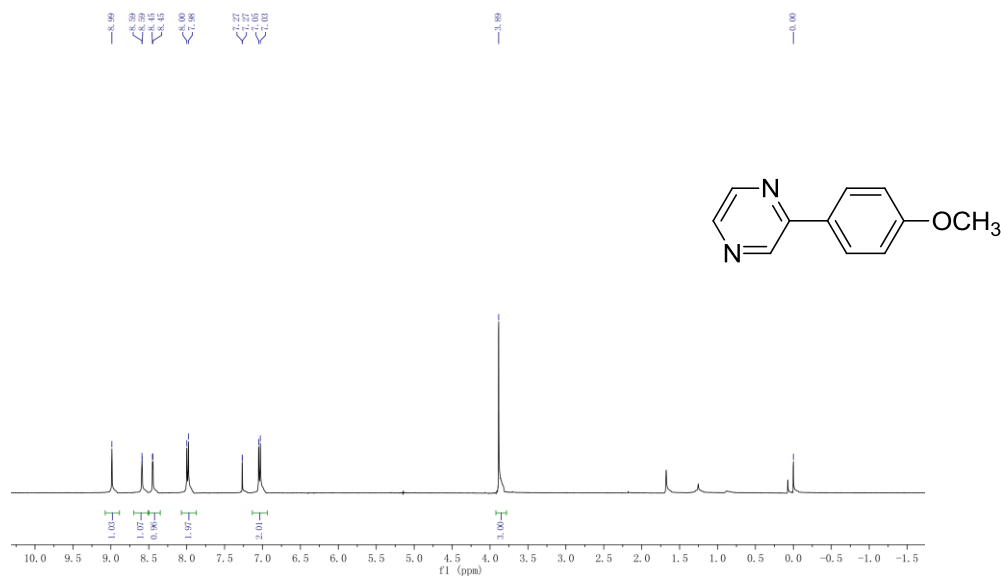
Yellow solid, m.p. 126-128°C. ¹H NMR (400 MHz, CDCl₃): δ 9.45 (d, *J* = 4.0 Hz, 1H), 8.50-8.47 (m, 1H), 8.08 (d, *J* = 8.0 Hz, 2H), 7.84 (d, *J* = 8.0 Hz, 1H), 7.04 (d, *J* = 8.0 Hz, 2H), 3.90 (s, 3H) ppm. Data is consistent with that reported in the literature.¹²





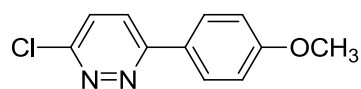
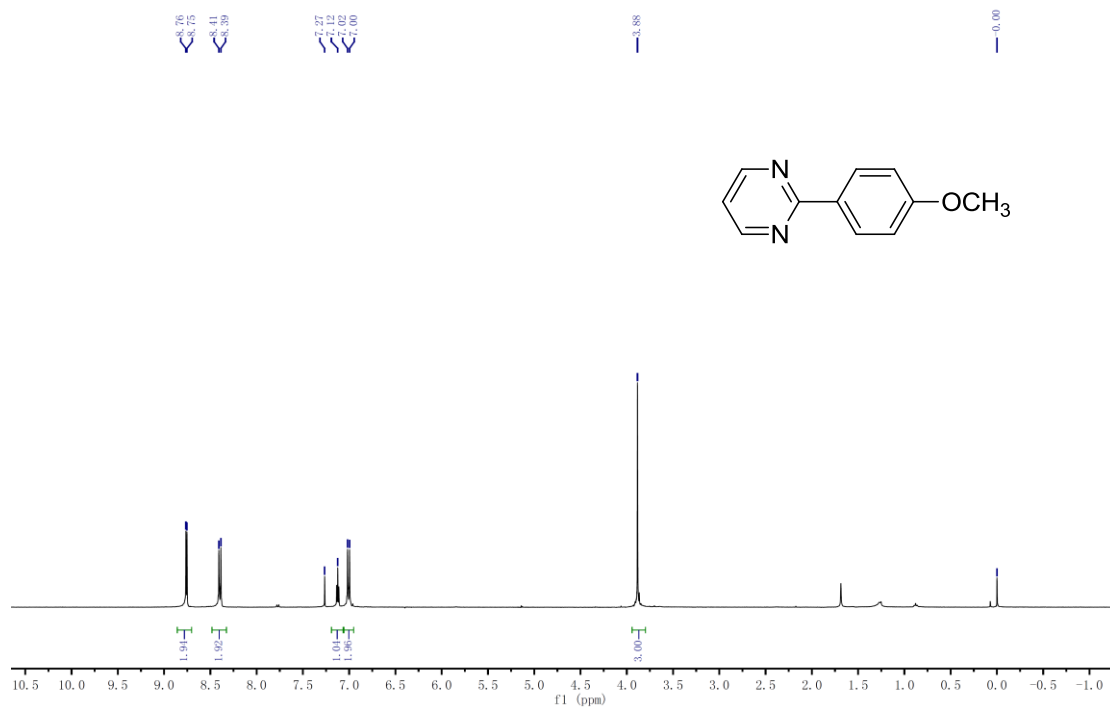
2-(4-Methoxyphenyl)pyrazine

White solid, m.p. 83-85°C. ^1H NMR (400 MHz, CDCl_3): δ 8.99 (s, 1H), 8.59 (s, 1H), 8.45 (s, 1H), 7.99 (d, $J = 8.8$ Hz, 2H), 7.04 (d, $J = 8.8$ Hz, 2H), 3.89 (s, 3H) ppm. Data is consistent with that reported in the literature.¹⁰



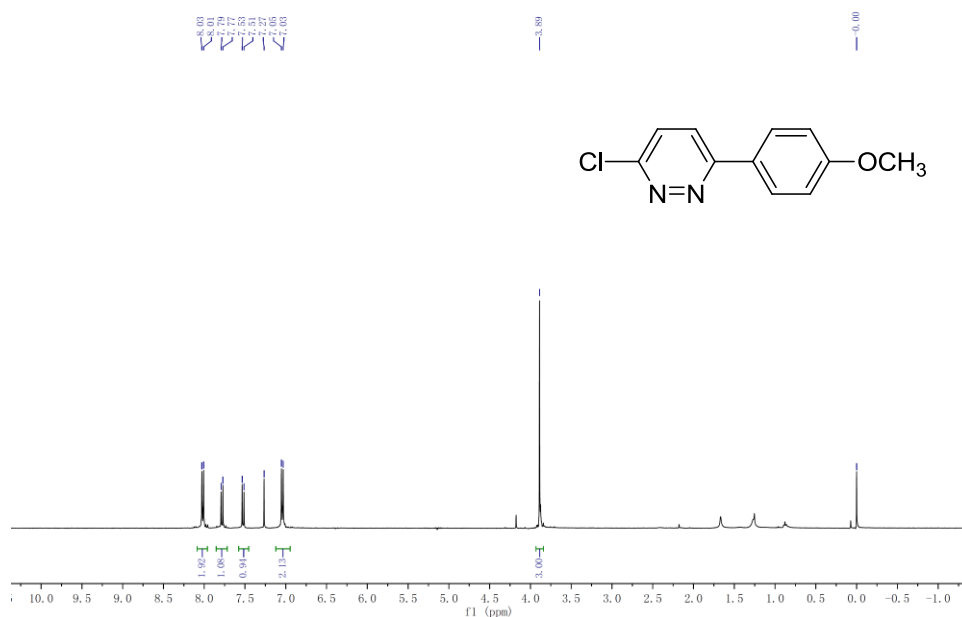
2-(4-methoxyphenyl)pyrimidine

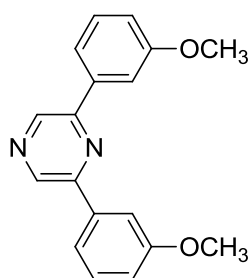
Yellow solid, m.p. 51-53°C. ^1H NMR (400 MHz, CDCl_3): δ 8.77 (d, $J = 5.2$ Hz, 2H), 8.40 (d, $J = 8.8$ Hz, 2H), 7.13 (t, $J = 6.0$ Hz, 1H), 7.01 (d, $J = 8.4$ Hz, 2H), 3.88 (s, 3H) ppm. Data is consistent with that reported in the literature.¹³



3-chloro-6-(4-methoxyphenyl) pyridazine

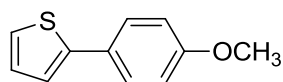
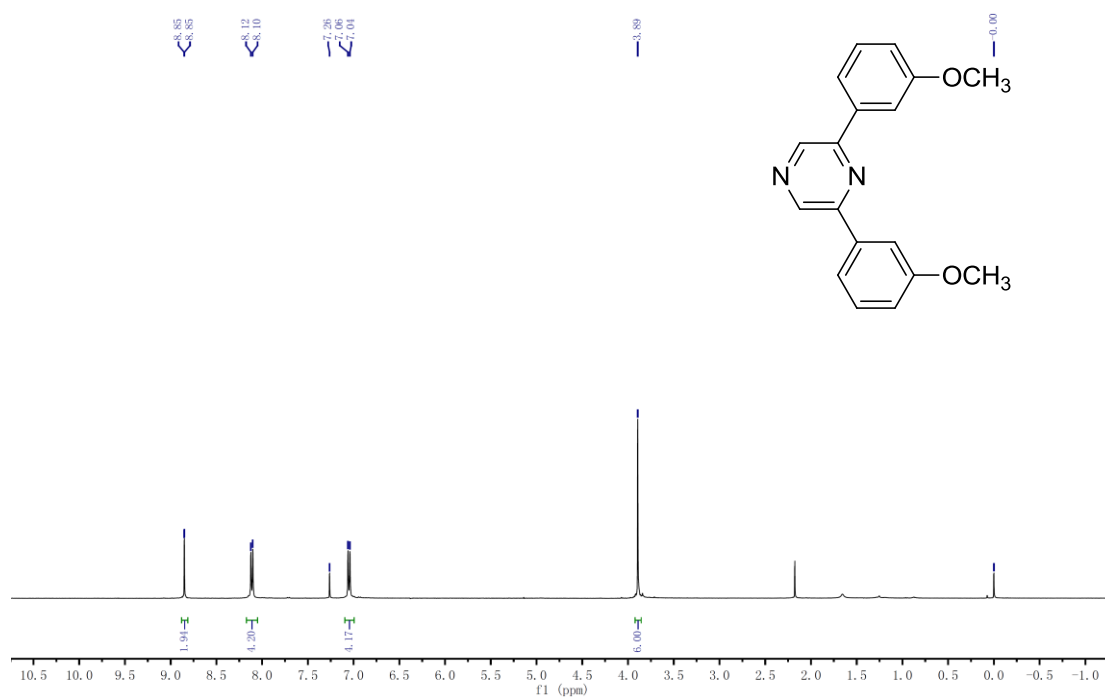
Light grey solid, m.p. 150-152°C. ¹H NMR (400 MHz, CDCl₃): δ 8.02 (d, *J* = 8.8 Hz, 2H), 7.78 (d, *J* = 8.8 Hz, 1H), 7.52 (d, *J* = 8.8 Hz, 1H), 7.04 (d, *J* = 8.8 Hz, 2H), 3.89 (s, 3H) ppm. Data is consistent with that reported in the literature.¹⁴





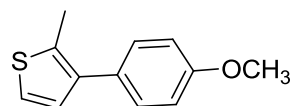
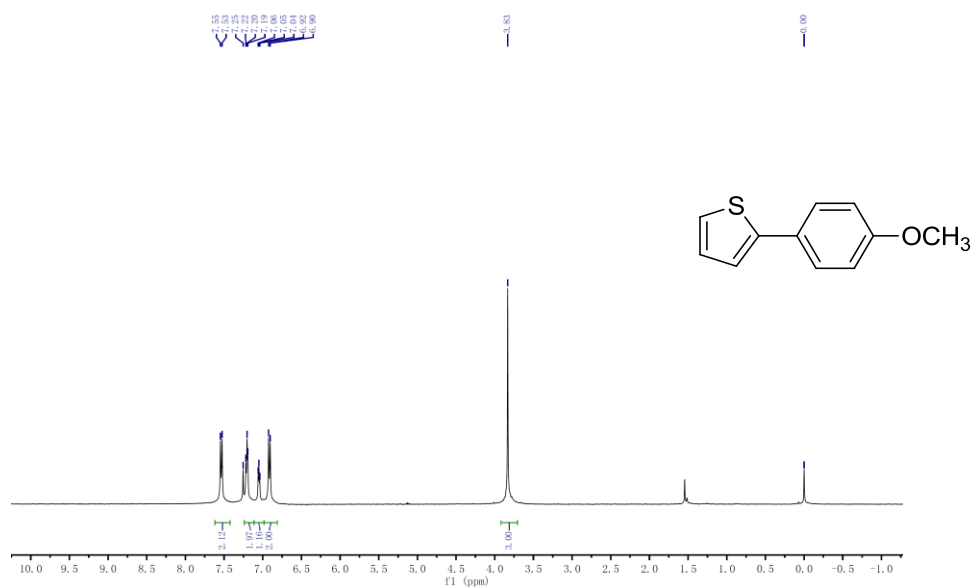
2, 6-bis(3-methoxyphenyl) pyrazine

White solid, m.p. 128-130°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.85 (s, 2H), 8.11 (d, $J = 8.0$ Hz, 4H), 7.05 (d, $J = 8.0$ Hz, 4H), 3.89 (s, 6H) ppm. Data is consistent with that reported in the literature.¹⁵



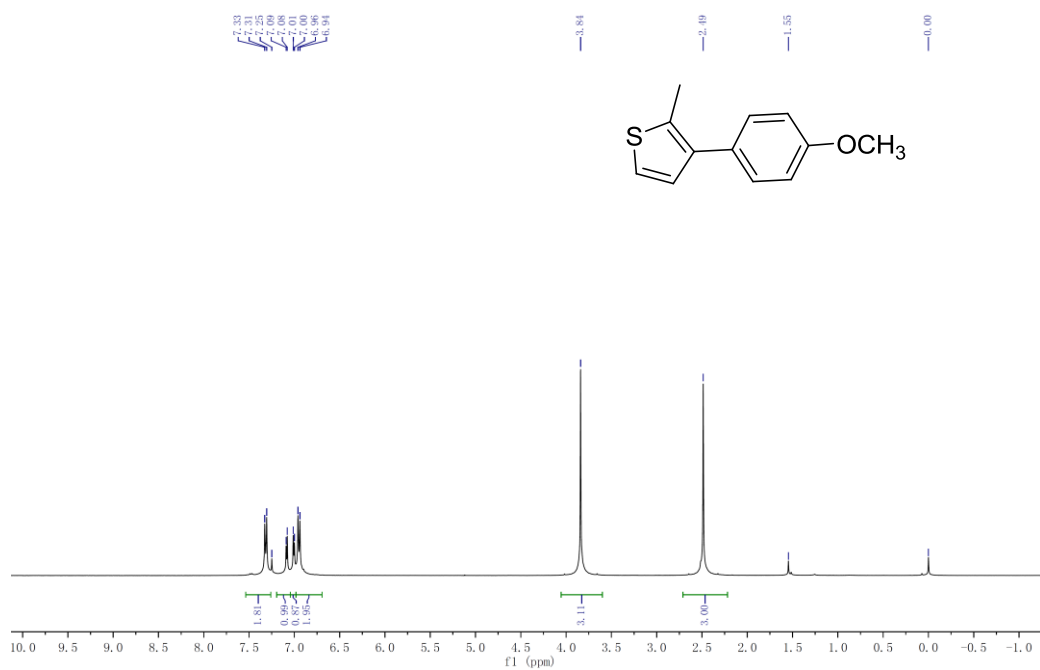
2-(4-methoxyphenyl) thiophene

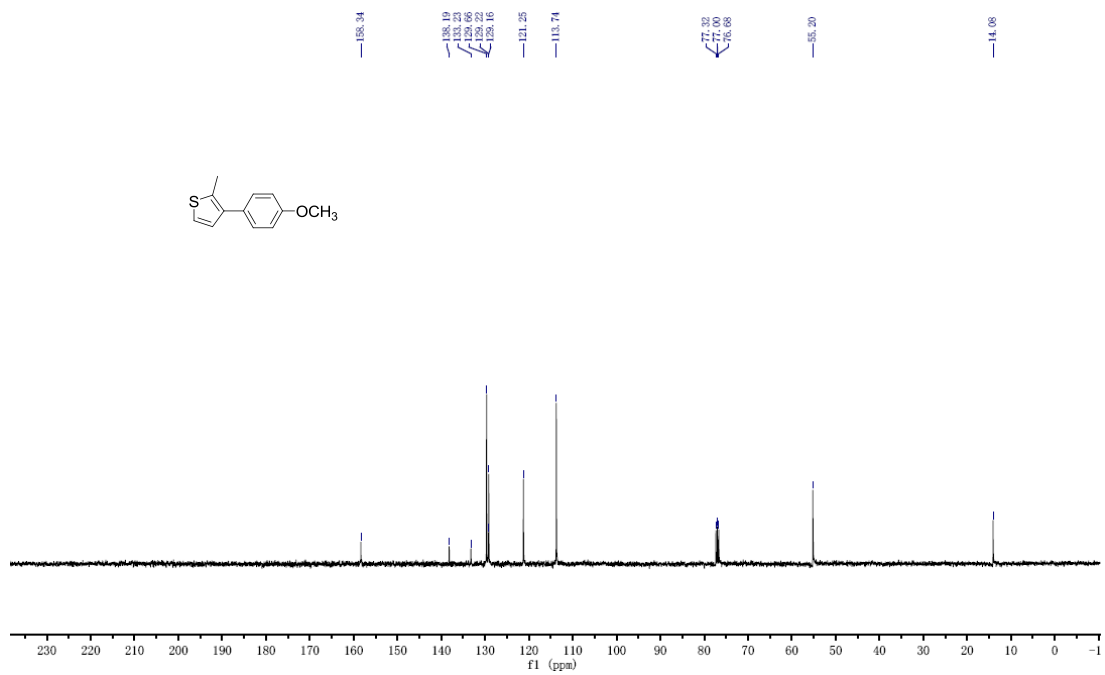
White solid, m.p. 104-105°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 7.54 (d, $J = 8.0$ Hz, 2H), 7.20 (t, $J = 6.0$ Hz, 2H), 7.25-7.04 (m, 3H), 6.91 (d, $J = 8.0$ Hz, 2H), 3.83 (s, 3 H) ppm. Data is consistent with that reported in the literature.¹⁶

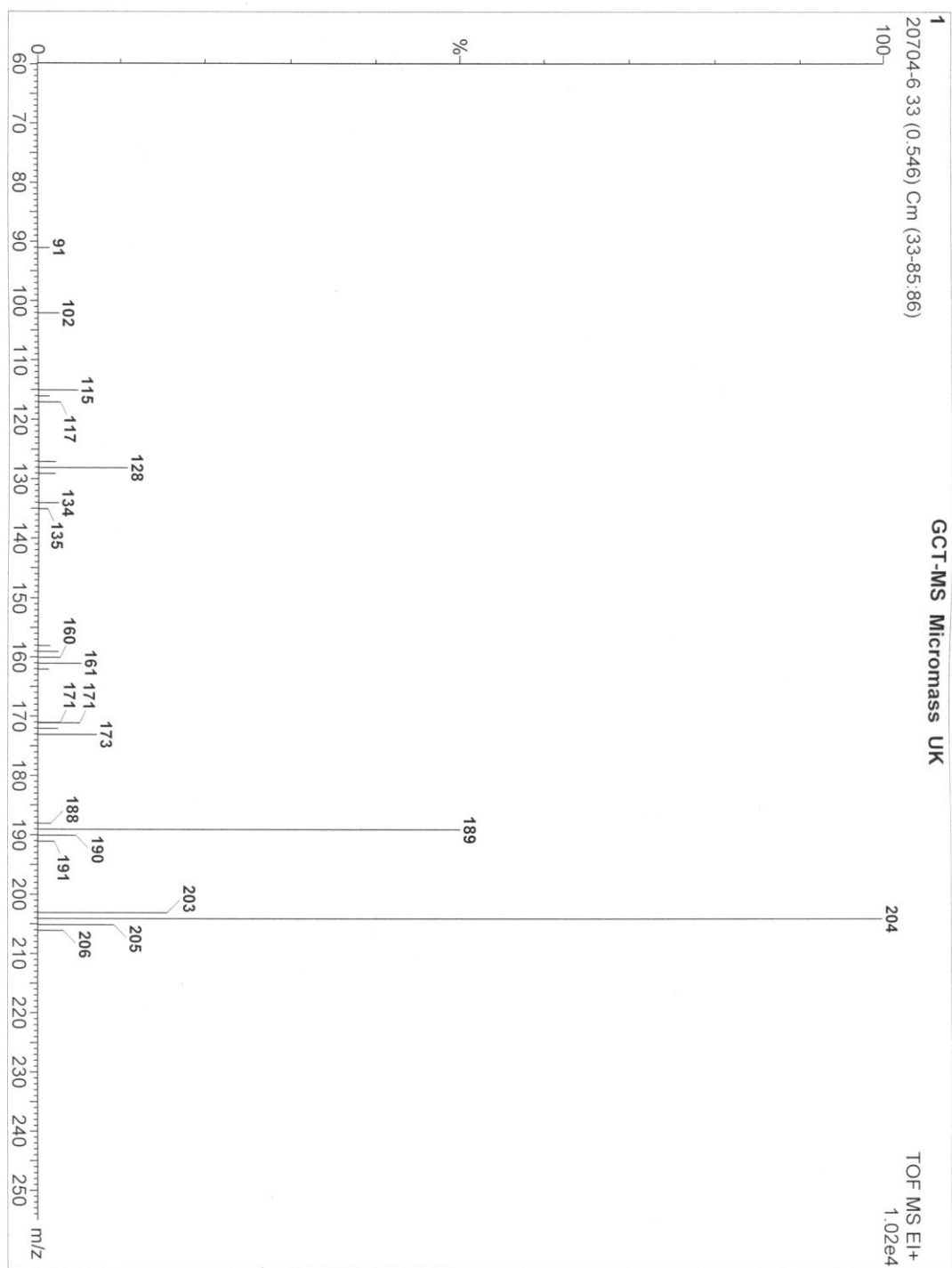


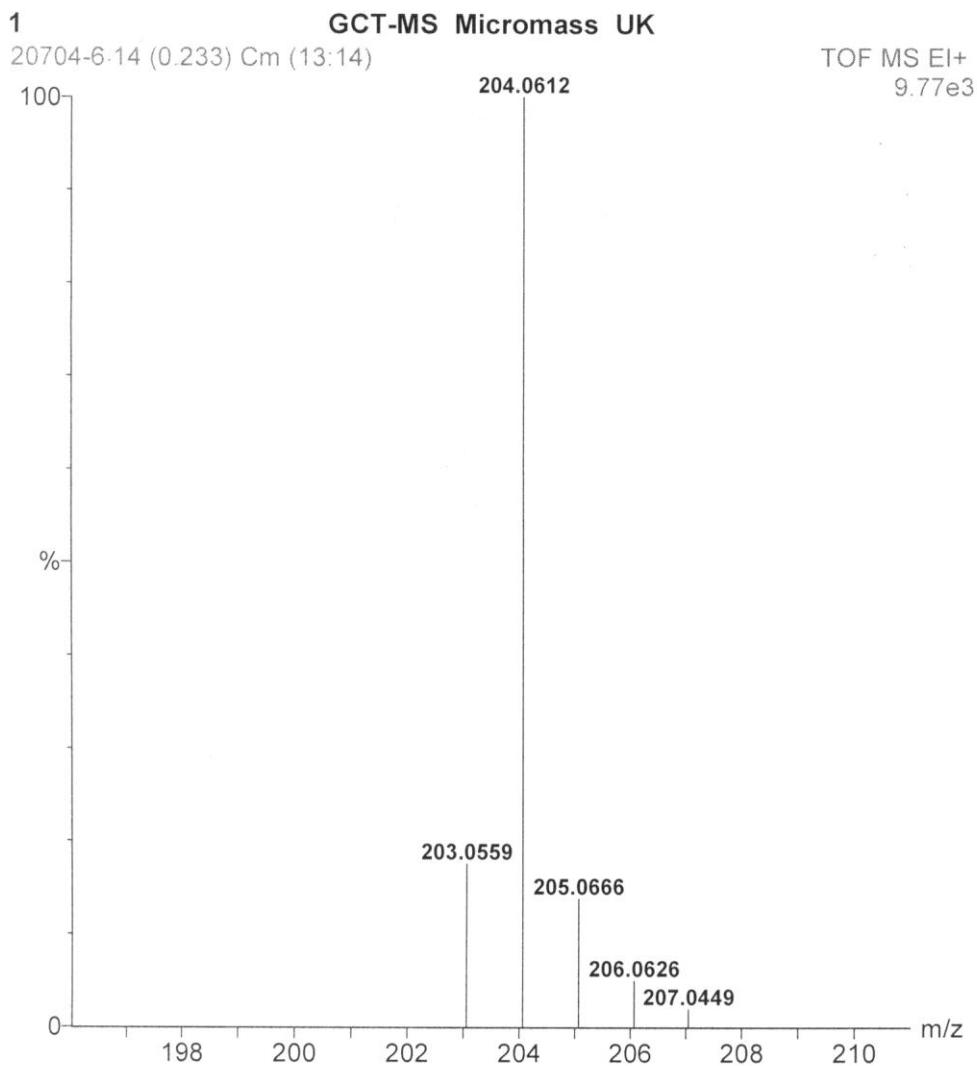
3-(4-methoxyphenyl)-2-methylthiophene

Colorless oil. ¹H NMR (400 MHz, CDCl₃): δ 7.32 (d, *J* = 8.0 Hz, 2H), 7.08 (d, *J* = 4.0 Hz, 1H), 7.00 (d, *J* = 4.0 Hz, 1H), 6.95 (d, *J* = 8.0 Hz, 2H), 3.84 (s, 3H), 2.94 (s, 3H) ppm. ¹³C NMR (100.6 MHz, CDCl₃): δ 158.34, 138.19, 133.24, 129.66, 129.22, 129.16, 121.25, 113.74, 55.20, 14.07 ppm. HRMS (EI) for C₁₂H₁₂OS: calcd 204.0609, found 204.0612.







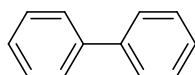


Elemental Composition Report

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 50.0
Isotope cluster parameters: Separation = 1.0 Abundance = 1.0%

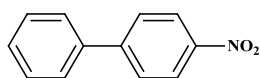
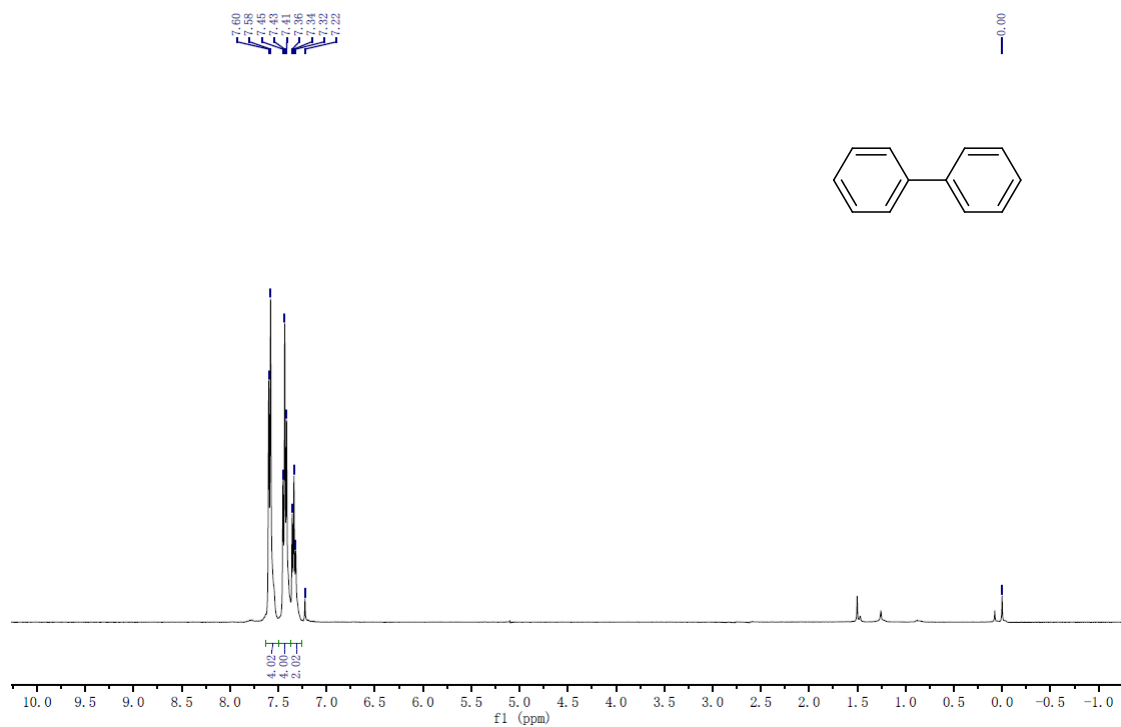
Monoisotopic Mass, Odd and Even Electron Ions
9 formula(e) evaluated with 1 results within limits (up to 50 closest results for each mass)

Minimum:	80.00				-1.5			
Maximum:	100.00		200.0	10.0	50.0			
Mass	RA	Calc. Mass	mDa	PPM	DBE	Score	Formula	
204.0612	100.00	204.0609	0.3	1.5	7.0	1	C12 H12 O S	



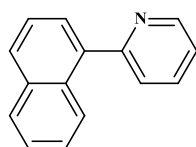
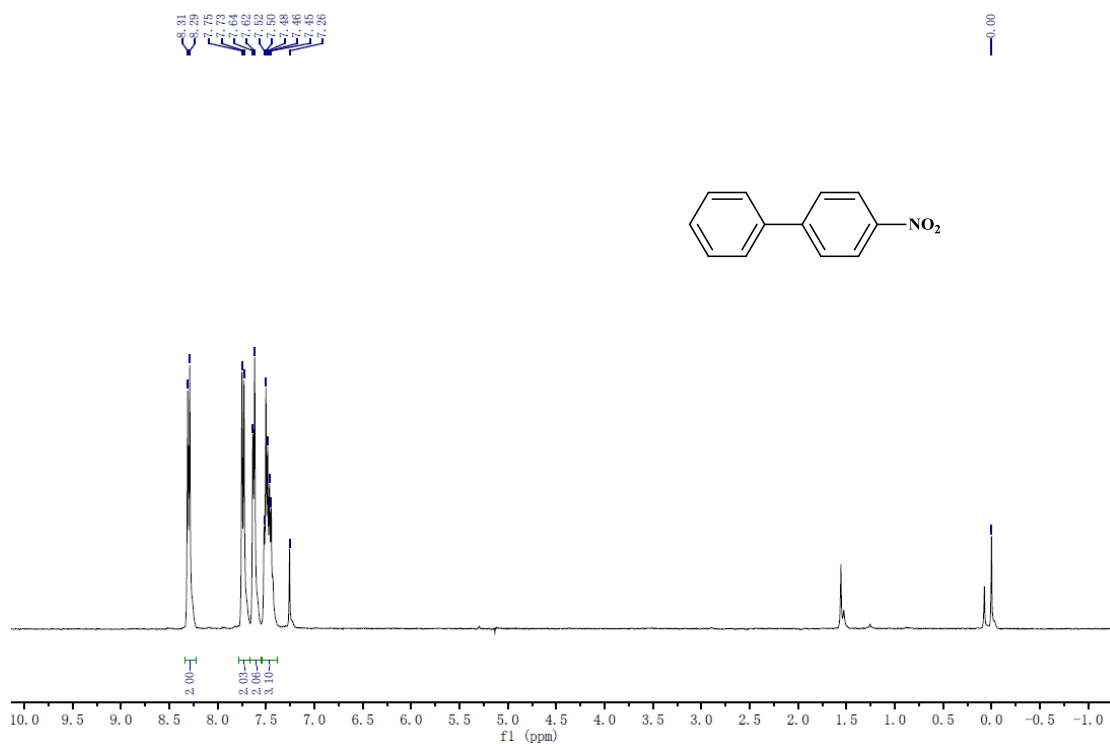
1,1'-biphenyl

White solid, m.p. 65-67°C. ¹H NMR (400 MHz, CDCl₃): δ 7.59 (d, *J* = 8.0 Hz, 4H), 7.43 (t, *J* = 8.0 Hz, 4H), 7.34 (t, *J* = 8.0 Hz, 2H) ppm. Data is consistent with that reported in the literature.¹⁷



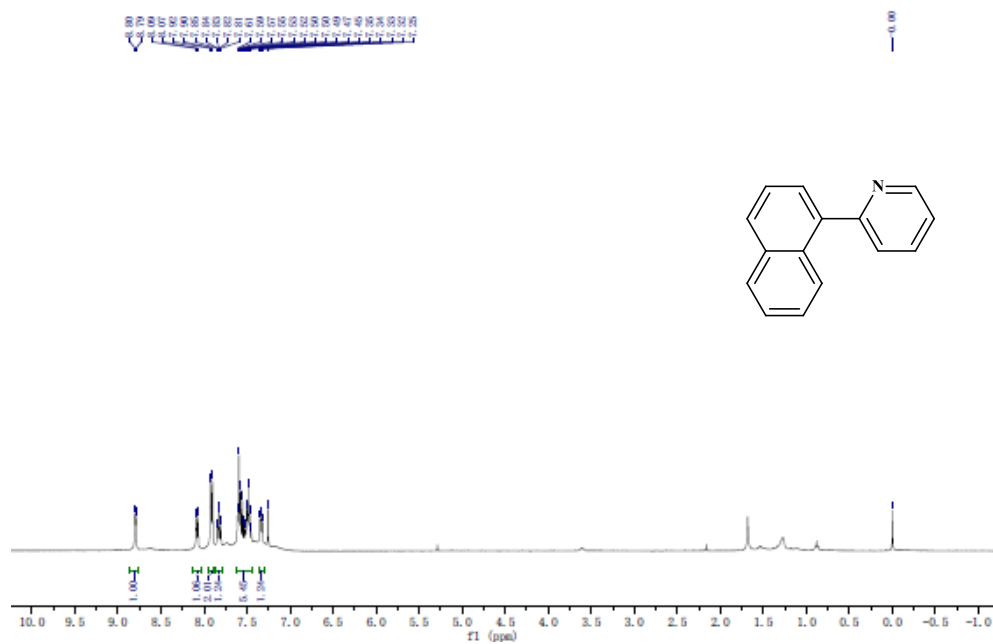
4-nitro-1,1'-biphenyl

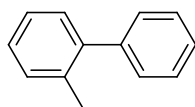
Light yellow solid, m.p. 110-111°C. ¹H NMR (400 MHz, CDCl₃): δ 8.30 (d, *J* = 8.0 Hz, 2H), 7.74 (d, *J* = 8.0 Hz, 2H), 7.63 (d, *J* = 8.0 Hz, 2H), 7.50-7.45 (m, 3H) ppm. Data is consistent with that reported in the literature.¹⁸



2-(naphthalen-1-yl)pyridine

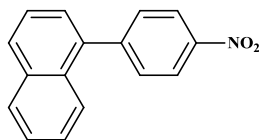
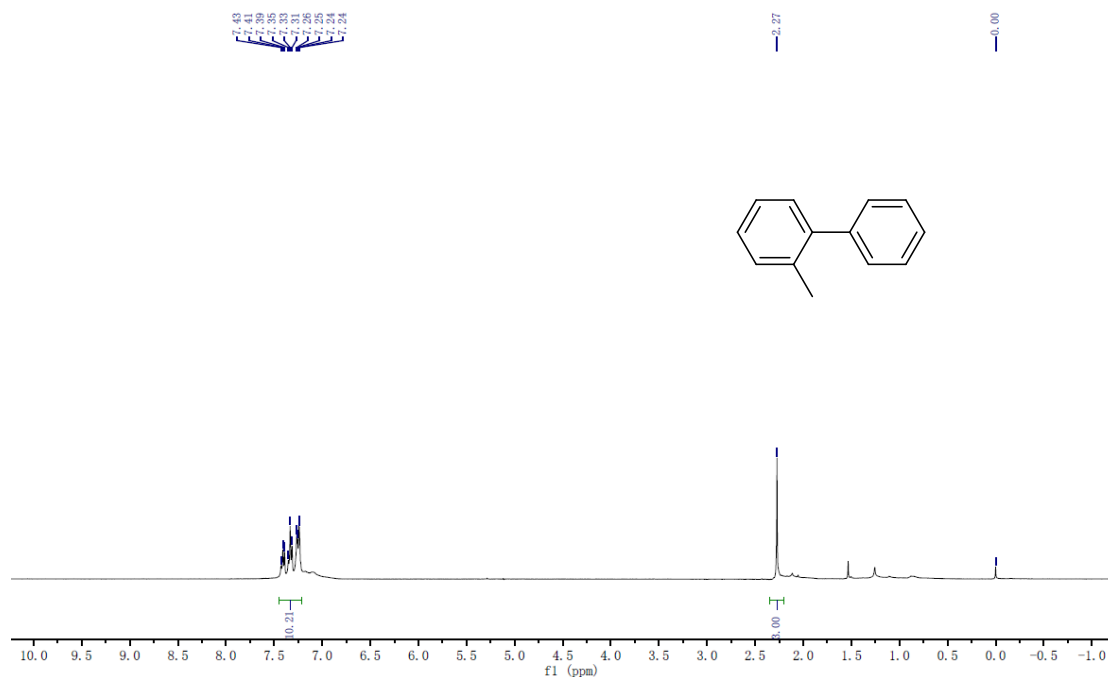
Yellow oil. ¹H NMR (400 MHz, CDCl₃): δ 8.79 (d, *J* = 4.0 Hz, 1H), 8.08 (d, *J* = 8.0 Hz, 1H), 7.91 (d, *J* = 8.0 Hz, 2H), 7.85-7.81 (m, 1H), 7.61-7.45 (m, 5H), 7.35-7.32 (m, 1H) ppm. Data is consistent with that reported in the literature.¹⁹





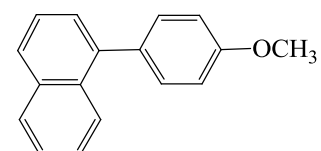
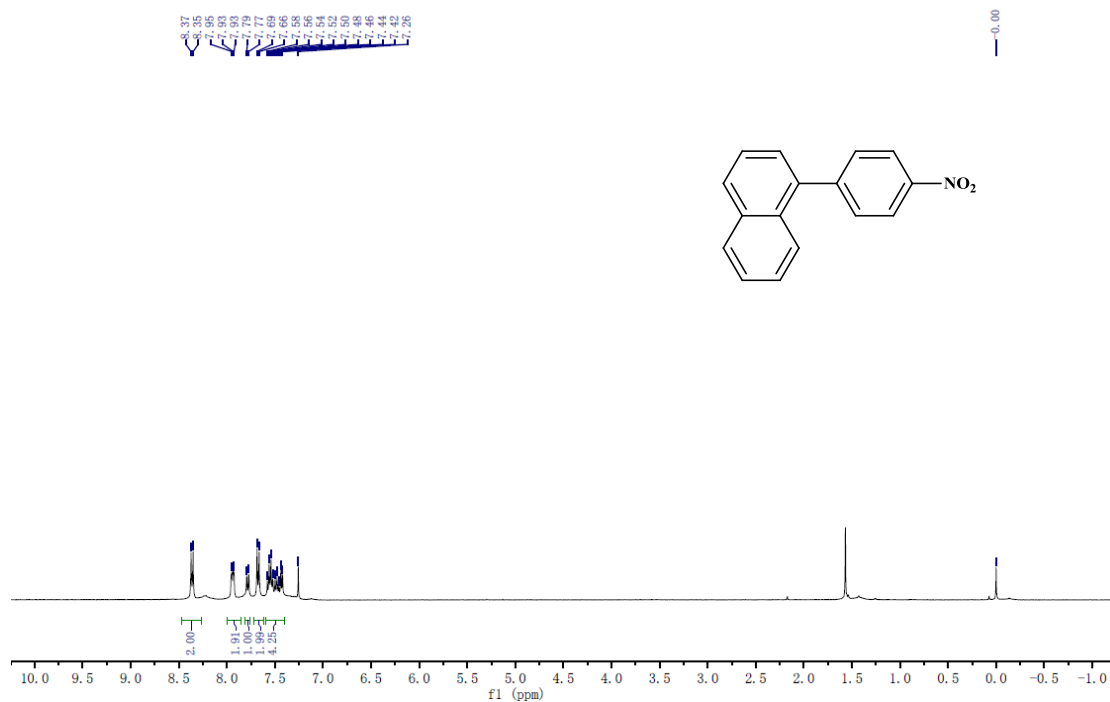
2-methyl-1,1'-biphenyl

colorless oil. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 7.43-7.24 (m, 9H), 2.27 (s, 3H) ppm. Data is consistent with that reported in the literature.¹⁹



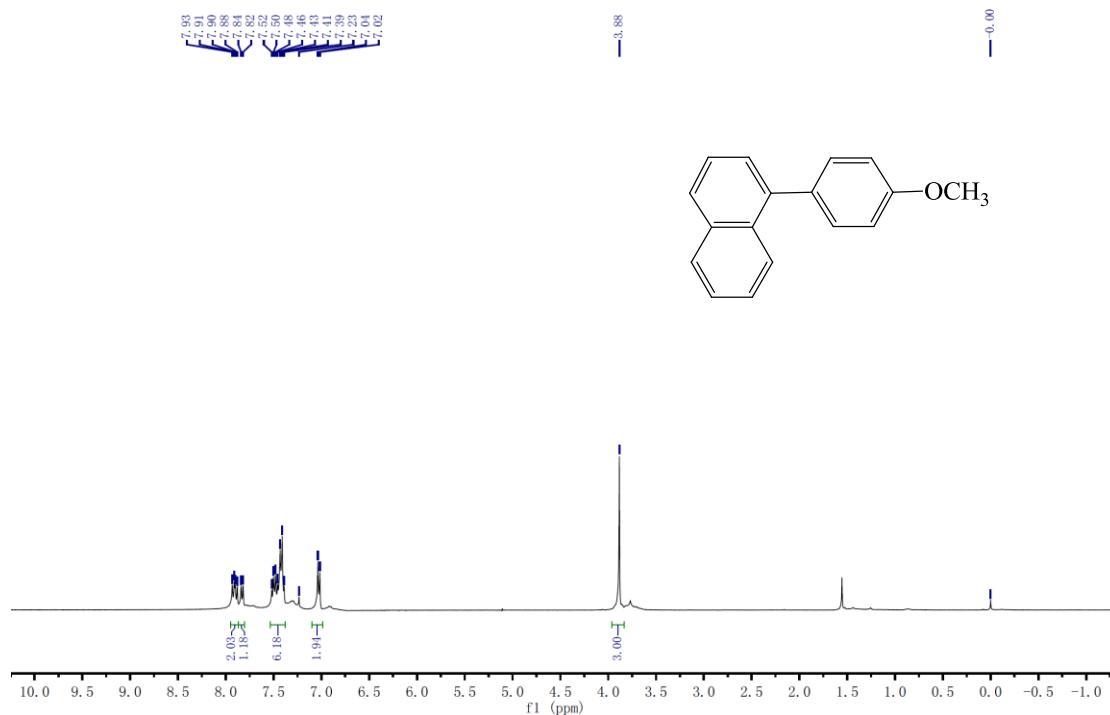
1-(4-nitrophenyl)naphthalene

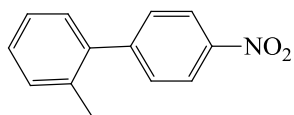
White solid, m.p. 128-130°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.36 (d, $J = 8.0$ Hz, 2 H), 8.94 (d, $J = 8.0$ Hz, 2H), 7.78 (d, $J = 8.0$ Hz, 1 H), 7.67 (d, $J = 12.0$ Hz, 1H), 7.57 (d, $J = 8.0$ Hz, 1H), 7.54-7.42(m, 4H) ppm. Data is consistent with that reported in the literature.¹⁸



1-(4-methoxyphenyl)naphthalene

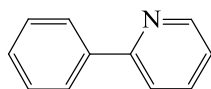
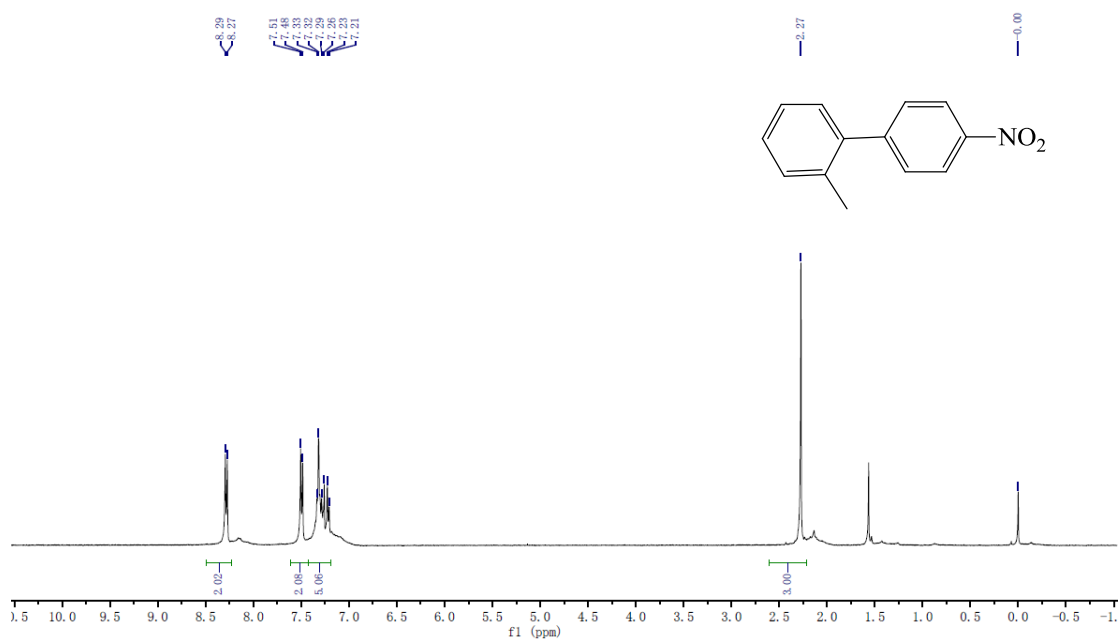
White solid, m.p. 115-117°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 7.93-7.82 (m, 3H), 7.52-7.39 (m, 6H), 7.04-7.02 (m, 2H), 3.88 (s, 3H) ppm. Data is consistent with that reported in the literature.²⁰





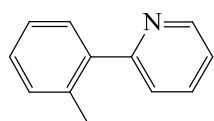
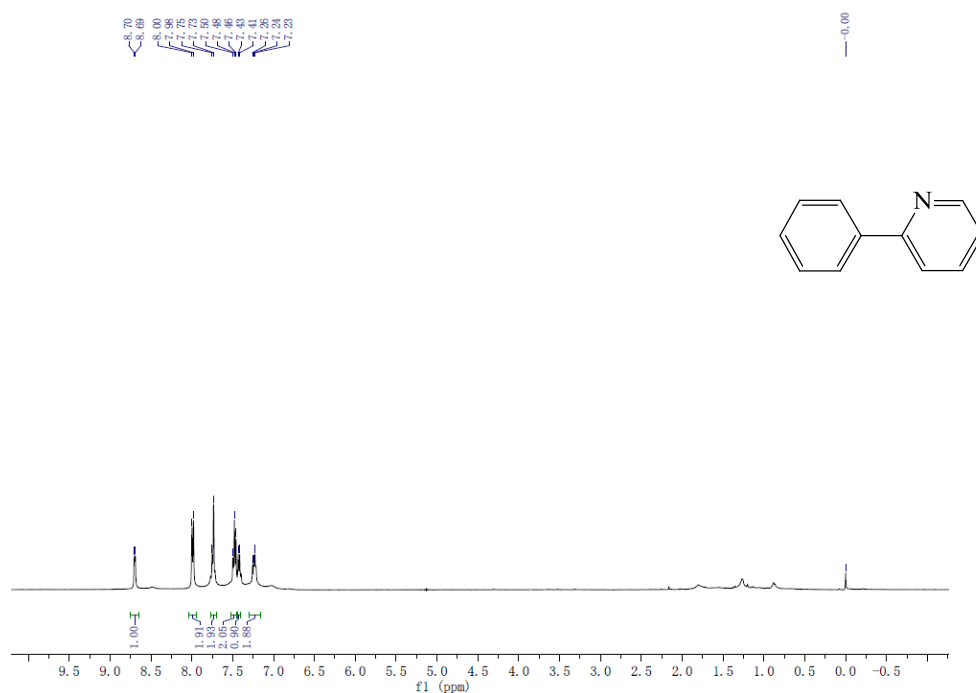
1-methyl-4'-nitro-1,1'-biphenyl

White solid, m.p. 99-101°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.28 (d, $J = 8.0$ Hz, 2H), 7.50 (d, $J = 12.0$ Hz, 2H), 7.33-7.21 (m, 4H), 2.27 (s, 3H) ppm. Data is consistent with that reported in the literature.²⁰



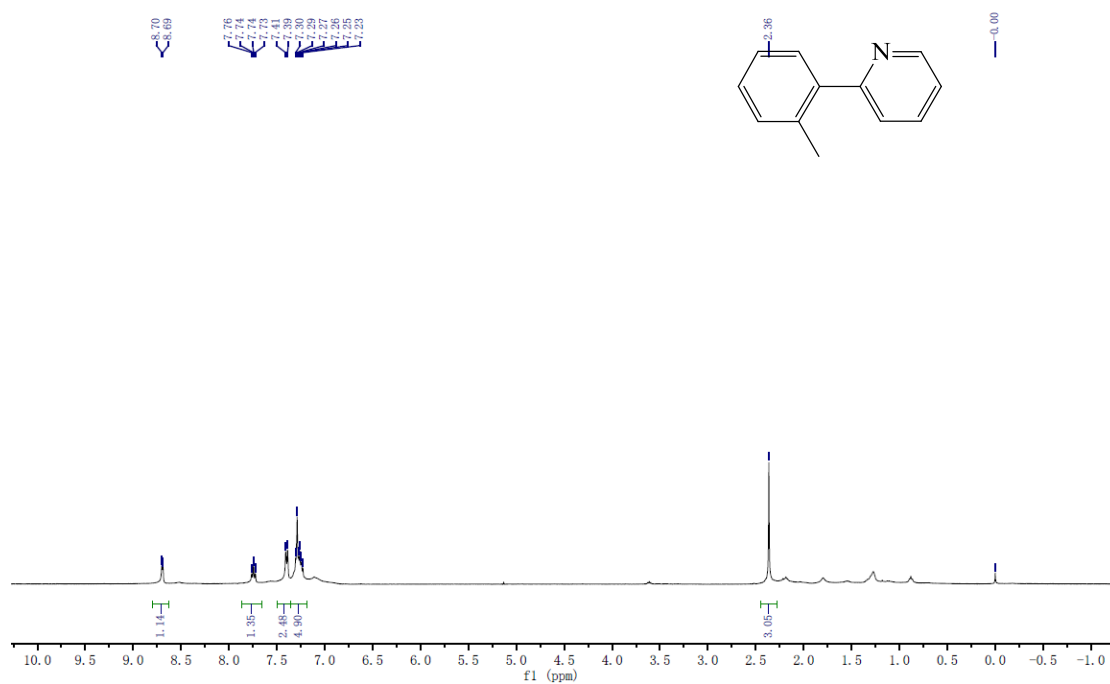
2-phenylpyridine

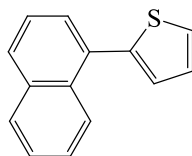
Yellow oil. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.69 (d, $J = 4.0$ Hz, 1H), 8.98 (d, $J = 4.0$ Hz, 2H), 7.77-7.72 (m, 2H), 7.48 (t, $J = 8.0$ Hz, 2H), 7.41 (t, $J = 6.0$ Hz, 1H), 7.23 (d, $J = 4.0$ Hz, 1H) ppm. Data is consistent with that reported in the literature.¹⁹



2-(*o*-tolyl)pyridine

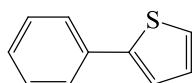
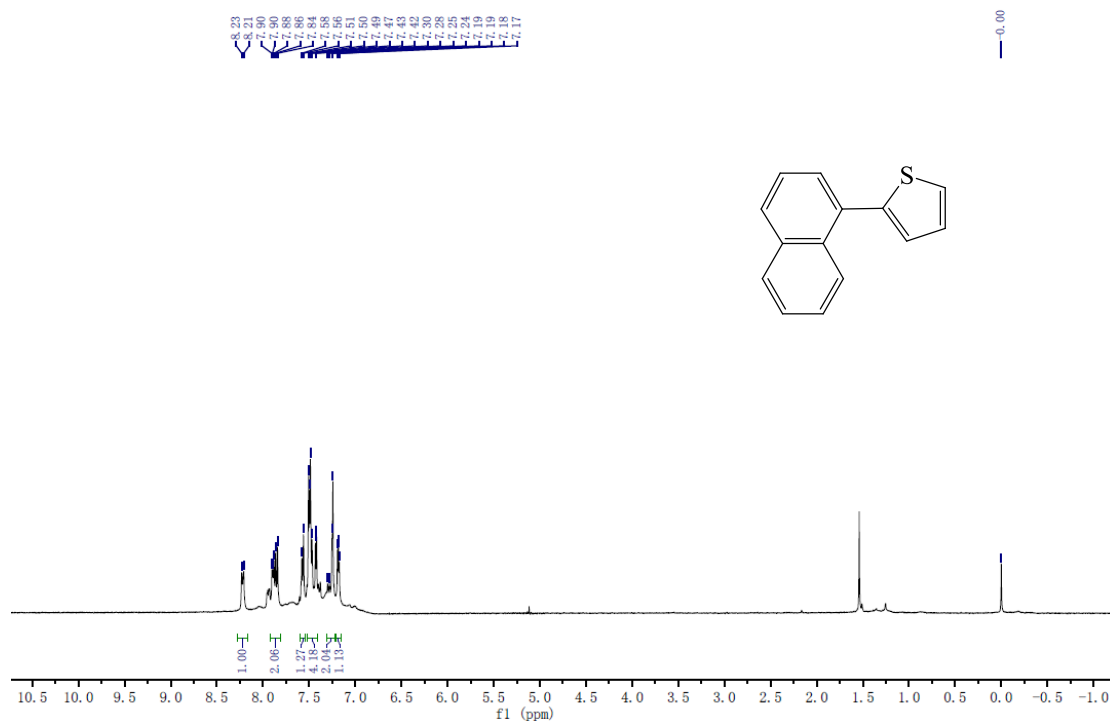
Yellow oil. ¹H NMR (400 MHz, CDCl₃): δ 8.69 (d, *J* = 4.0 Hz, 1H), 7.76-7.73 (m, 1H), 7.40 (d, *J* = 8.0 Hz, 2H), 7.30-7.23 (m, 4H), 2.36 (s, 3H) ppm. Data is consistent with that reported in the literature.¹⁹





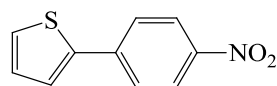
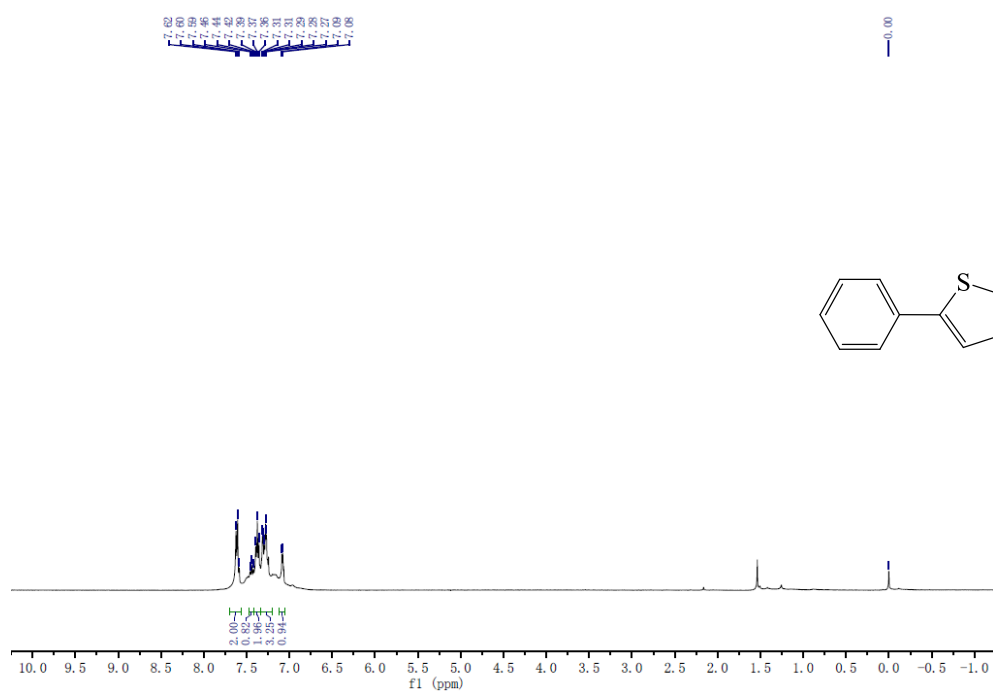
2-(naphthalen-1-yl)thiophene

Colorless oil. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.22 (d, $J = 8.0$ Hz, 1H), 7.90-7.84 (m, 2H), 7.57 (d, $J = 8.0$ Hz, 1H), 7.51-7.42 (m, 4H), 7.30-7.24 (m, 1H), 7.18 (d, $J = 8.0$ Hz, 1H) ppm. Data is consistent with that reported in the literature.²¹



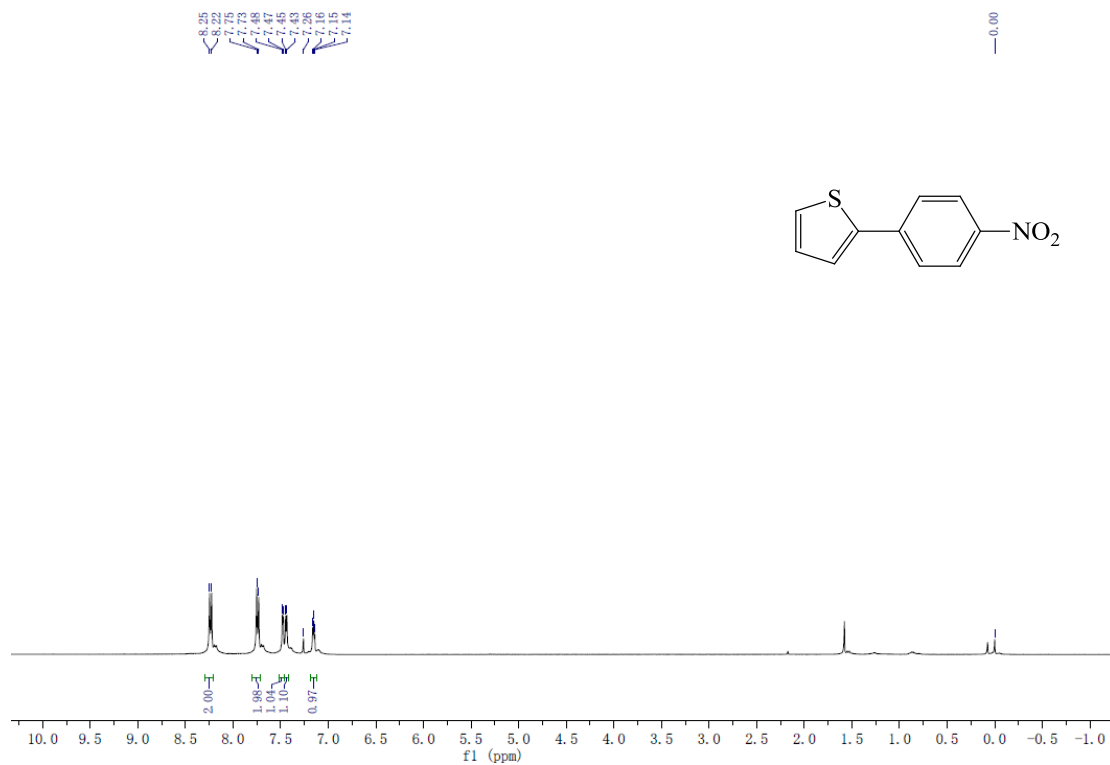
2-phenylthiophene

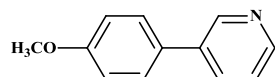
Colorless oil. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 7.62-7.59 (m, 2H), 7.39-7.27 (m, 5H), 7.09 (d, $J = 4.0$ Hz, 1H) ppm. Data is consistent with that reported in the literature.²²



2-(4-nitrophenyl)thiophene

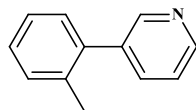
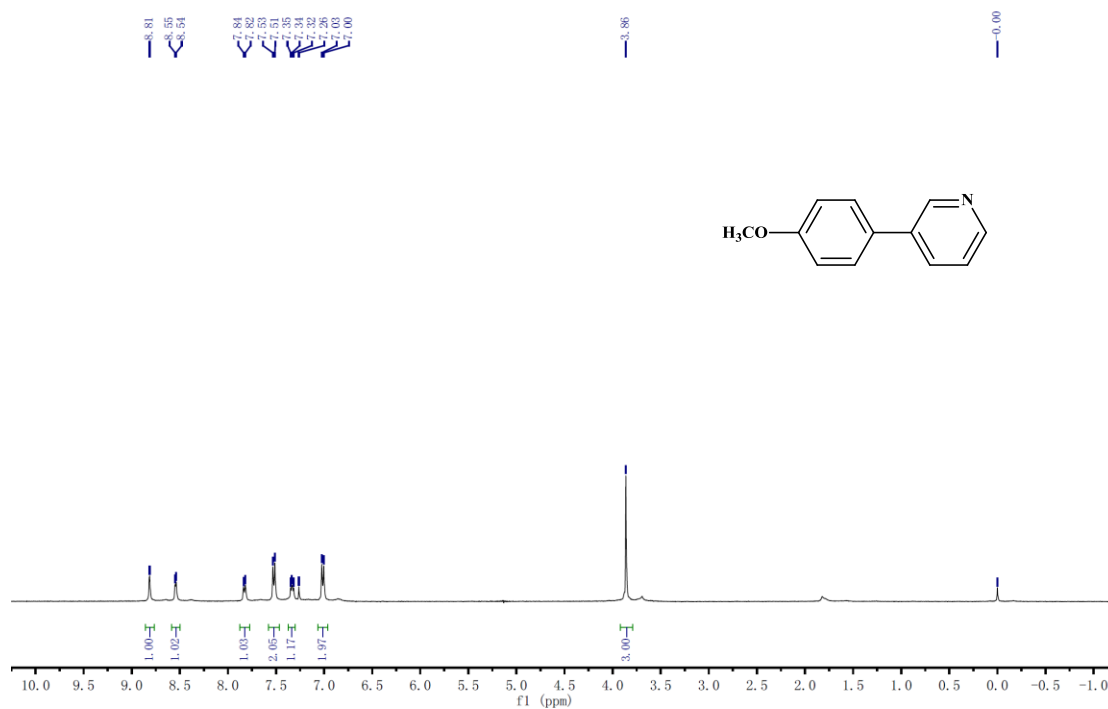
Yellow solid, m.p. 135-136°C. ¹H NMR (400 MHz, CDCl₃): δ 8.23 (d, *J* = 12.0 Hz, 2H), 7.74 (d, *J* = 8.0 Hz, 2H), 7.47 (d, *J* = 4.0 Hz, 1H), 7.44 (d, *J* = 8.0 Hz, 1H), 7.15 (t, *J* = 4.0 Hz, 1H) ppm. Data is consistent with that reported in the literature.²³





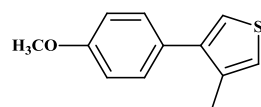
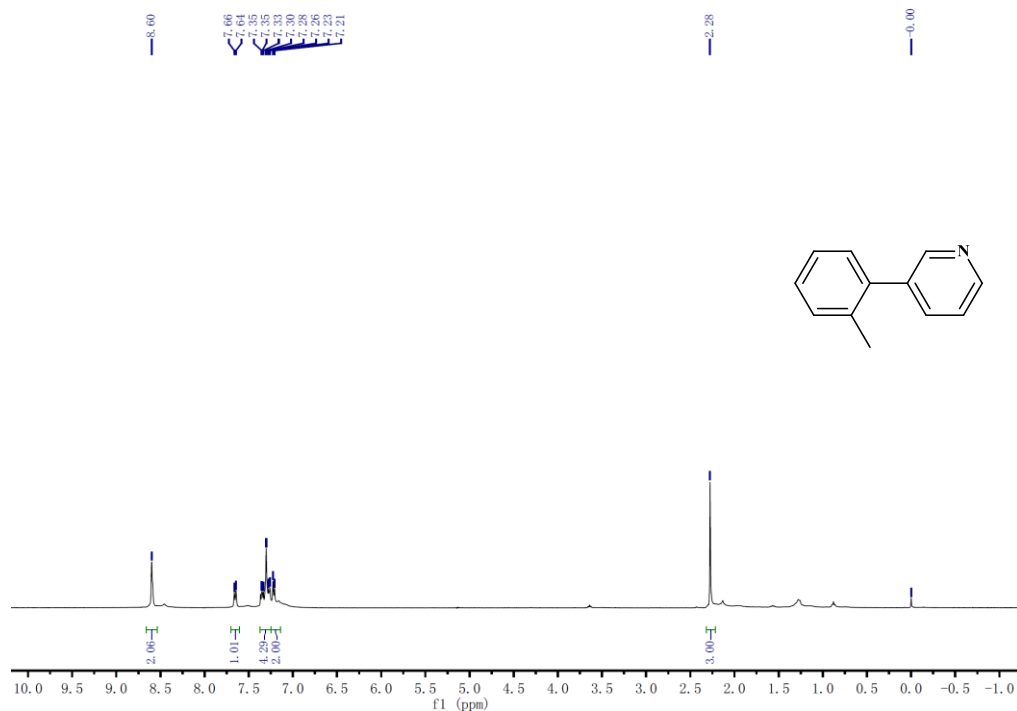
3-(4-methoxyphenyl)pyridine

White solid, m.p. 58-60°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.81 (s, 1H), 8.54 (d, $J = 4.0$ Hz, 1H), 7.83 (d, $J = 8.0$ Hz, 1H), 7.52 (d, $J = 8.0$ Hz, 2H), 7.35-7.32 (m, 1H), 7.02 (d, $J = 8.0$ Hz, 2H), 3.86 (s, 3H) ppm. Data is consistent with that reported in the literature.²⁴



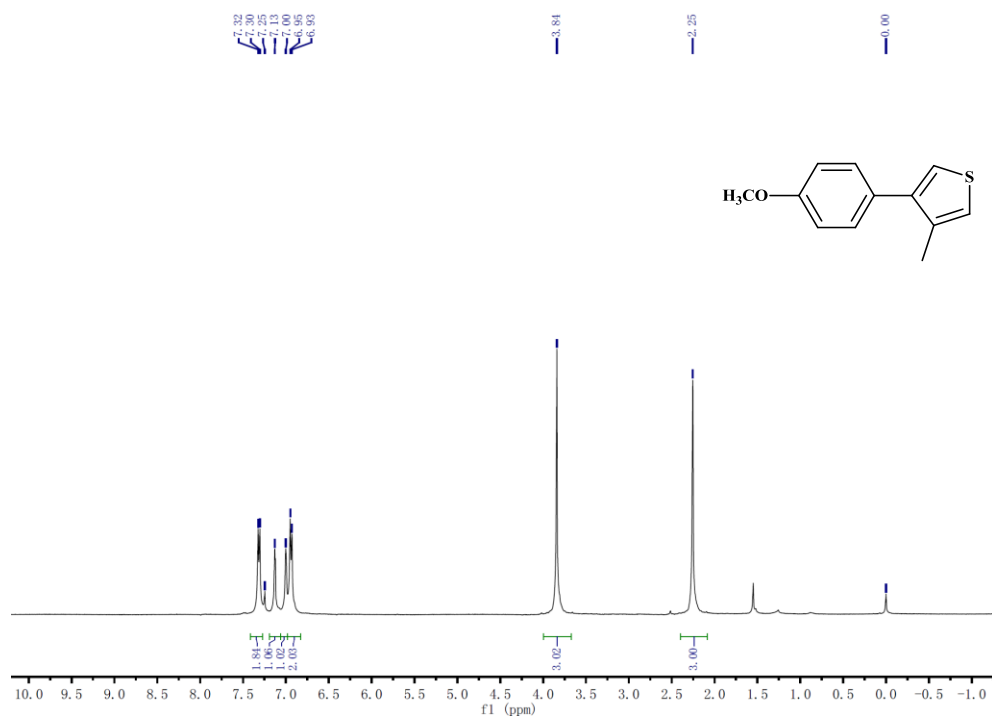
3-(*o*-tolyl)pyridine

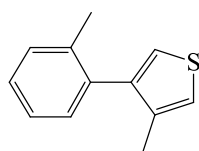
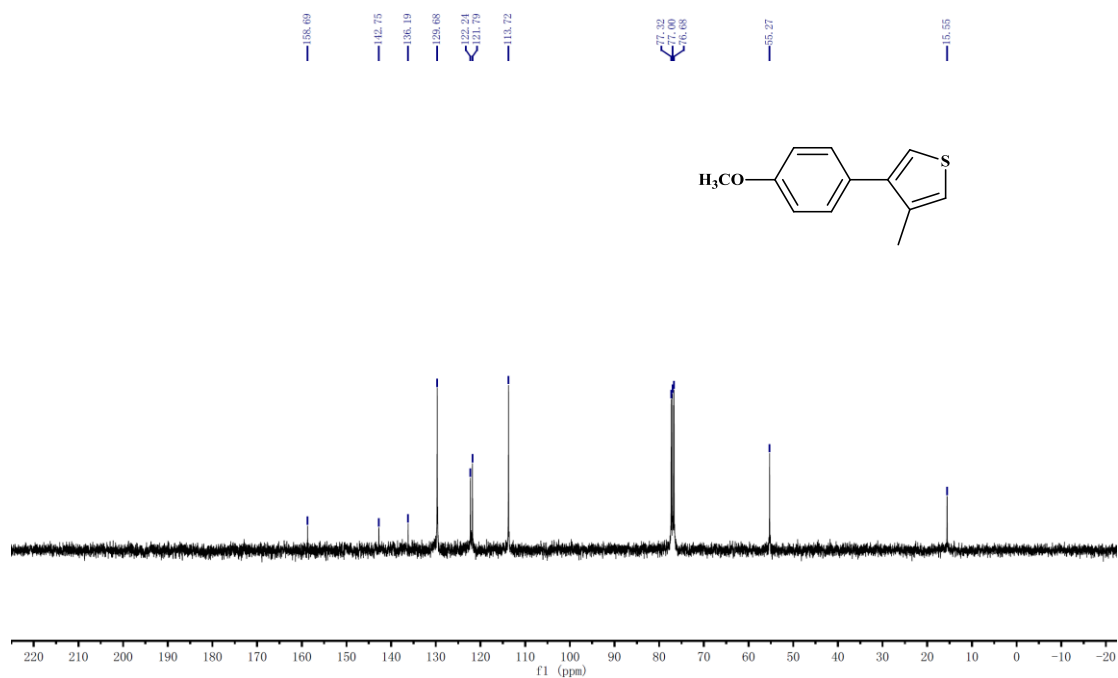
Colorless oil. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.60 (s, 2H), 7.65 (d, $J = 8.0$ Hz, 1H), 7.35-7.21 (m, 5H), 2.28 (s, 3H) ppm. Data is consistent with that reported in the literature.¹⁹



3-(4-methoxyphenyl)-4-methylthiophene

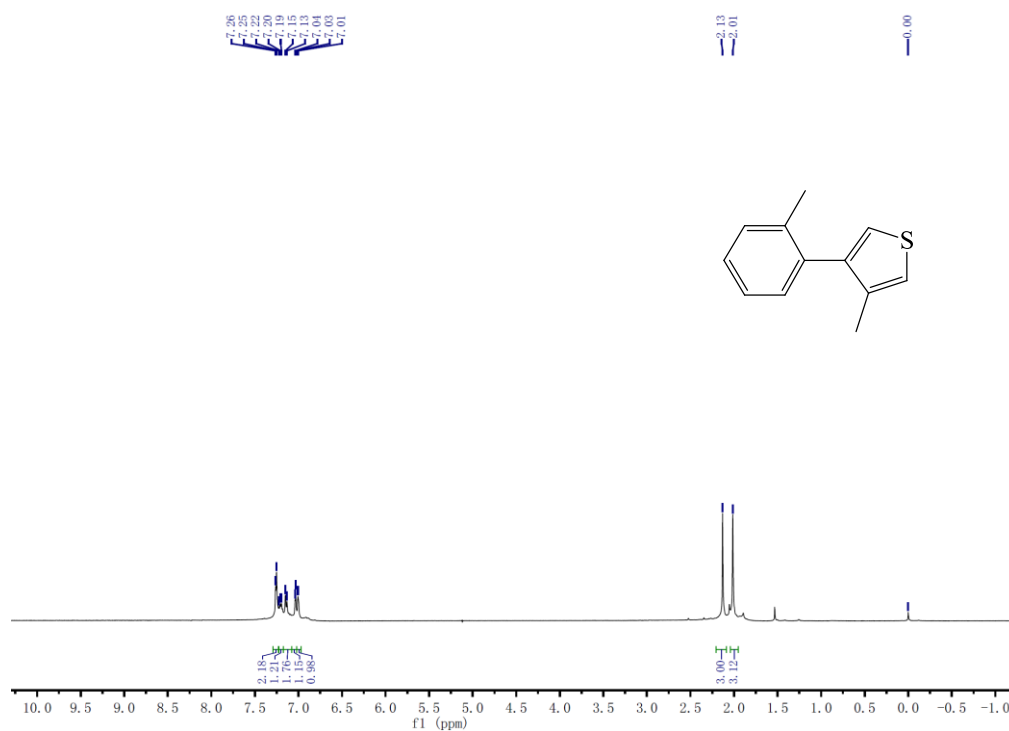
Colorless oil. ¹H NMR (400 MHz, CDCl₃): δ 7.31 (d, *J* = 8.0 Hz, 2H), 7.13 (s, 1H), 7.00 (s, 1H), 7.94 (d, *J* = 8.0 Hz, 2H), 3.84 (s, 3H), 2.25 (s, 3H) ppm. ¹³C NMR (100.6 MHz, CDCl₃): δ 158.69, 142.75, 136.19, 129.68, 129.57, 122.24, 121.79, 113.72, 55.27, 15.55 ppm.

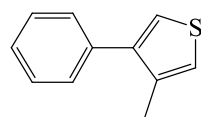
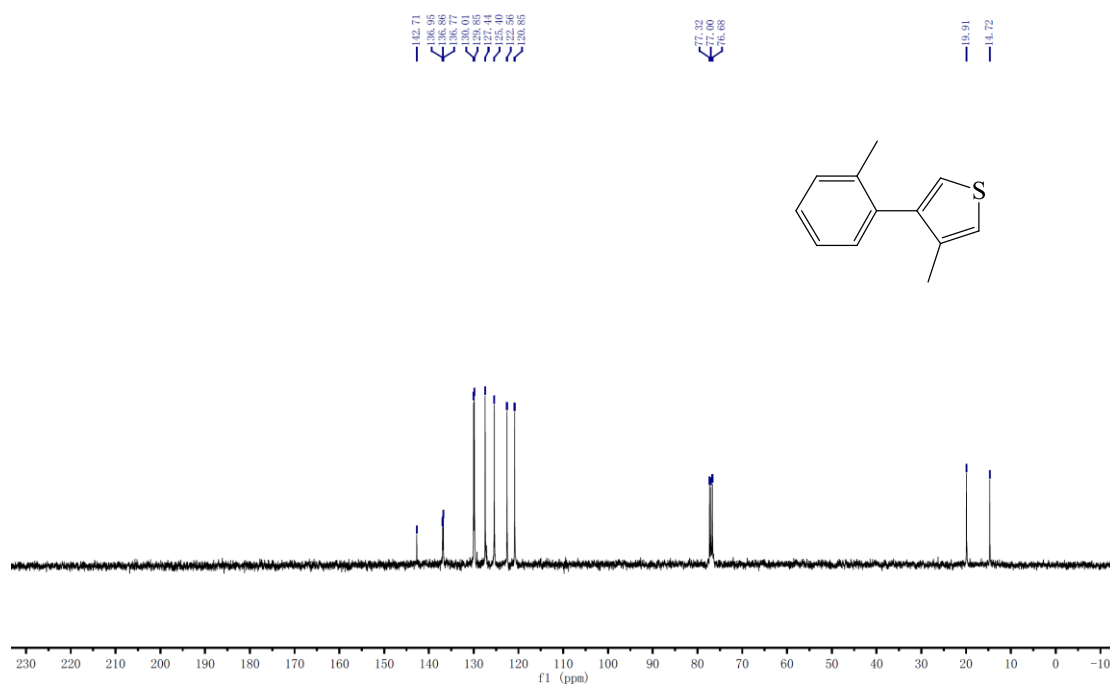




3-methyl-4-(*o*-tolyl)thiophene

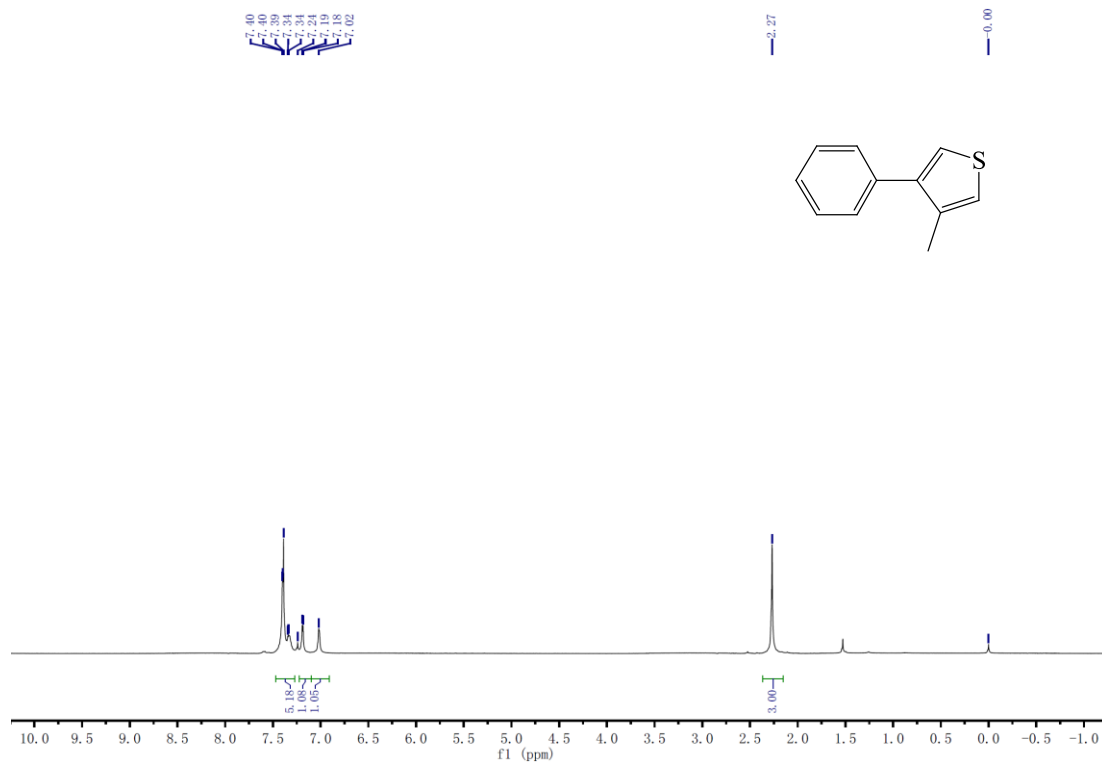
Colorless oil. ¹H NMR (400 MHz, CDCl₃): δ 7.24 (t, *J* = 8.0 Hz, 1H), 7.19 (d, *J* = 4.0 Hz, 1H), 7.14 (d, *J* = 8.0 Hz, 2H), 7.03 (d, *J* = 4.0 Hz, 1H), 7.01 (s, 1H), 2.13 (s, 3H), 2.01 (s, 3H) ppm. ¹³C NMR (100.6 MHz, CDCl₃): δ 142.71, 136.96, 136.86, 136.77, 130.01, 129.85, 127.44, 125.40, 122.56, 120.86, 19.91, 14.72 ppm.

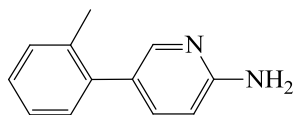




3-methyl-4-phenylthiophene

Colorless oil. ¹H NMR (400 MHz, CDCl₃): δ 7.40-7.34 (m, 5H), 7.19 (d, *J* = 4.0 Hz, 1H), 7.02 (br, 1H), 2.27 (s, 3H) ppm. Data is consistent with that reported in the literature.²⁵

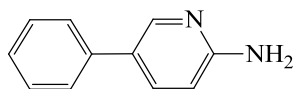
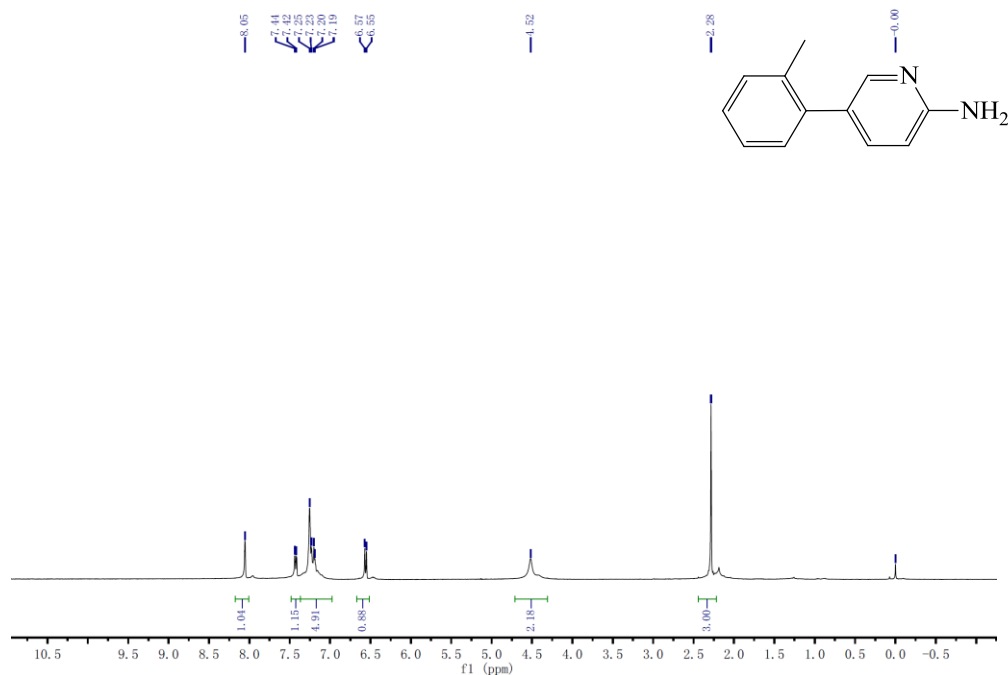




5-(*o*-tolyl)pyridin-2-amine

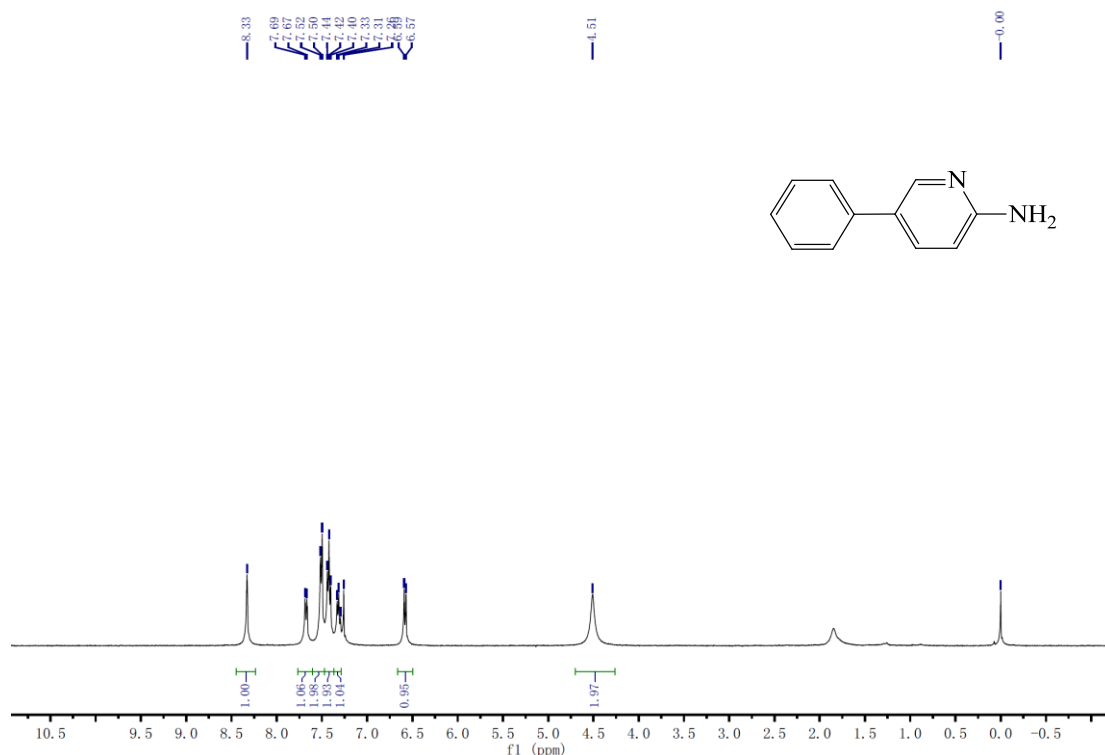
Light orange oil. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.05 (s, 1H), 7.43 (d, $J = 8.0$ Hz, 1H), 7.25-7.19 (m, 4H), 6.56 (d, $J = 8.0$ Hz, 1H), 4.52 (br, 2H), 2.28 (s, 3H) ppm.

Data is consistent with that reported in the literature.²⁶



5-phenylpyridin-2-amine

Light yellow solid, m.p. 130-131°C. $^1\text{H NMR}$ (400 MHz, CDCl_3): δ 8.33 (s, 1H), 7.68 (d, $J = 8.0$ Hz, 1H), 7.51 (d, $J = 8.0$ Hz, 2H), 7.42 (t, $J = 6.0$ Hz, 2H), 7.32 (d, $J = 8.0$ Hz, 1H), 6.58 (d, $J = 8.0$ Hz, 1H), 4.51 (br, 2H) ppm. Data is consistent with that reported in the literature.²⁷



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