

Supporting Information

Stabilized Pyrrolyl Iodonium Salts and Metal-Free Oxidative Cross-Coupling

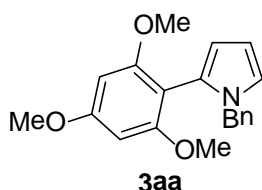
Koji Morimoto,^a Yusuke Ohnishi,^a Daichi Koseki,^a Akira Nakamura,^b Toshifumi Dohi,^a Yasuyuki Kita

^a Ritsumeikan University College of Pharmaceutical Sciences 1-1-1 Nojihigashi, Kusatsu, Shiga 525-8577, Japan

^b Ritsumeikan University Research Organization of Science and Technology, 1-1-1 Nojihigashi, Kusatsu, Shiga, 525-8577, Japan

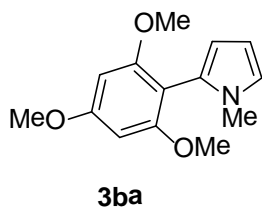
Characterization data of the products 3

1-Benzyl-2-[(2,4,6-trimethoxy)phenyl]-1H-pyrrole (3aa)



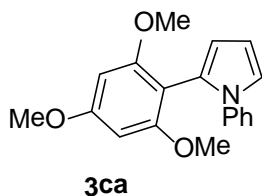
White solid; mp: 87-89 °C; ¹H NMR (400 MHz, CDCl₃): δ 3.54 (s, 6H), 3.75 (s, 3H), 4.72 (s, 2H), 6.16 (dd, 1H, *J* = 3.4, 1.0 Hz), 6.05 (s, 2H), 6.22 (d, 1H, *J* = 2.4 Hz), 6.65 (t, 1H, *J* = 2.0 Hz), 6.93 (d, 2H, *J* = 6.8 Hz), 7.08-7.16 (m, 3H) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 50.6, 55.3, 55.6, 90.4, 103.3, 107.9, 109.3, 120.7, 125.5, 126.8, 127.1, 128.1, 138.9, 160.1, 161.4 ppm; IR (KBr): 3942 w, 3053 w, 2987 w, 2945 w, 2685 w, 2305 w, 1610 w, 1421 w, 1263 s, 1155 w, 1126 w, 895 w, 814 w, 748 s, 706 m cm⁻¹; HRFABMS calcd for C₂₀H₂₁NO₃ [M]⁺ 323.1521, found 323.1537.

1-Methyl-2-[(2,4,6-trimethoxy)phenyl]-1H-pyrrole (3ba)



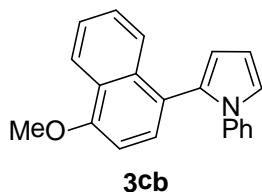
White solid; mp: 87-89 °C; ¹H NMR (400 MHz, CDCl₃): δ 3.37 (s, 3H), 3.72 (s, 6H), 3.84 (s, 3H), 6.04 (dd, 1H, *J* = 3.7, 1.8 Hz), 6.18 (s, 2H), 6.21 (t, 1H, *J* = 3.0 Hz), 6.70 (t, 1H, *J* = 2.0 Hz) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 34.0, 55.3, 55.8, 90.5, 103.5, 107.1, 109.4, 121.4, 125.2, 159.9, 161.2 ppm; IR (KBr): 2930 m, 1611 s, 1583 s, 1552 m, 1496 w, 1454 m, 1413 m, 1334 m, 1307 w, 1224 m, 1203 s, 1155 s, 1124 s, 1030 w, 812 w, 711 m cm⁻¹; HRFABMS calcd for C₁₄H₁₇NO₃ [M]⁺ 247.1208, found 247.1204.

1-Phenyl-2-[(2,4,6-trimethoxy)phenyl]-1H-pyrrole (3ca)



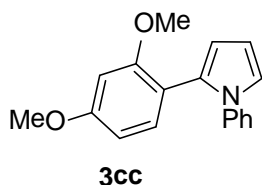
White solid; mp: 87-89 °C; ¹H NMR (400 MHz, CDCl₃): δ 3.49 (s, 6H), 3.78 (s, 3H), 6.02 (s, 2H), 6.26-6.27 (m, 1H), 6.39 (t, 1H, *J* = 2.8 Hz), 6.97 (t, 1H, *J* = 2.8 Hz), 7.07-7.13 (m, 3H), 7.21 (t, 2H, *J* = 7.6 Hz) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 55.1, 55.4, 90.3, 103.9, 108.8, 111.6, 121.4, 124.1, 124.9, 125.6, 128.2, 141.3, 159.3, 161.1 ppm; IR (KBr): 3944 w, 3053 w, 2986 w, 2941 w, 2305 w, 1502 w, 1417 w, 1261 s, 1226 w, 1157 w, 1128 m, 895 w, 814 w, 763 s, 748 s, 704 m cm⁻¹; HRFABMS calcd for C₁₉H₁₉NO₃ [M]⁺ 309.1365, found 309.1357.

2-[(4-Methoxy)naphthalen-1-yl]-1-phenyl-1H-pyrrole (3cb)



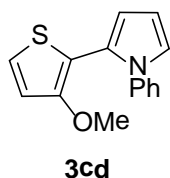
Brown oil; ^1H NMR (400 MHz, CDCl_3): δ 3.96 (s, 3H), 6.43 (q, 1H, $J = 1.7$ Hz), 6.45 (t, 1H, $J = 3.2$ Hz), 6.69 (d, 1H, $J = 7.8$ Hz), 7.03-7.16 (m, 5H), 7.35-7.42 (m, 3H), 7.87-7.90 (m, 2H), 8.22-8.26 (m, 1H) ppm; ^{13}C NMR (100 MHz, CDCl_3): δ 55.4, 103.2, 108.8, 112.4, 121.8, 122.5, 124.7, 125.0, 125.9, 126.0, 126.5, 128.7, 129.1 ppm; IR (KBr): 2925, 2853, 2362, 2252, 1723, 1586, 1498, 1459, 1384, 1237, 1096, 913, 744 cm^{-1} ; MALDI-TOFMS calcd for $\text{C}_{21}\text{H}_{17}\text{NO}$ $[\text{M}]^+$ 299.1310, found 299.1305.

2-[(2,4-Dimethoxy)phenyl]-1-phenyl-1H-pyrrole (3cc)



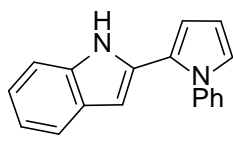
Colorless oil; ^1H NMR (400 MHz, CDCl_3): δ 3.19 (s, 3H), 3.69 (s, 3H), 6.14-6.15 (m, 1H), 6.20-6.23 (m, 2H), 6.38 (dd, 1H, $J = 8.3, 2.4$ Hz), 6.86-6.87 (m, 1H), 6.99-7.02 (m, 2H), 7.08-7.11 (m, 2H), 7.16-7.19 (m, 2H) ppm; ^{13}C NMR (100 MHz, CDCl_3): δ 54.7, 55.3, 98.6, 104.2, 108.8, 110.7, 115.5, 122.3, 124.1, 125.7, 128.5, 130.3, 132.0, 141.5, 157.6, 160.5 ppm; IR (KBr): 2932, 1614, 1502, 1465, 1305, 1209, 1161, 1034, 765 cm^{-1} ; HRFABMS calcd for $\text{C}_{18}\text{H}_{17}\text{NO}_2$ $[\text{M}]^+$ 279.1259, found 279.1254.

2-[(3-Methoxy)thiophen-2-yl]-1-phenyl-1H-pyrrole (3cd)



Colorless oil; ^1H NMR (400 MHz, CDCl_3): δ 3.47 (s, 3H), 6.36 (t, 1H, $J = 3.3$ Hz), 6.48-6.50 (m, 1H), 6.72 (d, 1H, $J = 5.7$ Hz), 6.94-6.95 (m, 1H), 7.08 (d, 1H, $J = 5.4$ Hz), 7.22-7.35 (m, 5H) ppm; ^{13}C NMR (100 MHz, CDCl_3): δ 58.2, 109.1, 111.5, 112.2, 116.3, 123.2, 123.3, 124.0, 125.3, 126.6, 128.6, 140.6, 154.0 ppm; IR (KBr): 3105, 3051, 2958, 2931, 2850, 1597, 1523, 1500, 1427, 1379, 1321, 1259, 1236, 1103, 1070, 790, 763, 750, 717, 696 cm^{-1} . MALDI-TOFMS calcd for $\text{C}_{15}\text{H}_{13}\text{NOS}$ $[\text{M}]^+$ 255.0718, found 255.0713.

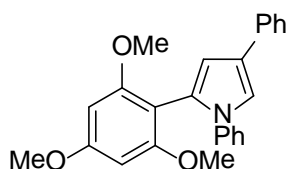
2-(1-Phenyl-1H-pyrrol-2-yl)-1H-indole (3ce)



3ce

White solid; mp: 144-145 °C; ¹H NMR (400 MHz, CDCl₃): δ 6.41 (t, 1H, *J* = 2.8 Hz), 6.52 (d, 1H, *J* = 3.6 Hz), 6.60 (d, 1H, *J* = 2.4 Hz), 6.94 (s, 1H), 7.07 (td, 1H, *J* = 8.0, 1.2 Hz), 7.16 (td, 1H, *J* = 6.8, 1.2 Hz), 7.20-7.27 (m, 5H), 7.31 (d, 1H, *J* = 8.0 Hz), 7.63 (d, 1H, *J* = 8.0 Hz), 7.99 (s, 1H) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 109.1, 109.3, 110.0, 110.9, 120.0, 120.2, 122.2, 122.7, 122.8, 125.8, 126.5, 126.6, 127.3, 128.8, 135.6, 140.8 ppm; IR (KBr): 3404, 3058, 2926, 1597, 1498, 1456, 1434, 1331, 1242, 1199, 1097, 81, 791, 741, 697 cm⁻¹; MALDI-TOFMS calcd for C₁₈H₁₄N₂ [M+H]⁺ 258.1157, found 258.1152.

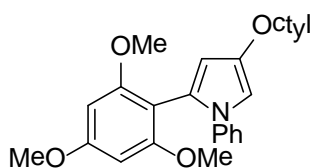
1,4-Diphenyl-2-[(2,4,6-trimethoxy)phenyl]-1H-pyrrole (3da)



3da

White solid; mp: 59-61 °C; ¹H NMR (400 MHz, CDCl₃): δ 3.51 (s, 6H), 3.79 (s, 3H), 6.03 (s, 2H), 6.61 (s, 1H), 7.12-7.32 (m, 9H), 7.58 (dd, 2H, *J* = 8.4, 1.2 Hz) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 55.2, 55.5, 90.5, 103.7, 110.1, 118.2, 124.0, 125.0, 125.1, 125.2, 125.8, 125.9, 128.3, 128.4, 135.8, 141.2, 159.3, 161.3 ppm; IR (KBr): 2936, 2837, 1583, 1500, 1454, 1415, 1336, 1227, 1204, 1155, 1126, 911, 812, 748, 695 cm⁻¹; MALDI-TOFMS calcd for C₂₅H₂₄NO₃ [M+H]⁺ 386.1756, found 386.1751.

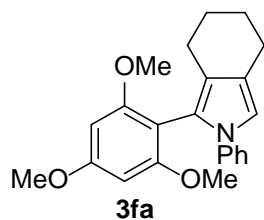
4-Octyl-1-phenyl-2-[(2,4,6-trimethoxy)phenyl]-1H-pyrrole (3ea)



3ea

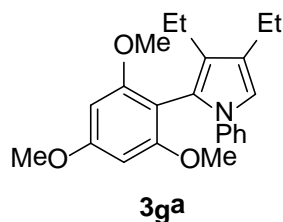
Brown oil; ¹H NMR (400 MHz, CDCl₃): δ 0.88 (m, 3H), 1.22-1.45 (m, 10H), 1.69-1.65 (m, 2H), 2.55 (t, 2H, *J* = 7.8 Hz), 3.48 (s, 6H), 3.78 (s, 3H), 6.02 (s, 2H), 6.16 (s, 1H), 6.76 (s, 1H), 7.11-7.05 (m, 3H), 7.19 (t, 2H, *J* = 7.3 Hz) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 14.1, 22.7, 27.3, 29.3, 29.6, 29.9, 30.4, 31.9, 55.2, 55.4, 90.2, 90.4, 104.3, 112.5, 118.6, 123.7, 124.0, 125.1, 128.2, 141.6, 159.1, 160.9 ppm; IR (KBr): 2999, 2925, 2853, 2359, 1610, 1584, 1500, 1415, 1127, 812, 765, 695 cm⁻¹; MALDI-TOFMS calcd for C₂₇H₃₆NO₃ [M+H]⁺ 422.1365, found 422.2690.

2-Phenyl-1-[(2,4,6-trimethoxy)phenyl]-4,5,6,7-tetrahydro-2H-isoindole (3fa)



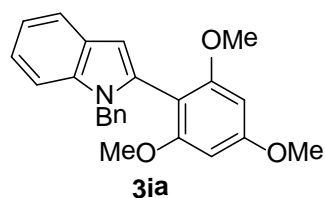
White solid; mp: 117-119 °C; ¹H NMR (400 MHz, CDCl₃): δ 1.72-1.79 (m, 4H), 2.39 (t, 2H, *J* = 5.8 Hz), 2.48 (t, 2H, *J* = 5.9 Hz), 3.48 (s, 6H), 3.78 (s, 3H), 6.02 (s, 2H), 6.71 (s, 1H), 7.02-7.07 (m, 3H), 7.17 (t, 2H, *J* = 7.6 Hz) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 22.1, 22.2, 23.9, 24.1, 55.2, 55.4, 90.4, 103.4, 116.9, 119.7, 120.1, 121.7, 123.6, 124.9, 128.2, 141.7, 159.2, 161.0 ppm; IR (KBr): 2998, 2926, 2837, 1585, 1502, 1335, 1204, 1127, 813, 764, 696 cm⁻¹; MALDI-TOFMS calcd for C₂₃H₂₅NO₃ [M+H]⁺ 363.1834, found 363.1830.

3,4-Diethyl-1-phenyl-2-[(2,4,6-trimethoxy)phenyl]-1H-pyrrole (3ga)



White solid; mp: 97-99 °C; ¹H NMR (400 MHz, CDCl₃): δ 1.02 (t, 3H, *J* = 7.5 Hz), 1.28 (t, 3H, *J* = 7.5 Hz), 2.30 (q, 2H, *J* = 7.5 Hz), 2.59 (q, 2H, *J* = 7.5 Hz), 3.50 (s, 6H), 3.78 (s, 3H), 6.02 (s, 2H), 6.74 (s, 1H), 7.01-7.06 (m, 3H), 7.14 (t, 2H, *J* = 7.8 Hz) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 12.4, 14.7, 18.6, 18.8, 55.2, 55.4, 90.3, 103.7, 117.8, 121.3, 123.8, 124.8, 125.0, 1.251, 128.1, 141.4, 159.7, 161.2 ppm; IR (KBr): 2960, 2927, 2852, 1583, 1501, 1462, 1412, 1204, 1128, 764, 697 cm⁻¹; MALDI-TOFMS calcd for C₂₃H₂₈NO₃ [M+H]⁺ 366.2069, found 366.2064.

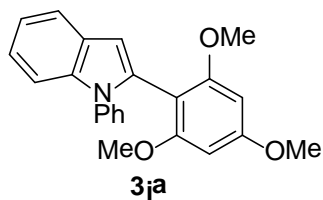
1-Benzyl-2-[(2,4,6-trimethoxy)phenyl]-1H-indole (3ha)



Yellow solid; mp: 153-155 °C; ¹H NMR (400 MHz, CDCl₃): δ 3.58 (s, 6H), 3.84 (s, 3H), 5.07 (s, 2H), 6.15 (s, 2H), 6.49 (s, 1H), 6.99 (d, 2H, *J* = 7.8 Hz), 7.06-7.09 (m, 2H), 7.13-7.19 (m, 4H), 7.63-7.65 (m, 1H) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 47.5, 55.4, 55.6, 90.4, 102.8, 103.1, 110.1, 119.1, 120.4, 120.8, 126.6, 128.1,

128.5, 133.4, 136.8, 138.5, 160.1, 162.1 ppm; IR (KBr): 3003, 2925, 2850, 1611, 1583, 1461, 1415, 1338, 1226, 1126, 812, 731 cm^{-1} ; MALDI-TOFMS calcd for $\text{C}_{24}\text{H}_{24}\text{NO}_3$ $[\text{M}+\text{H}]^+$ 374.1756, found 374.1751.

1-Phenyl-2-[(2,4,6-trimethoxy)phenyl]-1H-indole (3ia)

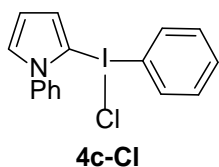


White solid; mp: 168-170 $^{\circ}\text{C}$; ^1H NMR (400 MHz, CDCl_3): δ 3.49 (s, 6H), 3.70 (s, 3H), 5.97 (s, 2H), 6.44 (s, 1H), 7.02-7.03 (m, 2H), 7.11-7.27 (m, 4H), 7.22-7.26 (m, 3H), 7.52-7.54 (m, 1H) ppm; ^{13}C NMR (100 MHz, CDCl_3): δ 55.3, 55.5, 90.3, 103.5, 104.7, 110.3, 119.8, 120.5, 121.3, 126.3, 126.8, 128.3, 128.5, 133.1, 137.4, 138.8, 159.6, 161.7 ppm; IR (KBr): 3002, 2937, 2838, 2364, 1612, 1585, 1499, 1454, 1313, 1204, 1128, 1039, 741 cm^{-1} ; MALDI-TOFMS calcd for $\text{C}_{23}\text{H}_{22}\text{NO}_3$ $[\text{M}+\text{H}]^+$ 360.1600, found 360.1594.

Synthesis of iodonium salt 4c-X (Scheme 3, Eq. 1)

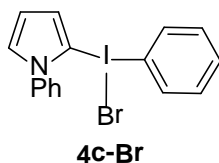
Iodine(III) reagent (1 equiv.) and TMSX (1 equiv.) were added to a solution of pyrrole **1c** (1 equiv.) in HFIP (0.1 M) at room temperature and the mixture was stirred under an inert atmosphere for 1 h. Then H_2O (20 mL) was added and then stirred for 3 min. The aqueous phase was extracted with CH_2Cl_2 and the combined organic phases were dried over anhydrous Na_2SO_4 . Removal of the drying agent by filtration afforded a solution of pure iodonium(III) salts **4c-X**.

Phenyl-(1-phenyl-1H-pyrrole-2-yl)-iodonium chloride (4c-Cl)



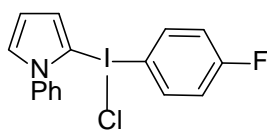
White solid; mp: 191-193 $^{\circ}\text{C}$; ^1H NMR (400 MHz, DMSO-d_6): δ 6.46 (t, 1H, $J = 2.9$ Hz), 7.24-7.25 (m, 1H), 7.35-7.38 (m, 5H), 7.49-7.61 (m, 6H) ppm; ^{13}C NMR (100 MHz, CDCl_3): δ 100.7, 112.3, 122.2, 123.6, 126.2, 128.5, 128.7, 129.5, 130.7, 131.0, 133.1, 138.8 ppm; IR (KBr): 3087, 1595, 1496, 1433, 1379, 1319, 1275, 1072, 1038, 992, 747 cm^{-1} ; MALDI-TOFMS calcd for $\text{C}_{16}\text{H}_{13}\text{IN}$ $[\text{M}-\text{Cl}]^+$ 346.19, found 346.02.

Phenyl-(1-phenyl-1H-pyrrole-2-yl)-iodonium bromide (4c-Br)



White solid; mp: 182-184 °C; ¹H NMR (400 MHz, DMSO-d⁶): δ 6.49 (t, 1H, *J* = 3.4 Hz), 7.30 (dd, 1H, *J* = 3.9, 1.0 Hz), 7.34-7.41 (m, 5H), 7.53-7.62 (m, 6H) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 98.6, 112.4, 120.1, 121.2, 123.9, 126.3, 128.9, 129.6, 131.0, 131.2, 133.3, 138.7 ppm; IR (KBr): 3087, 1595, 1565, 1496, 1432, 1320, 1276, 992, 749 cm⁻¹; MALDI-TOFMS calcd for C₁₆H₁₃IN [M-Br]⁺ 346.19, found 346.17.

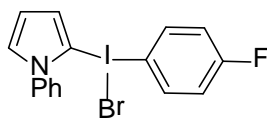
4-Fruolophenyl -(1-phenyl-1*H*-pyrrole-2-yl)-iodonium chloride (**4c-F-Cl**)



4c-F-Cl

White solid; mp: 204-206 °C; ¹H NMR (400 MHz, DMSO-d⁶): δ 6.48 (t, 1H, *J* = 2.9 Hz), 7.27 (t, 2H, *J* = 8.8 Hz), 7.29-7.30 (m, 1H), 7.34-7.36 (m, 2H), 7.39 (dd, 1H, *J* = 2.9, 1.9 Hz), 7.55-7.58 (m, 3H), 7.65-7.57 (m, 2H) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 101.5, 112.3, 116.8, 116.9, 118.2, 118.4, 123.5, 126.2, 128.4, 128.8, 129.6, 135.7, 135.8, 138.8, 161.7, 164.2 ppm; IR (KBr): 3090, 3050, 1891, 1763, 1634, 1594, 1753, 1494, 1480, 1433, 1376, 1319, 1229, 1161, 1035, 1002, 942, 923, 824, 772, 727, 700, 503 cm⁻¹; MALDI-TOFMS calcd for C₁₆H₁₂FIN [M-Cl]⁺ 363.99, found 363.98.

4-Fruolophenyl -(1-phenyl-1*H*-pyrrole-2-yl)-iodonium bromide (**4c-F-Br**)



4c-F-Br

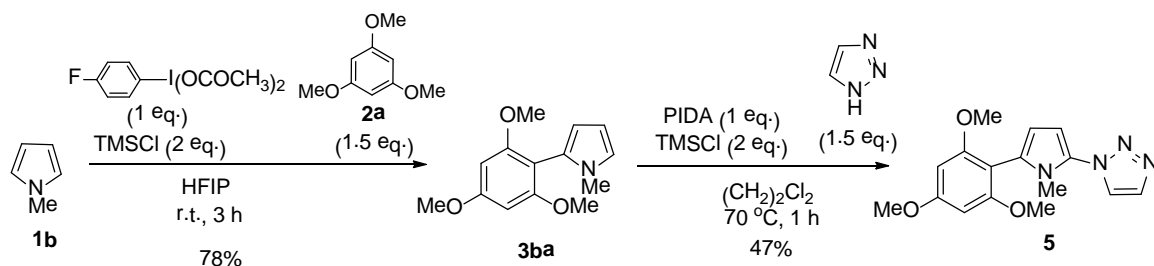
White solid; mp: 198-200 °C; ¹H NMR (400 MHz, DMSO-d⁶): δ 6.49 (t, 1H, *J* = 3.8 Hz), 7.28 (t, 2H, *J* = 8.8 Hz), 7.31-7.35 (m, 3H), 7.40-7.41 (m, 1H), 7.57 (m, 3H), 7.64-7.68 (m, 2H) ppm; ¹³C NMR (100 MHz, CDCl₃): δ 24.1, 100.9, 112.2, 116.5, 118.2, 118.4, 120.0, 123.4, 126.2, 128.3, 128.8, 129.6, 129.9, 135.9, 136.0, 138.8, 161.7, 164.2, 174.5 ppm; IR (KBr): 3089, 3048, 1573, 1496, 1480, 1433, 1320, 1230, 1160, 1036, 825, 750 cm⁻¹; MALDI-TOFMS calcd for C₁₆H₁₂FIN [M-Cl]⁺ 363.99, found 363.98.

Reaction of iodonium(III) salt **4c-X** with 1,3,5-trimethoxybenzene **2a** (Scheme 3, Eq. 2)

1,3,5-Trimethoxybenzene **2a** (1.5 equiv.) and TMSX (1 equiv.) were added to a solution of pyrrole iodonium salt **4c-X** (1 equiv.) in HFIP (0.1 M) at room temperature, and the mixture was stirred under an inert atmosphere for 1 h. Saturated aqueous sodium hydrogen carbonate was added to the mixture when the reaction completed. The aqueous phase was extracted with CH₂Cl₂. The extract was dried over anhydrous Na₂SO₄ and then evaporated to dryness. The crude residue was purified by column chromatography on

silica-gel (eluent: *n*-hexane/ethylacetate) to give the pure product **3ca**. The structure of the resulting product **3ca** was confirmed by comparing its NMR spectra with authentic sample (see Table 2).

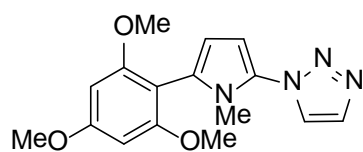
General procedure for synthesis pyrrole trimer **5**



To a stirred solution of pyrrole **1b** (0.4 mmol 1 equiv.) in 1,1,1,3,3,3-hexafluoroisopropanol (HFIP, 0.1 M), 4-F-PIDA (0.4 mmol 1 equiv.) was added at room temperature. After 15 min, to the mixture, arene **2a** (0.6 mmol 1.5 equiv.) and TMSCl (0.8 mmol 2 equiv.) was added and then stirred for 3 h under the same conditions, while the reaction progress was checked by TLC. Saturated aqueous sodium hydrogen carbonate was added to the mixture when the reaction completed. The aqueous phase was extracted with CH_2Cl_2 . The extract was dried over anhydrous Na_2SO_4 and then evaporated to dryness. The crude residue was purified by column chromatography on silica-gel (eluent: *n*-hexane/ethylacetate) to give the pure **3ba**.

Next, PIDA (0.4 mmol 1 equiv.) and TMSCl (0.8 mmol 2 equiv.) were added to a solution of pyrrole dimer **3ba** (0.4 mmol 1 equiv.) in $(\text{CH}_2)_2\text{Cl}_2$ (0.1 M) at ambient temperature and the mixture was stirred under an inert atmosphere at 70 °C. After 1 h, saturated aqueous sodium hydrogen carbonate was added to the mixture at room temperature when the reaction completed. The aqueous phase was extracted with CH_2Cl_2 . The extract was dried over anhydrous Na_2SO_4 and then evaporated to dryness. The crude residue was purified by column chromatography on silica-gel (eluent: *n*-hexane/ethylacetate) to give the pure **5**.

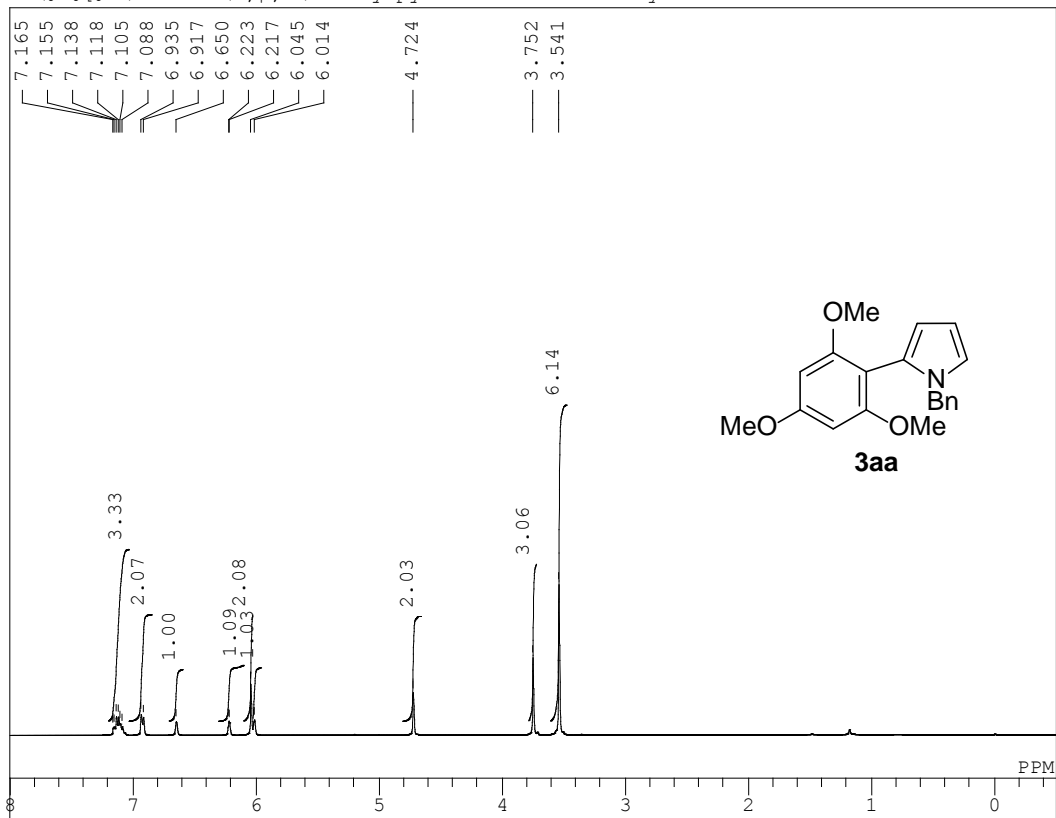
1-(1-methyl-5-(2,4,6-trimethoxyphenyl)-1H-pyrrol-2-yl)-1H-1,2,3-triazole (5)



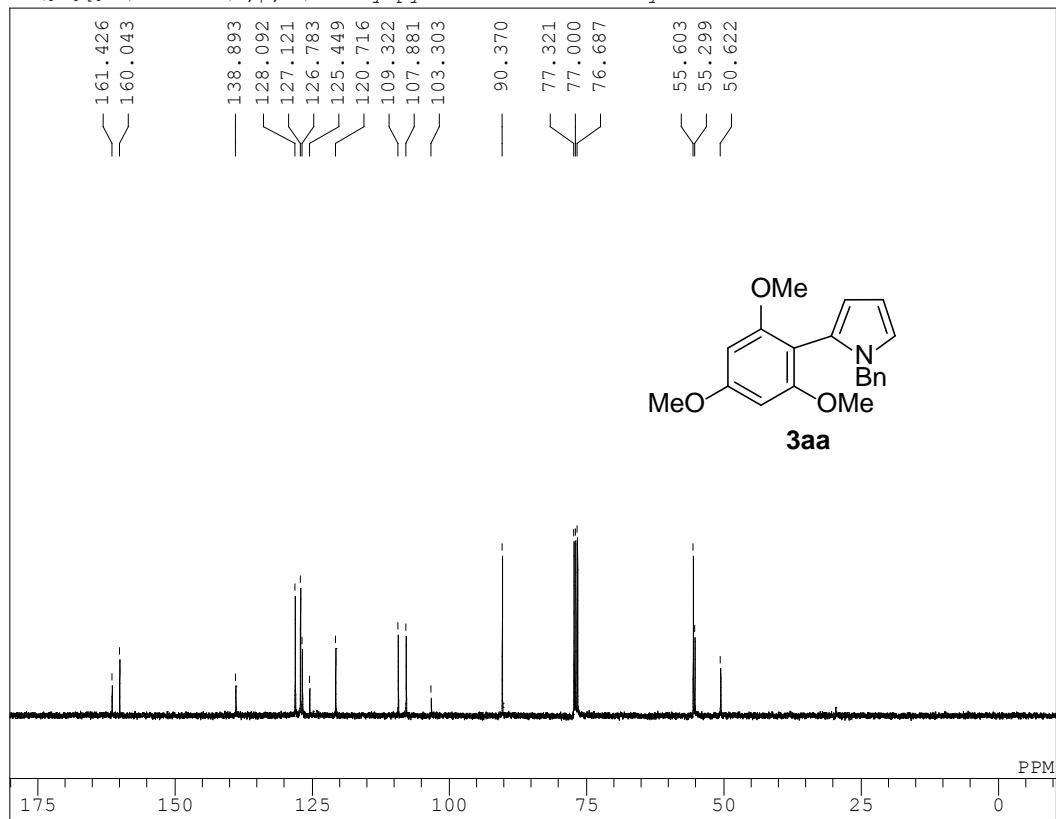
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Brown oil; ^1H NMR (400 MHz, CDCl_3): δ 3.18 (s, 3H), 3.75 (s, 6H), 3.85 (s, 3H), 6.12 (d, 1H, $J = 3.4$ Hz), 6.19 (s, 2H), 6.34 (d, 1H, $J = 3.9$ Hz), 7.79-7.81 (m, 2H) ppm; ^{13}C NMR (100 MHz, CDCl_3): δ 31.0, 55.4, 55.8, 90.5, 102.3, 104.1, 108.4, 124.7, 126.2, 126.6, 132.4, 133.0, 160.0, 161.8 ppm; IR (KBr): 3122, 2922, 2850, 1710, 1610, 1584, 1537, 1464, 1415, 1337, 1276, 1228, 1205, 1155, 1125, 1035, 1011, 947, 816, 750, 647 cm^{-1} ; MALDI-TOFMS calcd for $\text{C}_{16}\text{H}_{19}\text{N}_4\text{O}_3$ $[\text{M}+\text{H}]^+$ 315.1457, found 315.1452.

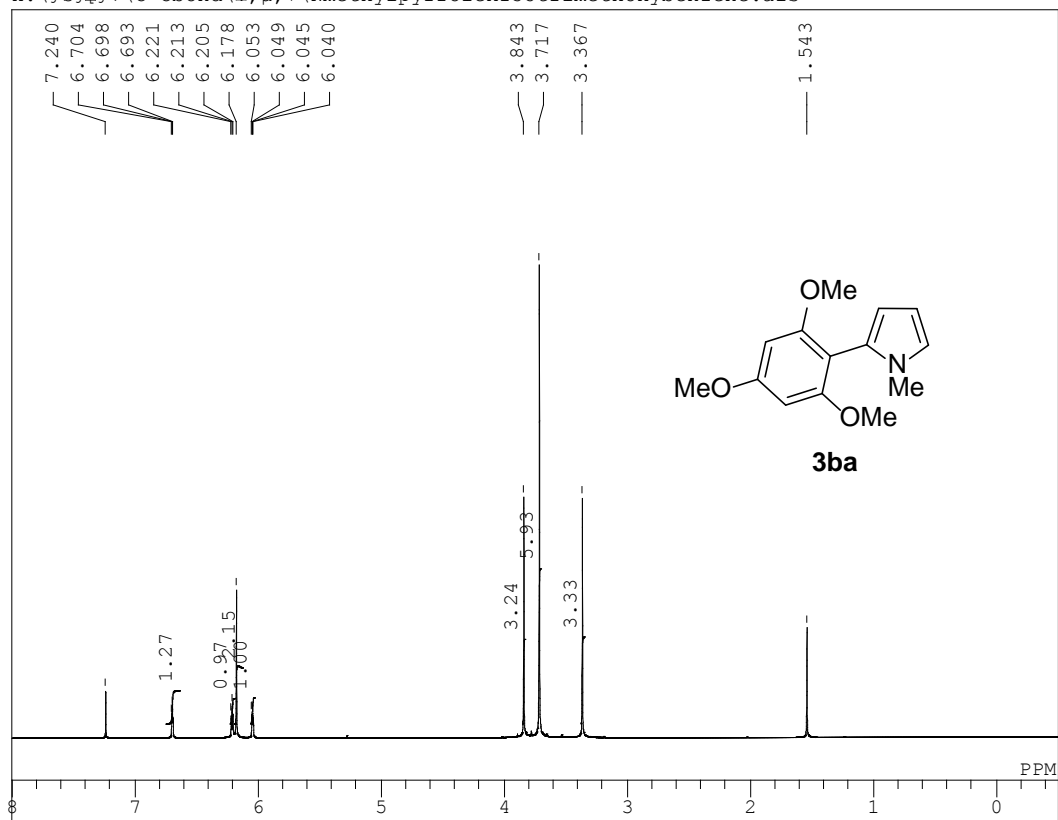
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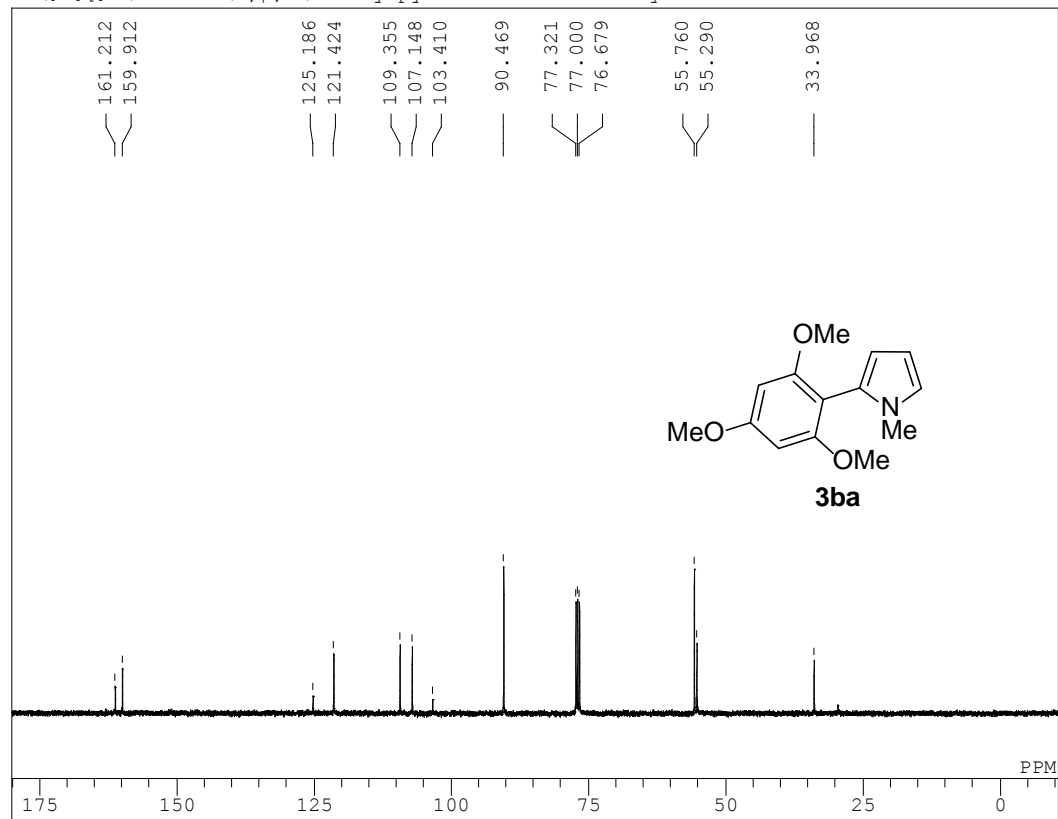
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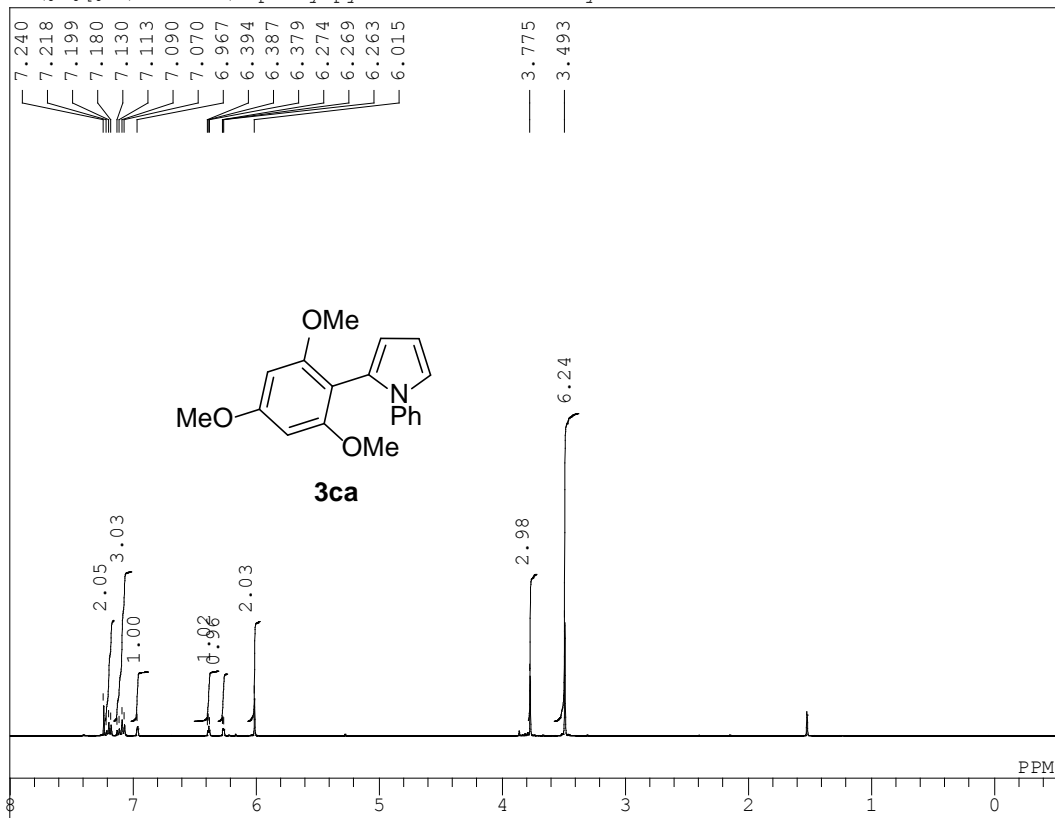
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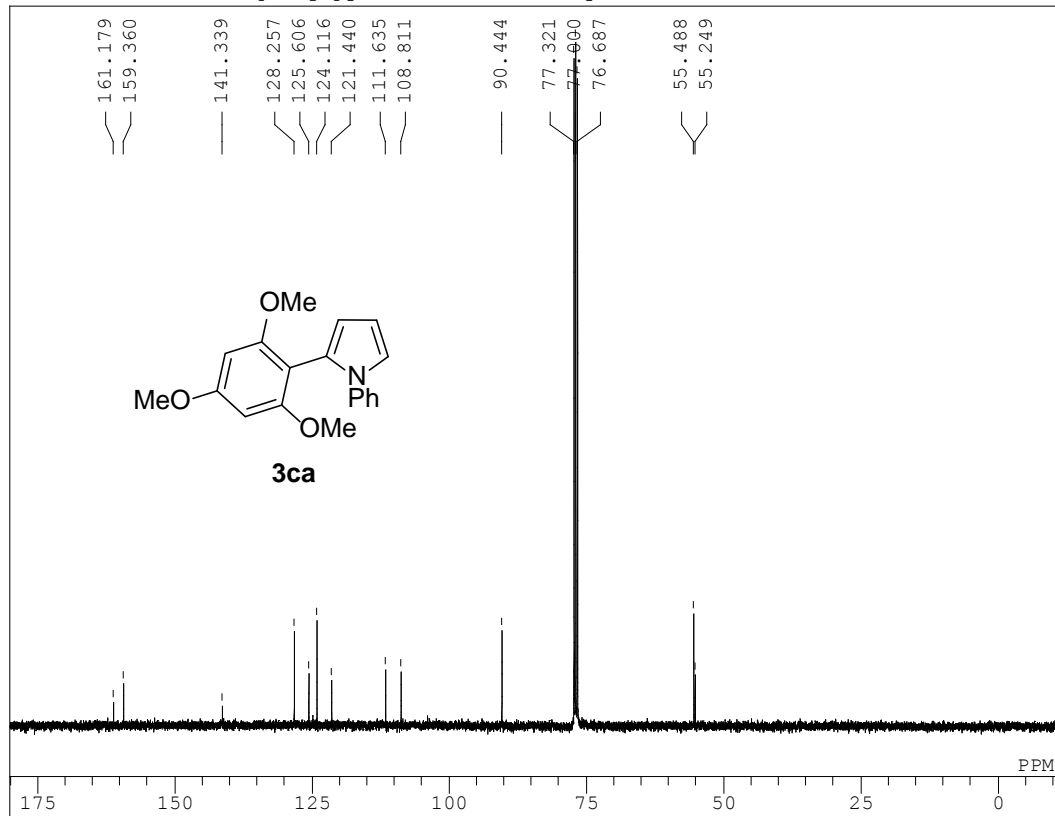
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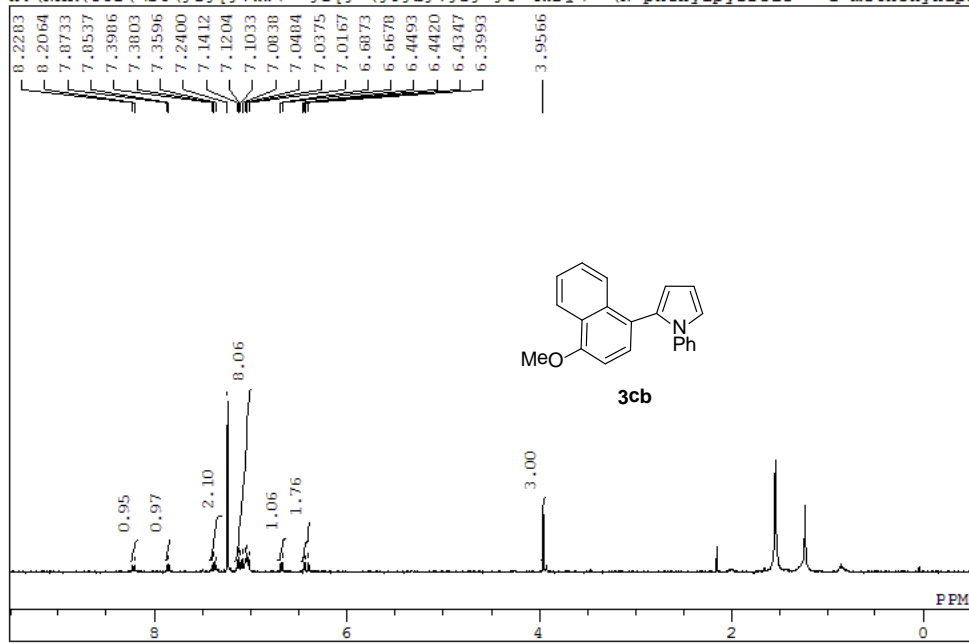
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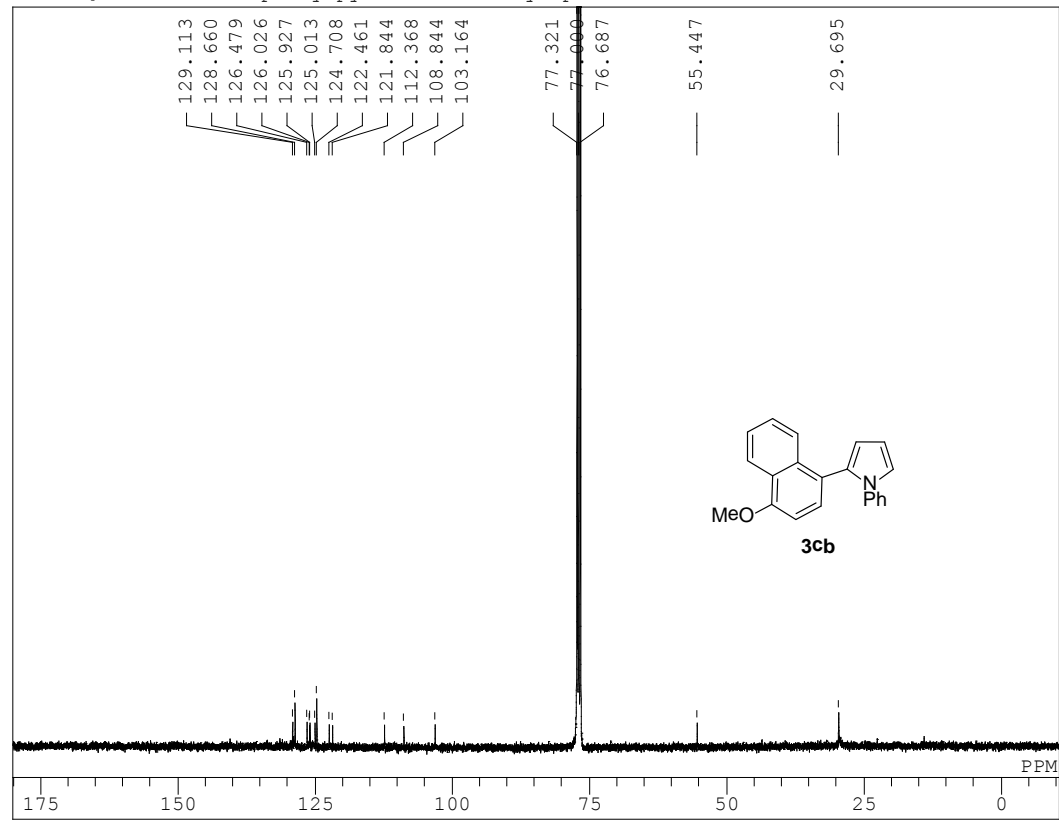
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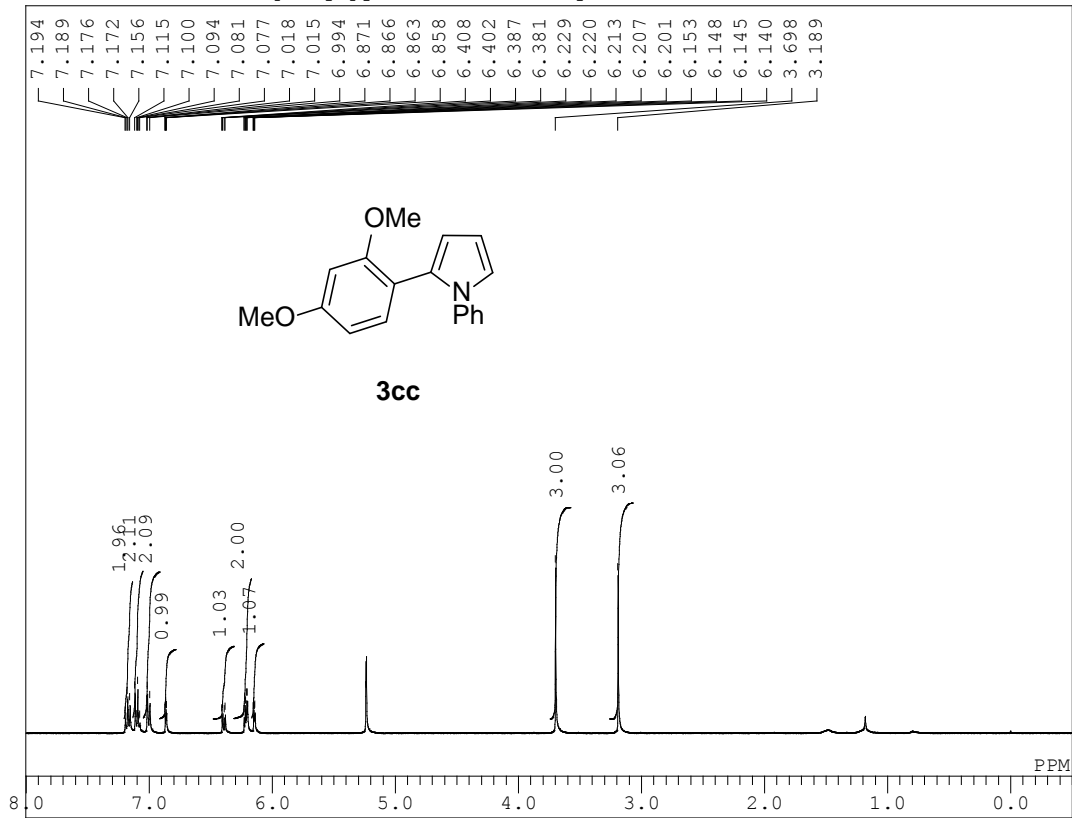
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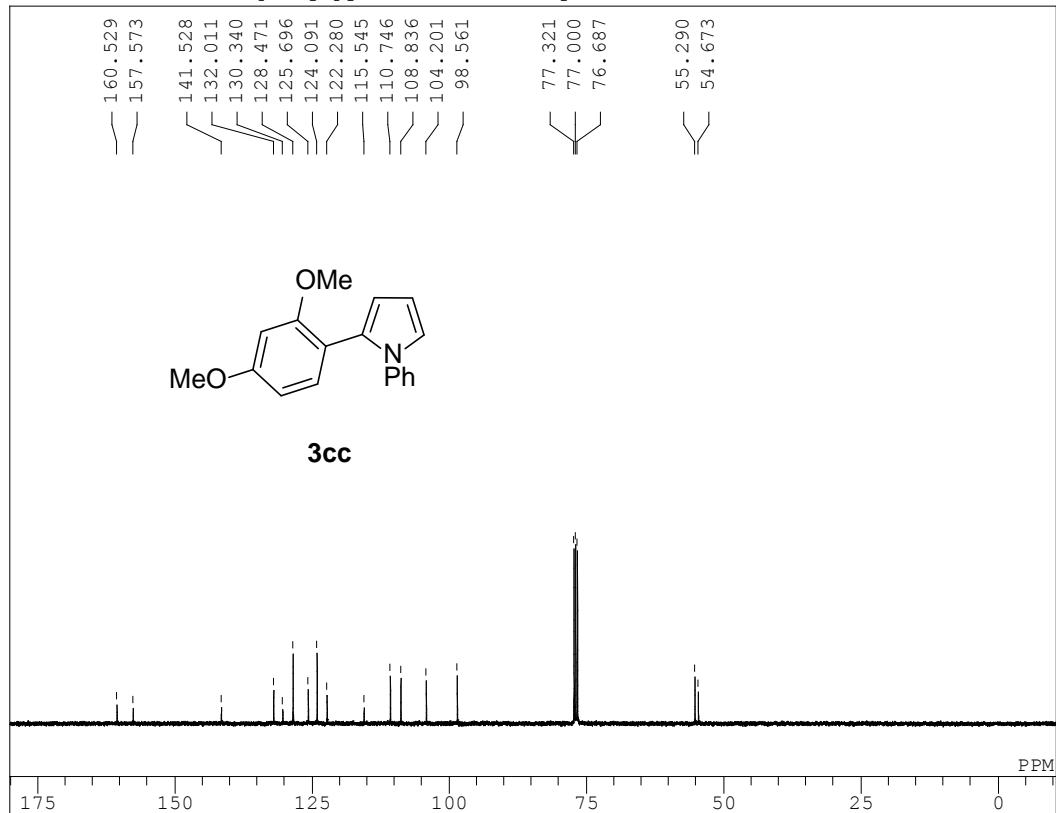
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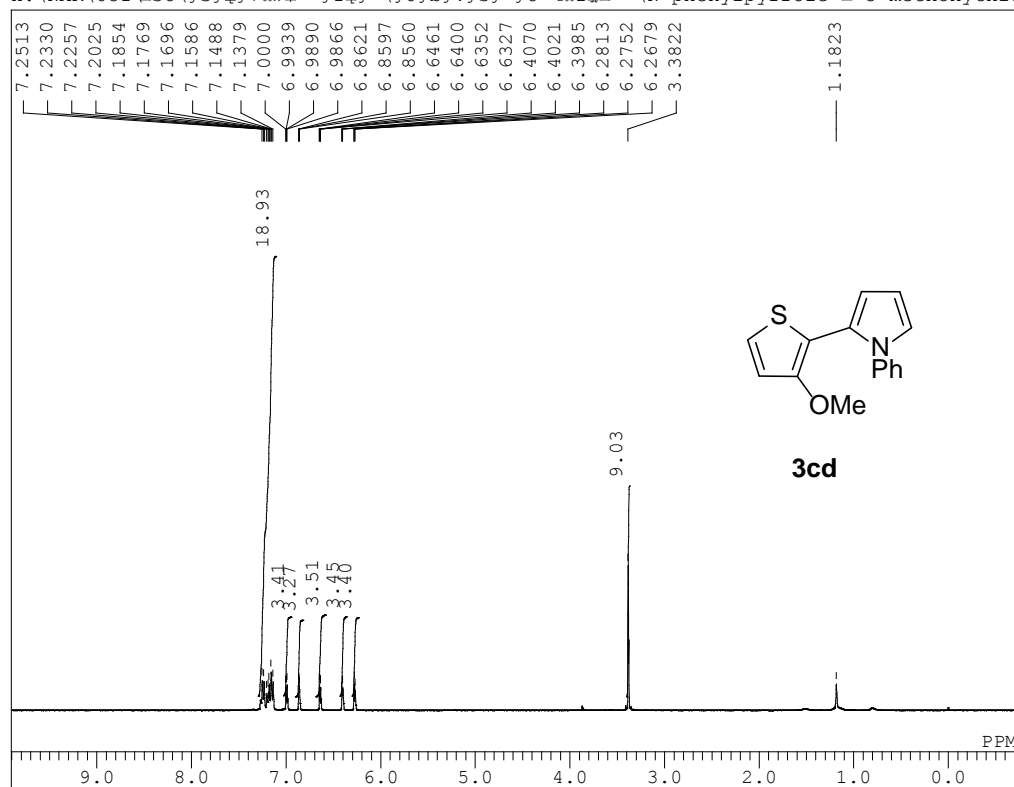
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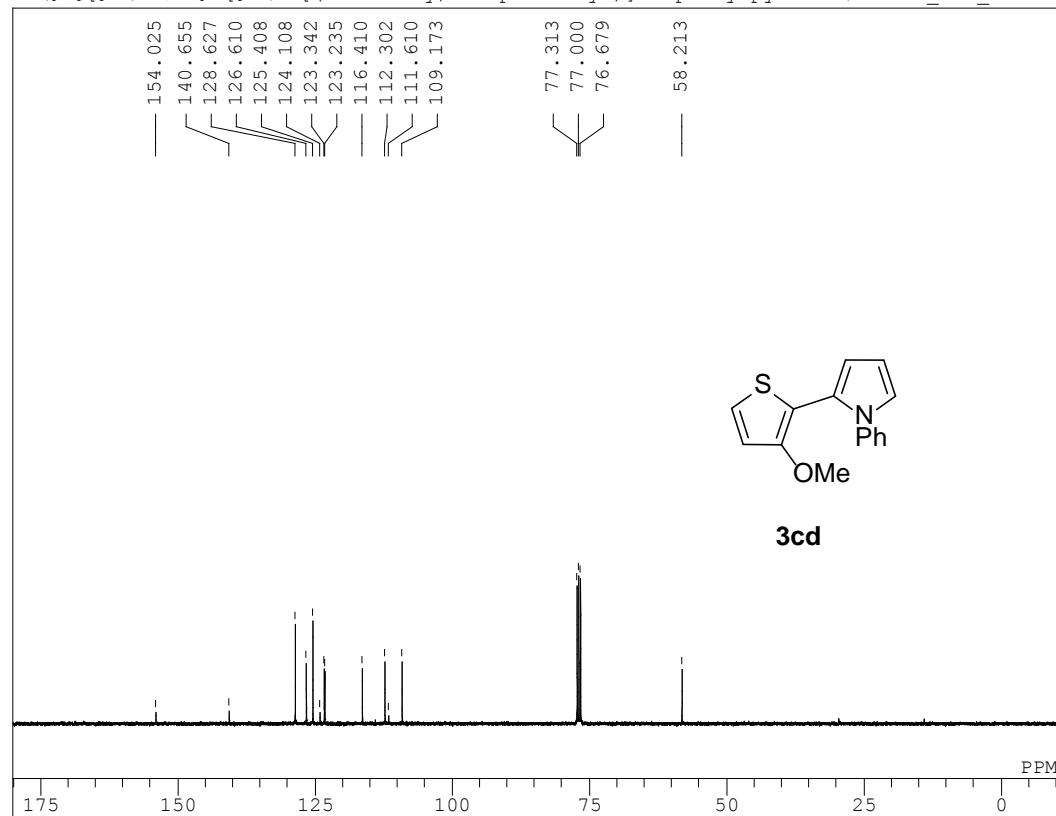
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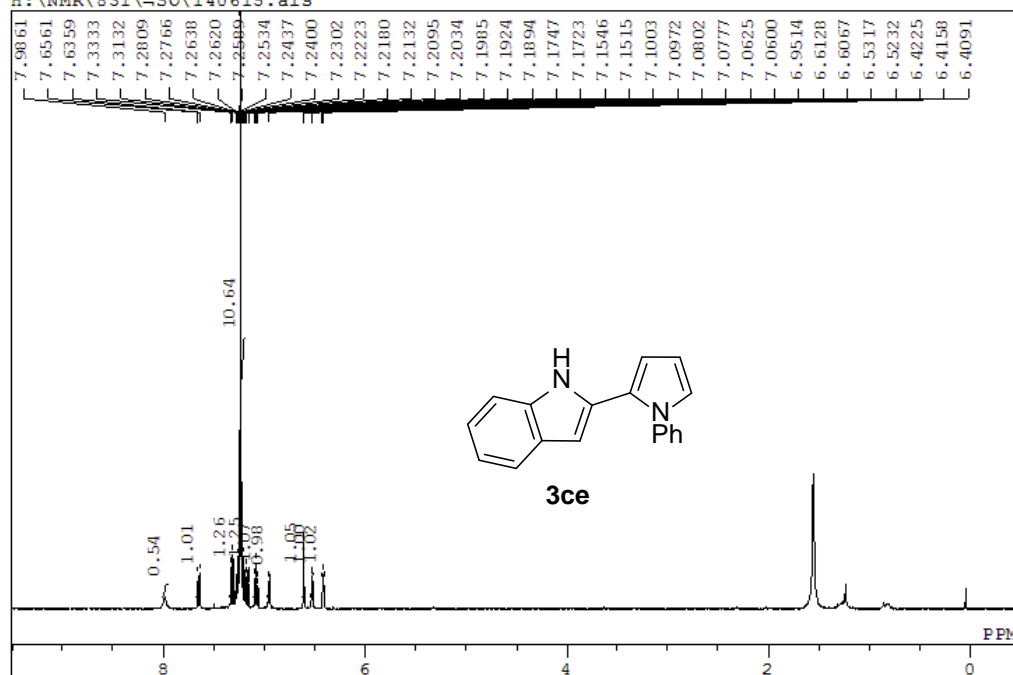
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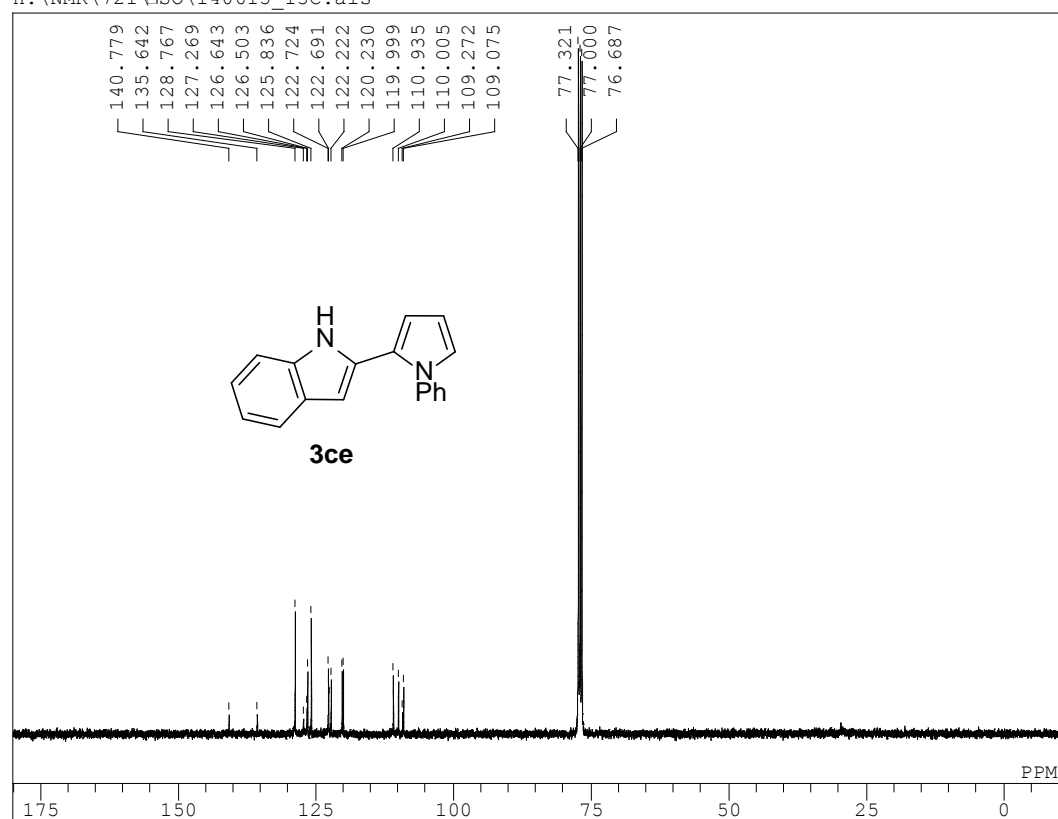
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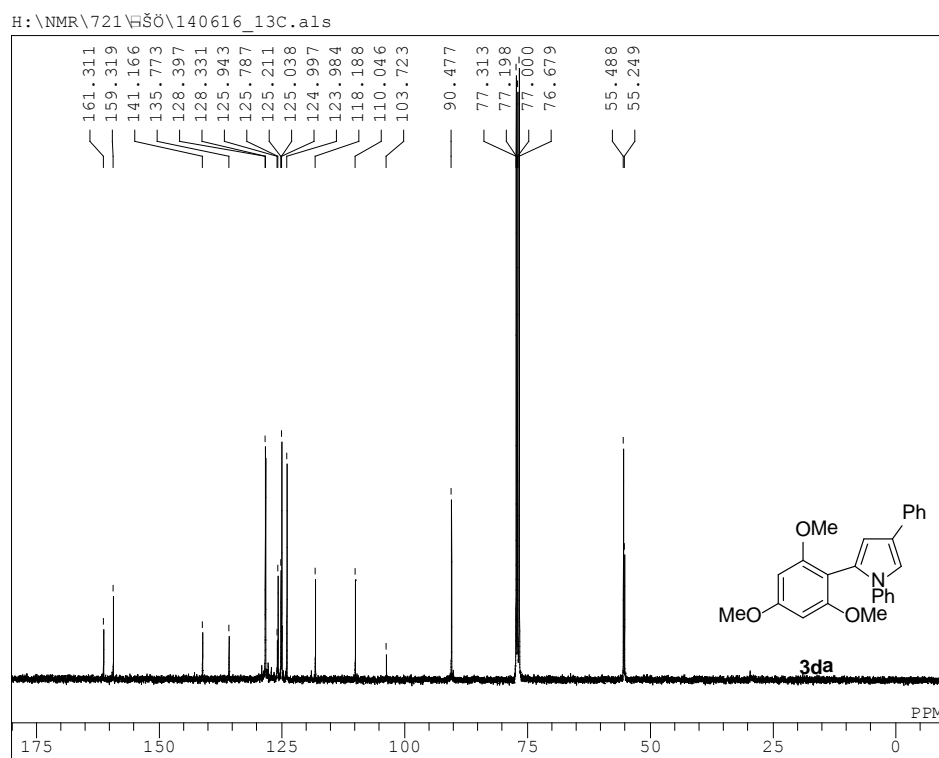
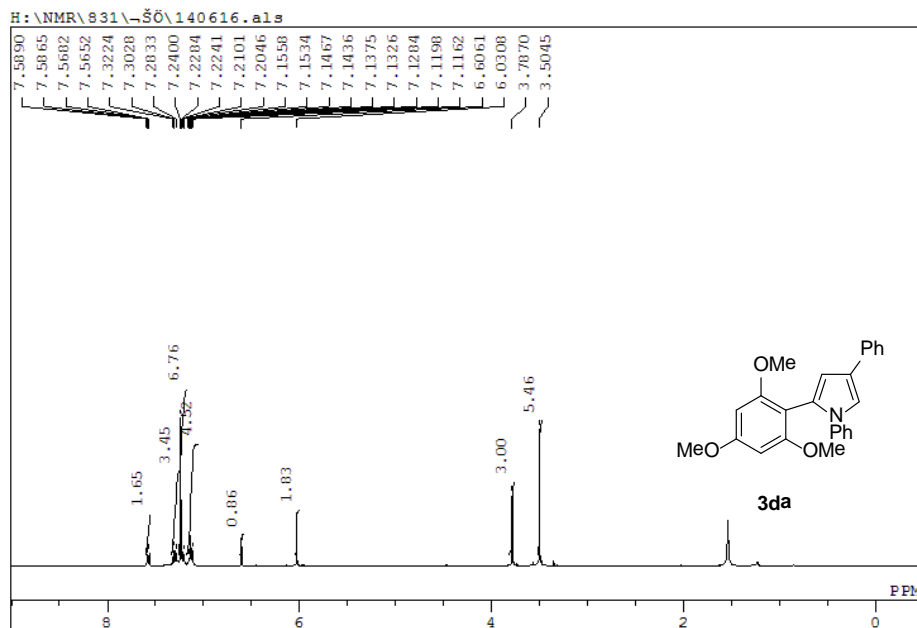


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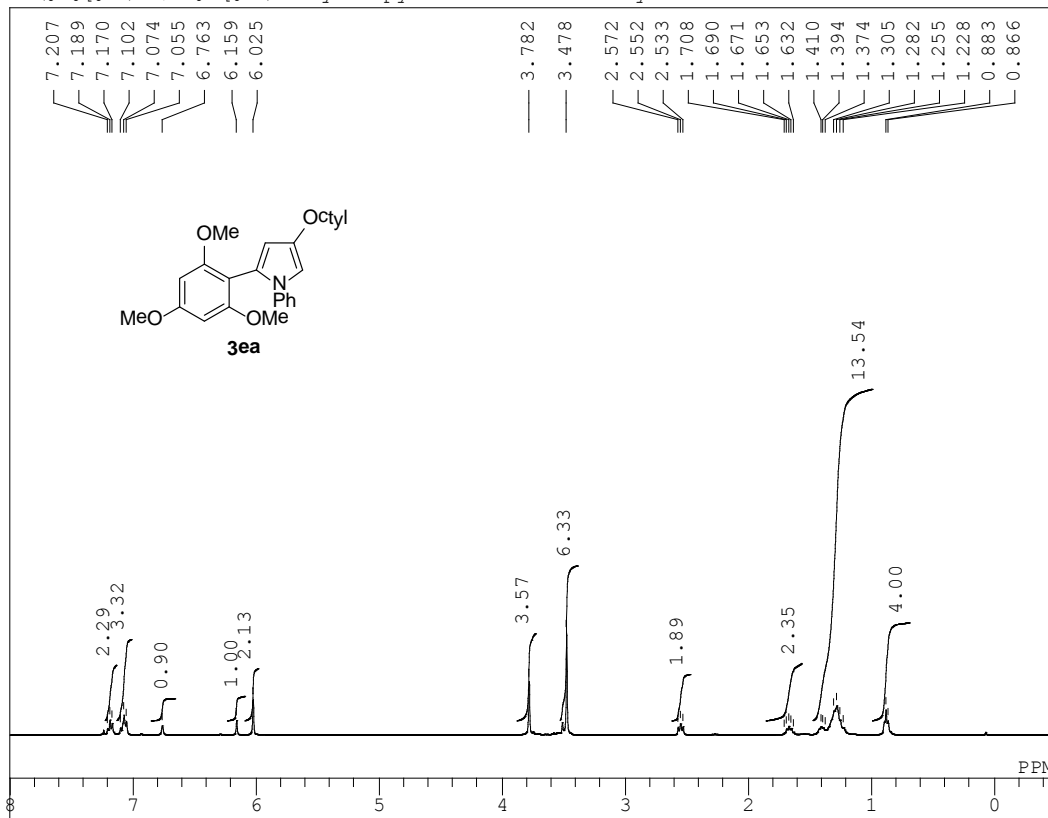


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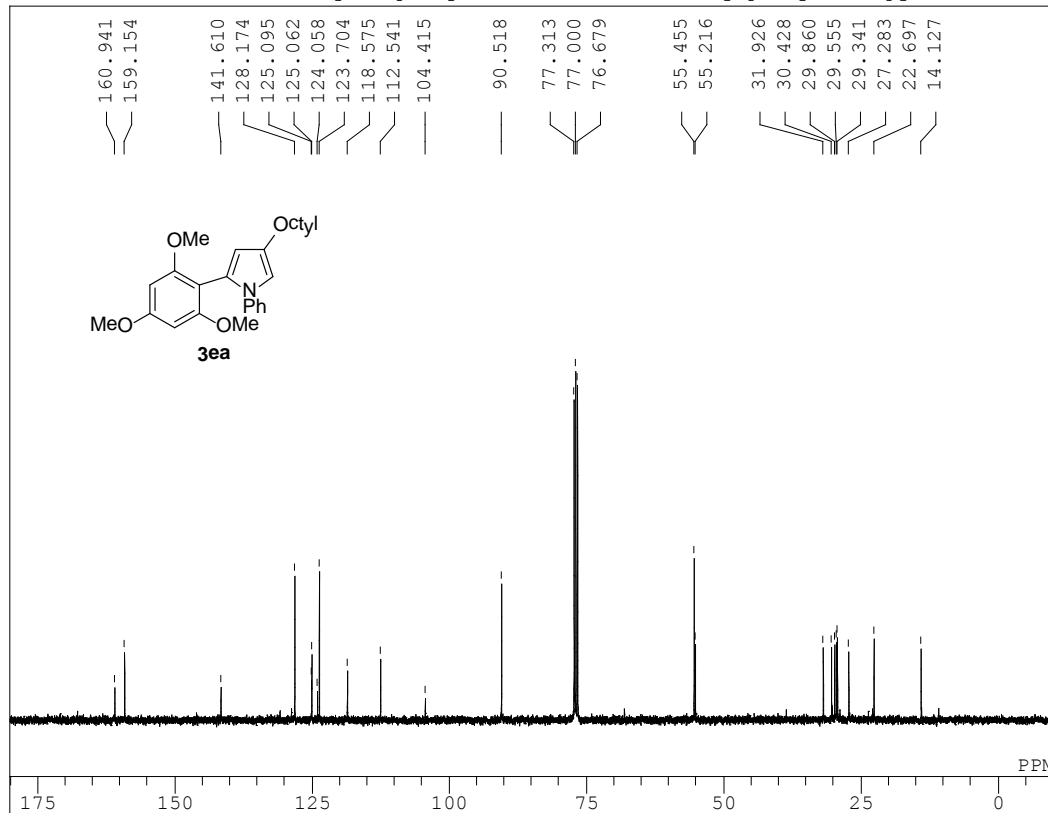


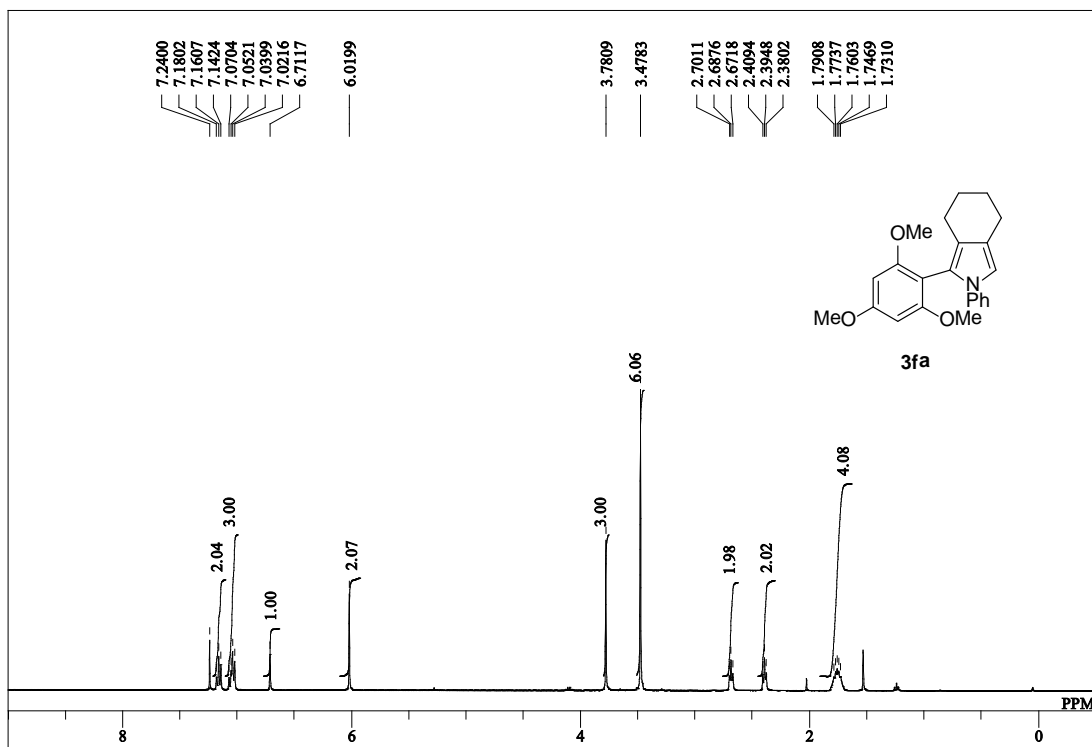


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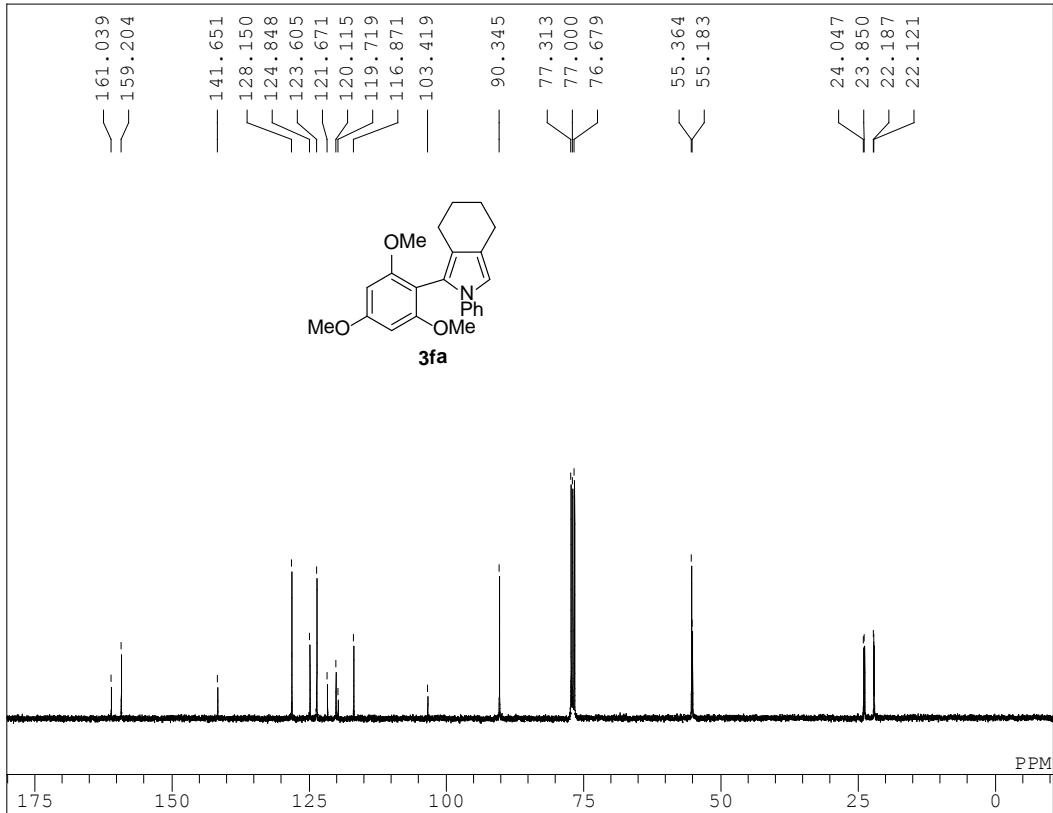


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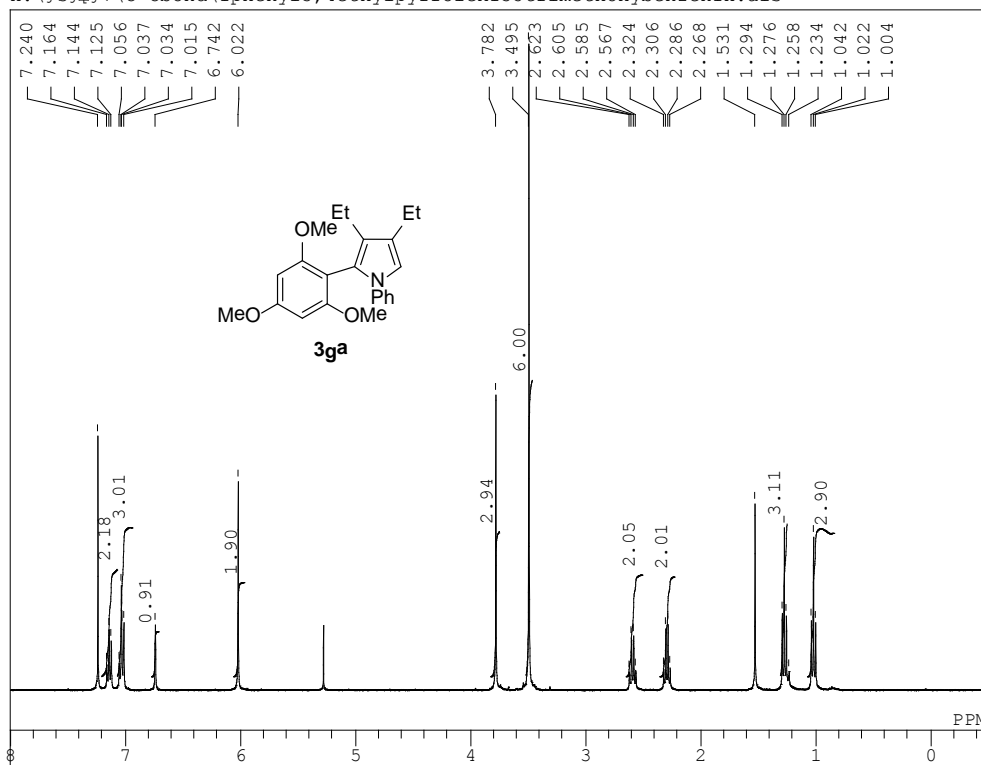




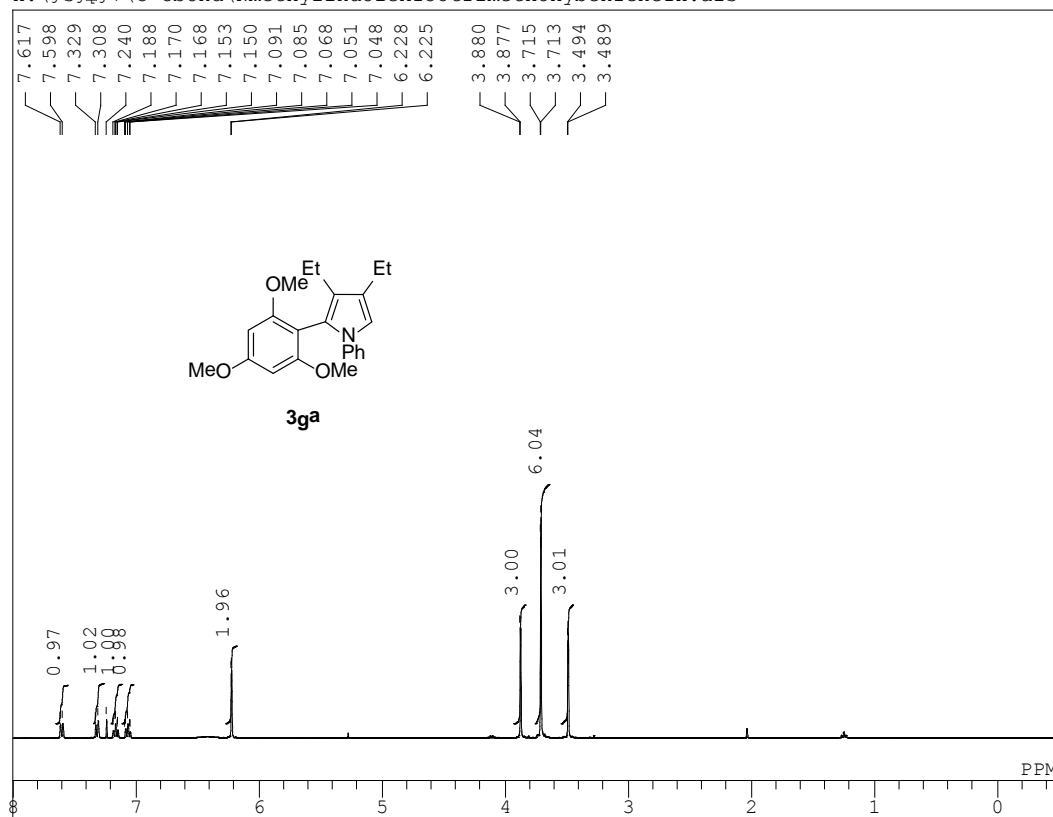
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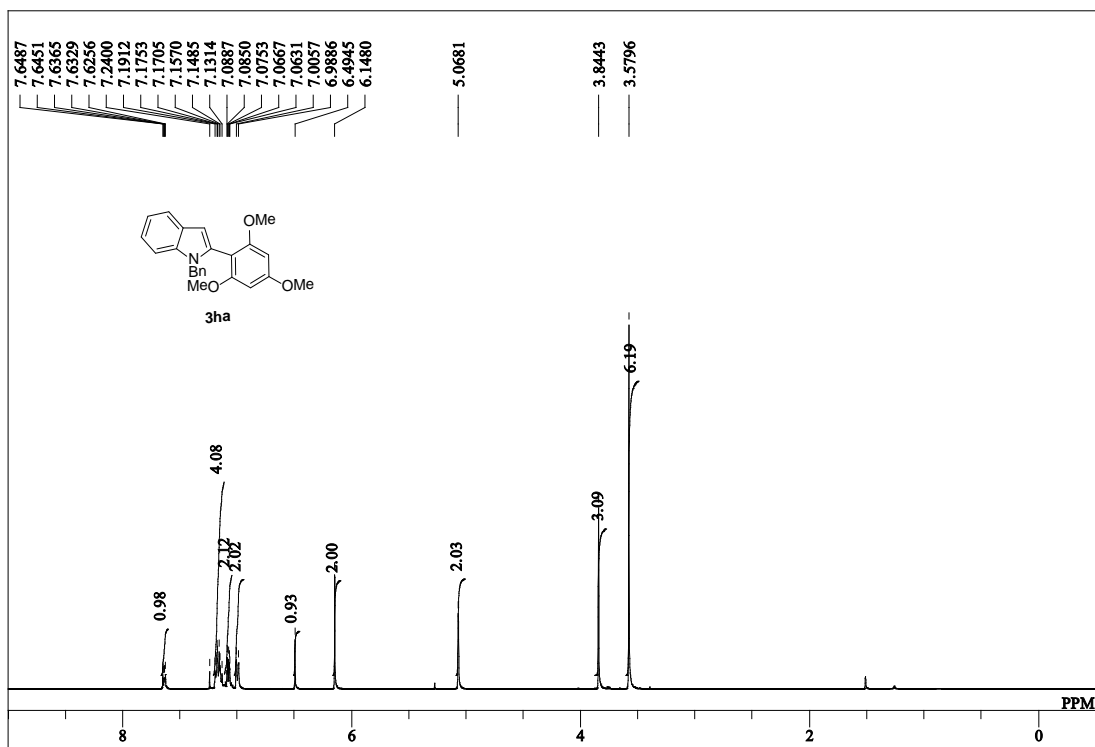


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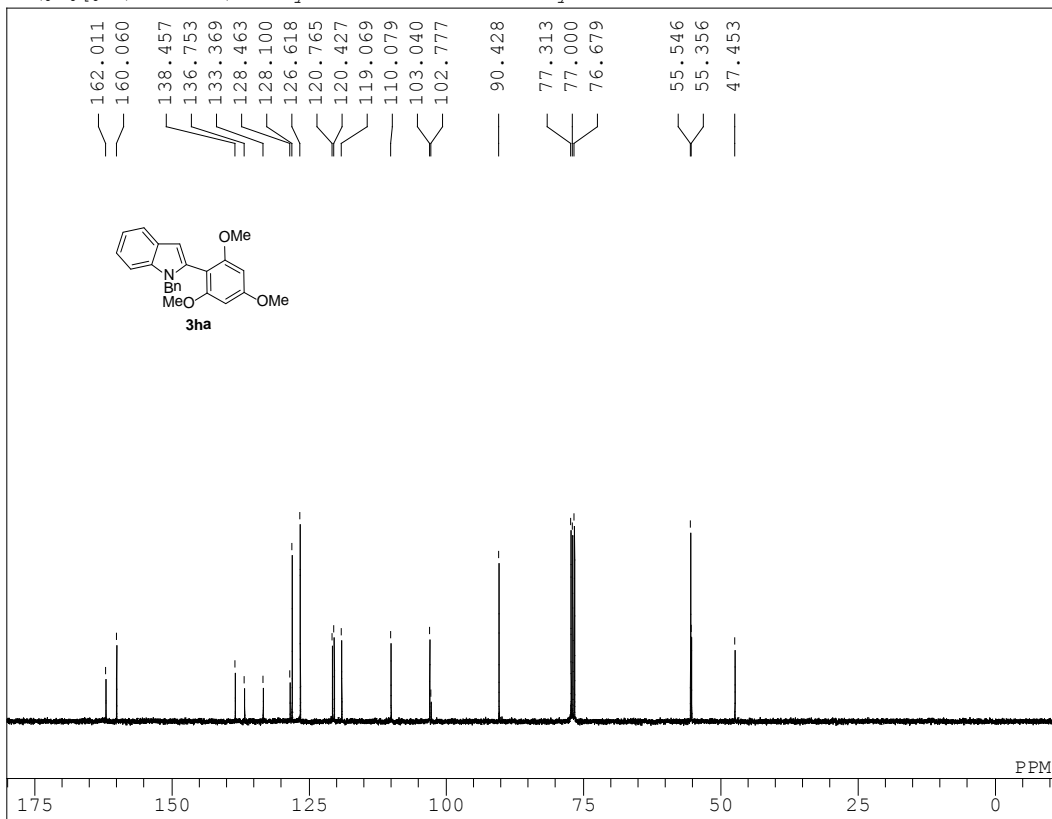


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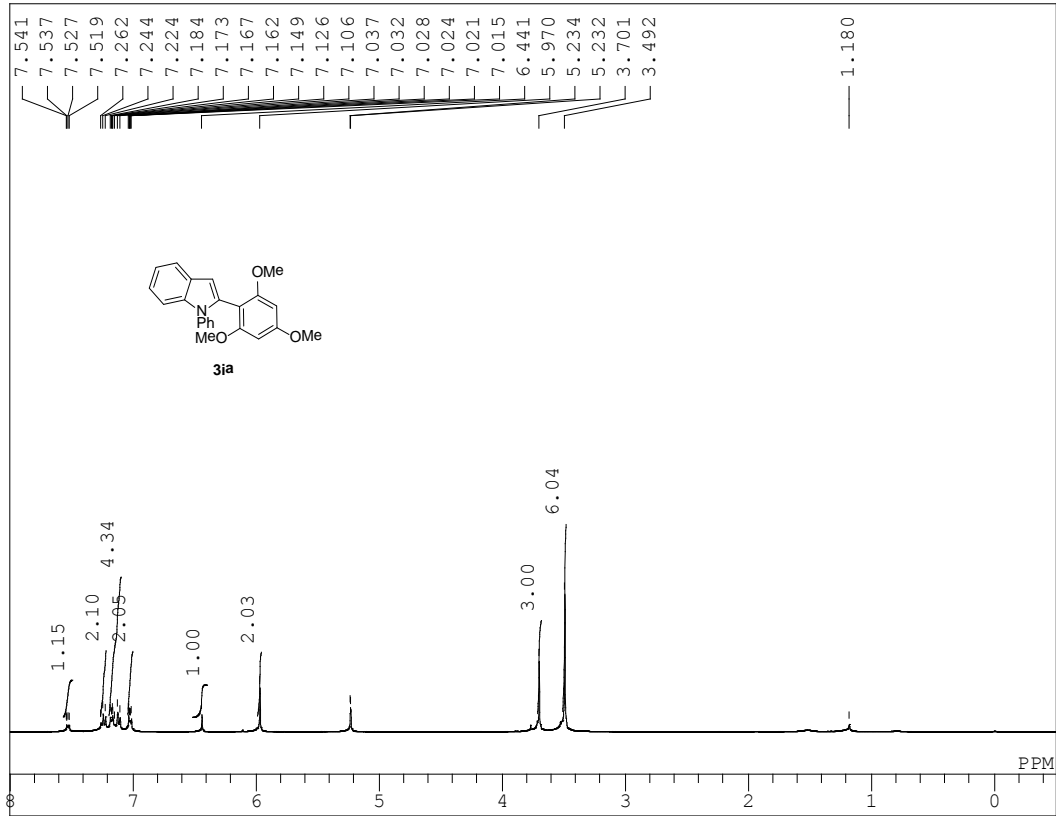




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