SUPPORTING INFORMATION

Diethyl 2,7-Dibromo-4*H*,5*H*-thieno[3,2-*b*:4,5-*b*']dipyrrole-3,6-dicarboxylate: A Key Intermediate for a Diversity Oriented Synthesis of 2,7,12,17-Tetraarylporphycenes

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Experimental Section

All melting points were determined with a Büchi 530 capillary apparatus and are uncorrected. Infrared spectra were recorded in a Nicolet Magna 560 FTIR spectrophotometer. ^{1}H and ^{13}C NMR spectra were determined in a Varian Gemini-300 operating in a field strength of 300 and 75.5 MHz, respectively. Elemental microanalyses were obtained in a Carlo-Erba CHNS-O/EA 1108. All MS were registered at the Unidade de Espectrometria de Masas (Universidade de Santiago de Compostela) using a Micromass Autospec spectrometer. MALDI-TOF experiments were realized with a Bruker Autoflex spectrometer. Flash chromatography was performed using silica gel 60 A C.C 35-70 μm(SDS ref. 2000027).

Bis(azido-2'-ethoxycarbonyl-2'-vinyl)-2,5-tiophene (18)

A solution of 16.2 g (0.12 mol) of 2,5-tiophenedicarboxaldehyde (**16**) and 119 g (0.93 mol) of ethyl azidoacetate (**17**) in 500 mL of dry absolute ethanol was added dropwise to 300 mL of a sodium ethoxide solution (21% in ethanol) at –40 ºC. The resulting mixture was poured into a cold ammonium chloride solution. The yellow solid obtained was separated by filtration to give 21.1 g (50%) of **18**. The filtrate was extracted with diethyl ether, washed with water, dried ($MgSO_4$), and concentrated *in vacuo* to give an extra crop of 2.4 g (4%) of **18**. Mp: 134 ºC.[1]

^{13}C NMR ($CDCl_3$): δ; 162.6, 140.5, 131.6, 123.4, 118.3, 62.2, 14.2 (see page S6).

Diethyl 4*H*,5*H*-thieno[3,2-*b*:4,5-*b'*]dipyrrole-3,6-dicarboxylate (15)

32.0 g (88 mmol) of bis(azido-2'-ethoxycarbonyl-2'-vinyl)-2,5-tiophene **18** were suspended in 1500 mL of xylene (mixture of isomers). The suspension was heated to 115 ºC (nitrogen evolution) and then maintained at such temperature for 12 hours. The white solid obtained was separated by filtration, washed with hexane, and dried (P_2O_5) to give 23 g (85%) of **15**. Mp: 254 ºC.[1]

IR (KBr): 3420, 3045, 2807, 1699, 1659
^{13}C NMR 300 MHz (DMSO): δ 160.1, 126.9, 126.8, 124.4, 109.1, 60.1, 14.5
Anal. Calcd for $C_{14}H_{14}N_2O_4S$: C, 54.89; H, 4.61; N, 9.14; S, 10.47. Found: C, 55.12; H, 4.64; N, 9.19; S, 10.33.

[1] Farnier, M.; Soth, S.; Fournari, P. *Can. J. Chem.* **1976**, *54*, 1074.

Diethyl 2,7-dibromo-4*H*,5*H*-thieno[3,2-*b*:4,5-*b'*]dipyrrole-3,6-dicarboxylate (19)

A solution of 3 mL of Br_2 in 45 mL of AcOH was added dropwise to a suspension of 3.0 g (9.7 mmol) of **15** in a mixture of 250 mL of AcOEt and 100 mL of AcOH. The resulting mixture was stirred for 8 h at room temp. The resulting precipitate was filtered, washed with 3x50 mL of an aqueous $NaHCO_3$ solution, and dried over P_2O_5 *in vacuo* (50 ºC) to yield 4.1 g (8.7 mmol, 89%) of **19** as a white solid. Mp: > 290 ºC (d).

IR (KBr): ν_{max}: 3417, 3327, 2924, 2853, 1686, 1649, 1375, 1230 cm^{-1}.
^{1}H NMR (DMSO-d_6): δ 11.52 (s, 2H, NH), 4.34 (q, 4H, *J*=7.2Hz, O-C**H$_2$**CH$_3$), 1.35 (t, 6H, *J*=7.2Hz, O-CH$_2$C**H$_3$**).
^{13}C NMR (DMSO-d_6): δ 158.9, 127.7, 125.2, 121.9, 96,1, 60,6, 14.3.
MS (70 eV): m/z = 463.6 ($[M+2H]^+$), 419.6, 371.6, 264.7.
HRMS: calcd for $C_{14}H_{12}Br_2N_2O_4S$, 461.8884, found 461.8892;
Anal. Calcd for $C_{14}H_{12}Br_2N_2O_4S$: C, 36.23; H, 2.61; N, 6.04; S, 6.91. Found: C, 36.11; H, 2.54; N, 5.98; S, 6.59.

Diethyl 2,7-dibromo-4*H*,5*H*-bis(trimethylsilylethoxymethyl)thieno[3,2-*b*:4,5-*b'*]dipyrrole-3,6-dicarboxylate (20)

2.1 g (525 mmol) of NaH (60% in mineral oil) were added portionwise to a suspension of 11.0 g (24 mmol) of **19** in 50 mL of anhydrous THF under Ar atmosphere. The resulting mixture was stirred for 15 min at room temp. Then, 15 mL (80 mmol) of trimethylsilylethoxymethyl chloride (SEM-Cl) were added dropwise and the resulting solution was stirred for 1 h at room temp. 100 g of crushed ice were added and the resulting mixture was stirred until a precipitate appeared. The solid was filtered, washed with MeOH until it became white, and dried (P_2O_5) *in vacuo* (50 ºC) to yield 13.4 g (18 mmol, 77%) of **20**. The mother liquor was extracted with hexane, washed ($MgSO_4$), and concentrated *in vacuo* to yield an extra crop of 3.0 g (4 mmol, 17%) of **20**. Mp: 127-129ºC.

IR (KBr): ν_{max} : 2952, 2902, 1705, 1382, 1319, 1228, 1088, 920, 859, 835 cm^{-1}.
^{1}H NMR ($CDCl_3$): δ: 6.27 (s, 4H, N-CH$_2$), 4.41 (q, 4H, *J*=7.2Hz, O-C**H$_2$**CH$_3$), 3.51 (t, 4H, *J*=8.4Hz, O-CH$_2$), 1.45 (t, 6H, *J*=7.2Hz, O-CH$_2$C**H$_3$**), 0.83 (t, 4H, *J*=8.4 Hz, Si-CH$_2$), -0.07 (s, 18H, Si-(CH$_3$)$_3$).
^{13}C NMR ($CDCl_3$): δ: 160.5, 130.7, 128.5, 123.9, 99.6, 75.0, 65.9, 61.1, 17.9, 14.4, -1.4.
MS (ESI-TOF): m/z = 747.0 ($[M+Na+2H]^+$), 337.3, 236.1, 218.2, 163.0.
HRMS (MALDI-TOF): calcd for $C_{26}H_{40}Br_2N_2O_6SSi_2$+Na 745.041, found 745.040.
Anal. Calcd for $C_{26}H_{40}Br_2N_2O_6SSi_2$: C, 43.09; H, 5.56; N, 3.87; S, 4.42. Found: C, 43.25; H, 5.37; N, 3.64; S, 4.21.

Synthesis of diethyl 2,7-diaryl-4*H*,5*H*-bis(trimethylsilylethoxymethyl)thieno[3,2-*b*,4,5-*b'*]dipyrrole-3,6-dicarboxylates (21)

General Procedure

An aqueous solution of 57 mg (412 μmol) of Na_2CO_3 in 1 mL of water was added to a solution of 100 mg (138 μmol) of **20**, 410 μmol of the corresponding arylboronic acid in 60 mL of 1,4-dioxane. The resulting mixture was deoxygenated with N_2 for 30 min. Then, 25 mg (22 μmol) of $Pd(PPh_3)_4$ were added and the resulting mixture was refluxed for 16 h under Ar atmosphere. Then, 30 mL of water were added to the cooled mixture and it was extracted with 3x50 mL of hexane. The organic extracts were dried ($MgSO_4$) and concentrated *in vacuo* to afford the corresponding compound **21**.

Diethyl 2,7-diphenyl-4*H*,5*H*-bis(trimethylsilylethoxymethyl)thieno[3,2-*b*,4,5-*b'*]dipyrrole-3,6-dicarboxylate (21{*5*}, R = Ph)

As above using phenylboronic acid. The residue obtained was column chromatographed using a 1:10 AcOEt/hexane mixture as eluent to give 76 mg (77%) of **21**{*5*} (R = Ph) as a white solid. Mp: 90-92 ºC.

IR (KBr): ν_{max}: 3061, 3029, 2980, 2953, 2897, 1948, 1882, 1698 1397, 1382, 1317, 1249, 1238, 1179, 1101, 1078, 860, 836, 699 cm^{-1}.
^{1}H NMR ($CDCl_3$): δ 7.5-7.3 (m, 10H, Ph), 6.33 (s, 4H, N-CH_2), 4,14 (q, 4H, *J*=6.9Hz, O-C**H_2**CH_3), 3.61 (t, 4, *J*=8.4Hz, O-CH_2), 1.05 (t, 2H, *J*=6.9Hz, O-CH_2C**H_3**), 0.91 (t, 4H, *J*=8.4 Hz, Si-CH_2), -0.04 (s, 18H, Si-$(CH_3)_3$).
^{13}C NMR ($CDCl_3$): δ 161.8, 134.5, 129.9, 129.2, 128.7, 127.8, 127.2, 126.8, 122.5, 74.6, 65.7, 60.5, 18.0, 13.8, -1.3.
MS (ESI-TOF): m/z = 741.5 ($[M+Na]^+$), 601.4, 416.5, 368.5, 288.4.
HRMS (ESI-TOF): calcd for $C_{38}H_{50}N_2O_6SSi_2$+Na 741.282, found 741.285.
Anal. Calcd for $C_{26}H_{40}Br_2N_2O_6SSi_2$: C, 43.09; H, 5.56; N, 3.87; S, 4.42. Found: C, 43.25; H, 5.37; N, 3.64; S, 4.21.

Diethyl 2,7-di(pyridin-4-yl)-4*H*,5*H*-bis(trimethylsilylethoxymethyl)thieno [3,2-*b*,4,5-*b'*]dipyrrole-3,6-dicarboxylate (21{*6*}, R = C_6H_4N)

As above using (pyridin-4-yl)boronic acid. The residue obtained was crystallized from water/EtOH to give 95 mg (95%) of **21**{*6*} (R = C_6H_4N) as a white solid. Mp: 128-130 ºC.

IR (KBr): ν_{max} 3069, 3030, 2980, 2953, 2897, 1937, 1702, 1601, 1397, 1382, 1317, 1241, 1182, 1102, 1077, 860, 834, cm^{-1}.
^{1}H NMR ($CDCl_3$): δ 8.65 (dd, *J*=1.7Hz, *J*=4.5Hz, 4H, CH(Py)), 7.40 (dd, *J*=1.7Hz, *J*=4.5Hz, 4H, CH(Py)), 6.34 (s, 4H, N-CH_2), 4,21 (q, 4H, *J*=7.1Hz, O-C**H_2**CH_3), 3.61 (m, 4H, O-CH_2), 1.10 (t, 2H, *J*=7.2Hz, O-CH_2C**H_3**), 0.91 (m, 4H, Si-CH_2), -0.04 (s, 18H, Si-$(CH_3)_3$).
^{13}C NMR ($CDCl_3$): δ 161.2, 149.4, 142.6, 129.1, 128.7, 124.0, 123.5, 123.1, 74.7, 65.9, 61.0, 18.0, 13.8, -1.4.
MS (ESI-TOF): m/z = 721.5 ($[M]^+$), 681.5, 642.4, 591.4, 524.3, 448.3.
Anal. Calcd for $C_{36}H_{48}N_4O_6SSi_2$: C, 59.97; H, 6.71; N, 7.77; S, 4.45. Found: C, 60.13; H, 6.84; N, 7.66; S, 4.45.

Diethyl 2,7-di(*p*-methoxyphenyl)-4*H*,5*H*-bis(trimethylsilylethoxymethyl)thieno[3,2-*b*,4,5-*b'*]dipyrrole-3,6-dicarboxylate (21{*7*}, R = *p*-$MeOC_6H_4$)

As above using *p*-methoxyphenylboronic acid. The residue obtained was column chromatographed using a 1:10 AcOEt/hexane mixture as eluent, and then crystallized from MeOH to give 138 mg (100%) of **21**{*7*} (R = p-$MeOC_6H_4$) as a white solid. Mp: 77-79 ºC.

IR (KBr): ν_{max} 3035, 2986, 2958, 2898, 2860, 2838, 1703, 1686, 1381, 1242, 1079, 833, 777 cm^{-1}.
^{1}H NMR ($CDCl_3$): δ 7.42 (dd, *J*=2.1Hz, *J*=6.7Hz, 4H, CH(Ar)), 6.92 (dd, *J*=2.1Hz, *J*=6.7Hz, 4H, CH(Ar)), 6.30 (s, 4H, N-CH_2), 4,19 (q, 4H, *J*=7.2Hz, O-C**H_2**CH_3), 3.59 (m, 4H, O-CH_2), 1.11 (t, 2H, *J*=7.2Hz, O-CH_2C**H_3**), 0.91 (m, 4H, Si-CH_2), -0.05 (s, 18H, Si-$(CH_3)_3$).
^{13}C NMR ($CDCl_3$): δ 161.9, 158.7, 130.4, 130.0, 128.8, 126.8, 126.6, 122.3, 113.3, 74.7, 65.6, 60.4, 55.3, 18.0, 14.0, -1.3.
MS (ESI-TOF): m/z = 801.3 ($[M]^+$), 671.2, 456.2, 337.2, 301.1, 236.0.
HRMS (MALDI-TOF): calcd for $C_{40}H_{54}N_2O_8SSi_2$+Na 801.303, found 801.303.
Anal. Calcd for $C_{40}H_{54}N_2O_8SSi_2$: C, 61.66; H, 6.99; N, 3.60; S, 4.12. Found: C, 61.83; H, 7.09; N, 3.40; S, 4.54.

Synthesis of Diethyl 4,4'-diaryl-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-3,6-dicarboxylates (22)

General Procedure

0.13 mmol of the corresponding diethyl 2,7-diaryl-4*H*,5*H*-bis(trimethylsilylethoxymethyl)-thieno[3,2-*b*,4,5-*b'*]dipyrrole-3,6-dicarboxylate **21** were added to a suspension of 0,5 g of Raney Nickel (caution pyrophoric) in 25 mL of deoxygenated EtOH. The Raney Nickel was previously washed with deoxygenated EtOH. The mixture was heated at reflux for 4 hours. The resulting suspension was filtered

on Celite®, the residue was washed with acetone and the combined organic solvent was concentrated *in vacuo* to give the corresponding compound **22**.

Diethyl 4,4'-diphenyl-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-5,5'-dicarboxylate (22{*5*}, R = Ph)

As above using diethyl 2,7-diphenyl-4*H*,5*H*-bis(trimethylsilylethoxymethyl)thieno[3,2-*b*,4,5-*b'*] dipyrrole-3,6-dicarboxylate (**21**{*5*}, R = Ph). The crude material obtained was crystallized from water/EtOH (1:9) to give 90 mg (100%) of **22**{*5*} (R = Ph) as a white solid. Mp: 101-103 ºC.

IR (KBr): ν_{max} 3058, 3030, 2953, 2926, 2898, 1944, 1875, 1802, 1670, 1416, 1239, 1098, 1078, 836, 762, 698 cm^{-1}.
^{1}H NMR ($CDCl_3$): δ 7.41-7.29 (m, 10H, Ph), 6.50 (s, 2H, $C_{pyrrole}$-H), 5.57 (s, 4H, N-CH_2), 4.15 (q, 4H, *J*=6.0Hz, O-C**H$_2$**CH_3), 1.41 (m, 4H, O-CH_2), 1.06 (t, 6H, *J*=6.0 Hz, O-CH_2C**H$_3$**), 0.86 (m, 4H, *J*=8.4 Hz, Si-CH_2), -0.062 (s, 18H, Si-$(CH_3)_3$).
^{13}C NMR ($CDCl_3$): δ 161.5, 135.9, 133.6, 129.3, 129.1, 127.5, 126.7, 115.0, 74.3, 65.7, 60.3, 55.3, 18.0, 13.8, -1.4.
MS (ESI-TOF): m/z = 711.3 ($[M+Na]^+$), 635.3, 543.2.
HRMS (ESI-TOF): calcd for $C_{38}H_{52}N_2O_6Si_2$+Na 711.326, found 711.324.
Anal. Calcd for $C_{38}H_{52}N_2O_6SSi_2$: C, 66.24; H, 7.61; N, 4.07. Found: C, 66.66; H, 7.86; N, 4.04.

Diethyl 4,4'-(di(pyridin-4-yl)-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-3,6-dicarboxylate (22{*6*}, R = C_6H_4N)

As above using diethyl 2,7-di(pyridin-4-yl)-4*H*,5*H*-bis(trimethylsilylethoxymethyl)thieno[3,2-*b*,4,5-*b'*]dipyrrole-3,6-dicarboxylate (**21**{*6*}, R = C_6H_4N). The crude material obtained was treated with acetic acid, extracted with AcOEt and neutralized with sodium carbonate, dried ($MgSO_4$) and evaporated *in vacuo* to give 125 mg (100%) of **22**{*6*} (R = C_6H_4N) as a white solid. Mp: 144-145 ºC.

^{1}H NMR ($CDCl_3$): δ 8.61 (d, 4H, *J*=5.7 Hz, Py), 7.33 (d, 4H, *J*=5.7Hz, Py), 6.55 (s, 2H, $C_{pyrrole}$-H), 5.58 (s, 2H, N-CH_2), 4.20 (q, 4H, *J*=7.2Hz, O-C**H$_2$**CH_3), 3.50 (m, 4H, O-CH_2), 1.12 (t, 6H, *J*=7.2 Hz, O-CH_2C**H$_3$**), 0.87 (m, 4H, Si-CH_2), -0.05 (s, 18H, Si-$(CH_3)_3$) (see page S7).
^{13}C NMR ($CDCl_3$): δ 161.0, 149.0, 143.9, 130.5, 129.1, 124.2, 121.2, 114.6, 113.0, 74.3, 66.0, 60.0, 18.1, 13.8, -1.4.
MS (MALDI-TOF): m/z= 691.3 ($[M+H]^+$)
HRMS (MALDI-TOF): calcd for $C_{36}H_{50}N_4O_6Si_2$+H 691.335, found 691.334.

Diethyl 4,4'-(*p*-methoxyphenyl)-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-3,6-dicarboxylate (22{*7*}, R = *p*-$MeOC_6H_4$)

As above using diethyl 2,7-di(*p*-methoxyphenyl)-4*H*,5*H*-bis(trimethylsilylethoxymethyl)thieno[3,2-*b*,4,5-*b'*]dipyrrole-3,6-dicarboxylate (**21**{*7*}, R = *p*-$MeOC_6H_4$). The crude material obtained was washed with water and dried (P_2O_5) to give 92 mg (94%) of **22**{*7*} (R = p-$MeOC_6H_4$) as a white solid. Mp: 77-78 ºC.

IR (KBr): ν_{max} 2952, 2900, 2835, 1697, 1501, 1247, 836 cm^{-1}.
^{1}H NMR 300 MHz ($CDCl_3$): δ 7.35 (d, *J* = 8.4 Hz, 4H, Ph), 6.90 (d, *J* = 8.4 Hz, 4H, Ph), 6.46 (s, 2H, $C_{pyrrole}$-H), 5.57 (s, 4H, N-CH_2), 4.19 (q, 4H, *J*=6.0Hz, O-C**H$_2$**CH_3), 3.85 (s, 6H, O-CH_3), 3.46 (m, 4H, O-CH_2), 1.13 (t, 6H, *J*=6.0 Hz, O-CH_2C**H$_3$**), 0.86 (m, 4H, *J*=8.4 Hz, Si-CH_2), -0.05 (s, 18H, Si-$(CH_3)_3$).
^{13}C NMR 300 MHz ($CDCl_3$): δ 161.5, 158.5, 133.3, 130.4, 129.2, 128.3, 120.4, 115.0, 113.0, 74.3, 65.7, 60.2, 55.3, 18.0, 14.0, -1.4 (see page S8).
MS (ESI-TOF): m/z = 771.6 ($[M+Na]^+$), 701.6, 631.5, 603.4.
HRMS (ESI): calcd for $C_{40}H_{56}N_2O_8Si_2$+Na 771.347, found 771.344.

Synthesis of Diethyl 4,4'-diaryl-2,2'-bipyrrole-3,6-dicarboxylates (10)

General Procedure

A solution of the corresponding diethyl 4,4'-diaryl-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-3,6-dicarboxylate **22** (770 μmol) in 10 mL of dry 1,4-dioxane containing 0.8 mL (380 μmol) of ethylenediamine was heated at reflux and then 32 mL (168 μmol) of tetrabutylammonium fluoride (TBAF) (1M in THF) were added dropwise. The evolution of the reaction was monitored by TLC (24-48 h). The resulting mixture was poured into water and extracted with AcOEt (3 x 25 mL). The organic extracts were dried ($MgSO_4$) and concentrated *in vacuo* to give the corresponding compound **10**.

Diethyl 4,4'-diphenyl-2,2'-bipyrrole-3,6-dicarboxylate (10{*5*}, R = Ph)

As above using diethyl 4,4'-diphenyl-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-5,5'-dicarboxylate (**22**{*5*}, R = Ph). The crude material obtained was recrystallized from MeOH to give 424 mg (80%) of **10**{*5*} (R = Ph) as a white solid. Mp: 265 ºC(d)[2] (see page S9).

Diethyl 4,4'-(di(pyridin-4-yl)-2,2'-bipyrrole-3,6-dicarboxylate (10{*6*}, R = C_6H_4N)

As above using 4,4'-(di(pyridin-4-yl)-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-3,6-dicarboxyl-ate (**22**{*6*}, R = C_6H_4N). The crude material obtained was washed with pentane and with MeOH yielding 295 mg (89%) of **10**{*6*} (R = C_6H_4N) as a white solid. Mp: 275 ºC(d).

^{1}H NMR (d_6-DMSO): δ 12.32 (s, 2H, NH), 8.63 (d, *J* = 5.8 Hz, 4H, Py), 7.61 (d, *J* = 5.8 Hz, 4H, Ph), 7.04 (d, 2H, , *J* = 2.0 Hz, $C_{pyrrole}$-H), 4.27 (q, 4H, *J*=7.0Hz, O-C**H$_2$**CH_3), 1.24 (t, 6H, *J*=7.0 Hz, O-CH_2C**H$_3$**).
^{13}C NMR ($CDCl_3$): δ160.2, 149.1, 142.5, 129.2, 127.8, 124.1, 118.6, 110.5, 60.4, 14.4 (see p/ S10)
MS (ESI-TOF): m/z = 437.3 ($[M+Li]^+$), 316.4, 288.4, 158.1.
HRMS (ESI-TOF): calcd for $C_{24}H_{23}N_4O_4$ 431.171, found 431.173.

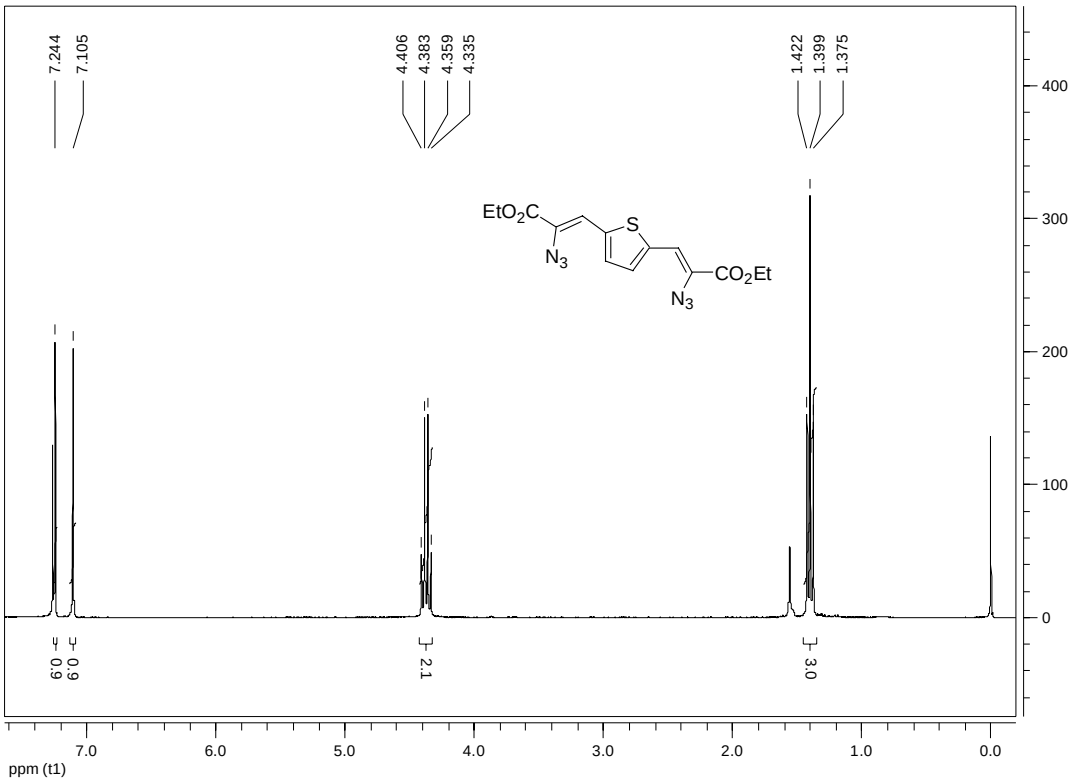
Diethyl 4,4'-(*p*-methoxyphenyl)-2,2'-bipyrrole-3,6-dicarboxylate (10{*7*}, R = *p*-$MeOC_6H_4$)

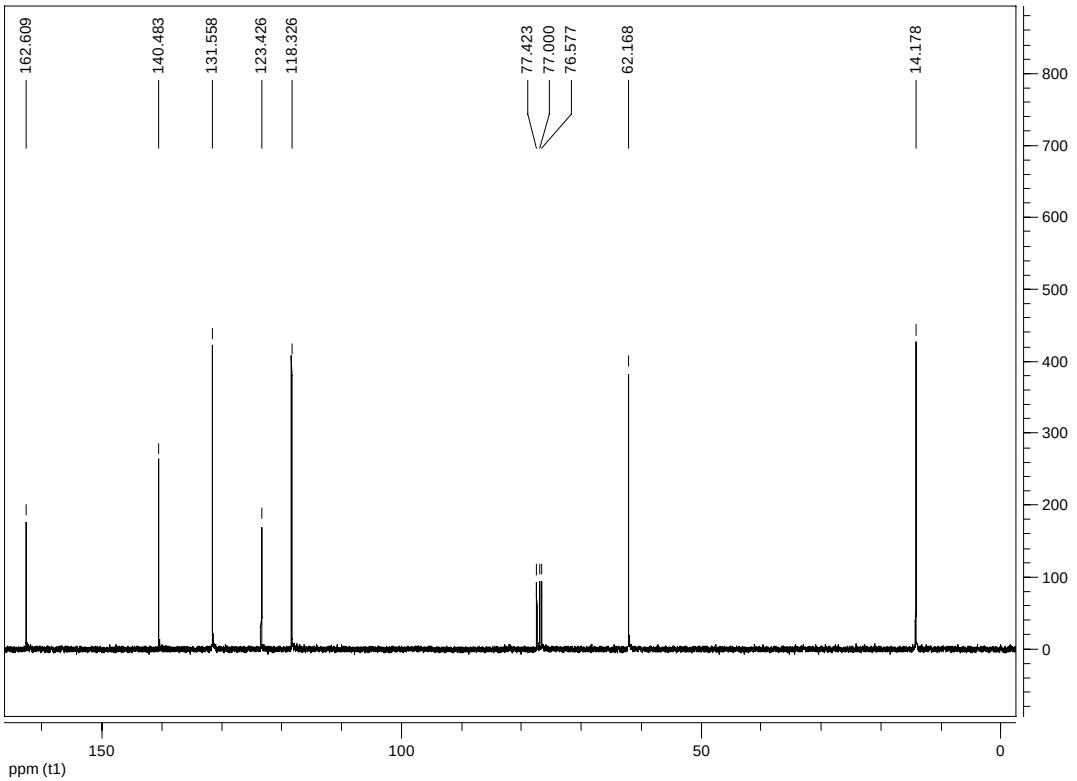
As above using diethyl 4,4'-(*p*-methoxyphenyl)-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-3,6-dicarboxylate (**22{*7*}**, R = *p*-$MeOC_6H_4$). The crude material obtained was column chromatographed using a 1: 2 AcOEt/hexane mixture as eluent to give 342 mg (91%) of **10**{*7*} (R = *p*-$MeOC_6H_4$) as a white solid. Mp: 245 ºC(d).

^{1}H NMR ($CDCl_3$): δ 9.44 (s, 2H, NH), 7.52 (d, *J* = 8.8 Hz, 4H, Ph), 6.93 (d, *J* = 8.8 Hz, 4H, Ph), 6.53 (d, 2H, , *J* = 3.0 Hz, $C_{pyrrole}$-H), 4.27 (q, 4H, *J*=7.1Hz, O-C**H$_2$**CH_3), 1.28 (t, 6H, *J*=7.1 Hz, O-CH_2C**H$_3$**).
^{13}C NMR (d_6-DMSO): δ 160.2, 158.1, 131.9, 130.3, 127.5, 127.0, 117.1, 112.1, 110.0, 59.6, 55.0, 14.3 (see p/S11)
MS (MALDI-TOF): m/z= 489.6 ($[M+H]^+$)
Anal. Calcd for $C_{28}H_{28}N_2O_6$: C, 68.84; H, 5.78; N, 5.73. Found: C, 68.69; H, 6.00; N, 5.55.

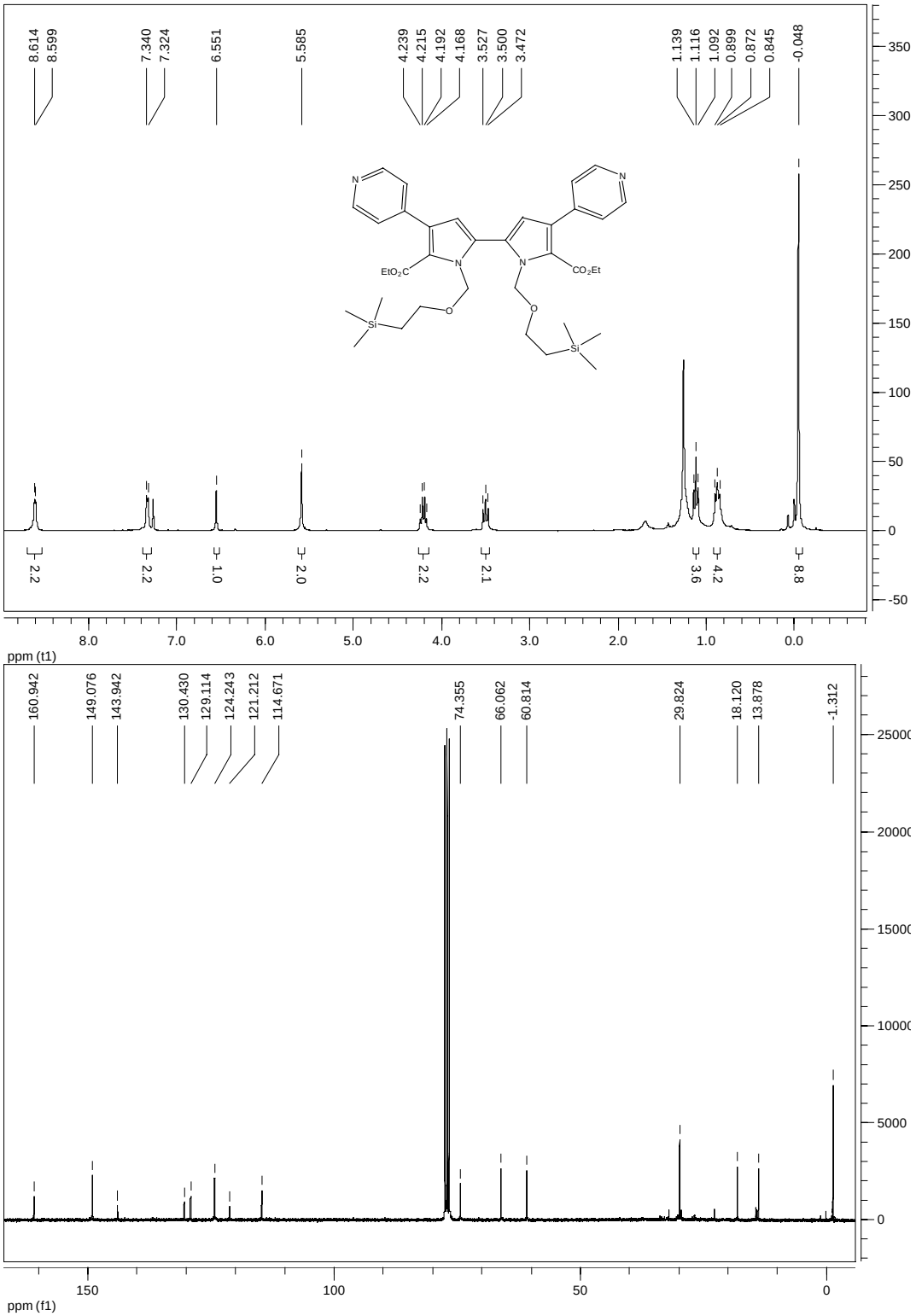
[2] Gavaldà, A.; Borrell, J. I.; Teixidó, J.; Nonell, S.; Arad, O.; Grau, R.; Cañete, M.; Juarranz, A.; Villanueva, A.; Stockert, J. C. *J. Porphryins. Phthalocyanines.* **2001**, *5*, 846.

Bis(azido-2'-ethoxycarbonyl-2'-vinyl)-2,5-tiophene (18)

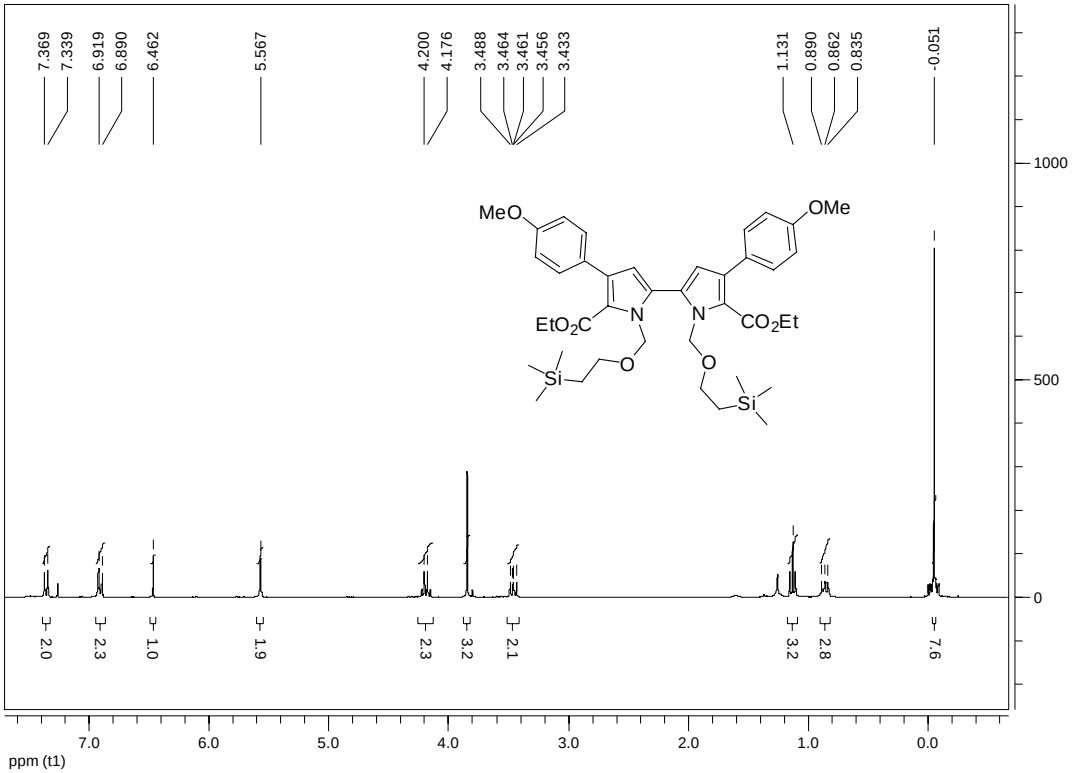


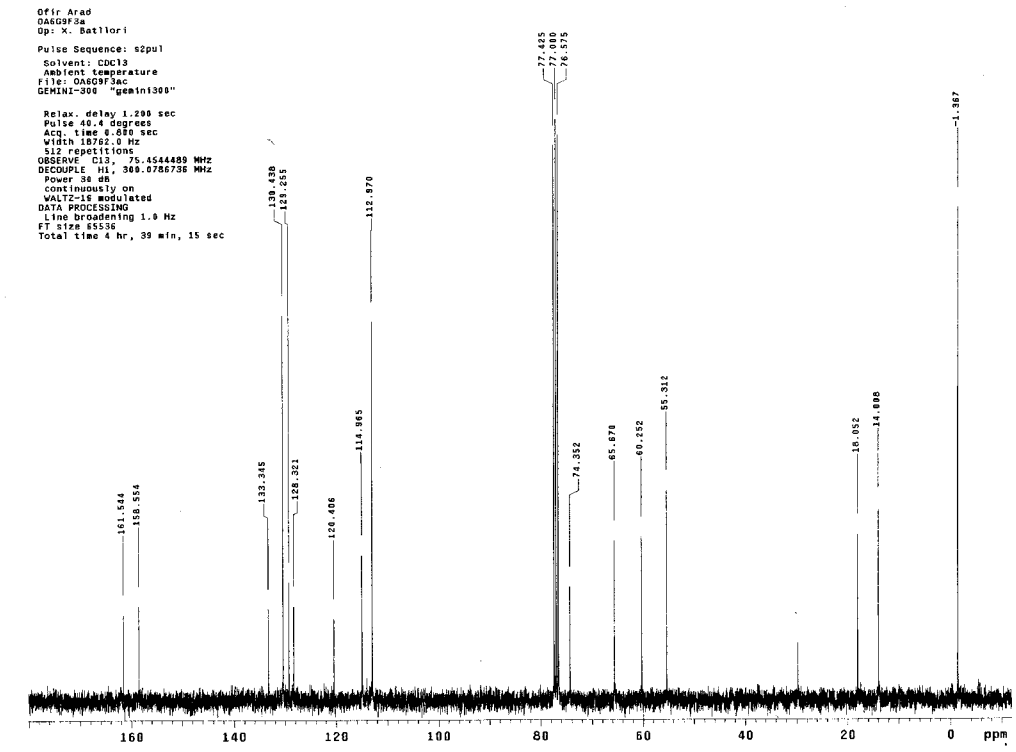


Diethyl 4,4'-(di(pyridin-4-yl)-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-3,6-dicarboxylate (22{*6*}, R = C_6H_4N)

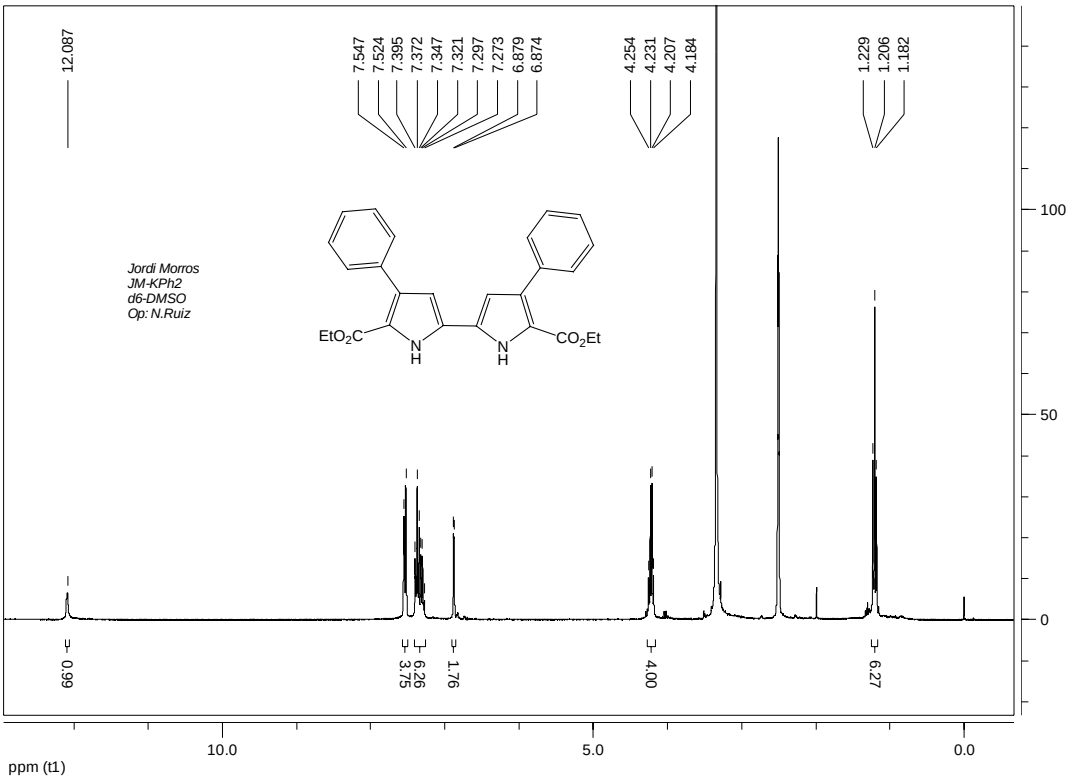


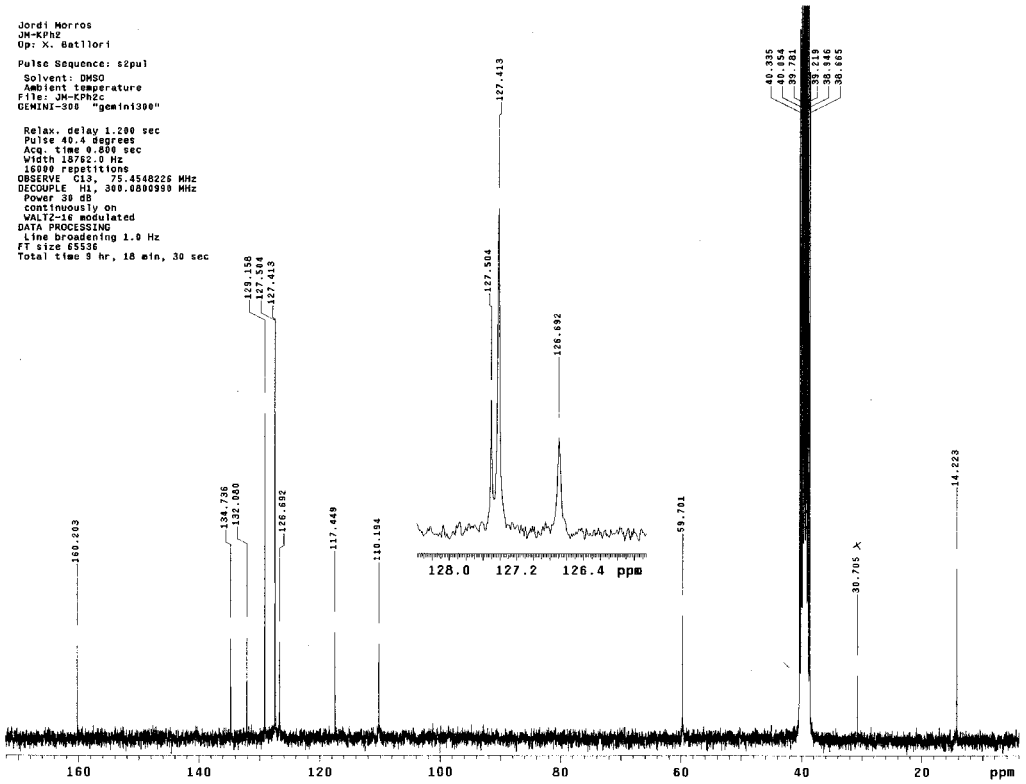
Diethyl 4,4'-(*p*-methoxyphenyl)-1,1'-bis(trimethylsilylethoxymethyl)-2,2'-bipyrrole-3,6-dicarboxylate (22{*7*}, R = *p*-MeOC$_6$H$_4$)



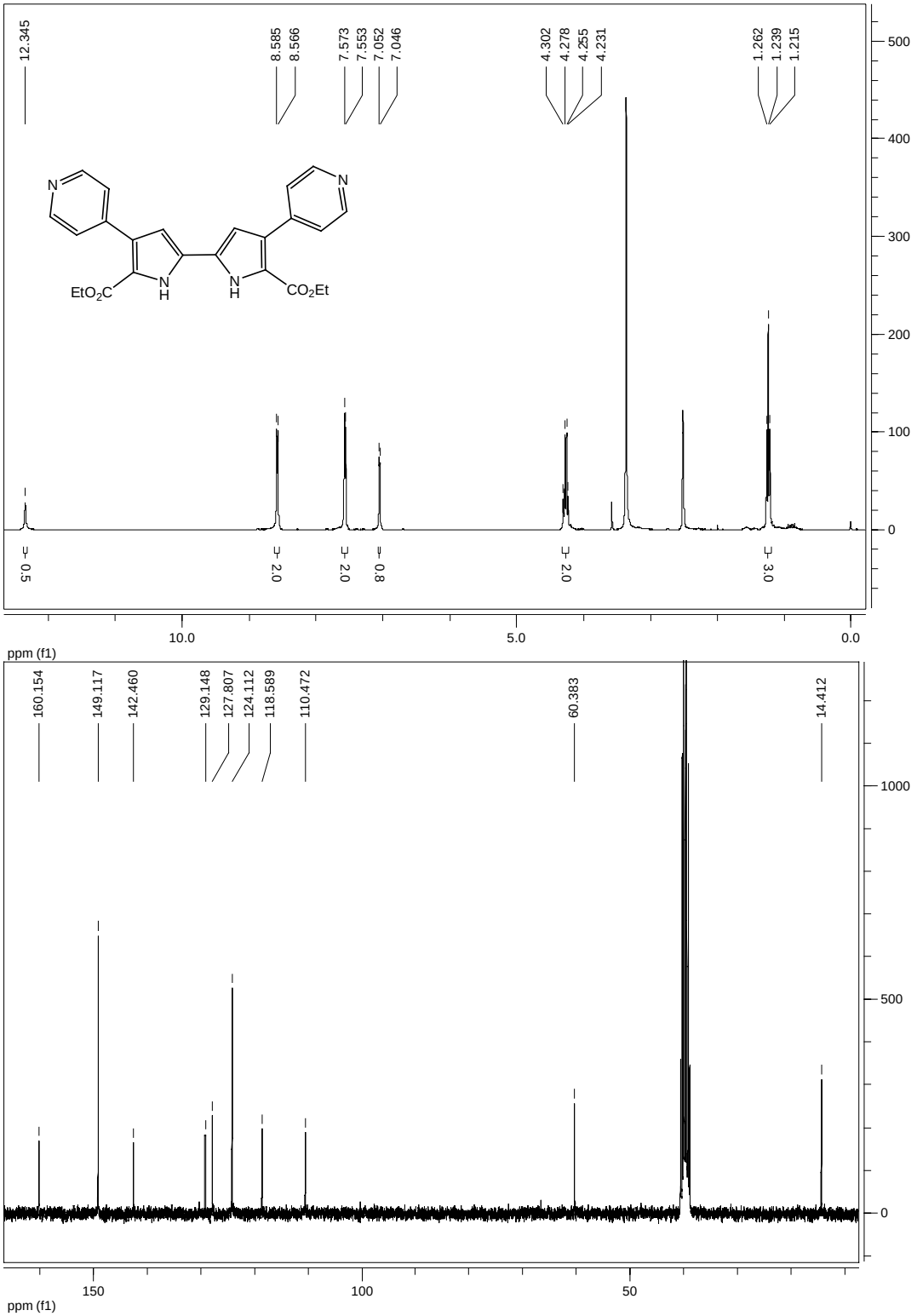


Diethyl 4,4'-diphenyl-2,2'-bipyrrole-3,6-dicarboxylate (10{*5*}, R = Ph)





Diethyl 4,4'-(di(pyridin-4-yl)-2,2'-bipyrrole-3,6-dicarboxylate (10{*6*}, R = C_6H_4N)



Diethyl 4,4'-(*p*-methoxyphenyl)-2,2'-bipyrrole-3,6-dicarboxylate (10{*7*}, R = *p*-$MeOC_6H_4$)