Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Synthesis of *N*-alkyl pyrroles via decarboxylation/ dehydration in neutral ionic liquid under catalyst-free condition

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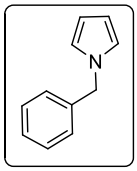
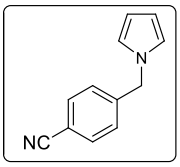
Contents

Spectroscopic data

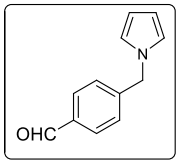
1-Benzyl-1*H*-pyrrole[1] (**2b**). Yield: 56% (0.082 g from 0.1 g); a light yellow oil; R_f = 0.52 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 761, 968, 1085, 1282, 1447, 1498, 2924, 3020 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 4.95 (s, 2H), 6.16 (t, J = 2.1 Hz, 2H), 6.62 (t, J = 2.1 Hz, 2H), 7.04 (d, J = 7.1 Hz, 2H), 7.21-7.25 (m, 3H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 53.5, 108.9, 121.5, 127.3, 127.9, 129.1, 138.6. MS (ESI+): *m/z* = 158.0. ESI-HR-MS calculated for $C_{11}H_{11}N$ (M^++H): 158.0970, found: 158.0976.



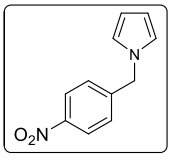
4-((1*H*-pyrrol-1-yl)methyl)benzonitrile (**2c**). Yield: 78% (0.108 g from 0.1 g); yellow solid; mp 70-72 ^oC; R_f = 0.44 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 762, 1216, 1391, 1670, 2421, 3020, cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 5.12 (s, 2H), 6.22 (t, J = 2.1 Hz, 2H), 6.67 (t, J = 2.1 Hz, 2H), 7.13 (d, J = 8.3 Hz, 2H), 7.56 (d, J = 8.3 Hz, 2H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 52.7, 111.5, 118.6, 121.3, 127.4, 132.6, 143.9. MS (ESI+): *m/z* = 183.0. ESI-HR-MS calculated for $C_{12}H_{10}N_2$ (M^++H): 183.0922, found: 183.0924.



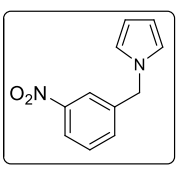
4-((1*H*-pyrrol-1-yl)methyl)benzaldehyde (**2d**). Yield: 65% (0.089 g from 0.1 g); a light brown oil; R_f = 0.40 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 742, 1214, 1528, 1621, 1665, 3020 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 5.03 (s, 2H), 6.15 (t, J = 1.84 Hz, 2H), 6.66 (t, J = 1.84 Hz, 2H), 7.56 (d, J = 8.1 Hz, 2H), 6.98 (d, J = 7.8 Hz, 2H) 9.91 (s, 1H); ^{13}C NMR (100 MHz, $CDCl_3$): δ (ppm) = 52.8, 108.4, 120.9, 122.2, 123.7, 127.3, 136.7, 187.5. MS (ESI+): *m/z* = 186.1. ESI-HR-MS calculated for $C_{12}H_{11}NO$ (M^++H): 186.0919, found: 186.0921.



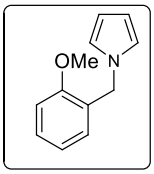
1-(4-Nitrobenzyl)-1*H*-pyrrole[2] (**2e**). Yield: 80% (0.118 g from 0.1 g); yellow solid; mp 88-90 ^oC; R_f = 0.42 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 761, 1216, 1523, 1652, 3021 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 5.26 (s, 2H), 6.21 (t, J = 2.1 Hz, 2H), 6.77 (t, J = 2.1 Hz, 2H), 7.27 (d, J = 8.6 Hz, 2H), 8.23 (d, J = 8.7 Hz, 2H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 52.6, 109.4, 121.3, 124.1, 127.4, 145.7, 147.5. MS (ESI+): *m/z* = 203.0. ESI-HR-MS calculated for $C_{11}H_{10}N_2O_2$ (M^++H): 203.0821, found: 203.0822.



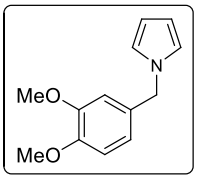
1-(3-Nitrobenzyl)-1*H*-pyrrole (**2f**). Yield: 69% (0.092 g from 0.1 g); a yellow solid; mp 70-72 ^oC; R_f = 0.40 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 789, 1225, 1401, 1538, 1602, 2488, 2986, 3019 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 5.71 (s, 2H), 6.24 (t, J = 2.1 Hz, 2H), 6.70 (t, J =2.1 Hz, 2H), 7.36 (dd, J_1 = 0.6 Hz, J_2 = 0.6 Hz, 1H), 7.51 (t, J = 7.8 Hz, 1H),7.97 (s, 1H), 8.12 (dd, J_1 = 1.2 Hz, J_2 = 1.3 Hz, 1H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 52.5, 119.4, 121.2, 121.8, 122.7, 129.8, 132.9, 140.6, 148.5. MS (ESI+): *m/z* = 203.0. ESI-HR-MS calculated for $C_{11}H_{10}N_2O_2$ (M^++H): 203.0821, found: 203.0822.



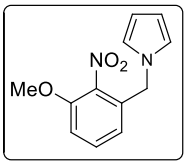
1-(2-Methoxybenzyl)-1*H*-pyrrole[1] (**2g**). Yield: 59% (0.083 g from 0.1 g); a colourless oil; R_f = 0.44 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 766, 901, 1221, 1570, 1608, 2995, 3012 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 3.69 (s, 3H), 4.94 (s, 2H), 6.06 (t, J = 2.1 Hz, 2H), 6.58 (t, J = 2.1 Hz, 2H), 6.68-6.77 (m, 3H), 7.09-7.14 (m, 1H); ^{13}C NMR (100 MHz, $CDCl_3$): δ (ppm) = 48.3, 55.3, 108.1, 110.2, 120.7, 121.3, 128.3, 128.8, 135.9, 156.9. MS (ESI+): *m/z* = 187.9. ESI-HR-MS calculated for $C_{12}H_{13}NO$ (M^++H): 188.1075, found: 188.1078.



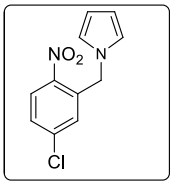
1-(3,4-Dimethoxybenzyl)-1*H*-pyrrole (**2h**). Yield: 64% (0.083 g from 0.1 g); a sea green oil; R_f = 0.38 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 761, 1086, 1144, 1263, 1459, 1515, 1599, 2935, 3018 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 3.86 (s, 3H), 3.96 (s, 3H), 5.04 (s, 2H), 6.23 (t, J = 2.1 Hz, 2H), 6.69 (d, J = 1.9 Hz, 1H), 6.73 (t, J =2.2 Hz, 2H), 6.76 (d, J = 2.1 Hz, 1H), 6.86 (d, J = 8.2 Hz, 1H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 52.6, 55.4, 55.5, 108.1, 110.2, 110.9, 119.2, 120.6, 130.4, 148.3, 148.8. MS (ESI+): *m/z* = 217.8. ESI-HR-MS calculated for $C_{13}H_{15}NO_2$ (M^++H): 218.1181, found: 218.1184.



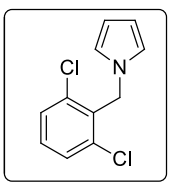
1-(3-Methoxy-2-nitrobenzyl)-1*H*-pyrrole (**2i**). Yield: 65% (0.078 g from 0.1 g); a pale white solid; mp 96-98 ^oC; R_f = 0.40 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 758, 1215, 1384, 1403, 1533, 1654, 3019 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 3.93 (s, 3H), 5.09 (s, 2H), 6.23 (t, J = 2.1 Hz, 2H), 6.46 (d, J = 7.8 Hz, 1H), 6.69 (t, J = 2.1 Hz, 2H), 6.99 (d, J = 8.3 Hz, 2H), 7.37 (t, J = 8.2 Hz, 1H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 48.4, 56.6, 109.2, 112.0, 119.5, 121.5, 131.6, 131.9, 151.1. MS (ESI+): *m/z* = 233.0. ESI-HR-MS calculated for $C_{12}H_{12}N_2O_3$ (M^++H): 233.0926, found: 233.0924.



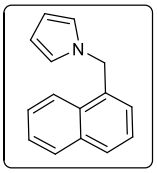
1-(5-Chloro-2-nitrobenzyl)-1*H*-pyrrole (**2j**). Yield: 88% (0.111 g from 0.1 g); a light brown solid; mp 76-78 ^oC; R_f = 0.39 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 760, 889, 1216, 1344, 1570, 1605, 3020 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 5.02 (s, 2H), 6.32 (t, J = 2.1 Hz, 2H), 6.54 (t, J = 1.2 Hz, 1H), 6.72 (t, J = 2.1 Hz, 2H), 7.42 (dd, J_1 = 2.2 Hz, J_2 = 2.2 Hz, 1H), 8.11 (d, J = 8.7 Hz, 1H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 50.5, 109.9, 121.6, 126.5, 128.5, 128.6, 137.6, 141.3, 144.9. MS (ESI+): *m/z* = 236.9. ESI-HR-MS calculated for $C_{11}H_9ClN_2O_2$ (M^++H): 237.0431, found: 237.0434.



1-(2,6-Dichlorobenzyl)-1*H*-pyrrole (**2k**). Yield: 86% (0.114 g from 0.1 g); a white solid; R_f = 0.39 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 761, 1091, 1274, 1438, 1650, 3018 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 5.37 (s, 2H), 6.13 (t, J = 2.2 Hz, 2H), 6.81 (t, J = 2.2 Hz, 2H), 7.17-7.22 (m, 1H), 7.34 (d, J = 8.1 Hz, 2H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 47.9, 108.2, 121.3, 130.2, 133.2, 136.6, MS (ESI+): *m/z* = 226.1. ESI-HR-MS calculated for $C_{11}H_9Cl_2N$ (M^++H): 226.0190, found: 226.0192.

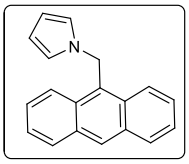


1-(Naphthalen-1-ylmethyl)-1*H*-pyrrole (**2l**). Yield: 77% (0.102 g from 0.1 g); a white solid;



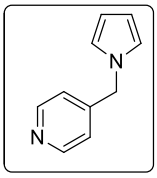
mp 62-64 ^{o}C; R_f = 0.41 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 668, 758, 929, 1067, 1160, 1291, 1384, 1482, 1598, 1654, 2926, 3019 cm^{-1}. ^{1}H NMR (400 MHz, $CDCl_3$): δ = 5.59 (s, 2H), 6.33 (d, J = 1.8 Hz, 2H), 6.82 (d, J =1.7 Hz, 2H), 7.12 (d, J = 7.0 Hz, 2H), 7.51 (t, J = 7.2 Hz, 1H), 7.59-7.63 (m, 2H), 7.88 (d, J = 8.3Hz, 1H), 7.97 (d, J = 7.5 Hz, 1H), 8.02 (d, J = 8.1Hz, 1H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 51.3, 108.6, 121.5, 122.7, 125.6, 125.7, 126.1, 126.7, 128.6, 128.9, 131.1, 133.6, 133.7. MS (ESI+): *m/z* = 208.1. ESI-HR-MS calculated for $C_{15}H_{13}N$ (M^++H): 208.1126, found: 208.1121.

1-(Anthracen-9-ylmethyl)-1*H*-pyrrole[2] (**2m**). Yield: 82% (0.102 g from 0.1 g); a yellow solid;



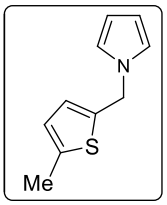
mp 150-152 ^{o}C, (Lit. 152-155 ^{o}C); R_f = 0.39 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 758, 1215, 1384, 1659, 3019 cm^{-1}. ^{1}H NMR (400 MHz, $CDCl_3$): δ (ppm) 6.07 (s, 2H), 6.13 (t, J = 2.1 Hz, 2H), 6.68 (t, J =2.1 Hz, 2H), 7.52-7.58 (m, 4H), 8.07-8.12 (m, 2H), 8.31 (d, J = 8.6 Hz, 2H), 8.55 (s, 1H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 45.3, 108.2,120.5, 123.6, 125.2, 125.7, 126.9, 128.8, 129.3.131.1, 131.5. MS (ESI+): *m/z* = 257.9. ESI-HR-MS calculated for $C_{19}H_{15}N$ (M^++H): 258.1283, found: 258.1280.

4-((1*H*-pyrrol-1-yl)methyl)pyridine[2] (**2n**). Yield: 64% (0.044 g from 0.1 g); a brown oil; R_f =

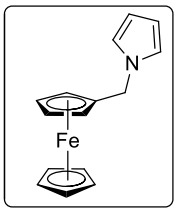


0.26 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 770, 1216, 1384, 1652, 3019 cm^{-1}. ^{1}H NMR (400 MHz, $CDCl_3$): δ = 5.03 (s, 2H), 6.23 (t, J = 1.9 Hz, 2H), 6.65 (d, J = 1.6 Hz, 2H), 6.91 (d, J = 4.6 Hz, 2H), 8.51 (d, J = 4.6 Hz, 2H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 52.1, 109.3, 121.3, 147.5, 150.2. MS (ESI+): *m/z* = 159.09. ESI-HR-MS calculated for $C_{10}H_{10}N_2$ (M^++H): 159.0922, found: 159.0922.

1-((5-Methylthiophen-2-yl)methyl)-1*H*-pyrrole (**2o**). Yield: 66% (0.092 g from 0.1 g); a brown

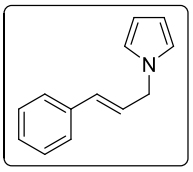


oil; R_f = 0.39 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 760, 967, 1084, 1217, 1275, 1397, 1440, 1495, 1679, 2404, 2862, 2922, 3012 cm^{-1}. ^{1}H NMR (400 MHz, $CDCl_3$): δ = 2.39 (s, 3H), 5.08 (s, 2H), 6.16 (t, J = 2.2 Hz, 2H), 6.55-6.56 (m, 1H), 6.68-6.69 (m, 3H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 15.5, 48.4, 118.8, 120.7, 125.1, 126.1, 138.4, 140.4. MS (ESI+): *m/z* = 177.8. ESI-HR-MS calculated for $C_{10}H_{11}NS$ (M^++H): 178.0690, found: 178.0693.

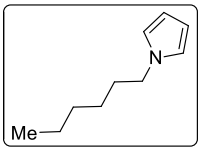


Ferrocene-1*H*-pyrrole (**2p**). Yield: 68% (0.083 g from 0.1 g); a brown oil; R_f = 0.56 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 492, 668, 761, 1086, 1217, 1272, 1390, 1631, 2926, 3015 cm^{-1}. ^{1}H NMR (400 MHz, $CDCl_3$): δ = 4.17-4.19 (m, 7H), 4.22 (t, J = 1.7 Hz, 2H), 4.83 (s, 2H), 6.14 (t, J = 2.2 Hz, 2H), 6.69 (t, J = 2.1 Hz, 2H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 49.1, 68.4, 68.5, 68.7, 84.5, 107.9, 120.4. MS (ESI+): *m/z* = 266.0. ESI-HR-MS calculated for $C_{15}H_{15}NFe$ (M^++H): 266.0632, found: 266.0637.

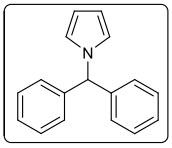
1-Cinnamyl-1*H*-pyrrole (**2q**). Yield: 60% (0.083 g from 0.1 g); a brown oil; R_f = 0.43 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 669, 758, 1215, 1384, 1637, 3019 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 4.64 (d, J = 5.9 Hz, 2H), 6.18 (bs, 2H), 6.48 (d, J = 15.9 Hz, 1H), 6.71 (bs, 2H), 7.24-7.36 (m, 6H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 51.6, 108.4, 120.7, 125.5, 126.6, 127.9, 128.6, 132.6. MS (ESI+): *m/z* = 183.9. ESI-HR-MS calculated for $C_{13}H_{13}N$ (M^++H): 184.1126, found: 184.1125.



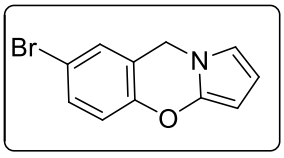
1-Hexyl-1*H*-pyrrole (**2r**). Yield: 58% (0.087 g from 0.1 g); a brown oil; R_f = 0.53 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 732, 930, 1210, 1569, 2995 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 0.86-0.91 (m, 3H), 1.25-1.33 (m, 6H), 2.03 (q, J = 7.3 Hz, 2H), 4.36 (bs, 2H), 6.13 (t, J = 2.1 Hz, 2H), 6.61 (t, J = 2.1 Hz, 2H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 14.1, 22.6, 27.6, 29.4, 30.5, 31.6, 55.7, 107.8, 120.8. MS (ESI+): *m/z* = 152.1. ESI-HR-MS calculated for $C_{10}H_{17}N$ (M^++H): 152.1439, found: 152.1444.



1-Benzhydryl-1*H*-pyrrole[1] (**2s**). Yield: 90% (0.115 g from 0.1 g); a white solid; mp 72-74 ^oC, (Lit. 70-74 ^oC); R_f = 0.38 (Hexanes: EtOAc, 9:1, v/v); IR (neat) ν_{max}: 880, 1214, 1356, 1578, 1625, 3042 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 6.17 (t, J = 2.0 Hz, 2H), 6.44 (s, 1H), 6.59 (t, J = 2.0 Hz, 2H), 7.05-7.07 (m, 4H), 7.26-7.31 (m, 6H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 66.9, 108.4, 121.2, 127.9, 128.3, 128.6, 140.8. MS (ESI+): *m/z* = 234.1. ESI-HR-MS calculated for $C_{17}H_{15}N$ (M^++H): 234.1283, found: 234.1285.



7-Bromo-9*H*-benzo[*e*]pyrrolo[2,1-*b*][1,3]oxazine (**3B**). Yield: 35% (0.043 g from 0.1 g); a dark brown solid; mp 126-128 ^oC; R_f = 0.28 (Hexanes: EtOAc, 9:1, v/v); IR (KBr) ν_{max}: 916, 1240, 1598, 1625 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$): δ = 4.76 (d, J = 15.5 Hz, 1H), 4.91 (d, J = 15.3 Hz, 1H), 6.84 (d, J = 8.8 Hz, 2H), 7.52-7.61 (m, 4H); ^{13}C NMR (100 MHz, $CDCl_3$): δ = 51.4, 108.5, 111.4, 119.8, 121.7, 132.2, 134.4, 135.6, 139.7, 147.7, 156.4. MS (ESI+): *m/z* = 250.1. ESI-HR-MS calculated for $C_{11}H_8BrNO$ (M^++H): 249.9868, found: 249.9870.



References:

1. I. Deb, D. J. Coiro, D. Seidel, *Chem. Commun*, 2011, **47**, 6473.
2. V. Kumar, K. R. Rao. *Tetrahedron Lett.*, 2011, **52**, 3237.

^{1}H NMR and ^{13}C NMR Spectra of Compounds:

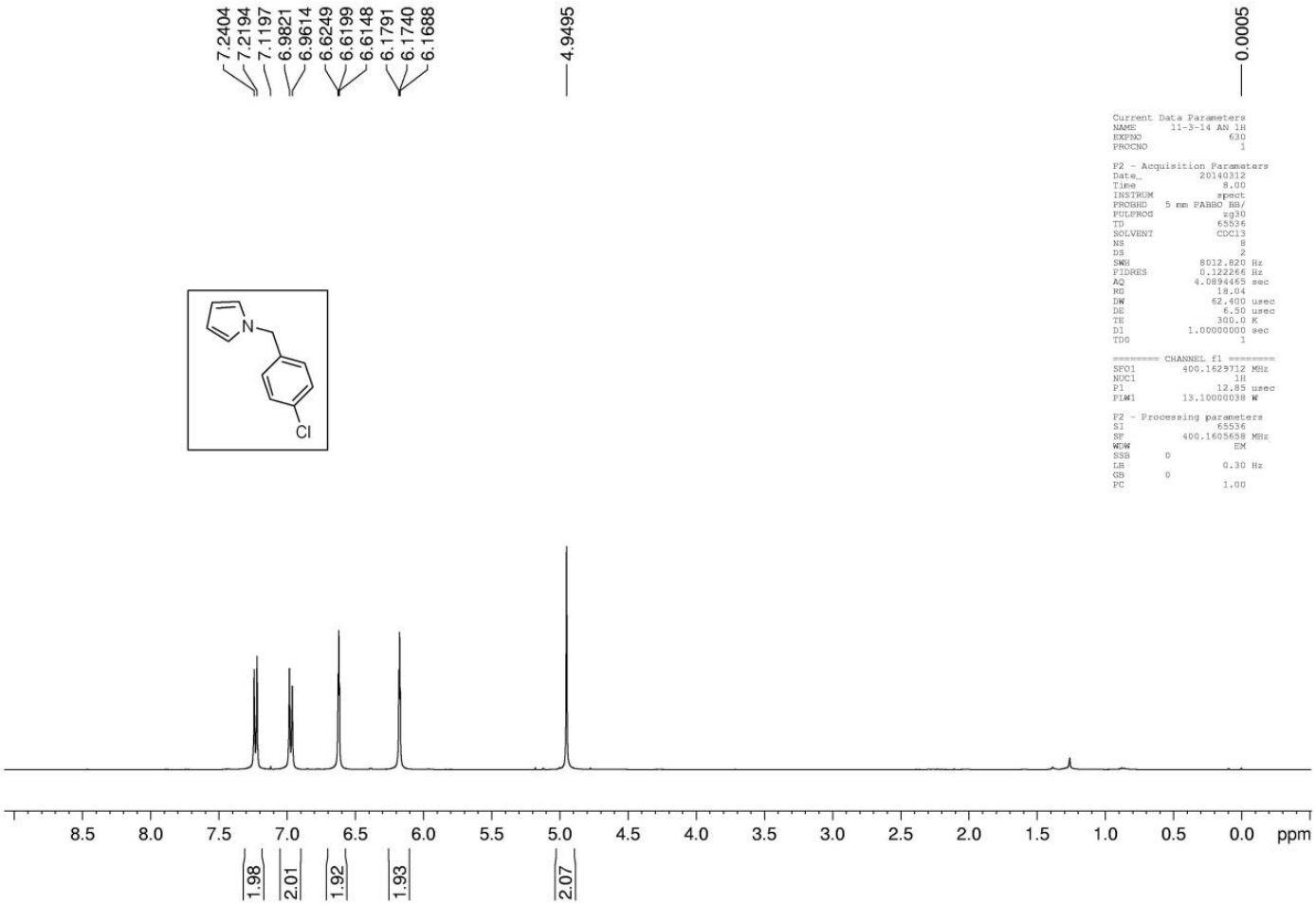


Fig: S-1 ^{1}H-NMR spectrum of 1-(4-Chlorobenzyl)-1*H*-pyrrole (**2a**).

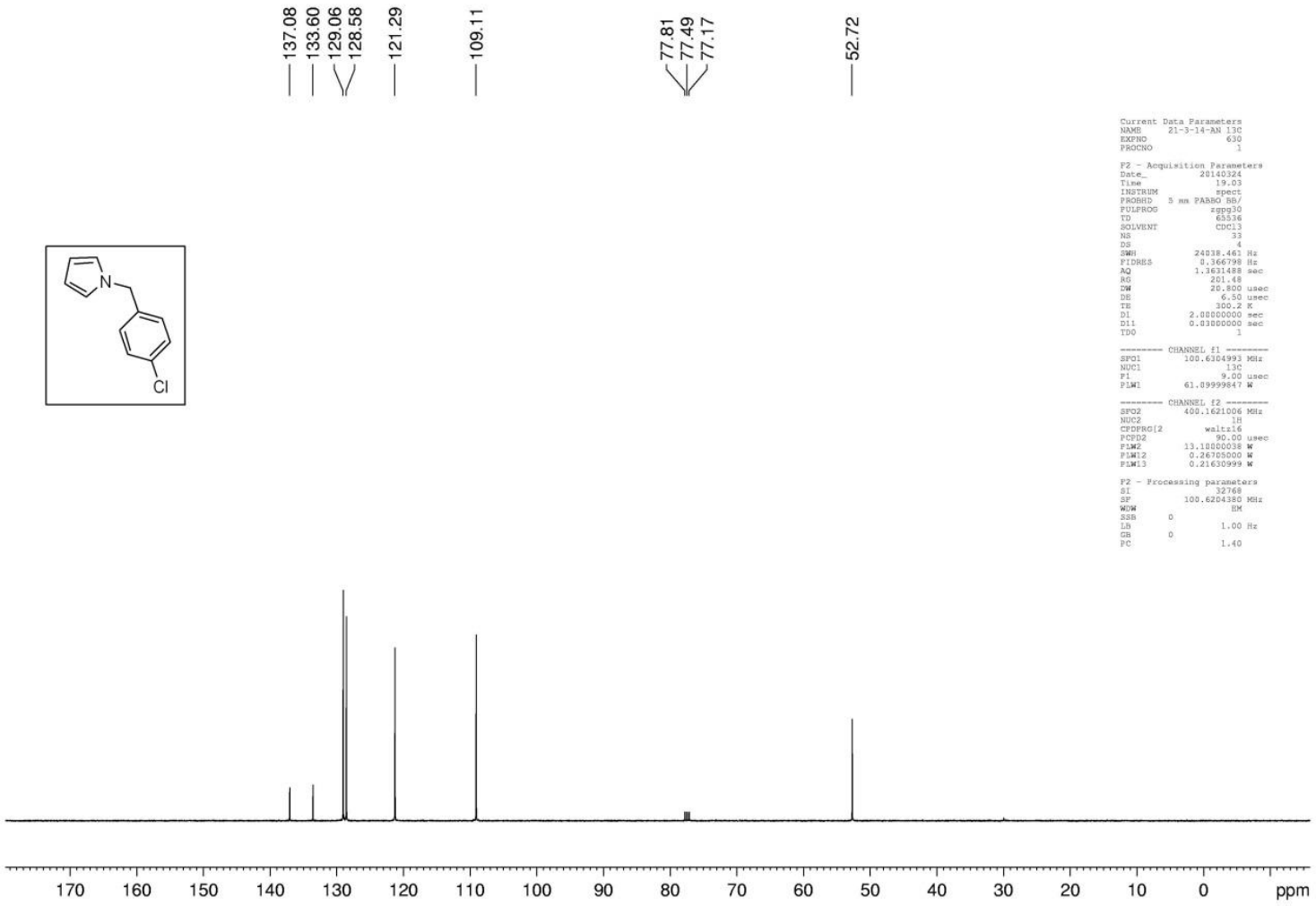


Fig: S-2 ^{13}C-NMR spectrum of 1-(4-Chlorobenzyl)-1*H*-pyrrole (**2a**).

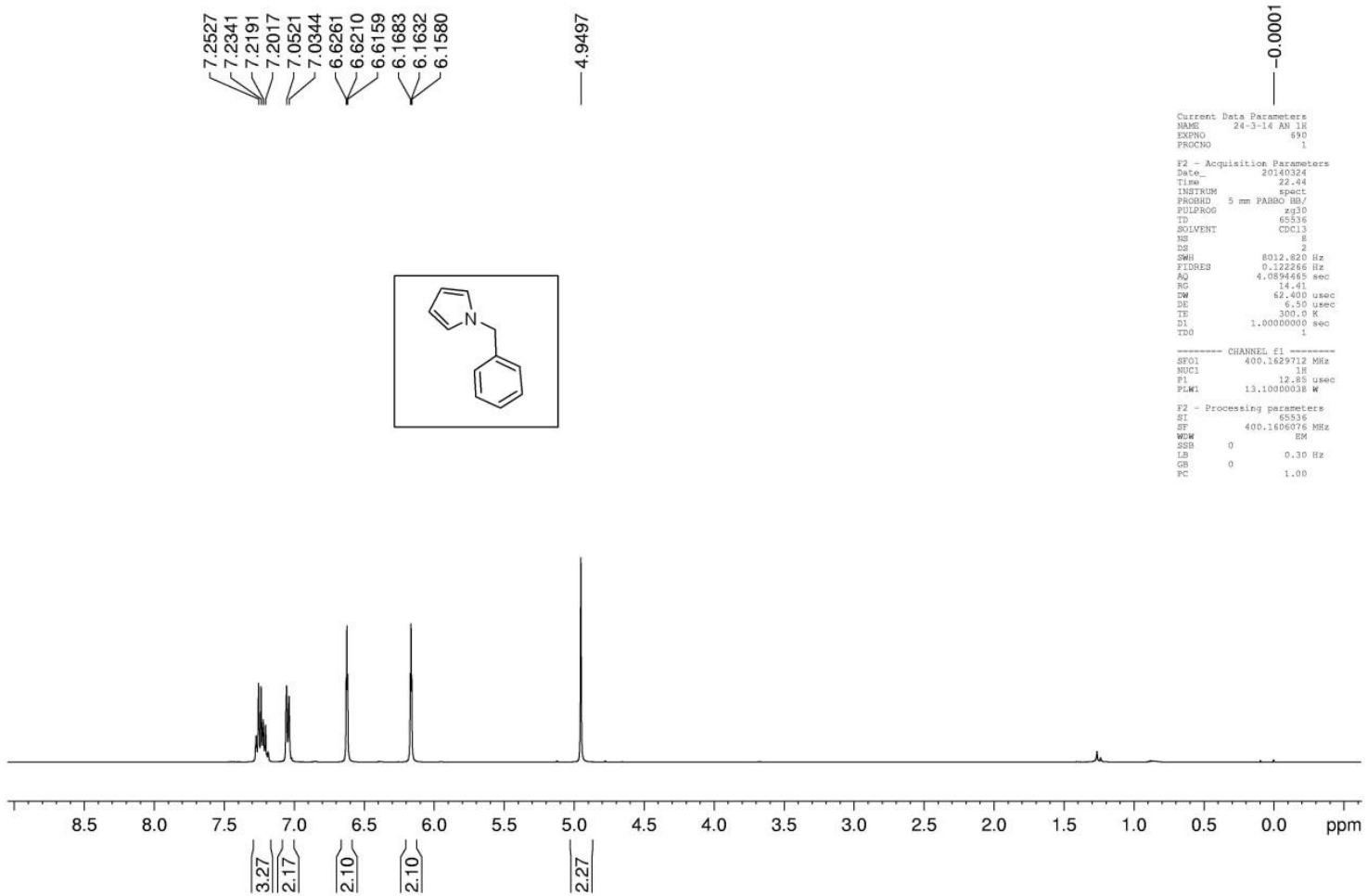


Fig: S-3 ^{1}H-NMR spectrum of 1-Benzyl-1*H*-pyrrole (**2b**).

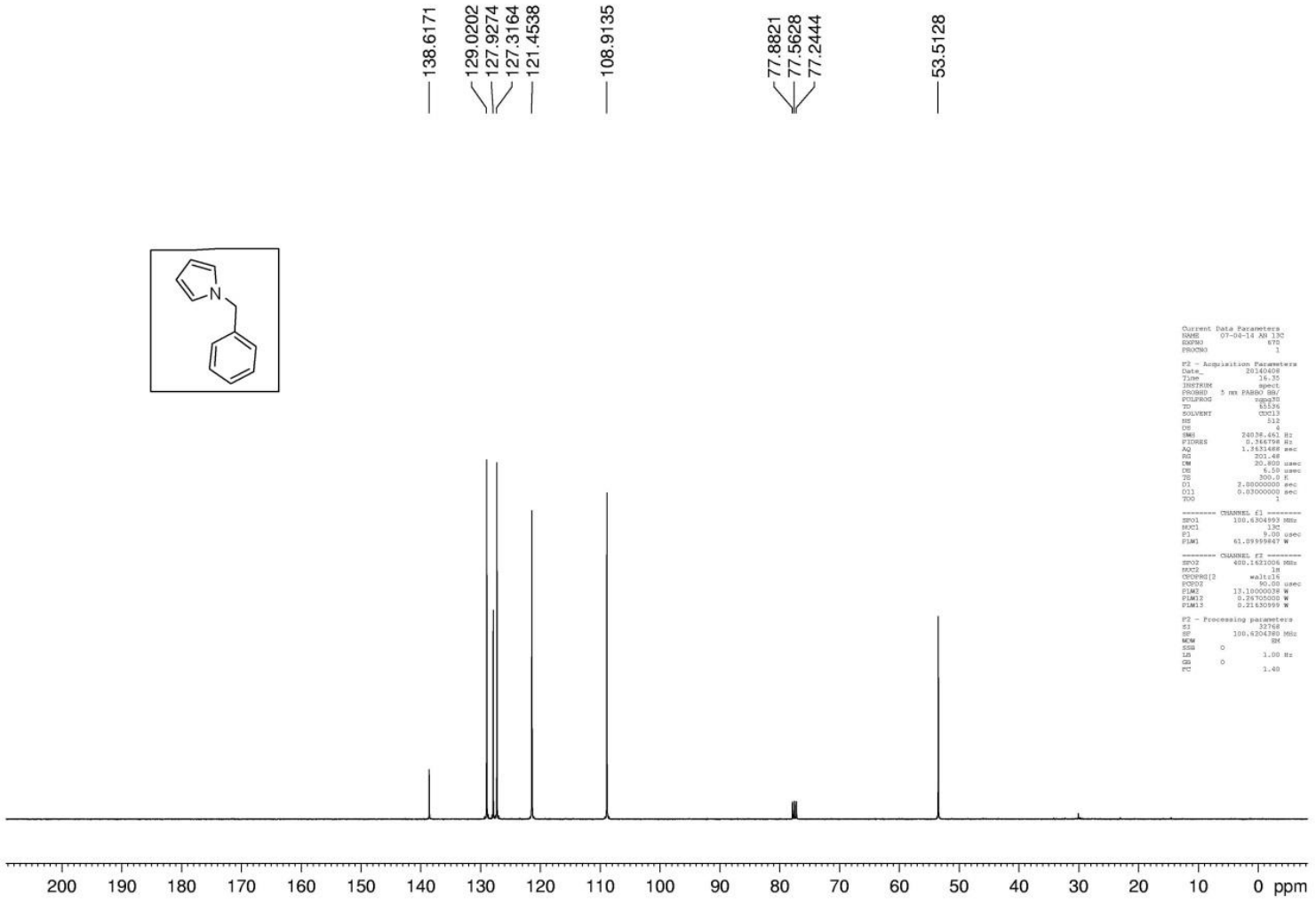


Fig: S-4 ^{13}C-NMR spectrum of 1-Benzyl-1*H*-pyrrole (**2b**).

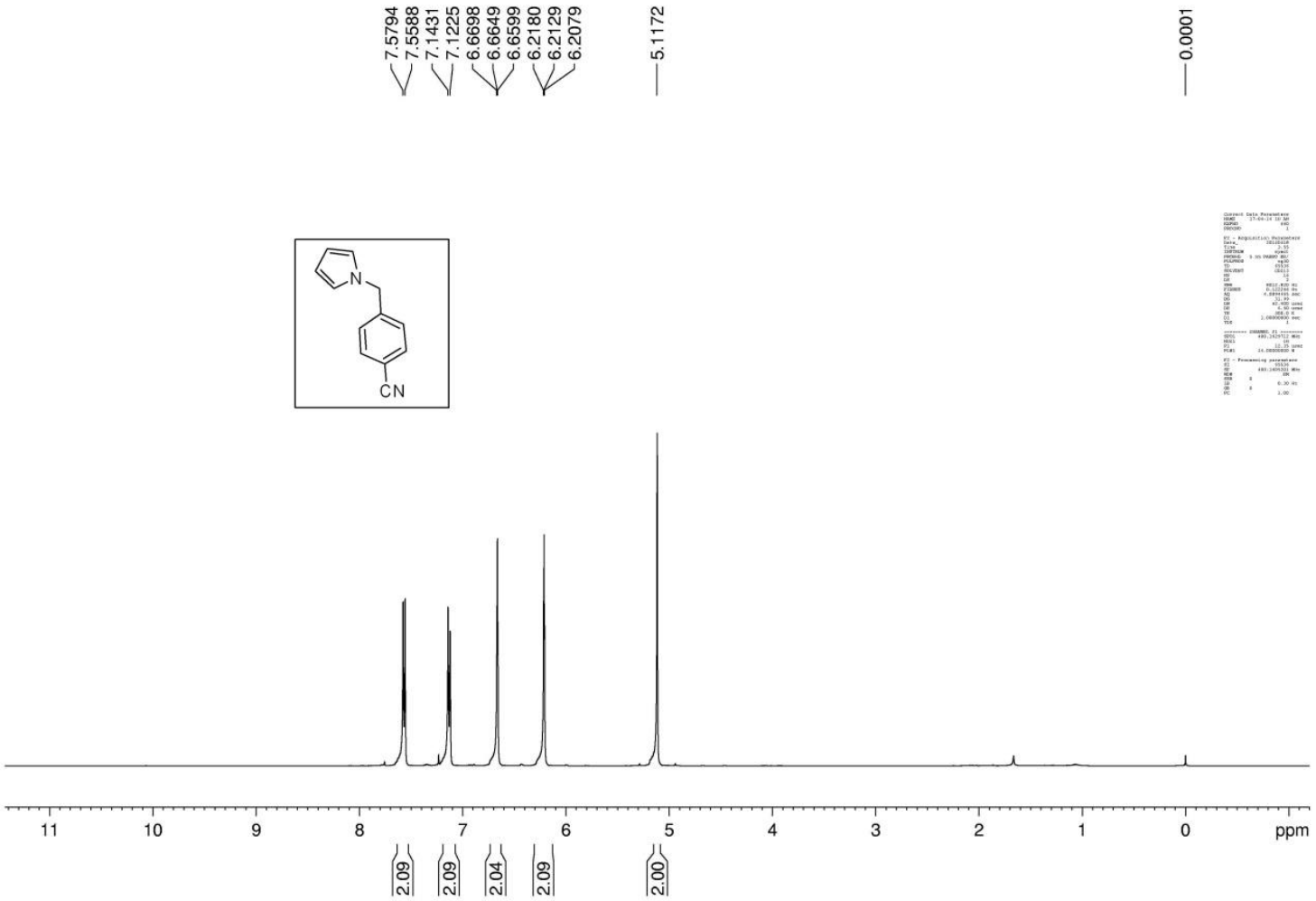


Fig: S-5 ^{1}H-NMR spectrum of 4-((1*H*-pyrrol-1-yl)methyl)benzonitrile (**2c**).

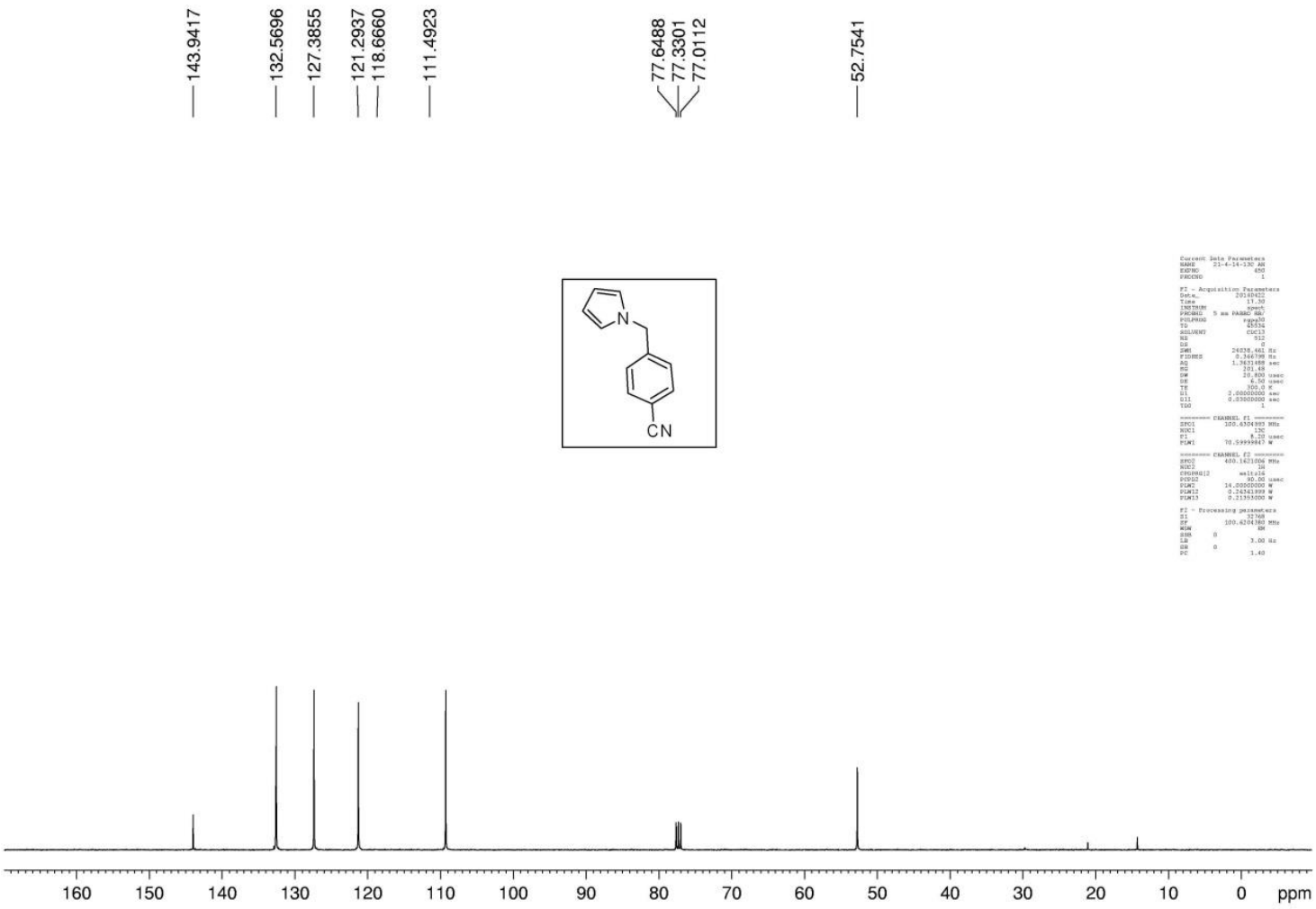


Fig: S-6 ^{13}C-NMR spectrum of 4-((1*H*-pyrrol-1-yl)methyl)benzonitrile (**2c**).

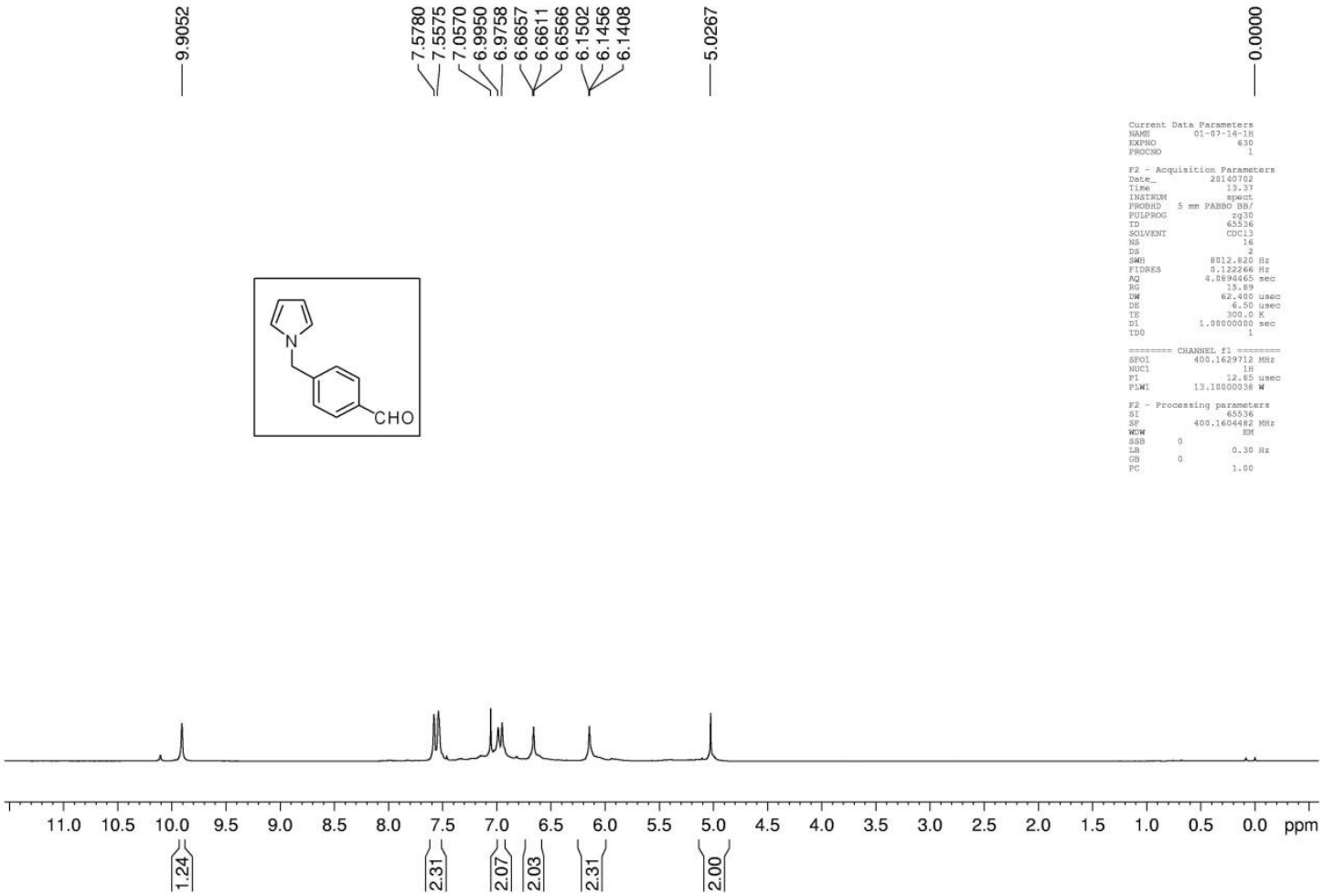


Fig: S-7 ^{1}H-NMR spectrum of 4-((1*H*-pyrrol-1-yl)methyl)benzaldehyde (**2d**).

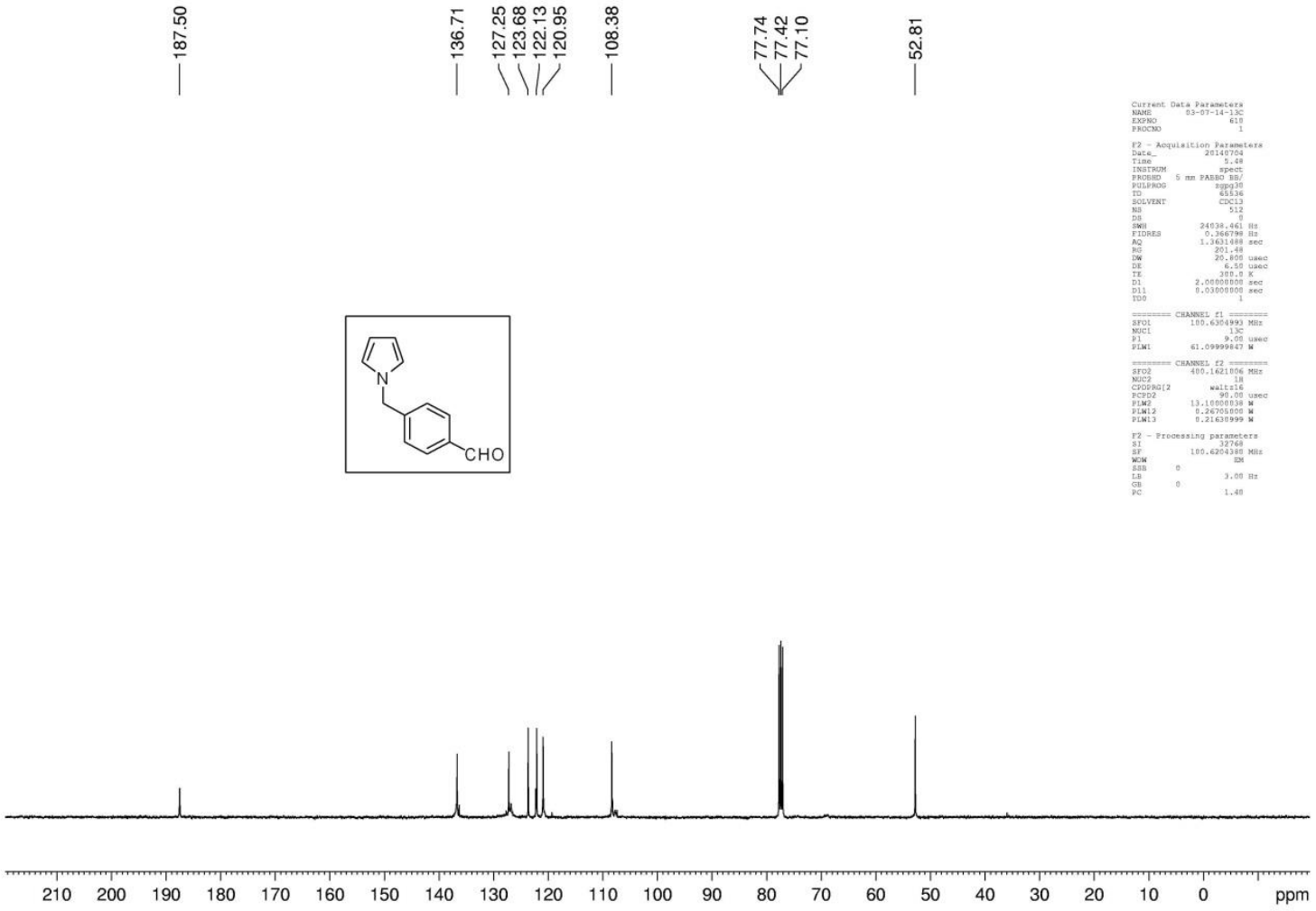


Fig: S-8 ^{13}C-NMR spectrum of 4-((1*H*-pyrrol-1-yl)methyl)benzaldehyde (**2d**).

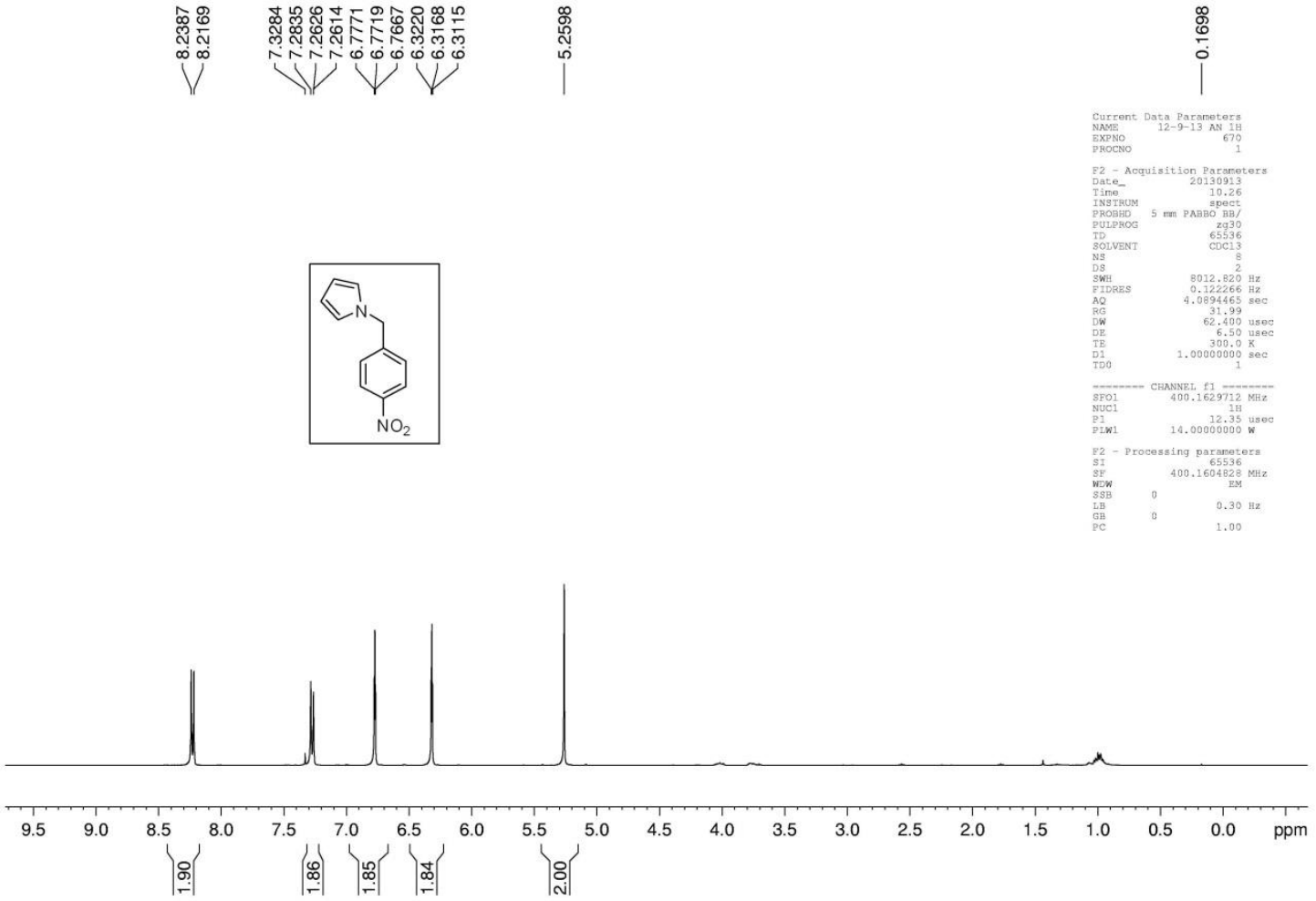


Fig: S-9 ^{1}H-NMR spectrum of 1-(4-nitrobenzyl)-1*H*-pyrrole (**2e**).

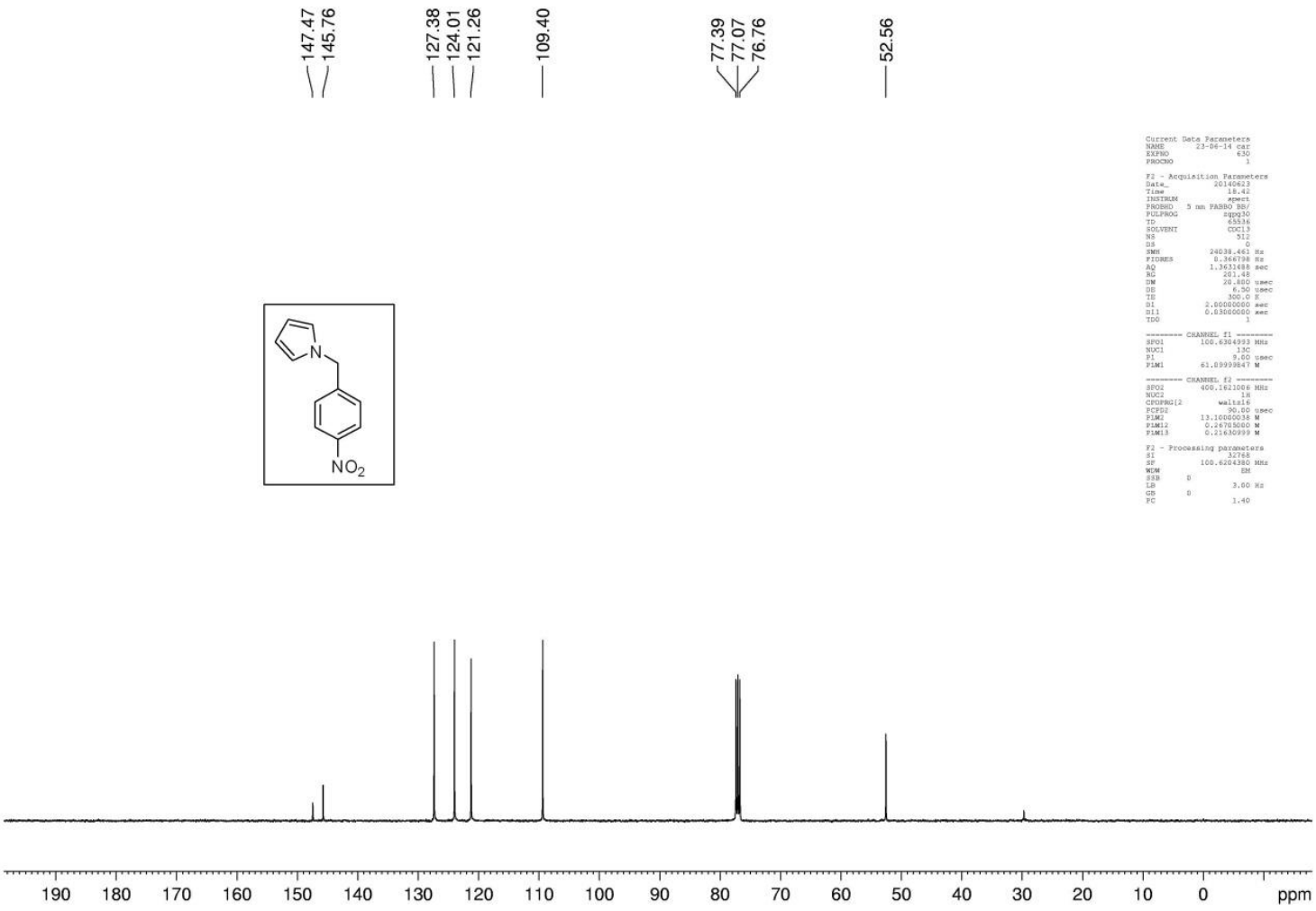


Fig: S-10 ^{13}C-NMR spectrum of 1-(4-nitrobenzyl)-1*H*-pyrrole (**2e**).

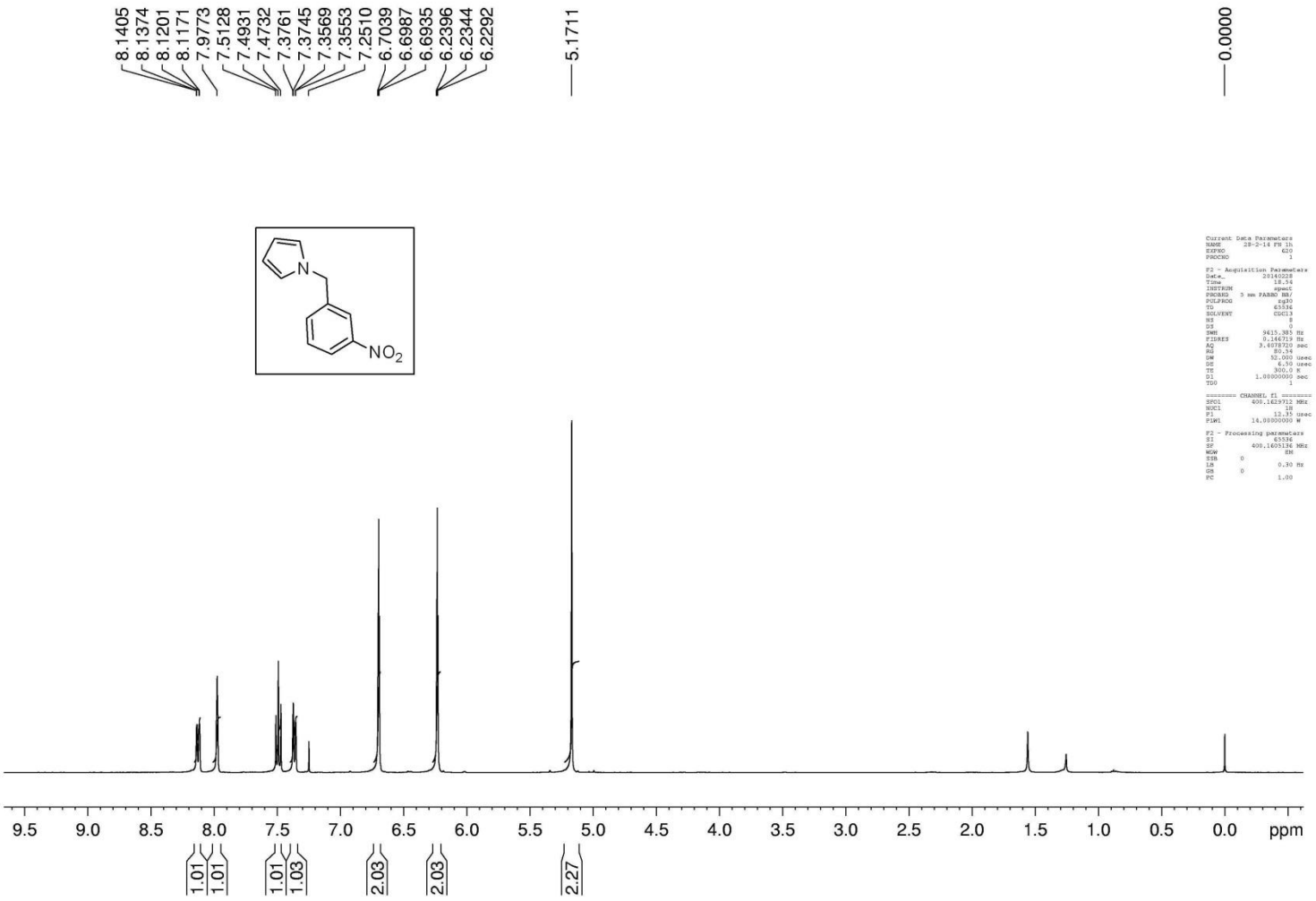


Fig: S-11 ^{1}H-NMR spectrum of 1-(3-Nitrobenzyl)-1*H*-pyrrole (**2f**).

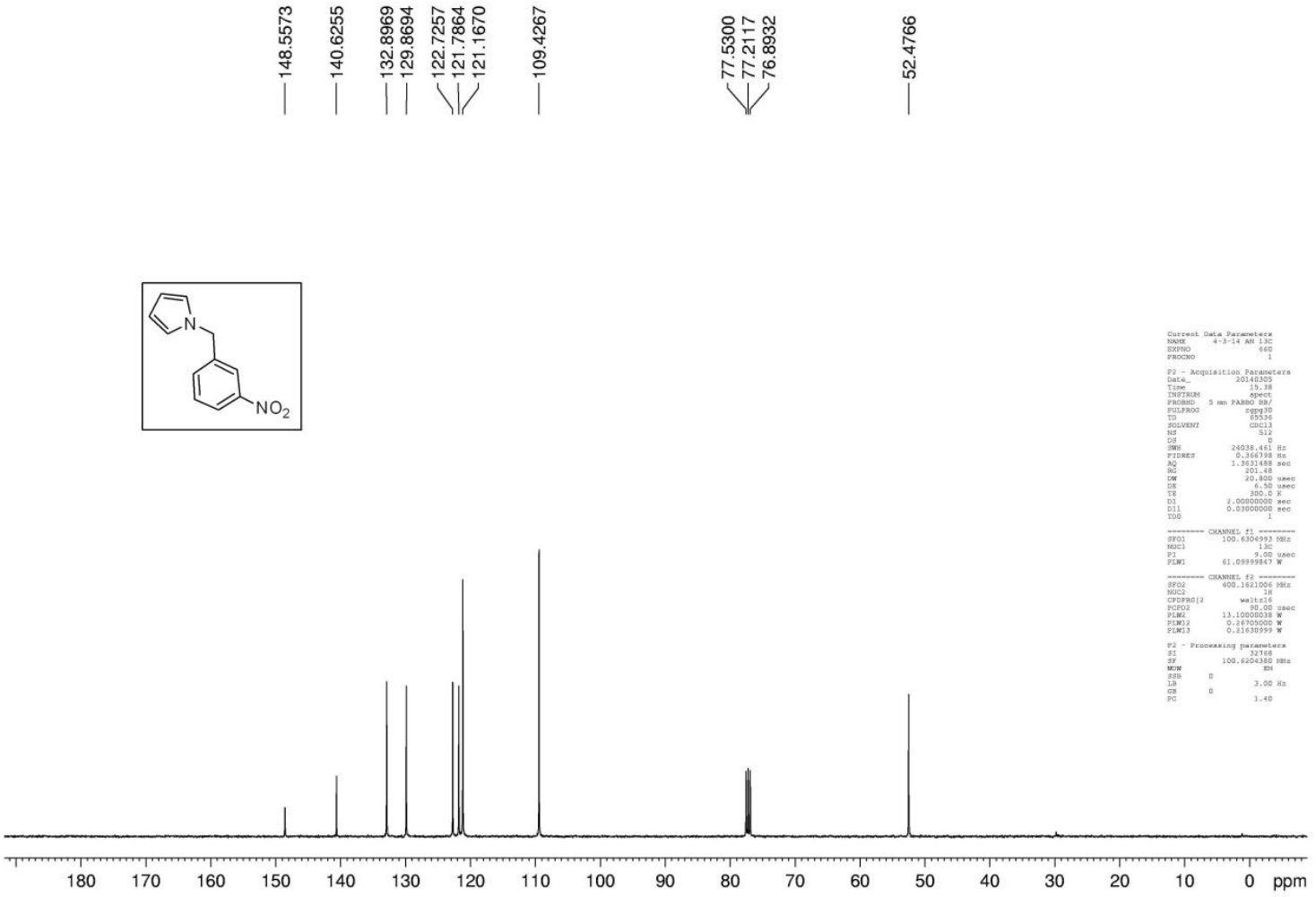


Fig: S-12 ^{13}C-NMR spectrum of 1-(3-Nitrobenzyl)-1*H*-pyrrole (**2f**).

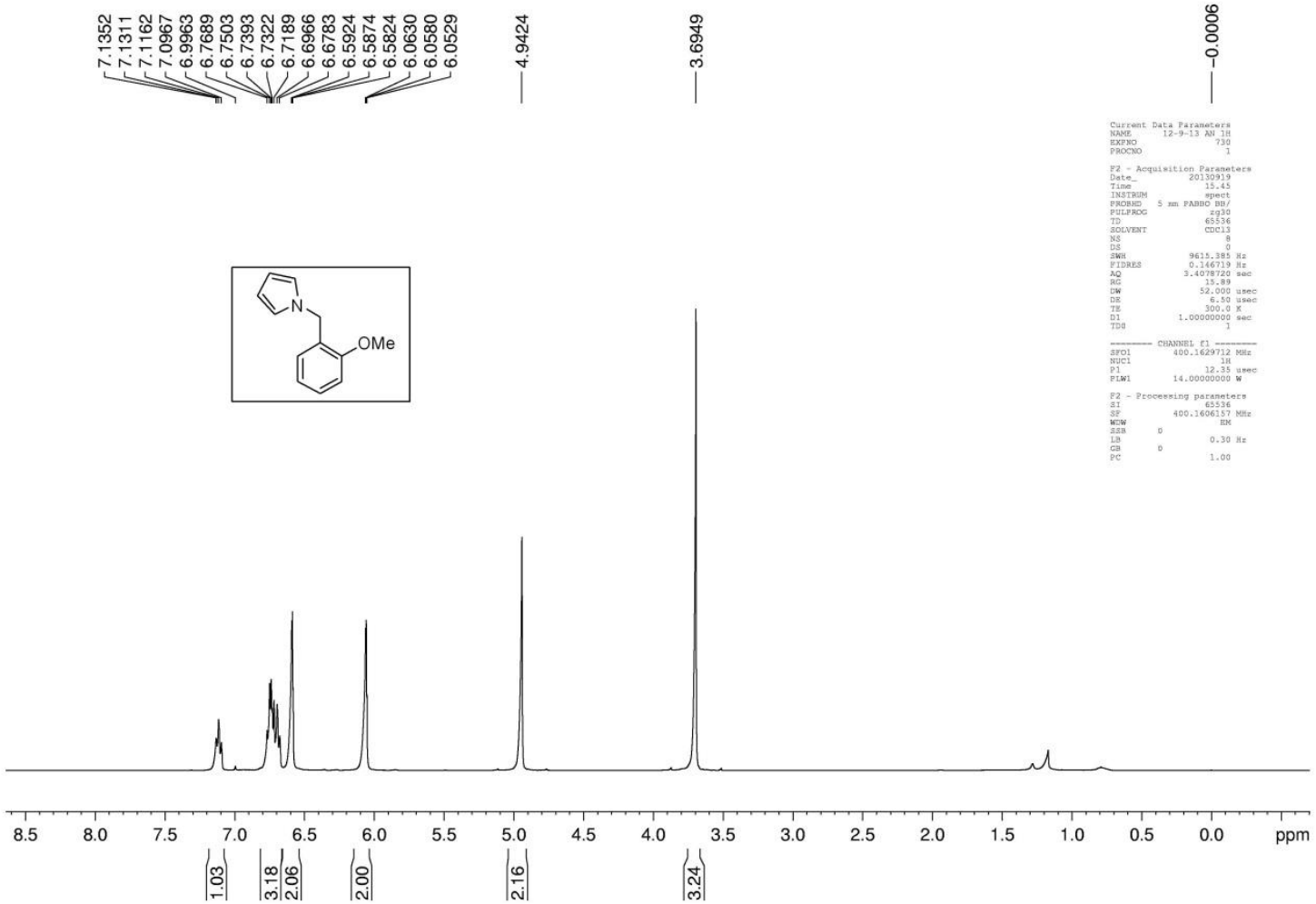


Fig: S-13 ^{1}H-NMR spectrum of 1-(2-Methoxybenzyl)-1*H*-pyrrole (**2g**).

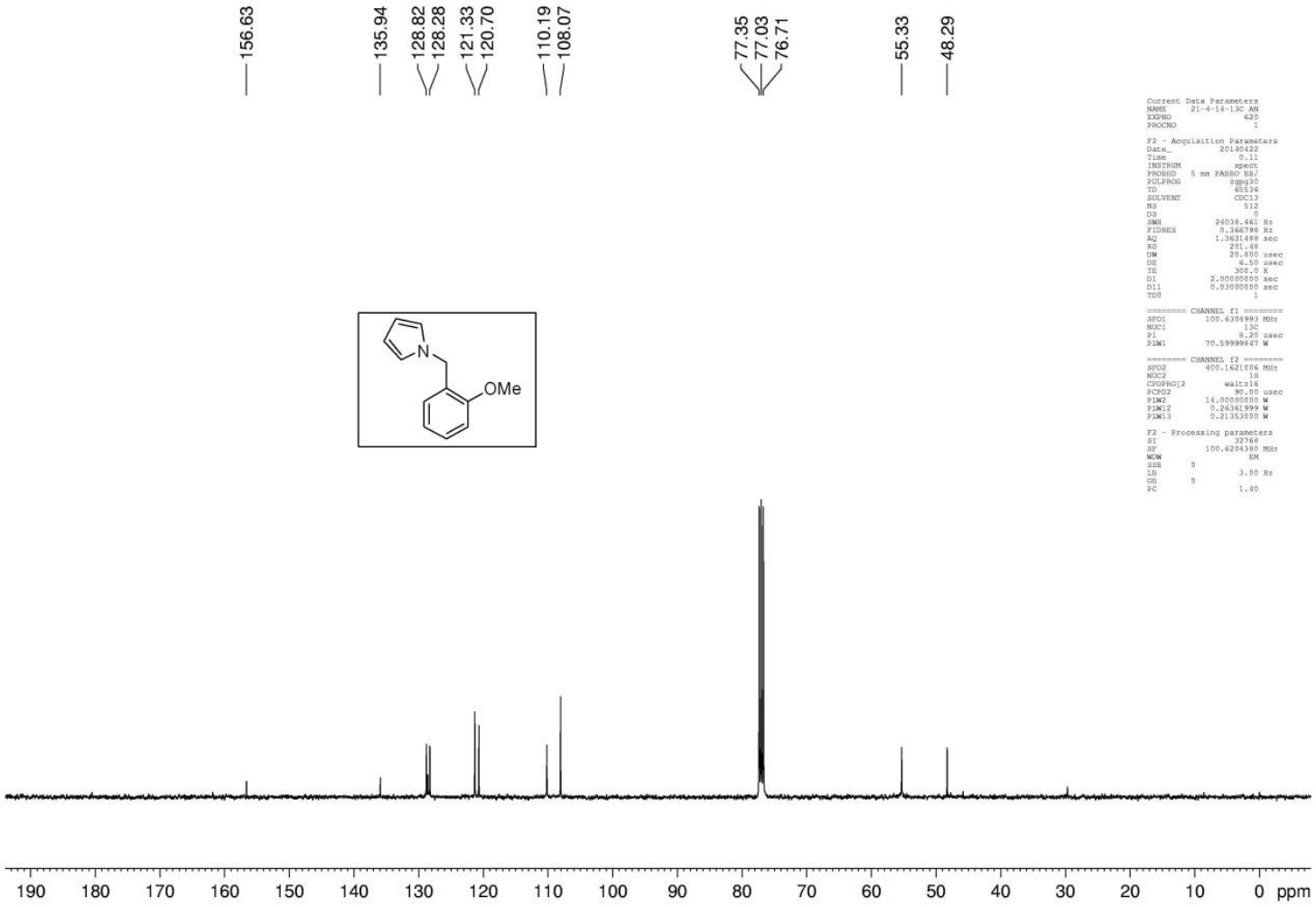


Fig: S-14 ^{13}C-NMR spectrum of 1-(2-Methoxybenzyl)-1*H*-pyrrole (**2g**).

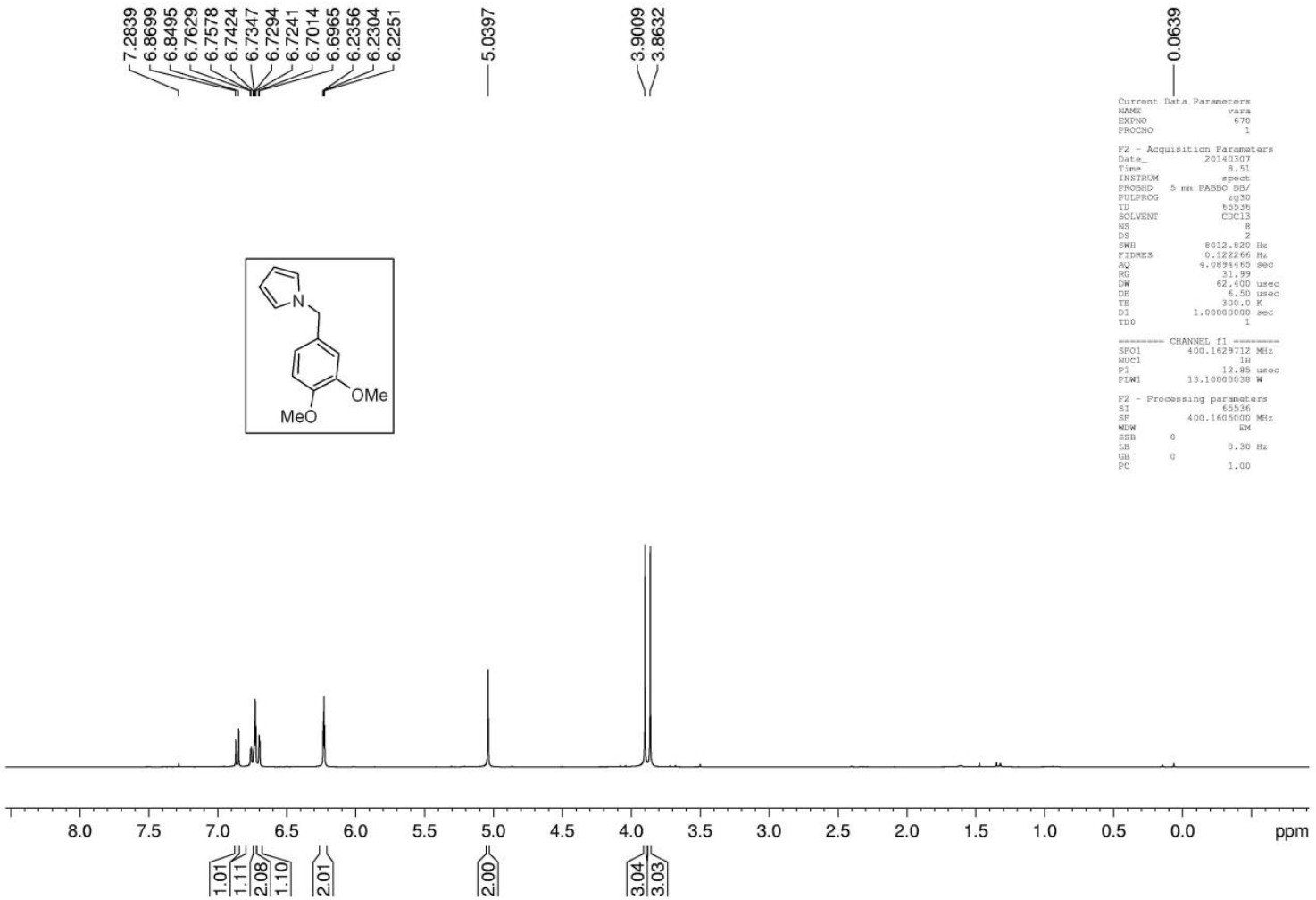


Fig: S-15 ^{1}H-NMR spectrum of 1-(3,4-Dimethoxybenzyl)-1*H*-pyrrole (**2h**).

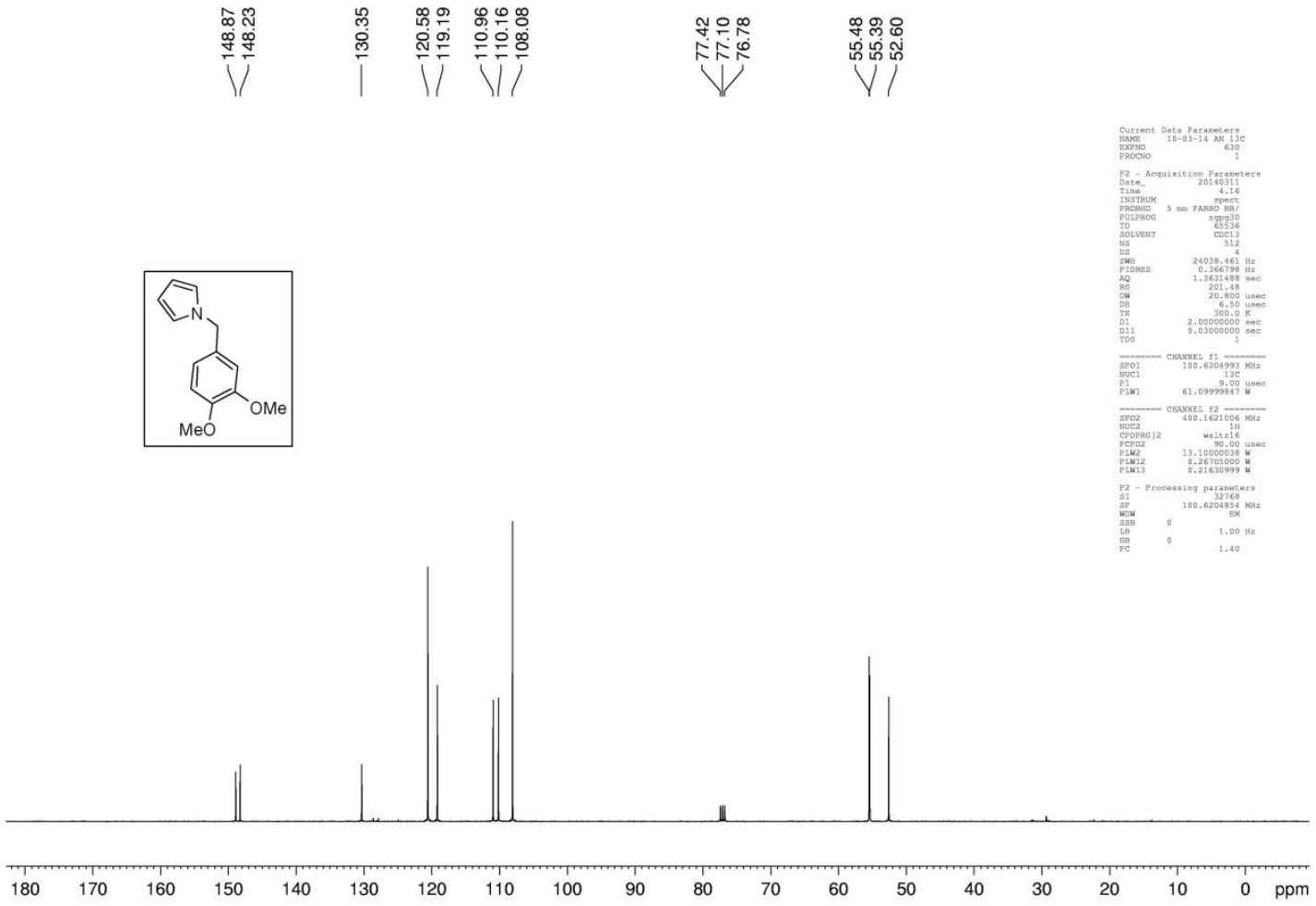


Fig: S-16 ^{13}C-NMR spectrum of 1-(3,4-Dimethoxybenzyl)-1*H*-pyrrole (**2h**).

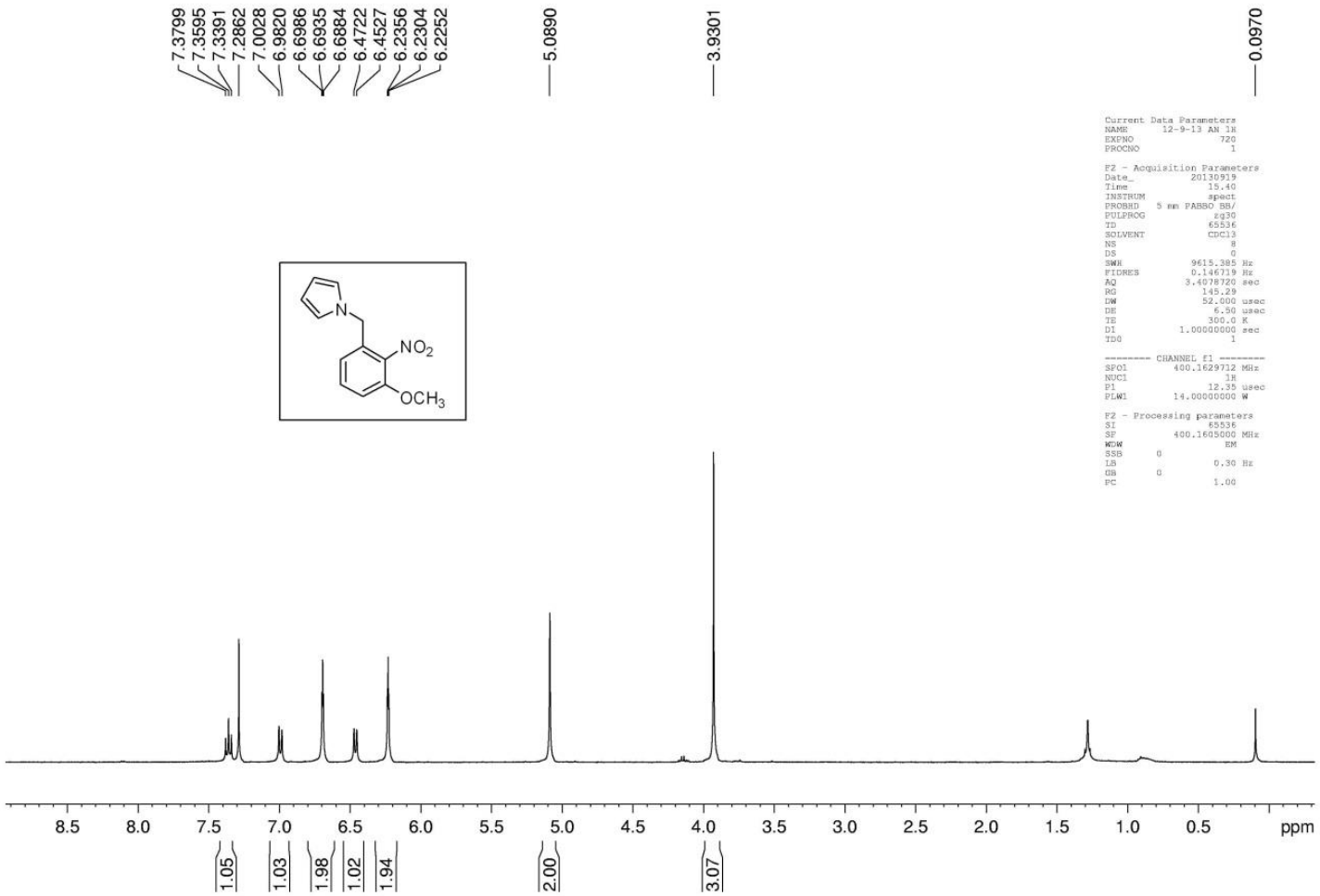


Fig: S-17 ^{1}H-NMR spectrum of 1-(3-Methoxy-2-nitrobenzyl)-1*H*-pyrrole (**2i**).

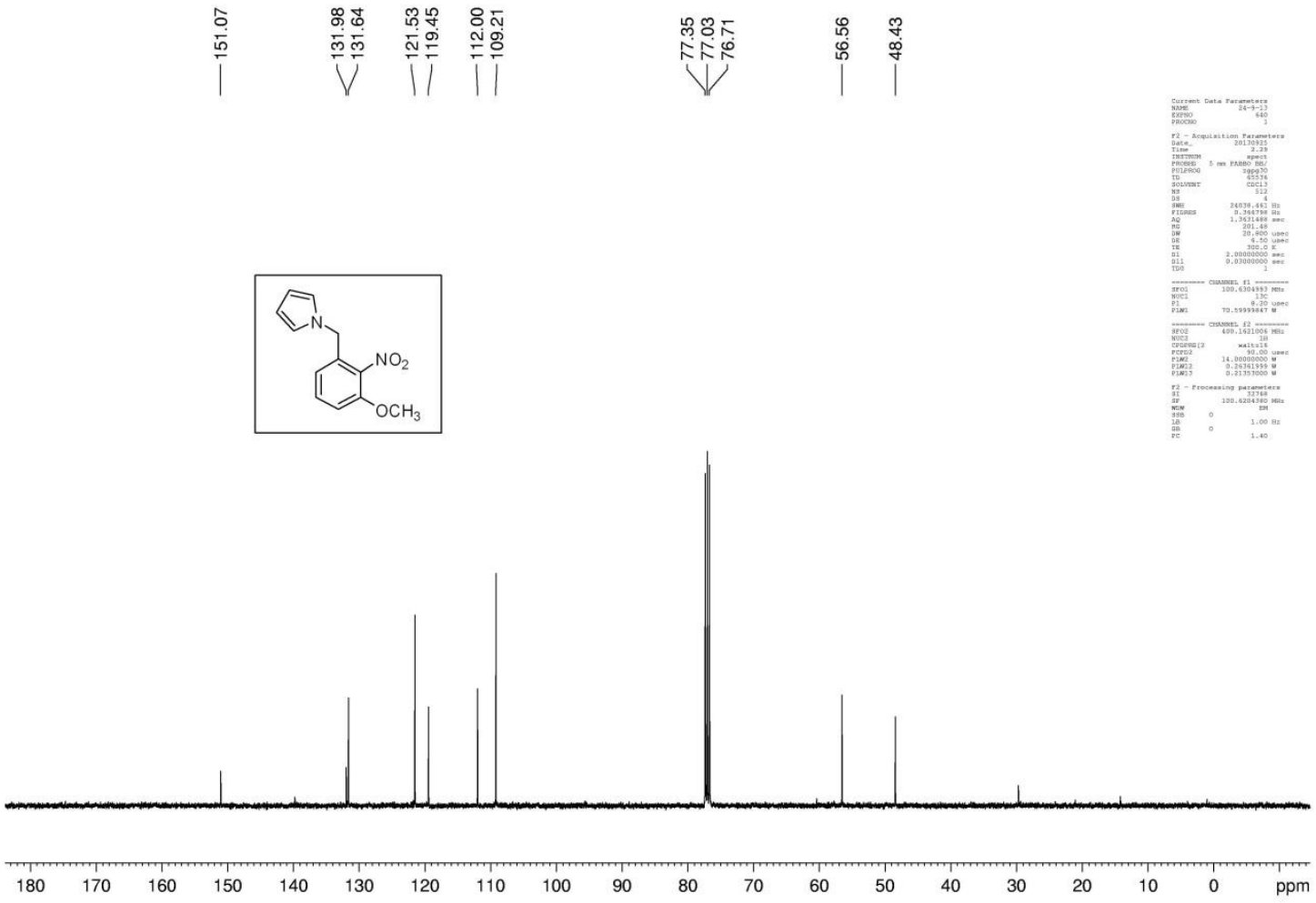


Fig: S-18 ^{13}C-NMR spectrum of 1-(3-Methoxy-2-nitrobenzyl)-1*H*-pyrrole (**2i**).

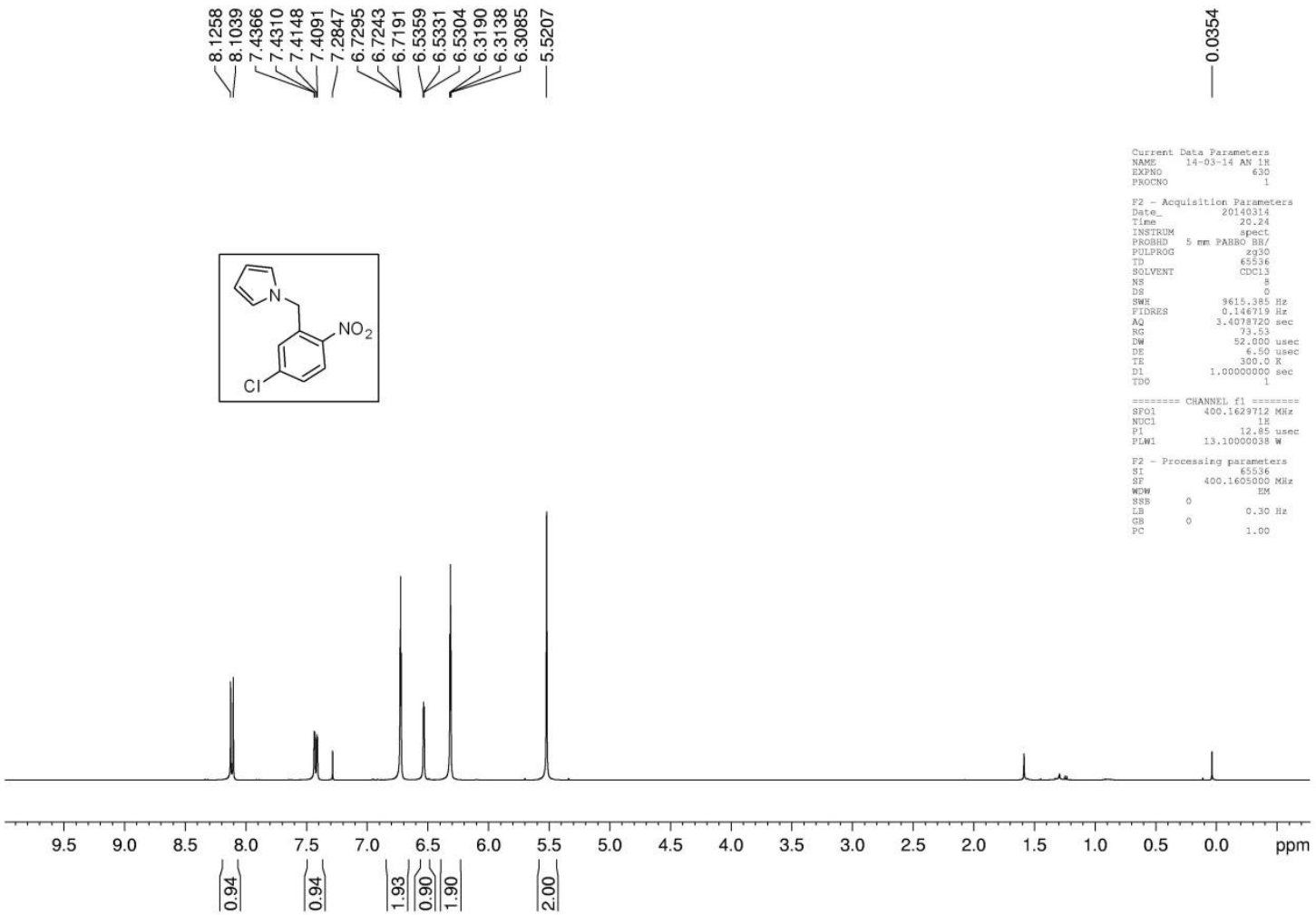


Fig: S-19 ^{1}H-NMR spectrum of 1-(5-Chloro-2-nitrobenzyl)-1*H*-pyrrole (**2j**).

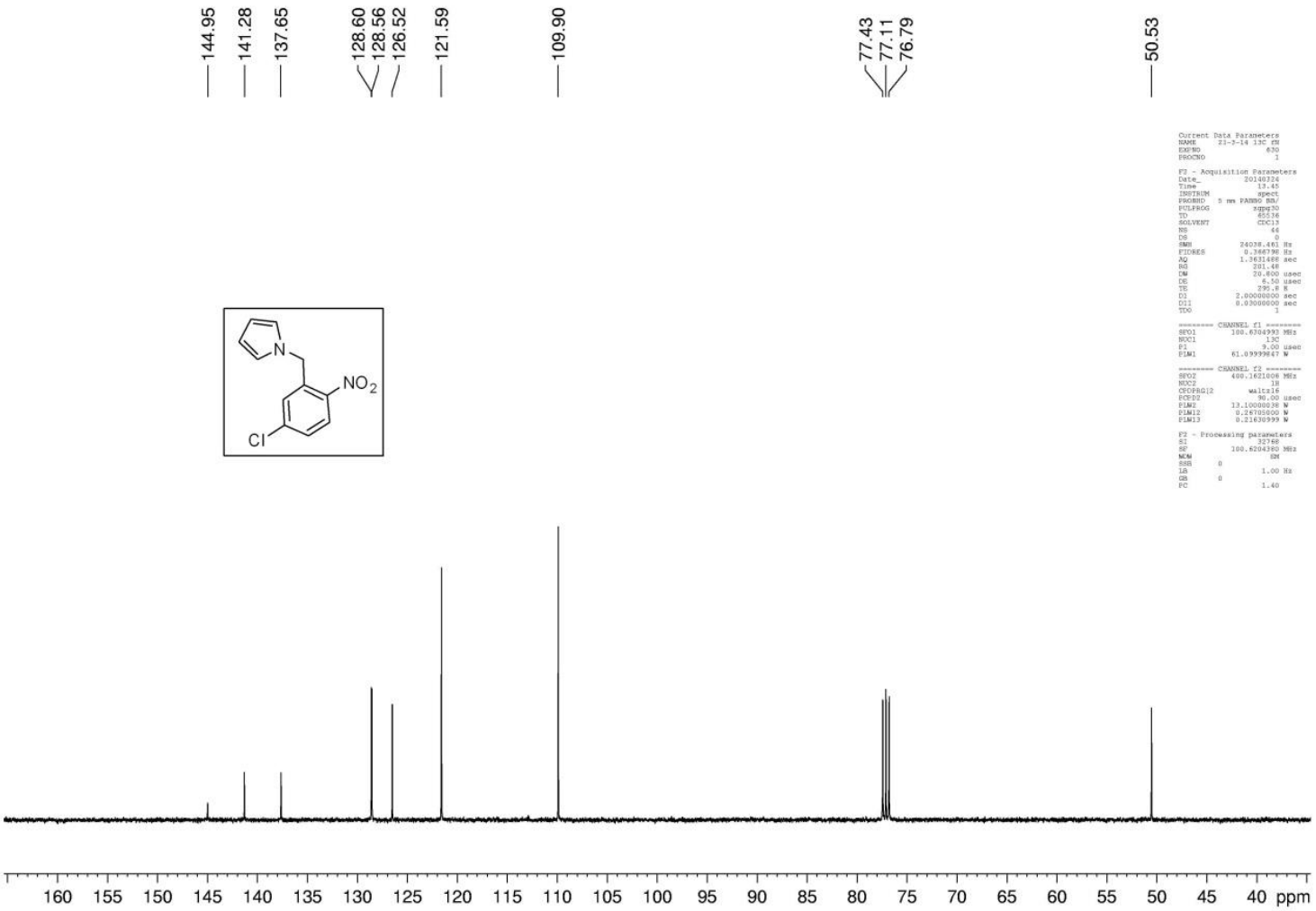


Fig: S-20 ^{13}C-NMR spectrum of 1-(5-Chloro-2-nitrobenzyl)-1*H*-pyrrole (**2j**).

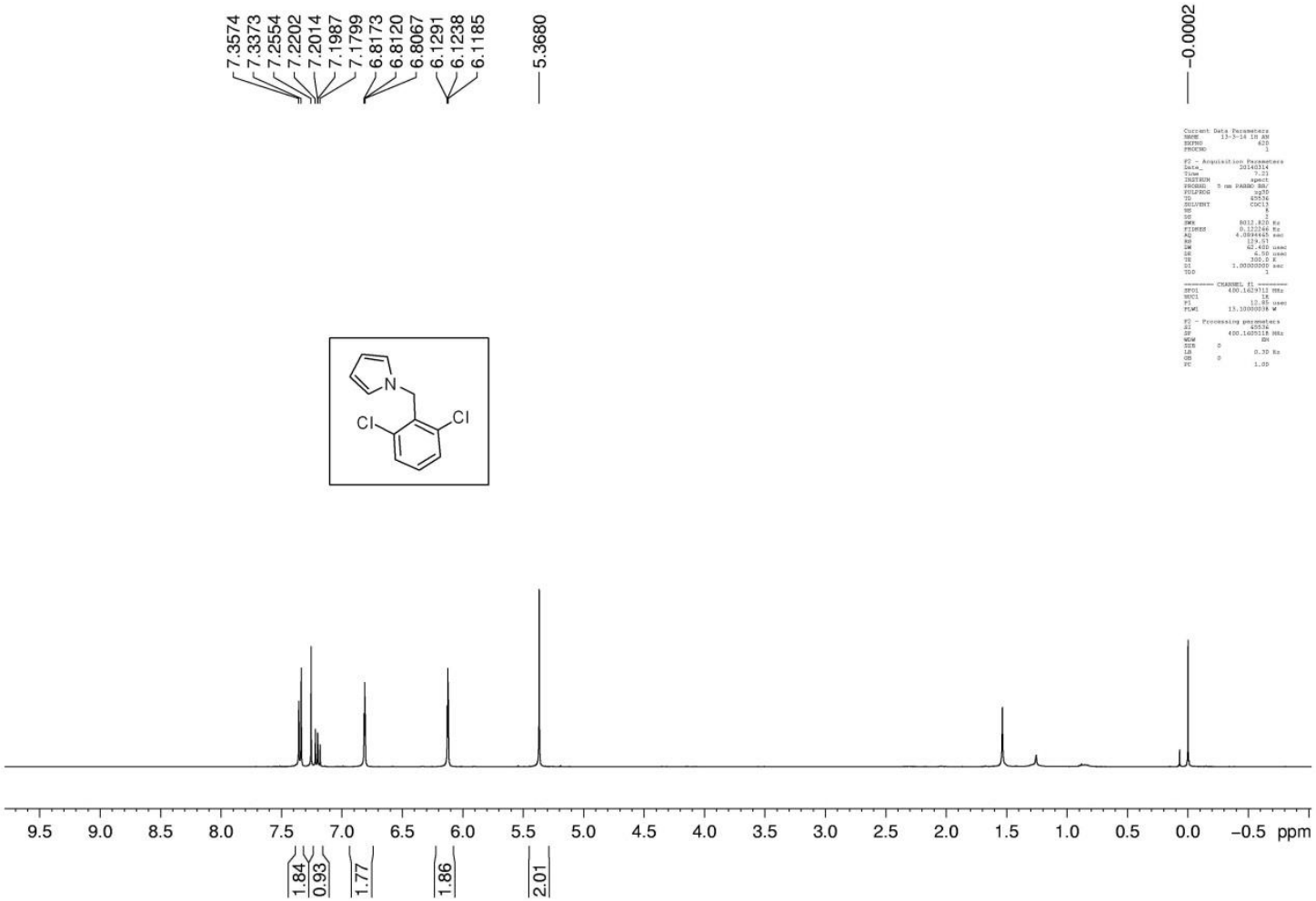


Fig: S-21 ^{1}H-NMR spectrum of 1-(2,6-Dichlorobenzyl)-1*H*-pyrrole (**2k**).

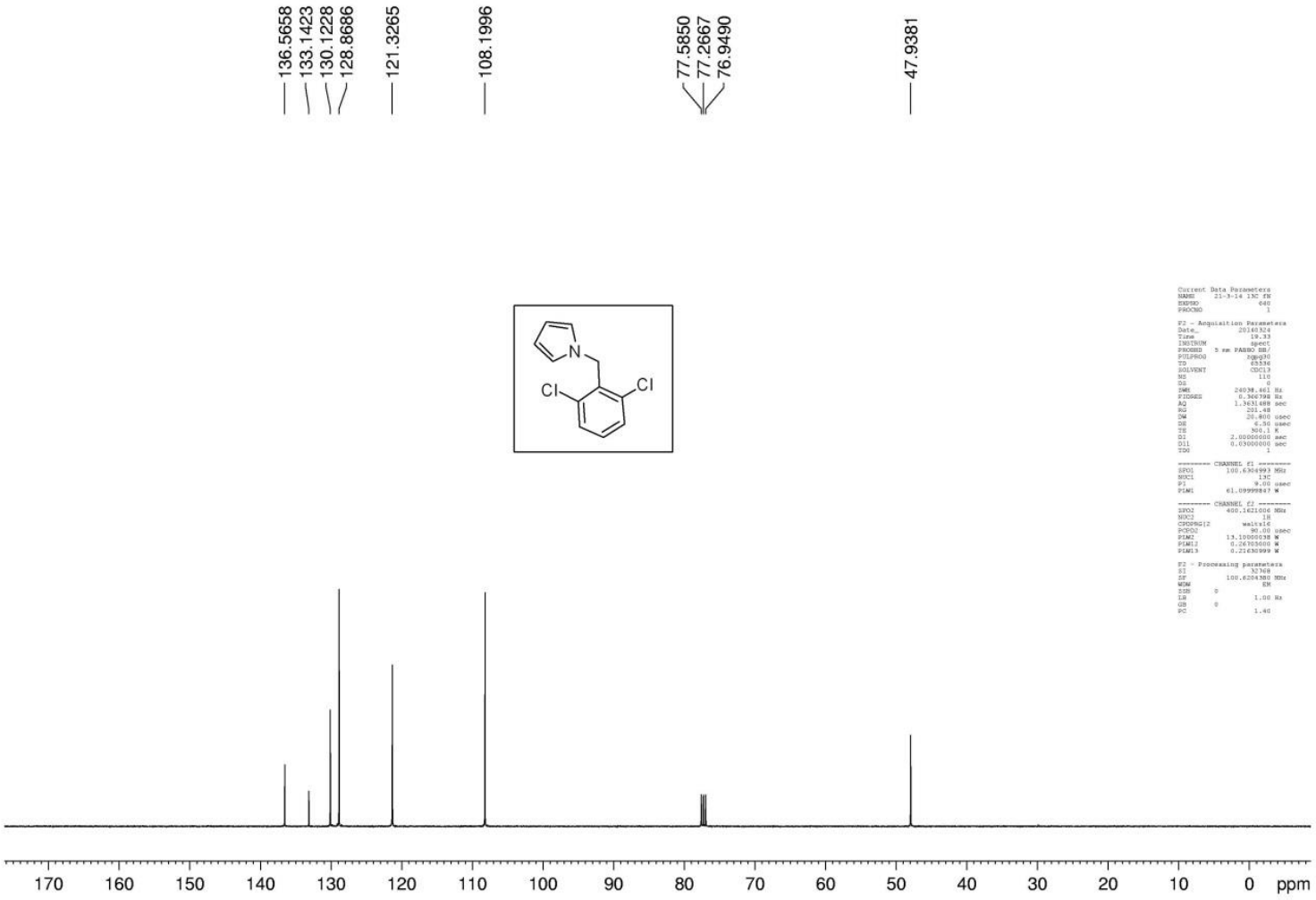


Fig: S-22 ^{13}C-NMR spectrum of 1-(2,6-Dichlorobenzyl)-1*H*-pyrrole (**2k**).

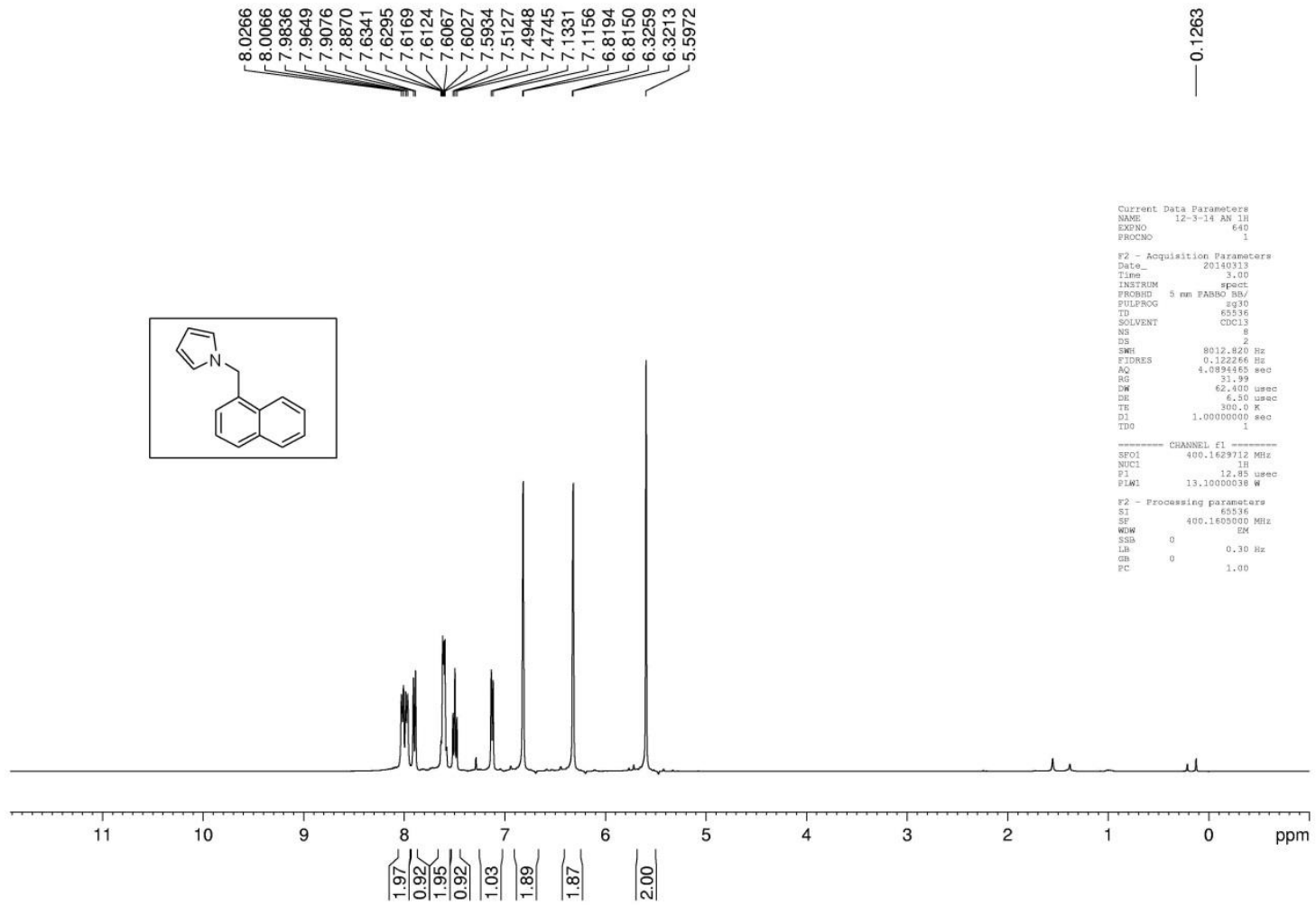


Fig: S-23 ^{1}H-NMR spectrum of 1-(Naphthalen-1-ylmethyl)-1*H*-pyrrole (**2l**).

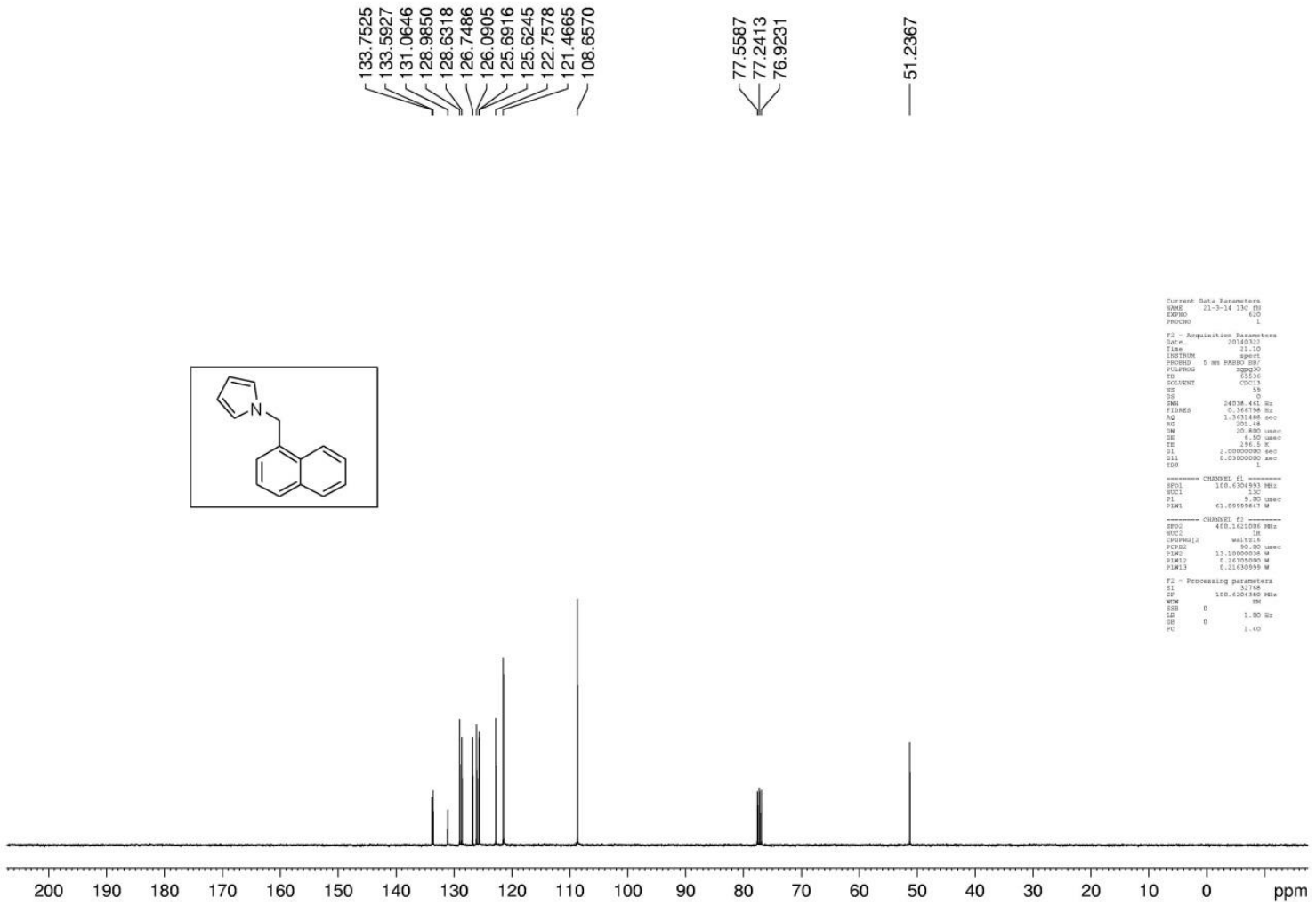


Fig: S-24 ^{13}C-NMR spectrum of 1-(Naphthalen-1-ylmethyl)-1*H*-pyrrole (**2l**).

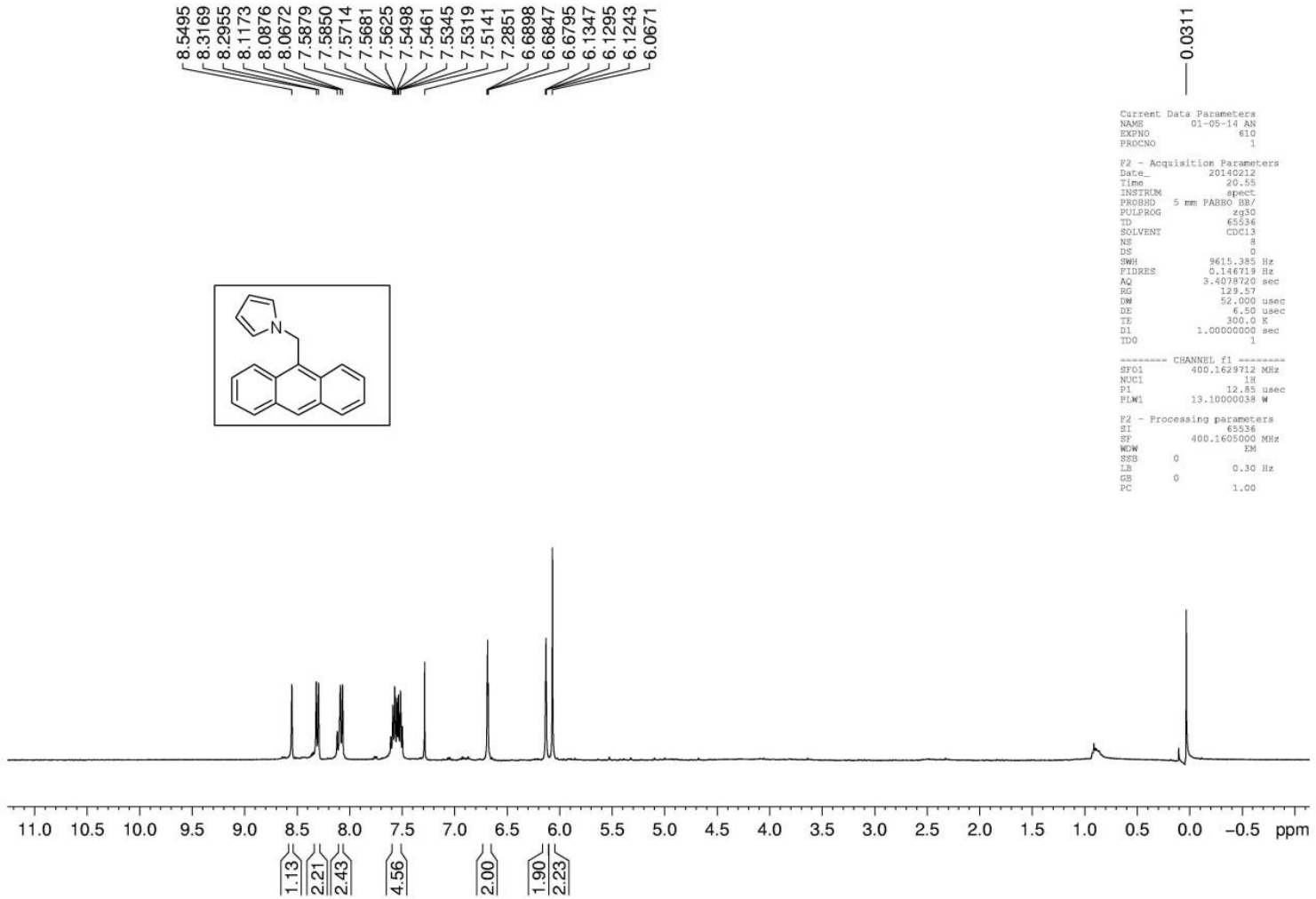


Fig: S-25 ^{1}H-NMR spectrum of 1-(Anthracen-9-ylmethyl)-1*H*-pyrrole (**2m**).

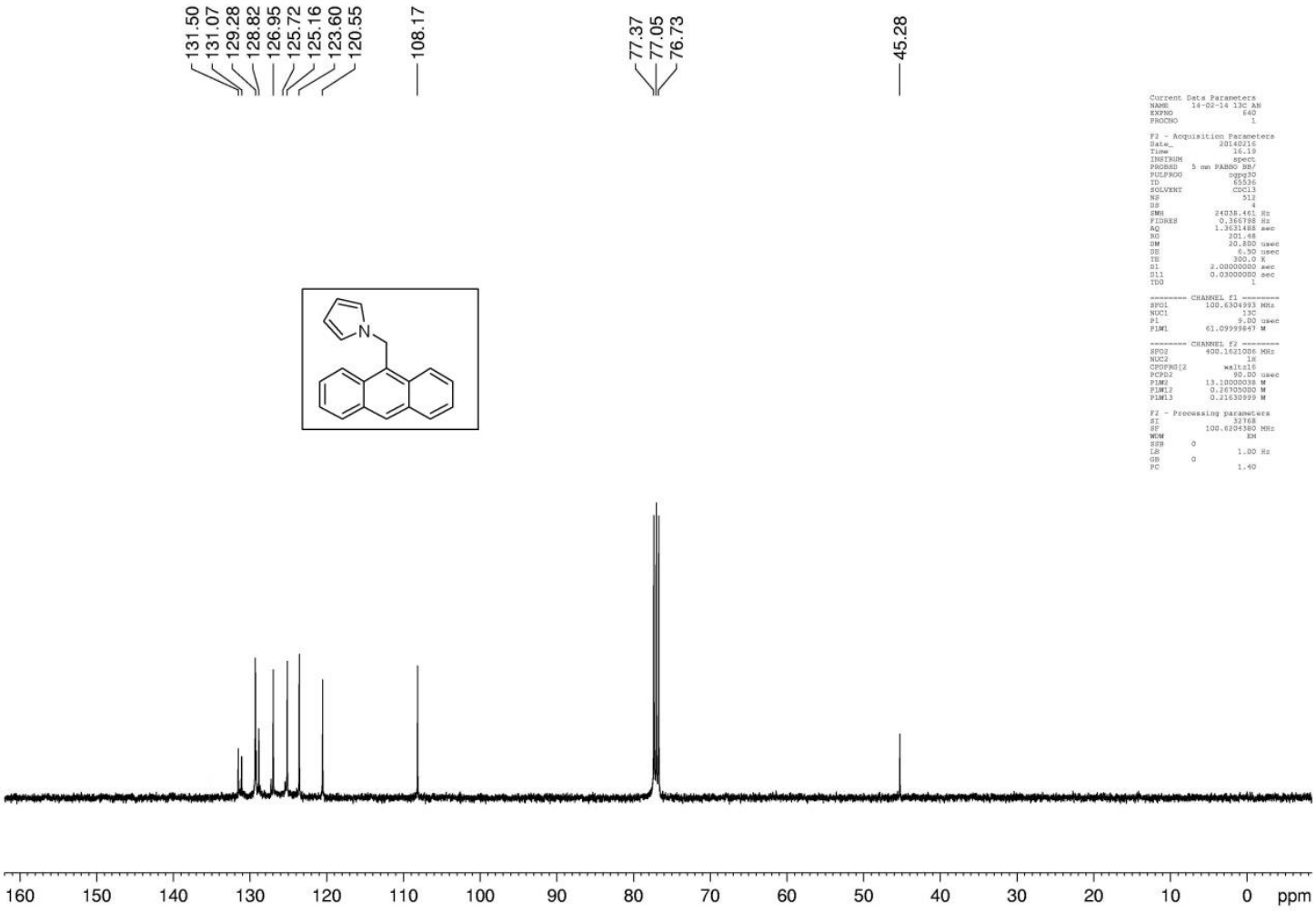


Fig: S-26 ^{13}C-NMR spectrum of 1-(Anthracen-9-ylmethyl)-1*H*-pyrrole (**2m**).

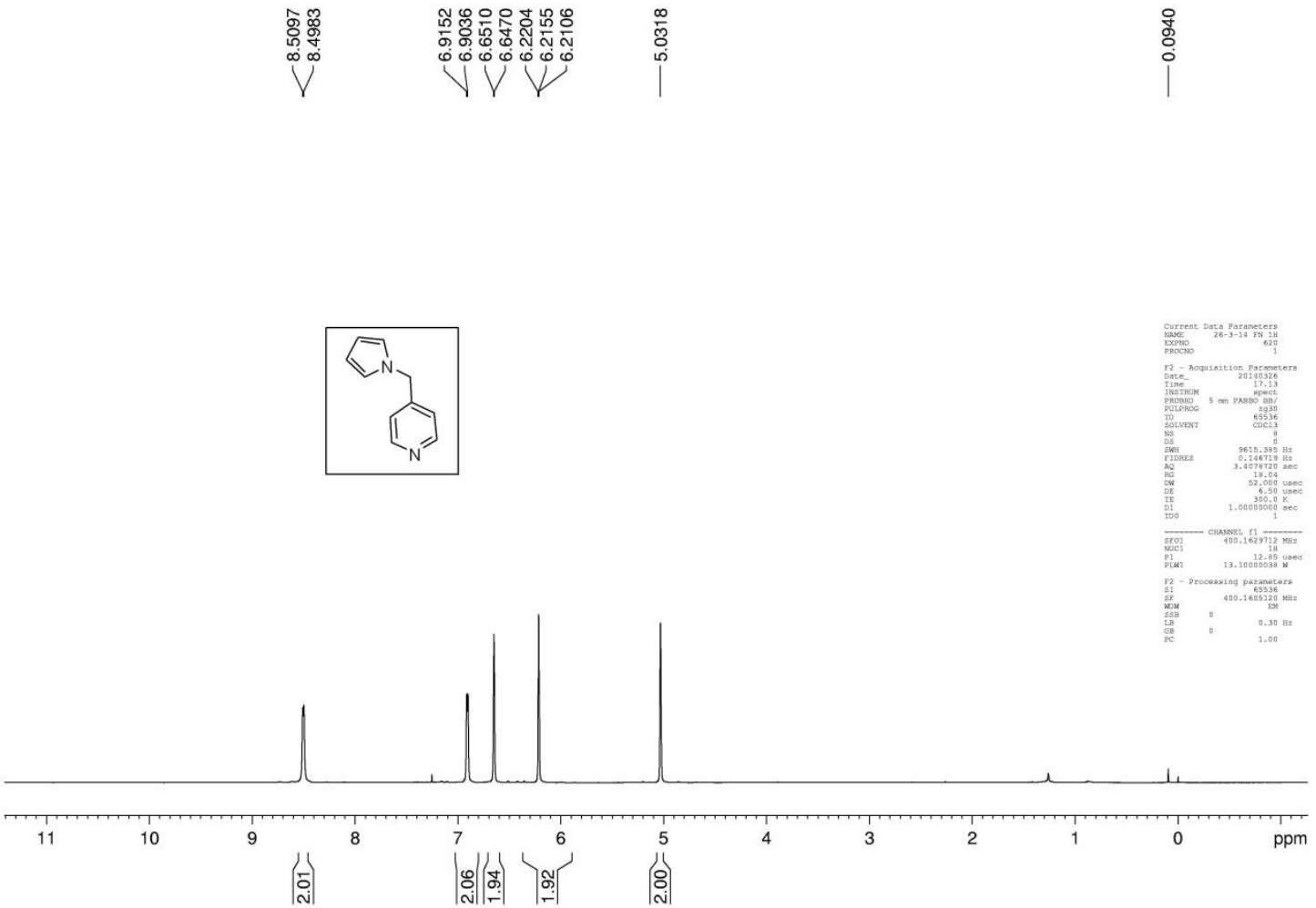


Fig: S-27 ^{1}H-NMR spectrum of 4-((1*H*-pyrrol-1-yl)methyl)pyridine (**2n**).

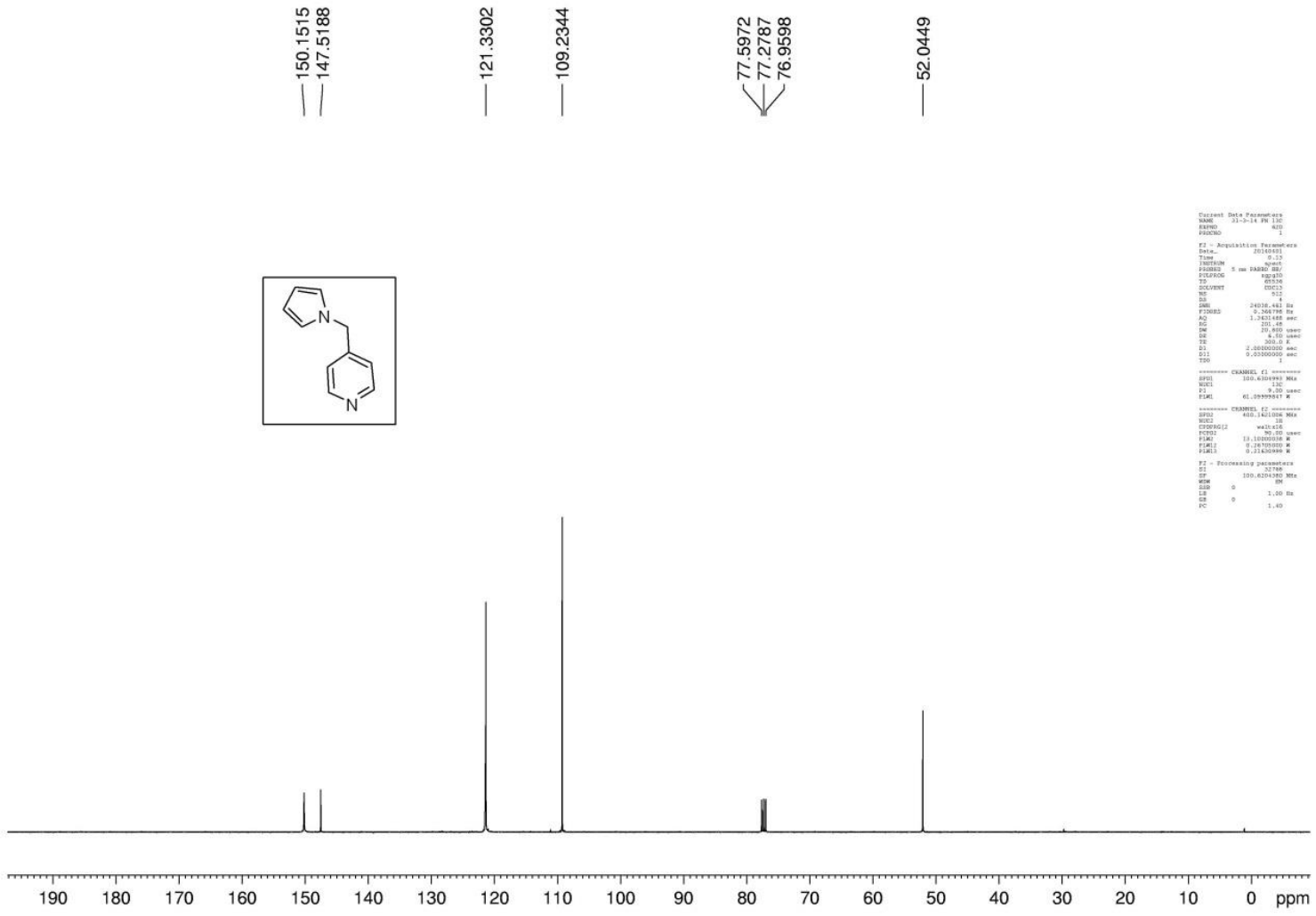


Fig: S-28 ^{13}C-NMR spectrum of 4-((1*H*-pyrrol-1-yl)methyl)pyridine (**2n**).

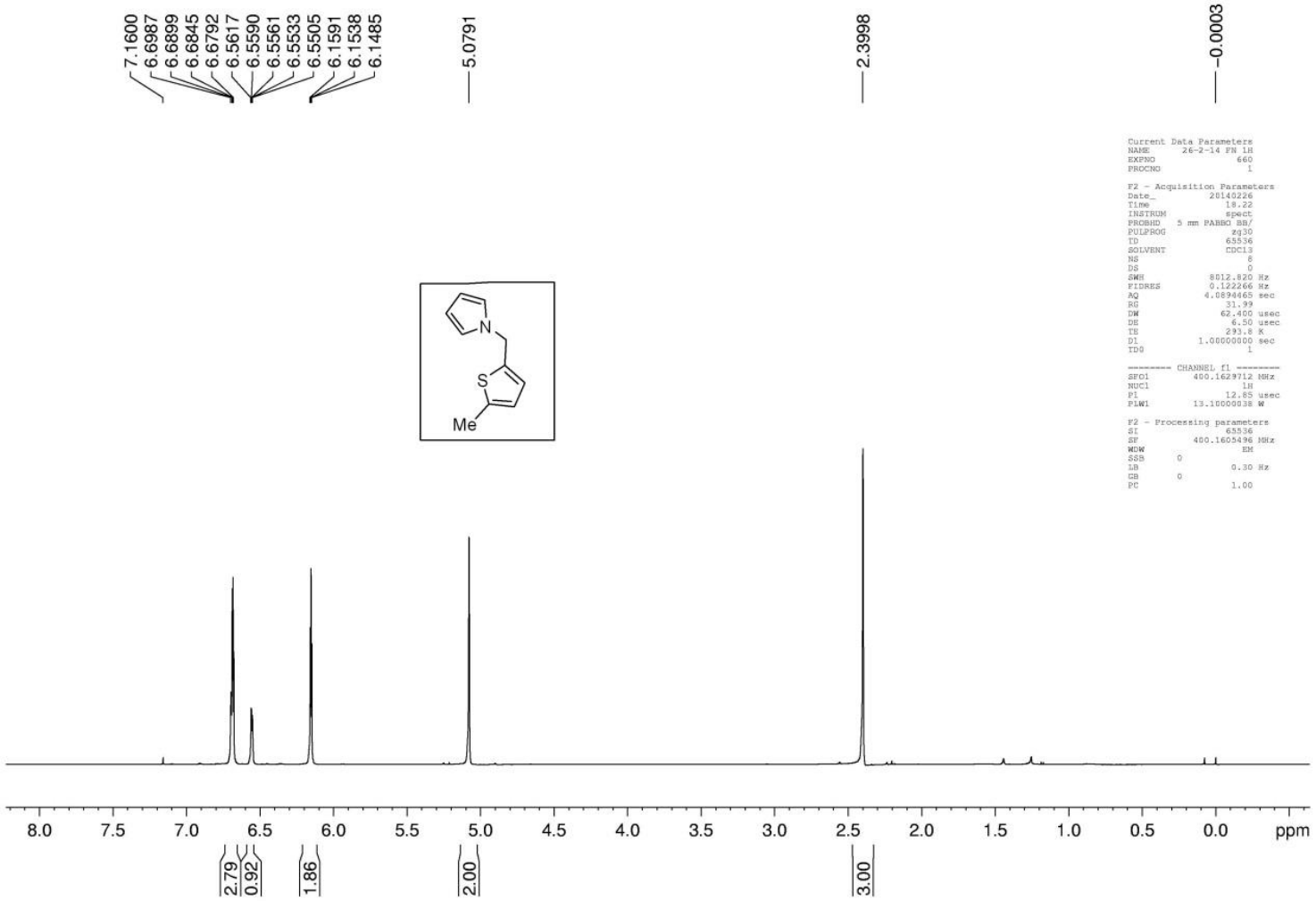


Fig: S-29 ^{1}H-NMR spectrum of 1-((5-Methylthiophen-2-yl)methyl)-1*H*-pyrrole (**2o**).

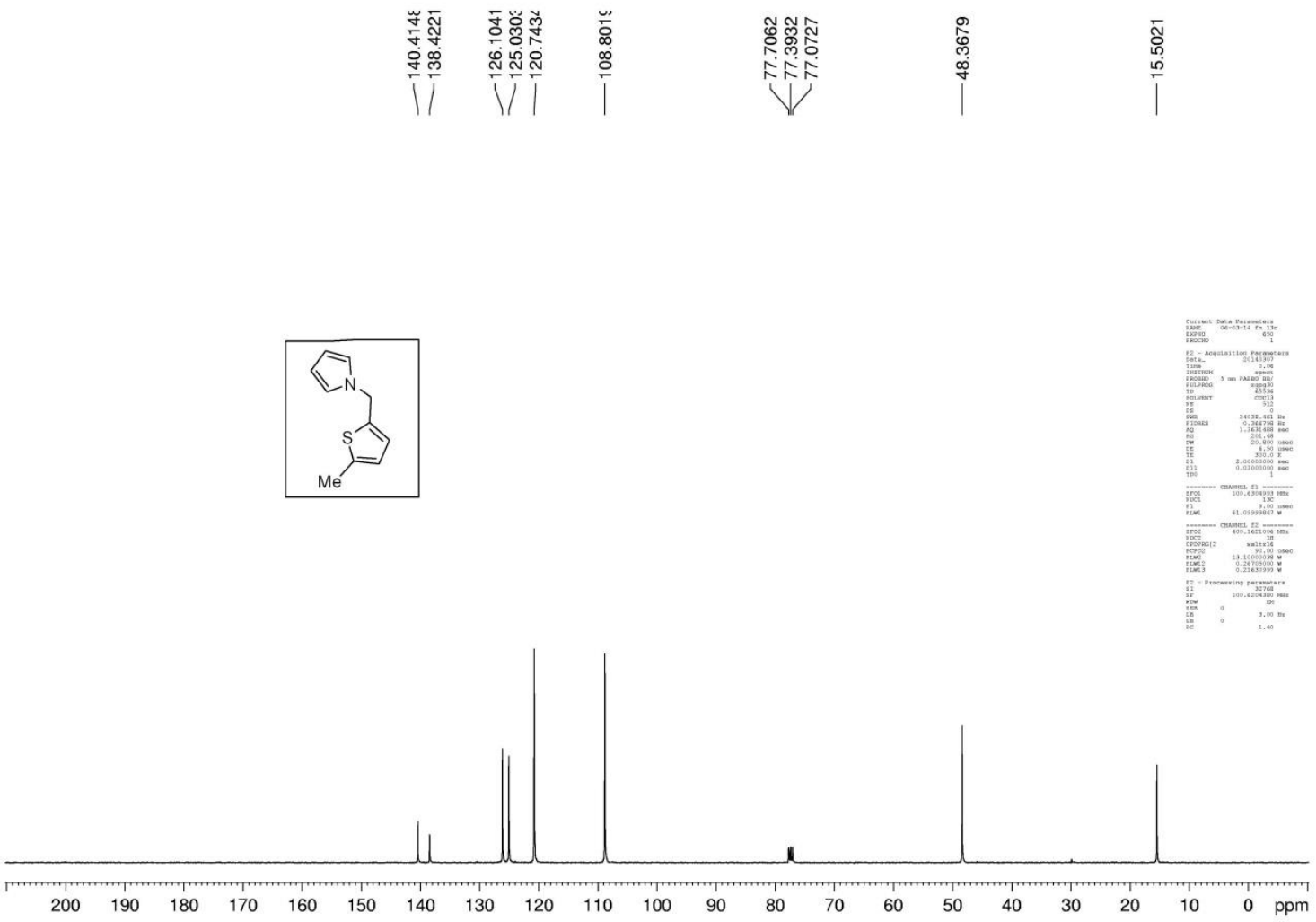


Fig: S-30 ^{13}C-NMR spectrum of 1-((5-Methylthiophen-2-yl)methyl)-1*H*-pyrrole (**2o**).

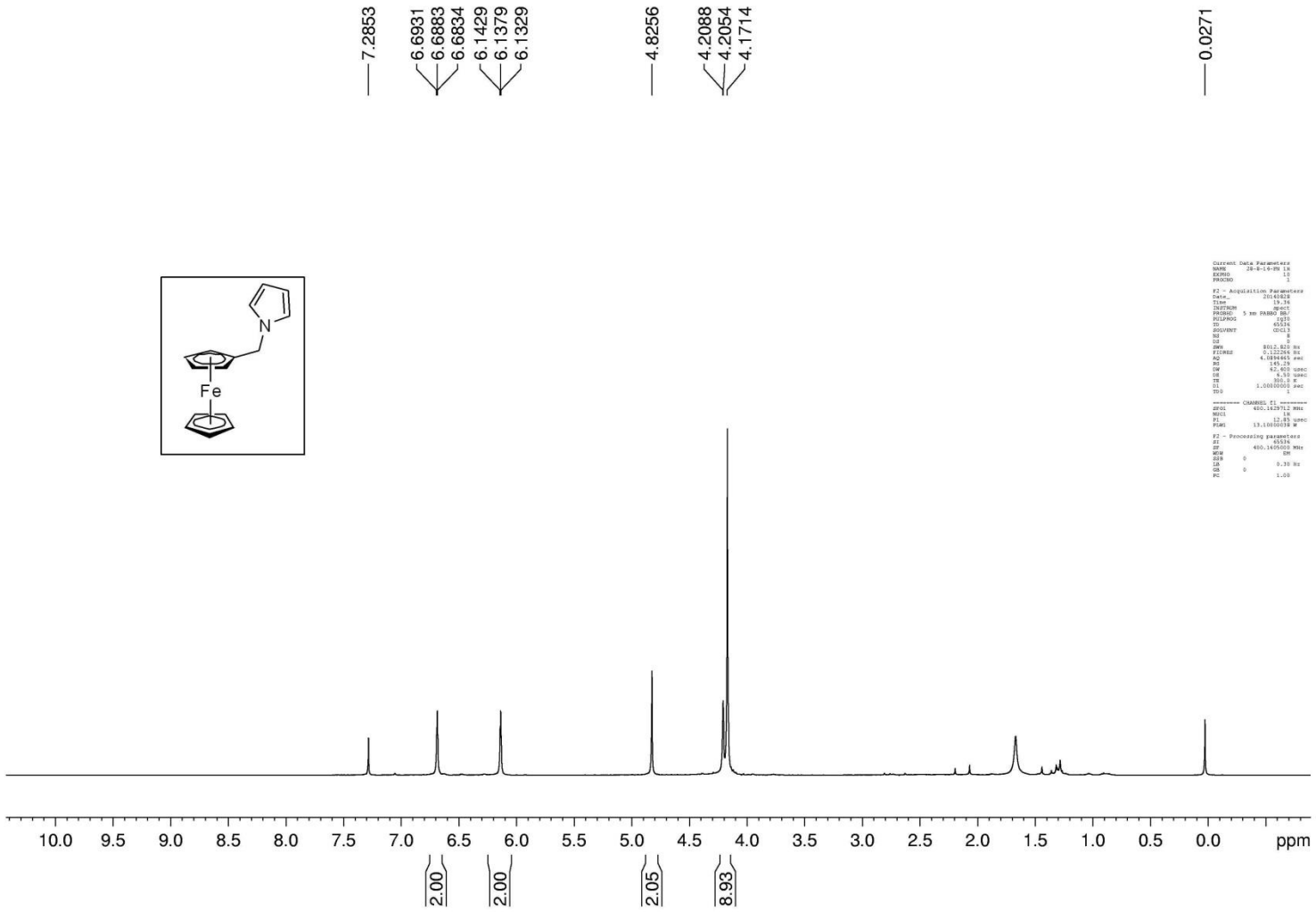


Fig: S-31 ^{1}H-NMR spectrum of Ferrocene (**2p**).

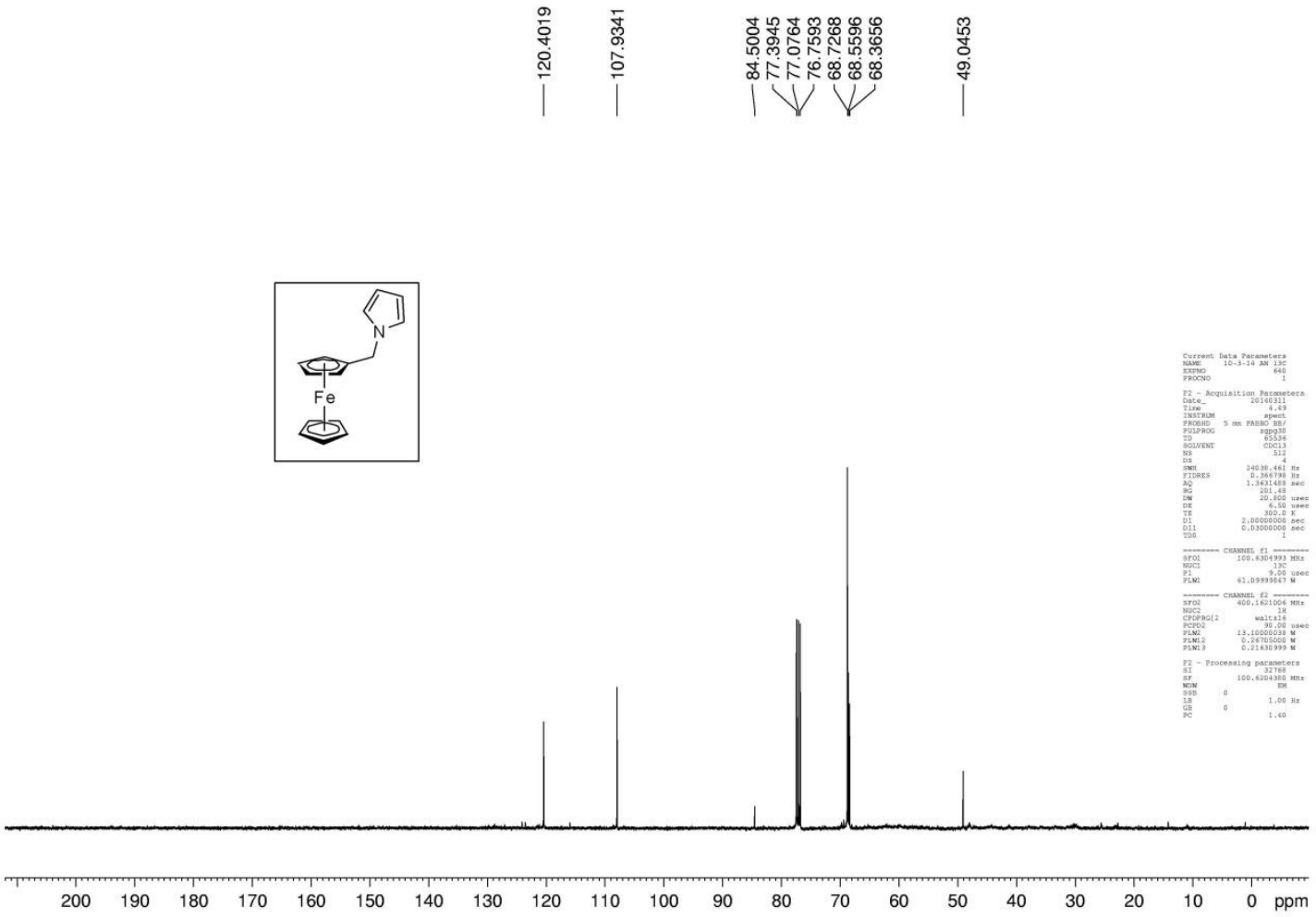


Fig: S-32 ^{13}C-NMR spectrum of Ferrocene (**2p**).

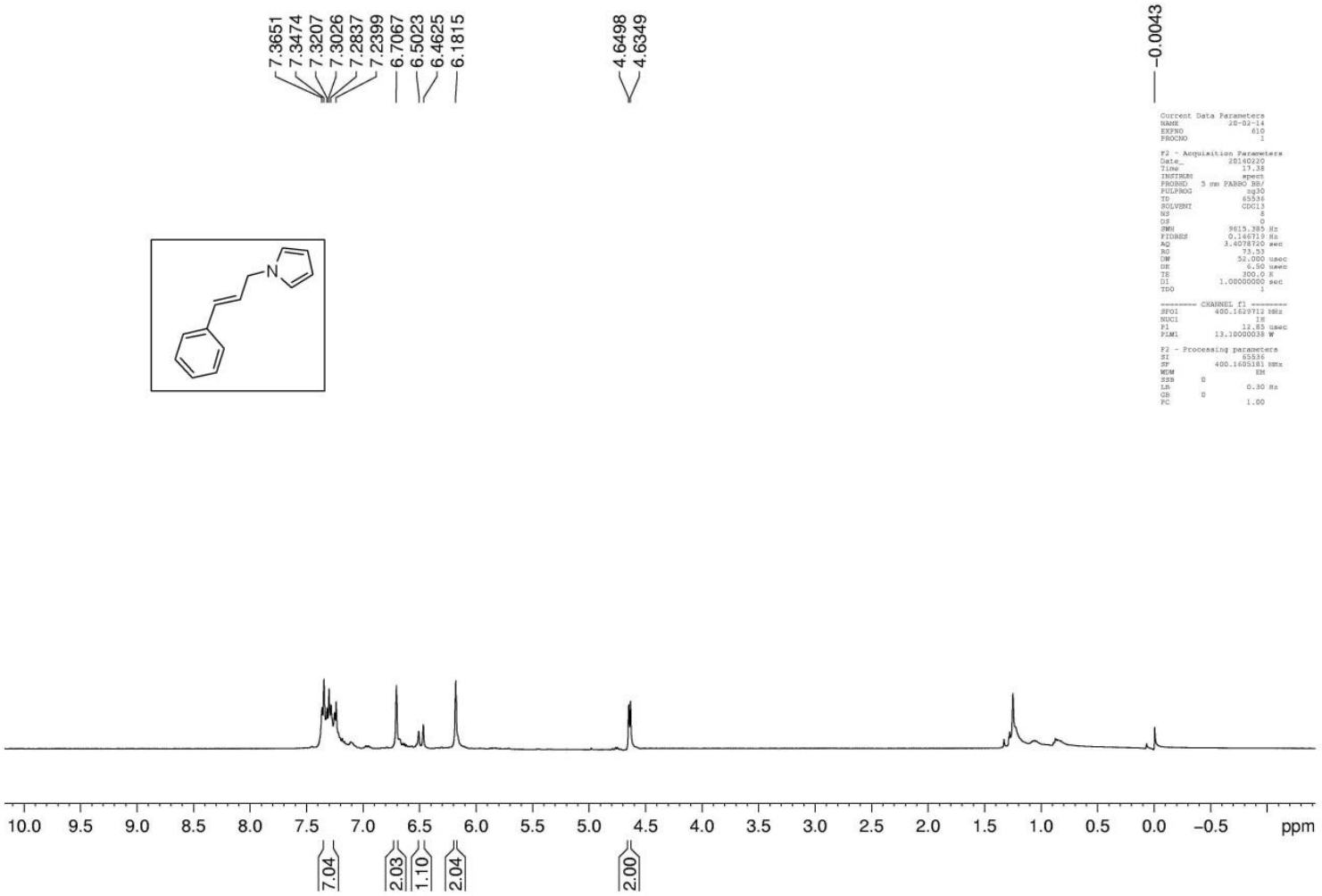


Fig: S-33 ^{1}H-NMR spectrum of 1-Cinnamyl-1*H*-pyrrole (**2q**).

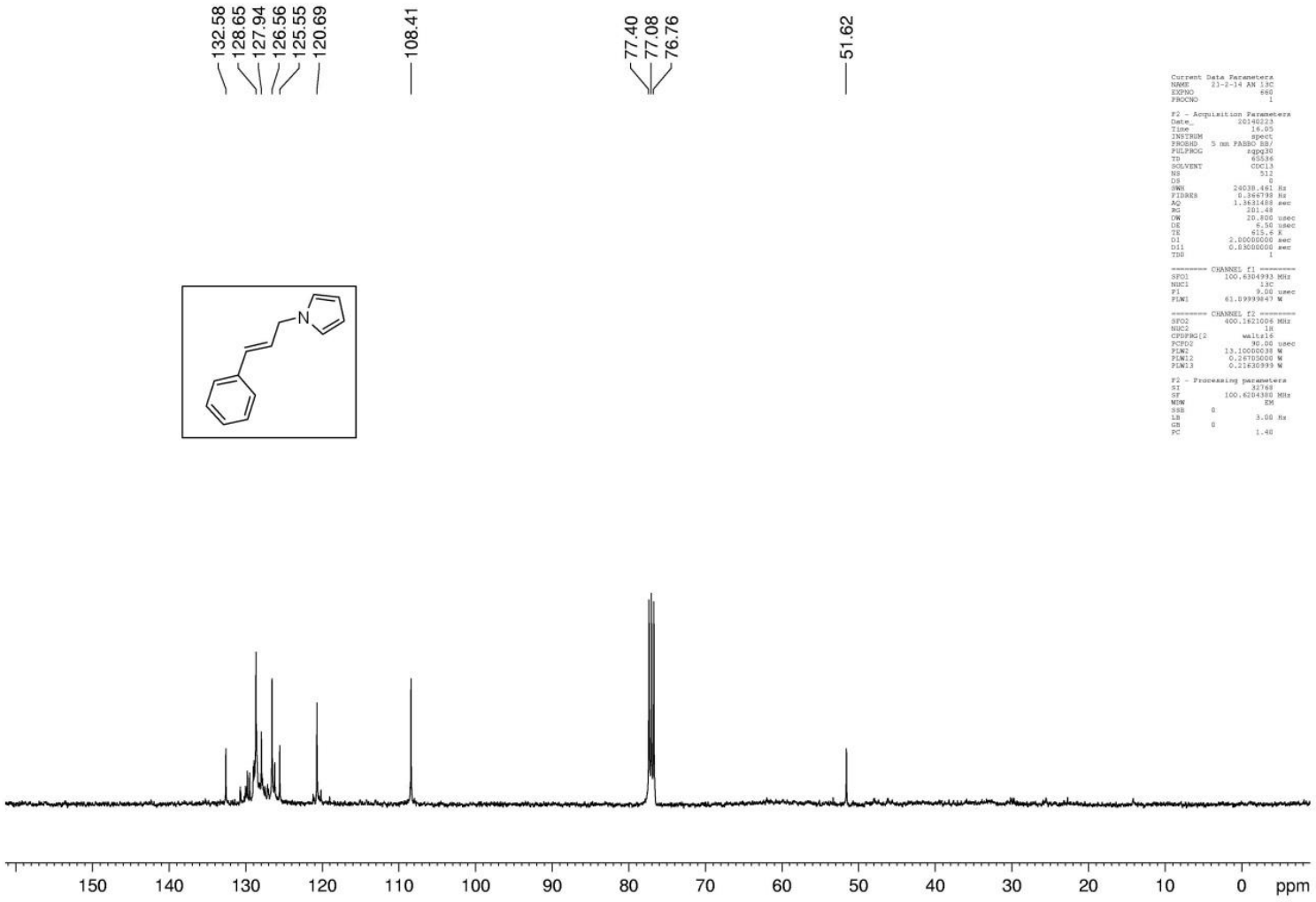


Fig: S-34 ^{13}C-NMR spectrum of 1-Cinnamyl-1*H*-pyrrole (**2q**).

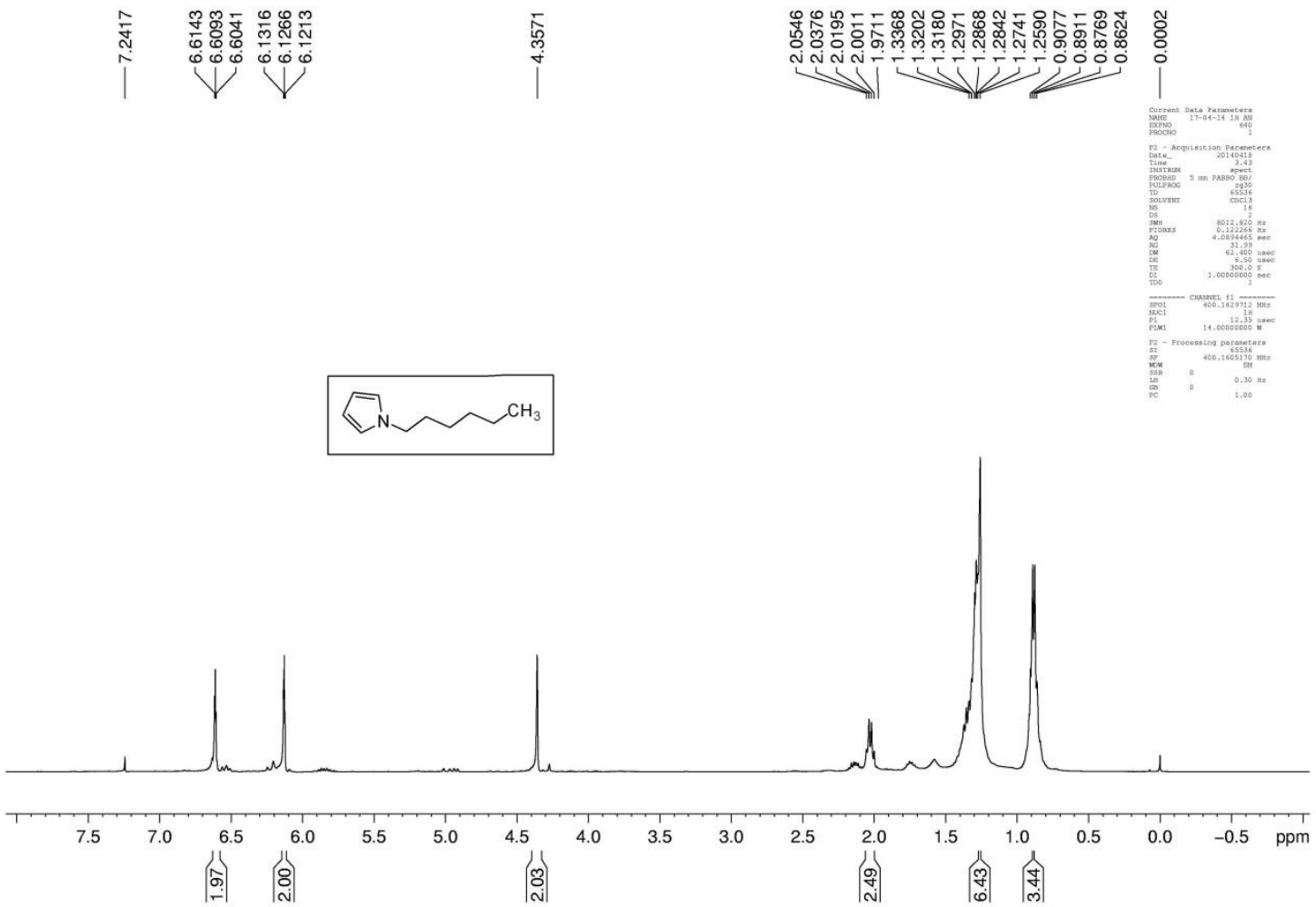


Fig: S-35 ^{1}H-NMR spectrum of 1-Hexyl-1*H*-pyrrole (**2r**).

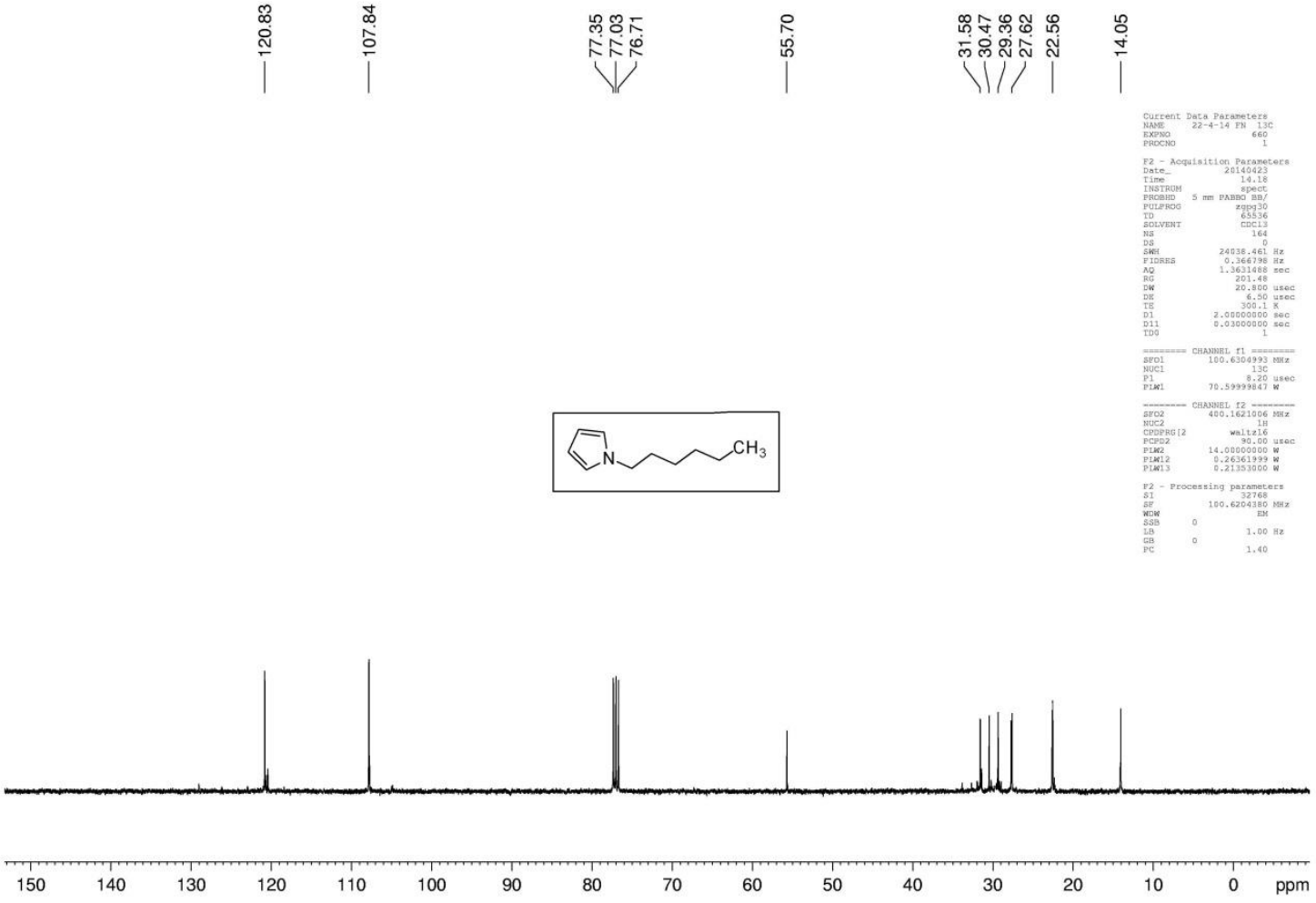


Fig: S-36 ^{13}C-NMR spectrum of 1-Hexyl-1*H*-pyrrole (**2r**).

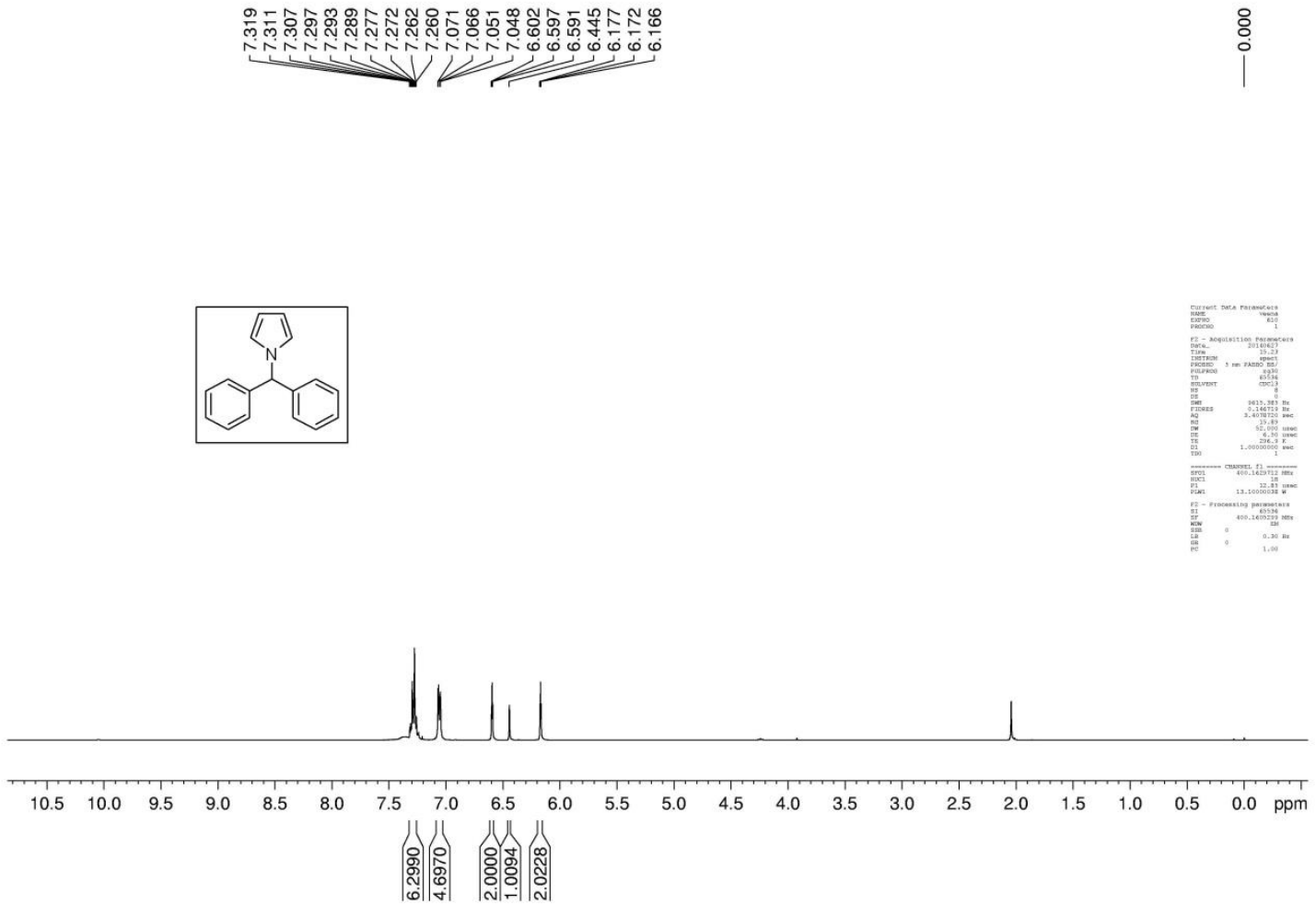


Fig: S-37 ^{1}H-NMR spectrum of 1-Benzhydryl-1*H*-pyrrole (**2s**).

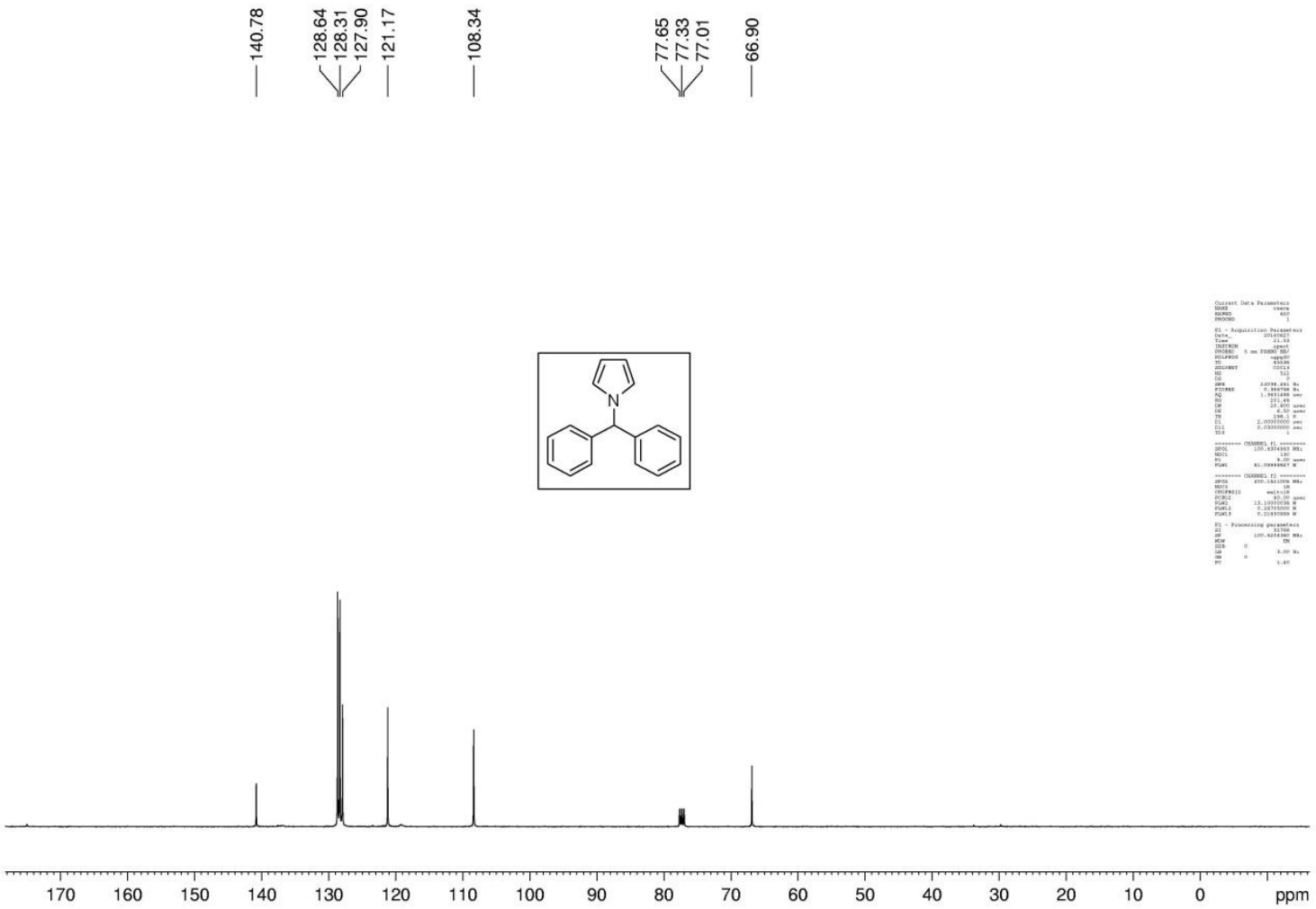


Fig: S-38 ^{13}C-NMR spectrum of 1-Benzhydryl-1*H*-pyrrole (**2s**).

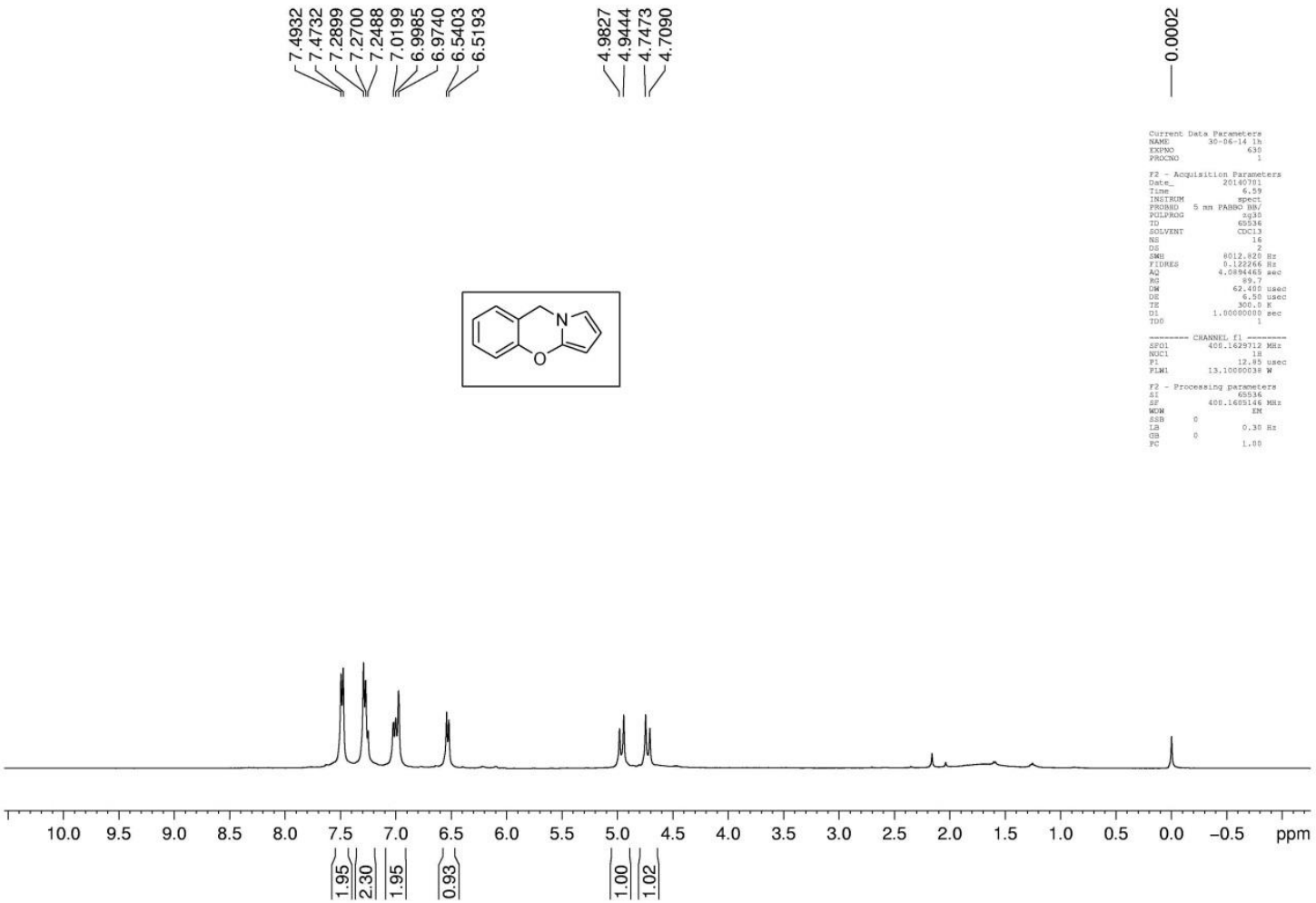


Fig: S-39 ^{1}H-NMR spectrum of 9*H*-benzo[*e*]pyrrolo[2,1-*b*][1,3]oxazine (**3A**).

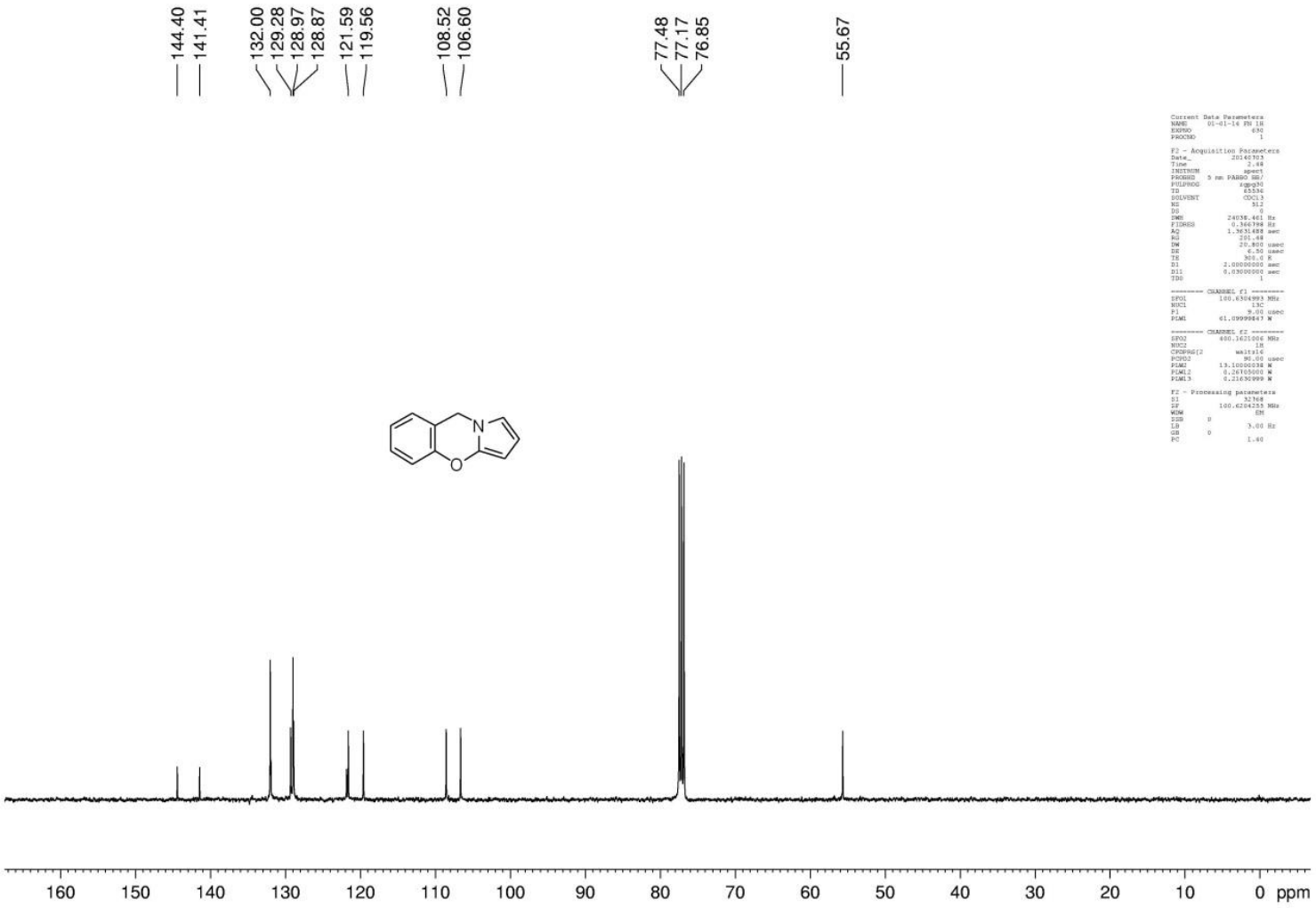


Fig: S-40 ^{13}C-NMR spectrum of 9*H*-benzo[*e*]pyrrolo[2,1-*b*][1,3]oxazine (**3A**).

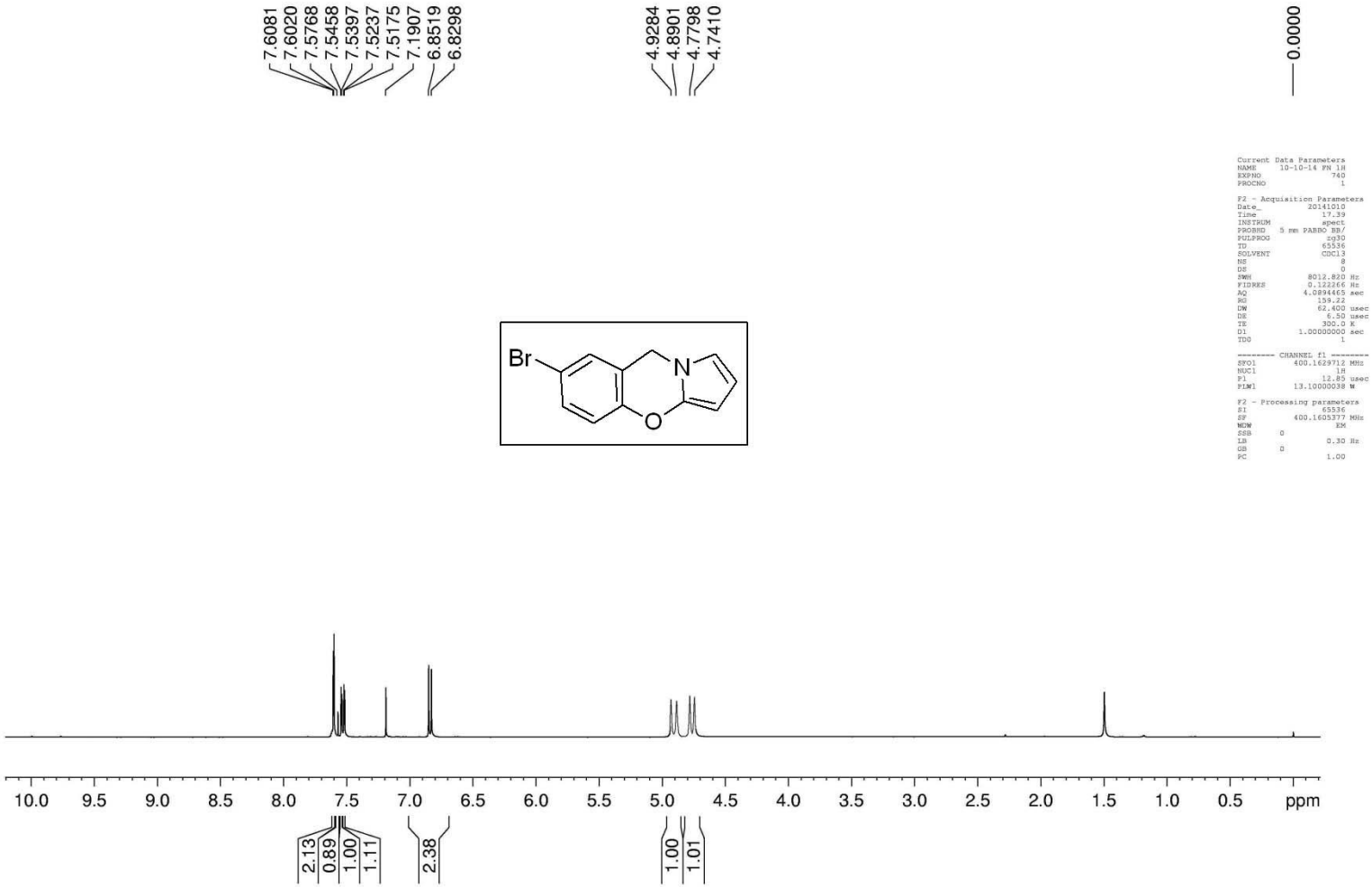


Fig: S-41 ^{1}H-NMR spectrum of 7-Bromo-9*H*-benzo[*e*]pyrrolo[2,1-*b*][1,3]oxazine (**3B**).

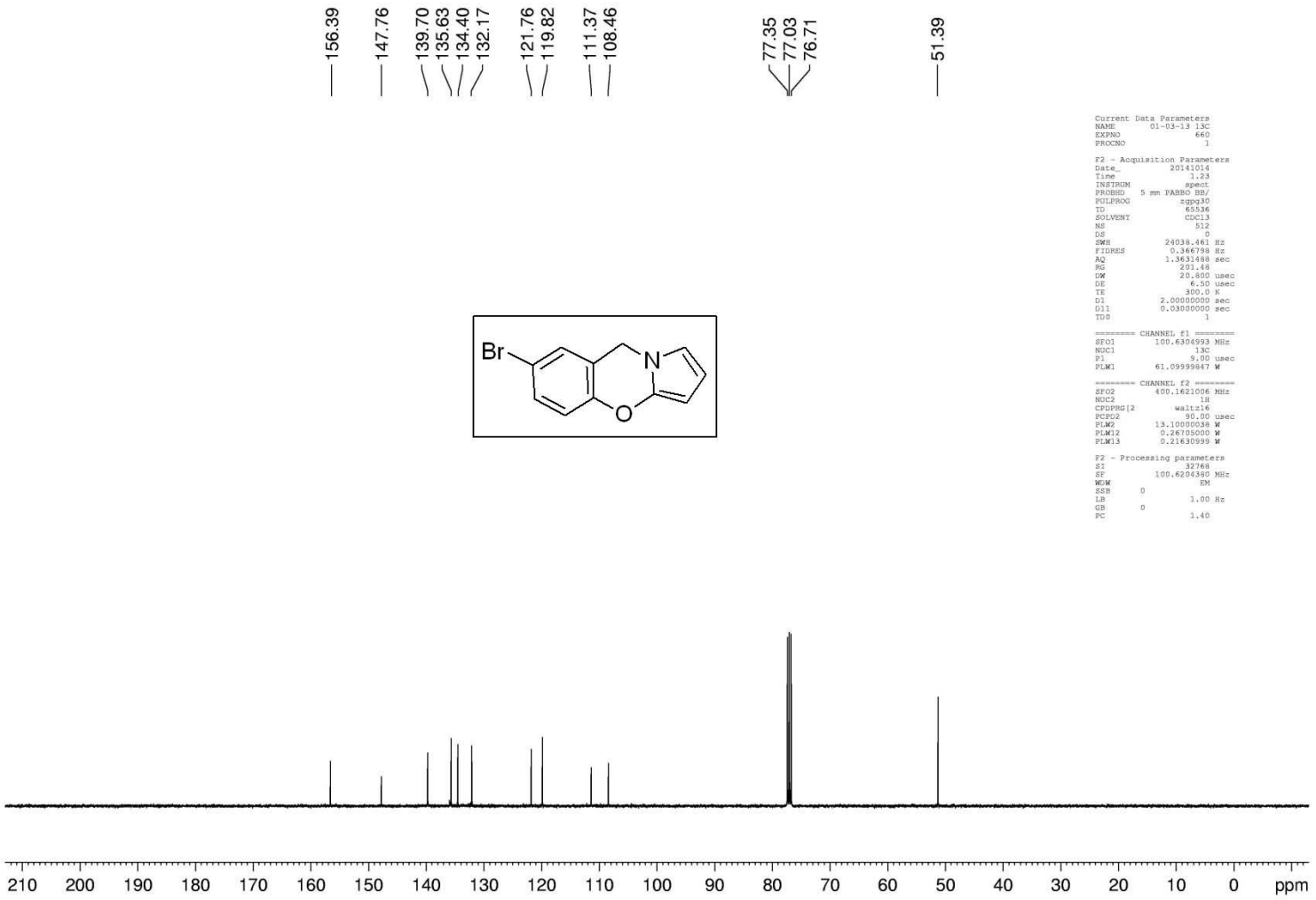


Fig: S-42 ^{13}C-NMR spectrum of 7-Bromo-9*H*-benzo[*e*]pyrrolo[2,1-*b*][1,3]oxazine (**3B**).