Supporting information

Diastereoselective Rhodium Catalyzed Synthesis of Indolines from *N*-Sulfonyl-1,2,3-Triazoles and *ortho*-Vinylanilines

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1. General Comments:

All reactions were carried out under an atmosphere of dry nitrogen using reaction tubes. Dry toluene was prepared by distilling over Na metal and stored over using molecular sieves 4Å under N_2 atmosphere. All the *N*-sulfonyl-1,2,3-triazoles were synthesized from alkynes and tosyl azide employing literature procedure.[1,2] Similarly, all the *ortho*-vinylanilines were achieved from anilines and arylacetylenes. $Rh_2(OAc)_4$, $Rh_2(Oct)_4$ and $Rh_2(TBSP)_4$ were obtained from Aldrich and they were used as received.[3] Rh_2(*S*-NTTL)$_4$[4] and $Rh_2(Piv)_4$[5] were synthesized using literature protocol.

Column chromatography was performed using Rankem Silicagel (100-200 mesh) and the solvent system used unless otherwise specified, was ethylacetate-hexanes with various percentage of polarity depending on the nature of the substrate.

It is important to note that purity of both triazoles and dienophiles significantly affect the reactions.

2. Analytical Methods:

NMR data were recorded on 400 and 500 MHz spectrometers. ^{13}C and ^{1}H NMR spectra were referenced to signals of deutero solvents and residual protonated solvents, respectively. Infrared spectra were recorded on a Thermo Nicolet iS10 FT spectrometer. HRMS were recorded by electron spry ionization (ESI) method on a Q-TOF Micro with lock spray source. Melting points are corrected. The crystal data were collected and integrated using a Bruker Axs kappa apex2 CCD diffractometer, with graphite monochromated Mo-Kα radiation.

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[1] J. Raushel and V. V. Fokin, *Org. Lett.,* 2010, **12**, 4952.

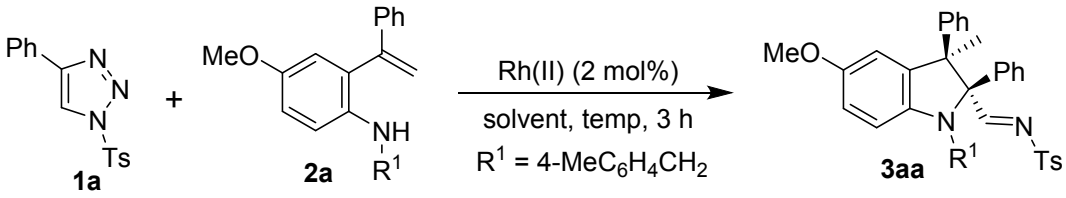
[2] L. Wang, S. Peng, L. J.T. Danence, Y. Gao and J. Wang, *Chem. –Eur. J.,* 2012, **18**, 6088.

[3] A. Arienti, F. Bigi, R. Maggi, E. Marzi, P. Moggi, M. Rastelli, G. Sartori and F. Tarantola, *Tetrahedron*, 1997, **53**, 3795.

[4] P. Müller, Y. Allenbach and E. Robert, *Tetrahedron Asymmetry,* 2003, **14**, 779.

[5] S. W. Kwok, L. Zhang, N.P. Grimster and V.V. Fokin, *Angew. Chem. Int. Ed.,* 2014, **53**, 3452.

3. Diastereoselective rhodium catalyzed synthesis of indolines from *N*-sulfonyl-1,2,3-triazoles and *ortho*-vinylanilines: *Optimization*

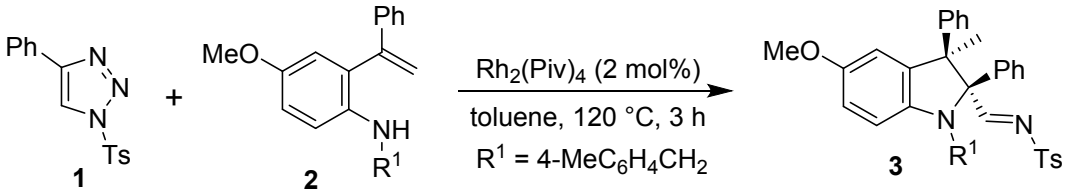


4-Phenyl-1-tosyl-1,2,3-triazole **1a** (50 mg, 0.167 mmol, 1 equiv), Rh(II)-catalyst (2 mol%) and *ortho*-vinylaniline **2a** (82 mg, 0.25 mmol, 1.5 equiv) were added under nitrogen atmosphere to an oven dried 10 mL reaction tube equipped with stir bar and solvent (1 mL) was introduced through syringe. The reaction tube was sealed and stirred at the temperature shown in the table for 3 h. After the TLC analysis, it was cooled to room temperature and the solvent was removed under reduced pressure. The resultant crude was purified by column chromatography using hexane/ethyl acetate mixture as eluent to afford indoline **3aa**.

Entry	Rh(II) (2 mol%)	Solvent	Temp (^{o}C)	Yield (%)[a]
1	$Rh_2(OAc)_4$	Toluene	100	15
2	$Rh_2(Oct)_4$	Toluene	100	30
3	$Rh_2(Piv)_4$	Toluene	100	45
4	Rh_2(*S*-NTTL)$_4$	Toluene	100	5
5	$Rh_2(Piv)_4$	Benzene	100	35
6	$Rh_2(Piv)_4$	1,2-DCE	100	29
7	$Rh_2(Piv)_4$	Toluene	120	85
8	$Rh_2(Piv)_4$	Toluene	120	75[b]

Triazole **1a** (0.167 mmol, 1 equiv), **2a** (0.25 mmol 1.5 equiv), Rh (II) (2 mol%), solvent (1 mL).
[a]Isolated yields. [b]1 mol% catalyst was used. R^1 = *p*-methyl benzyl

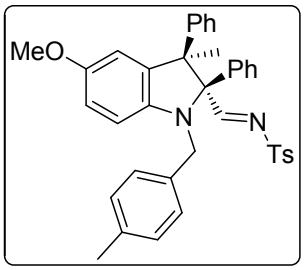
4. General procedure for the diastereoselective synthesis of indolines 3:



1-Sulfonyl-1,2,3-triazole **1** (50 mg, 0.167 mmol, 1 equiv) and $Rh_2(Piv)_4$ (2 mg, 0.0033mmol, 2 mol%) and *ortho*-vinylaniline **2** (82 mg, 0.25mmol, 1.5 equiv) were added under nitrogen atmosphere to an oven dried 10 mL reaction tube equipped with stir bar and toluene (1 mL) was introduced through syringe. The reaction tube was sealed and stirred at 120 °C for 3 h. After the TLC analysis, it was cooled to room temperature and the solvent was removed under reduced pressure. The resultant crude was purified by column chromatography using hexane/ethyl acetate mixture as eluent to afford the indolines **3**, in diastereoselective manners.

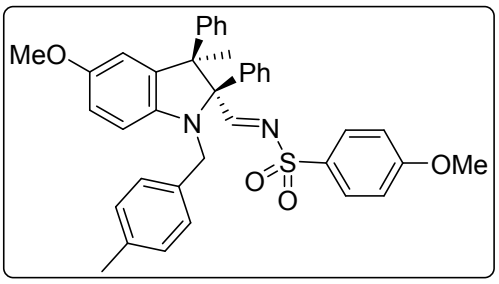
5. Properties of isolated indolines 3

Indoline (3aa): According to general procedure the product was isolated 85% yield.Colorless gummy

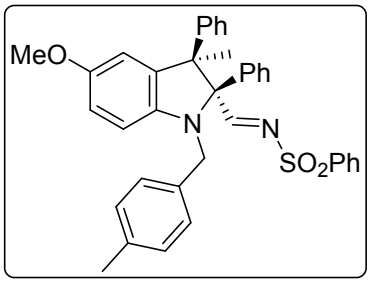


liquid; R_f = 0.68 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3067, 2978, 2837, 1615, 1489, 1373, 1241, 1162, 1095, 916, 845, 732, 636, 549 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.87 (s, 1H), 7.71 (d, 2H, J = 8.2 Hz), 7.28 (d, 2H, J = 8.0 Hz), 7.13-7.11 (m, 4H), 7.05-6.93 (m, 8H), 6.66-6.59 (m, 3H), 6.59 (d, 1H, J = 2.5 Hz), 6.20 (d, 1H, J = 8.4 Hz), 3.99 (ABq, 2H, J = 16.6, 44.2 Hz), 3.72 (s, 3H), 2.44 (s, 3H), 2.35 (s, 3H), 1.82 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.5, 154.5, 144.8, 144.6, 142.3, 136.3, 136.0, 135.5, 135.1, 134.3, 129.8, 129.3, 128.2, 128.0, 127.9, 127.6, 127.6(0), 127.3, 126.5, 126.1, 113.3, 111.3, 109.4, 85.6, 57.8, 55.9, 50.0, 21.7, 21.2, 21.0; HRMS: calcd. for $C_{38}H_{36}N_2O_3S$+H: 601.2519; found: 617.2510.

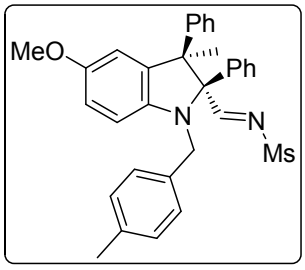
Indoline (3ba): According to general procedure the product was isolated 83% yield.White solid; R_f = 0.52 in 20% ethyl acetate/hexane; mp: 171-173 ºC; FTIR (KBr): 3058, 2970, 2935, 2836, 1597, 1490, 1374, 1327, 1263, 1156, 1092, 1031, 809, 762, 735, 556, 487 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.85 (s, 1H), 7.75 (d, 2H, J = 8.9 Hz), 7.14-7.12 (m, 4H), 7.05-6.92 (m, 10H), 6.65-6.62 (m, 3H), 6.58 (d, 1H, J = 2.5 Hz), 6.20 (d, 1H, J = 8.5 Hz), 3.99 (ABq, 2H, J = 16.6, 42.7 Hz), 3.88 (s, 3H), 3.72 (s, 3H), 2.35 (s, 3H), 1.81 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 177.8, 163.8, 154.5, 144.7, 142.4, 136.3, 136.0, 135.2, 134.5, 130.2, 129.7, 129.3, 128.2, 127.9, 127.6, 127.5, 127.3, 126.5, 126.2, 114.5, 113.2, 111.3, 109.3, 85.5, 57.9, 55.9, 55.7, 50.1, 21.2, 21.0; HRMS: calcd. for $C_{38}H_{36}N_2O_4S$+H: 617.2469; found: 617.2453.



Indoline (3ca): According to general procedure the product was isolated 77% yield. White solid; R_f = 0.68 in 20% ethyl acetate/hexane; mp: 155-157 ºC; FTIR (KBr): 3059, 2925, 2833, 1615, 1489, 1379, 1267, 1199, 1089, 1036, 969, 902, 806, 772, 699, 608, 576, 523, 421 cm^{-1}.^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.92 (s, 1H), 7.82 (d, 2H, J = 8.5 Hz), 7.64-7.59 (m, 1H), 7.50-7.46 (m, 2H), 7.12-7.10 (m, 4H), 7.05-6.93 (m, 8H), 6.65-6.59 (m, 4H), 6.20 (d, 1H, J = 8.4 Hz), 3.99 (ABq, 2H, J = 16.5, 41.4 Hz), 3.72 (s, 3H), 2.35 (s, 3H), 1.82 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 179.1, 154.6, 144.6, 142.3, 138.5, 136.3, 136.0, 135.1, 134.4, 133.7, 129.4, 129.2, 128.2, 128.0, 127.9, 127.7, 127.6, 127.4, 126.5, 126.2, 113.3, 111.3, 109.4, 85.7, 58.0, 56.0, 50.1, 21.2, 21.0; HRMS: calcd. for $C_{37}H_{34}N_2O_3S$+H: 587.2368; found: 587.2363.

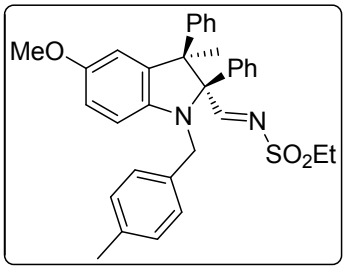


Indoline (3da): According to general procedure the product was isolated 90% yield. White solid; R_f = 0.56 in 20% ethyl acetate/hexane; mp: 178-180 ºC; FTIR (KBr): 3056, 2983, 2930, 1617, 1490, 1428, 1322, 1265, 1152, 1036, 967, 897, 740, 516, 408 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.87 (s, 1H), 7.24 (d, 2H, J = 8.9

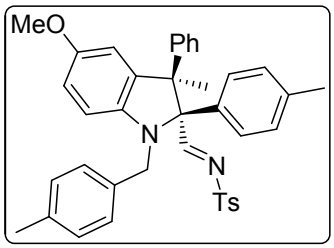


Hz), 7.16 (d, 2H, J = 7.9 Hz), 7.10-6.94 (m, 8H), 6.68-6.63 (m, 4H), 6.26 (d, 1H, J = 8.3 Hz), 4.18 (ABq, 2H, J = 9.1, 16.6 Hz), 3.73 (s, 3H), 2.99 (s, 3H), 2.36 (s, 3H), 1.91 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 179.4, 154.7, 144.4, 142.3, 136.4, 136.0, 135.1, 134.3, 129.4, 128.2, 128.0, 127.7, 127.7(4), 127.4, 126.5, 126.2, 113.4, 111.4, 109.6, 85.5, 57.8, 56.0, 50.0, 40.6, 21.2, 21.0; HRMS: calcd. for $C_{32}H_{32}N_2O_3S$+Na: 547.2026; found: 547.2051.

Indoline (3ea): According to general procedure the product was isolated 88% yield. White solid; R_f = 0.56 in 20% in ethyl acetate/hexane; mp: 176-178 ºC; FTIR (KBr): 3058, 2973, 2929, 2837, 1620, 1489, 1449, 1322, 1275, 1145, 1038, 970, 793, 742, 704, 544 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.95 (s, 1H), 7.24 (d, 2H, J = 8.5 Hz), 7.15 (d, 2H, J = 7.9 Hz), 7.10-6.95 (m, 8H), 6.67-6.63 (m, 4H), 6.26 (d, 1H, J = 8.4 Hz), 4.19 (ABq, 2H, J = 16.6, 21.9 Hz), 3.72 (s, 3H), 3.13-3.03 (m, 2H), 2.35 (s, 3H), 1.91 (s, 3H), 1.26 (t, 3H, J = 7.4 Hz); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 179.9, 154.6, 144.7, 142.4, 136.4, 136.0, 135.3, 134.6, 129.4, 128.2, 127.9, 127.8, 127.7, 127.4, 126.5, 126.2, 113.4, 111.3, 109.5, 85.7, 58.0, 56.0, 50.2, 47.2, 21.2, 21.1, 7.7; HRMS: calcd. for $C_{33}H_{34}N_2O_3S$+H: 539.2363; found: 539.2374.

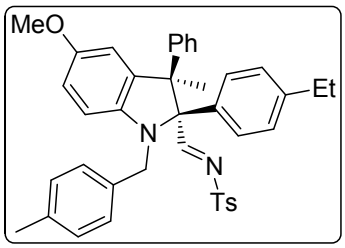


Indoline (3fa): According to general procedure the product was isolated 72% yield. Colorless liquid; R_f = 0.68 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3058, 2972, 2931, 2834, 1613, 1489, 1442, 1330, 1284, 1164, 1126, 1090, 1038, 807, 741, 714, 549, 484 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.86 (s, 1H), 7.68 (d, 2H, J = 8.2 Hz), 7.26 (d, 2H, J = 8.6 Hz), 7.11-7.08 (m, 4H), 6.99-6.95 (m, 3H), 6.85-6.74 (m, 4H), 6.63-6.56 (m, 4H), 6.17 (d, 1H, J = 8.4 Hz), 3.97 (ABq, 2H, J = 16.3, 25.6 Hz), 3.71 (s, 3H), 2.43 (s, 3H), 2.33 (s, 3H), 2.15 (s, 3H), 1.78 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.7, 154.4, 144.7, 144.7(3), 142.4, 137.3, 136.2, 135.9, 135.4, 135.3, 131.3, 129.8, 129.3, 128.4, 128.2,

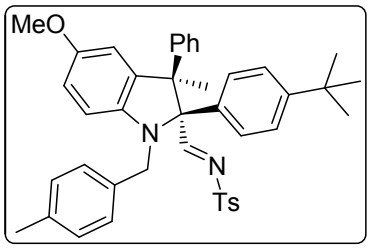


128.0, 127.8, 127.3, 126.4, 126.2, 113.2, 111.3, 109.2, 85.5, 57.8, 55.9, 50.0, 21.7, 21.2, 21.1, 21.0; HRMS: calcd. for $C_{39}H_{38}N_2O_3S$+H: 617.2676; found: 617.2694.

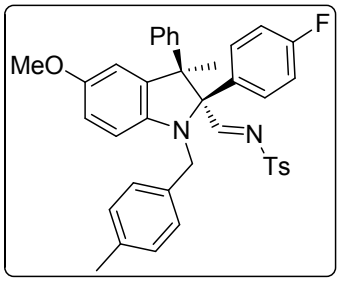
Indoline (3ga): According to general procedure the product was isolated 73% yield. White solid; R_f = 0.68 in 20% ethyl acetate/hexane; mp: 175-177 ºC; FTIR (KBr): 3056, 2980, 2928, 1603, 1485, 1449, 1326, 1265, 1160, 1090, 1023, 984, 897, 812, 741, 706, 672, 550 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.87 (s, 1H), 7.68 (d, 2H, J = 8.2 Hz), 7.25 (d, 2H, J = 8.0 Hz), 7.11-7.09 (m, 4H), 6.98-6.85 (m, 5H), 6.85-6.74 (m, 4H), 6.76 (d, 2H, J = 7.8 Hz), 6.63-6.56 (m, 4H), 6.16 (d, 1H, J = 8.4 Hz), 3.99 (ABq, 2H, J = 16.5, 45.4 Hz), 3.70 (s, 3H), 2.45-2.43 (m, 2H), 2.33 (s, 3H), 1.78 (s, 3H), 1.07 (t, 3H, J = 7.6 Hz); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.7, 154.4, 144.8, 144.7, 143.8, 142.5, 136.2, 136.0, 135.5, 135.3, 131.6, 129.8, 129.3, 128.2, 128.0, 127.8, 127.2, 127.2(2), 126.4, 126.2, 113.2, 111.3, 109.2, 85.5, 58.0, 55.9, 50.0, 28.4, 21.7, 21.1, 21.1(1), 15.7; HRMS: calcd. for $C_{40}H_{40}N_2O_3S$+H: 629.2832; found: 629.2834.



Indoline (3ha): According to general procedure the product was isolated 66% yield. Colorless liquid; R_f = 0.68 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 2924, 2858, 1692, 1651, 1598, 1408, 1335, 1172, 1126, 1069, 862, 845, 771, 682, 507, 423 cm^{-1}; ^1H NMR (500 MHz, $CDCl_3$, 24 °C): δ 8.83 (s, 1H), 7.68 (d, 2H, J = 8.2 Hz), 7.27 (d, 2H, J = 8.5 Hz), 7.09-7.12 (m, 4H), 6.97-6.89 (m, 7H), 7.62 (dd, 1H, J = 2.5, 8.5 Hz), 6.57-6.56 (m, 3H), 6.17 (d, 1H, J = 8.5 Hz), 4.0 (ABq, 2H, J = 16.8, 63.2 Hz), 3.71 (s, 3H), 2.44 (s, 3H), 2.34 (s, 3H), 1.77 (s, 3H), 1.66 (s, 9H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.7, 154.4, 150.7, 144.8, 144.7, 142.4, 136.2, 135.9, 135.4, 135.3, 131.4, 129.8, 129.3, 128.2, 128.0, 127.4, 127.2, 126.3, 126.2, 124.6, 113.2, 111.3, 109.2, 85.5, 58.2, 55.9, 50.0, 34.4, 31.3, 21.7, 21.2, 21.0; HRMS: calcd. for $C_{42}H_{44}N_2O_3S$+H: 657.3145; found: 657.3129.

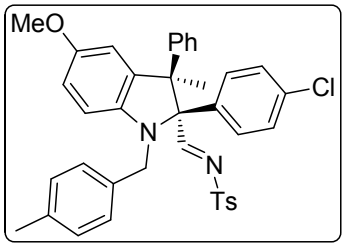


Indoline (3ia): According to general procedure the product was isolated 92% yield. Colorless liquid;



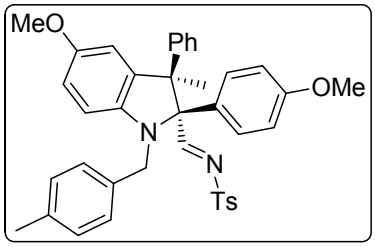
R_f = 0.68 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 2985, 2920, 1602, 1466, 1374, 1245, 1094, 1048, 918, 848, 735, 634, 608 cm^{-1}; ^1H NMR (500 MHz, $CDCl_3$, 24 °C): δ 8.76 (s, 1H), 7.73 (d, 2H, J = 8.3 Hz), 7.3 (d, 2H, J = 7.9 Hz), 7.18-7.07 (m, 6H), 7.01-6.96 (m, 5H), 6.66-6.59 (m, 4H), 6.21 (d, 1H, J = 8.5 Hz), 3.91 (ABq, 2H, J = 16.5, 45.4 Hz), 3.73 (s, 3H), 2.43 (s, 3H), 2.35 (s, 3H), 1.8 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.2, 163.1(d, J = 247.5 Hz), 154.8, 144.6 (d, J = 59.0 Hz), 136.2 (d, J = 44.3 Hz), 135.3, 134.8, 129.9, 129.9(2), 129.8, 129.7, 129.4, 129.1, 128.3, 127.9, 127.5, 126.6, 126.0, 125.9, 114.4 (d, J = 21.4 Hz), 113.4, 111.3, 109.6, 85.2, 57.5, 55.9, 49.8, 21.7, 21.1, 20.7; HRMS: calcd. for $C_{38}H_{35}FN_2O_3S$+Na: 641.2245; found: 641.2269.

Indoline (**3ja):** According to general procedure the product was isolated 85% yield. Colorless liquid;



R_f = 0.68 in 20% ethyl acetate/hexane**;** FTIR ($CHCl_3$): 2972, 2829, 1636, 1440, 1375, 1243, 1042, 850, 781, 634, 465, 423 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.74 (s, 1H), 7.73 (d, 2H, J = 8.3 Hz), 7.30 (d, 2H, J = 8.1 Hz), 7.12 (d, 2H, J = 8.0 Hz), 7.06 (d, 2H, J = 8.0 Hz), 7.02-6.92 (m, 7H), 6.67-6.59 (m, 4H), 6.21 (d, 1H, J = 8.5 Hz), 3.89 (ABq, 2H, J = 16.4, 30.6 Hz), 3.73 (s, 3H), 2.45 (s, 3H), 2.34 (s, 3H), 1.80 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.0, 154.9, 145.0, 144.3, 142.2, 136.5, 136.0, 135.3, 134.8, 133.6, 132.7, 130.0, 129.9, 129.4, 128.1, 128.1(3), 127.7, 127.5, 126.7, 126.0, 113.4, 111.3, 109.7, 85.3, 57.5, 55.9, 49.9, 21.8, 21.1, 20.7; HRMS: calcd. for $C_{38}H_{35}N_2ClO_3S$+H: 635.2130; found: 635.2142.

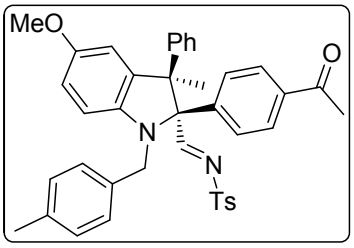
Indoline (3ka): According to general procedure the product was isolated 73% yield. Colorless liquid;



R_f = 0.56 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3055, 2983, 2931, 2836, 1610, 1512, 1491, 1444, 1375, 1327, 1263, 1161, 1090, 1039, 897,

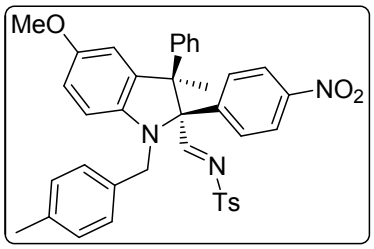
738, 549, 483 cm^{-1}; ^1H NMR (500 MHz, $CDCl_3$, 24 °C): δ 8.83 (s, 1H), 7.69 (d, 2H, J = 8.3 Hz), 7.27 (d, 2H, J = 8.0 Hz), 7.18-7.16 (m, 2H), 7.12-7.08 (m, 4H), 6.89-6.88 (m, 1H), 6.64-6.61 (m, 3H), 6.58 (d, 1H, J = 2.5 Hz), 6.49 (d, 2H, J = 7.8 Hz), 6.17 (d, 2H, J = 8.5 Hz), 3.96 (ABq, 2H, J = 16.5, 55.1 Hz), 3.72 (s, 3H), 3.65 (m, 3H), 2.44 (s, 3H), 2.34 (s, 3H), 1.78 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.8, 159.0, 154.5, 144.7, 144.7(1), 142.5, 136.2, 136.0, 135.4, 135.3, 129.8, 129.3, 129.1, 128.2, 128.0, 127.3, 126.4, 126.3, 126.1, 113.2, 111.1, 111.3, 109.3, 85.3, 57.8, 55.9, 55.2, 49.9, 21.7, 21.1, 21.0; HRMS: calcd. for $C_{39}H_{38}N_2O_4S$+H: 631.2625; found: 631.2620.

Indoline (3la): According to general procedure the product was isolated 84% yield. Colorless liquid;



R_f = 0.58 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 2985, 2920, 1708, 1602, 1506, 1490, 1445, 1374, 1240, 1162, 1092, 1045, 917, 847, 812, 734, 608, 550 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.69 (s, 1H), 7.65 (d, 2H, J = 8.3 Hz), 7.45-7.43 (m, 2H), 7.23-7.22 (d, 2H, J = 8.0 Hz), 7.10-7.00 (m, 6H), 6.89-6.83 (m, 3H), 6.58 (dd, 1H, J = 2.5, 8.5 Hz), 6.54-6.51 (m, 3H), 6.15 (d, 1H, J = 8.5 Hz), 3.84 (ABq, 2H, J = 16.7, 24.6 Hz), 3.65 (s, 3H), 2.37 (s, 3H), 2.36 (s, 3H), 2.27 (s, 3H), 1.76 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 197.8, 177.6, 155.0, 145.0, 144.2, 142.0, 139.7, 136.5, 136.0, 135.9, 135.2, 134.7, 130.0, 129.5, 128.3, 128.1, 128.0, 127.5, 127.4, 126.8, 126.0, 113.5, 111.3, 109.8, 85.6, 57.7, 55.9, 50.0, 26.6, 21.8, 21.2, 20.7; HRMS: calcd. for $C_{40}H_{38}N_2O_4S$+H: 643.2625; found: 643.2642.

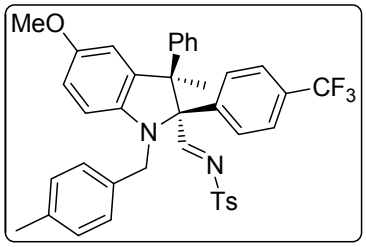
Indoline (3ma): According to general procedure the product was isolated 69% yield. Colorless liquid;



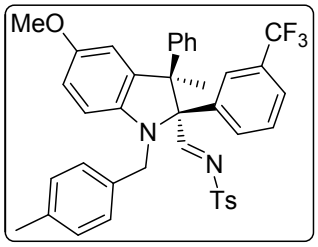
R_f = 0.52 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3056, 2984, 2934, 1610, 1520, 1490, 1431, 1346, 1264, 1161, 1091, 1041, 898, 854, 812, 736, 550 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.71 (s, 1H), 7.76 (d, 4H, J = 8.3 Hz), 7.33 (d, 2H, J = 8.1 Hz), 7.23-7.14 (m, 4H), 7.08 (d, 2H, J = 8.0 Hz), 6.99-6.95 (m, 3H), 6.71-6.60 (m, 1H), 6.63-6.59 (m, 3H), 6.29 (d, 1H, J = 8.5 Hz), 3.88 (s, 2H), 3.75 (s, 3H), 2.46 (s, 3H), 2.36 (s, 3H), 1.87 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 176.9, 155.3, 147.1, 145.3,

143.9, 141.8, 141.7, 136.8, 135.8, 135.1, 134.3, 130.1, 129.6, 129.2, 128.2, 127.9, 127.7, 127.1, 125.9, 122.4, 113.8, 111.4, 110.2, 85.6, 57.7, 56.0, 50.0, 21.8, 21.1, 20.6; HRMS: calcd. for $C_{38}H_{35}N_3O_5S$+H: 646.2370; found: 646.2371.

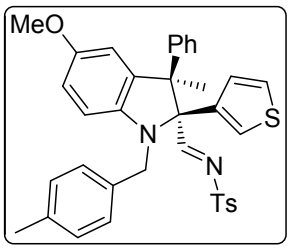
Indoline (3na): According to general procedure the product was isolated 77% yield. White solid; R_f = 0.68 in 20% ethyl acetate/hexane; mp: 206-208 ºC; FTIR (KBr): 2924, 2834, 1617, 1491, 1411, 1327, 1290, 1242, 1164, 1124, 1089, 1072, 910, 809, 734, 645, 549, 485 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.75 (s, 1H), 7.75 (d, 2H, J = 8.2 Hz), 7.32 (d, 2H, J = 8.0 Hz), 7.18-7.07 (m, 8H), 6.99-6.92 (m, 3H), 6.69-6.56 (m, 4H), 6.24 (d, 1H, J = 8.4 Hz), 3.90 (ABq, 2H, J = 16.4, 25.6 Hz), 3.74 (s, 3H), 2.37 (s, 3H), 2.45 (s, 3H), 2.35 (s, 3H), 1.84 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 177.6, 155.1, 145.1, 144.2, 142.0, 138.4, 136.6, 135.8, 135.2, 134.6, 130.0, 129.5, 128.4, 128.1, 128.0, 127.5, 126.8, 126.0, 124.3 (q, J = 3.5 Hz), 113.6, 111.4, 109.9, 85.5, 57.7, 55.9, 49.9, 21.8, 21.1, 20.6; HRMS: calcd. for $C_{39}H_{35}F_3N_2O_3S$+H: 669.2393; found: 669.2409.



Indoline (3oa): According to general procedure the product was isolated 80% yield. Colorless liquid; Yield: 80%; R_f = 0.68 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$):2973, 2926, 2834, 1614, 1491, 1444, 1381, 1288, 1163, 1090, 914, 805, 750, 716, 549, 486 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.66 (s, 1H), 7.69 (d, 2H, J = 8.0 Hz), 7.24 (d, 2H, J = 8.1 Hz), 7.20-7.14 (m, 4H), 6.90-6.80 (m, 4H), 6.87-6.85 (m, 3H), 6.61-6.46 (m, 4H), 6.20 (d, 1H, J = 8.5 Hz), 3.85 (s, 2H), 3.65 (s, 3H), 2.37 (s, 3H), 2.26 (s, 3H), 1.74 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 177.3, 155.1, 145.1, 144.2, 142.0, 136.6, 135.8, 135.2, 135.2(6), 134.5, 131.4, 130.0, 129.5, 129.1, 128.3, 128.0, 127.9, 127.9(0), 127.6, 126.8, 126.0, 125.3, 124.2, 124.2(2), 113.6, 111.3, 110.0, 85.3, 58.2, 57.5, 55.9, 49.9, 21.7, 21.1, 20.4; HRMS: calcd. for $C_{39}H_{35}F_3N_2O_3S$+K: 707.1952; found: 707.1942.

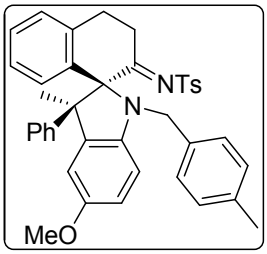


Indoline (3pa): According to general procedure the product was isolated 81% yield. Colorless liquid;



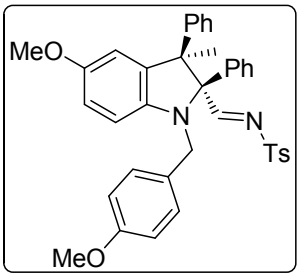
R_f = 0.58 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3057, 2983, 2938, 1619, 1490, 1375, 1243, 1161, 1091, 1044, 911, 848, 808, 737, 648, 548 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.84 (s, 1H), 7.73 (d, 2H, J = 8.3 Hz), 7.30 (d, 2H, J = 8.0 Hz), 7.18-7.12 (m, 4H), 7.07-7.02 (m, 3H), 6.92-6.90 (m, 2H), 6.74-6.62 (m, 4H), 6.59 (d, 1H, J = 2.5 Hz), 6.25 (d, 1H, J = 8.4 Hz), 4.10 (s, 2H), 3.72 (s, 3H), 2.45 (s, 3H), 2.36 (s, 3H), 1.74 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.0, 154.4, 144.8, 144.5, 142.2, 136.3, 136.0, 135.7, 135.4, 135.1, 129.9, 129.3, 128.0, 127.9, 127.5, 127.3, 126.6, 126.2, 124.4, 123.9, 113.2, 111.3, 109.1, 83.9, 58.3, 50.1, 21.7, 21.5, 21.1; HRMS: calcd. for $C_{36}H_{34}N_2O_3S_2$+Na: 629.1903; found: 629.1906.

Indoline (3qa): According to general procedure the product was isolated 84% yield. White solid; R_f =



0.52 in 20% ethyl acetate/hexane; mp: 95-97 ºC; FTIR ($CHCl_3$): 3058, 2930, 2833, 1605, 1489, 1413, 1346, 1287, 1266, 1159, 1091, 1038, 967, 863, 808, 735, 662, 550 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.50 (s, 1H), 7.30 (d, 2H, J = 7.7 Hz), 7.17 (d, 2H, J = 7.2 Hz), 7.04-6.96 (m, 6H), 6.90-6.84 (m, 4H), 6.71-6.69 (m, 1H), 6.62 (d, 2H, J = 7.2 Hz), 6.56-6.55 (m, 1H), 6.37 (dd, 1H, J = 1.2, 8.4 Hz), 6.0-5.99 (m, 1H), 4.22 (d, 1H, J = 17.6 Hz), 3.73 (s, 3H), 3.64 (d, 1H, J = 17.4), 2.8 (dd, 1H, J = 6.2, 21.3 Hz), 2.58 (d, 1H, J = 21.3 Hz), 2.42 (s, 3H), 2.31 (s, 3H), 1.98 (s, 3H), 1.53 (s, 2H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 154.1, 145.1, 143.4, 141.2, 137.1, 136.9, 136.3, 135.9, 135.3, 131.4, 130.0, 129.3, 129.1, 128.3, 127.9, 127.5, 126.9, 126.5, 126.4, 125.8, 125.0, 112.7, 112.4, 108.2, 106.3, 80.6, 61.1, 56.0, 51.1, 29.7, 28.1, 27.0, 21.5, 21.2; HRMS: calcd. for $C_{40}H_{38}N_2O_3S$+Na: 649.2495; found: 649.2501.

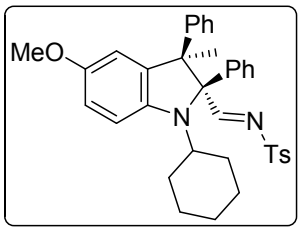
Indoline (3ab): According to general procedure the product was isolated 57% yield. Colorless liquid;



R_f = 0.56 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3057, 2931, 2838,

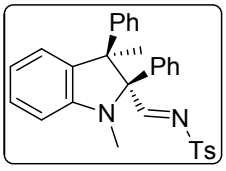
1610, 1491, 1326, 1259, 1162, 1091, 1034, 904, 814, 738, 710, 547 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.79 (s, 1H), 7.62 (d, 2H, J = 8.3 Hz), 7.19 (d, 2H, J = 8.4 Hz), 7.06 (d, 2H, J = 8.8 Hz), 6.97-6.87 (m, 8H), 6.77 (d, 2H, J = 8.7 Hz), 6.57-6.53 (m, 3H), 6.50 (d, 1H, J = 2.5 Hz), 6.12 (d, 1H, J = 8.5 Hz), 3.89 (ABq, 2H, J = 16.3, 39.2 Hz), 3.73 (s, 3H), 3.63 (s, 3H), 2.35 (s, 3H), 1.72 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.4, 158.5, 154.5, 144.8, 144.7, 142.3, 136.0, 135.4, 134.5, 130.2, 129.8, 128.2, 128.0, 127.9, 127.7, 127.6, 127.4, 127.3, 126.5, 114.1, 113.3, 111.3, 109.3, 85.5, 58.0, 55.9, 55.3, 49.8, 21.7, 21.1; HRMS: calcd. for $C_{38}H_{36}N_2O_4S$+Na: 639.2288; found: 639.2292.

Indoline (3ac): According to general procedure the product was isolated 34% yield. Colorless liquid;



R_f = 0.68 in 20% ethyl acetate/hexane**;** FTIR ($CHCl_3$): 3054, 2984, 2928, 2855, 1603, 1487, 1378, 1322, 1265, 1160, 1091, 1038, 909, 739, 650, 550, 436, 416 cm^{-1}; ^1H NMR (500 MHz, $CDCl_3$, 24 °C): δ 8.59 (s, 1H), 7.77 (d, 2H, J = 8.3 Hz), 7.28 (d, 2H, J = 8.0 Hz), 7.24-7.02 (m, 4H), 6.90-6.76 (m, 6H), 6.55 (d, 1H, J = 2.6 Hz), 6.34-6.32 (m, 2H), 3.75 (s, 3H), 2.67-2.61 (m, 1H), 2.41 (s, 3H), 2.13-1.90 (m, 2H), 1.78 (s, 3H), 1.74-1.70 (m, 2H), 1.48-1.47 (m, 2H), 1.14-0.98 (m, 4H), 0.66-0.60 (m, 1H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 176.9, 153.7, 144.7, 143.8, 141.6, 136.5, 135.1, 134.3, 129.8, 128.7, 128.3, 128.1, 127.9, 127.1, 127.1, 126.0, 113.5, 111.8, 110.2, 85.3, 57.0, 56.4, 56.1, 33.6, 31.2, 28.2, 27.9, 27.1, 26.5, 21.7, 19.9; HRMS: calcd. for $C_{36}H_{38}N_2O_3S$+H: 579.2676; found: 579.2687.

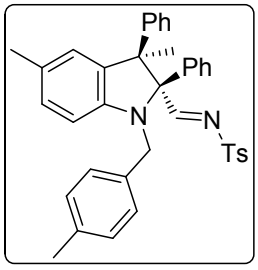
Indoline (3ad): According to general procedure the product was isolated 75% yield. White solid; R_f =



0.68 in 20% ethyl acetate/hexane; mp: 174-176 ºC; FTIR (KBr): 3059, 2974, 2929, 1607, 1483, 1323, 1266, 1160, 1091, 1026, 986, 909, 808, 652, 549 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.76 (s, 1H), 7.73 (d, 2H, J = 8.3 Hz), 7.29-7.26 (m, 3H), 7.07-6.82 (m, 10H), 6.62 (d, 1H, J = 7.8 Hz), 6.47 (d, 2H, J = 7.6 Hz), 2.61 (s, 3H), 2.42 (s, 3H), 1.77 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 177.5, 151.3, 144.8, 143.1, 135.3, 134.3,

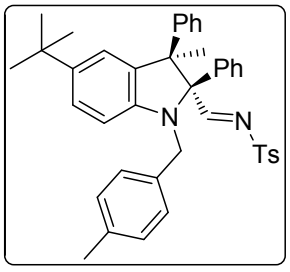
134.0, 129.9, 129.1, 128.3, 128.1, 128.0, 127.5, 127.4, 127.2, 126.2, 124.2, 119.8, 107.1, 84.4, 57.7, 31.4, 21.7, 21.1; HRMS: calcd. for $C_{30}H_{28}N_2O_2S$+Na: 503.1764; found: 503.1742.

Indoline (3af): According to general procedure the product was isolated 73% yield. Colorless liquid;



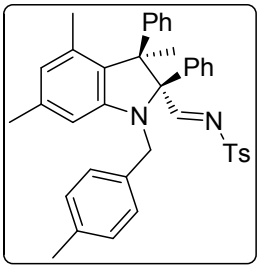
R_f = 0.62 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3054, 2975, 2925, 2851, 1613, 1493, 1448, 1330, 1269, 1160, 1090, 1027, 807, 737, 549, 482 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.91 (s, 1H), 7.69 (d, 2H, J = 7.5 Hz), 7.28 (d, 2H, J = 8.3 Hz), 7.13-7.11 (m, 4H), 7.05-6.89 (m, 10H), 6.78 (s, 1H), 6.66 (d, 2H, J = 7.9 Hz), 6.21 (d, 1H, J = 7.9 Hz), 4.03 (ABq, 2H, J = 16.6, 37.8 Hz), 2.45 (s, 3H), 2.36 (s, 3H), 2.26 (s, 3H), 1.82 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.3, 148.5, 144.7, 142.6, 136.2, 135.4, 135.2, 134.8, 134.5, 129.8, 129.6, 129.3, 129.0, 128.2, 128.0, 127.9, 127.6, 127.5, 127.3, 126.4, 126.2, 124.9, 108.8, 85.5, 57.9, 49.9, 21.7, 21.3, 21.2, 21.0; HRMS: calcd. for $C_{38}H_{36}N_2O_2S$+Na: 607.2390; found: 607.2398.

Indoline (3ag): According to general procedure the product was isolated 72% yield. Colorless liquid;



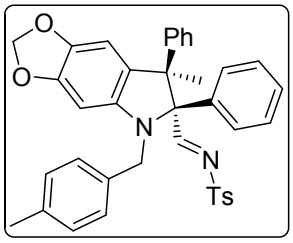
Yield: R_f = 0.62 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3053, 2963, 1613, 1493, 1448, 1332, 1265, 1162, 1088, 903, 741, 545 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.79 (s, 1H), 7.62 (d, 2H, J = 8.2 Hz), 7.19-7.14 (m, 3H), 7.03-6.99 (m, 5H), 6.96-6.84 (m, 8H), 6.53 (d, 2H, J = 8.1 Hz), 6.13 (d, 2H, J = 8.1 Hz), 3.91 (ABq, 2H, J = 16.6, 34.8 Hz), 2.34 (s, 3H), 2.26 (s, 3H), 1.75 (s, 3H), 1.16 (s, 9H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.3, 148.2, 144.7, 143.4, 142.2, 136.2, 135.3, 135.2, 134.5, 134.2, 129.8, 129.3, 128.2, 128.0, 127.9, 127.6, 127.5, 127.3, 126.3, 126.2, 125.2, 121.2, 108.3, 85.6, 58.0, 49.9, 34.4, 31.7, 21.7, 21.3, 21.2; HRMS: calcd. for $C_{41}H_{42}N_2O_2S$+Na: 649.2859; found: 649.2871.

Indoline (3ah): According to general procedure the product was isolated 88% yield. Colorless liquid;



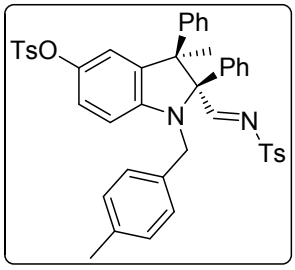
R_f = 0.58 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3055, 2983, 2927, 2856, 1599, 1481, 1426, 1329, 1266, 1154, 1119, 1023, 975, 908, 739, 522 cm^{-1} ; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.93 (s, 1H), 7.70 (d, 2H, J = 8.3 Hz), 7.28 (d, 2H, J = 8.0 Hz), 7.12-7.07 (m, 4H), 7.03-6.92 (m, 8H), 6.66 (d, 2H, J = 8.4 Hz), 6.46 (s, 1H), 6.03 (s, 1H), 4.03 (ABq, 2H, J = 16.8, 33.4 Hz), 2.45 (s, 3H), 2.36 (s, 3H), 2.22 (s, 3H), 1.90 (s, 3H), 1.88 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 177.8, 151.1, 144.7, 141.8, 138.5, 135.9, 135.5, 135.3, 134.7, 134.7(1), 129.8, 129.2, 129.1, 128.8, 128.2, 128.0, 127.5, 127.4, 127.3, 126.3, 126.2, 123.8, 107.4, 85.3, 58.3, 50.1, 21.7, 21.6(8), 21.6, 21.1, 19.2; HRMS: calcd. for $C_{39}H_{39}N_2O_2S$+H: 599.2727; found: 599.2751.

Indoline (3ai): According to general procedure the product was isolated 75% yield. Colorless liquid;



R_f = 0.58 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3056, 2973, 2921, 2883, 1614, 1474, 1375, 1328, 1238, 1188, 1091, 936, 810, 764, 741, 697, 547, 481, 419 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.92 (s, 1H), 7.72 (d, 2H, J = 8.1 Hz), 7.29 (d, 2H, J = 8.4 Hz), 7.13-7.08 (m, 4H), 7.06-6.89 (m, 8H), 6.63 (d, 2H, J = 7.6 Hz), 6.47 (s, 1H), 5.93 (s, 1H), 5.88 (s, 2H), 3.96 (ABq, 2H, J = 16.6, 35.0 Hz), 2.45 (s, 3H), 2.34 (s, 3H), 1.77 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.5, 147.7, 145.7, 144.9, 142.5, 141.4, 136.4, 135.2, 134.8, 134.2, 129.9, 129.4, 129.1, 128.3, 128.1, 128.0, 127.8, 127.7, 127.4, 126.5, 126.1, 105.4, 101.0, 92.9, 85.8, 57.4, 50.0, 21.8, 21.2, 21.1; HRMS: calcd. for $C_{38}H_{34}N_2O_4S$+H: 615.2312; found: 615.2319.

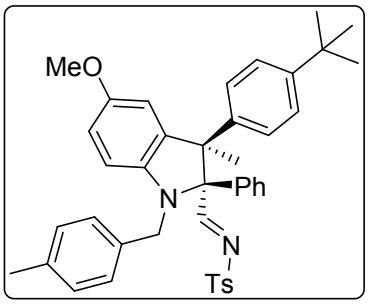
Indoline (3aj): According to general procedure the product was isolated 73% yield. Colorless liquid;



R_f = 0.68 in 9:91 ethyl acetate/hexane; FTIR ($CHCl_3$): 3057, 2978, 2924, 2857, 1604, 1484, 1446, 1371, 1330, 1266, 1161, 1025, 970, 888, 815, 658, 550, 482 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.96 (s, 1H), 7.65 (d, 2H, J = 8.3 Hz), 7.59 (d, 2H, J = 8.3 Hz), 7.27 (d, 2H, J = 8.0 Hz), 7.23-7.16 (m, 4H),

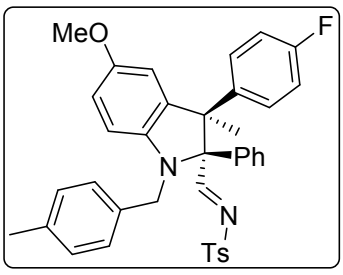
7.13-6.88 (m, 10H), 6.83 (dd, 1H, J = 2.4, 8.5 Hz), 6.51 (d, 2H, J = 7.2 Hz), 6.26 (d, 1H, J = 2.4 Hz), 6.16 (d, 1H, J = 8.5 Hz), 4.06 (s, 2H), 2.43 (s, 3H), 2.35 (s, 6H), 1.62 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 176.7, 149.7, 145.2, 145.1, 143.0, 141.4, 136.5, 135.4, 134.9, 134.6, 134.5, 132.3, 129.9, 129.7, 129.4, 129.1, 128.8, 128.0, 127.9, 127.6, 127.5, 126.8, 126.1, 125.4, 123.0, 118.6, 108.6, 85.6, 58.3, 50.2, 21.8, 21.7, 21.5, 21.2; HRMS: calcd. for $C_{44}H_{40}N_2O_5S_2$+Na: 763.2271; found: 763.2292.

Indoline (3al): According to general procedure the product was isolated 81% yield. Colorless liquid;



Yield: 81%; R_f = 0.68 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3056, 2961, 2871, 1612, 1488, 1327, 1267, 1161, 1091, 1035, 810, 733, 552 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.79 (s, 1H), 7.60 (d, 2H, J = 8.3 Hz), 7.17 (d, 2H, J = 8.0 Hz), 7.05-7.02 (m, 4H), 6.94-6.80 (m, 7H), 6.55-6.51 (m, 2H), 6.46 (d, 2H, J = 8.7 Hz), 6.09 (d, 1H, J = 8.3 Hz), 3.91 (ABq, 2H, J = 16.4, 27.6 Hz), 3.62 (s, 3H), 2.33 (s, 3H), 2.26 (s, 3H), 1.70 (s, 3H), 1.09 (s, 9H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.7, 154.4, 149.6, 144.7, 144.6, 139.1, 136.2, 136.1, 135.4, 135.2, 134.6, 129.8, 129.3, 128.0, 127.9, 127.7, 127.5, 127.3, 126.2, 124.1, 113.2, 111.3, 109.2, 85.6, 57.9, 55.9, 50.1, 34.2, 31.3, 21.7, 21.2, 21.0; HRMS: calcd. for $C_{42}H_{45}N_2O_3S$+H: 657.3145; found: 657.3125.

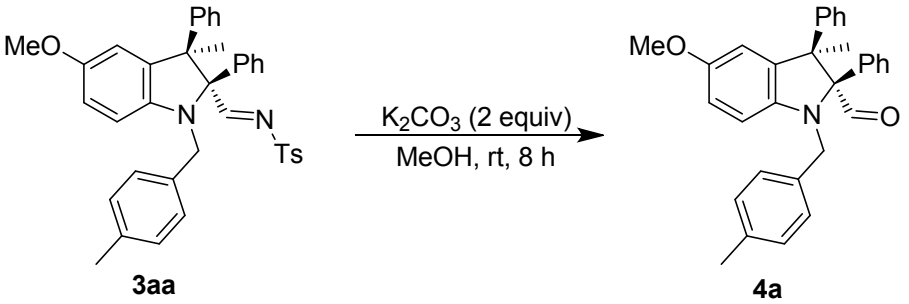
Indoline (3am): According to general procedure the product was isolated 60% yield. Colorless liquid;



R_f = 0.68 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 2984, 2937, 1602, 1507, 1491, 1447, 1374, 1328, 1239, 1162, 1091, 1044, 911, 843, 809. 731, 704, 550 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 8.84 (s, 1H), 7.71 (d, 2H, J = 8.3 Hz), 7.29 (d, 2H, J = 7.9 Hz), 7.15-7.06 (m, 5H), 7.02-6.98 (m, 4H), 6.66-6.54 (m, 6H), 6.21 (d, 1H, J = 8.5 Hz), 3.99 (ABq, 2H, J = 16.6, 47.5 Hz), 3.80 (s, 3H), 2.52 (s, 3H), 2.42 (s, 3H), 1.87 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 178.3, 161.4 (d, J = 246.4 Hz), 154.7, 144.8, 144.5, 138.3 (d, J = 3.3 Hz), 136.4, 135.8, 135.3, 135.0, 134.2, 129.9, 129.7,

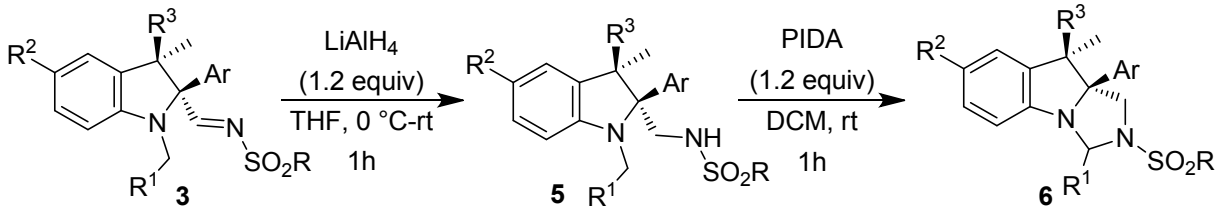
129.4, 128.0, 127.9, 127.8, 127.7, 126.1, 114.0 (d, J = 20.5 Hz), 113.3, 111.2, 109.6, 85.6, 57.3, 55.9, 50.0, 21.7, 21.1, 21.0; HRMS: calcd. for $C_{38}H_{35}FN_2O_3S$+H: 619.2425; found: 619.2429.

6. Synthesis of compound (4a):



Compound **3aa** (100 mg, 0.166 mmol) and K_2CO_3 (0.333 mmol, 2 equiv) were added under nitrogen atmosphere to an oven dried 10 mL reaction tube equipped with stir bar. 4 mL of MeOH was introduced through syringe and the reaction mixture was stirred at room temperature for 8 h. After the TLC analysis, the reaction mixture was dilute with water (10 mL) and extracted with DCM (2 x 5 mL). The combined organic layer was dried over (Na_2SO_4) and filtered. Evaporation of solvent under reduced pressure followed by column chromatography of the crude product afforded the aldehyde **4a** in 69% yield. Colorless liquid; R_f = 0.9 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 2989, 2923, 2843, 1702, 1570, 1443, 1327, 1287, 1198, 1105, 986, 862, 636, 412 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 9.97 (s, 1H), 7.27 (d, 2H, J = 7.8 Hz), 7.19 (d, 2H, J = 8.0 Hz), 7.13-7.06 (m, 3H), 7.03-6.97 (m, 5H), 6.70-6.68 (m, 3H), 6.65 (d, 1H, J = 2.5 Hz), 6.31 (d, 1H, J = 8.4 Hz), 4.23 (ABq, 2H, J = 16.6, 48.7 Hz), 3.74 (s, 3H), 2.38 (s, 3H), 1.98 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 201.8, 154.4, 145.1, 142.9, 136.6, 136.4, 135.3, 133.9, 129.5, 128.1, 127.9, 127.7, 127.4, 127.3, 126.3, 126.2, 113.1, 111.2, 109.1, 88.2, 56.5, 55.9, 50.2, 21.2, 20.7; HRMS: calcd. for $C_{31}H_{29}NO_2$+H: 448.2271; found: 448.2285.

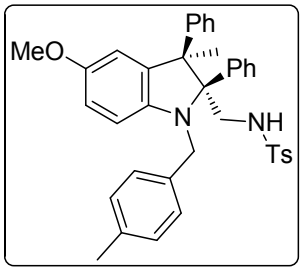
7. General procedure for the synthesis of imidazoindolines 6:



In a 10 mL round bottom flask, compound **3** (1 equiv) was dissolved in dry THF (2 mL) and cooled to 0 °C. After 5 min, $LiAlH_4$ (1.2 equiv) was added portion-wise to the stirred solution at 0 °C. After completion of addition of $LiAlH_4$, the reaction mixture was allowed to warm up to room temperature and stirred for 1 hour. After the consumption of starting material, monitored by TLC analysis, the reaction mixture was quenched by addition of saturated Na_2SO_4 and extracted with DCM (2 × 5 mL). Organic layers was dried over Na_2SO_4 followed by evaporationof solvent give the compound **5**, which was subjected for the next step without further purification.

In a 10 mL reaction tube, compound **5** (obtained above) was dissolved in dry DCM (1 mL). Diacetoxyiodo benzene (PIDA, 1.2 equiv) was added at room temperature and the reaction mixture was stirred for 1 hour at same temperature. After the consumption of starting material, monitored by TLC analysis, solvent was removed under the reduced pressure and the crude product was purified by the column chromatography using ethylacetate and hexane to afford the compound **6** with high yield and purity.

Compound (5a): According to the above reduction procedure the product was isolated 90%

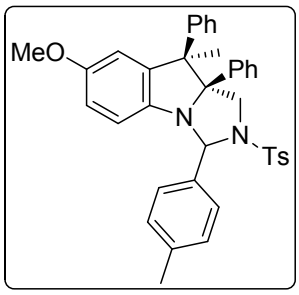


yield.Colorless solid; R_f = 0.58 in 20% ethyl acetate/hexane; mp: 196-198 ºC; FTIR (KBr): 3275, 3092, 2972, 2823,1586, 1473, 1326, 1289, 1097, 945, 880, 767, 643, 517 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.55 (d, 2H, J = 8.2 Hz), 7.27 (d, 2H, J = 8.0 Hz), 7.16-7.11 (m, 4H), 7.03-6.99 (m, 1H), 6.96-6.87 (m, 5H), 6.73 (d, 1H, J = 7.7 Hz), 6.63 (dd, 1H, J = 2.6, 8.4 Hz), 6.59 (d, 1H, J = 2.5 Hz), 6.55 (d, 2H, J = 7.4 Hz), 6.13 (d, 1H, J = 8.4 Hz), 4.31-4.23 (m, 2H), 3.96-3.91 (m, 2H), 3.72 (s, 3H), 3.53 (dd, 1H, J = 3.2, 12.6 Hz), 2.44 (s, 3H), 2.36 (s, 3H), 1.79 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 153.8, 145.0, 143.7, 143.5, 138.5, 136.7, 136.3, 136.1, 135.8, 129.8, 129.8(2), 129.5, 128.2,

128.0, 127.3, 127.2, 126.1, 126.0, 112.8, 111.1, 108.5, 81.1, 56.9, 55.9, 49.4, 46.2, 21.7, 21.7(1), 21.2; HRMS: calcd. for $C_{38}H_{38}N_2O_3S$+Na: 625.2495; found: 625.2501.

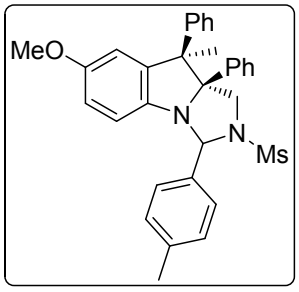
8. Properties of isolated imidazoindolines 6

Imidazoindoline (6a): According to general procedure the product was isolated 68% yield. White



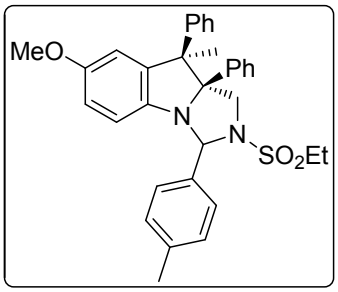
solid; R_f = 0.58 in 20% ethyl acetate/hexane; mp: 195-197 ºC; FTIR (KBr): 3107, 2926, 2859, 1600, 1482, 1379, 1344, 1280, 1161, 1097, 1032, 911, 807, 740, 653, 538 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): 7.41 (d, 2H, *J* = 8.0 Hz), 7.24 (d, 2H, *J* = 7.8 Hz), 7.20 (d, 2H, *J* = 8.3 Hz), 7.00-6.87 (m, 6H), 6.82-6.72 (m, 4H), 6.47 (d, 1H, *J* = 2.6 Hz), 6.35 (dd, 1H, *J* = 2.6, 8.8 Hz), 6.21 (d, 2H, *J* = 7.2 Hz), 5.78 (s, 1H), 5.03 (d, 1H, *J* = 8.9 Hz), 4.32 (d, 1H, *J* = 10.7 Hz), 3.97 (d, 1H, *J* = 10.7 Hz), 3.64 (s, 3H), 2.44 (s, 3H), 2.28 (s, 3H), 1.85 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 155.4, 144.4, 143.9, 142.9, 141.9, 139.1, 138.4, 137.5, 135.6, 132.6, 129.8, 129.2, 128.8, 127.9, 127.4, 127.3, 127.0, 126.5, 125.7, 116.6, 112.9, 109.9, 84.8, 80.7, 55.6, 54.2, 53.4, 21.5, 21.5, 20.0; HRMS: calcd. for $C_{38}H_{36}N_2O_3S$+K: 639.2078; found: 639.2059.

Imidazoindoline (6b): According to general procedure the product was isolated 74% yield. Colorless



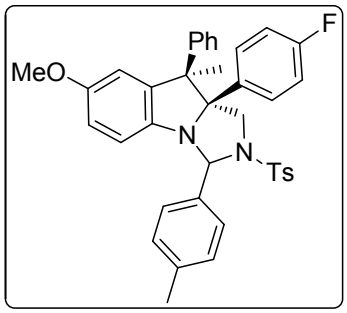
liquid; R_f = 0.48 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3052, 2954, 2926, 2858, 1598, 1408, 1172, 1126, 1069, 862, 771, 682, 443 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.56-7.51 (m, 1H), 7.42 (d, 2H, *J* = 8.0 Hz), 7.35-7.31 (m, 1H), 7.23 (d, 2H, *J* = 7.8 Hz), 7.12-7.04 (m, 3H), 6.99-6.96 (m, 1H), 6.88-6.82 (m, 3H), 6.50 (d, 1H, *J* = 2.6 Hz), 6.38-6.35 (m, 3H), 5.78 (s, 1H), 5.04 (d, 1H, *J* = 8.9 Hz), 4.47 (d, 1H, *J* = 11.1 Hz), 3.97 (d, 1H, *J* = 11.2 Hz), 3.66 (s, 3H), 2.44 (s, 3H), 2.13 (s, 3H), 1.96 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 155.4, 144.3, 141.6, 139.4, 138.3, 138.2, 132.6, 129.6, 129.1, 128.2, 127.8, 127.5, 127.5(2), 127.2, 125.9, 116.5, 113.0, 109.8, 85.6, 80.1, 55.6, 54.4, 53.8, 37.8, 21.5, 20.1; HRMS: calcd. for $C_{32}H_{32}N_2O_3S$+H: 525.2206; found: 525.2214.

Imidazoindoline (6c): According to general procedure the product was isolated 68% yield Colorless



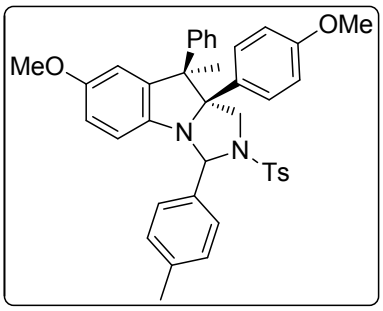
liquid; R_f = 0.48 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3054, 3028, 2933, 1598, 1482, 1333, 1278, 1211, 1144, 1034, 993, 897, 807, 733, 700, 514 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.41-7.36 (m, 3H), 7.24-7.21 (m, 3H), 7.13-7.07 (m, 2H), 6.94-6.77 (m, 4H), 6.52 (d, 1H, J = 2.6 Hz), 6.37 (dd, 1H, J = 2.7,8.8 Hz), 6.33 (d, 2H, J = 7.1 Hz), 5.88 (s, 1H), 5.06 (d, 1H, J = 8.8 Hz), 4.59 (d, 1H, J = 10.8 Hz), 3.87 (d, 1H, J = 10.8 Hz), 3.65 (s, 3H), 2.43 (s, 3H), 2.42-2.32 (m, 2H), 1.93 (s, 3H), 1.06 (t, 3H, J = 7.3 Hz); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 155.3, 144.6, 141.8, 139.5, 138.4, 137.5, 132.6, 129.6, 129.1, 128.3, 128.0, 127.7, 127.5, 127.1, 125.9, 116.5, 113.0, 109.9, 85.6, 80.0, 55.6, 53.9, 53.8, 47.0, 21.5, 20.1, 7.6; HRMS: calcd. for $C_{33}H_{34}N_2O_3S$+H: 539.2363; found: 539.2360.

Imidazoindoline (6d): According to general procedure the product was isolated 57% yield. Colorless



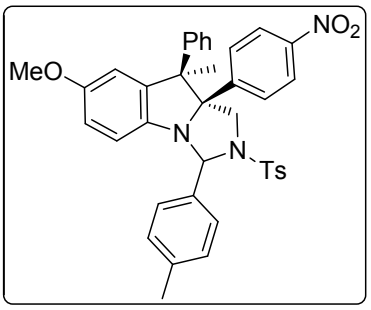
liquid; R_f = 0.52 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3072, 2925, 2855, 1597, 1484, 1347, 1277, 1160, 1113, 1092, 902, 809, 782, 735, 699, 597, 539, 459 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.41 (d, 2H, J = 8.0 Hz), 7.26 (d, 2H, J = 8.0 Hz), 7.20 (d, 2H, J = 7.8 Hz), 6.94 (d, 2H, J = 7.9 Hz), 6.88-6.76 (m, 6H), 6.58-6.54 (m, 1H), 6.46 (d, 1H, J = 2.6 Hz), 6.35 (dd, 1H, J = 2.7,8.9 Hz), 6.21 (d, 2H, J = 7.1 Hz), 5.75 (s, 1H), 5.02 (d, 1H, J = 8.8 Hz), 4.27 (d, 1H, J = 10.8 Hz), 3.97 (d, 1H, J = 10.8 Hz), 3.64 (s, 3H), 2.44 (s, 3H), 2.32 (s, 3H), 1.84 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 161.9 (d, J = 247.9 Hz), 155.5, 144.2, 143.4, 141.7, 139.2, 138.2, 135.7, 133.4 (d, J = 3.0 Hz), 132.5, 129.7, 129.3, 128.9, 127.3, 127.2, 126.0, 116.6, 113.3, 114.7 (d, J = 21.6 Hz), 113.0, 109.9, 84.5, 80.7, 55.6, 54.1, 53.4, 21.6, 21.4, 20.0; HRMS: calcd. for $C_{38}H_{35}FN_2O_3S$+Na: 641.2245; found: 641.2252.

Imidazoindoline (6e): According to general procedure the product was isolated 59% yield. Colorless



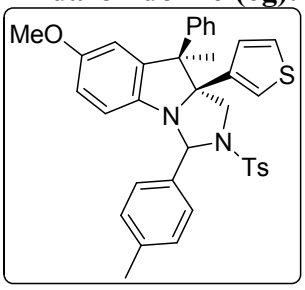
liquid; R_f = 0.44 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3023, 2925, 2850, 1603, 1482, 1346, 1252, 1162, 1094, 1032, 810, 736, 698, 666, 588 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.40 (d, 2H, J = 8.0 Hz), 7.26-7.24 (m, 2H), 7.19 (d, 2H, J = 7.8 Hz), 6.92 (d, 2H, J = 7.9 Hz), 6.84-6.75 (m, 6H), 6.47 (d, 1H, J = 2.6 Hz), 6.35 (dd, 2H, J = 2.7, 8.9 Hz), 6.21 (d, 2H, J = 7.1 Hz), 5.76 (s, 1H), 5.02 (d, 1H, J = 8.8 Hz), 4.30 (d, 1H, J = 10.7 Hz), 3.94 (d, 1H, J = 10.7 Hz), 3.69 (s, 3H), 3.64 (s, 3H), 2.44 (s, 3H), 2.31 (s, 3H), 1.83 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 158.6, 155.4, 144.5, 143.0, 141.9, 139.1, 138.4, 135.9, 133.5, 132.7, 129.8, 129.4, 129.2, 127.4, 127.4(0), 127.0, 125.8, 125.7, 116.5, 113.3, 112.9, 109.9, 84.5, 80.7, 55.6, 55.2, 54.1, 53.5, 21.6, 21.5, 20.0; HRMS: calcd. for $C_{39}H_{38}N_2O_4S$+Na: 653.2444; found: 653.2450.

Imidazoindoline (6f): According to general procedure the product was isolated 68% yield. Colorless



liquid; R_f = 0.48 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3028, 2925, 2854, 1596, 1505, 1385, 1307, 1280, 1172, 1067, 1017, 931, 862, 770,611, 416 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.74-7.59 (m, 2H), 7.40 (d, 2H, J = 8.0 Hz), 7.33-7.26 (m, 2H), 7.22 (d, 2H, J = 7.8 Hz), 7.13 (d, 2H, J = 9.1 Hz), 6.92 (d, 2H, J = 8.0 Hz), 6.88-6.75 (m, 3H), 6.46 (d, 1H, J = 2.6 Hz), 6.37 (dd, 1H, J = 2.7,8.9 Hz), 6.25 (d, 2H, J = 7.8 Hz), 5.74 (s, 1H), 5.04 (d, 1H, J = 8.9 Hz), 4.32 (d, 1H, J = 11.1 Hz), 4.03 (d, 1H, J = 11.0 Hz), 3.64 (s, 3H), 2.45 (s, 3H), 2.27 (s, 3H), 1.90 (s, 3H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 155.8, 150.1, 146.5, 146.0, 143.8, 143.4, 141.2, 139.5, 137.8, 135.7, 132.1, 129.6, 129.3, 129.0, 127.5, 127.4, 126.5, 122.9, 116.7, 113.3, 109.8, 84.8, 80.6, 55.6, 54.4, 53.2, 21.6, 21.3, 20.1; HRMS: calcd. for $C_{38}H_{35}N_3O_5S$+Na: 668.2190; found: 668.2193.

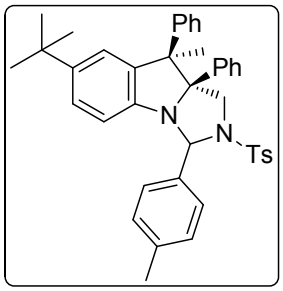
Imidazoindoline (6g): According to general procedure the product was isolated 83% yield. Colorless



liquid; R_f = 0.52 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 3055, 2984,

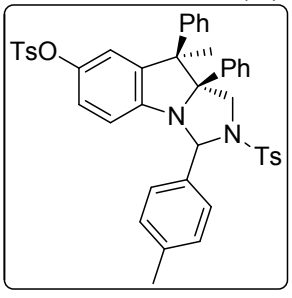
2897, 1597, 1481, 1428, 1344, 1267, 1218, 1161, 1096, 1033, 997, 899, 741, 587 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.37 (d, 2H, J = 8.0 Hz), 7.32 (d, 2H, J = 8.3 Hz), 7.18 (d, 2H, J = 7.8 Hz), 7.0 (d, 2H, J = 8.0 Hz), 6.90-6.82 (m, 3H), 6.75 (dd, 1H, J = 2.9,4.9 Hz), 6.66 (dd, 1H, J = 1.2, 2.8 Hz), 6.49 (d, 1H, J = 2.7 Hz), 6.44 (dd, 1H, J = 1.0, 5.0 Hz), 6.35 (dd, 1H, J = 2.7, 8.9 Hz), 6.29 (d, 2H, J = 7.2 Hz), 5.83 (s, 1H), 5.02 (d, 1H, J = 8.9 Hz), 4.21 (d, 1H, J = 10.5 Hz), 3.94 (d, 1H, J = 10.5 Hz), 3.65 (s, 3H), 2.44 (s, 3H), 2.34 (s, 3H), 1.84 (s, 3H). $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 155.5, 144.6, 143.1, 141.8, 139.9, 139.1, 138.3, 135.9, 132.4, 129.8, 129.3, 128.8, 127.3, 127.2, 127.1, 126.2, 125.9, 124.8, 122.2, 116.5, 112.9, 109.9, 83.0, 81.2, 55.6, 54.0, 53.8, 21.6, 21.5, 19.9; HRMS: calcd. for $C_{36}H_{35}N_2O_3S_2$+Na: 607.2084; found: 607.2098.

Imidazoindoline (6h): According to general procedure the product was isolated 89% yield Colorless



liquid; R_f = 0.56 in 20% ethyl acetate/hexane; FTIR ($CHCl_3$): 2957, 2928, 2866, 1601, 1486, 1348, 1272, 1160, 1093, 998, 895, 808, 739, 699, 673, 581, 519 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.45 (d, 2H, J = 7.8 Hz), 7.26 (d, 2H, J = 8.1 Hz), 7.21 (d, 2H, J = 7.8 Hz), 6.94-6.88 (m, 6H), 6.82-6.79 (m, 3H), 6.88-6.82 (m, 3H), 6.18 (d, 2H, J = 7.3 Hz), 5.80 (s, 1H), 5.05 (d, 1H, J = 8.6 Hz), 4.32 (d, 1H, J = 10.8 Hz), 3.97 (d, 1H, J = 10.7 Hz), 2.46 (s, 3H), 2.29 (s, 3H), 1.87 (s, 3H), 1.17 (s, 9H); $^{13}C\{^1H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 145.8, 145.1, 144.9, 142.9, 139.0, 137.6, 136.6, 135.6, 132.6, 129.8, 129.2, 128.8, 127.9, 127.5, 127.3, 127.3(3), 126.9, 126.4, 125.5, 124.3, 121.1, 115.1, 84.7, 80.5, 54.2, 53.3, 34.3, 31.6, 21.6, 21.5, 20.2; HRMS: calcd. for $C_{41}H_{42}N_2O_2S$+H: 627.3040; found: 627.3051.

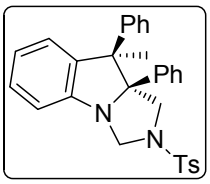
Imidazoindoline (6i): According to general procedure the product was isolated 70% yield. Colorless



liquid; R_f = 0.46 in 16:84 ethyl acetate/hexane; FTIR ($CHCl_3$): 3024, 2925, 2862, 1597, 1474, 1367, 1270, 1163, 1092, 1002, 918, 817, 762, 703, 661, 552 cm^{-1}; ^1H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.51 (d, 2H, J = 8.2 Hz), 7.35 (d,

2H, *J* = 8.0 Hz), 7.22 (d, 2H, *J* = 8.2 Hz), 7.18 (d, 2H, *J* = 7.8 Hz), 7.07 (d, 2H, *J* = 8.0 Hz), 6.92-6.82 (m, 8H), 6.77-6.73 (m, 2H), 6.51 (dd, 1H, *J* = 2.5,8.9 Hz), 6.27 (d, 1H, *J* = 2.5 Hz), 6.12 (d, 2H, *J* = 7.5 Hz), 5.77 (s, 1H), 4.99 (d, 1H, *J* = 8.9 Hz), 4.32 (d, 1H, *J* = 10.7 Hz), 3.88 (d, 1H, *J* = 10.7 Hz), 2.43 (s, 3H), 2.30 (s, 3H), 2.28 (s, 3H), 1.72 (s, 3H); $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 146.9, 145.1, 144.5, 143.6, 143.1, 139.5, 138.4, 136.9, 135.4, 132.0, 132.0(1), 129.6, 129.5, 129.3, 129.0, 128.8, 128.6, 128.0, 127.2, 127.1, 126.7, 126.0, 125.9, 121.7, 118.3, 116.0, 84.8, 80.0, 53.8, 53.2, 21.6, 21.5, 21.5, 20.0; HRMS: calcd. for $C_{44}H_{40}N_2O_5S_2$+H: 741.2451; found: 741.2458.

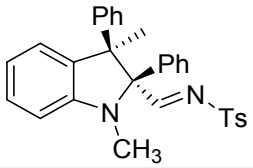
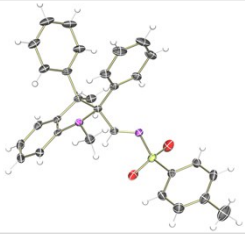
Imidazoindoline (6k): According to general procedure the product was isolated 69% yield. White



solid; R_f = 0.56 in 20% ethyl acetate/hexane; mp: 188-190 ºC; FTIR (KBr): 3043, 2979, 2925, 1595, 1408, 1335, 1171, 1127, 1069, 862, 771, 682, 412 cm^{-1}; ^{1}H NMR (400 MHz, $CDCl_3$, 24 °C): δ 7.40 (d, 2H, *J* = 8.3 Hz), 7.17-7.13 (m, 1H), 7.0-6.94 (m, 5H), 6.92-6.83 (m, 5H), 6.81-6.77 (m, 2H), 6.88-6.82 (m, 3H), 6.70 (d, 1H, *J* = 6.9 Hz), 6.34-6.32 (m, 2H), 4.94 (d, 1H, *J* = 8.7 Hz), 4.32 (d, 1H, *J* = 8.7 Hz), 3.93 (d, 1H, *J* = 9.6 Hz), 3.48 (d, 1H, *J* = 9.6 Hz), 2.31 (s, 3H), 1.83 (s, 3H); $^{13}C\{^{1}H\}$ NMR (100 MHz, $CDCl_3$, 24 °C): δ 150.5, 149.6, 143.6, 143.3, 137.2, 136.4, 134.1, 129.5, 128.6, 127.9, 127.5, 127.1, 127.0, 126.3, 126.0, 124.5, 122.5, 111.6, 86.4, 66.2, 54.7, 52.1, 21.5, 20.2; HRMS: calcd. for $C_{30}H_{28}N_2O_2S$+Na: 503.1764; found: 503.1767.

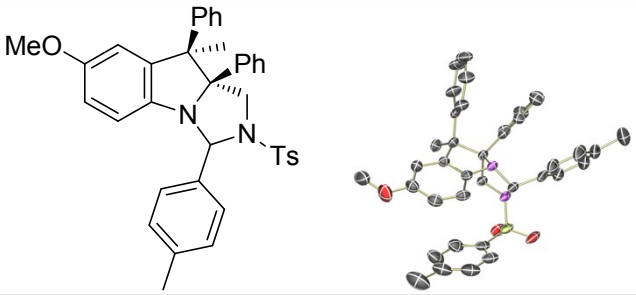
9. Crystallographic data and structure refinements summary for compound 3ad

Recrystallization of indoline **3ad** from DCM : hexane (1 : 2) by slow evaporation in a vial with diameter of 0.75 cm and length 5 cm at 30 ºC afforded suitable size and quality crystals for X-ray diffraction.

Molecular Structure (Ortep Structure)	 
CCDC number	1438964
Formula	$C_{30}H_{28}N_2O_2S$
Formula weight	480.6
Color	Colorless
Temperature/K	296(2)
Radiation	Mo Kα
Wavelength/Å	0.71073
Crystal system	Monoclinic
Space group	*P* 21/n
a (Å)	8.5621(3)
b (Å)	12.1149(4)
c (Å)	25.0836(10)
α (°)	90
β (°)	99.7094(14)
γ (°)	90
Volume (Å^3)	2564.63(16)
Z	4
Density (g/ml)	1.245
μ (1/mm)	0.156
F (000)	1016
θ(min, max)	1.647, 24.997
No. of unique reflns	4520
No. of parameters	319
*R*_obs, wR_2_obs	0.0398, 0.0961
$\Delta\rho_{min}$, $\Delta\rho_{max}$ (eÅ^{-3})	−0.318, 0.199
GooF	1.016

10. Crystallographic data and structure refinements summary for compound 6a

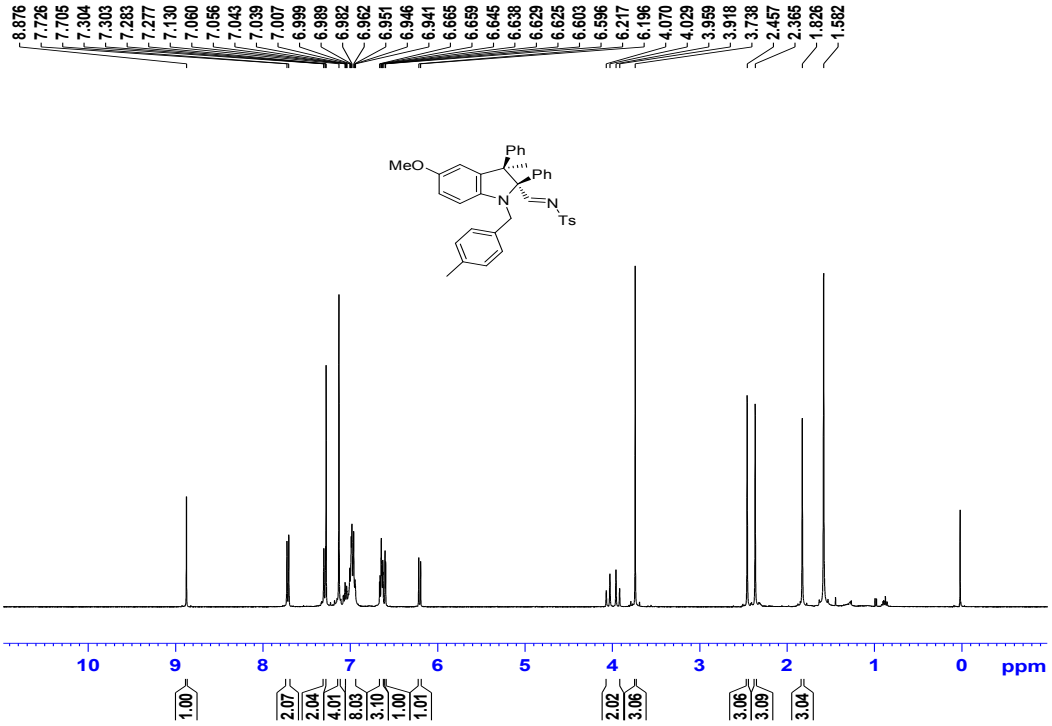
Recrystallization of imidazoindoline **6a** from EtOAc : hexane (1 : 2) by slow evaporation in a vial with diameter of 0.75 cm and length 5 cm at 30 ºC afforded suitable size and quality crystals for X-ray diffraction.

Molecular Structure (Ortep Structure)	
CCDC number	1438963
Formula	$C_{38}H_{36}N_2O_3S$
Formula weight	600.75
Color	White
Temperature/K	296(2)
Radiation	Mo Kα
Wavelength/Å	0.71073
Crystal system	Monoclinic
Space group	*P* 21/c
a (Å)	6.8957(3)
b (Å)	18.2571(8)
c (Å)	26.4728(13)
α (°)	90
β (°)	91.3638(19)
γ (°)	90
Volume (Å^3)	3331.9(3)
Z	4
Density (g/ml)	1.198
μ (1/mm)	0.135
F (000)	1272
θ(min, max)	1.539, 24.261
No. of unique reflns	5343
No. of parameters	402
*R*_obs, wR_2_obs	0.0642, 0.1774
$\Delta\rho_{min}$, $\Delta\rho_{max}$ (eÅ^{-3})	−0.244, 0.958
GooF	1.063

11. NMR spectra of isolated compounds:

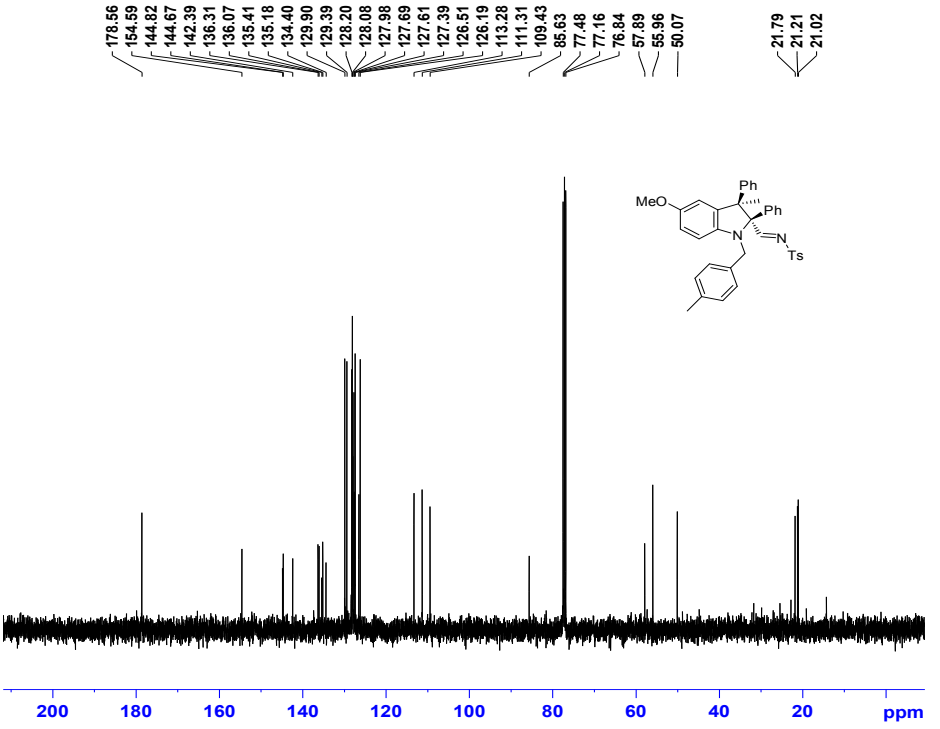
Indoline (3aa):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              507
PROCNO               1

F2 - Acquisition Parameters
Date_         20160418
Time              14.17
INSTRUM           spect
PROBHD  5 mm PABBO BB-
PULPROG           zg30
TD               65536
SOLVENT           CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES          0.122266 Hz
AQ            4.0894465 sec
RG                200.34
DW             62.400 usec
DE              6.50 usec
TE              299.9 K
D1           0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1       400.1320007 MHz
NUC1               1H
P1              15.70 usec
PLW1        7.75000000 W

F2 - Processing parameters
SI               65536
SF          400.1300103 MHz
WDW                 EM
SSB      0
LB            0.30 Hz
GB       0
PC               1.00
```

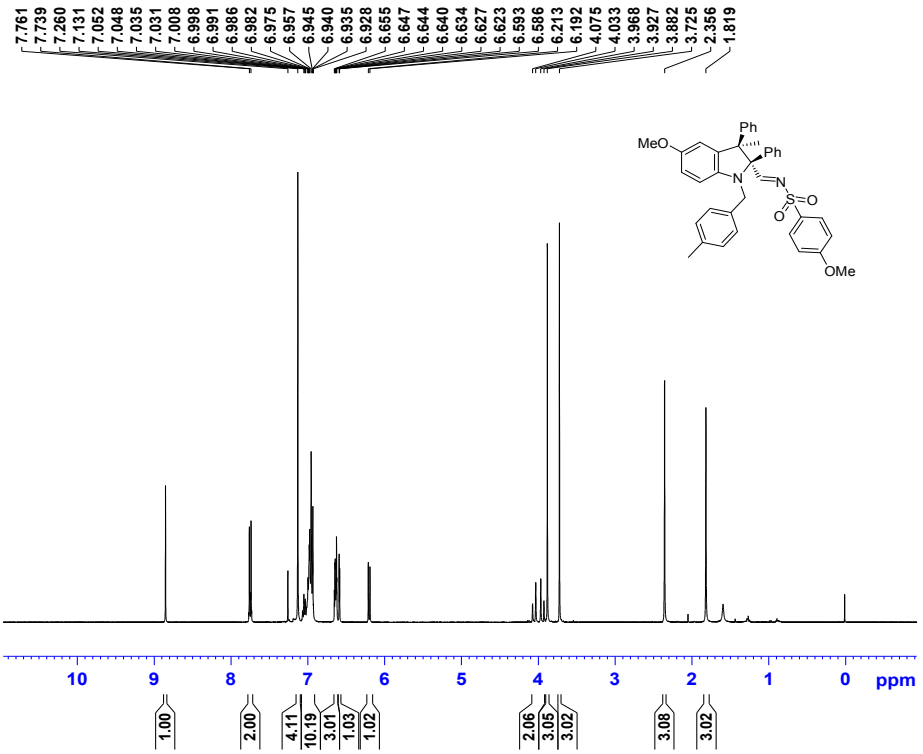
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          New Folder
EXPNO              101
PROCNO               1

F2 - Acquisition Parameters
Date_         20150704
Time              15.16
INSTRUM           spect
PROBHD  5 mm PABBO BB-
PULPROG         zgpg30
TD               16540
SOLVENT           CDCl3
NS                 151
DS                   4
SWH          24038.461 Hz
FIDRES         1.453353 Hz
AQ           0.3440820 sec
RG                200.34
DW             20.800 usec
DE              6.50 usec
TE              296.8 K
D1           1.00000000 sec
D11          0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1               13C
P1              9.25 usec
PLW1       47.00000000 W
SFO1       100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2               1H
PCPD2          90.00 usec
PLW2        7.75000000 W
PLW12       0.23583999 W
PLW13       0.19103000 W
SFO2       400.1316005 MHz

F2 - Processing parameters
SI               32768
SF          100.6127569 MHz
WDW                 EM
SSB      0
LB            1.00 Hz
GB       0
PC               1.40
```

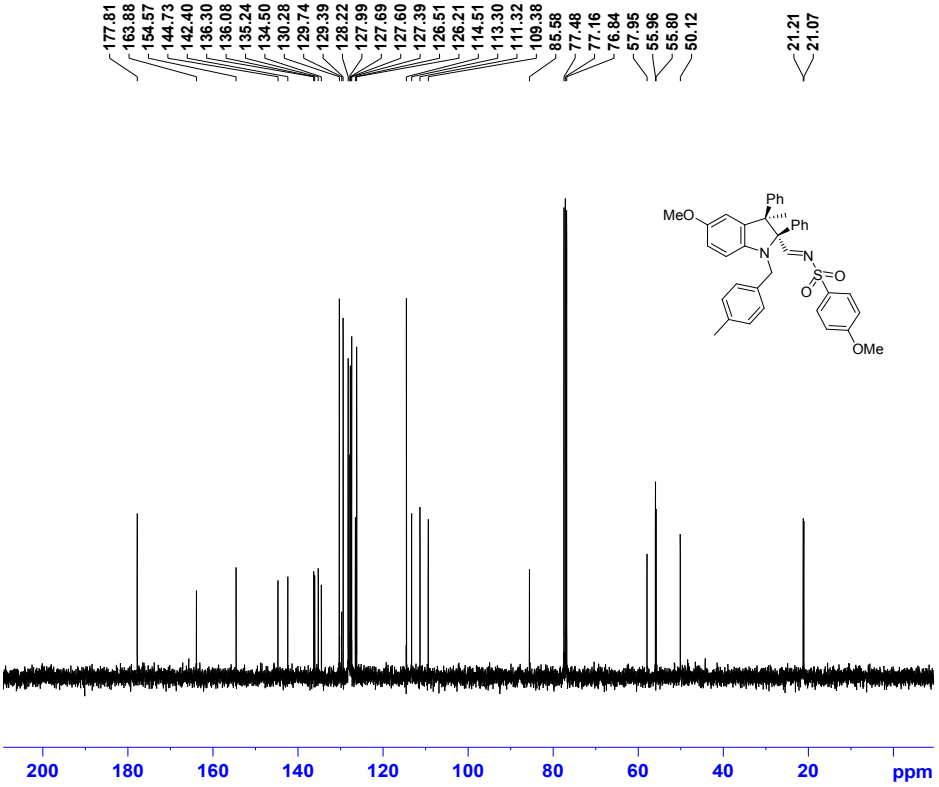
Indoline (3ba) :

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          765
PROCNO           1

F2 - Acquisition Parameters
Date_        20150525
Time            20.49
INSTRUM         spect
PROBHD   5 mm PABBO BB-
PULPROG         zg30
TD             65536
SOLVENT         CDCl3
NS                16
DS                 2
SWH          8012.820 Hz
FIDRES          0.122266 Hz
AQ           4.0894966 sec
RG               124.58
DW              62.400 usec
DE               6.50 usec
TE              298.9 K
D1           0.50000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1              1H
P1             15.70 usec
PLW1        7.75000000 W
SFO1       400.1320007 MHz

F2 - Processing parameters
SI             65536
SF         400.1300093 MHz
WDW               EM
SSB      0
LB            0.30 Hz
GB       0
PC            1.00
```

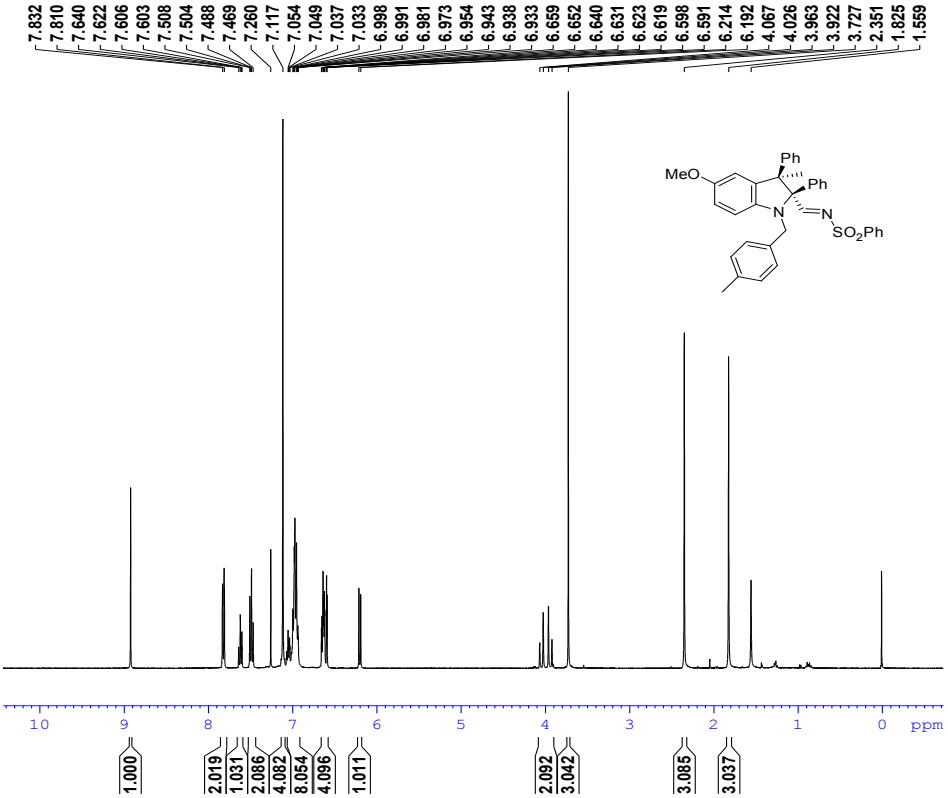
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          766
PROCNO           1

F2 - Acquisition Parameters
Date_        20150525
Time            20.53
INSTRUM         spect
PROBHD   5 mm PABBO BB-
PULPROG        zgpg30
TD             16540
SOLVENT         CDCl3
NS               207
DS                 4
SWH         24038.461 Hz
FIDRES          1.453353 Hz
AQ           0.3440820 sec
RG              200.34
DW              20.800 usec
DE               6.50 usec
TE              299.2 K
D1           1.00000000 sec
D11          0.03000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1             13C
P1              9.25 usec
PLW1        47.00000000 W
SFO1       100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2        waltz16
NUC2              1H
PCPD2          90.00 usec
PLW2        7.75000000 W
PLW12       0.23583999 W
PLW13       0.19103000 W
SFO2       400.1316005 MHz

F2 - Processing parameters
SI             32768
SF         100.6127567 MHz
WDW               EM
SSB      0
LB            1.00 Hz
GB       0
PC            1.40
```

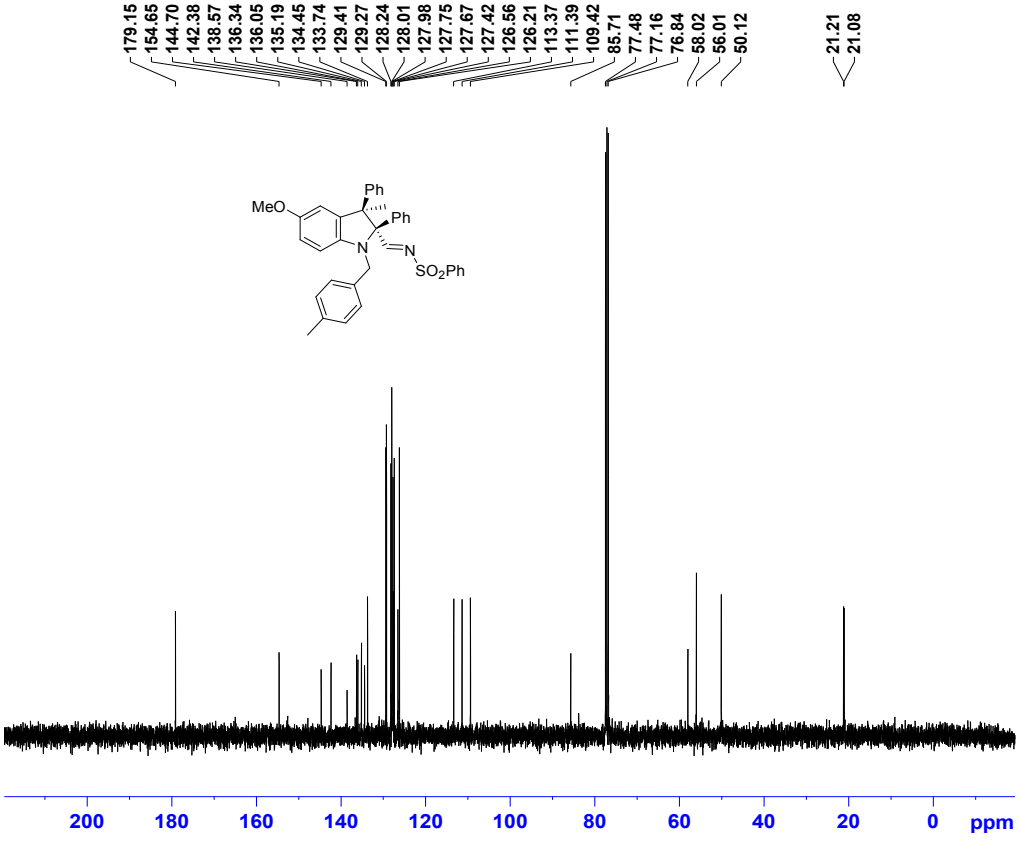
Indoline (3ca):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          701
PROCNO           1

F2 - Acquisition Parameters
Date_        20150522
Time            1.06
INSTRUM         spect
PROBHD  5 mm PABBO BB-
PULPROG         zg30
TD             65536
SOLVENT         CDCl3
NS                16
DS                 2
SWH          8012.820 Hz
FIDRES          0.122266 Hz
AQ           4.0894465 sec
RG              169.77
DW               62.400 usec
DE                6.50 usec
TE              301.2 K
D1           0.50000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1             1H
P1              15.70 usec
PLW1         7.75000000 W
SFO1        400.1320007 MHz

F2 - Processing parameters
SI             65536
SF         400.1300094 MHz
WDW               EM
SSB     0
LB           0.30 Hz
GB      0
PC              1.00
```

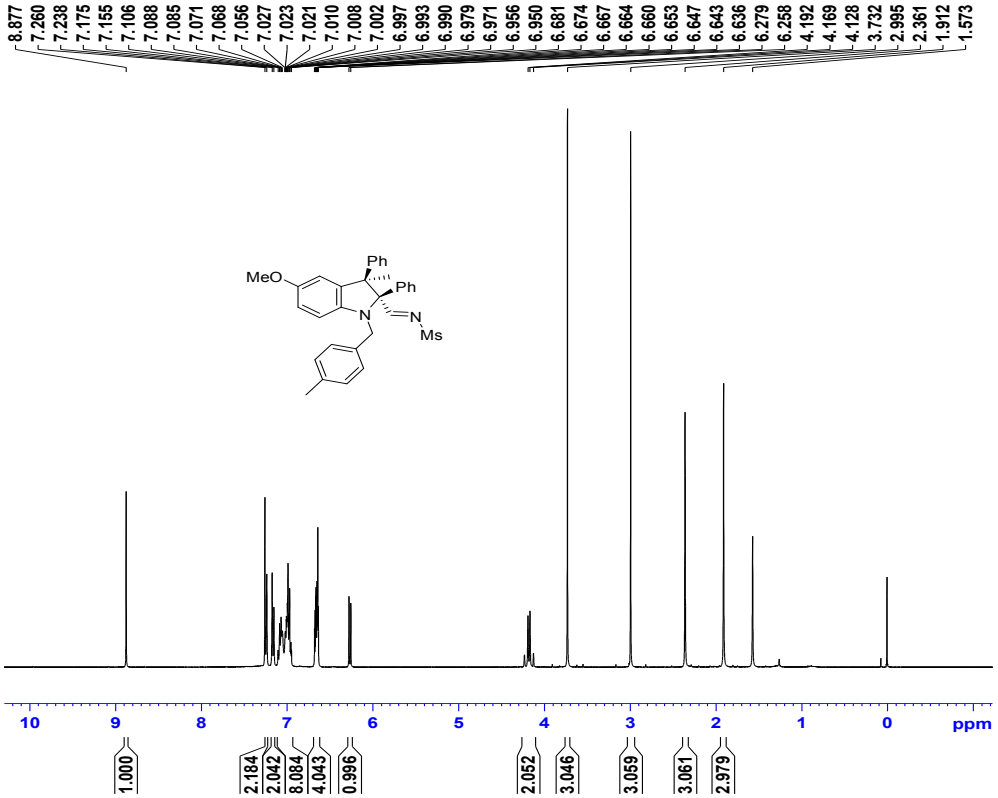
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          702
PROCNO           1

F2 - Acquisition Parameters
Date_        20150522
Time            1.14
INSTRUM         spect
PROBHD  5 mm PABBO BB-
PULPROG        zgpg30
TD             16540
SOLVENT         CDCl3
NS               256
DS                 4
SWH          24038.461 Hz
FIDRES          1.453353 Hz
AQ           0.3440320 sec
RG              200.34
DW               20.800 usec
DE                6.50 usec
TE              302.0 K
D1           1.00000000 sec
d11          0.03000000 sec
DELTA        0.89999998 sec
TD0               1
SFO1        100.6228289 MHz
NUC1             13C
P1               9.25 usec
PLW1        47.00000000 W
SFO2        400.1316005 MHz
NUC2             1H
CPDPRG[2        waltz16
PCPD2           90.00 usec
PLW2         7.75000000 W
PLW12        0.23583999 W
PLW13        0.19103000 W

F2 - Processing parameters
SI             32768
SF         100.6127541 MHz
WDW               EM
SSB     0
LB             1.00 Hz
GB      0
PC              1.40
```

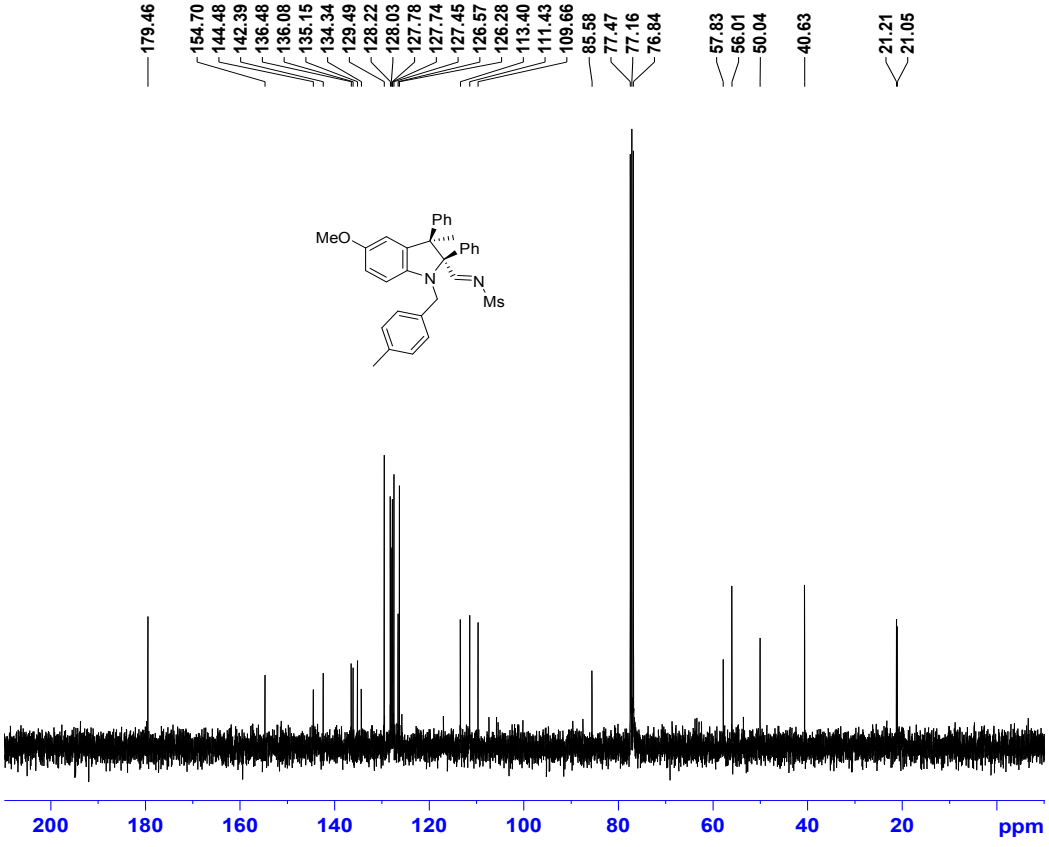
Indoline (3da):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40415
EXPNO              780
PROCNO               1

F2 - Acquisition Parameters
Date_         20150425
Time             18.36
INSTRUM          spect
PROBHD   5 mm PABBI 1H/
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES        0.122266 Hz
AQ            4.0894465 sec
RG                 108.26
DW              62.400 usec
DE               6.50 usec
TE               298.5 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                1H
P1               9.00 usec
PLW1         8.50000000 W
SFO1         400.1320007 MHz

F2 - Processing parameters
SI                  65536
SF           400.1300102 MHz
WDW                    EM
SSB                 0
LB               0.30 Hz
GB                  0
PC                  1.00
```

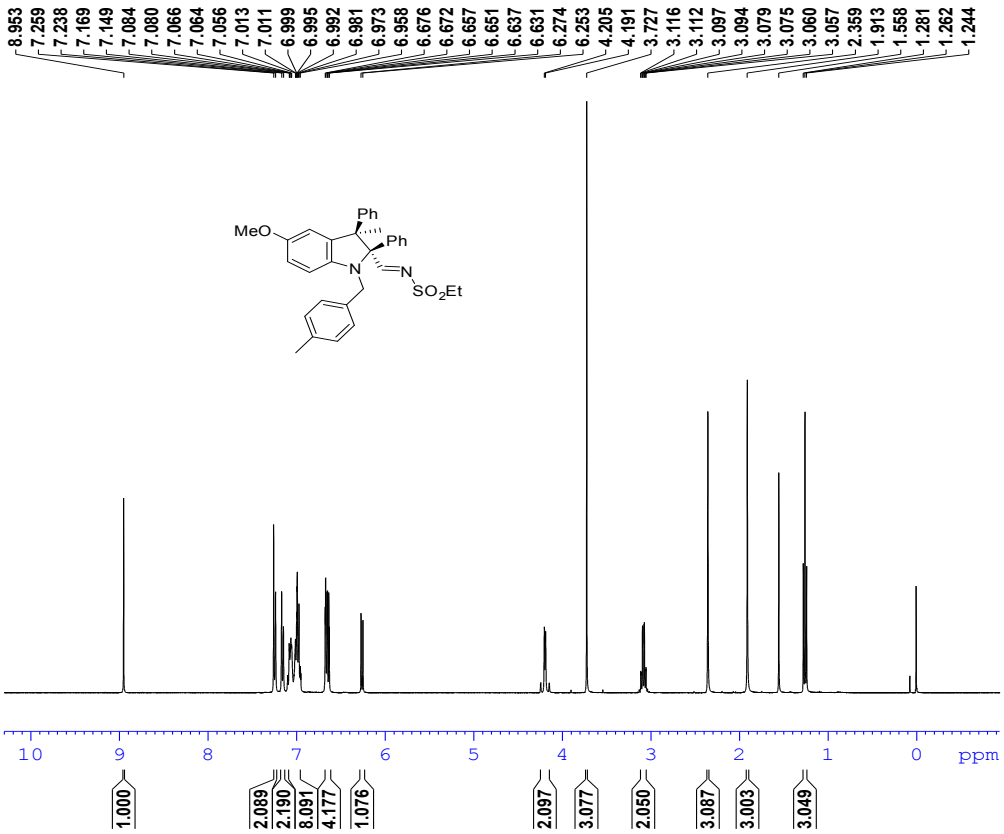
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40415
EXPNO              781
PROCNO               1

F2 - Acquisition Parameters
Date_         20150425
Time             18.43
INSTRUM          spect
PROBHD   5 mm PABBI 1H/
PULPROG        zgpg30
TD              16540
SOLVENT          CDCl3
NS                 256
DS                   4
SWH           24038.461 Hz
FIDRES        1.453353 Hz
AQ            0.3440320 sec
RG                 200.34
DW              20.800 usec
DE               6.50 usec
TE               298.7 K
D1            1.00000000 sec
d11           0.03000000 sec
DELTA         0.89999998 sec
TD0                  1
SFO1         100.6228289 MHz
NUC1                13C
P1               15.00 usec
PLW1         76.00000000 W
SFO2         400.1316005 MHz
NUC2                1H
CPDPRG[2        waltz16
PCPD2            90.00 usec
PLW2          8.50000000 W
PLW12         0.08500000 W
PLW13         0.06885000 W

F2 - Processing parameters
SI                  32768
SF           100.6127559 MHz
WDW                    EM
SSB                 0
LB               1.00 Hz
GB                  0
PC                  1.40
```

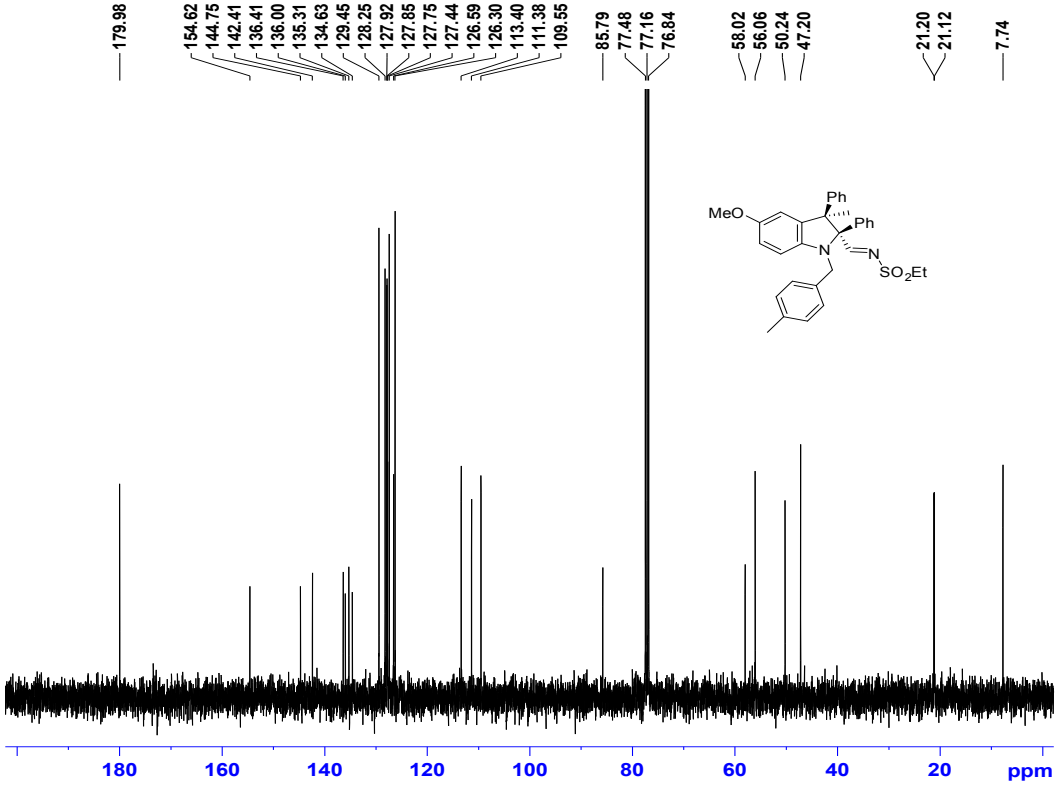
Indoline (3ea):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME       New Folder_1
EXPNO            707
PROCNO             1

F2 - Acquisition Parameters
Date_        20150522
Time             1.42
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD             65536
SOLVENT          CDCl3
NS                16
DS                 2
SWH           8012.820 Hz
FIDRES        0.122266 Hz
AQ            4.0894465 sec
RG              169.77
DW             62.400 usec
DE              6.50 usec
TE              301.2 K
D1          0.50000000 sec
TD0                1

======== CHANNEL f1 ========
NUC1               1H
P1             15.70 usec
PLW1        7.75000000 W
SFO1       400.1320007 MHz

F2 - Processing parameters
SI             65536
SF        400.1300097 MHz
WDW               EM
SSB     0
LB           0.30 Hz
GB      0
PC              1.00
```

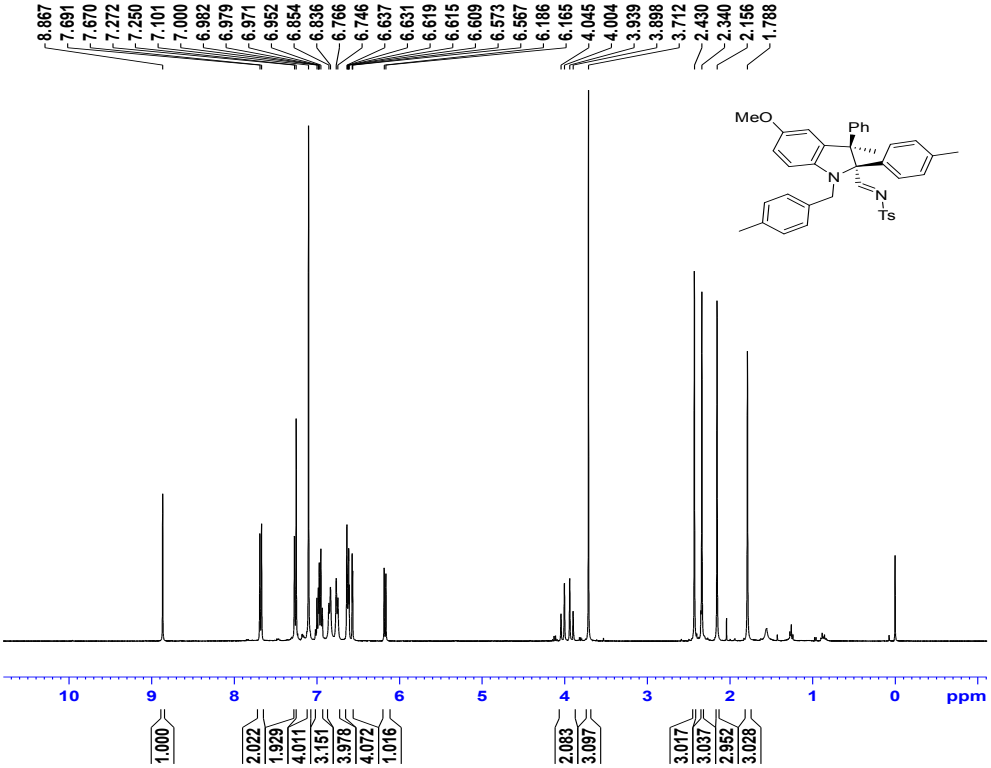
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME       New Folder_1
EXPNO            708
PROCNO             1

F2 - Acquisition Parameters
Date_        20150522
Time             1.49
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG         zgpg30
TD             16540
SOLVENT          CDCl3
NS               256
DS                 4
SWH           24038.461 Hz
FIDRES         1.453353 Hz
AQ            0.3440320 sec
RG              200.34
DW             20.800 usec
DE              6.50 usec
TE              302.0 K
D1          1.00000000 sec
d11         0.03000000 sec
DELTA       0.89999998 sec
TD0                1
SFO1       100.6228289 MHz
NUC1              13C
P1             9.25 usec
PLW1       47.00000000 W
SFO2       400.1316005 MHz
NUC2               1H
CPDPRG[2       waltz16
PCPD2          90.00 usec
PLW2        7.75000000 W
PLW12       0.23583999 W
PLW13       0.19103000 W

F2 - Processing parameters
SI             32768
SF        100.6127544 MHz
WDW               EM
SSB     0
LB           1.00 Hz
GB      0
PC              1.40
```

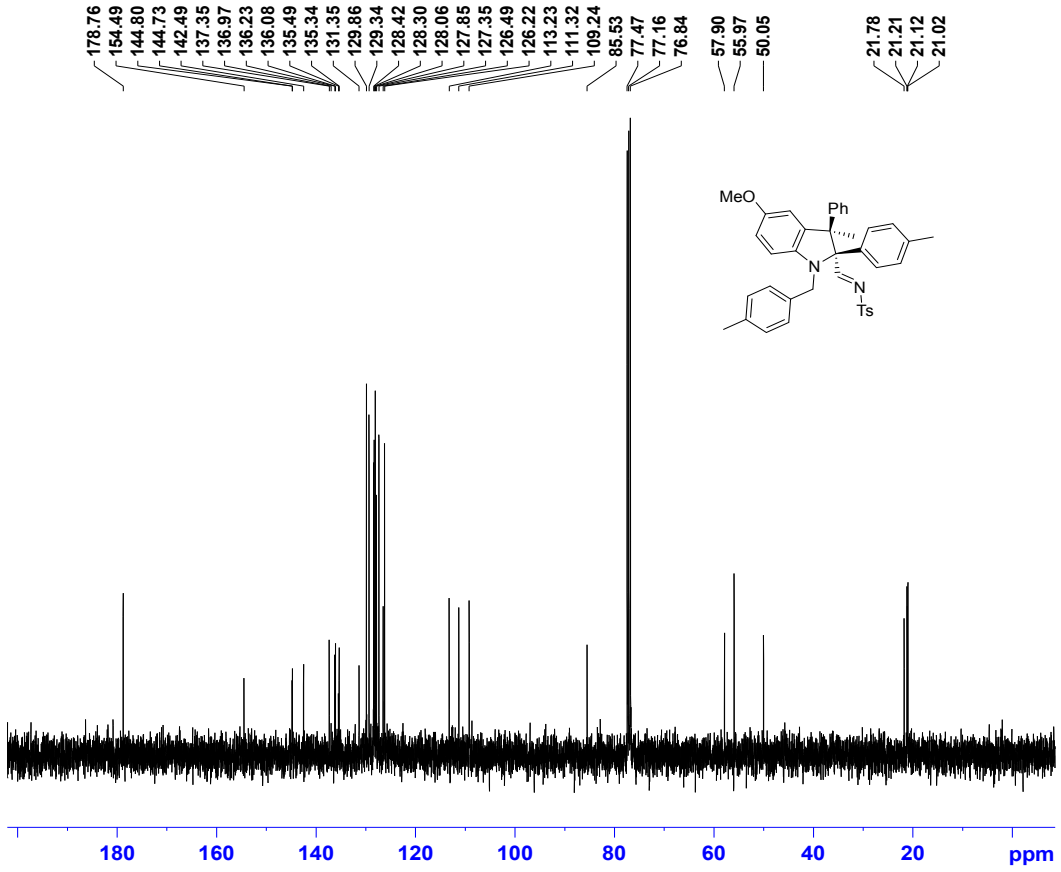
Indoline (3fa):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40415
EXPNO              884
PROCNO               1

F2 - Acquisition Parameters
Date_         20150428
Time             12.47
INSTRUM          spect
PROBHD  5 mm PABBI 1H/
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894465 sec
RG                95.73
DW               62.400 usec
DE                6.50 usec
TE               298.5 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                 1H
P1                9.00 usec
PLW1          8.50000000 W
SFO1          400.1320007 MHz

F2 - Processing parameters
SI              65536
SF          400.1300141 MHz
WDW                 EM
SSB      0
LB               0.30 Hz
GB       0
PC               1.00
```

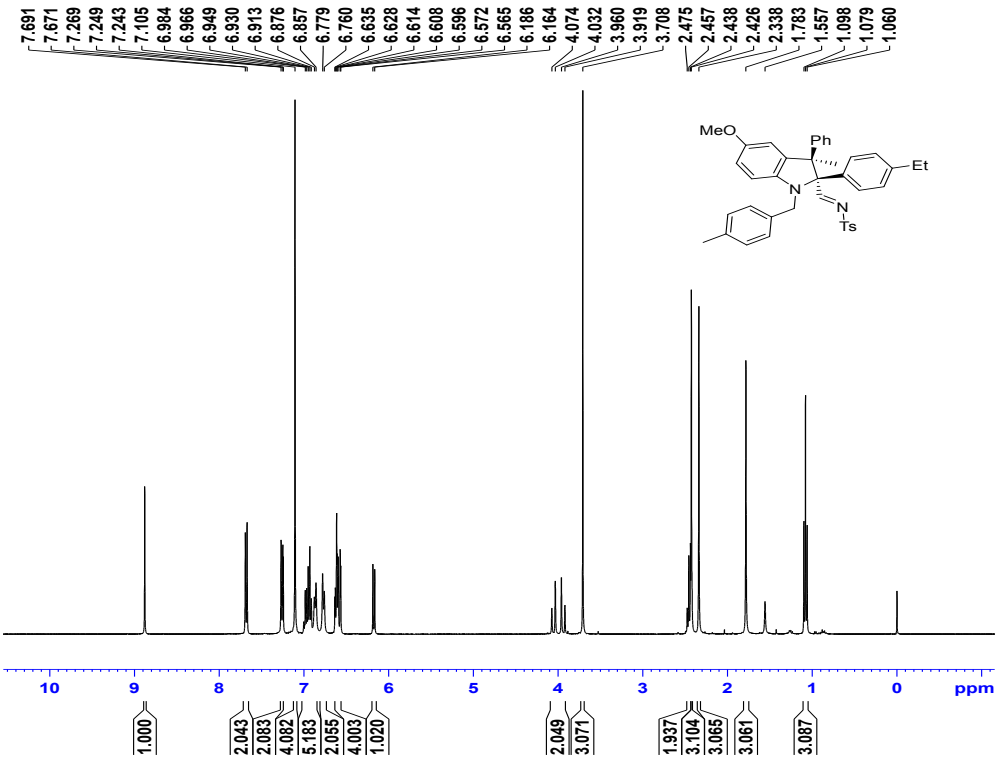
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40415
EXPNO              885
PROCNO               1

F2 - Acquisition Parameters
Date_         20150428
Time             12.54
INSTRUM          spect
PROBHD  5 mm PABBI 1H/
PULPROG        zgpg30
TD              16540
SOLVENT          CDCl3
NS                 256
DS                   4
SWH          24038.461 Hz
FIDRES           1.453353 Hz
AQ            0.3440320 sec
RG                200.34
DW               20.800 usec
DE                6.50 usec
TE               298.8 K
D1            1.00000000 sec
d11           0.03000000 sec
DELTA         0.89999998 sec
TD0                  1
SFO1          100.6228289 MHz
NUC1                13C
P1               15.00 usec
PLW1          76.00000000 W
SFO2          400.1316005 MHz
NUC2                 1H
CPDPRG[2         waltz16
PCPD2            90.00 usec
PLW2          8.50000000 W
PLW12         0.08500000 W
PLW13         0.06885000 W

F2 - Processing parameters
SI              32768
SF          100.6127562 MHz
WDW                 EM
SSB      0
LB               1.00 Hz
GB       0
PC               1.40
```

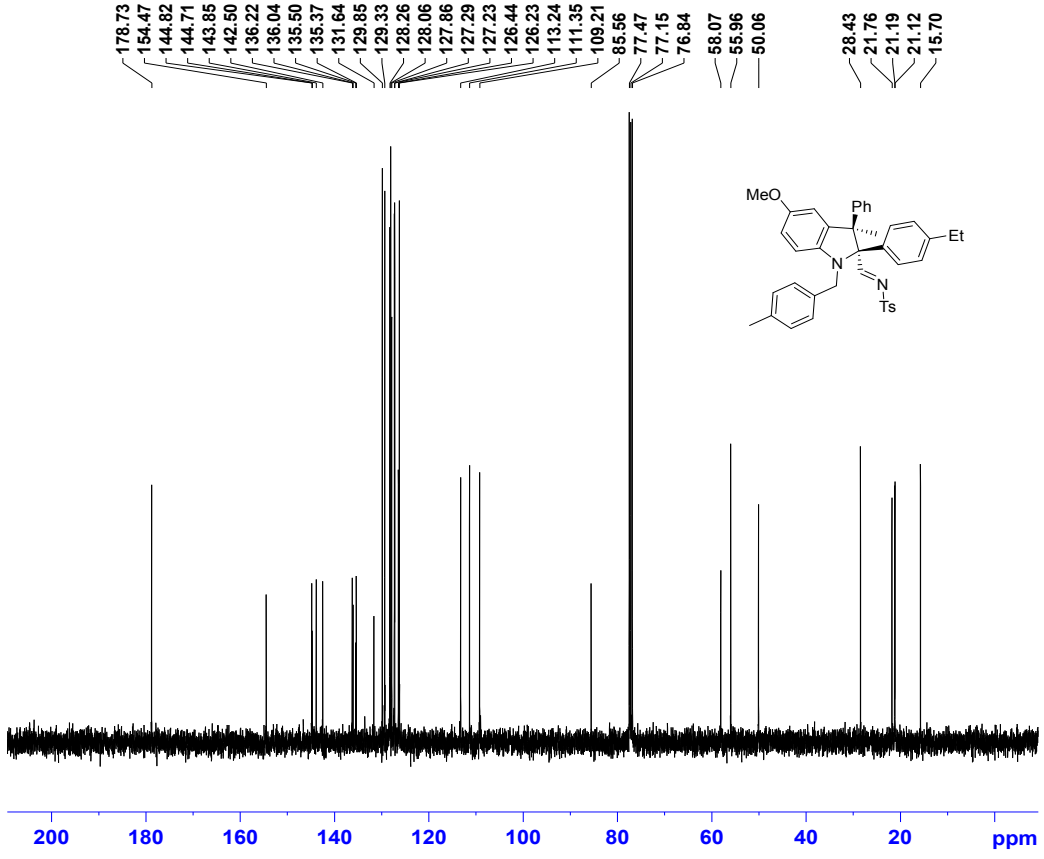
Indoline (3ga):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME       New Folder_1
EXPNO           646
PROCNO            1

F2 - Acquisition Parameters
Date_         20150520
Time            17.47
INSTRUM         spect
PROBHD   5 mm PABBO BB-
PULPROG         zg30
TD             65536
SOLVENT         CDCl3
NS                16
DS                 2
SWH          8012.820 Hz
FIDRES       0.122266 Hz
AQ           4.0894465 sec
RG              108.26
DW              62.400 usec
DE               6.50 usec
TE              301.3 K
D1          0.50000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1              1H
P1             15.70 usec
PLW1        7.75000000 W
SFO1       400.1320007 MHz

F2 - Processing parameters
SI             65536
SF         400.1300162 MHz
WDW               EM
SSB     0
LB           0.30 Hz
GB      0
PC              1.00
```

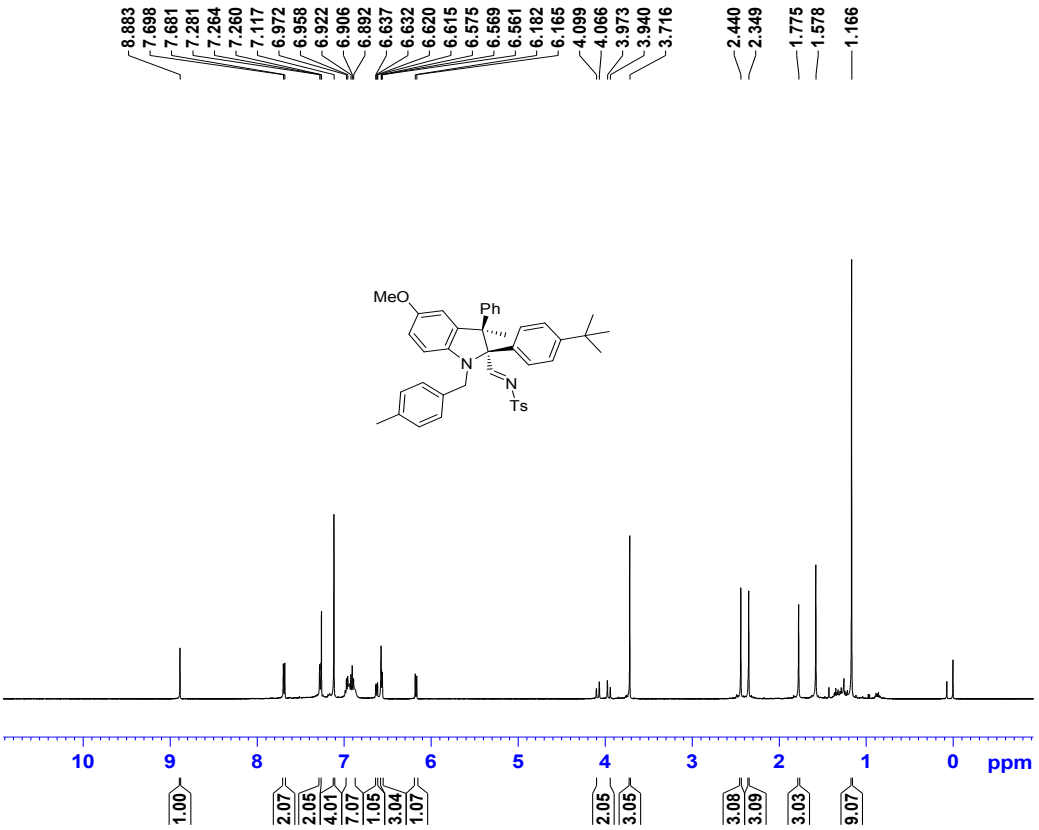
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME       New Folder_1
EXPNO           647
PROCNO            1

F2 - Acquisition Parameters
Date_         20150520
Time            17.51
INSTRUM         spect
PROBHD   5 mm PABBO BB-
PULPROG        zgpg30
TD             16540
SOLVENT         CDCl3
NS               256
DS                 4
SWH         24038.461 Hz
FIDRES       1.453353 Hz
AQ           0.3440320 sec
RG              200.34
DW              20.800 usec
DE               6.50 usec
TE              301.8 K
D1          1.00000000 sec
d11         0.03000000 sec
DELTA       0.89999998 sec
TD0               1
SFO1       100.6228289 MHz
NUC1              13C
P1              9.25 usec
PLW1       47.00000000 W
SFO2       400.1316005 MHz
NUC2              1H
CPDPRG[2       waltz16
PCPD2          90.00 usec
PLW2        7.75000000 W
PLW12       0.23583999 W
PLW13       0.19103000 W

F2 - Processing parameters
SI             32768
SF         100.6127569 MHz
WDW               EM
SSB     0
LB             1.00 Hz
GB      0
PC              1.40
```

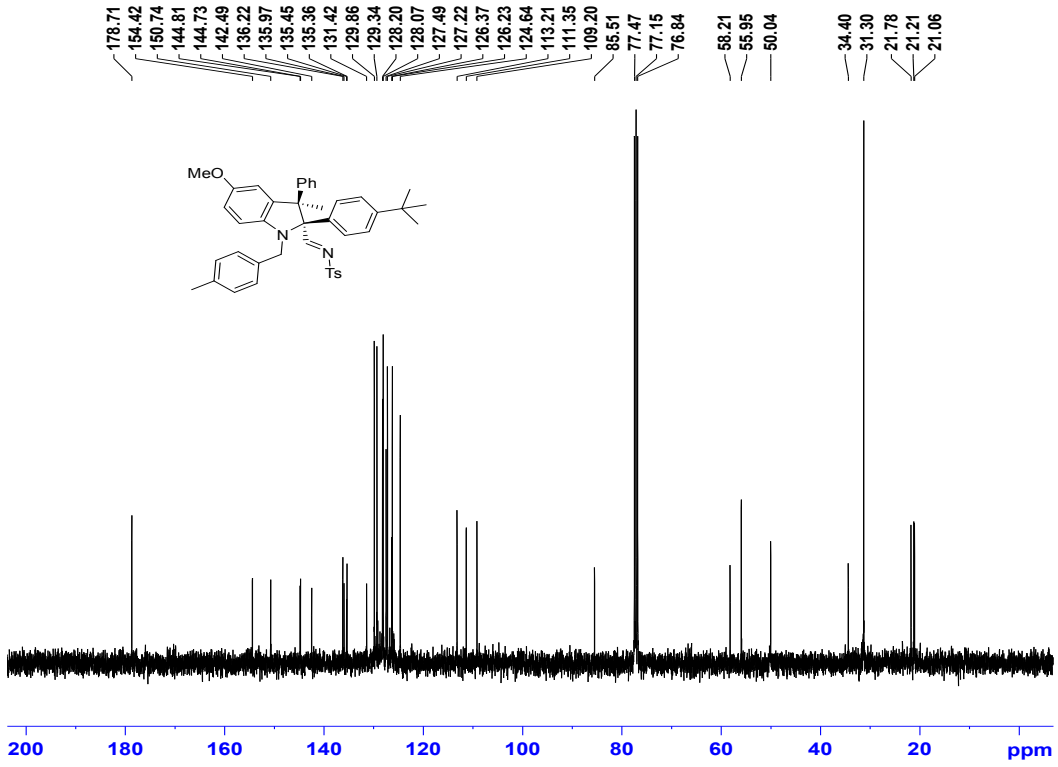
Indoline (3ha):

^{1}H NMR (500 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa50416
EXPNO           41
PROCNO           1

F2 - Acquisition Parameters
Date_         20160406
Time            10.36
INSTRUM         spect
PROBHD   5 mm PABBO BB/
PULPROG         zg30
TD             32768
SOLVENT         CDCl3
NS                32
DS                 2
SWH           10000.000 Hz
FIDRES            0.305176 Hz
AQ            1.6384000 sec
RG              138.53
DW               50.000 usec
DE                6.50 usec
TE              295.4 K
D1            0.50000000 sec
TD0               1

======== CHANNEL f1 ========
SFO1          500.1525008 MHz
NUC1              1H
P1               11.75 usec
PLW1          15.30000019 W

F2 - Processing parameters
SI             65536
SF          500.1500234 MHz
WDW               EM
SSB     0
LB              0.30 Hz
GB      0
PC              1.00
```

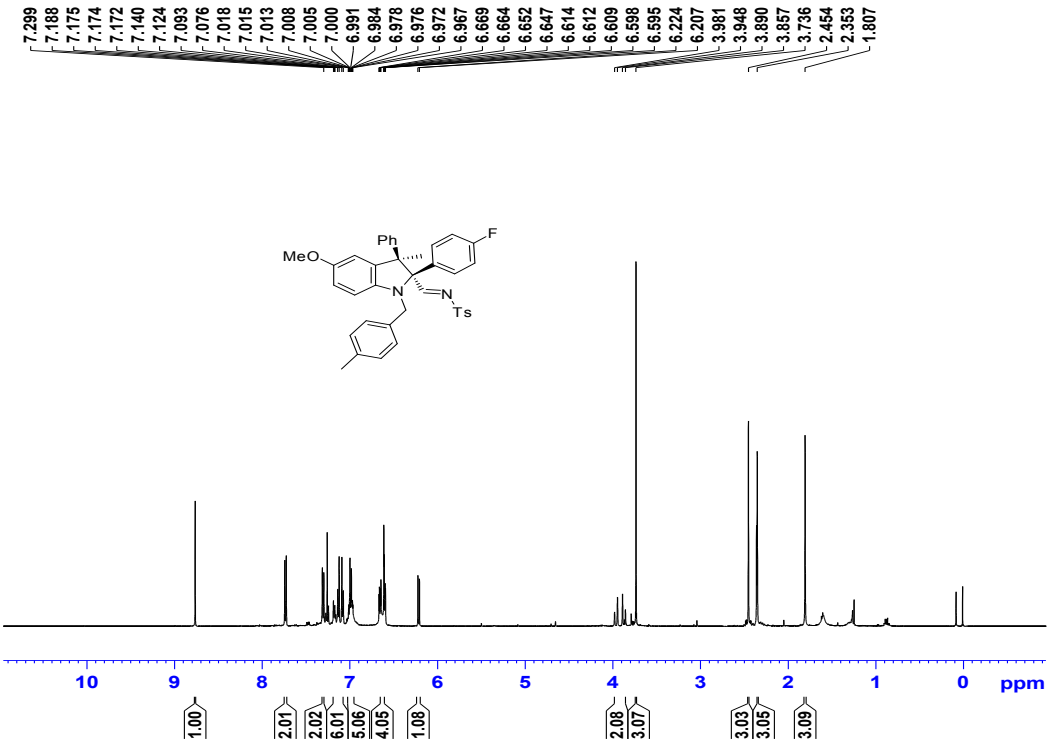
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40415
EXPNO           932
PROCNO           1

F2 - Acquisition Parameters
Date_         20150429
Time            15.37
INSTRUM         spect
PROBHD   5 mm PABBI 1H/
PULPROG         zgpg30
TD             16540
SOLVENT         CDCl3
NS               512
DS                 4
SWH           24038.461 Hz
FIDRES            1.453353 Hz
AQ            0.3440320 sec
RG              200.34
DW               20.800 usec
DE                6.50 usec
TE              298.6 K
D1            1.00000000 sec
d11           0.03000000 sec
DELTA         0.89999998 sec
TD0               1
SFO1          100.6228289 MHz
NUC1              13C
P1               15.00 usec
PLW1          76.00000000 W
SFO2          400.1316005 MHz
NUC2              1H
CPDPRG[2          waltz16
PCPD2            90.00 usec
PLW2          8.50000000 W
PLW12         0.08500000 W
PLW13         0.06885000 W

F2 - Processing parameters
SI             32768
SF          100.6127573 MHz
WDW               EM
SSB     0
LB              1.00 Hz
GB      0
PC              1.40
```

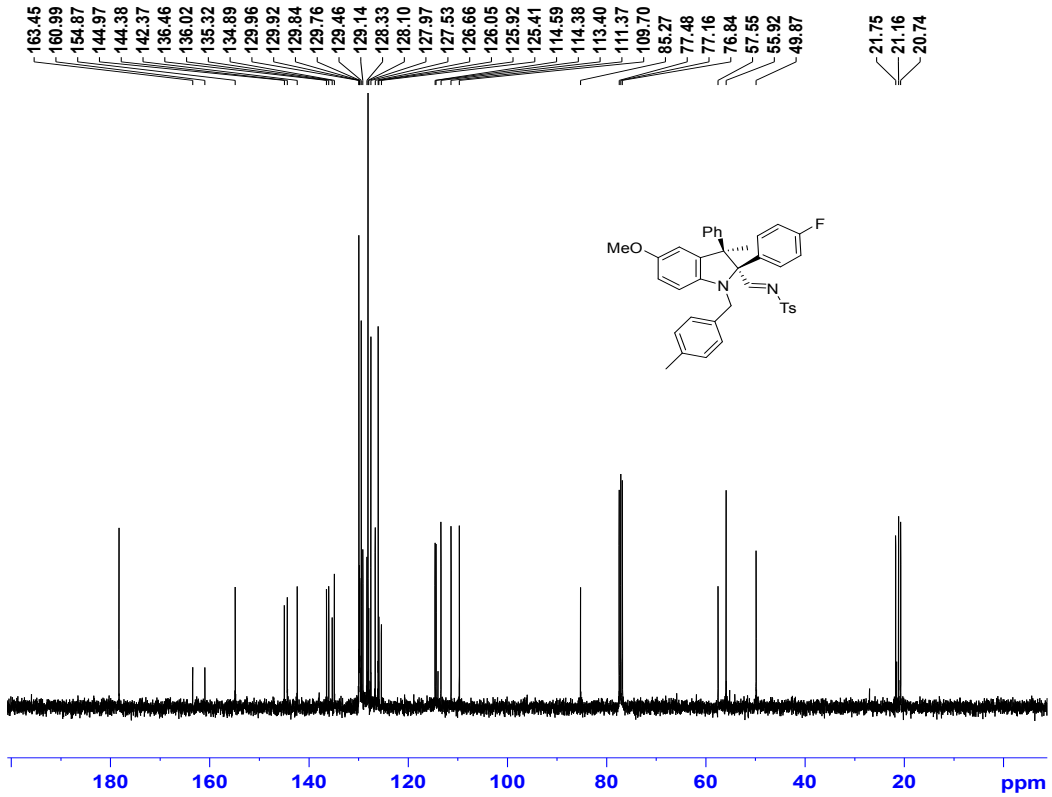
Indoline (3ia):

^{1}H NMR (500 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa50416
EXPNO           56
PROCNO           1

F2 - Acquisition Parameters
Date_         20160406
Time            18.25
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG          zg30
TD              32768
SOLVENT          CDCl3
NS                 32
DS                  2
SWH         10000.000 Hz
FIDRES          0.305176 Hz
AQ          1.6384000 sec
RG                89.12
DW             50.000 usec
DE              6.50 usec
TE              299.4 K
D1          0.50000000 sec
TD0                1

======== CHANNEL f1 ========
SFO1        500.1525008 MHz
NUC1               1H
P1             11.75 usec
PLW1        15.30000019 W

F2 - Processing parameters
SI              65536
SF          500.1500282 MHz
WDW                EM
SSB     0
LB              0.30 Hz
GB      0
PC              1.00
```

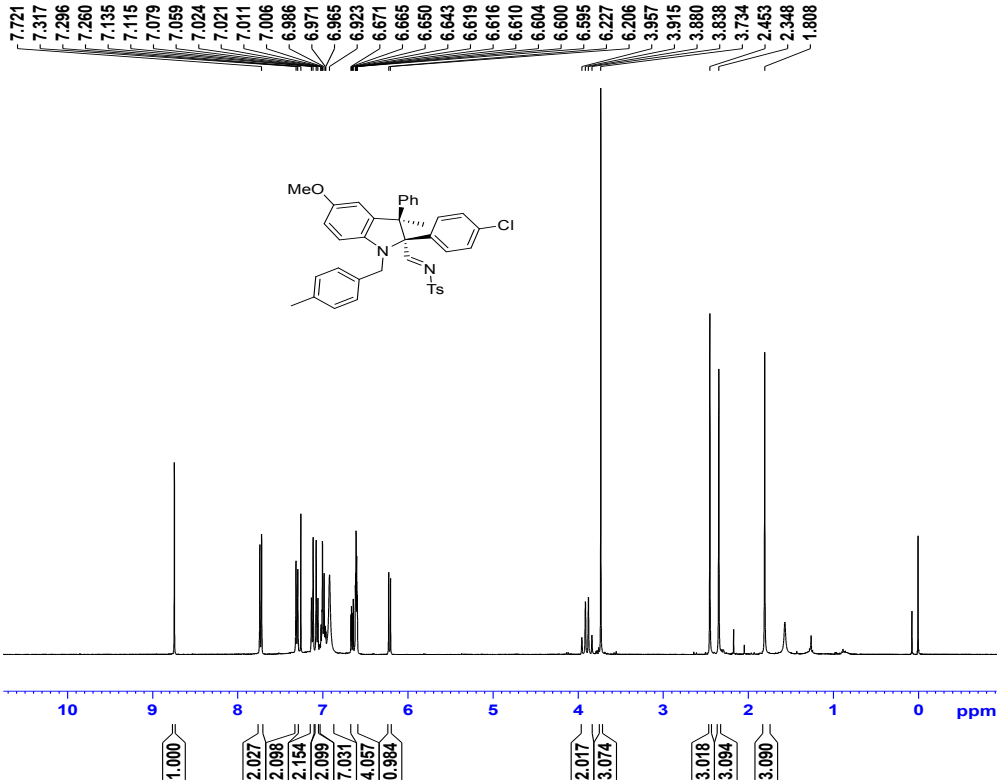
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40415
EXPNO            864
PROCNO           1

F2 - Acquisition Parameters
Date_         20150427
Time            23.47
INSTRUM          spect
PROBHD   5 mm PABBI 1H/
PULPROG          zgpg30
TD              16540
SOLVENT          CDCl3
NS                256
DS                 4
SWH         24038.461 Hz
FIDRES          1.453353 Hz
AQ          0.3440320 sec
RG               200.34
DW              20.800 usec
DE               6.50 usec
TE              299.2 K
D1          1.00000000 sec
d11         0.03000000 sec
DELTA       0.89999998 sec
TD0                1
SFO1        100.6228289 MHz
NUC1               13C
P1             15.00 usec
PLW1        76.00000000 W
SFO2        400.1316005 MHz
NUC2               1H
CPDPRG[2        waltz16
PCPD2          90.00 usec
PLW2        8.50000000 W
PLW12       0.08500000 W
PLW13       0.06885000 W

F2 - Processing parameters
SI              32768
SF          100.6127623 MHz
WDW                EM
SSB     0
LB              1.00 Hz
GB      0
PC              1.40
```

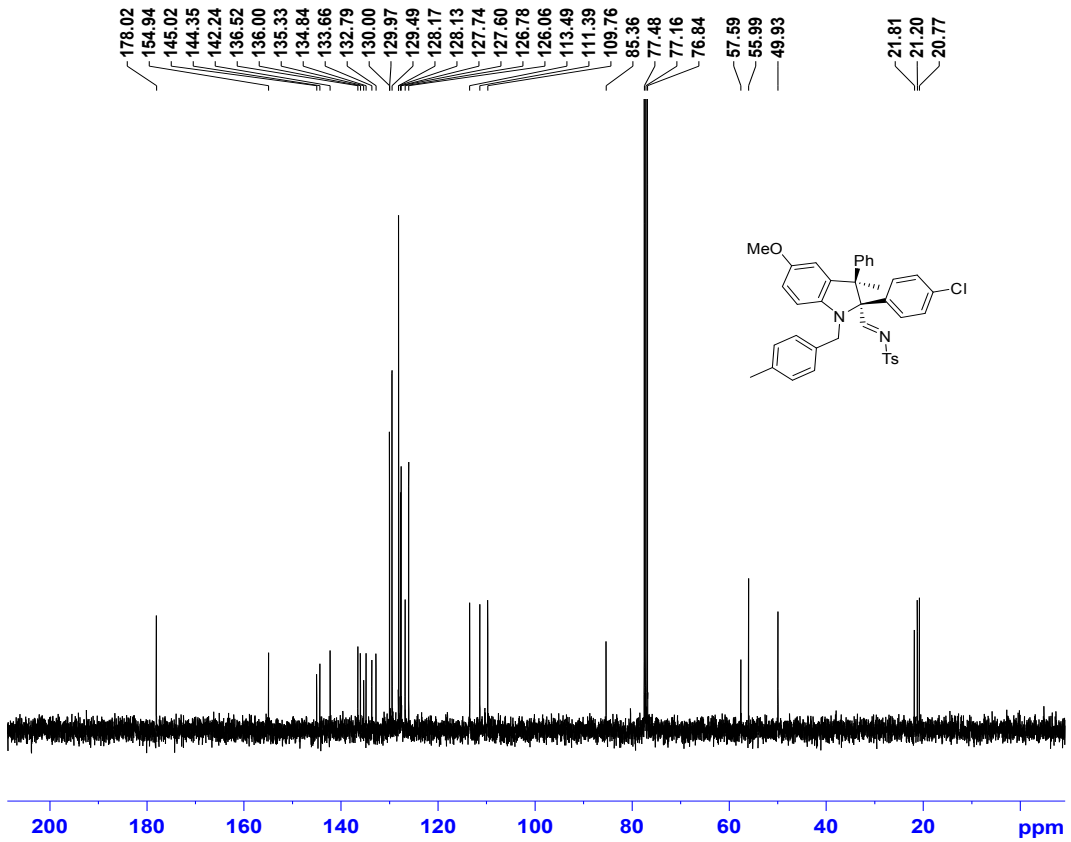
Indoline (3ja):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          279
PROCNO           1

F2 - Acquisition Parameters
Date_        20150509
Time           18.19
INSTRUM         spect
PROBHD  5 mm PABBO BB-
PULPROG         zg30
TD             65536
SOLVENT         CDCl3
NS                16
DS                 2
SWH          8012.820 Hz
FIDRES          0.122266 Hz
AQ           4.0894465 sec
RG               169.77
DW              62.400 usec
DE               6.50 usec
TE              298.6 K
D1           0.50000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1              1H
P1             15.70 usec
PLW1        7.75000000 W
SFO1        400.1320007 MHz

F2 - Processing parameters
SI             65536
SF         400.1300094 MHz
WDW               EM
SSB     0
LB           0.30 Hz
GB      0
PC           1.00
```

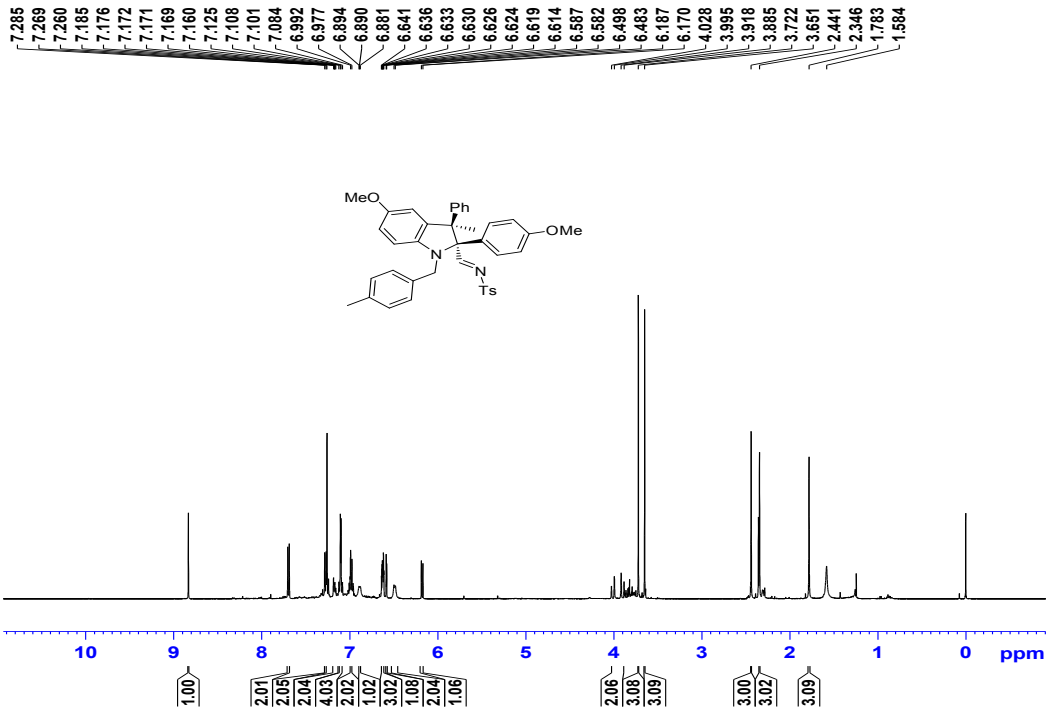
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          280
PROCNO           1

F2 - Acquisition Parameters
Date_        20150509
Time           18.27
INSTRUM         spect
PROBHD  5 mm PABBO BB-
PULPROG        zgpg30
TD             16540
SOLVENT         CDCl3
NS               256
DS                 4
SWH         24038.461 Hz
FIDRES          1.453353 Hz
AQ           0.3440320 sec
RG              200.34
DW              20.800 usec
DE               6.50 usec
TE              299.3 K
D1           1.00000000 sec
d11          0.03000000 sec
DELTA        0.89999998 sec
TD0               1
SFO1        100.6228289 MHz
NUC1             13C
P1              9.25 usec
PLW1        47.00000000 W
SFO2        400.1316005 MHz
NUC2              1H
CPDPRG[2        waltz16
PCPD2           90.00 usec
PLW2         7.75000000 W
PLW12        0.23583999 W
PLW13        0.19103000 W

F2 - Processing parameters
SI             32768
SF         100.6127552 MHz
WDW               EM
SSB     0
LB           1.00 Hz
GB      0
PC           1.40
```

Indoline (3ka):

^{1}H NMR (500 MHz, $CDCl_3$, 24 °C)



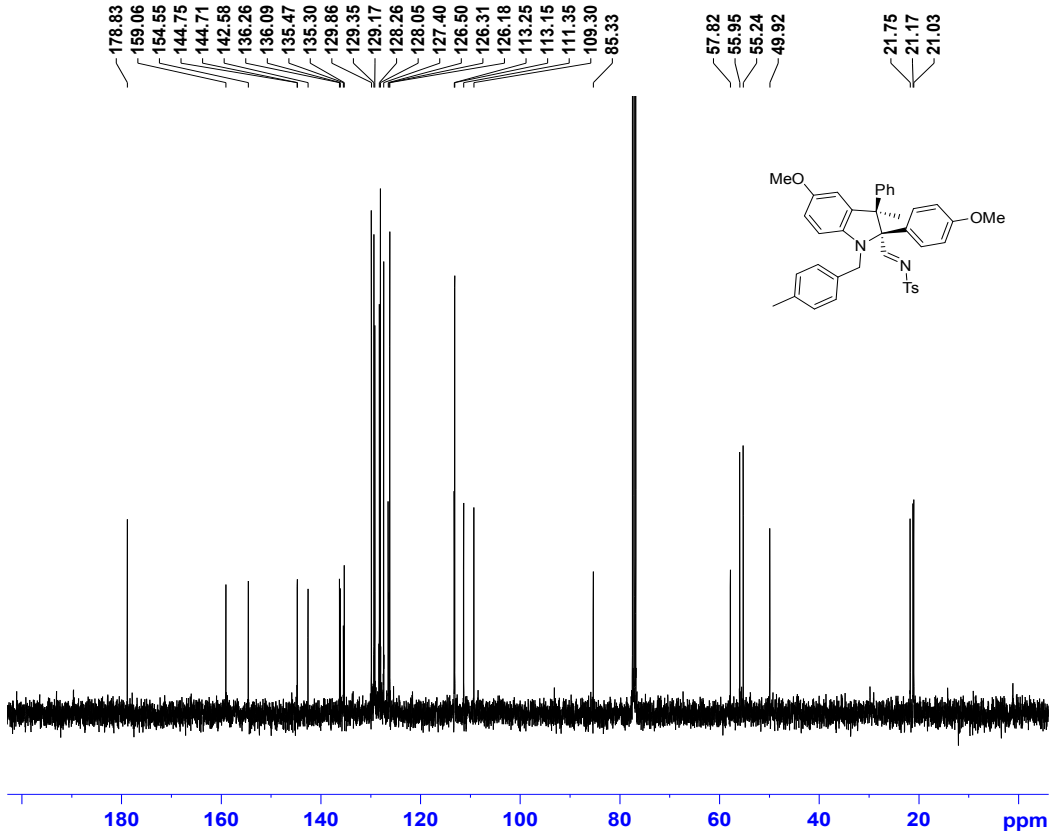
Current Data Parameters
NAME spa50416
EXPNO 120
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160415
Time 15.58
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 32
DS 2
SWH 10000.000 Hz
FIDRES 0.305176 Hz
AQ 1.6384000 sec
RG 124.08
DW 50.000 usec
DE 6.50 usec
TE 296.9 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 500.1525008 MHz
NUC1 1H
P1 11.75 usec
PLW1 15.30000019 W

F2 - Processing parameters
SI 65536
SF 500.1500245 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



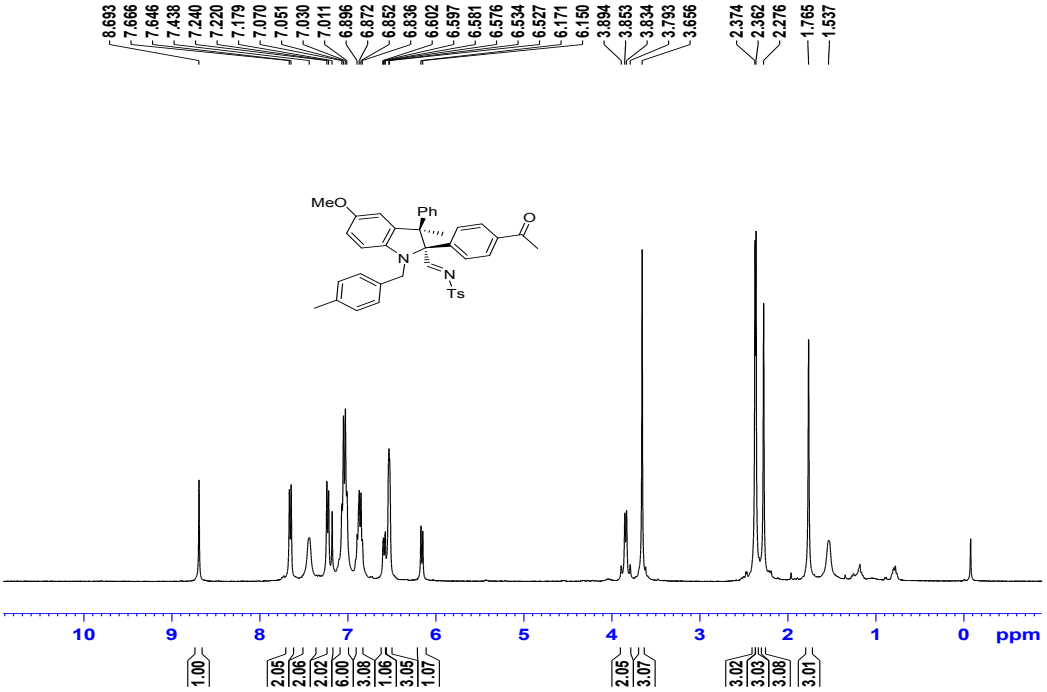
Current Data Parameters
NAME New Folder_1
EXPNO 670
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150521
Time 13.57
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440320 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 301.9 K
D1 1.00000000 sec
d11 0.03000000 sec
DELTA 0.89999998 sec
TD0 1
SFO1 100.6228289 MHz
NUC1 13C
P1 9.25 usec
PLW1 47.00000000 W
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG[2 waltz16
PCPD2 90.00 usec
PLW2 7.75000000 W
PLW12 0.23583999 W
PLW13 0.19103000 W

F2 - Processing parameters
SI 32768
SF 100.6127581 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

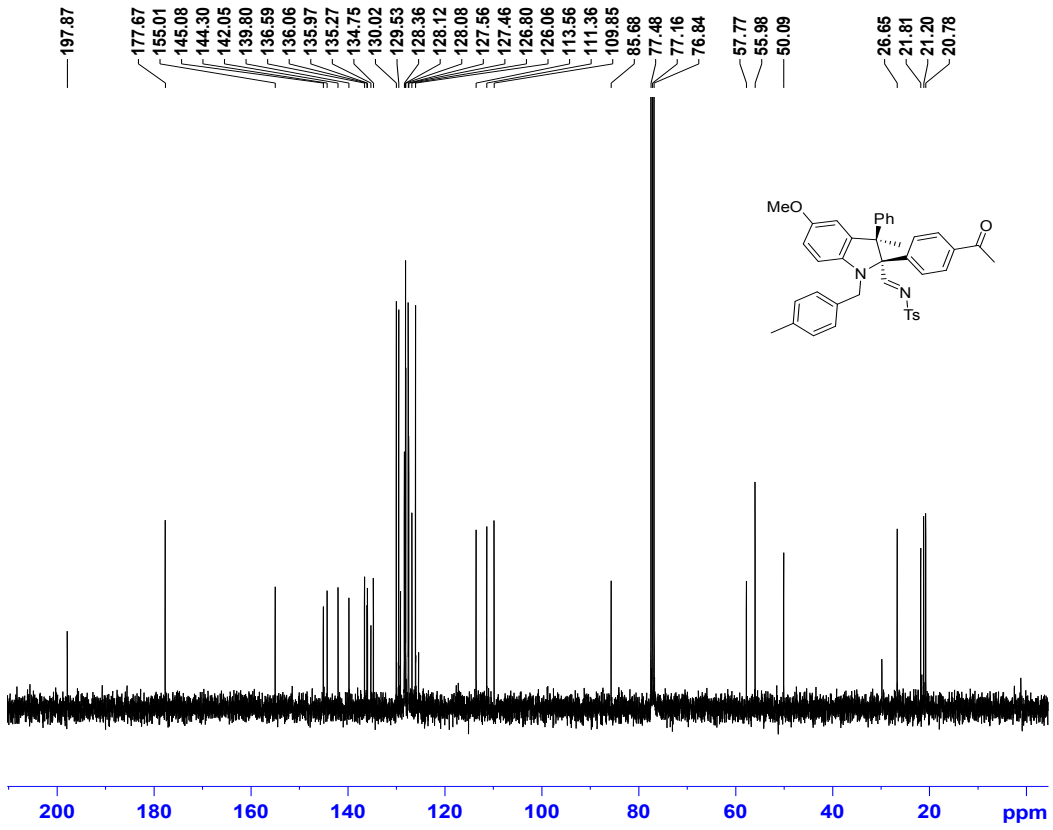
Indoline (3la):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME         spa40416
EXPNO             824
PROCNO              1

F2 - Acquisition Parameters
Date_         20160424
Time             18.04
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                 16
DS                  2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894465 sec
RG                169.77
DW              62.400 usec
DE               6.50 usec
TE               300.1 K
D1            0.50000000 sec
TD0                 1

======== CHANNEL f1 ========
SFO1         400.1320007 MHz
NUC1                1H
P1               15.70 usec
PLW1          7.75000000 W

F2 - Processing parameters
SI              65536
SF          400.1300110 MHz
WDW                EM
SSB             0
LB              0.30 Hz
GB              0
PC              1.00
```

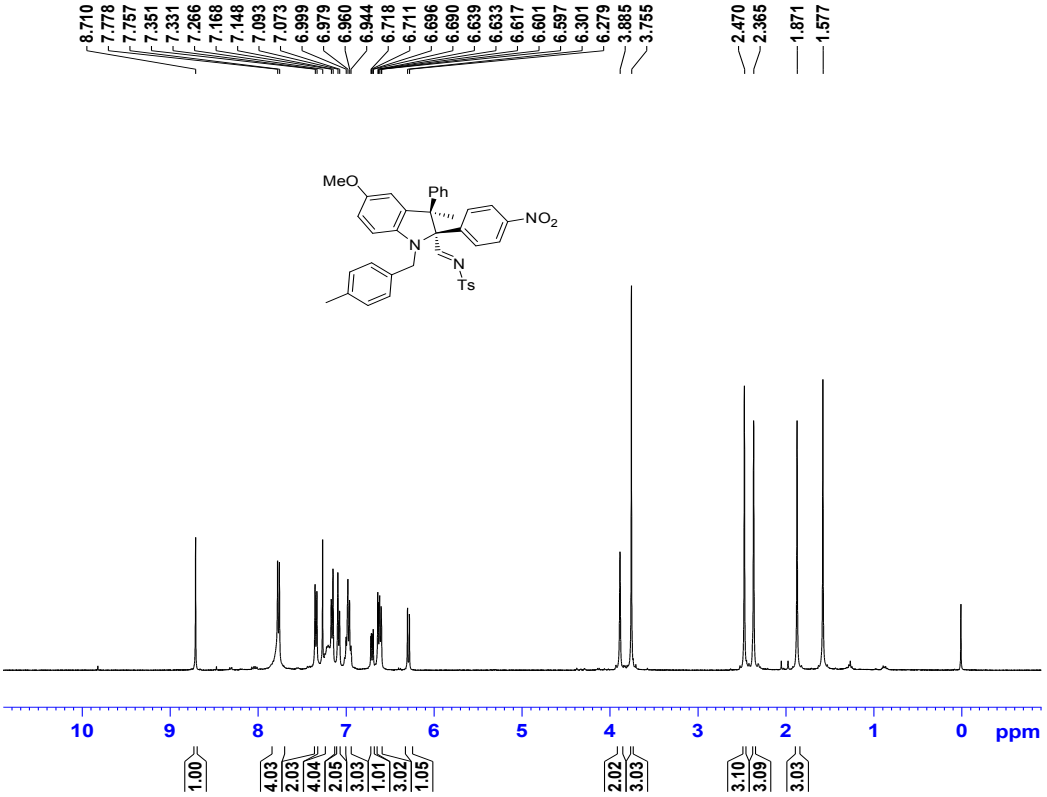
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME         New Folder
EXPNO               179
PROCNO              1

F2 - Acquisition Parameters
Date_         20150609
Time             20.11
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG         zgpg30
TD              16540
SOLVENT          CDCl3
NS                256
DS                  4
SWH          24038.461 Hz
FIDRES           1.453353 Hz
AQ           0.3440320 sec
RG                200.34
DW              20.800 usec
DE               6.50 usec
TE               299.4 K
D1           1.00000000 sec
d11          0.03000000 sec
DELTA        0.89999998 sec
TD0                 1
SFO1         100.6228289 MHz
NUC1                13C
P1               9.25 usec
PLW1         47.00000000 W
SFO2         400.1316005 MHz
NUC2                1H
CPDPRG[2         waltz16
PCPD2           90.00 usec
PLW2          7.75000000 W
PLW12         0.23583999 W
PLW13         0.19103000 W

F2 - Processing parameters
SI              32768
SF          100.6127564 MHz
WDW                EM
SSB             0
LB              1.00 Hz
GB              0
PC              1.40
```

Indoline (3ma):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



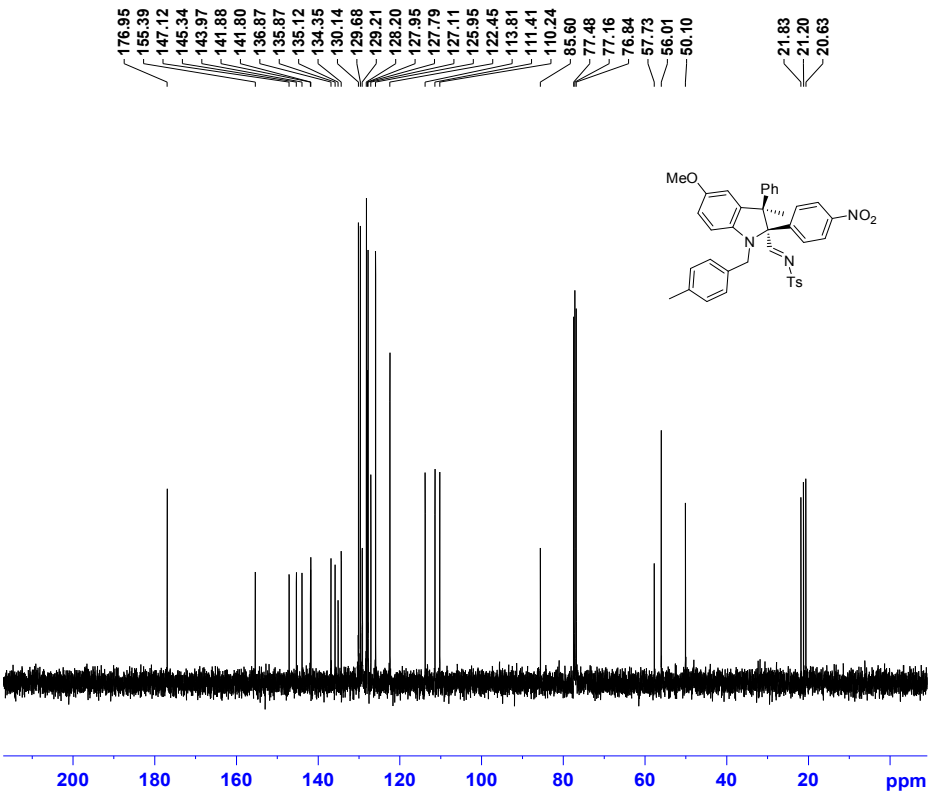
Current Data Parameters
NAME spa40416
EXPNO 868
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160426
Time 13.20
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 200.34
DW 62.400 usec
DE 6.50 usec
TE 300.9 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 400.1320007 MHz
NUC1 1H
P1 15.70 usec
PLW1 7.75000000 W

F2 - Processing parameters
SI 65536
SF 400.1300104 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



Current Data Parameters
NAME New Folder
EXPNO 124
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150607
Time 10.29
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440820 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 301.8 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

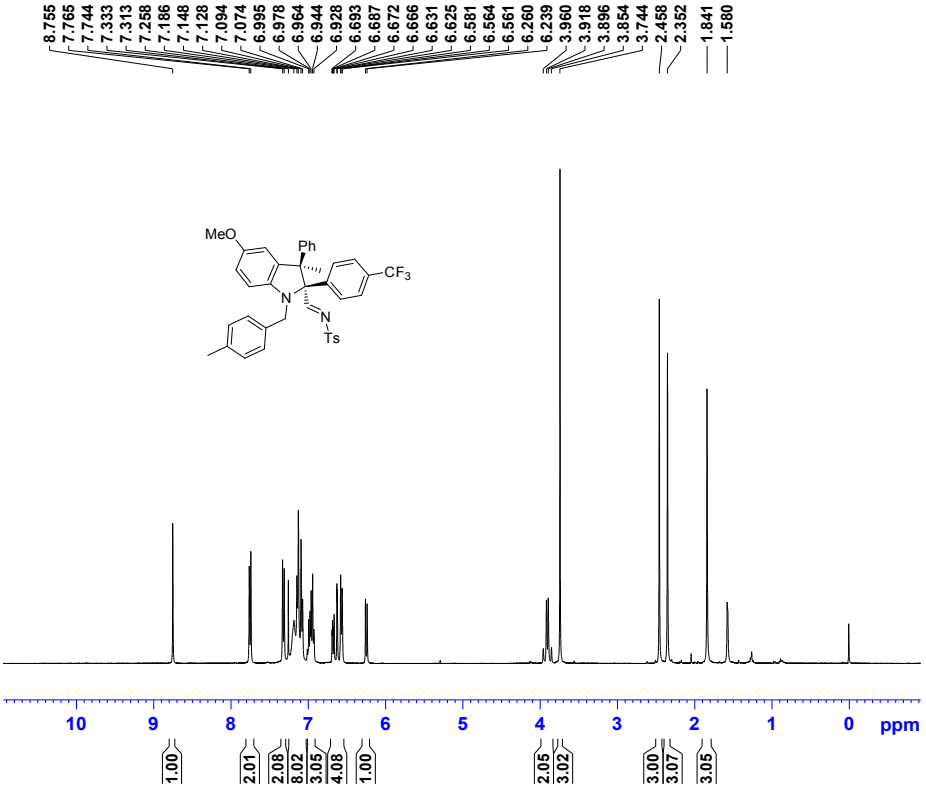
======== CHANNEL f1 ========
NUC1 13C
P1 9.25 usec
PLW1 47.00000000 W
SFO1 100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PLW2 7.75000000 W
PLW12 0.23583999 W
PLW13 0.19103000 W
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127543 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

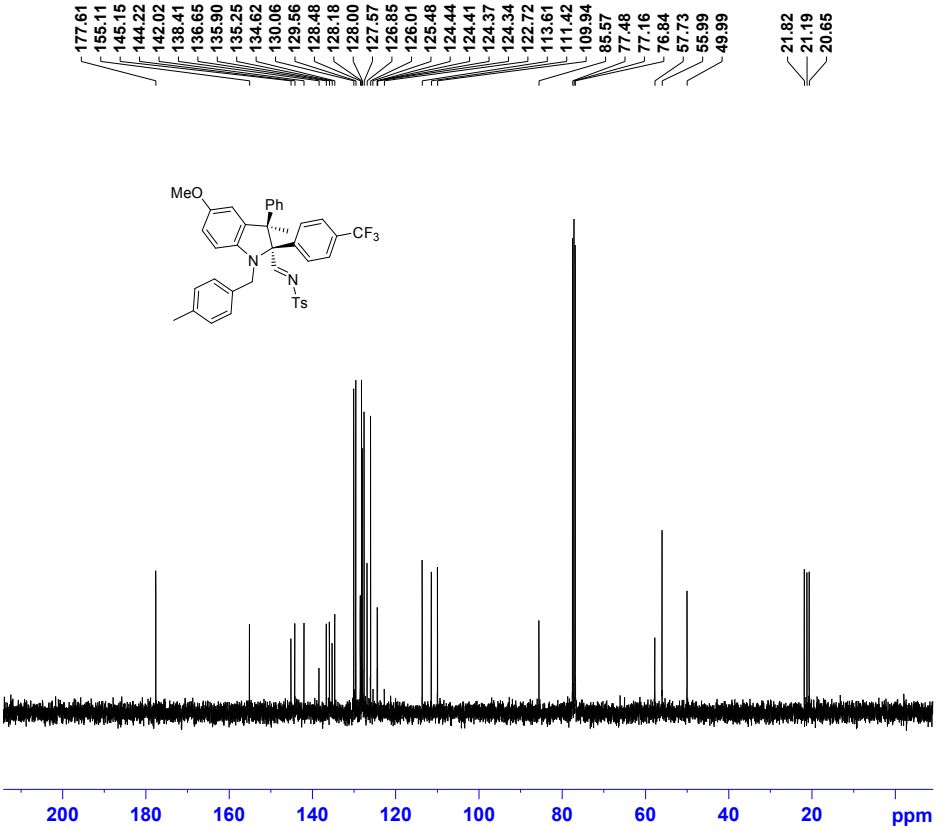
Indoline (3na):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          742
PROCNO           1

F2 - Acquisition Parameters
Date_        20150524
Time           22.07
INSTRUM         spect
PROBHD  5 mm PABBO BB-
PULPROG         zg30
TD             65536
SOLVENT         CDCl3
NS                16
DS                 2
SWH          8012.820 Hz
FIDRES          0.122266 Hz
AQ           4.0894966 sec
RG               138.85
DW                62.400 usec
DE                 6.50 usec
TE               298.9 K
D1           0.50000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1               1H
P1                15.70 usec
PLW1          7.75000000 W
SFO1         400.1320007 MHz

F2 - Processing parameters
SI             65536
SF          400.1300102 MHz
WDW               EM
SSB     0
LB              0.30 Hz
GB      0
PC              1.00
```

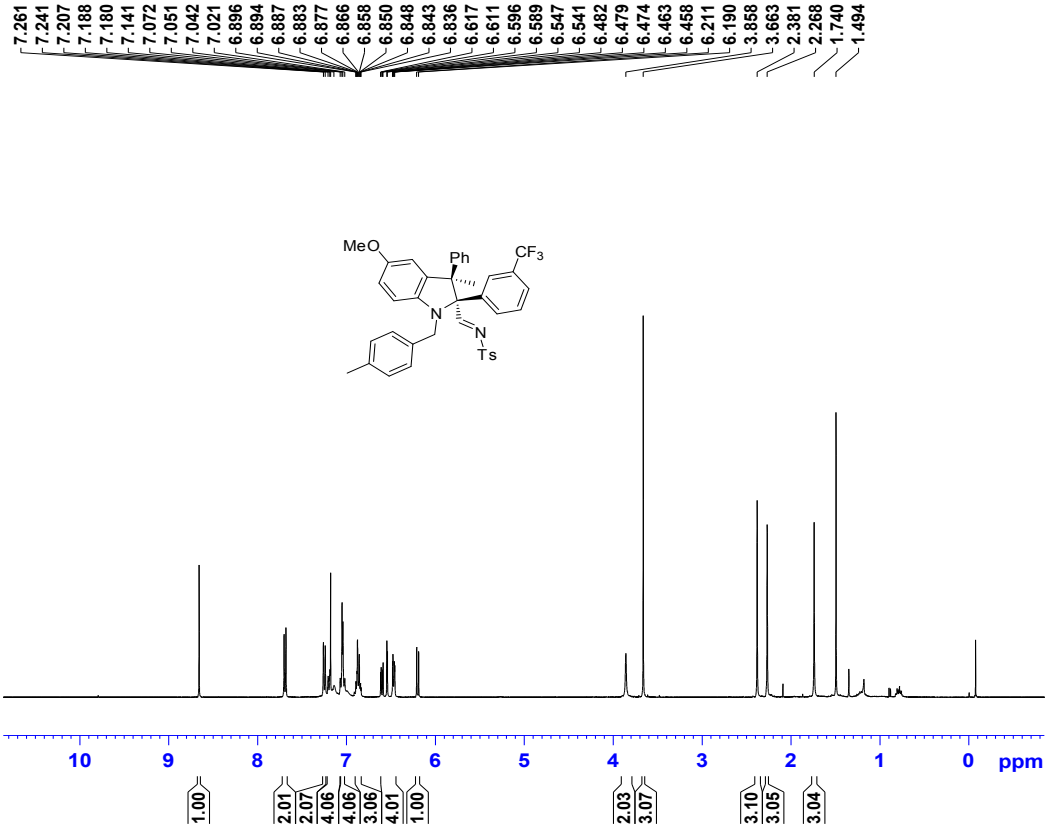
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          743
PROCNO           1

F2 - Acquisition Parameters
Date_        20150524
Time           22.10
INSTRUM         spect
PROBHD  5 mm PABBO BB-
PULPROG        zgpg30
TD             16540
SOLVENT         CDCl3
NS               256
DS                 4
SWH          24038.461 Hz
FIDRES          1.453353 Hz
AQ           0.3440820 sec
RG               200.34
DW                20.800 usec
DE                 6.50 usec
TE               299.2 K
D1           1.00000000 sec
D11          0.03000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1              13C
P1                 9.25 usec
PLW1          47.00000000 W
SFO1         100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2               1H
PCPD2             90.00 usec
PLW2           7.75000000 W
PLW12          0.23583999 W
PLW13          0.19103000 W
SFO2         400.1316005 MHz

F2 - Processing parameters
SI             32768
SF          100.6127553 MHz
WDW               EM
SSB     0
LB              1.00 Hz
GB      0
PC              1.40
```

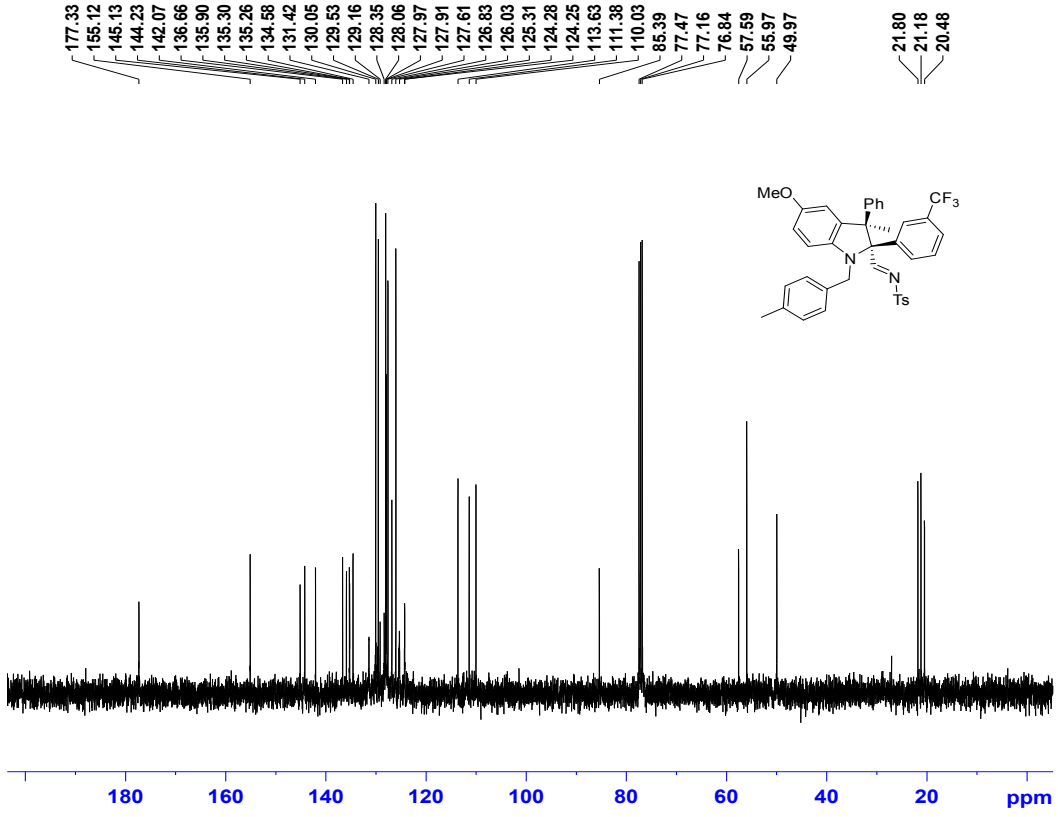
Indoline (3oa):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              149
PROCNO               1

F2 - Acquisition Parameters
Date_         20160408
Time             18.01
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES         0.122266 Hz
AQ            4.0894465 sec
RG                200.34
DW             62.400 usec
DE              6.50 usec
TE              299.4 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1                1H
P1               15.70 usec
PLW1         7.75000000 W

F2 - Processing parameters
SI              65536
SF          400.1300112 MHz
WDW                EM
SSB     0
LB              0.30 Hz
GB      0
PC              1.00
```

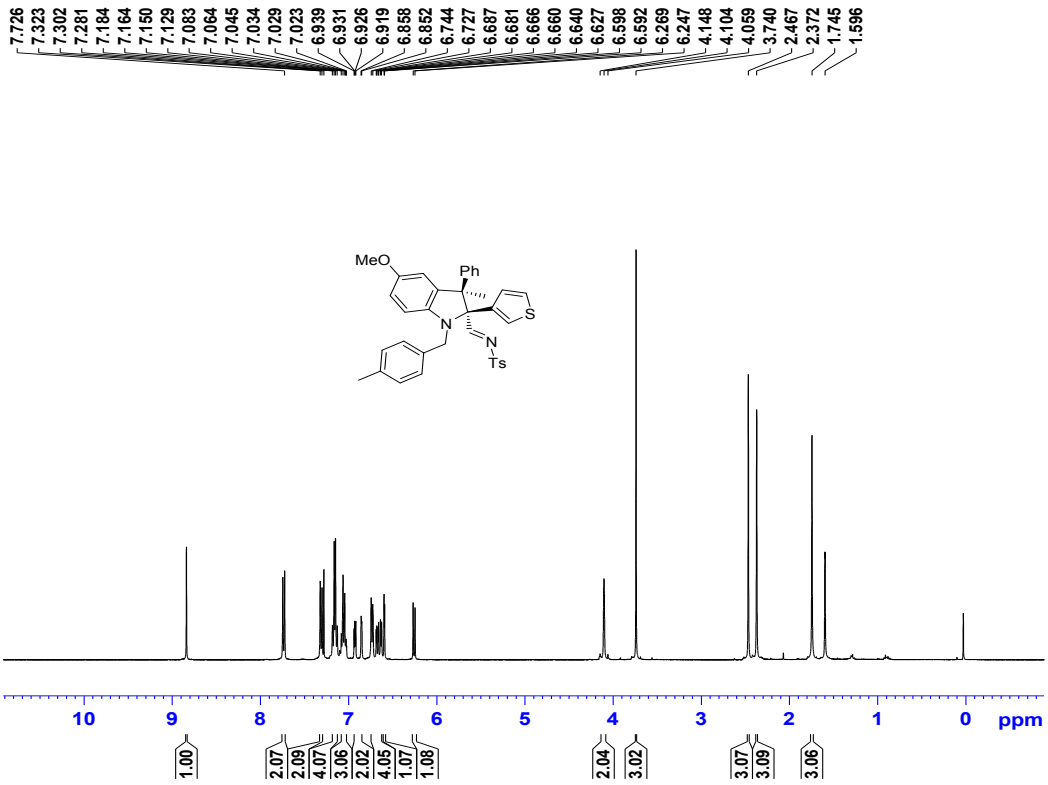
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          New Folder
EXPNO              233
PROCNO               1

F2 - Acquisition Parameters
Date_         20150507
Time             16.33
INSTRUM          spect
PROBHD   5 mm PABBI 1H/
PULPROG          zgpg30
TD              16540
SOLVENT          CDCl3
NS                 256
DS                   4
SWH           24038.461 Hz
FIDRES         1.453353 Hz
AQ            0.3440320 sec
RG                200.34
DW             20.800 usec
DE              6.50 usec
TE              298.6 K
D1            1.00000000 sec
d11           0.03000000 sec
DELTA         0.89999998 sec
TD0                  1
SFO1        100.6228289 MHz
NUC1                13C
P1               15.00 usec
PLW1         76.00000000 W
SFO2        400.1316005 MHz
NUC2                1H
CPDPRG[2         waltz16
PCPD2            90.00 usec
PLW2          8.50000000 W
PLW12         0.08500000 W
PLW13         0.06885000 W

F2 - Processing parameters
SI              32768
SF          100.6127580 MHz
WDW                EM
SSB     0
LB              1.00 Hz
GB      0
PC              1.40
```

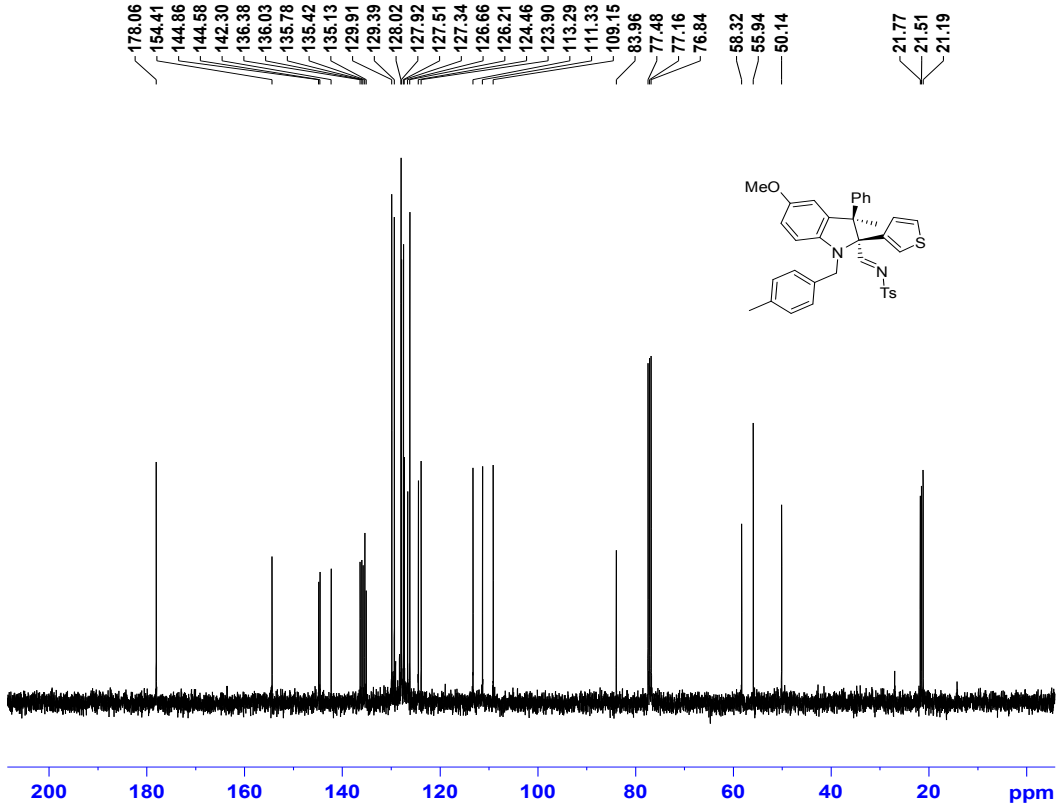
Indoline (3pa):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              131
PROCNO               1

F2 - Acquisition Parameters
Date_         20160408
Time             14.54
INSTRUM          spect
PROBHD  5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES        0.122266 Hz
AQ            4.0894465 sec
RG                200.34
DW             62.400 usec
DE              6.50 usec
TE              299.4 K
D1          0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1       400.1320007 MHz
NUC1               1H
P1             15.70 usec
PLW1        7.75000000 W

F2 - Processing parameters
SI              65536
SF         400.1300121 MHz
WDW                EM
SSB     0
LB           0.30 Hz
GB      0
PC              1.00
```

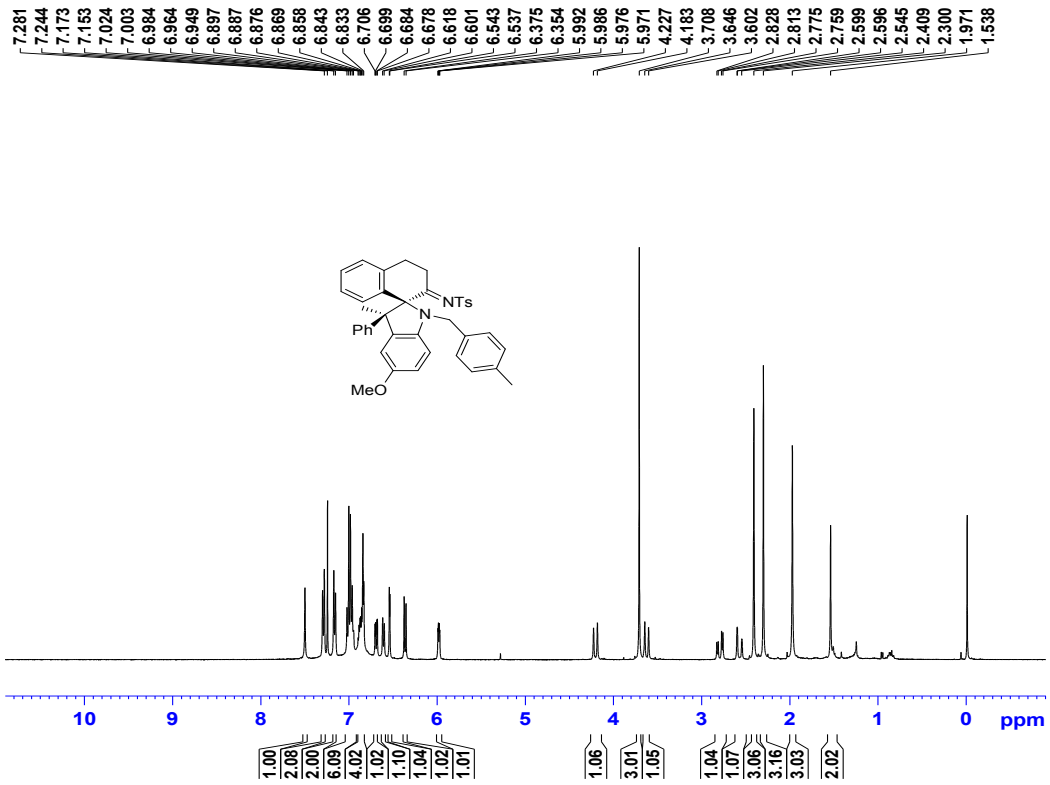
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME       New Folder_1
EXPNO              237
PROCNO               1

F2 - Acquisition Parameters
Date_         20150507
Time             22.51
INSTRUM          spect
PROBHD  5 mm PABBI 1H/
PULPROG        zgpg30
TD              16540
SOLVENT          CDCl3
NS                 256
DS                   4
SWH          24038.461 Hz
FIDRES        1.453353 Hz
AQ            0.3440320 sec
RG                200.34
DW             20.800 usec
DE              6.50 usec
TE              298.2 K
D1          1.00000000 sec
d11         0.03000000 sec
DELTA       0.89999998 sec
TD0                  1
SFO1       100.6228289 MHz
NUC1               13C
P1             15.00 usec
PLW1        76.00000000 W
SFO2       400.1316005 MHz
NUC2               1H
CPDPRG[2        waltz16
PCPD2          90.00 usec
PLW2         8.50000000 W
PLW12        0.08500000 W
PLW13        0.06885000 W

F2 - Processing parameters
SI              32768
SF         100.6127617 MHz
WDW                EM
SSB     0
LB             1.00 Hz
GB      0
PC              1.40
```

Indoline (3qa):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



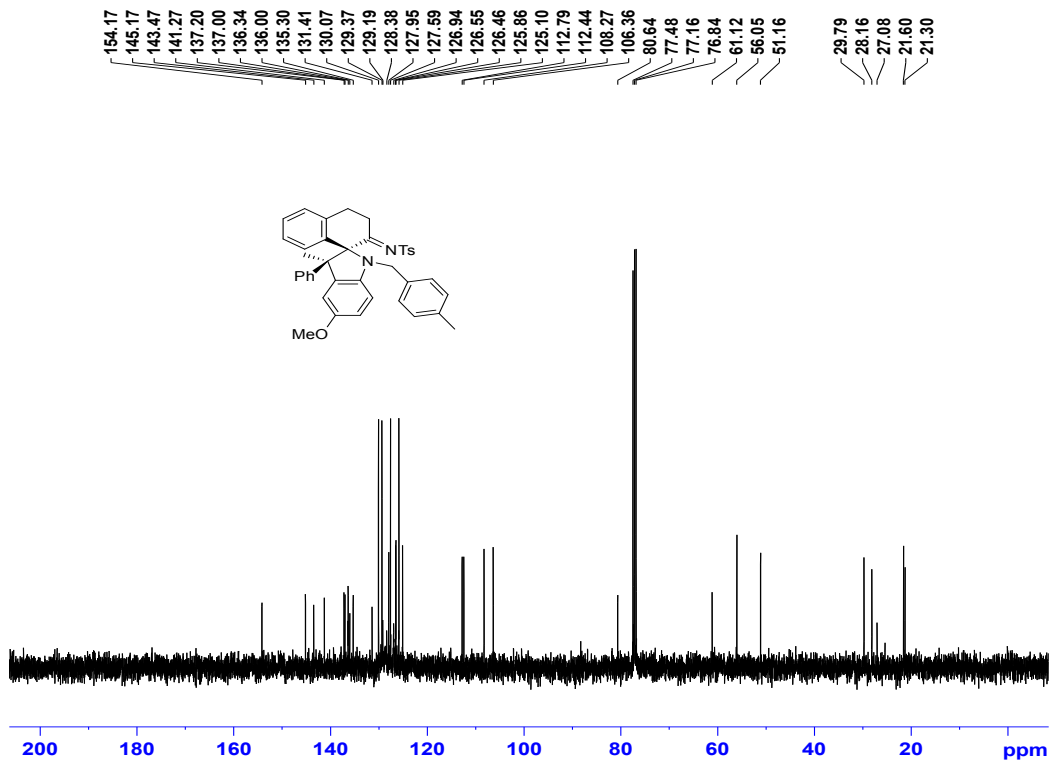
Current Data Parameters
NAME spa40416
EXPNO 614
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160420
Time 2.15
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 200.34
DW 62.400 usec
DE 6.50 usec
TE 299.9 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 400.1320007 MHz
NUC1 1H
P1 15.70 usec
PLW1 7.75000000 W

F2 - Processing parameters
SI 65536
SF 400.1300113 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



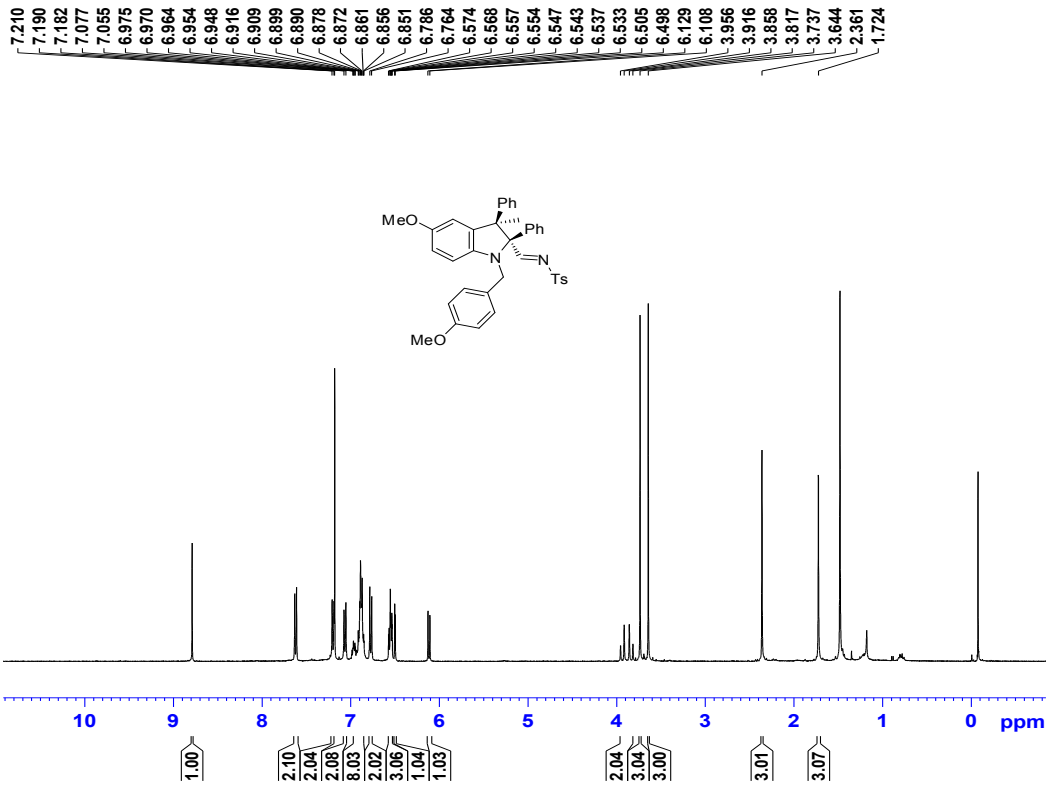
Current Data Parameters
NAME New Folder
EXPNO 126
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150607
Time 10.43
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440320 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 301.7 K
D1 1.00000000 sec
d11 0.03000000 sec
DELTA 0.89999998 sec
TD0 1
SFO1 100.6228289 MHz
NUC1 13C
P1 9.25 usec
PLW1 47.00000000 W
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG[2 waltz16
PCPD2 90.00 usec
PLW2 7.75000000 W
PLW12 0.23583999 W
PLW13 0.19103000 W

F2 - Processing parameters
SI 32768
SF 100.6127527 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

Indoline (3ab):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



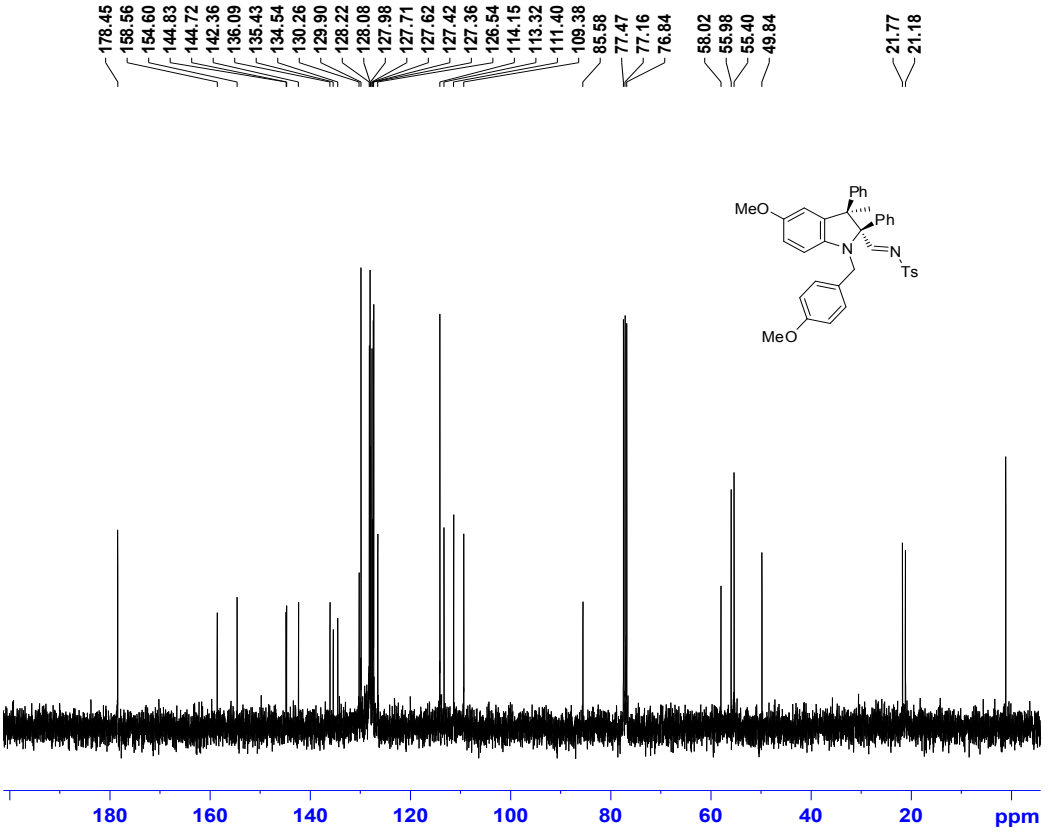
Current Data Parameters
NAME spa40416
EXPNO 610
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160420
Time 1.52
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 200.34
DW 62.400 usec
DE 6.50 usec
TE 299.9 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 400.1320007 MHz
NUC1 1H
P1 15.70 usec
PLW1 7.75000000 W

F2 - Processing parameters
SI 65536
SF 400.1300103 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



Current Data Parameters
NAME New Folder
EXPNO 129
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150505
Time 17.45
INSTRUM spect
PROBHD 5 mm PABBI 1H/
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 332
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440820 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 301.7 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

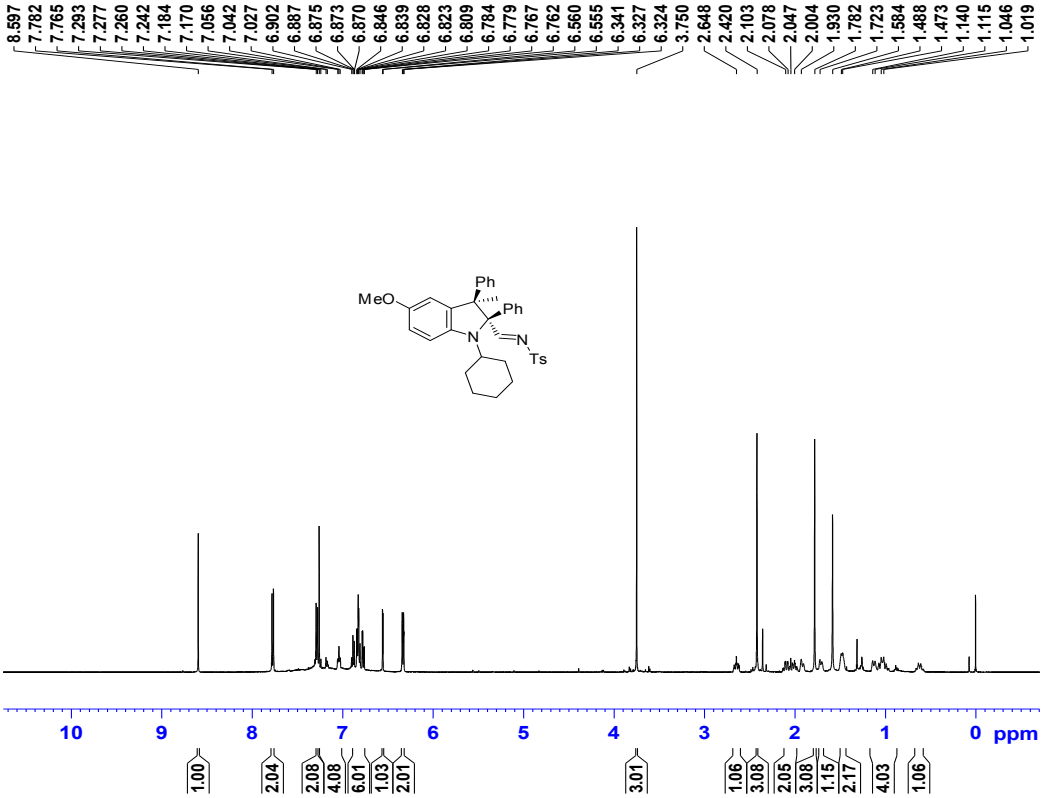
======== CHANNEL f1 ========
NUC1 13C
P1 15.00 usec
PLW1 76.00000000 W
SFO1 100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PLW2 8.50000000 W
PLW12 0.08500000 W
PLW13 0.06885000 W
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127557 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

Indoline (3ac):

^{1}H NMR (500 MHz, $CDCl_3$, 24 °C)



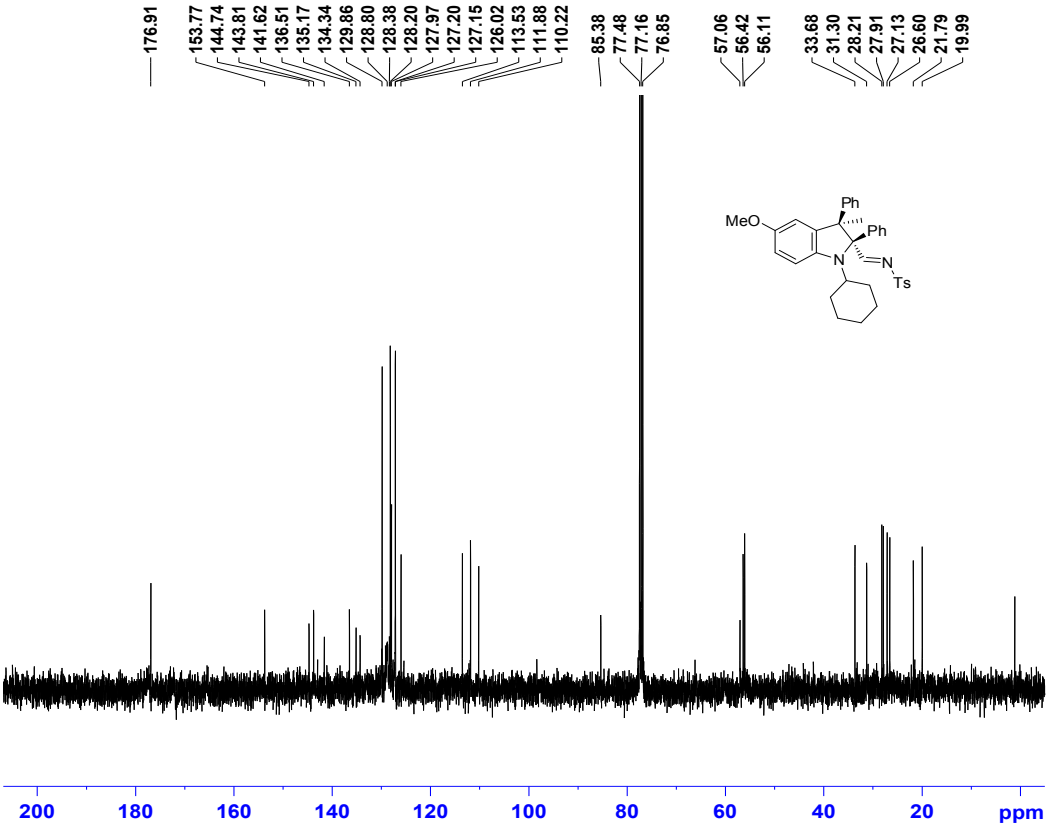
Current Data Parameters
NAME spa50416
EXPNO 80
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160407
Time 14.24
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 32
DS 2
SWH 10000.000 Hz
FIDRES 0.305176 Hz
AQ 1.6384000 sec
RG 114.76
DW 50.000 usec
DE 6.50 usec
TE 297.8 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 500.1525008 MHz
NUC1 1H
P1 11.75 usec
PLW1 15.30000019 W

F2 - Processing parameters
SI 65536
SF 500.1500242 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



Current Data Parameters
NAME New Folder
EXPNO 252
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150508
Time 4.45
INSTRUM spect
PROBHD 5 mm PABBI 1H/
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 2000
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440820 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 298.4 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

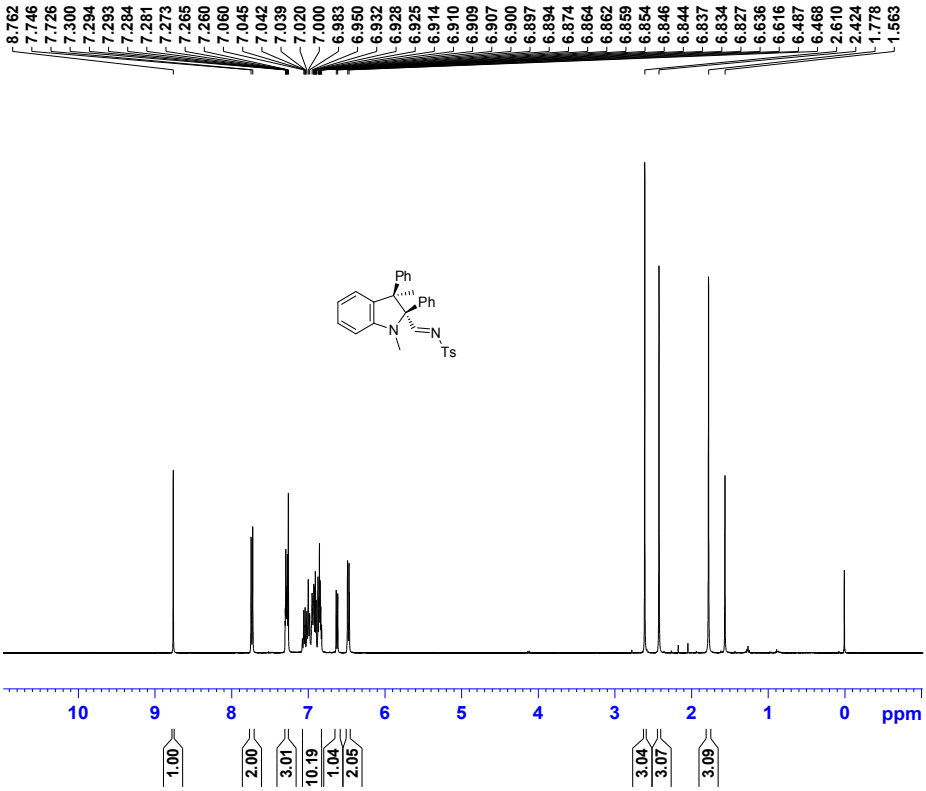
======== CHANNEL f1 ========
NUC1 13C
P1 15.00 usec
PLW1 76.00000000 W
SFO1 100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PLW2 8.50000000 W
PLW12 0.08500000 W
PLW13 0.06885000 W
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127544 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

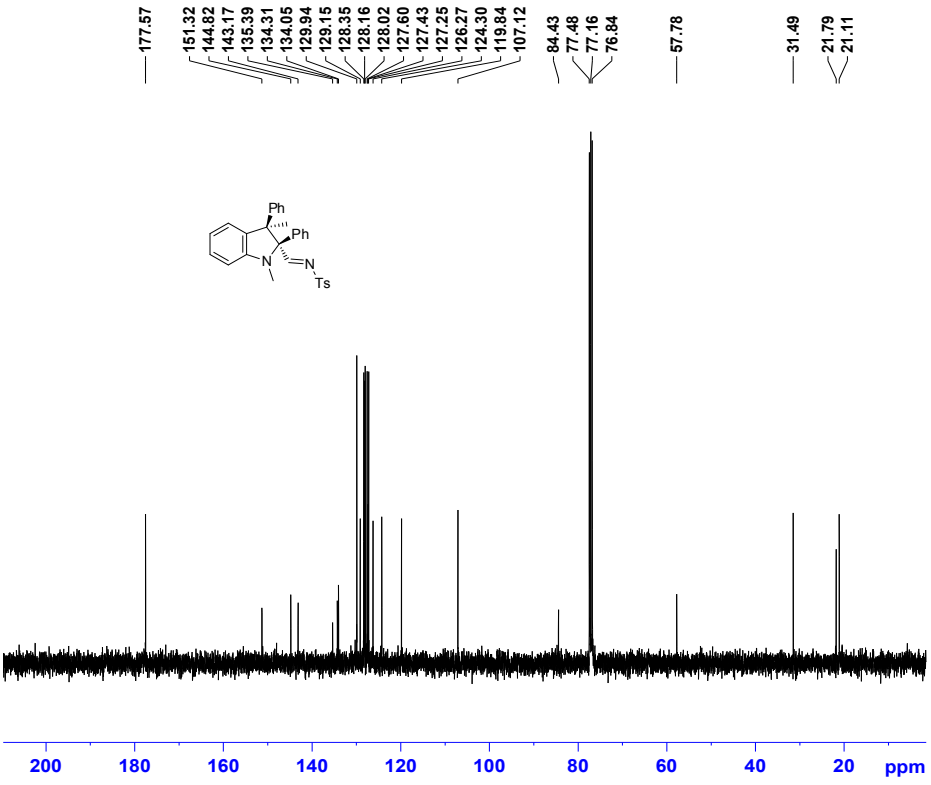
Indoline (3ad):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME         New Folder
EXPNO               101
PROCNO                1

F2 - Acquisition Parameters
Date_         20150504
Time             20.24
INSTRUM          spect
PROBHD   5 mm PABBI 1H/
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                 16
DS                  2
SWH          8012.820 Hz
FIDRES       0.122266 Hz
AQ           4.0894966 sec
RG              124.58
DW              62.400 usec
DE               6.50 usec
TE              298.4 K
D1           0.50000000 sec
TD0                 1

======== CHANNEL f1 ========
NUC1               1H
P1               9.00 usec
PLW1        8.50000000 W
SFO1        400.1320007 MHz

F2 - Processing parameters
SI              65536
SF          400.1300102 MHz
WDW                EM
SSB     0
LB              0.30 Hz
GB      0
PC              1.00
```

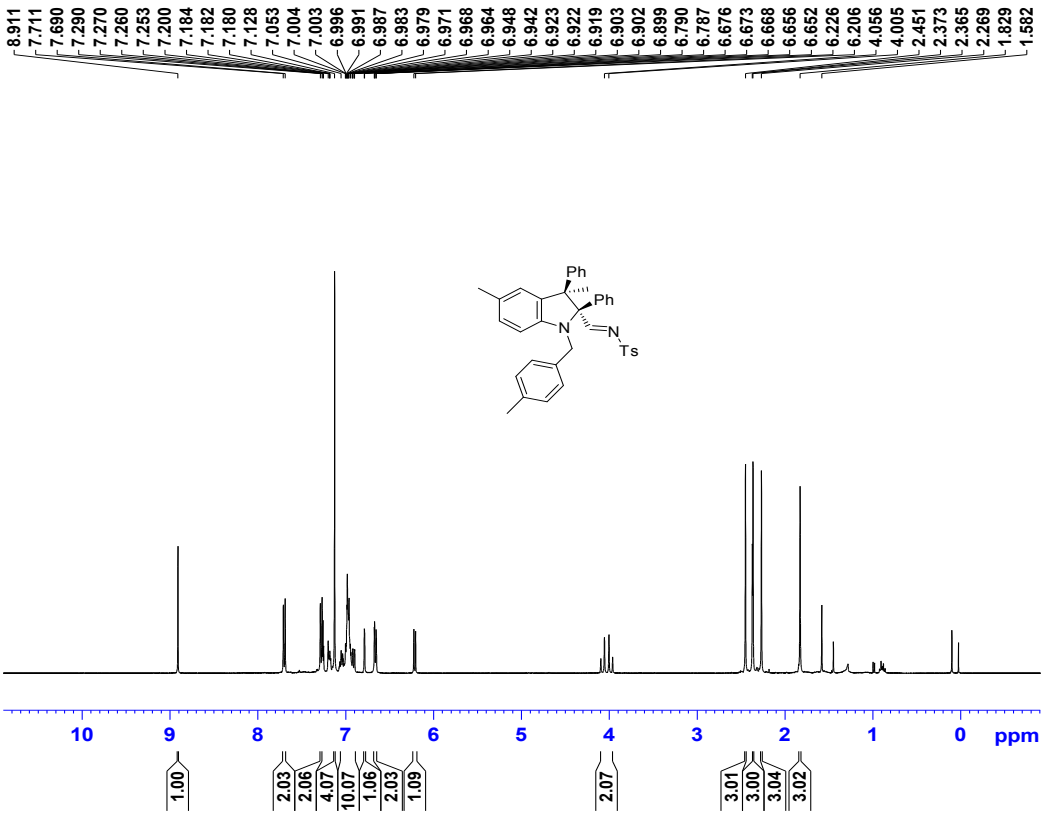
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME         New Folder
EXPNO               99
PROCNO               1

F2 - Acquisition Parameters
Date_         20150504
Time             20.18
INSTRUM          spect
PROBHD   5 mm PABBI 1H/
PULPROG         zgpg30
TD              16540
SOLVENT          CDCl3
NS                512
DS                  4
SWH          24038.461 Hz
FIDRES        1.453353 Hz
AQ           0.3440820 sec
RG              200.34
DW              20.800 usec
DE               6.50 usec
TE              298.7 K
D1           1.00000000 sec
D11          0.03000000 sec
TD0                 1

======== CHANNEL f1 ========
NUC1               13C
P1              15.00 usec
PLW1        76.00000000 W
SFO1        100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2               1H
PCPD2           90.00 usec
PLW2         8.50000000 W
PLW12        0.08500000 W
PLW13        0.06885000 W
SFO2        400.1316005 MHz

F2 - Processing parameters
SI              32768
SF          100.6127551 MHz
WDW                EM
SSB     0
LB              1.00 Hz
GB      0
PC              1.40
```

Indoline (3af):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



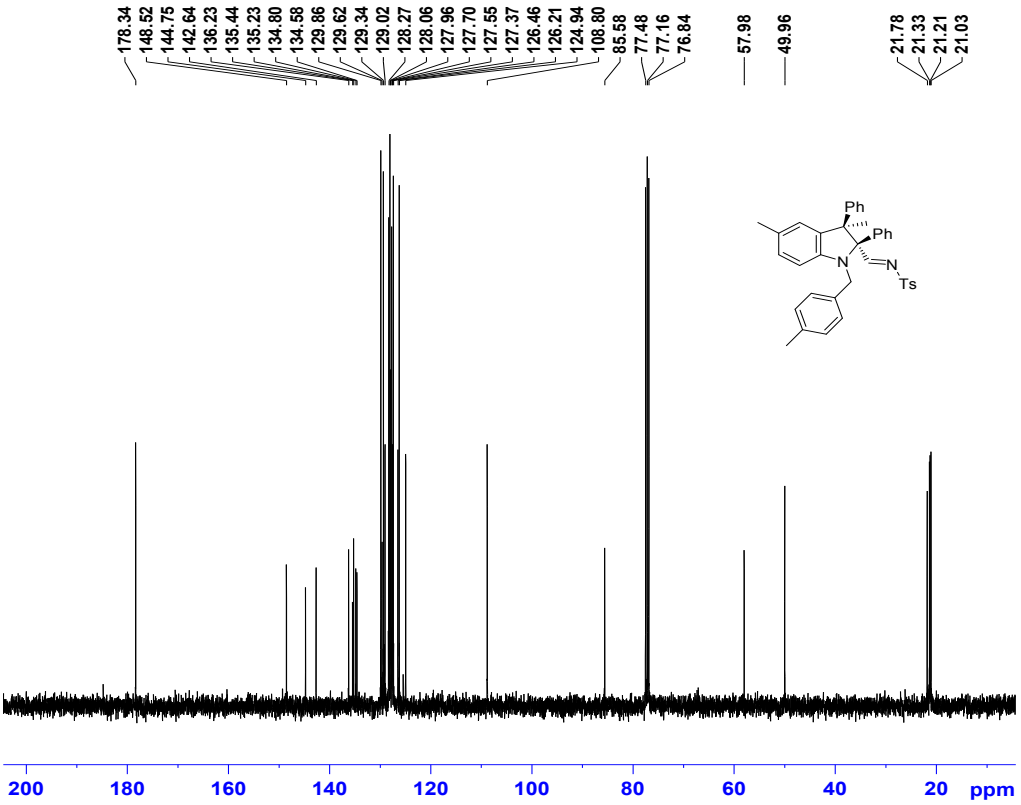
Current Data Parameters
NAME spa40416
EXPNO 269
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160412
Time 19.53
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 108.26
DW 62.400 usec
DE 6.50 usec
TE 299.7 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 400.1320007 MHz
NUC1 1H
P1 15.70 usec
PLW1 7.75000000 W

F2 - Processing parameters
SI 65536
SF 400.1300500 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



Current Data Parameters
NAME spa40615
EXPNO 137
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150608
Time 16.28
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440820 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 299.5 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

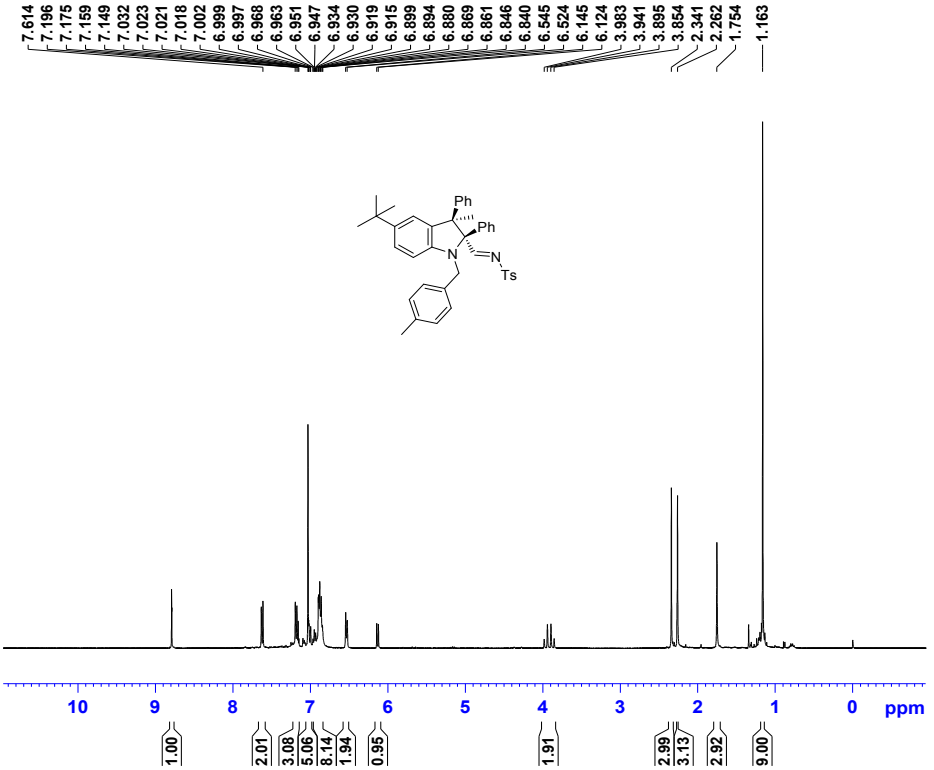
======== CHANNEL f1 ========
NUC1 13C
P1 9.25 usec
PLW1 47.00000000 W
SFO1 100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PLW2 7.75000000 W
PLW12 0.23583999 W
PLW13 0.19103000 W
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127581 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

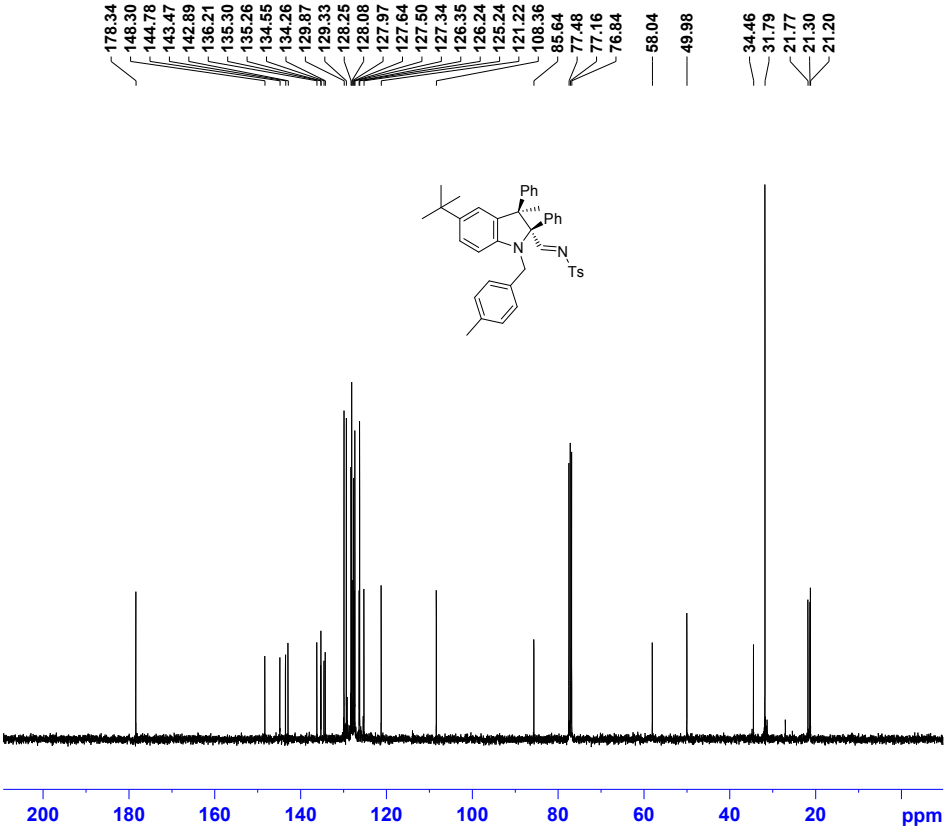
Indoline (3ag):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          488
PROCNO           1

F2 - Acquisition Parameters
Date_        20150514
Time           13.26
INSTRUM         spect
PROBHD   5 mm PABBO BB-
PULPROG         zg30
TD             65536
SOLVENT         CDCl3
NS                16
DS                 2
SWH          8012.820 Hz
FIDRES          0.122266 Hz
AQ           4.0894966 sec
RG               67.99
DW               62.400 usec
DE                6.50 usec
TE              295.6 K
D1           0.50000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1              1H
P1               15.70 usec
PLW1          7.75000000 W
SFO1         400.1320007 MHz

F2 - Processing parameters
SI             65536
SF          400.1300499 MHz
WDW               EM
SSB      0
LB            0.30 Hz
GB       0
PC               1.00
```

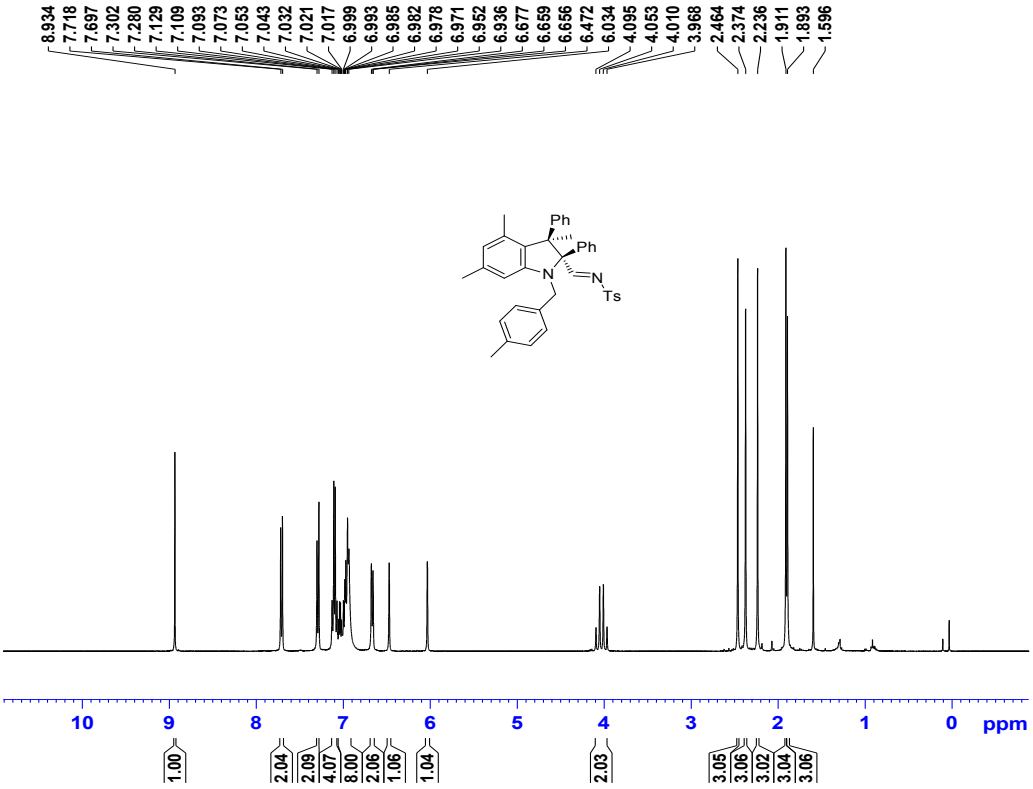
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME      New Folder_1
EXPNO          489
PROCNO           1

F2 - Acquisition Parameters
Date_        20150514
Time           13.39
INSTRUM         spect
PROBHD   5 mm PABBO BB-
PULPROG        zgpg30
TD             16540
SOLVENT         CDCl3
NS               512
DS                 4
SWH          24038.461 Hz
FIDRES          1.453353 Hz
AQ           0.3440820 sec
RG              200.34
DW               20.800 usec
DE                6.50 usec
TE              296.6 K
D1           1.00000000 sec
D11          0.03000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1             13C
P1                9.25 usec
PLW1         47.00000000 W
SFO1        100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2        waltz16
NUC2              1H
PCPD2            90.00 usec
PLW2          7.75000000 W
PLW12         0.23583999 W
PLW13         0.19103000 W
SFO2        400.1316005 MHz

F2 - Processing parameters
SI             32768
SF          100.6127604 MHz
WDW               EM
SSB      0
LB             1.00 Hz
GB       0
PC               1.40
```

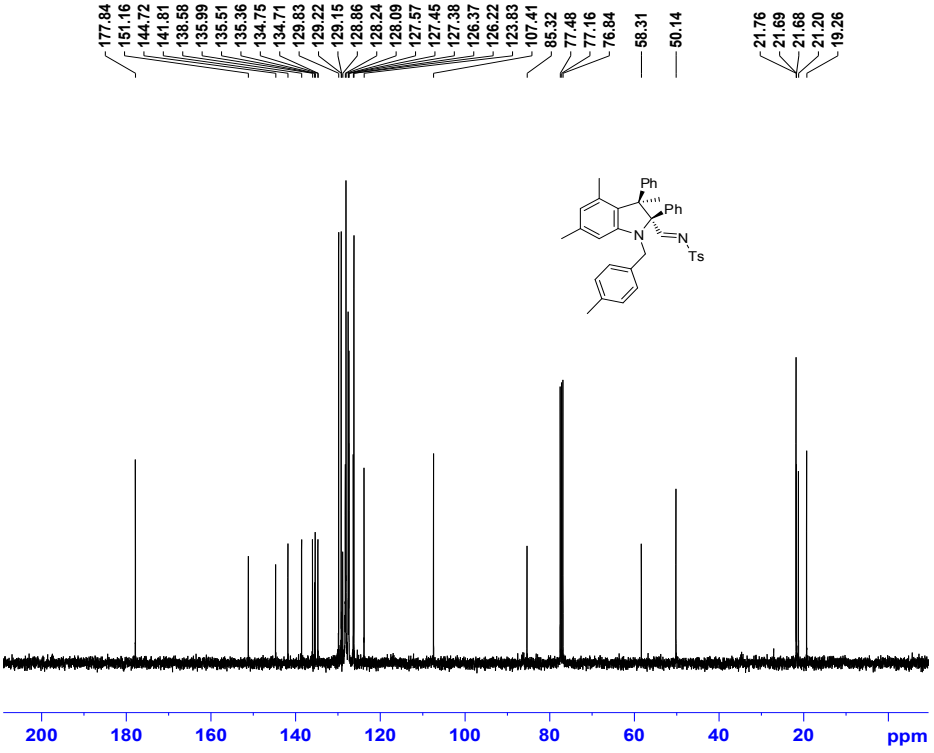
Indoline (3ah):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME            yd-2
EXPNO            192
PROCNO             1

F2 - Acquisition Parameters
Date_         20160409
Time             16.40
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                 16
DS                  2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894966 sec
RG                138.85
DW                62.400 usec
DE                 6.50 usec
TE                299.3 K
D1            0.50000000 sec
TD0                1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1               1H
P1                15.70 usec
PLW1         7.75000000 W

F2 - Processing parameters
SI                65536
SF          400.1300015 MHz
WDW                EM
SSB      0
LB                 0.30 Hz
GB       0
PC                 1.00
```

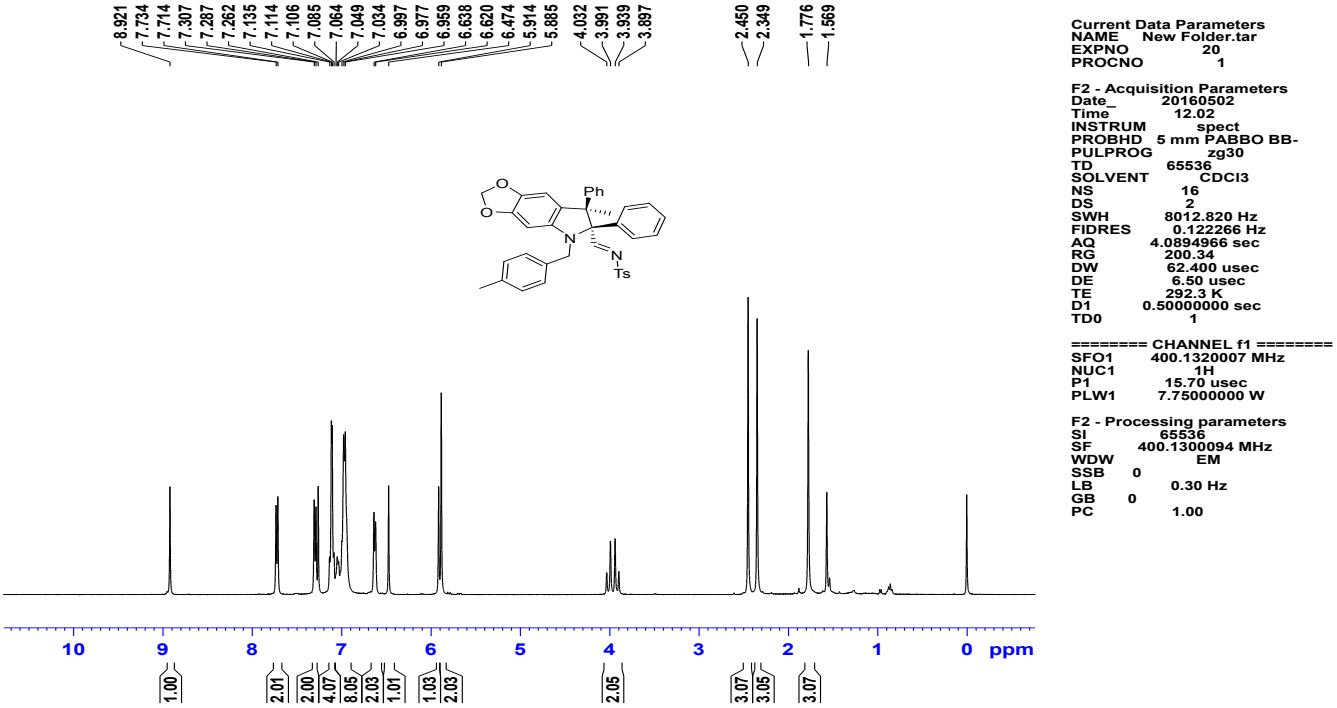
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME         New Folder
EXPNO            30
PROCNO            1

F2 - Acquisition Parameters
Date_         20150603
Time             13.42
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG         zgpg30
TD              16540
SOLVENT          CDCl3
NS                256
DS                 4
SWH           24038.461 Hz
FIDRES         1.453353 Hz
AQ            0.3440820 sec
RG               200.34
DW                20.800 usec
DE                 6.50 usec
TE                302.4 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                1

======== CHANNEL f1 =======
NUC1              13C
P1                9.25 usec
PLW1         47.00000000 W
SFO1        100.6228289 MHz

======== CHANNEL f2 =======
CPDPRG2         waltz16
NUC2               1H
PCPD2             90.00 usec
PLW2          7.75000000 W
PLW12          0.23583999 W
PLW13          0.19103000 W
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                32768
SF          100.6127588 MHz
WDW                EM
SSB      0
LB                 1.00 Hz
GB       0
PC                 1.40
```

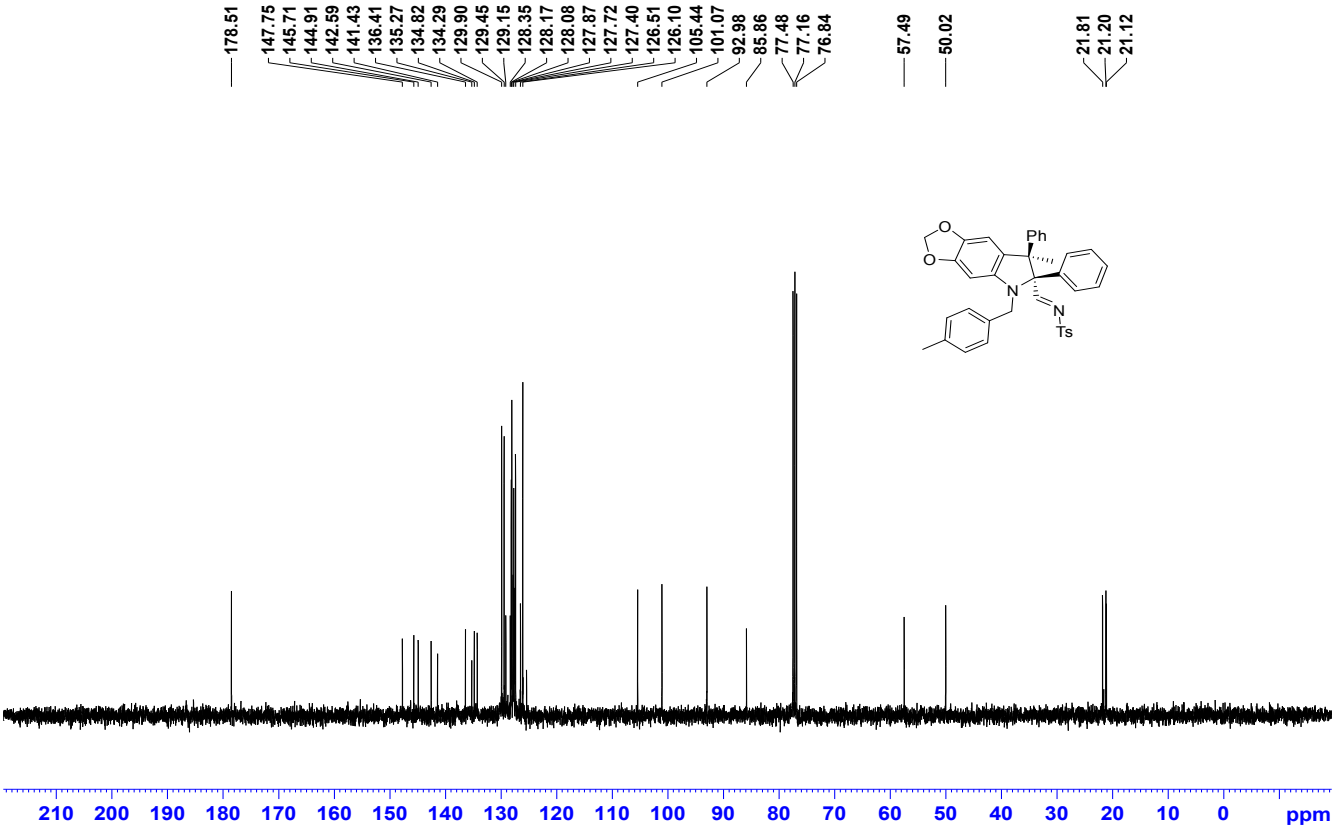
Indoline (3ai):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



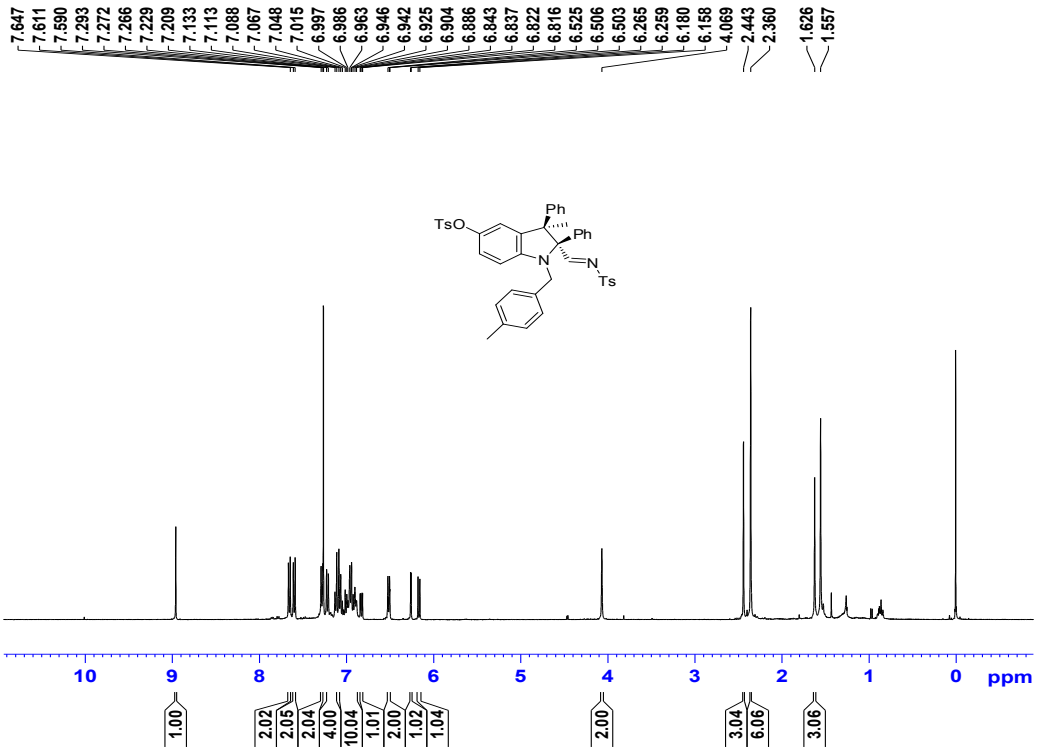

```
Current Data Parameters
NAME      New Folder.tar
EXPNO             20
PROCNO             1

F2 - Acquisition Parameters
Date_          20160502
Time             12.02
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG           zg30
TD             65536
SOLVENT          CDCl3
NS                16
DS                 2
SWH          8012.820 Hz
FIDRES        0.122266 Hz
AQ           4.0894966 sec
RG              200.34
DW             62.400 usec
DE              6.50 usec
TE              292.3 K
D1           0.50000000 sec
TD0                1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1              1H
P1             15.70 usec
PLW1         7.75000000 W

F2 - Processing parameters
SI             65536
SF         400.1300094 MHz
WDW               EM
SSB      0
LB            0.30 Hz
GB       0
PC             1.00
```

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



Indoline (3aj):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



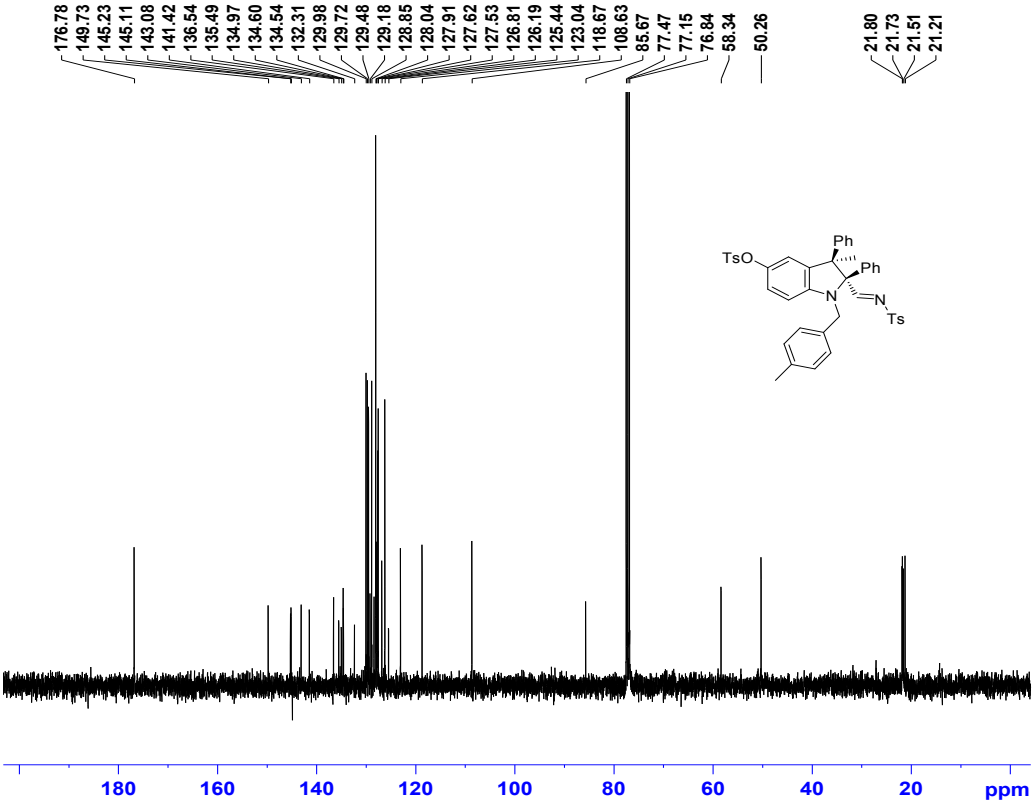
Current Data Parameters
NAME spa40416
EXPNO 711
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160422
Time 10.00
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 200.34
DW 62.400 usec
DE 6.50 usec
TE 299.9 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 400.1320007 MHz
NUC1 1H
P1 15.70 usec
PLW1 7.75000000 W

F2 - Processing parameters
SI 65536
SF 400.1300101 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



Current Data Parameters
NAME New Folder_1
EXPNO 650
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150520
Time 18.37
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440820 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 302.1 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

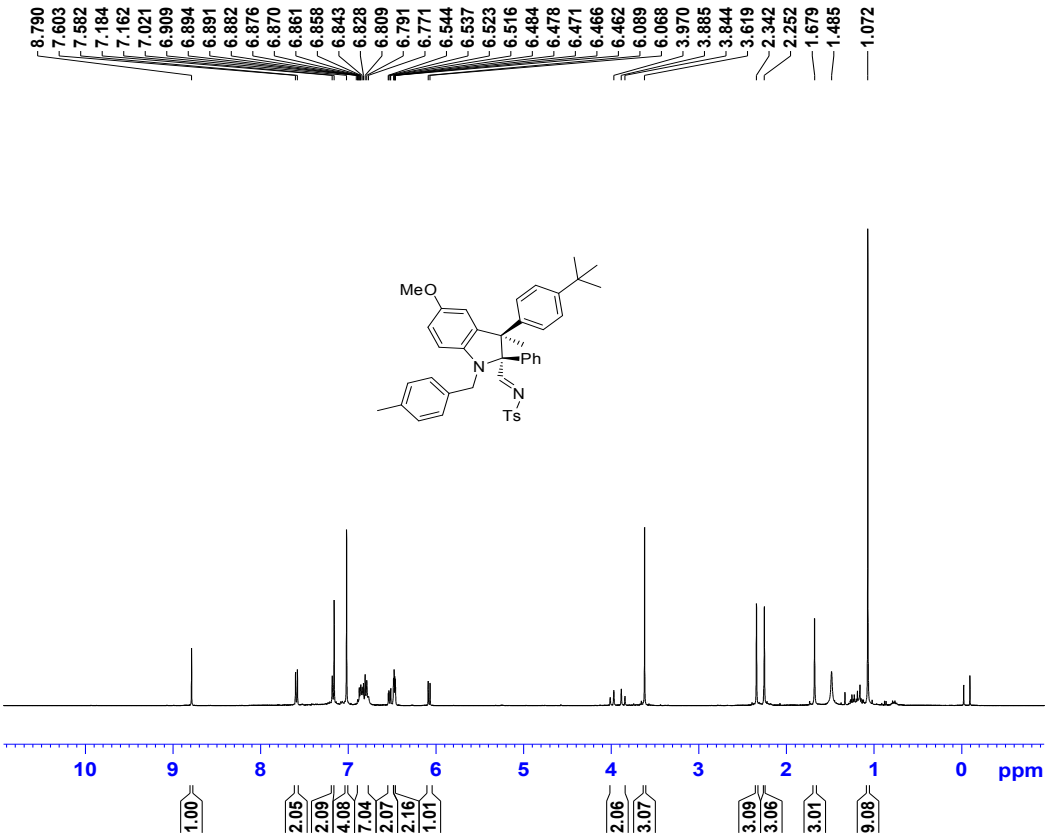
======== CHANNEL f1 ========
NUC1 13C
P1 9.25 usec
PLW1 47.00000000 W
SFO1 100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PLW2 7.75000000 W
PLW12 0.23583999 W
PLW13 0.19103000 W
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127545 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

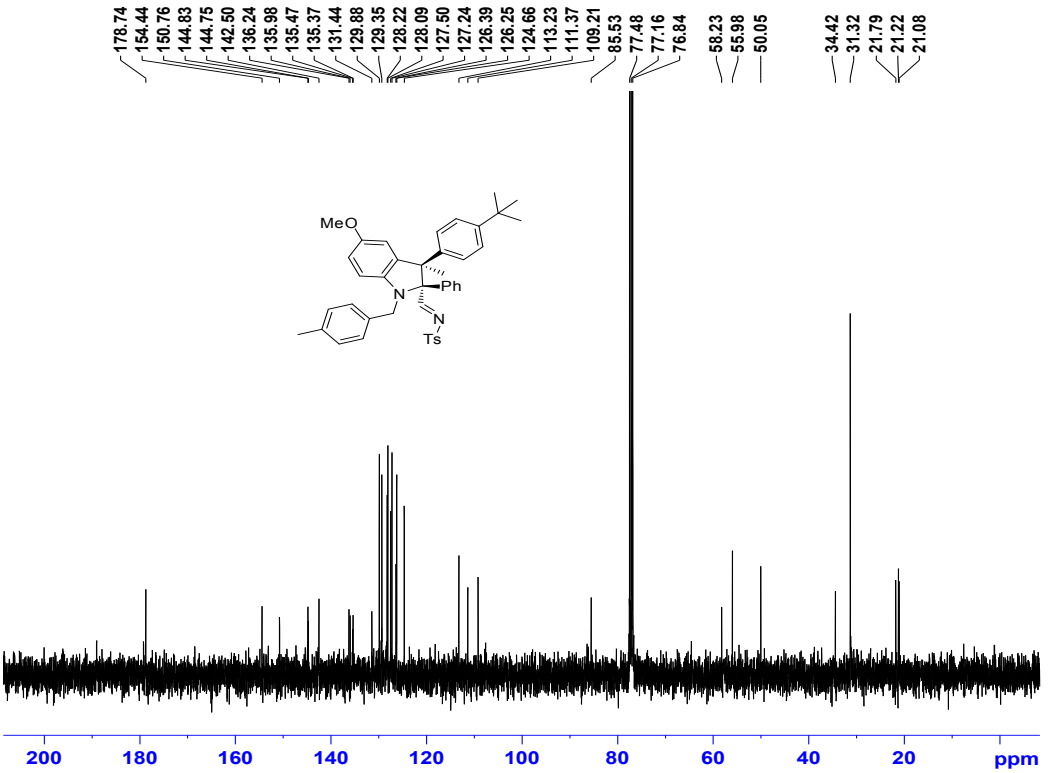
Indoline (3al):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              133
PROCNO               1

F2 - Acquisition Parameters
Date_         20160408
Time             15.05
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES        0.122266 Hz
AQ            4.0894465 sec
RG                200.34
DW             62.400 usec
DE              6.50 usec
TE              299.4 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1                   1H
P1               15.70 usec
PLW1         7.75000000 W

F2 - Processing parameters
SI                  65536
SF          400.1300113 MHz
WDW                    EM
SSB                 0
LB                0.30 Hz
GB                  0
PC                1.00
```

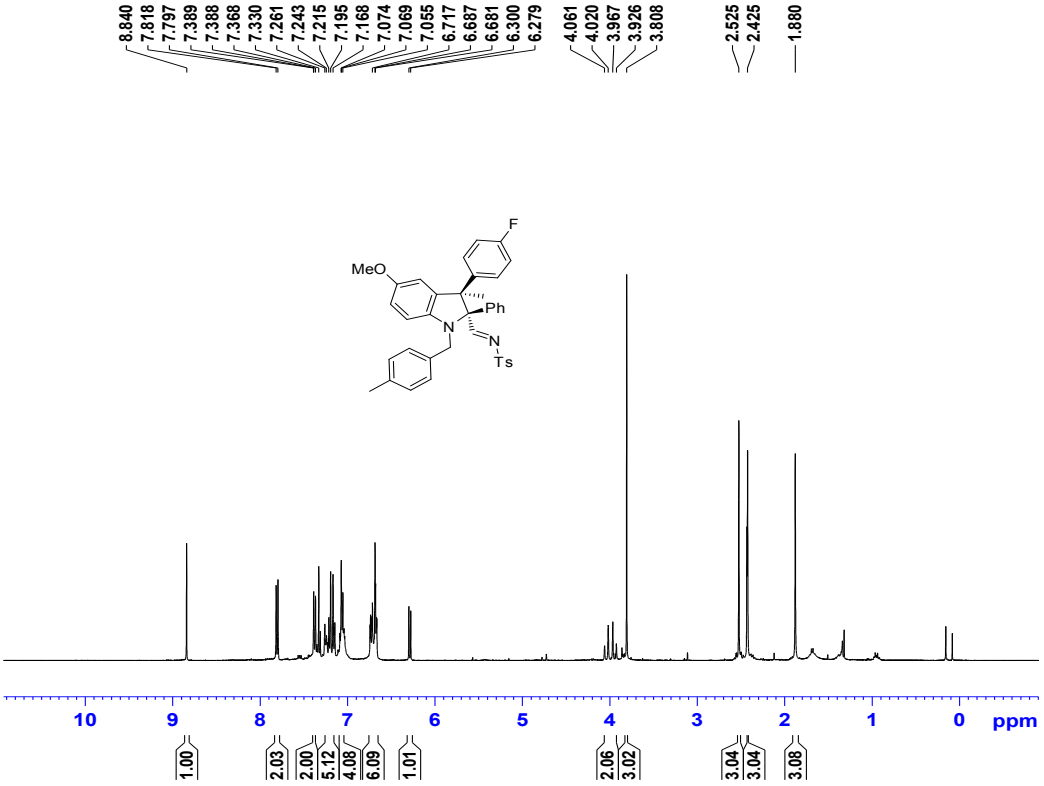
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              134
PROCNO               1

F2 - Acquisition Parameters
Date_         20160408
Time             15.18
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG       zgpg30
TD              16540
SOLVENT          CDCl3
NS                 512
DS                   4
SWH          24038.461 Hz
FIDRES        1.453353 Hz
AQ            0.3440320 sec
RG                200.34
DW             20.800 usec
DE              6.50 usec
TE              300.0 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        100.6228289 MHz
NUC1                   13C
P1                9.25 usec
PLW1        47.00000000 W

======== CHANNEL f2 ========
SFO2        400.1316005 MHz
NUC2                   1H
CPDPRG[2         waltz16
PCPD2          90.00 usec
PLW2         7.75000000 W
PLW12        0.23583999 W
PLW13        0.11863000 W

F2 - Processing parameters
SI                  32768
SF          100.6127690 MHz
WDW                    EM
SSB                 0
LB                1.00 Hz
GB                  0
PC                1.40
```

Indoline (3am):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



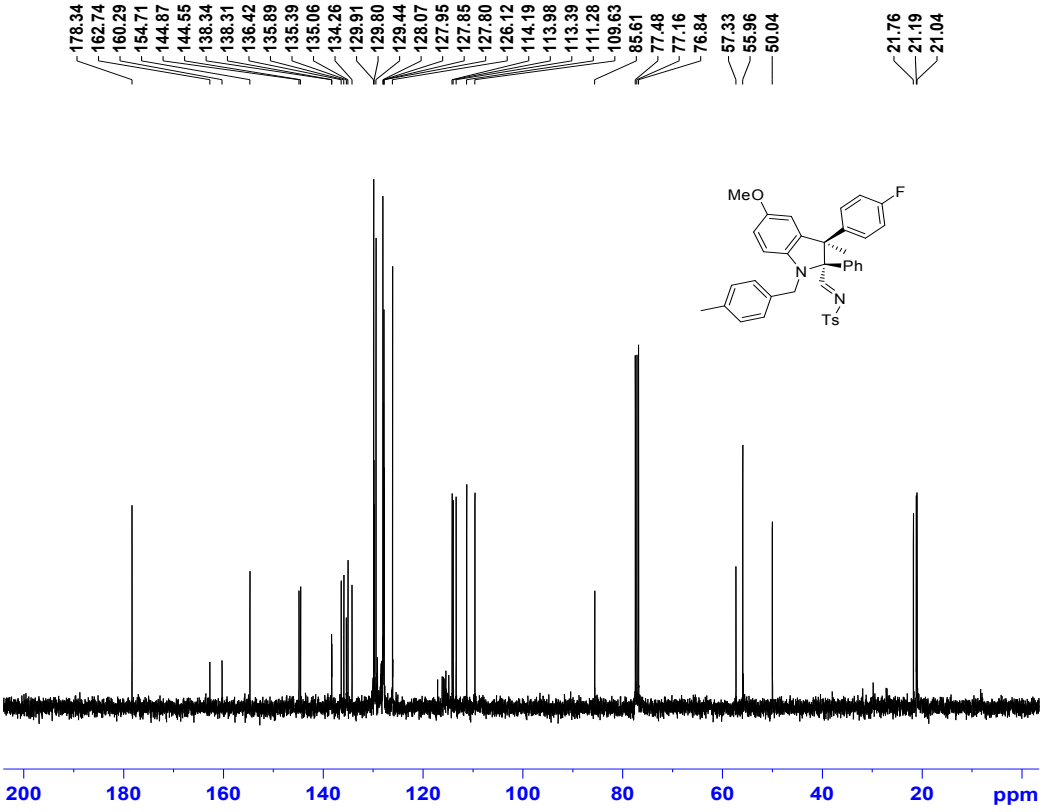
Current Data Parameters
NAME spa40416
EXPNO 135
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160408
Time 15.22
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 138.85
DW 62.400 usec
DE 6.50 usec
TE 299.6 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 400.1320007 MHz
NUC1 1H
P1 15.70 usec
PLW1 7.75000000 W

F2 - Processing parameters
SI 65536
SF 400.1300444 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



Current Data Parameters
NAME New Folder_1
EXPNO 546
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150515
Time 21.56
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 256
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440820 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 301.0 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

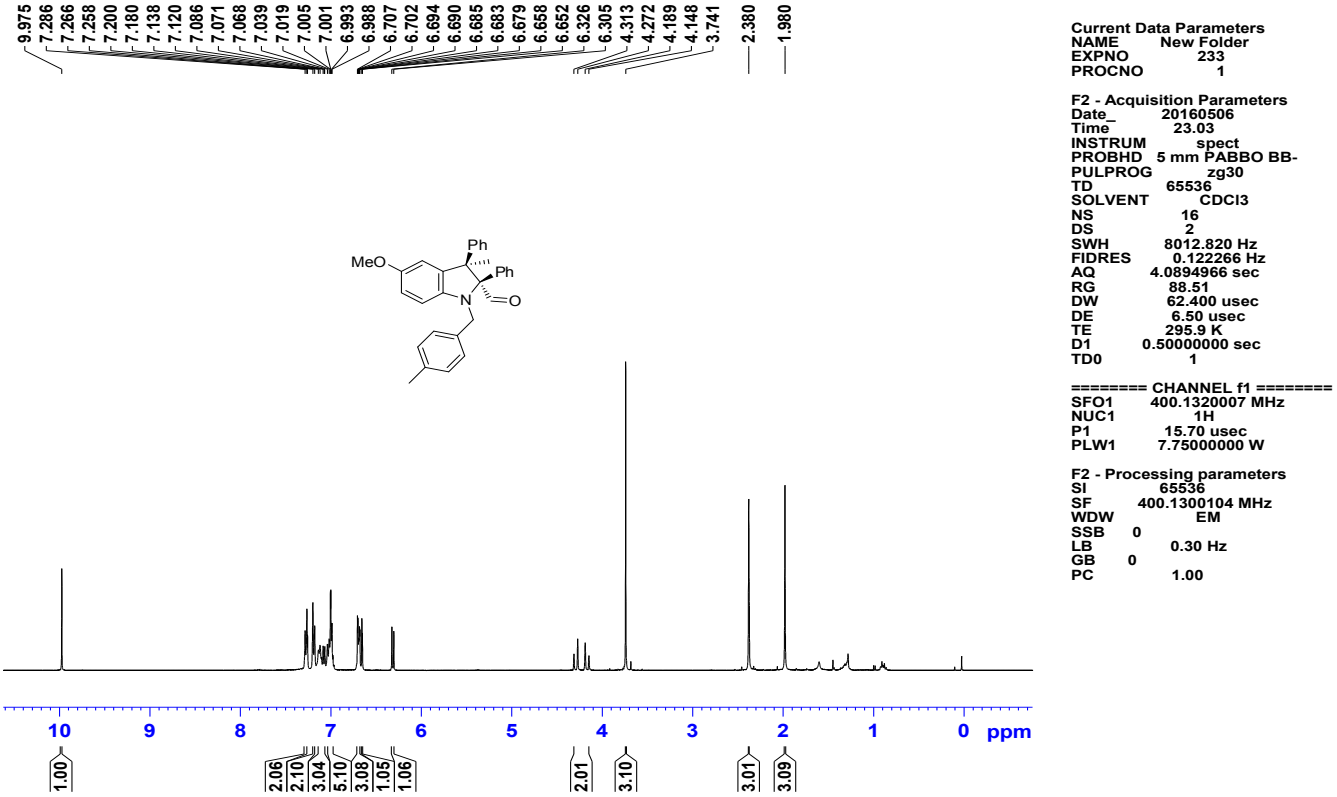
======== CHANNEL f1 ========
NUC1 13C
P1 9.25 usec
PLW1 47.00000000 W
SFO1 100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PLW2 7.75000000 W
PLW12 0.23583999 W
PLW13 0.19103000 W
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127575 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

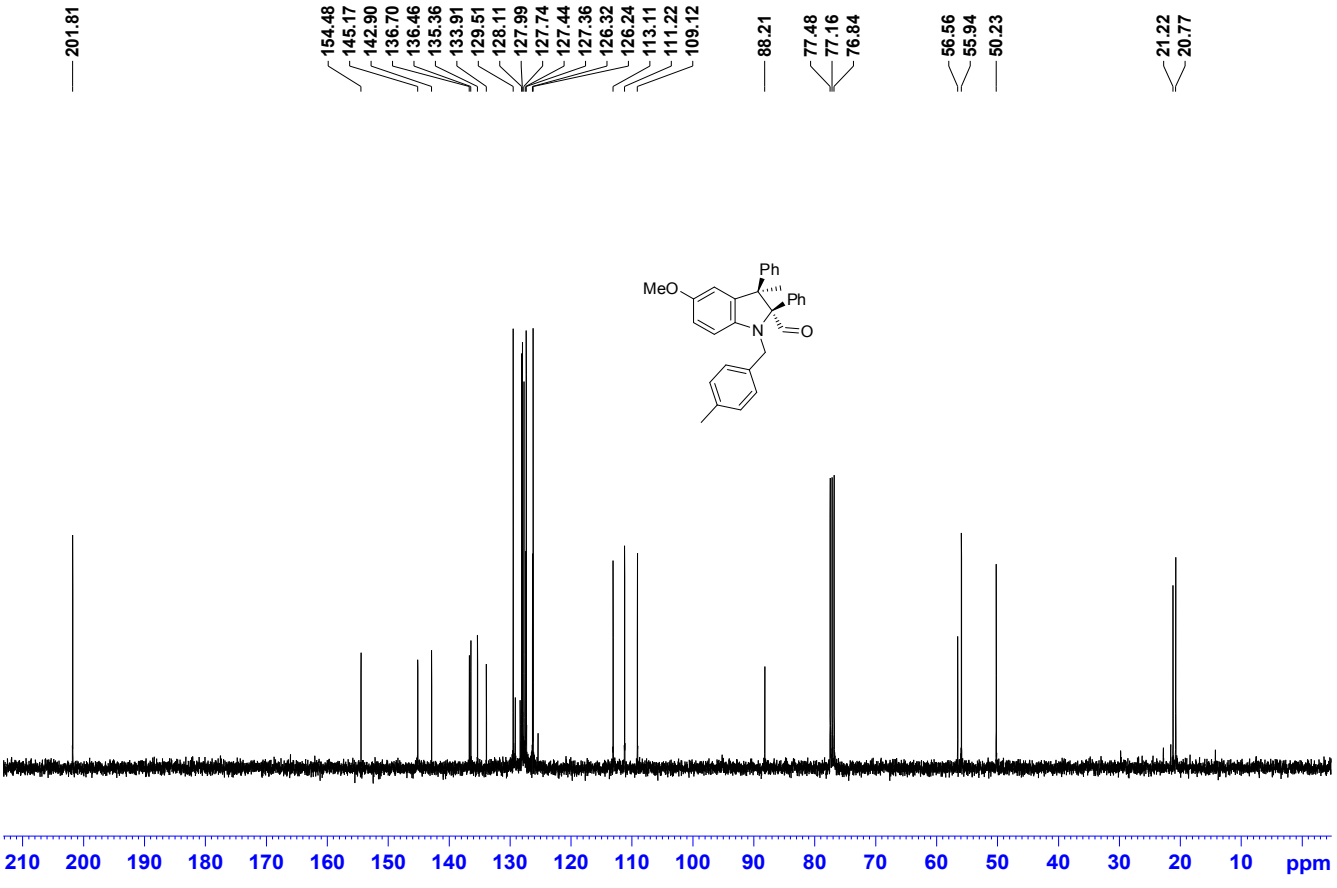
Compound (4a):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



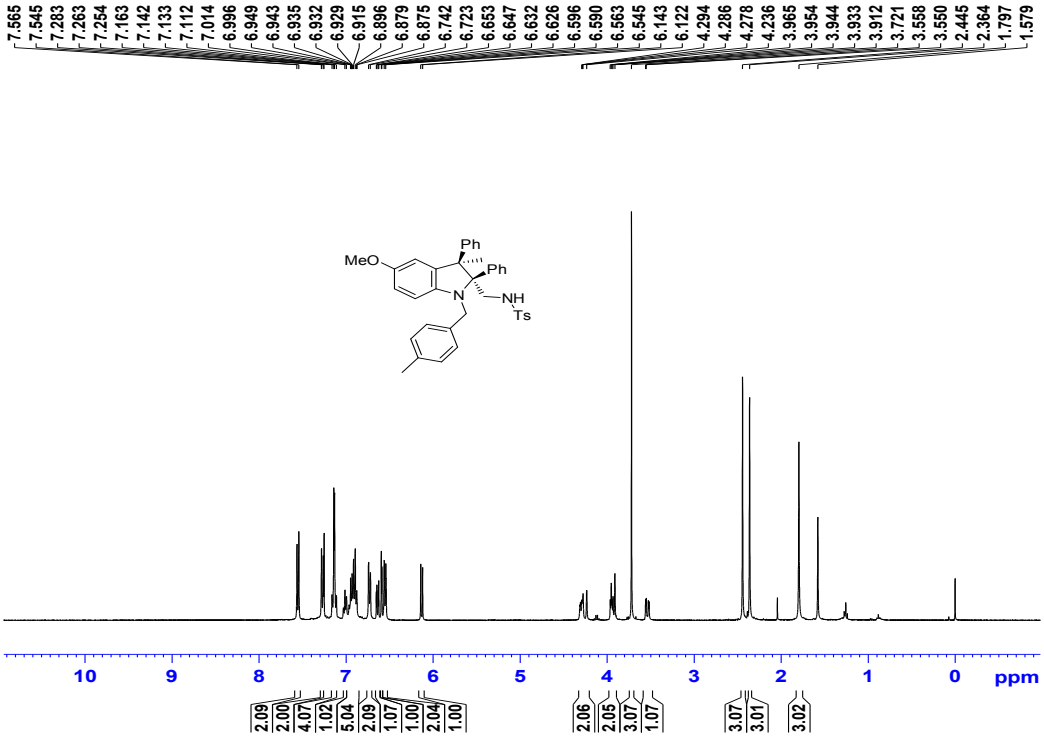

```
Current Data Parameters
NAME          New Folder
EXPNO            233
PROCNO             1

F2 - Acquisition Parameters
Date_         20160506
Time             23.03
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                 16
DS                  2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894966 sec
RG                88.51
DW                62.400 usec
DE                 6.50 usec
TE               295.9 K
D1            0.50000000 sec
TD0                1

======== CHANNEL f1 ========
SFO1         400.1320007 MHz
NUC1               1H
P1                15.70 usec
PLW1          7.75000000 W

F2 - Processing parameters
SI              65536
SF          400.1300104 MHz
WDW                EM
SSB      0
LB               0.30 Hz
GB       0
PC                 1.00
```

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



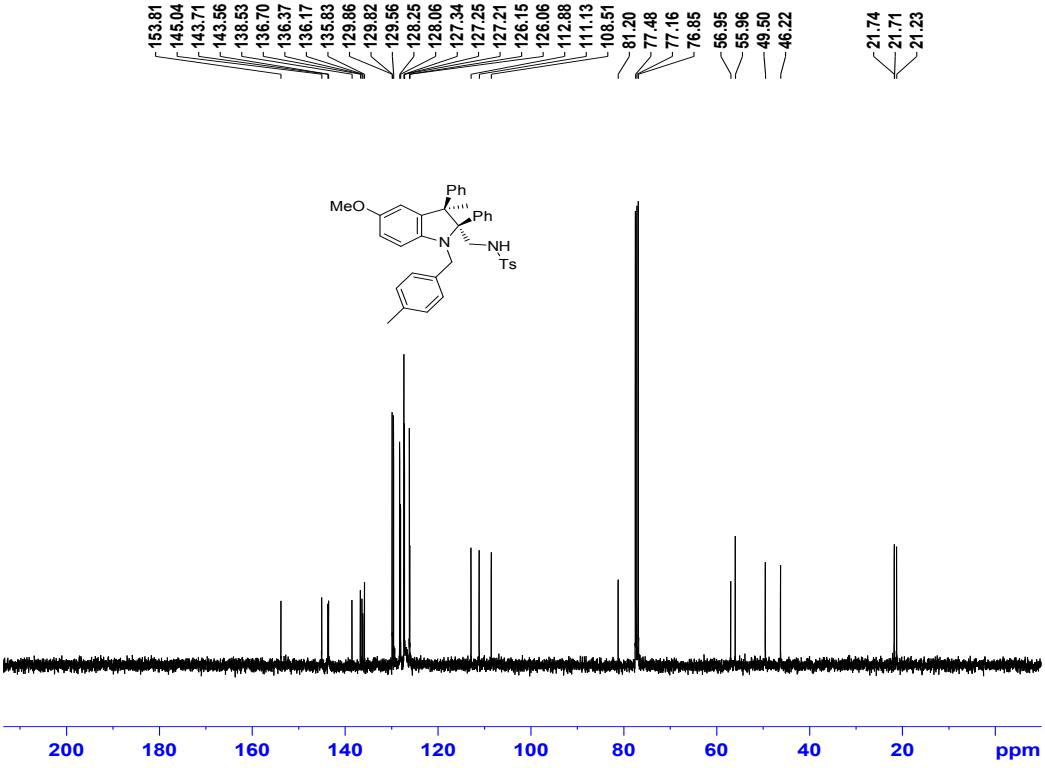
Indoline (5a):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME            YD
EXPNO           94
PROCNO          1

F2 - Acquisition Parameters
Date_       20150704
Time            14.55
INSTRUM         spect
PROBHD   5 mm PABBO BB-
PULPROG         zg30
TD              65536
SOLVENT         CDCl3
NS              16
DS              2
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ              4.0894966 sec
RG              138.85
DW              62.400 usec
DE              6.50 usec
TE              296.6 K
D1              0.50000000 sec
TD0             1

======== CHANNEL f1 ========
NUC1            1H
P1              15.70 usec
PLW1            7.75000000 W
SFO1            400.1320007 MHz

F2 - Processing parameters
SI              65536
SF              400.1300118 MHz
WDW             EM
SSB             0
LB              0.30 Hz
GB              0
PC              1.00
```

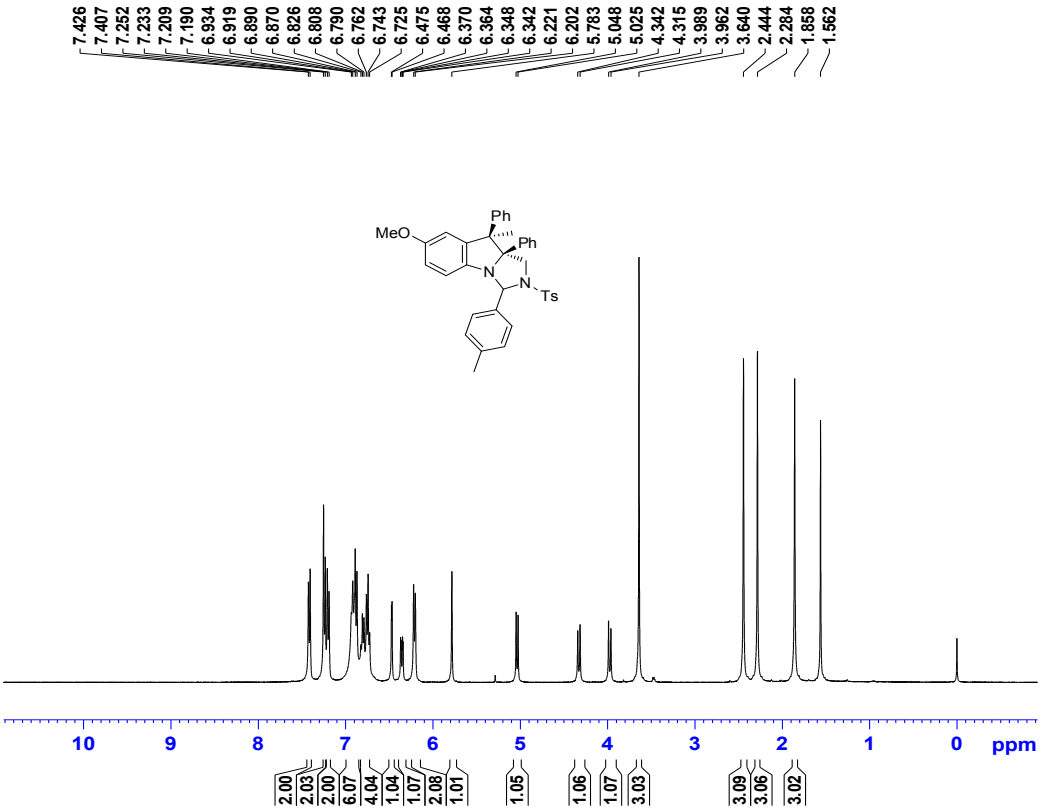
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME            YD
EXPNO           99
PROCNO          1

F2 - Acquisition Parameters
Date_       20150704
Time            15.03
INSTRUM         spect
PROBHD   5 mm PABBO BB-
PULPROG         zgpg30
TD              16540
SOLVENT         CDCl3
NS              512
DS              4
SWH             24038.461 Hz
FIDRES          1.453353 Hz
AQ              0.3440820 sec
RG              200.34
DW              20.800 usec
DE              6.50 usec
TE              297.3 K
D1              1.00000000 sec
D11             0.03000000 sec
TD0             1

======== CHANNEL f1 ========
NUC1            13C
P1              9.25 usec
PLW1            47.00000000 W
SFO1            100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2            1H
PCPD2           90.00 usec
PLW2            7.75000000 W
PLW12           0.23583999 W
PLW13           0.19103000 W
SFO2            400.1316005 MHz

F2 - Processing parameters
SI              32768
SF              100.6127558 MHz
WDW             EM
SSB             0
LB              1.00 Hz
GB              0
PC              1.40
```

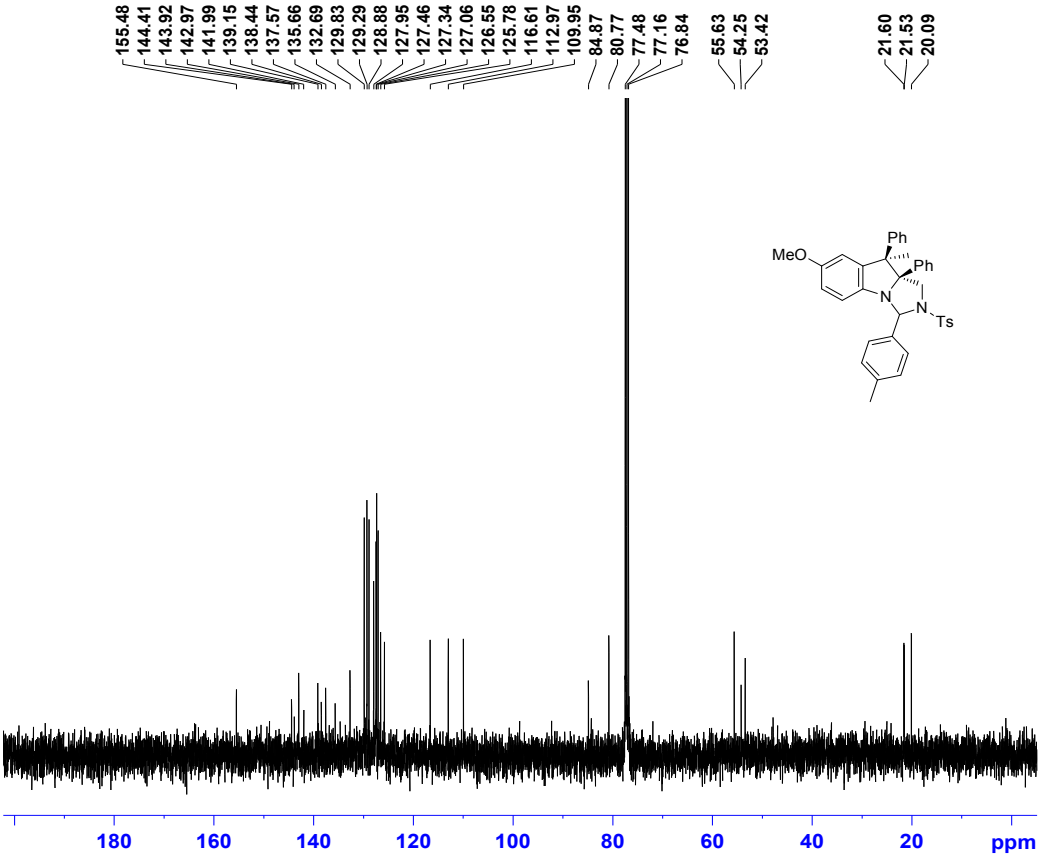
Imidazoindoline (6a):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME                  spa40416
EXPNO                      820
PROCNO                       1

F2 - Acquisition Parameters
Date_                 20160424
Time                     13.13
INSTRUM                  spect
PROBHD     5 mm PABBO BB-
PULPROG                  zg30
TD                      65536
SOLVENT                 CDCl3
NS                         32
DS                          2
SWH                  8012.820 Hz
FIDRES               0.122266 Hz
AQ                   4.0894465 sec
RG                      200.34
DW                      62.400 usec
DE                       6.50 usec
TE                      300.0 K
D1                   0.50000000 sec
TD0                          1

======== CHANNEL f1 ========
SFO1                400.1320007 MHz
NUC1                        1H
P1                       15.70 usec
PLW1                 7.75000000 W

F2 - Processing parameters
SI                          65536
SF                  400.1300129 MHz
WDW                            EM
SSB                 0
LB                           0.30 Hz
GB                  0
PC                           1.00
```

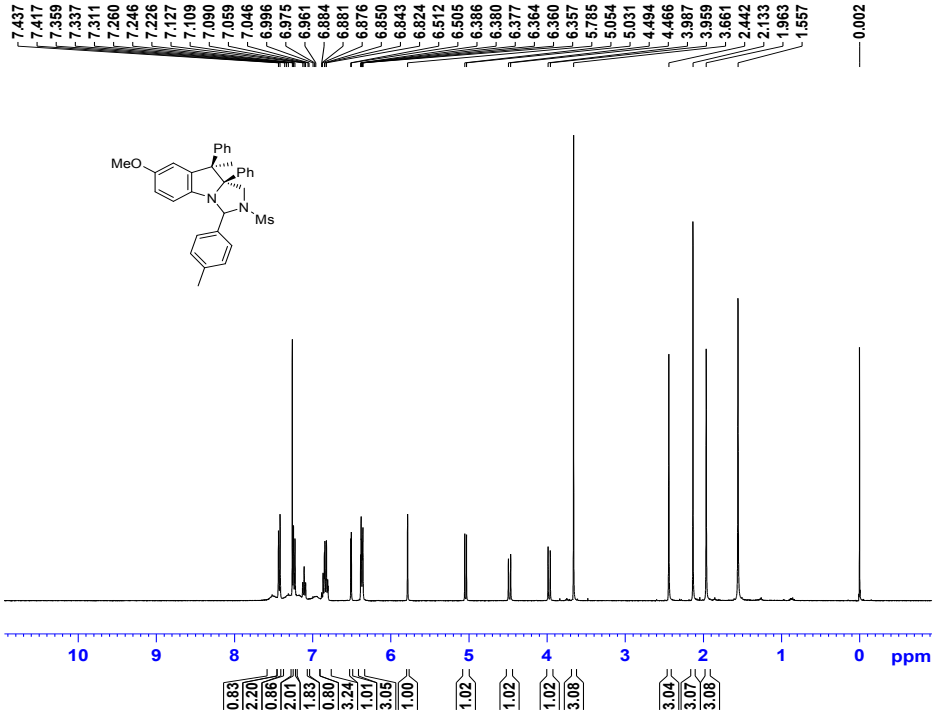
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          New Folder
EXPNO                 64
PROCNO                 1

F2 - Acquisition Parameters
Date_          20150803
Time              12.12
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG         zgpg30
TD                16540
SOLVENT           CDCl3
NS                  750
DS                    4
SWH           24038.461 Hz
FIDRES         1.453353 Hz
AQ            0.3440820 sec
RG                200.34
DW                20.800 usec
DE                 6.50 usec
TE                300.2 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  13C
P1                 9.25 usec
PLW1          47.00000000 W
SFO1          100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              90.00 usec
PLW2           7.75000000 W
PLW12          0.23583999 W
PLW13          0.19103000 W
SFO2          400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF            100.6127537 MHz
WDW                   EM
SSB          0
LB                 1.00 Hz
GB           0
PC                 1.40
```

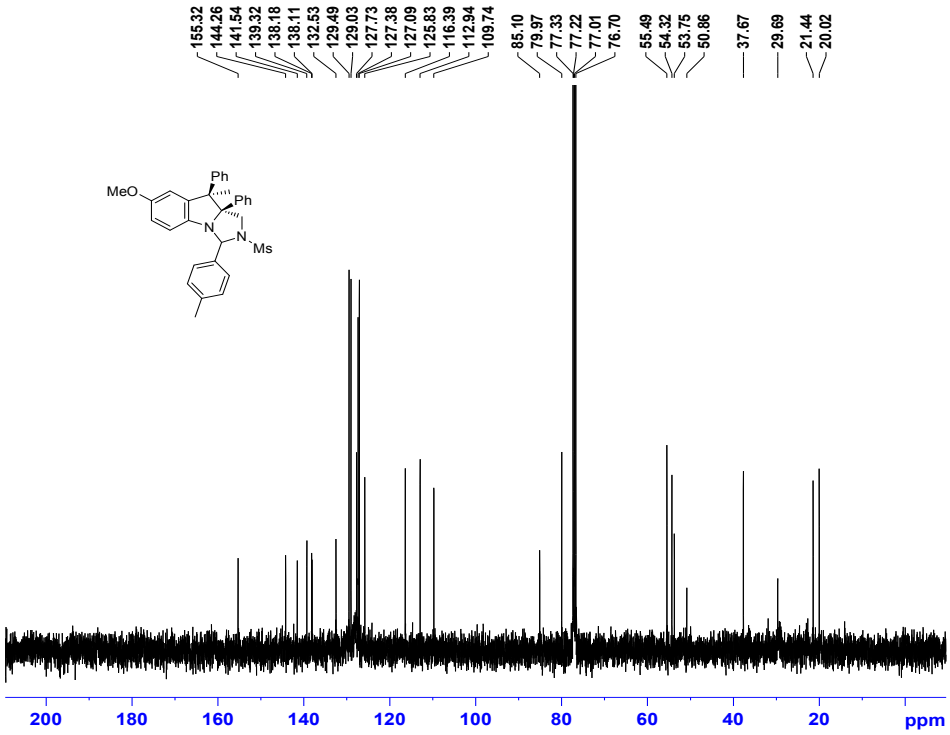
Imidazoindoline (6b):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40815
EXPNO              299
PROCNO               1

F2 - Acquisition Parameters
Date_         20150810
Time             15.28
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894966 sec
RG                200.34
DW                62.400 usec
DE                 6.50 usec
TE                298.1 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                1H
P1                15.70 usec
PLW1         7.75000000 W
SFO1         400.1320007 MHz

F2 - Processing parameters
SI                 65536
SF          400.1300095 MHz
WDW                  EM
SSB       0
LB                0.30 Hz
GB        0
PC                1.00
```

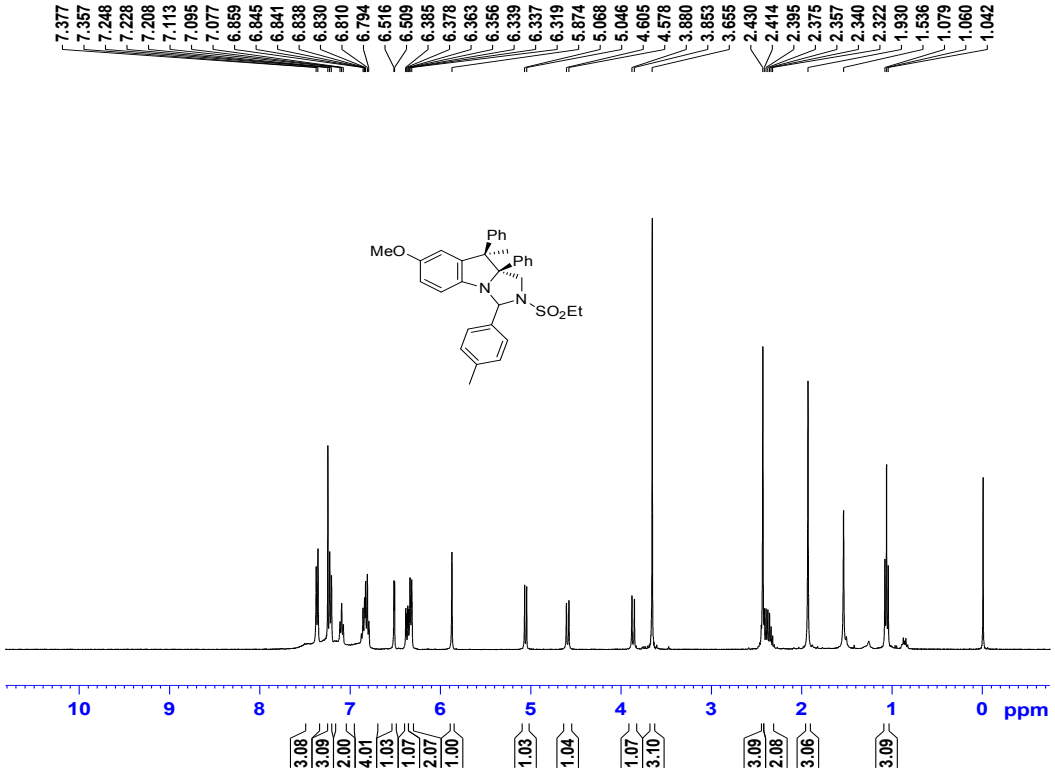
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40815
EXPNO              254
PROCNO               1

F2 - Acquisition Parameters
Date_         20150809
Time             10.24
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG         zgpg30
TD              16540
SOLVENT          CDCl3
NS                 750
DS                   4
SWH          24038.461 Hz
FIDRES           1.453353 Hz
AQ            0.3440820 sec
RG                200.34
DW                20.800 usec
DE                 6.50 usec
TE                299.7 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                13C
P1                9.25 usec
PLW1         47.00000000 W
SFO1         100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2            90.00 usec
PLW2          7.75000000 W
PLW12         0.23583999 W
PLW13         0.19103000 W
SFO2         400.1316005 MHz

F2 - Processing parameters
SI                 32768
SF          100.6127690 MHz
WDW                  EM
SSB       0
LB                1.00 Hz
GB        0
PC                1.40
```

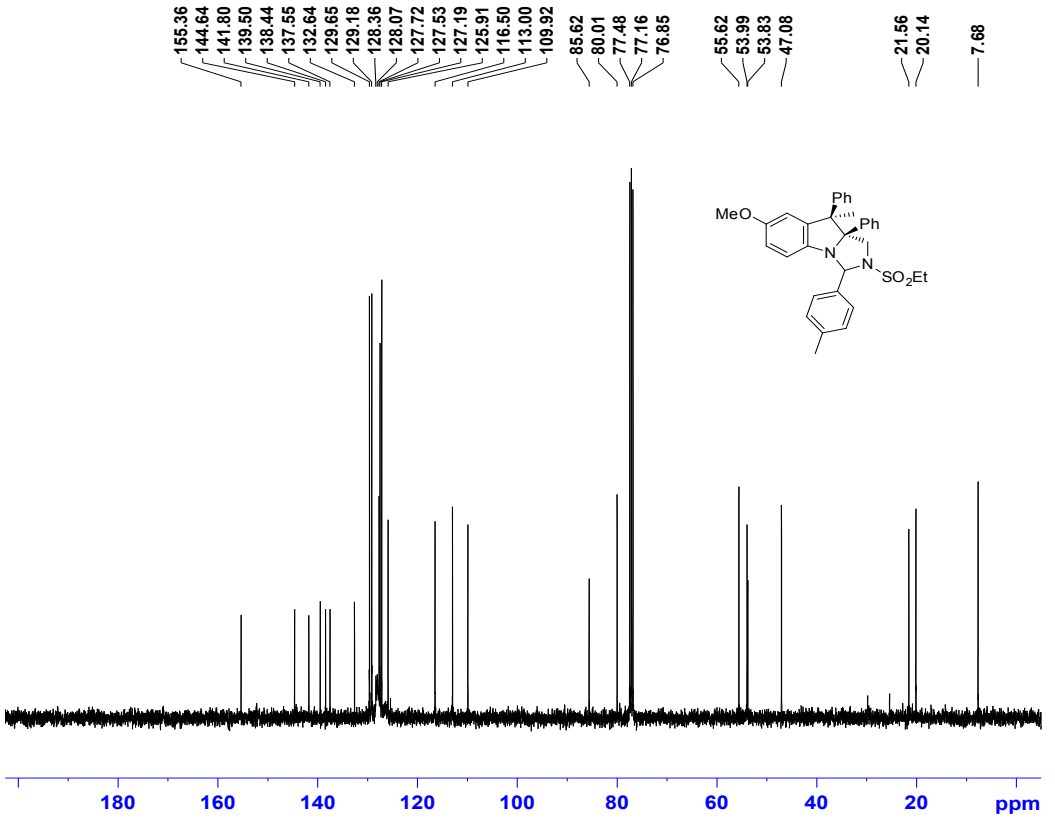
Imidazoindoline (6c):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME            yd-2
EXPNO            712
PROCNO             1

F2 - Acquisition Parameters
Date_         20160422
Time            10.05
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                 16
DS                  2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894966 sec
RG                200.34
DW                62.400 usec
DE                 6.50 usec
TE                299.9 K
D1             0.50000000 sec
TD0                1

======== CHANNEL f1 ========
SFO1          400.1320007 MHz
NUC1               1H
P1                15.70 usec
PLW1           7.75000000 W

F2 - Processing parameters
SI              65536
SF          400.1300143 MHz
WDW                EM
SSB      0
LB               0.30 Hz
GB       0
PC                1.00
```

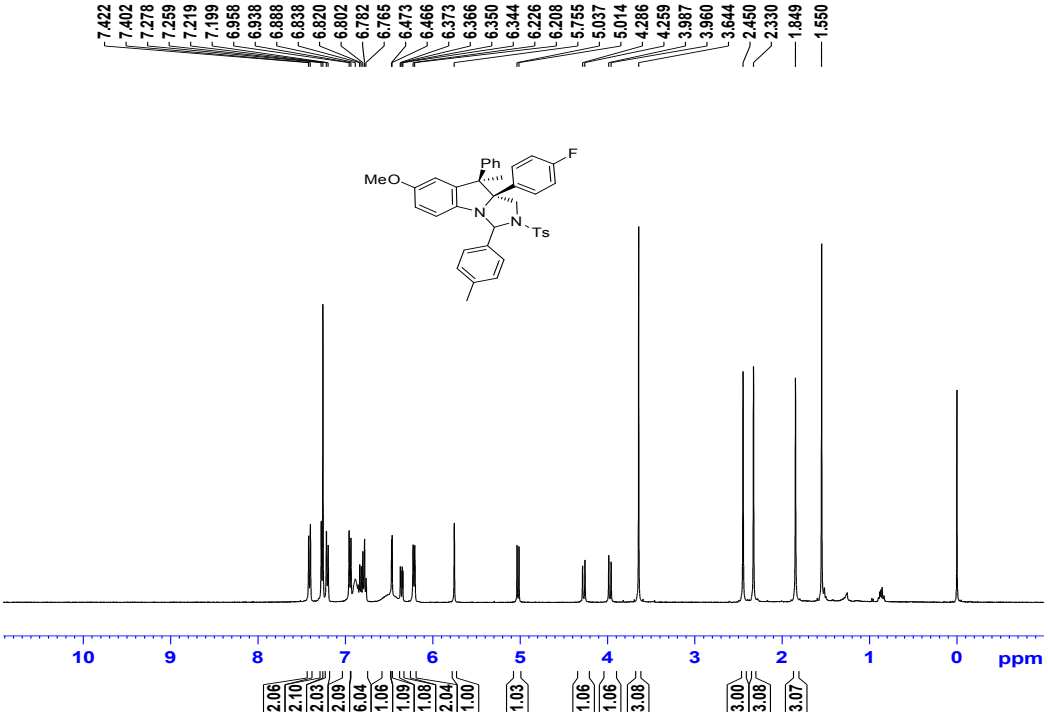
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40815
EXPNO              130
PROCNO               1

F2 - Acquisition Parameters
Date_         20150805
Time            18.21
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD              16540
SOLVENT          CDCl3
NS                 512
DS                   4
SWH           24038.461 Hz
FIDRES           1.453353 Hz
AQ            0.3440820 sec
RG                200.34
DW                20.800 usec
DE                 6.50 usec
TE                299.5 K
D1             1.00000000 sec
D11            0.03000000 sec
TD0                1

======== CHANNEL f1 ========
NUC1               13C
P1                 9.25 usec
PLW1          47.00000000 W
SFO1          100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2               1H
PCPD2             90.00 usec
PLW2           7.75000000 W
PLW12          0.23583999 W
PLW13          0.19103000 W
SFO2          400.1316005 MHz

F2 - Processing parameters
SI              32768
SF          100.6127564 MHz
WDW                EM
SSB      0
LB               1.00 Hz
GB       0
PC                1.40
```

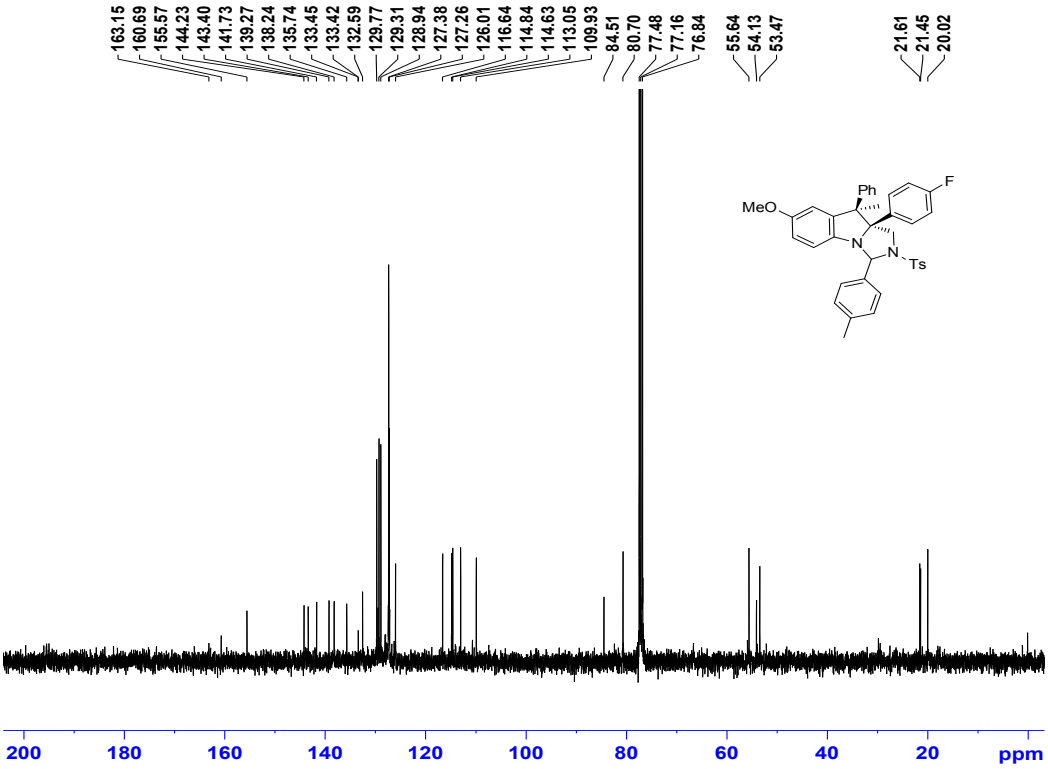
Imidazoindoline (6d):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              746
PROCNO               1

F2 - Acquisition Parameters
Date_         20160422
Time             23.29
INSTRUM          spect
PROBHD  5 mm PABBO BB-
PULPROG          zg30
TD               65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894465 sec
RG                200.34
DW                62.400 usec
DE                 6.50 usec
TE                300.0 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1                1H
P1                15.70 usec
PLW1         7.75000000 W

F2 - Processing parameters
SI               65536
SF          400.1300104 MHz
WDW                 EM
SSB      0
LB               0.30 Hz
GB       0
PC               1.00
```

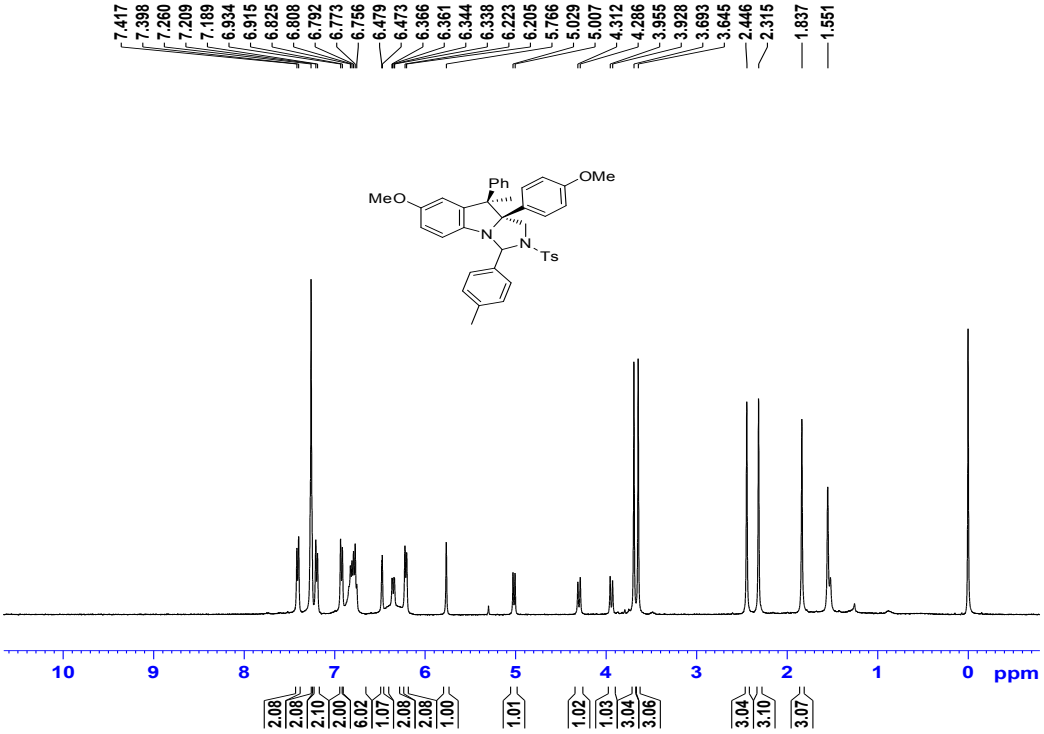
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40815
EXPNO              272
PROCNO               1

F2 - Acquisition Parameters
Date_         20150809
Time             17.04
INSTRUM          spect
PROBHD  5 mm PABBO BB-
PULPROG         zgpg30
TD               16540
SOLVENT          CDCl3
NS                2500
DS                   4
SWH          24038.461 Hz
FIDRES           1.453353 Hz
AQ            0.3440820 sec
RG                200.34
DW                20.800 usec
DE                 6.50 usec
TE                299.6 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                13C
P1                9.25 usec
PLW1         47.00000000 W
SFO1        100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2            90.00 usec
PLW2          7.75000000 W
PLW12         0.23583999 W
PLW13         0.19103000 W
SFO2        400.1316005 MHz

F2 - Processing parameters
SI               32768
SF          100.6127535 MHz
WDW                 EM
SSB      0
LB               1.00 Hz
GB       0
PC               1.40
```

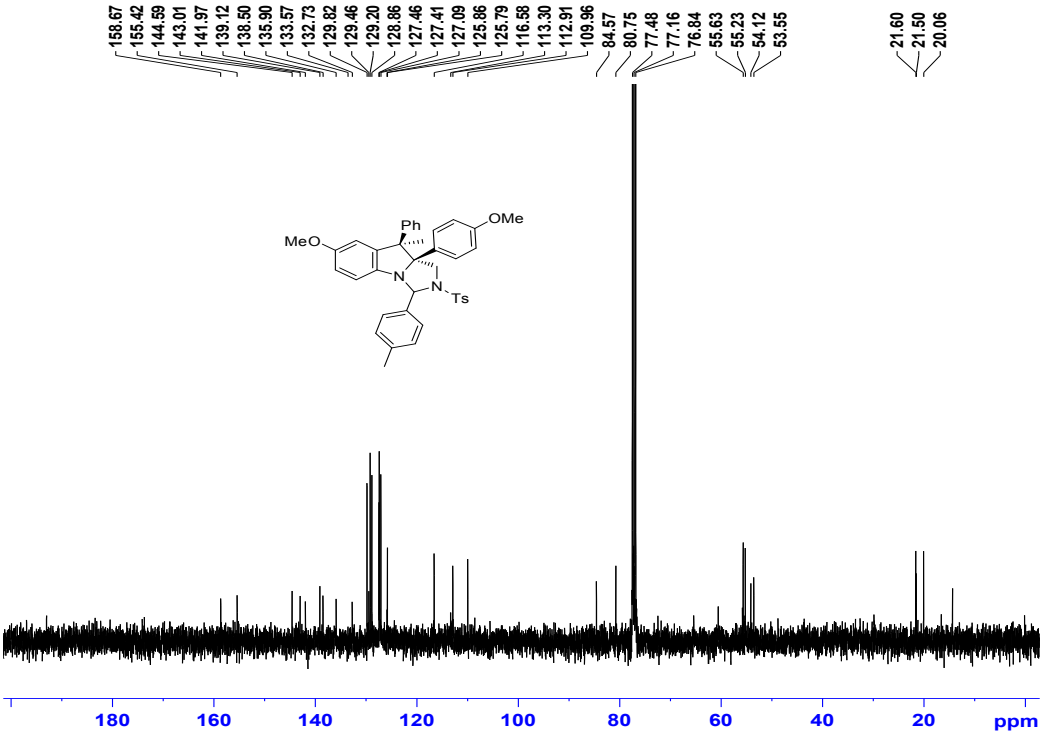
Imidazoindoline (6e):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME         New Folder
EXPNO               219
PROCNO                1

F2 - Acquisition Parameters
Date_         20160506
Time             10.55
INSTRUM           spect
PROBHD  5 mm PABBO BB-
PULPROG           zg30
TD               65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES         0.122266 Hz
AQ            4.0894966 sec
RG                200.34
DW             62.400 usec
DE              6.50 usec
TE              295.7 K
D1          0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1       400.1320007 MHz
NUC1               1H
P1              15.70 usec
PLW1        7.75000000 W

F2 - Processing parameters
SI               65536
SF          400.1300098 MHz
WDW                 EM
SSB      0
LB            0.30 Hz
GB       0
PC               1.00
```

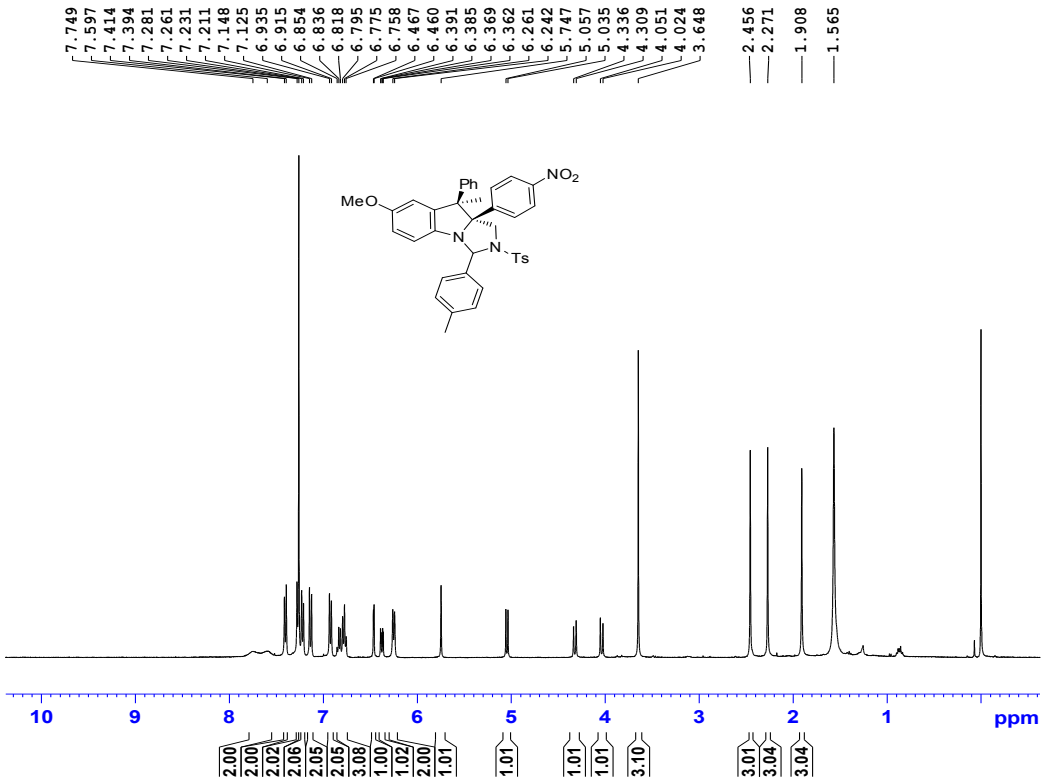
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME              spa40815
EXPNO                  241
PROCNO                   1

F2 - Acquisition Parameters
Date_              20150808
Time_                 19.12
INSTRUM              spect
PROBHD    5 mm PABBO BB-
PULPROG            zgpg30
TD                  16540
SOLVENT             CDCl3
NS                   1400
DS                      4
SWH              24038.461 Hz
FIDRES            1.453353 Hz
AQ                0.3440820 sec
RG                   200.34
DW                   20.800 usec
DE                    6.50 usec
TE                   299.3 K
D1             1.00000000 sec
D11            0.03000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                   13C
P1                    9.25 usec
PLW1          47.00000000 W
SFO1          100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2                90.00 usec
PLW2           7.75000000 W
PLW12          0.23583999 W
PLW13          0.19103000 W
SFO2          400.1316005 MHz

F2 - Processing parameters
SI                   32768
SF            100.6127535 MHz
WDW                     EM
SSB         0
LB                    1.00 Hz
GB          0
PC                    1.40
```

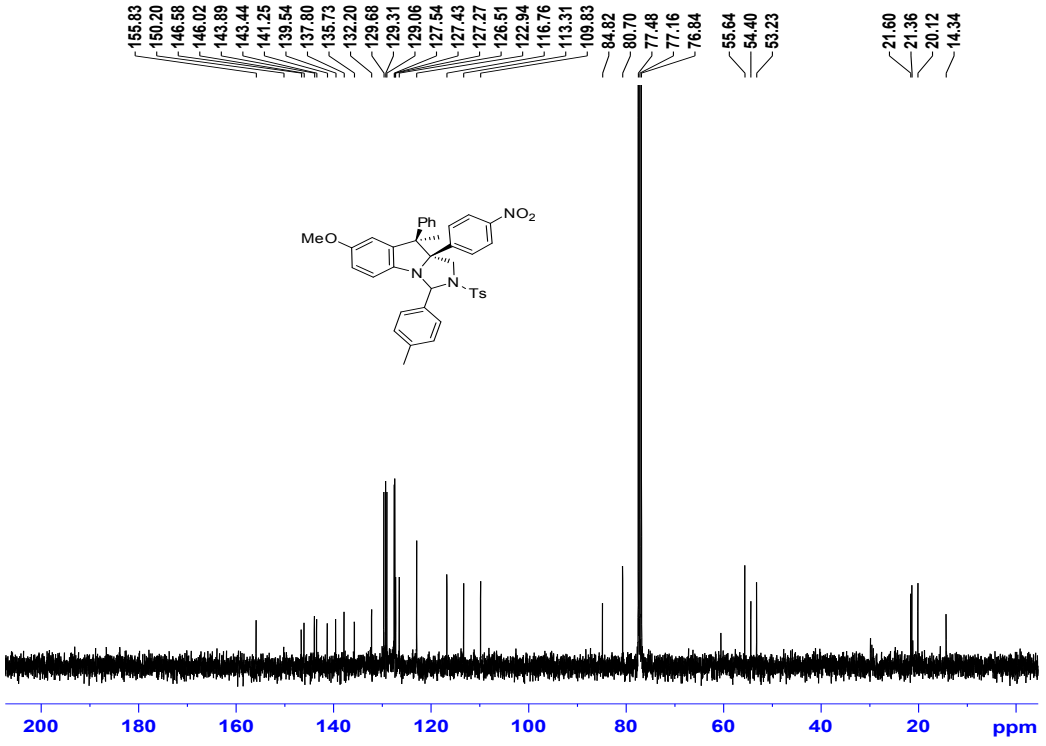
Imidazoindoline (6f):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME            yd-n
EXPNO            302
PROCNO             1

F2 - Acquisition Parameters
Date_         20160508
Time             11.52
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  32
DS                   2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894966 sec
RG                200.34
DW                62.400 usec
DE                 6.50 usec
TE                295.9 K
D1            0.50000000 sec
TD0                 1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1                1H
P1                 15.70 usec
PLW1         7.75000000 W

F2 - Processing parameters
SI                65536
SF          400.1300092 MHz
WDW                EM
SSB     0
LB                 0.30 Hz
GB      0
PC                 1.00
```

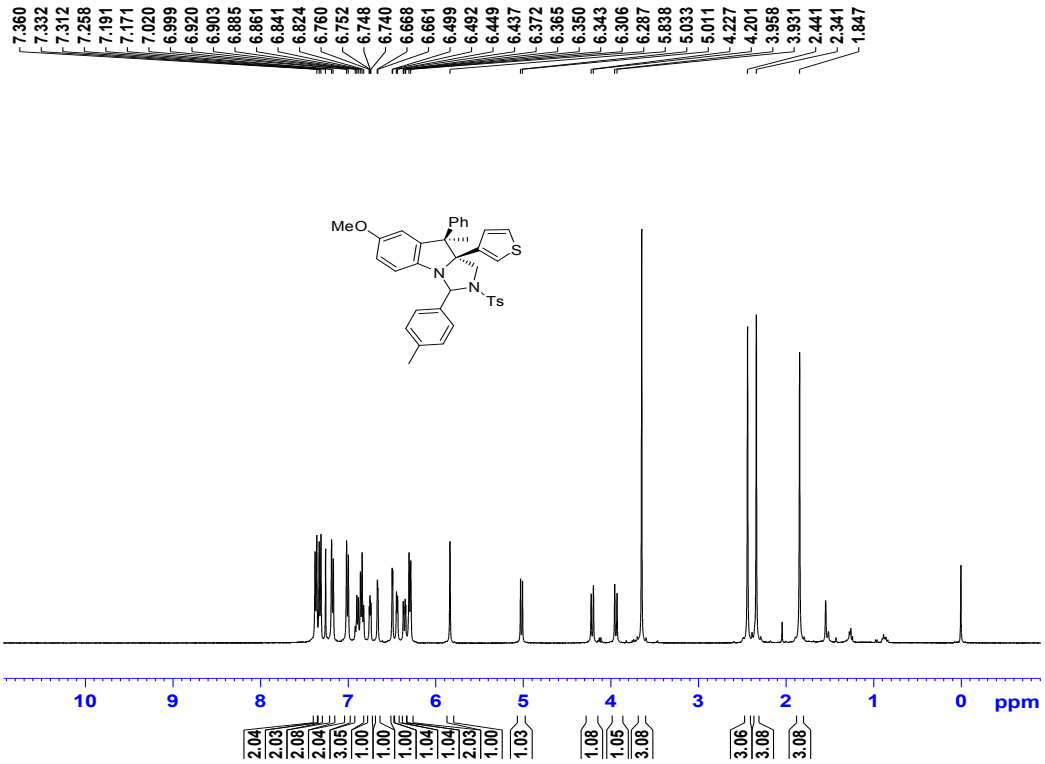
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40815
EXPNO              505
PROCNO               1

F2 - Acquisition Parameters
Date_         20150820
Time             18.33
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zgpg30
TD              16540
SOLVENT          CDCl3
NS                 558
DS                   4
SWH          24038.461 Hz
FIDRES           1.453353 Hz
AQ            0.3440820 sec
RG                200.34
DW                20.800 usec
DE                 6.50 usec
TE                299.2 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                 1

======== CHANNEL f1 ========
NUC1               13C
P1                 9.25 usec
PLW1         47.00000000 W
SFO1        100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2               1H
PCPD2             90.00 usec
PLW2          7.75000000 W
PLW12         0.23583999 W
PLW13         0.19103000 W
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                32768
SF          100.6127543 MHz
WDW                EM
SSB     0
LB                 1.00 Hz
GB      0
PC                 1.40
```

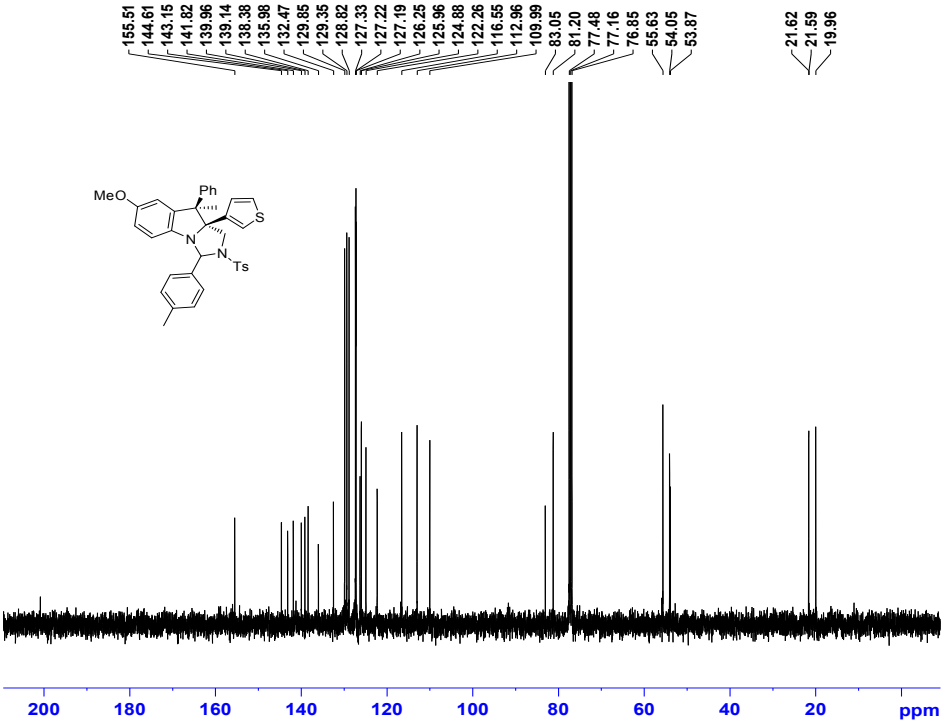
Imidazoindoline (6g):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              514
PROCNO               1

F2 - Acquisition Parameters
Date_         20160418
Time             17.24
INSTRUM          spect
PROBHD  5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894465 sec
RG                200.34
DW                62.400 usec
DE                 6.50 usec
TE                300.0 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1                1H
P1                15.70 usec
PLW1         7.75000000 W

F2 - Processing parameters
SI                65536
SF          400.1300123 MHz
WDW                 EM
SSB       0
LB                0.30 Hz
GB        0
PC                1.00
```

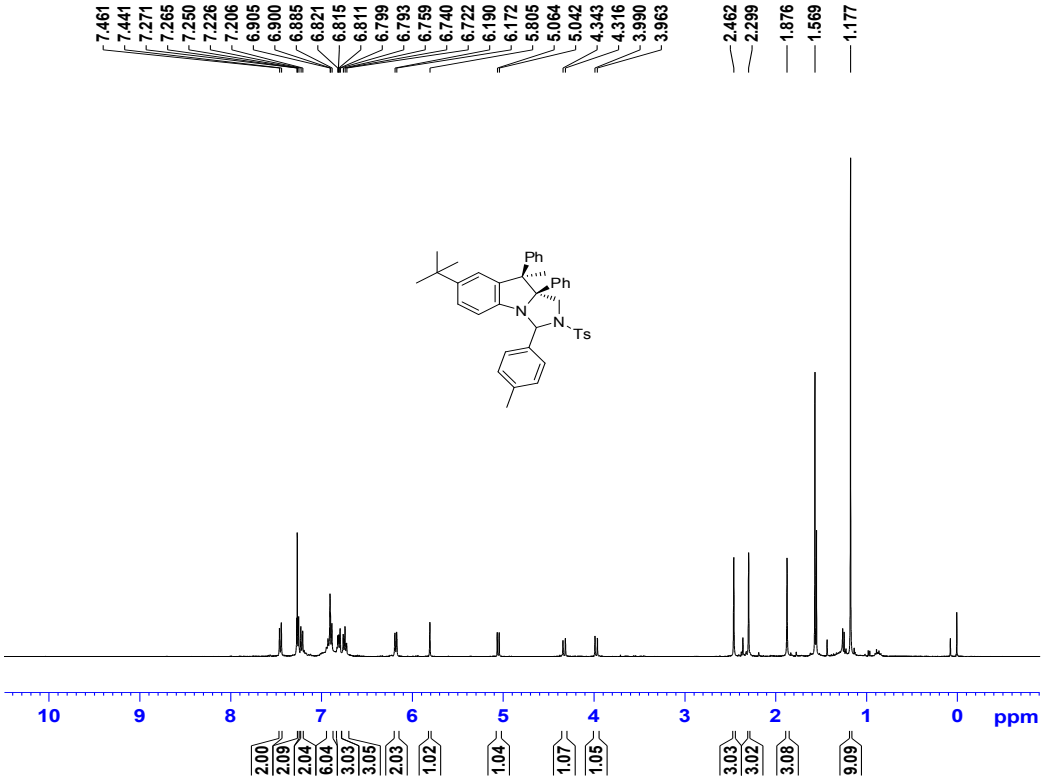
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40815
EXPNO              263
PROCNO               1

F2 - Acquisition Parameters
Date_         20150809
Time             11.27
INSTRUM          spect
PROBHD  5 mm PABBO BB-
PULPROG         zgpg30
TD              16540
SOLVENT          CDCl3
NS                 512
DS                   4
SWH          24038.461 Hz
FIDRES           1.453353 Hz
AQ            0.3440820 sec
RG                200.34
DW                20.800 usec
DE                 6.50 usec
TE                299.7 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                  1

======== CHANNEL f1 =======
NUC1                13C
P1                9.25 usec
PLW1         47.00000000 W
SFO1        100.6228289 MHz

======== CHANNEL f2 =======
CPDPRG2         waltz16
NUC2                1H
PCPD2            90.00 usec
PLW2          7.75000000 W
PLW12         0.23583999 W
PLW13         0.19103000 W
SFO2        400.1316005 MHz

F2 - Processing parameters
SI               32768
SF          100.6127549 MHz
WDW                 EM
SSB       0
LB                1.00 Hz
GB        0
PC                1.40
```

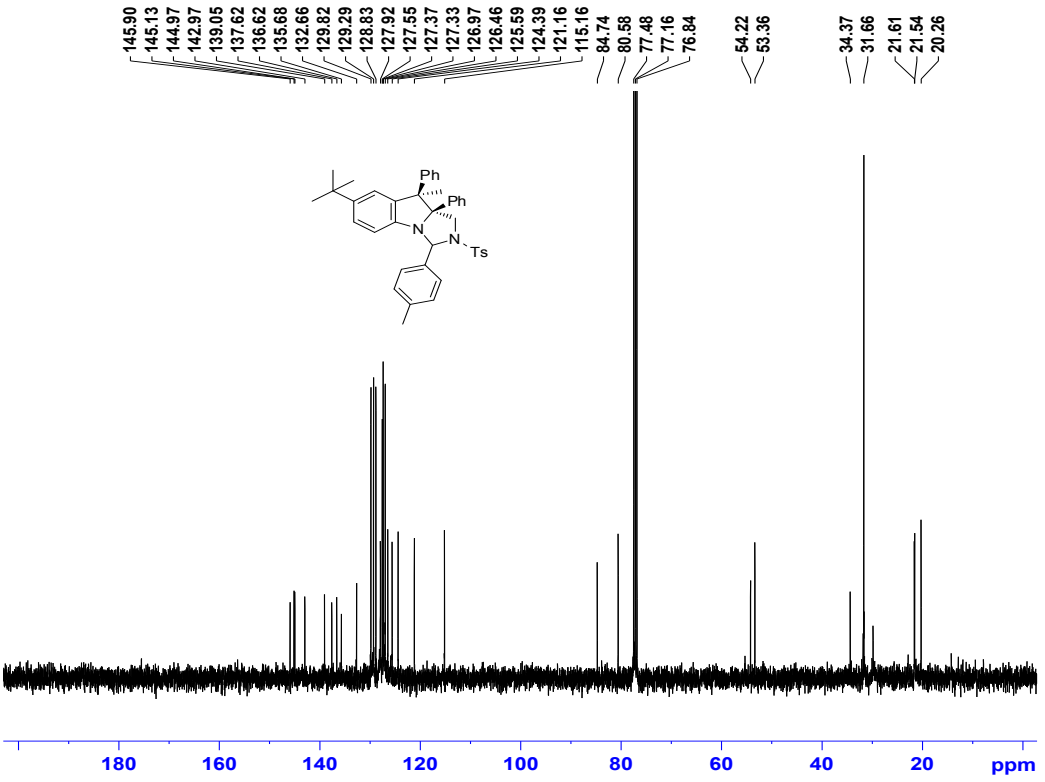
Imidazoindoline (6h):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              132
PROCNO               1

F2 - Acquisition Parameters
Date_         20160408
Time             14.58
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG          zg30
TD              65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894465 sec
RG                200.34
DW                62.400 usec
DE                 6.50 usec
TE                299.4 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1                1H
P1                15.70 usec
PLW1         7.75000000 W

F2 - Processing parameters
SI                65536
SF          400.1300108 MHz
WDW                 EM
SSB               0
LB                0.30 Hz
GB                0
PC                1.00
```

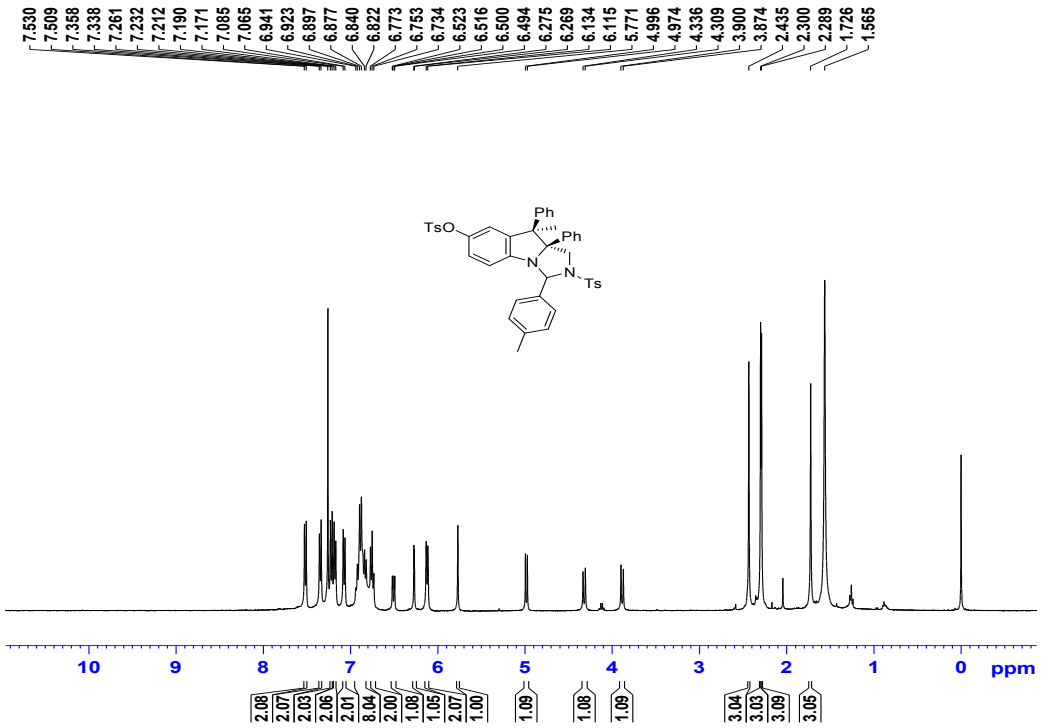
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40815
EXPNO              229
PROCNO               1

F2 - Acquisition Parameters
Date_         20150808
Time             15.47
INSTRUM          spect
PROBHD   5 mm PABBO BB-
PULPROG        zgpg30
TD              16540
SOLVENT          CDCl3
NS                 512
DS                   4
SWH          24038.461 Hz
FIDRES           1.453353 Hz
AQ            0.3440820 sec
RG                200.34
DW                20.800 usec
DE                 6.50 usec
TE                299.1 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                13C
P1                9.25 usec
PLW1         47.00000000 W
SFO1        100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2             90.00 usec
PLW2          7.75000000 W
PLW12         0.23583999 W
PLW13         0.19103000 W
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                32768
SF          100.6127547 MHz
WDW                 EM
SSB               0
LB                1.00 Hz
GB                0
PC                1.40
```

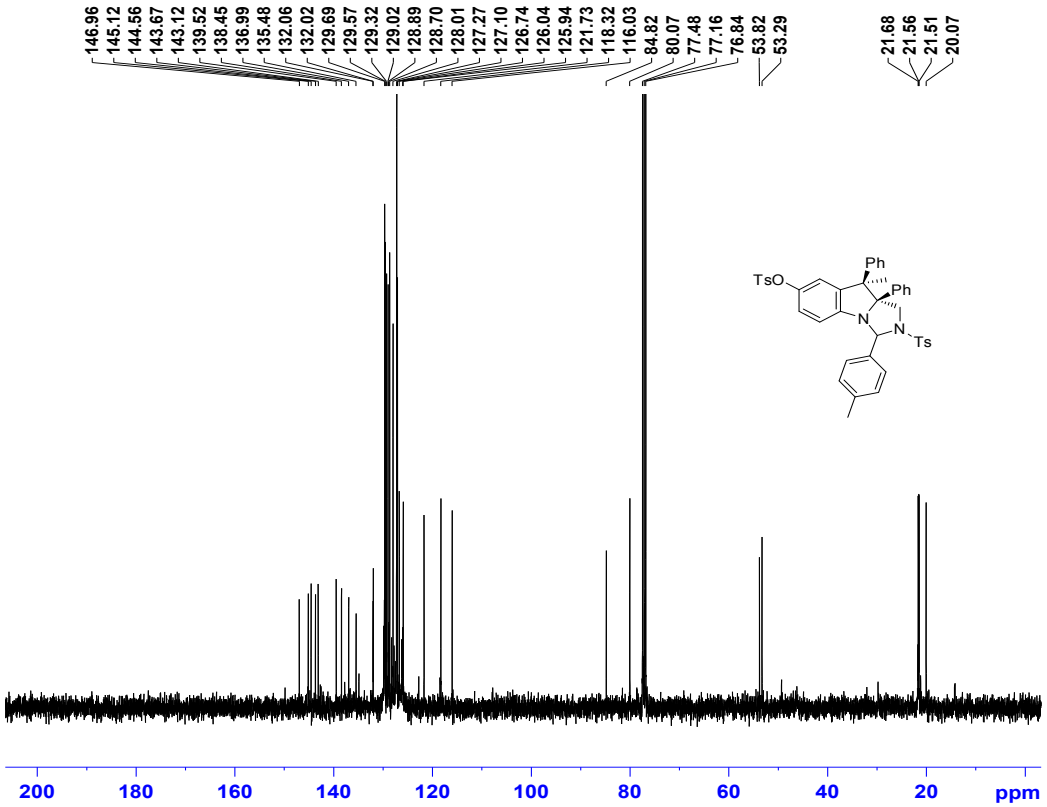
Imidazoindoline (6i):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40416
EXPNO              804
PROCNO               1

F2 - Acquisition Parameters
Date_         20160424
Time              7.41
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG           zg30
TD               65536
SOLVENT          CDCl3
NS                  16
DS                   2
SWH           8012.820 Hz
FIDRES           0.122266 Hz
AQ            4.0894465 sec
RG                200.34
DW                62.400 usec
DE                 6.50 usec
TE                300.0 K
D1            0.50000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        400.1320007 MHz
NUC1                   1H
P1                 15.70 usec
PLW1          7.75000000 W

F2 - Processing parameters
SI                  65536
SF          400.1300097 MHz
WDW                    EM
SSB      0
LB                 0.30 Hz
GB       0
PC                 1.00
```

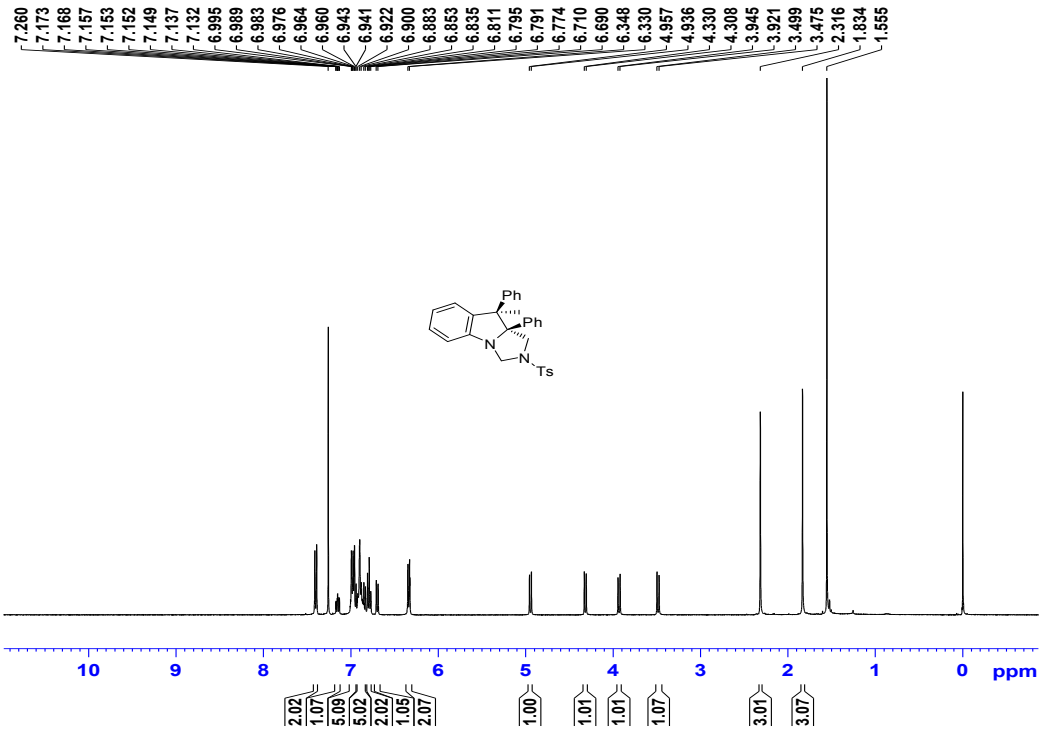
^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)




```
Current Data Parameters
NAME          spa40815
EXPNO              257
PROCNO               1

F2 - Acquisition Parameters
Date_         20150809
Time             10.45
INSTRUM           spect
PROBHD   5 mm PABBO BB-
PULPROG         zgpg30
TD               16540
SOLVENT          CDCl3
NS                 512
DS                   4
SWH           24038.461 Hz
FIDRES           1.453353 Hz
AQ            0.3440820 sec
RG                200.34
DW                20.800 usec
DE                 6.50 usec
TE                299.7 K
D1            1.00000000 sec
D11           0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                  13C
P1                 9.25 usec
PLW1         47.00000000 W
SFO1        100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                   1H
PCPD2             90.00 usec
PLW2          7.75000000 W
PLW12         0.23583999 W
PLW13         0.19103000 W
SFO2        400.1316005 MHz

F2 - Processing parameters
SI                  32768
SF          100.6127573 MHz
WDW                    EM
SSB      0
LB                 1.00 Hz
GB       0
PC                 1.40
```

Imidazoindoline (6k):

^{1}H NMR (400 MHz, $CDCl_3$, 24 °C)



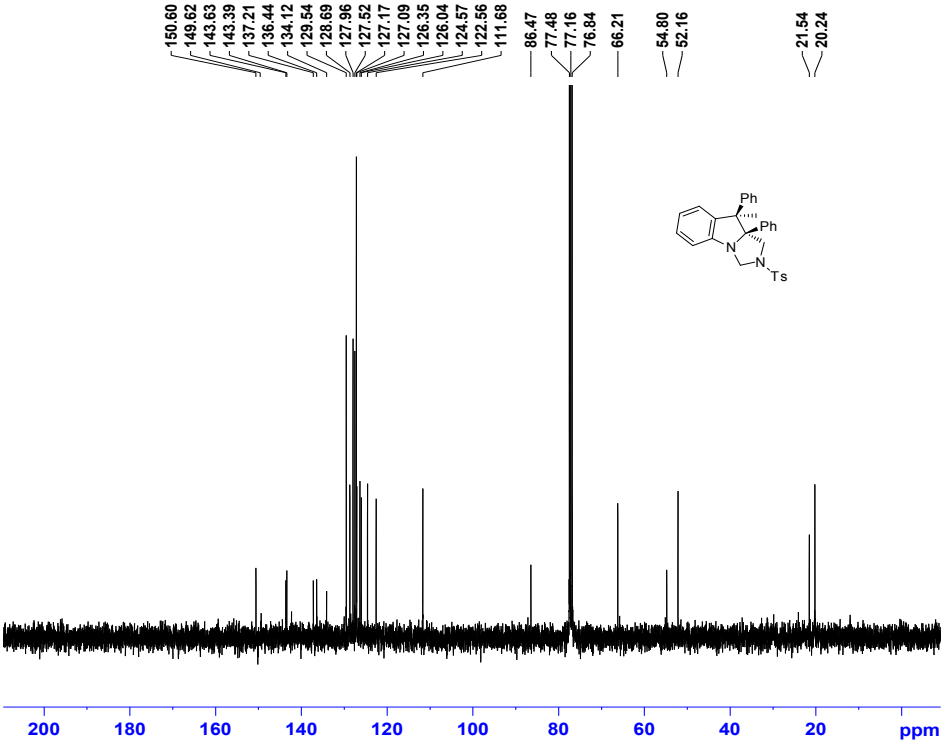
Current Data Parameters
NAME spa40416
EXPNO 236
PROCNO 1

F2 - Acquisition Parameters
Date_ 20160412
Time 10.39
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 200.34
DW 62.400 usec
DE 6.50 usec
TE 299.3 K
D1 0.50000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 400.1320007 MHz
NUC1 1H
P1 15.70 usec
PLW1 7.75000000 W

F2 - Processing parameters
SI 65536
SF 400.1300100 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C{^{1}H} NMR (100 MHz, $CDCl_3$, 24 °C)



Current Data Parameters
NAME spa40815
EXPNO 579
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150822
Time 15.55
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 16540
SOLVENT CDCl3
NS 512
DS 4
SWH 24038.461 Hz
FIDRES 1.453353 Hz
AQ 0.3440820 sec
RG 200.34
DW 20.800 usec
DE 6.50 usec
TE 300.1 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 13C
P1 9.25 usec
PLW1 47.00000000 W
SFO1 100.6228289 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PLW2 7.75000000 W
PLW12 0.23583999 W
PLW13 0.19103000 W
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127544 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

12. NOE experiment: