

Supporting information

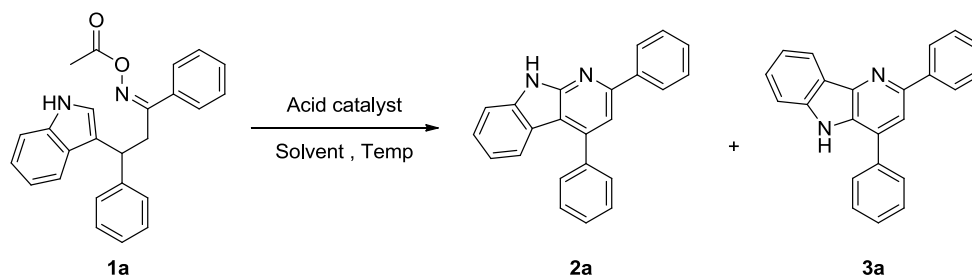
Regioselective Switching Approach for the Synthesis of α and δ Carboline Derivatives

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Table of content

Entry	content	page no
1.	Optimization studies of δ -carboline and α -carboline	2-4
2.	General procedure for indolyloxime ester 1a-1u	5-14
3.	General procedure for δ -carboline 3a-3u	14-21
4.	General procedure for α -carboline 2a-2u	21-28
5.	Synthesis of intermediate 4	29
6.	Control experiment of α -carboline	30
7.	X-ray data for carboline 2r/3g and intermediate 4	31-33

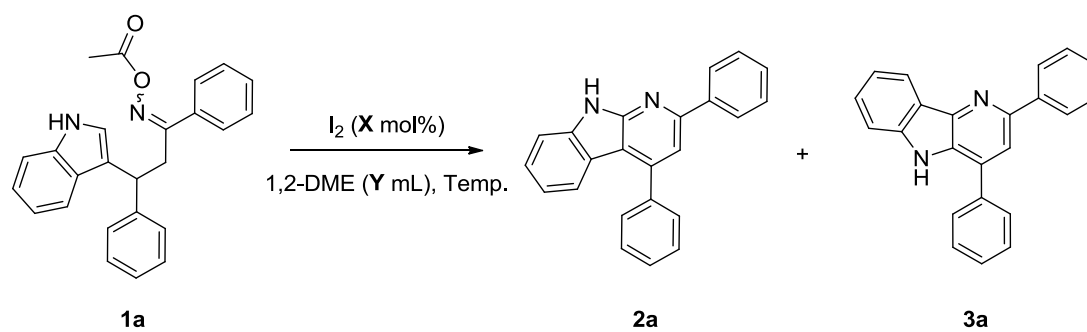
Table S1: Optimization studies of δ -carboline on acid catalyst and solvent.



Entry ^a	Acid catalyst	Solvent	Tmp. (°C)	Time (min)	Yield 2a (%) ^b	Yield 3a (%) ^b
1	FeCl ₃ 20 mol%	CH ₂ Cl ₂	r.t.	25	29	36
2	ZrCl ₄ 1eq	CH ₂ Cl ₂	r.t.	overnight	19	21
3	I ₂ 20 mol%	CH ₂ Cl ₂	r.t.	60	24	38
4	TFA 20 mol%	CH ₂ Cl ₂	r.t.	30	24	26
5	Sc(OTf) ₃ 10 mol%	CH ₂ Cl ₂	r.t.	overnight	15	8
6	FeCl ₃ 20 mol%	1,2-DCE	80	15	34	29
7	InCl ₃ 20 mol%	1,2-DCE	60	30	21	19
8	I ₂ 20 mol%	1,2-DCE	80	25	35	41
9	I ₂ 20 mol%	CH ₃ CN	60	120	5	42
10	I ₂ 20 mol%	CH ₃ CN	80	120	<i>n.d.</i>	
11	I ₂ 20 mol%	1,2-DME	60	15	10	50
12	I₂ 20 mol%	1,2-DME	80	15	9	52
13	I ₂ 20 mol%	EtOH	60	30	6	41
14	I ₂ 20 mol%	PEG-400	80	overnight		N.R.
15	I ₂ 20 mol%	DMSO	80	overnight		N.R.
16	NbCl ₅ 20 mol%	CH ₃ CN	60	60	18	36
17	NbCl ₅ 20 mol%	1,2-DME	60	60	19	19
18	NbCl ₅ 20 mol%	DMSO	80	overnight		N.R.

^aAll of reactions were carried out with 1 mmol **1a**, 2 mL solvent and acid catalyst.

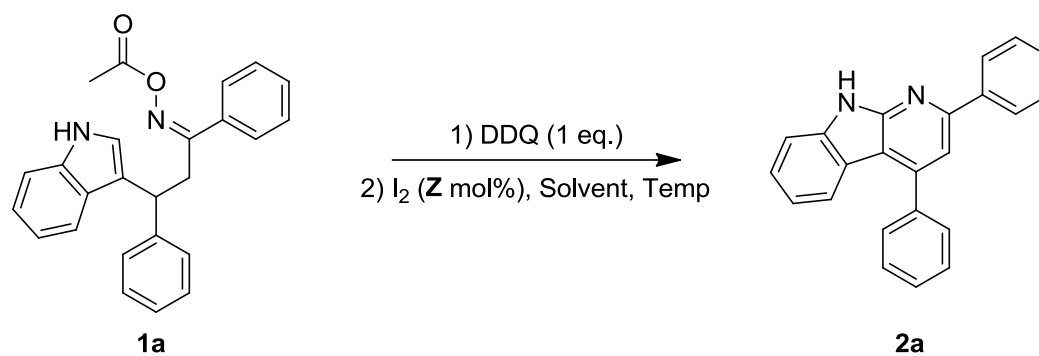
^bAll of yields were determined from crude ¹H NMR spectrum with dibromomethane as internal standard.

Table S2: Optimization studies of δ -carboline on I₂ and solvent

Entry ^a	X (mol%)	Y (mL)	Temp. (°C)	Time (min)	Yield 2a (%) ^b	Yield 3a (%) ^b
1	20	2	60	15	10	50
2	20	2	80	15	9	52
3	30	2	80	15	8	57
4	40	2	80	15	9	60
5	50	2	80	60	3	32
6	40	5	80	15	10	60
7	40	2	100	15	10	60
8	40	5	100	15	10	70
9	40	1	100	15	10	60
10	40	10	100	20	11	57

^aAll of reaction were carried out with 1mmol **1a**.

^bAll of yields were determined from crude ¹H NMR spectrum with dibromomethane as internal standard.

Table S3: Optimization studies of α -carboline

Entry ^a	Z	Solvent	Temp (°C)	Time (h)	Yield 2a (%) ^b
1	20	CH ₂ Cl ₂ (2 mL)	r.t.	4	53
2	20	1,2-DCE (2 mL)	80	0.5	47
3	20	1,2-DCE (5 mL)	80	0.5	63
4	40	1,2-DCE (5 mL)	80	0.5	60
5	20	1,2-DCE (10 mL)	80	1	70
6	20	1,2-DCE (10 mL)	60	1	70
7	20	1,2-DME (5 mL)	80	1	56

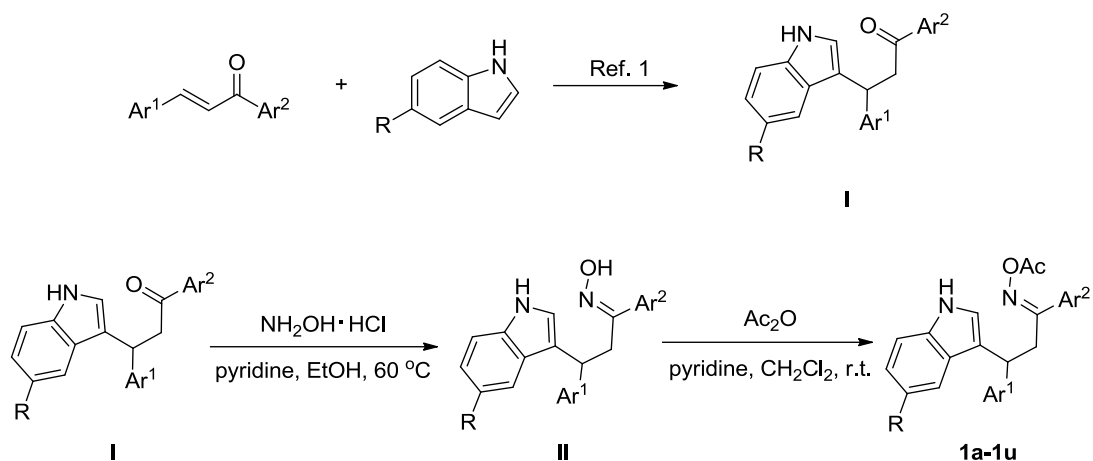
^aThe reactions were carried out with 1 mmol **1a**, 1 eq. DDQ and solvent, followed by addition of iodine as acid catalyst.

^bAll of yields were determined from crude ¹H NMR spectrum with dibromomethane as internal standard.

General information

Reagents and solvents were purchased from various commercial sources and were used directly without any further purification, unless otherwise stated. Column chromatography was performed with 63–200 mesh silica gel. ^1H and ^{13}C NMR spectra were recorded at 400 and 100 MHz, or 500 and 125 MHz, respectively. Chemical shifts are reported in parts per million (d) using TMS and chloroform as internal standards and coupling constants are expressed in Hertz. Melting points were recorded using an electro thermal capillary melting point apparatus and are uncorrected. HRMS spectra were recorded using ESI-TOF or EI+ mode. The starting material indolyl carbonyl compound derivatives **I** were synthesized from various indole and chalcone derivatives followed by reported literatures.¹

Preparation of indolyloxime esters 1a-1u



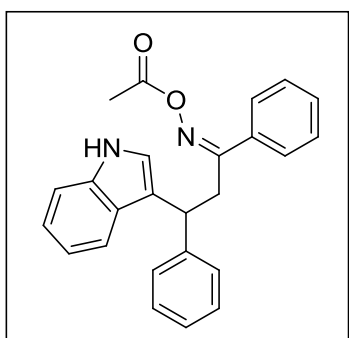
General procedures:

A suspension of indolyl carbonyl compound **I** (5 mmol), hydroxylamine hydrochloride (0.52g, 7.5 mmol) in pyridine (1.25 mL) and EtOH (10 mL) was heated to 60 °C for 1 h. After completion of the reaction, the mixture was concentrated under reduced pressure. The residue was diluted with ethyl acetate (50 mL), and the organic layer was washed with aq. 3M HCl (20 mL) for two times, and then aq. NaHCO₃ (10 mL) for two times. The organic layer was dried over MgSO₄ and concentrated under reduced pressure to afford the crude indolyloxime **II**. Further, acetic anhydride (0.56g, 6 mmol) was added slowly to a solution of indolyloxime **II** (crude) in pyridine (2.5 mL) and CH₂Cl₂

¹ F. Portela-Cubillo, B. A. Surgenor, R. A. Aitken, J.C. Walton *J. Org. Chem.* **2008**, *73*, 8125

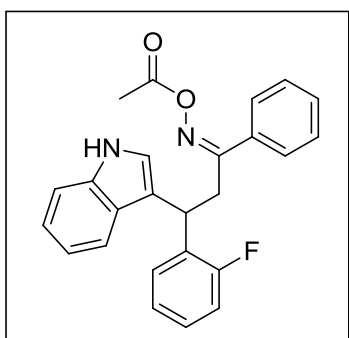
(2.5 mL). The reaction mixture was stirred at ambient temperature for 3 h. After completion of the reaction, the mixture was diluted with ethyl acetate (50 mL), and the organic layer was washed with with aq. 3M HCl (20 mL) for three times, and then aq. NaHCO₃ (20 mL) for three times. The organic layer was dried over MgSO₄ and concentrated under reduced pressure. the residue was purified by column chromatography on silica gel (eluent: hexane/ethyl acetate = 5:1) to afford the pure indolyloxime ester **1a-1u**.

(Z)-3-(1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime (1a)



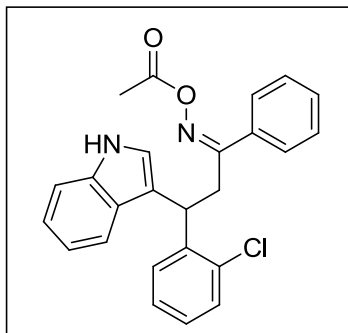
Brown solid, 76% yield; mp 117-118 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.10 (brs, 1H), 7.54-7.52 (m, 2H), 7.42-7.38 (m, 1H), 7.35-7.29 (m, 3H), 7.25-7.09 (m, 7H), 7.05 (d, *J* = 2.1 Hz, 1H), 6.97-6.93 (m, 1H), 4.44 (t, *J* = 7.8 Hz, 1H), 3.73 (dd, *J* = 12.9, 6.9 Hz, 1H), 3.64 (dd, *J* = 12.9, 8.7 Hz, 1H), 1.95 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.0, 165.2, 143.1, 136.8, 134.3, 130.5, 128.8, 128.5, 128.0, 127.7, 126.8, 126.7, 122.3, 121.6, 119.7, 119.6, 118.4, 111.4, 40.6, 34.7, 19.7; HRMS (EI) *m/z* calcd. For C₂₅H₂₂N₂O₂ (M⁺) 382.1681, found 382.1689.

(Z)-3-(2-fluorophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime (1b)



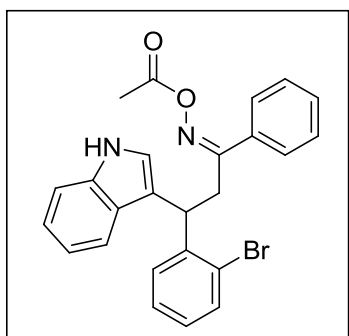
Pink solid, 99% yield; mp 124-126 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.20 (brs, 1H), 7.55 (d, *J* = 7.2 Hz, 2H), 7.42-7.38 (m, 1H), 7.39-7.35 (m, 4H), 7.21-7.17 (m, 1H), 7.15-7.09 (m, 3H), 7.00-6.93 (m, 3H), 4.83 (t, *J* = 7.86 Hz, 1H), 3.78-3.67 (m, 2H), 2.03 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.0, 165.3, 160.9 (d, *J*_{C-F} = 245.8 Hz), 136.6, 134.1, 130.1 (d, *J*_{C-F} = 13.9 Hz), 129.9 (d, *J*_{C-F} = 4.3 Hz), 129.6, 128.5 (d, *J*_{C-F} = 8.4 Hz), 128.3, 127.5, 126.5, 124.2 (d, *J*_{C-F} = 3.3 Hz), 122.3, 121.9, 119.6, 119.2, 116.9, 115.7 (d, *J*_{C-F} = 22.4 Hz), 111.4, 34.0, 33.7, 19.8; HRMS (ESI) *m/z* calcd. For C₂₅H₂₁FN₂O₂Na (M+23) 423.1485, found 423.1483.

(Z)-3-(2-chlorophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime (1c)



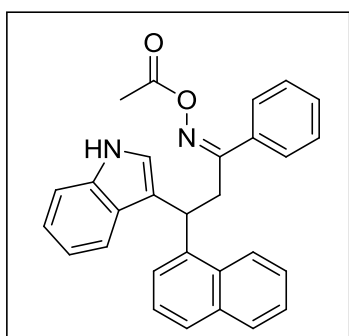
Brown solid, 99% yield; mp 137-139 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.35 (brs, 1H), 7.53 (d, *J* = 7.6 Hz, 2H), 7.37 (t, *J* = 7.28 Hz, 1H), 7.31-7.28 (m, 6H), 7.13-7.05 (m, 4H), 6.97 (t, *J* = 7.5 Hz, 1H), 5.12 (t, *J* = 7.9 Hz, 1H), 3.77 (dd, *J* = 13.4, 7.6 Hz, 1H), 3.58 (dd, *J* = 13.4, 8.3 Hz, 1H), 2.14 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.1, 165.2, 140.7, 136.5, 133.9, 133.5, 130.3, 129.5, 128.5, 127.9, 127.5, 126.9, 126.6, 122.2, 121.8, 119.4, 119.2, 117.2, 111.3, 36.4, 33.9, 19.8; HRMS (EI) *m/z* calcd. For C₂₅H₂₁ClN₂O₂ (M⁺) 416.1292, found 416.1292.

(Z)-3-(2-bromophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime (1d)



Brown solid, 70% yield; mp 138-139 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.24 (brs, 1H), 7.53-7.47 (m, 3H), 7.39-7.27 (m, 6H), 7.14-7.07 (m, 3H), 7.00-6.95 (m, 2H), 5.10 (t, *J* = 7.9 Hz, 1H), 3.77 (dd, *J* = 13.5, 7.7 Hz, 1H), 3.50 (dd, *J* = 13.5, 8.2 Hz, 1H), 2.15 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.3, 165.2, 142.5, 136.6, 134.1, 133.0, 130.4, 129.8, 128.6, 128.3, 127.7, 127.6, 126.7, 124.4, 122.4, 121.8, 119.7, 119.5, 117.7, 111.4, 39.2, 34.2, 20.0; HRMS (ESI) *m/z* calcd. For C₂₅H₂₁BrN₂O₂Na (M+23) 483.0684, found 483.0694.

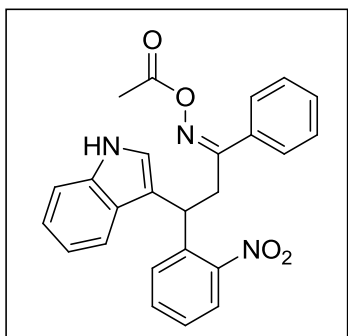
(Z)-3-(1H-indol-3-yl)-3-(naphthalen-1-yl)-1-phenylpropan-1-one O-acetyl oxime (1e)



White solid, 66% yield; mp 141-143 °C, two isomers; ¹H NMR (400 MHz, CDCl₃) δ 8.08 (brs, 1H), 8.03 (d, *J* = 8.5 Hz, 1H), 7.82 (d, *J* = 8.0 Hz, 1H), 7.71 (d, *J* = 8.2 Hz, 1H), 7.53 (d, *J* = 7.1 Hz, 1H), 7.46-7.26 (m, 9H), 7.09 (t, *J* = 7.7 Hz, 1H), 7.01 (d, *J* = 1.4 Hz, 1H), 6.91 (t, *J* = 7.5 Hz, 1H), 5.30 (1H, t, *J* = 7.7 Hz, CH), 3.96 (dd, *J* = 13.1, 8.1 Hz, 1H), 3.73 (dd, *J* = 13.1, 7.4 Hz, 1H), 1.91 (s, 3H); ¹³C NMR (100 MHz,

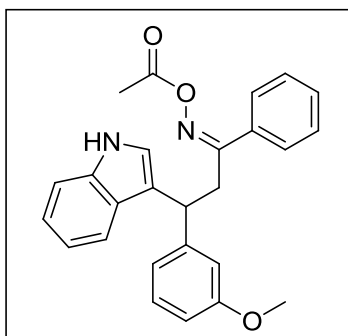
CDCl₃) δ 169.1, 165.6, 139.1, 136.7, 134.4, 134.2, 131.8, 130.4, 129.0, 128.7, 127.7, 127.6, 126.8, 126.1, 125.6, 125.5, 125.2, 123.5, 122.3, 122.2, 119.5, 118.5, 111.4, 36.1, 34.9, 19.6; HRMS (ESI) m/z calcd. For C₂₉H₂₄N₂O₂Na (M+23) 455.1736, found 455.1746.

(Z)-3-(1H-indol-3-yl)-3-(2-nitrophenyl)-1-phenylpropan-1-one O-acetyl oxime (1f)



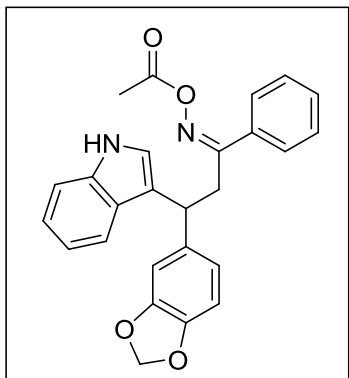
Yellow solid, 74% yield; mp 85-86 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.18 (brs, 1H), 7.68 (d, *J* = 8.0 Hz, 1H), 7.48-7.45 (m, 3H), 7.39-7.34 (m, 2H), 7.30-7.22 (m, 5H), 7.13-7.09 (m, 2H), 6.94 (t, *J* = 7.5 Hz, 1H), 5.29 (t, *J* = 7.9 Hz, 1H), 3.83 (dd, *J* = 13.4, 8.1 Hz, 1H), 3.61 (dd, *J* = 13.4, 8.0 Hz, 1H), 2.12 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.2, 164.6, 150.0, 137.6, 136.6, 133.8, 132.6, 130.6, 130.4, 128.7, 127.8, 127.6, 126.5, 124.4, 122.7, 122.3, 119.9, 119.3, 116.5, 111.4, 34.9, 34.4, 19.9; HRMS (ESI) m/z calcd. For C₂₅H₂₁N₃O₄Na (M+23) 450.1430, found 450.1442.

(Z)-3-(1H-indol-3-yl)-3-(3-methoxyphenyl)-1-phenylpropan-1-one O-acetyl oxime (1g)



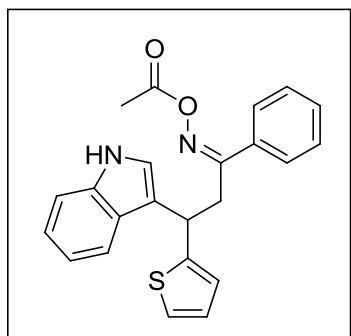
Red oil, 90% yield; ¹H NMR (400 MHz, CDCl₃) δ 8.06 (brs, 1H), 7.55-7.53 (m, 2H), 7.42-7.28 (m, 5H), 7.15-7.11 (m, 2H), 7.07 (d, *J* = 1.7 Hz, 1H), 6.96 (d, *J* = 7.5 Hz, 1H), 6.82 (d, *J* = 7.7 Hz, 1H), 6.76 (s, 1H), 6.69 (dd, *J* = 8.2, 1.8 Hz, 1H), 4.42 (t, *J* = 7.8 Hz, 1H), 3.73 (dd, *J* = 12.9, 7.0 Hz, 1H), 3.7 (s, 3H), 3.64 (dd, *J* = 13.0, 8.7 Hz, 1H), 1.98 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.0, 165.3, 159.7, 144.7, 136.8, 134.3, 130.5, 129.4, 128.7, 126.7, 122.3, 121.7, 120.5, 119.6, 119.5, 118.1, 114.2, 111.8, 111.4, 55.3, 40.6, 34.6, 19.7; HRMS (ESI) m/z calcd. For C₂₆H₂₄N₂O₃Na (M+23) 435.1679, found 435.1668.

(Z)-3-(benzo[d][1,3]dioxol-5-yl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime (1h)



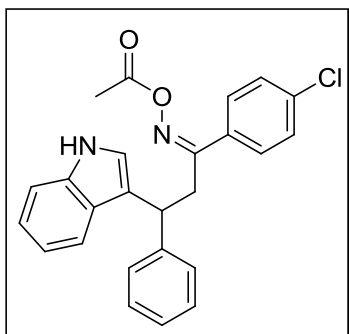
White solid, 76% yield; mp 140-141 °C, ¹H NMR (400 MHz, CDCl₃) δ 8.17 (brs, 1H,), 7.54-7.97 (m, 2H,), 7.43-7.39 (m, 1H), 7.36-7.27 (m, 4H), 7.15-7.11 (m, 1H), 7.06 (d, *J* = 2.2 Hz, 1H), 6.99-6.95 (m, 1H), 6.68-6.63 (m, 3H), 5.85 (dd, *J* = 4.5, 1.3 Hz, 2H), 4.38 (dd, *J* = 8.8, 6.8 Hz, 1H), 3.68 (dd, *J* = 12.9, 6.7 Hz, 1H), 3.61 (dd, *J* = 12.9, 9.1 Hz, 1H), 2.04 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 168.9, 165.3, 147.7, 146.3, 137.0, 136.8, 134.2, 130.5, 128.7, 127.7, 126.6, 122.2, 121.4, 121.0, 119.4, 118.2, 111.5, 108.4, 107.9, 100.9, 40.4, 34.8, 19.7; 119.52, HRMS (EI) *m/z* calcd. For C₂₆H₂₂N₂O₄ (M⁺) 426.1580, found 426.1575.

(Z)-3-(1H-indol-3-yl)-1-phenyl-3-(thiophen-2-yl)propan-1-one O-acetyl oxime (1i)



Pink solid, 60% yield; two isomers 6:1; mp 146-147 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.20 (brs, 1H), 7.57 (d, *J* = 7.2 Hz, 2H), 7.43-7.30 (m, 6H), 7.16-7.09 (m, 3H), 7.03-6.99 (m, 2H), 6.90-6.86 (m, 2H), 4.71 (t, *J* = 7.7 Hz, 1H), 3.86 (dd, *J* = 13.0, 8.2 Hz, 1H), 3.68 (dd, *J* = 12.9, 7.3 Hz, 1H), 1.91 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 168.8, 164.8, 147.8, 136.8, 134.0, 130.6, 128.8, 127.6, 126.7, 126.4, 124.6, 124.1, 122.3, 122.0, 119.7, 119.6, 117.5, 111.6, 36.3, 35.6, 19.5; HRMS (ESI) *m/z* calcd. For C₂₃H₂₀N₂O₂NaS (M+23) 411.1143, found 411.1143.

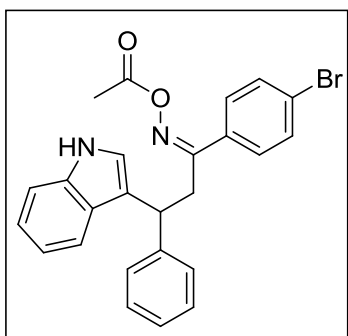
(Z)-1-(4-chlorophenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one O-acetyl oxime (1j)



White solid, 66% yield; mp 191-192 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.22 (brs, 1H), 7.45 (d, *J* = 8.5 Hz, 2H), 7.31-7.21 (m, 8H), 7.19-7.11 (m, 2H), 7.03 (s, 1H), 6.97 (1H, t, *J* = 7.5 Hz, CH), 4.46 (t, *J* = 7.8 Hz, 1H), 3.71 (dd, *J* = 13.0, 6.9 Hz, 1H), 3.62 (dd, *J* = 12.9, 8.8 Hz, 1H), 2.00 (s, 3H); ¹³C NMR

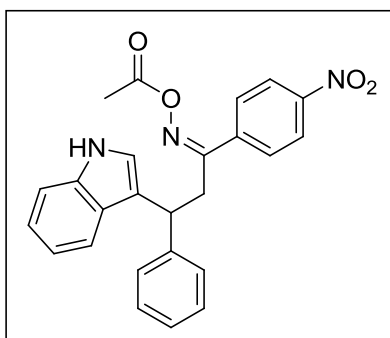
(100 MHz, CDCl₃) δ 168.8, 164.3, 142.9, 136.8, 136.6, 132.7, 128.9, 128.5, 127.9, 126.9, 126.6, 122.4, 121.6, 119.6, 118.1, 118.1, 111.5, 40.6, 34.7, 19.6; HRMS (ESI) *m/z* calcd. For C₂₅H₂₁ClN₂O₂Na (M+23) 439.1189, found 439.1204.

(Z)-1-(4-bromophenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one O-acetyl oxime (1k)



White solid, 82% yield; mp 175-176 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.18 (brs, 1H), 7.45 (d, *J* = 8.5 Hz, 2H), 7.31-7.25 (m, 4H), 7.19-7.17 (m, 6H), 7.03 (d, *J* = 1.6 Hz, 1H), 6.97 (t, *J* = 7.48 Hz, 1H), 4.46 (t, *J* = 7.8 Hz, 1H), 3.71 (dd, *J* = 12.9, 6.9 Hz, 1H), 3.62 (dd, *J* = 12.9, 8.8 Hz, 1H), 2.00 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 168.8, 164.3, 142.9, 136.8, 136.6, 132.7, 128.9, 128.5, 127.9, 126.9, 126.6, 122.4, 121.6, 119.6, 118.1, 118.1, 111.5, 40.6, 34.7, 19.6; HRMS (ESI) *m/z* calcd. For C₂₅H₂₁BrN₂O₂Na (M+23) 483.0684, found 483.0697.

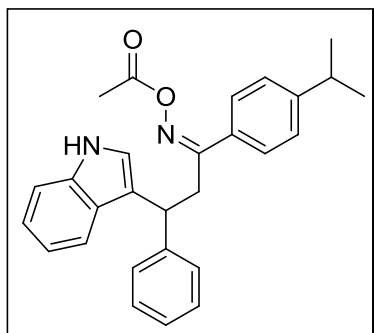
(Z)-3-(1H-indol-3-yl)-1-(4-nitrophenyl)-3-phenylpropan-1-one O-acetyl oxime (1l)



White solid, 50% yield; mp 113 -114 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.12 (brs, 1H), 8.09 (d, *J* = 8.7 Hz, 2H), 7.58 (d, *J* = 8.7 Hz, 2H), 7.31-7.11 (m, 8H), 7.05 (d, *J* = 1.4 Hz, 1H), 6.97 (t, *J* = 7.5 Hz, 1H), 4.49 (t, *J* = 7.9 Hz, 1H), 3.8 (dd, *J* = 13.0, 7.1 Hz, 1H), 3.65 (dd, *J* = 12.9, 8.8 Hz, 1H), 2.09 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 168.4, 163.8, 148.8, 142.6, 140.6, 136.8, 128.7, 128.6, 127.9, 127.1, 126.5, 123.7, 122.6, 121.6, 119.8, 119.6, 117.9, 111.5, 40.6, 35.1, 19.7; HRMS (ESI) *m/z* calcd. For C₂₅H₂₁N₃O₄Na (M+23) 450.1430, found 450.1442.

(Z)-3-(1H-indol-3-yl)-1-(4-isopropylphenyl)-3-phenylpropan-1-one

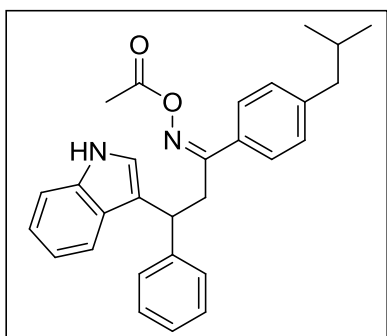
O-acetyl oxime (1m)



White solid, 65% yield; two isomers; mp 135-137 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.10 (brs, 1H), 7.31 (d, *J* = 8.4 Hz, 1H), 7.26-7.10 (m, 10H), 6.95 (t, *J* = 7.2 Hz, 1H), 4.46 (t, *J* = 7.7 Hz, 1H), 3.73 (dd, *J* = 12.9, 6.9 Hz, 1H), 3.65 (dd, *J* = 12.9, 8.7 Hz, 1H), 2.92 (sep, *J* = 6.9 Hz, 1H), 1.93 (s, 3H), 1.25 (d, *J* = 7.0 Hz, 6H); ¹³C NMR (100 MHz,

CDCl₃) δ 169.1, 165.0, 151.6, 143.2, 136.8, 131.7, 128.5, 128.0, 127.7, 126.9, 126.8, 122.3, 121.7, 119.8, 119.5, 118.5, 111.4, 40.7, 34.6, 34.2, 24.0, 24.0, 19.7; HRMS (ESI) *m/z* calcd. For C₂₈H₂₈N₂O₂Na (*M*+23) 447.2048, found 447.2048.

(Z)-3-(1H-indol-3-yl)-1-(4-isobutylphenyl)-3-phenylpropan-1-one O-acetyl oxime (1n)

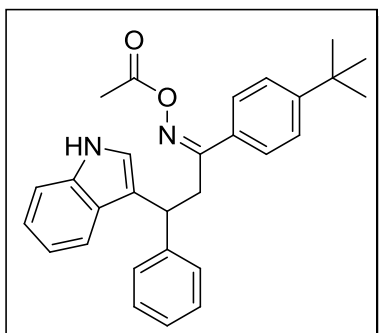


White solid, 66% yield; mp 119-120 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.33 (brs, 1H), 7.51 (d, *J* = 8.1 Hz, 2H), 7.31-7.12 (m, 10H), 7.06 (d, *J* = 2.2 Hz, 1H), 6.99 (t, *J* = 7.5 Hz, 1H), 4.51 (t, *J* = 7.7 Hz, 1H), 3.76 (dd, *J* = 12.9, 6.7 Hz, 1H), 3.68 (dd, *J* = 12.9, 8.9 Hz, 1H), 2.52 (d, *J* = 7.2 Hz, 2H), 1.99 (s, 3H), 1.9 (n, *J* = 6.74 Hz, 1H), 0.94

(d, *J* = 6.64 Hz, 6H); ¹³C NMR (100 MHz, CDCl₃) δ 169.1, 165.3, 144.5, 143.1, 136.8, 131.5, 129.5, 128.4, 127.9, 127.4, 126.7, 126.7, 122.1, 121.7, 119.6, 119.6, 119.3, 118.1, 111.4, 45.3, 40.7, 34.6, 30.3, 22.5, 19.6; HRMS (ESI) *m/z* calcd. For C₂₉H₃₀N₂O₂Na (*M*+23) 461.2205, found 461.2224.

(Z)-1-(4-(tert-butyl)phenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one

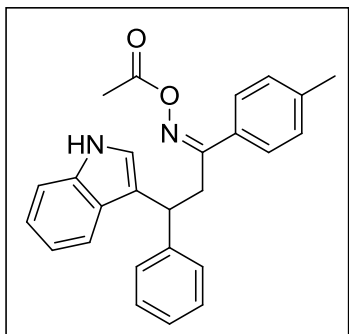
O-acetyl oxime (1o)



White solid, 70% yield; mp 110-112 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.15 (brs, 1H), 7.52-7.50 (m, 2H), 7.36 (d, *J* = 8.5 Hz, 2H), 7.3 (d, *J* = 8.2 Hz, 1H), 7.26-7.20 (m, 5H), 7.17-7.10 (m, 3H), 6.95 (t, *J* = 7.5 Hz, 1H), 4.47 (t, *J* = 7.7 Hz, 1H), 3.73 (dd, *J* = 12.9, 6.9 Hz, 1H), 3.65 (dd, *J* = 12.9, 8.6

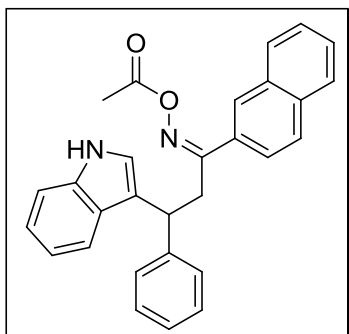
Hz, 1H), 1.92 (s, 3H), 1.32 (s, 9H); ^{13}C NMR (100 MHz, CDCl_3) δ 169.1, 165.0, 153.9, 143.2, 136.8, 131.2, 128.4, 128.0, 127.4, 126.8, 125.7, 122.3, 121.7, 119.8, 119.5, 118.4, 111.4, 40.7, 34.9, 34.6, 31.4, 19.7; HRMS (ESI) m/z calcd. For $\text{C}_{29}\text{H}_{30}\text{N}_2\text{O}_2\text{Na}$ ($M+23$) 461.2205, found 461.2208.

(Z)-3-(1H-indol-3-yl)-3-phenyl-1-(p-tolyl)propan-1-one O-acetyl oxime (5p)



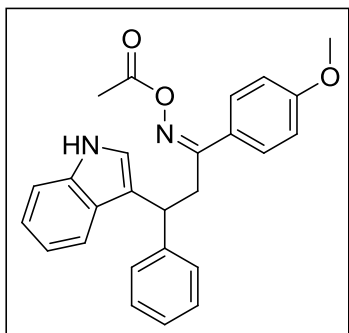
White solid, 52% yield; mp 135-137 °C; ^1H NMR (400 MHz, CDCl_3) δ 8.25 (brs, 1H), 7.49 (d, $J = 8.2$ Hz, 2H), 7.30-7.22 (m, 4H), 7.20-7.10 (m, 6H), 7.05 (d, $J = 2.1$ Hz, 1H), 6.96 (t, $J = 7.4$ Hz, 1H), 4.46 (t, $J = 7.7$ Hz, 1H), 3.73-3.62 (m, 2H), 2.37 (s, 3H), 1.95 (s, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 169.1, 165.1, 143.2, 140.8, 136.8, 131.3, 129.5, 128.4, 128.0, 127.6, 126.7, 122.2, 121.7, 119.7, 119.4, 118.2, 111.4, 40.7, 34.5, 19.7, 21.5; HRMS (ESI) m/z calcd. For $\text{C}_{26}\text{H}_{24}\text{N}_2\text{O}_2\text{Na}$ ($M+23$) 419.1736, found 419.1748.

(Z)-3-(1H-indol-3-yl)-1-(naphthalen-2-yl)-3-phenylpropan-1-one O-acetyl oxime (1q)



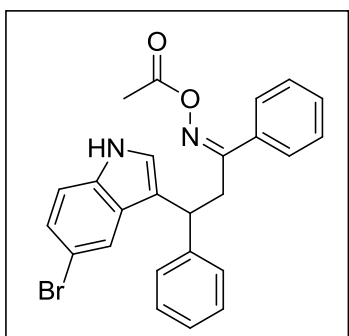
White solid, 73% yield; mp 161-163 °C, two isomers; ^1H NMR (400 MHz, CDCl_3) δ 8.14 (brs, 1H), 7.92 (s, 1H), 7.83-7.73 (m, 4H), 7.50 (p, $J = 7.6$ Hz, 2H), 7.31 (d, $J = 8.2$ Hz, 1H), 7.27-7.19 (m, 5H), 7.16-7.00 (m, 3H), 6.95 (1H, t, $J = 7.48$ Hz, CH), 4.54 (1H, t, $J = 7.74$ Hz, CH), 3.82 (1H, dd, $J = 12.94, 7.0$ Hz, CH_2), 3.75 (1H, dd, $J = 12.9, 8.62$ Hz, CH_2), 1.99 (3H, s, CH_3); ^{13}C NMR (100 MHz, CDCl_3) δ 168.8, 164.8, 142.9, 136.7, 134.2, 132.9, 131.4, 128.8, 128.3, 127.8, 127.6, 127.2, 126.7, 126.6, 126.5, 124.3, 122.2, 121.6, 119.6, 119.4, 118.1, 111.2, 40.7, 34.4, 19.5; HRMS (ESI) m/z calcd. For $\text{C}_{29}\text{H}_{24}\text{N}_2\text{O}_2\text{Na}$ ($M+23$) 455.1736, found 455.1752.

(Z)-3-(1H-indol-3-yl)-1-(4-methoxyphenyl)-3-phenylpropan-1-one O-acetyl oxime (1r)



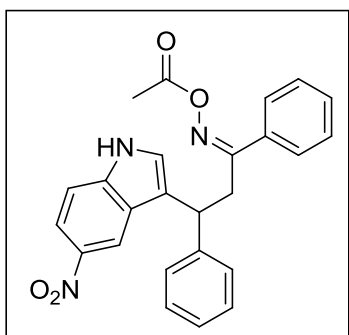
White solid, 80% yield; mp 138-139 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.06 (brs, 1H), 7.52 (d, *J* = 8.7 Hz, 2H), 7.31 (d, *J* = 8.1 Hz, 1H), 7.25-7.10 (m, 8H), 6.94 (d, *J* = 7.5 Hz, 1H), 6.84 (d, *J* = 8.7 Hz, 2H), 4.45 (t, *J* = 7.7 Hz, 1H), 3.81 (s, 3H), 3.69 (dd, *J* = 12.9, 7.0 Hz, 1H), 3.62 (dd, *J* = 13.0, 8.7 Hz, 1H), 1.91 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.1, 164.5, 161.6, 143.2, 143.2, 136.8, 129.2, 128.5, 128.0, 126.8, 126.5, 122.3, 121.6, 119.8, 119.5, 118.4, 114.2, 111.4, 55.5, 40.8, 34.4, 19.7; HRMS (ESI) *m/z* calcd. For C₂₆H₂₄N₂O₃Na (*M*+23) 435.1685, found 435.1694.

(Z)-3-(5-bromo-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime (1s)



White solid, 73% yield; mp 125-127°C; ¹H NMR (400 MHz, CDCl₃) δ 8.39 (brs, 1H), 7.50 (d, *J* = 7.4 Hz, 2H), 7.43-7.31 (m, 4H), 7.25-7.11 (m, 7H), 6.98 (d, *J* = 1.9 Hz, 1H), 4.37 (t, *J* = 7.8 Hz, 1H), 3.73 (dd, *J* = 13.0, 7.3 Hz, 1H), 3.59 (dd, *J* = 13.0, 8.5 Hz, 1H), 2.01 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.1, 165.3, 142.6, 135.4, 134.1, 130.6, 128.8, 128.6, 128.4, 127.8, 127.6, 127.0, 125.1, 123.1, 122.1, 117.7, 112.9, 112.7, 40.4, 34.7, 19.8; HRMS (ESI) *m/z* calcd. For C₂₅H₂₁BrN₂O₂Na (*M*+23) 483.0684, found 483.0697.

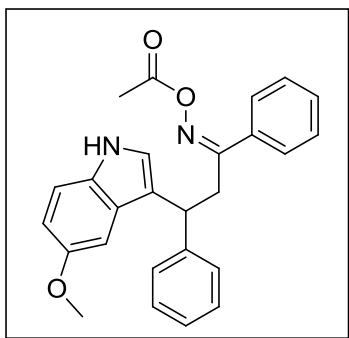
(Z)-3-(5-nitro-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime (1t)



Yellow solid, 66% yield; mp 174-177 °C; ¹H NMR (400 MHz, (CD₃)₂SO) δ 11.74 (brs, 1H), 8.09 (d, *J* = 2.2 Hz, 1H), 7.92 (dd, *J* = 9.0, 2.2 Hz, 1H), 7.65 (d, *J* = 2.1 Hz, 1H), 7.55-7.53 (m, 2H), 7.48 (d, *J* = 9.0 Hz, 1H), 7.45-7.43 (m, 1H), 7.38 (t, *J* = 7.4 Hz, 2H), 7.28 (d, *J* = 7.2 Hz, 2H), 7.22 (t, *J* = 7.5 Hz, 2H), 7.14 (t, *J* = 7.16 Hz, 1H), 4.49 (t, *J* = 7.9 Hz, 1H), 3.79-3.68 (m, 2H), 2.05 (s, 3H); ¹³C NMR (400 MHz, (CD₃)₂SO) δ 168.4, 165.1, 143.4, 140.6, 139.9, 134.4, 130.8, 128.9, 128.7, 128.1, 127.7, 127.0,

126.9, 125.9, 119.9, 117.0, 116.1, 112.4, 39.9, 34.3, 19.8; HRMS (ESI) *m/z* calcd. For C₂₅H₂₁N₃O₄Na (M+23) 450.1430, found 450.1431.

(Z)-3-(5-methoxy-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime (1u)



White solid, 80% yield; mp 144-146 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.27 (brs, 1H), 7.56 (d, *J* = 7.4 Hz, 2H), 7.42 (t, *J* = 7.3 Hz, 1H), 7.34 (t, *J* = 7.5 Hz, 2H), 7.26-7.15 (m, 6H), 7.00 (d, *J* = 2.2 Hz, 1H), 6.78 (dd, *J* = 8.8, 2.3 Hz, 1H), 6.66 (d, *J* = 2.2 Hz, 1H), 4.41 (t, *J* = 7.8 Hz, 1H), 3.74-3.60 (m, 5H), 2.00 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.0,

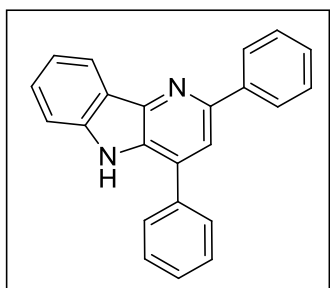
165.3, 153.8, 142.9, 134.1, 131.9, 130.5, 128.7, 128.4, 127.9, 127.6, 127.0, 126.8, 122.5, 117.7, 112.1, 101.7, 55.9, 40.6, 34.7, 19.7; HRMS (ESI) *m/z* calcd. For C₂₆H₂₄N₂O₃Na (M+23) 435.1685, found 435.1678.

Synthesis of δ-carbolines 3a-3u

General procedure:

A mixture of indolyloxime esters **1a-1u** (1 mmol) and iodine (0.102g, 0.4 eq.) in 1,2-dimethoxyethane (1,2-DME, 5 mL) was heated to 100 °C. After completion of the reaction, the mixture was allowed to cool to ambient temperature and worked up with aq. Na₂S₂O₃ (1 mL) and aq. NaHCO₃ (1 mL). The reaction mixture was extracted with ethyl acetate (20 mL) for three times. The combined organic layer was dried over MgSO₄ and concentrated under reduce pressure. The residue was purified by column chromatography on silica gel (eluent: hexane/ethyl acetate = 12:1) to afford δ-carbolines **3a-3u** and minor mixture of α-carbolines **2a-2u**.

2,4-diphenyl-δ-carboline (3a)

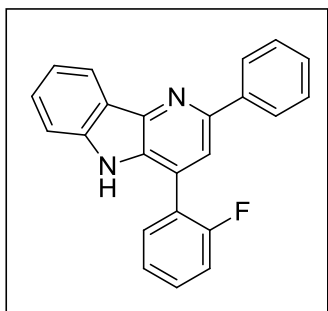


White solid, 70% yield; mp 232-234 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.49 (d, *J* = 7.8 Hz, 1H), 8.41 (brs, 1H), 8.17 (d, *J* = 7.5 Hz, 2H), 7.8 (brs, 1H), 7.76 (d, *J* = 7.3 Hz, 2H), 7.59 (t, *J* = 7.5 Hz, 2H), 7.51 (t, *J* = 7.3 Hz, 4H), 7.46-7.39 (m, 2H), 7.33 (t, *J* = 7.4 Hz, 1H); ¹³C NMR (100 MHz, CDCl₃) δ 151.4,

143.1, 141.0, 140.7, 137.2, 132.4, 130.2, 129.7, 128.9, 128.9, 128.4, 128.3, 128.1, 127.4, 123.3, 121.6, 120.6, 117.4, 111.4. HRMS (EI) *m/z* calcd. For

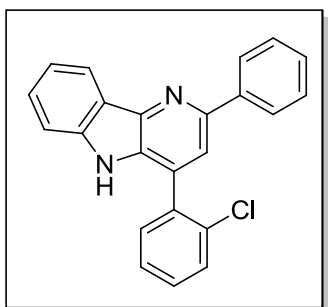
C₂₃H₁₆N₂ (M⁺) 320.1313, found 320.1317.

4-(2-fluorophenyl)-2-phenyl- δ -carboline (3b)



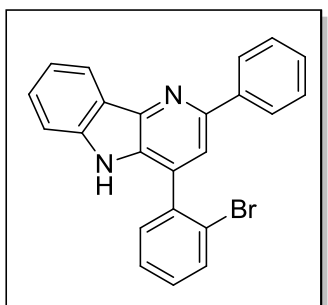
White solid, 66% yield; mp 258-259 °C; ¹H NMR (400 MHz, (CD₃)₂SO) δ 11.42 (brs, 1H), 8.31 (1H, d, J = 7.8 Hz, CH), 8.27-8.25 (m, 2H), 7.97 (s, 1H), 7.80 (td, J = 7.6, 1.7 Hz, 1H), 7.66-7.61 (m, 1H), 7.58-7.39 (m, 7H), 7.31-7.24 (m, 1H); ¹³C NMR (100 MHz, (CD₃)₂SO) δ 159.9 (d, J_{C-F} = 247.3 Hz), 148.9, 142.2, 141.9, 140.1, 132.1, 132.1, 131.5 (d, J_{C-F} = 8.3 Hz), 130.7, 129.2, 128.4 (d, J_{C-F} = 24.3 Hz), 127.0, 126.9, 125.6 (d, J_{C-F} = 3.1 Hz), 124.4 (d, J_{C-F} = 15.3 Hz), 124.4, 122.0, 120.8, 120.1, 118.3, 116.8 (d, J_{C-F} = 21.5 Hz), 112.5. HRMS (ESI) m/z calcd. For C₂₃H₁₆FN₂ (M+1) 339.1292, found 339.1299.

4-(2-chlorophenyl)-2-phenyl- δ -carboline (3c)



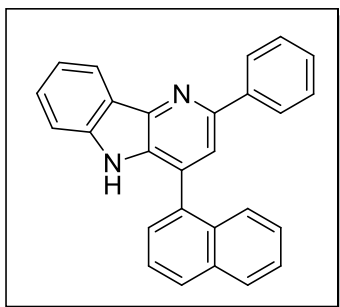
White solid, 63% yield; mp 253-255 °C; ¹H NMR (400 MHz, (CD₃)₂SO) δ 11.37 (brs, 1H), 8.32 (d, J = 7.8 Hz, 1H), 8.27-8.25 (m, 2H), 7.9 (s, 1H), 7.75-7.71 (m, 1H), 7.70-7.65 (m, 1H), 7.61-7.48 (m, 6H), 7.41-7.38 (m, 1H), 7.31-7.27 (m, 1H); ¹³C NMR (100 MHz, (CD₃)₂SO) δ 148.6, 142.1, 141.9, 140.1, 135.8, 132.9, 132.3, 130.9, 130.8, 130.4, 129.2, 128.5, 128.2, 127.0, 122.1, 121.8, 120.1, 118.2, 112.6. HRMS (EI) m/z calcd. For C₂₃H₁₆ClN₂ (M+1) 355.1002, found 355.1009.

4-(2-bromophenyl)-2-phenyl- δ -carboline (3d)



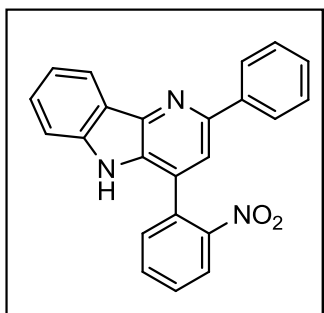
White solid, 46% yield; mp 266-267 °C; ¹H NMR (400 MHz, (CD₃)₂SO) δ 11.30 (brs, 1H), 8.28 (d, J = 7.8 Hz, 1H), 8.44-8.22 (m, 2H), 7.88-7.86 (m, 1H), 7.85 (s, 1H), 7.64-7.57 (m, 2H), 7.52-7.46 (m, 5H), 7.40-7.35 (m, 1H), 7.28-7.24 (m, 1H); ¹³C NMR (100 MHz, (CD₃)₂SO) δ 148.6, 142.2, 141.9, 140.1, 137.8, 133.5, 132.2, 132.1, 131.0, 130.6, 129.2, 128.7, 128.5, 128.2, 126.9, 123.1, 122.2, 120.7, 120.1, 118.1, 112.6. HRMS (EI) m/z calcd. For C₂₃H₁₆BrN₂ (M+1) 399.0491, found 399.0493.

4-(naphthalen-1-yl)-2-phenyl- δ -carboline (3e)



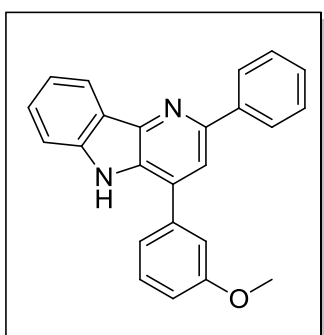
White solid, 59% yield; mp 242-243 °C; ^1H NMR (400 MHz, CDCl_3) δ 8.53 (d, $J = 7.84$ Hz, 1H), 8.18 (d, $J = 7.4$ Hz, 2H), 8.00-7.99 (m, 3H), 7.87 (s, 1H), 7.70 (d, $J = 8.4$ Hz, 1H), 7.66-7.60 (m, 2H), 7.43-7.38 (m, 2H), 7.57-7.46 (m, 4H), 7.35-7.29 (m, 2H); ^{13}C NMR (100 MHz, CDCl_3) δ 151.0, 142.7, 140.9, 140.6, 134.5, 134.1, 131.4, 131.1, 129.4, 128.9, 128.9, 128.3, 128.1, 127.7, 127.4, 127.2, 126.7, 125.9, 125.7, 123.2, 121.6, 120.6, 119.3, 111.4. HRMS (EI) m/z calcd. For $\text{C}_{27}\text{H}_{19}\text{N}_2$ ($\text{M}+1$) 371.1548, found 371.1556.

4-(2-nitrophenyl)-2-phenyl- δ -carboline (3f)



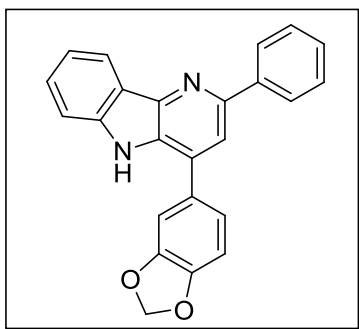
Yellow solid; mp 280-281 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.40 (s, 1H), 8.31-8.28 (m, 2H), 8.23-8.21 (m, 2H), 7.93 (td, $J = 7.5, 1.1$ Hz, 1H), 7.88 (s, 1H), 7.84-7.77 (m, 2H), 7.52-7.47 (m, 4H), 7.38 (t, $J = 7.3$ Hz, 1H), 7.29-7.26 (m, 1H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 148.8, 148.7, 141.9, 141.9, 139.9, 134.6, 133.2, 131.6, 130.8, 130.6, 129.9, 129.2, 128.5, 128.2, 126.9, 125.4, 122.2, 120.8, 120.3, 116.9, 112.5. HRMS (EI) m/z calcd. For $\text{C}_{23}\text{H}_{15}\text{N}_3\text{O}_2$ (M^+) 365.3841.

4-(3-methoxyphenyl)-2-phenyl- δ -carboline (3g)



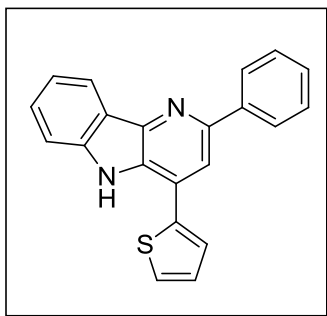
White solid, 70% yield; mp 179-181 °C; ^1H NMR (400 MHz, CDCl_3) δ 8.49 (d, $J = 7.8$ Hz, 1H), 8.41 (s, 1H), 8.17 (d, $J = 7.6$ Hz, 2H), 7.8 (s, 1H), 7.59 (t, $J = 7.5$ Hz, 2H), 7.53-7.38 (m, 6H), 7.35-7.27 (m, 3H), 7.04 (dd, $J = 8.1, 1.9$ Hz, 1H), 3.89 (s, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 160.6, 151.4, 143.1, 141.0, 140.7, 138.6, 132.2, 130.8, 130.2, 128.9, 128.2, 128.1, 127.4, 123.3, 121.6, 120.6, 120.6, 117.3, 114.2, 111.4, 55.7. HRMS (EI) m/z calcd. For $\text{C}_{24}\text{H}_{19}\text{N}_2\text{O}$ ($\text{M}+1$) 351.1492, found 351.1498.

4-(benzo[d][1,3]dioxol-5-yl)-2-phenyl- δ -carboline (3h)



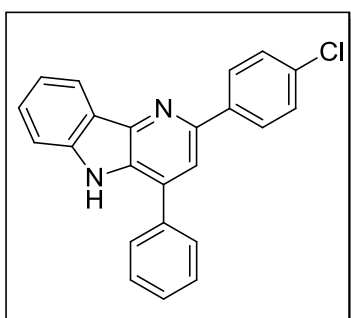
White solid, 68% yield; mp 221-222 °C; ^1H NMR (400 MHz, CDCl_3) δ 8.47 (d, $J = 7.8$ Hz, 1H), 8.34 (brs, 1H), 8.15 (d, $J = 7.7$ Hz, 2H), 7.52-7.44 (m, 4H), 7.74 (s, 1H), 7.39 (t, $J = 7.26$ Hz, 1H), 7.33 (t, $J = 7.4$ Hz, 1H), 7.24 (d, $J = 8.8$ Hz, 2H), 7.01 (d, $J = 7.8$ Hz, 1H), 6.08 (s, 2H); ^{13}C NMR (100 MHz, CDCl_3) δ 151.5, 148.9, 148.4, 143.1, 141.0, 140.8, 132.1, 130.2, 128.9, 128.2, 128.1, 127.4, 123.4, 122.1, 121.6, 120.6, 117.2, 111.4, 109.5, 108.7, 101.8. HRMS (ESI) m/z calcd. For $\text{C}_{24}\text{H}_{17}\text{N}_2\text{O}_2$ ($M+1$) 365.1290, found 365.1288.

2-phenyl-4-(thiophen-2-yl)- δ -carboline (3i)



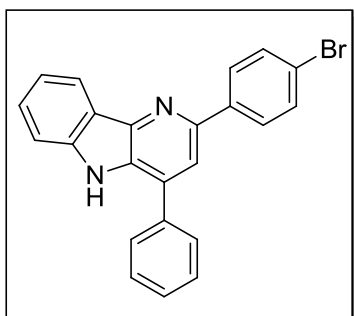
White solid, 73% yield; mp 249-250 °C; ^1H NMR (400 MHz, CDCl_3) δ 8.52 (brs, 1H), 8.46 (d, $J = 7.8$ Hz, 1H), 8.15 (d, $J = 7.4$ Hz, 2H), 7.88 (s, 1H), 7.59 (d, $J = 7.8$ Hz, 1H), 7.52-7.46 (m, 5H), 7.40 (t, $J = 7.4$ Hz, 1H), 7.34-7.31 (m, 1H), 7.25-7.24 (m, 1H); ^{13}C NMR (100 MHz, CDCl_3) δ 151.3, 143.6, 141.1, 140.5, 138.9, 129.2, 128.9, 128.6, 128.3, 128.3, 127.4, 126.9, 126.5, 125.2, 123.3, 121.6, 120.9, 116.2, 111.6; HRMS (ESI) m/z calcd. For $\text{C}_{21}\text{H}_{15}\text{N}_2\text{S}$ ($M+1$) 327.0596, found 327.0597.

2-(4-chlorophenyl)-4-phenyl- δ -carboline (3j)



White solid, 63% yield; mp 310-311 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.49 (brs, 1H), 8.32-8.26 (m, 3H), 8.41 (s, 1H), 8.17 (d, $J = 7.5$ Hz, 2H), 8.00 (s, 1H), 7.91-7.89 (m, 2H), 7.65-7.49 (m, 7H), 7.27 (t, $J = 7.5$ Hz, 1H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 148.0, 142.7, 142.2, 139.1, 136.8, 133.2, 132.4, 130.3, 129.7, 129.2, 129.1, 129.1, 128.7, 128.19, 122.2, 120.7, 120.2, 116.9, 112.8. HRMS (EI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{ClN}_2$ ($M+1$) 355.1002, found 355.1010.

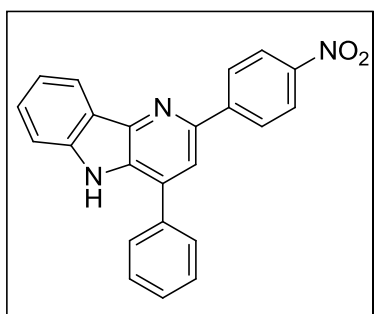
2-(4-bromophenyl)-4-phenyl- δ -carboline (3k)



White solid, 68% yield; mp 315-317 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.52 (brs, 1H), 8.30-8.25 (m, 3H), 8.00 (s, 1H), 7.93-7.91 (m, 2H), 7.77-7.51 (m, 7H), 7.29 (t, $J = 7.5$ Hz, 1H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 148.0, 142.7, 142.2, 139.4, 136.8, 132.4, 131.9, 130.3, 129.7, 129.2, 129.1, 129.1, 128.2, 122.2, 121.9, 120.8, 120.2, 116.9,

112.8. HRMS (EI) m/z calcd. For $\text{C}_{23}\text{H}_{15}\text{BrN}_2$ (M^+) 398.0419, found 398.0418.

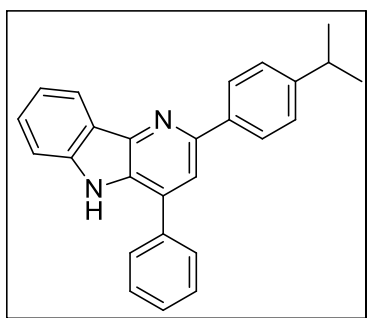
2-(4-nitrophenyl)-4-phenyl- δ -carboline (3l)



Yellow solid, 66% yield; mp 315-316 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.64 (brs, 1H), 8.59-8.55 (m, 2H), 8.35-8.31 (m, 3H), 8.16 (s, 1H), 7.94-7.92 (m, 2H), 7.68-7.54 (m, 5H), 7.32 (t, $J = 7.0$ Hz, 1H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 147.3, 146.6, 146.4, 143.1, 142.4, 132.4, 136.5, 130.7, 129.7, 129.3, 129.2, 128.5,

127.8, 124.3, 122.1, 120.9, 120.5, 118.0, 112.9. HRMS (EI) m/z calcd. For $\text{C}_{23}\text{H}_{15}\text{N}_3\text{O}_2$ (M^+) 365.3841

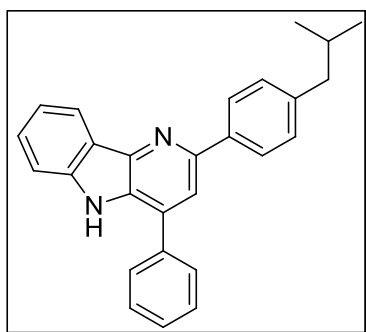
2-(4-isopropylphenyl)-4-phenyl- δ -carboline (3m)



White solid, mp 245-247 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.45 (brs, 1H), 8.29 (d, $J = 7.8$ Hz, 1H), 8.18 (d, $J = 8.2$ Hz, 2H), 7.95 (s, 1H), 7.92 (d, $J = 7.3$ Hz, 2H), 7.65 (t, $J = 7.5$ Hz, 2H), 7.62-7.50 (m, 3H), 7.38 (2H, d, $J = 8.2$ Hz, CH), 7.28 (t, $J = 7.5$ Hz, 1H), 2.95 (sep, $J = 6.9$ Hz, 1H), 1.26 (d, $J = 6.8$ Hz, 6H); ^{13}C NMR (100 MHz,

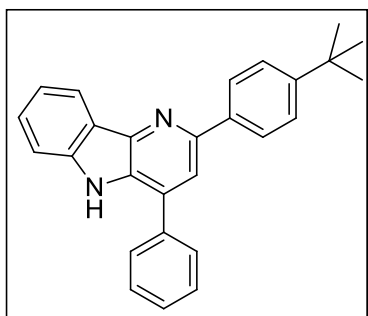
$(\text{CD}_3)_2\text{SO}$) δ 149.6, 148.7, 142.6, 142.1, 138.0, 136.9, 132.4, 130.0, 129.7, 129.1, 129.1, 128.0, 127.1, 127.0, 122.3, 120.7, 120.1, 116.8, 112.8, 33.7, 24.3. HRMS (ESI) m/z calcd. For $\text{C}_{26}\text{H}_{23}\text{N}_2$ ($\text{M}+1$) 363.1861, found 363.1859.

2-(4-isobutylphenyl)-4-phenyl- δ -carboline (3n)



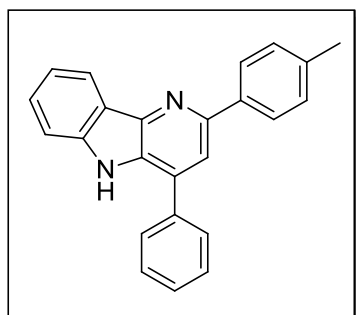
White solid, 68% yield; mp 254-255 °C; ^1H NMR (400 MHz, CDCl_3) δ 8.50 (d, $J = 7.8$ Hz, 1H), 8.29 (brs, 1H), 8.08 (d, $J = 8.1$ Hz, 2H), 7.80 (s, 1H), 7.77 (d, $J = 7.4$ Hz, 2H), 7.61 (t, $J = 7.54$ Hz, 2H), 7.54-7.50 (m, 2H), 7.45 (d, $J = 8.0$ Hz, 1H), 7.34 (t, $J = 7.44$ Hz, 1H), 7.29 (d, $J = 8.0$ Hz, 2H), 2.56 (d, $J = 7.2$ Hz, 2H), 1.94 (sep, $J = 6.7$ Hz, 1H), 0.95 (d, $J = 6.6$ Hz, 1H); ^{13}C NMR (100 MHz, CDCl_3) δ 151.5, 142.9, 141.8, 140.8, 138.1, 137.1, 132.2, 129.8, 129.5, 129.5, 128.8, 128.2, 127.8, 126.9, 123.2, 121.4, 120.4, 117.1, 111.1, 45.2, 30.3, 22.4; HRMS (ESI) m/z calcd. For $\text{C}_{27}\text{H}_{25}\text{N}_2$ ($M+1$) 377.2018, found 377.2015.

2-(4-(tert-butyl)phenyl)-4-phenyl- δ -carboline (3o)



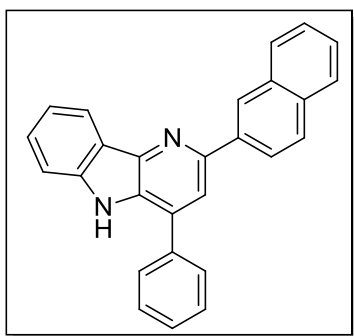
White solid, 63% yield; mp 284-285 °C; ^1H NMR (400 MHz, CDCl_3) δ 8.49 (d, $J = 7.8$ Hz, 1H), 8.36 (brs, 1H), 8.09 (d, $J = 8.4$ Hz, 2H), 7.79 (brs, 1H), 7.77-7.75 (m, 2H), 7.6 (t, $J = 7.5$ Hz, 2H), 7.55-7.49 (m, 4H), 7.45 (d, $J = 8.0$ Hz, 1H), 7.34 (t, $J = 7.4$ Hz, 1H), 1.40 (s, 9H); ^{13}C NMR (100 MHz, CDCl_3) δ 151.6, 151.3, 143.1, 140.9, 138.0, 137.3, 132.3, 130.1, 129.7, 128.9, 128.4, 127.9, 127.1, 125.9, 123.4, 121.6, 120.6, 117.3, 111.4, 34.8, 31.6; HRMS (ESI) m/z calcd. For $\text{C}_{27}\text{H}_{25}\text{N}_2$ ($M+1$) 377.2018, found 377.2019.

4-phenyl-2-(p-tolyl)- δ -carboline (3p)



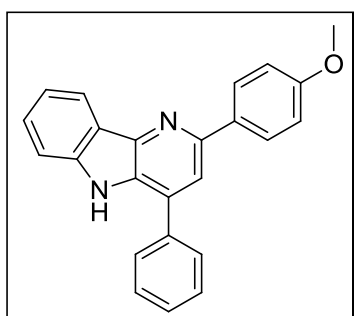
White solid, 67% yield; mp 304-305 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.45 (brs, 1H), 8.30 (d, $J = 7.8$ Hz, 1H), 8.19 (d, $J = 8.0$ Hz, 2H), 7.96 (s, 1H), 7.92 (d, $J = 7.3$ Hz, 2H), 7.68-7.50 (m, 5H), 7.77-7.51 (m, 7H), 7.33-7.20 (m, 3H), 2.38 (s, 3H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 149.5, 142.6, 142.1, 137.7, 137.5, 136.9, 132.4, 130.01, 129.7, 129.7, 129.1, 129.1, 127.9, 126.9, 122.3, 120.7, 120.1, 116.7, 112.7, 21.3. HRMS (ESI) m/z calcd. For $\text{C}_{24}\text{H}_{19}\text{N}_2$ ($M+1$) 335.1548 found 335.1556.

2-(naphthalen-2-yl)-4-phenyl- δ -carboline (3q)



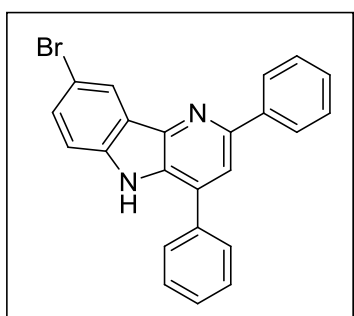
Yellow solid, 65% yield; mp 286-287 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.53 (brs, 1H), 8.84 (s, 1H), 8.56 (dd, $J = 8.6, 1.6$ Hz, 1H), 8.37 (d, $J = 7.8$ Hz, 1H), 8.21 (s, 1H), 8.08 (t, $J = 8.6$ Hz, 2H), 7.98 (d, $J = 7.6$ Hz, 3H), 7.71-7.52 (m, 7H), 7.32 (t, $J = 7.4$ Hz, 1H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 149.2, 142.8, 142.2, 137.7, 136.9, 133.8, 133.3, 132.5, 130.3, 129.7, 129.2, 129.2, 128.9, 128.5, 128.1, 128.1, 128.0, 126.8, 126.6, 125.8, 125.4, 122.4, 120.8, 120.2, 117.4, 112.8. HRMS (EI) m/z calcd. For $\text{C}_{27}\text{H}_{18}\text{N}_2$ (M^+) 370.1470, found 370.1468.

2-(4-methoxyphenyl)-4-phenyl- δ -carboline (3r)



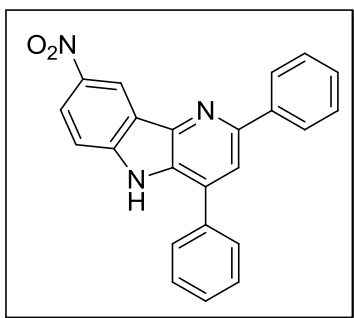
White solid, 80% yield; mp 288-290 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.38 (brs, 1H), 8.29-8.19 (m, 3H), 7.90-7.88 (s, 2H), 7.65-7.47 (m, 5H), 7.25 (t, $J = 7.4$ Hz, 1H), 7.05 (d, $J = 8.6$ Hz, 2H), 3.81 (s, 3H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 159.9, 149.4, 142.5, 142.1, 137.0, 132.9, 132.4, 129.8, 129.7, 129.1, 129.1, 128.3, 127.9, 122.3, 120.7, 120.0, 116.4, 114.5, 112.7, 55.7. HRMS (EI) m/z calcd. For $\text{C}_{24}\text{H}_{18}\text{N}_2\text{O}$ (M^+) 350.1419, found 350.1422.

8-bromo-2,4-diphenyl- δ -carboline (3s)



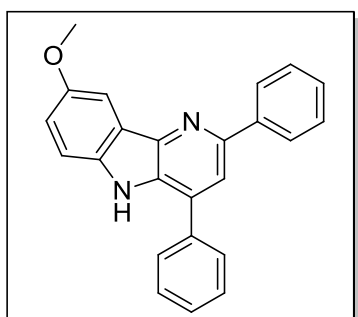
White solid, 70% yield; mp 219-222 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.63 (brs, 1H), 8.38 (d, $J = 1.9$ Hz, 1H), 8.29-8.27 (m, 2H), 8.02 (s, 1H), 7.91-7.89 (m, 2H), 7.66-7.62 (m, 3H), 7.58-7.54 (m, 2H), 7.50 (t, $J = 7.6$ Hz, 2H), 7.40 (t, $J = 7.3$ Hz, 1H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 150.0, 141.3, 140.7, 139.9, 136.6, 133.0, 130.7, 130.4, 129.7, 129.3, 129.1, 129.1, 128.6, 127.1, 124.1, 122.9, 117.7, 114.9, 112.3; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{BrN}_2$ ($\text{M}+1$) 399.0491, found 399.0484.

8-nitro-2,4-diphenyl- δ -carboline (3t)



Yellow solid, 60% yield; mp 254-256 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 12.18 (brs, 1H), 9.07 (d, J = 1.6 Hz, 1H), 8.36 (dd, J = 8.8, 1.9 Hz, 1H), 8.30 (d, J = 7.5 Hz, 2H), 8.08 (s, 1H), 7.89 (d, J = 7.3 Hz, 1H), 7.72-7.51 (m, 6H), 7.44 (t, J = 7.1 Hz, 1H), ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 151.1, 144.9, 142.3, 139.6, 136.1, 133.9, 131.8, 129.8, 129.6, 129.2, 128.9, 127.3, 123.2, 121.9, 118.5, 117.2, 113.2; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_3\text{O}_2$ ($M+1$) 366.1243, found 366.1243.

8-methoxy-2,4-diphenyl- δ -carboline (3u)



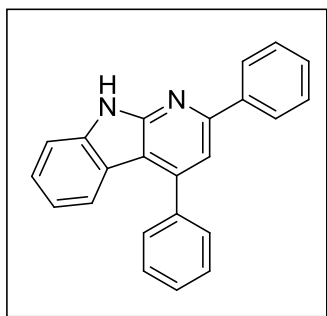
White solid, 76% yield; mp 259-260 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 11.27 (brs, 1H), 8.27 (d, J = 7.5 Hz, 2H), 7.95 (brs, 1H), 7.90 (d, J = 7.3 Hz, 2H), 7.73 (d, J = 2.0 Hz, 1H), 7.63 (t, J = 7.5 Hz, 2H), 7.56-7.48 (m, 4H), 7.38 (t, J = 7.2 Hz, 2H), 7.14 (dd, J = 8.7, 2.3 Hz, 1H), 3.89 (s, 3H); ^{13}C NMR (100 MHz, $(\text{CD}_3)_2\text{SO}$) δ 154.2, 149.0, 142.5, 140.3, 137.0, 136.9, 132.4, 130.7, 129.7, 129.1, 129.1, 129.0, 128.4, 127.1, 122.6, 118.1, 116.8, 113.7, 102.2, 56.0. HRMS (ESI) m/z calcd. For $\text{C}_{24}\text{H}_{19}\text{N}_2\text{O}$ ($M+1$) 351.1492, found 351.1493.

Synthesis of α -carbolines 2a-2u

General procedure:

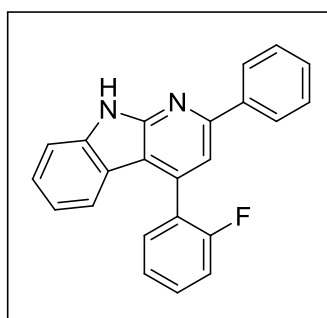
A mixture of indolyloxime esters **1a-1u** (1 mmol) and 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone (DDQ, 0.227g, 1 eq.) in 1,2-dichloroethane (1,2-DCE, 10 mL) was stirred at ambient temperature for 30 min, followed by addition of iodine (0.508g, 20 mol%) and the reaction mixture was heated to 60 °C. After completion of the reaction, the mixture was allowed to cool to ambient temperature and diluted with ethyl acetate (50 mL). The reaction mixture was washed with aq. 1M NaOH (10 mL) for two times. The combined water layer was extracted with ethyl acetate (20 mL) for three times. The combined organic layer was dried over MgSO_4 and concentrated under reduced pressure. The residue was purified by column chromatography on silica gel (eluent: hexane/ethyl acetate = 12:1) to afford α -carbolines **2a-2u**.

2,4-diphenyl- α -carboline (2a)



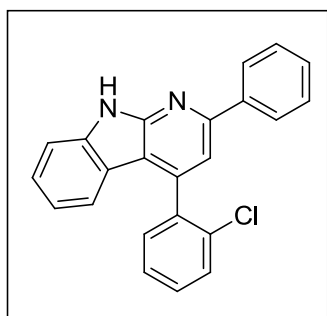
White solid, 70% yield; mp 216.5-217.5°C; ^1H NMR (400 MHz, CDCl_3), δ 11.81 (brs, 1H), 8.24 (td, $J = 6.2, 1.2$ Hz, 2H), 7.78-7.77 (m, 2H), 7.49-7.46 (m, 8H), 7.22 (td, $J = 7.8, 0.8$ Hz, 1H), 6.96 (td, $J = 7.7, 0.6$ Hz, 1H), 6.55 (d, $J = 8.2$ Hz, 1H); ^{13}C NMR δ 154.5, 153.5, 146.4, 140.4, 139.6, 139.5, 129.3, 129.0, 128.9, 128.9, 128.8, 128.0, 126.6, 122.5, 120.8, 119.7, 114.6, 113.1, 111.6; HRMS (EI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_2$ (M^+) 320.1313, found 320.1313.

4-(2-fluorophenyl)-2-phenyl- α -carboline (2b)



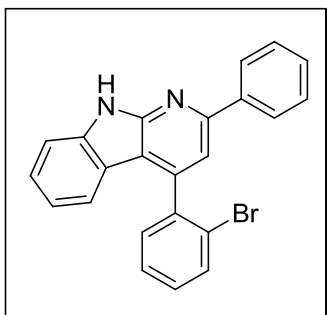
White solid, 77% yield; mp 250-251 °C; ^1H NMR (400 MHz, CDCl_3) δ 11.79 (brs, 1H), 8.21 (d, $J = 7.3$ Hz, 2H), 7.65-7.47 (m, 6H), 7.41-7.30 (m, 3H), 7.18 (t, $J = 7.58$ Hz, 1H), 6.98 (t, $J = 7.5$ Hz, 1H), 6.55 (d, $J = 8.1$ Hz, 1H); ^{13}C NMR (100MHz, CDCl_3) δ 160.9, 158.5, 154.2, 153.0, 140.1, 139.4, 131.2, 131.2, 130.6, 130.6, 129.1, 128.8, 127.8, 126.8, 126.6, 126.5, 124.5, 122.0, 120.6, 119.8, 116.3, 116.1, 114.9, 113.7, 111.3; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_2\text{F}$ ($\text{M}+1$) 339.1298, found 339.1300.

4-(2-chlorophenyl)-2-phenyl- α -carboline (2c)



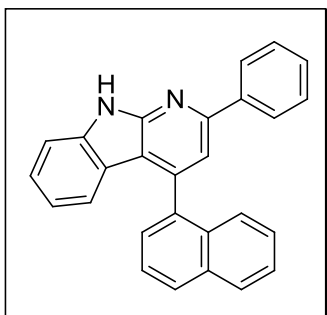
White solid, 90% yield; mp 243-244 °C; ^1H NMR (400 MHz, CDCl_3) δ 11.42 (brs, 1H), 8.22 (d, $J = 7.4$ Hz, 2H), 7.66-7.64 (m, 1H), 7.58-7.45 (m, 7H), 7.21 (7, $J = 7.7$ Hz, 1H), 7.15 (d, $J = 7.8$ Hz, 1H), 6.98 (t, $J = 7.5$ Hz, 1H), 6.67 (d, $J = 8.1$ Hz, 1H); ^{13}C NMR (100MHz, CDCl_3) δ 154.3, 153.2, 142.9, 140.3, 139.6, 138.0, 133.2, 130.9, 130.2, 130.1, 129.4, 129.0, 128.1, 127.3, 126.7, 122.2, 120.7, 119.9, 114.7, 113.9, 111.6; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_2\text{Cl}$ ($\text{M}+1$) 355.1002, found 355.1002.

4-(2-bromophenyl)-2-phenyl- α -carboline (2d)



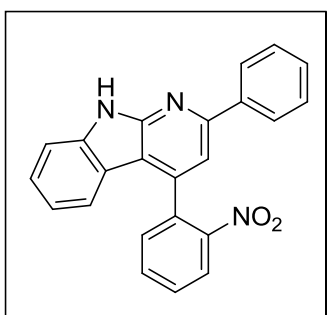
Brown solid, 85% yield; mp 254-255 °C; ^1H NMR (400 MHz, CDCl_3) δ 11.73 (brs, 1H), 8.24 (d, $J = 7.2$ Hz, 2H), 7.84 (d, $J = 8.0$ Hz, 1H), 7.58-7.49 (m, 6H), 7.45-7.40 (m, 1H), 7.19 (t, $J = 7.6$ Hz, 1H), 7.11 (d, $J = 7.9$ Hz, 1H), 6.97 (t, $J = 7.6$ Hz, 1H), 6.58 (d, $J = 8.2$ Hz, 1H); ^{13}C NMR (100MHz, CDCl_3) δ 154.3, 153.1, 144.5, 140.3, 140.0, 139.5, 133.4, 130.9, 130.2, 129.3, 129.0, 128.0, 127.9, 126.7, 122.8, 122.3, 120.7, 120.0, 114.5, 113.7, 111.5; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_2\text{Br}$ ($M+1$) 399.0497, found 399.0497.

4-(naphthalen-1-yl)-2-phenyl- α -carboline (2e)



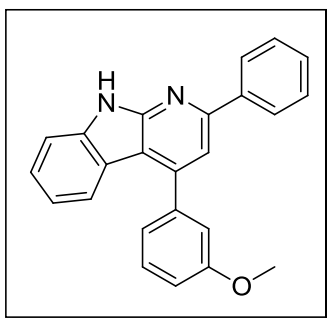
White solid, 57% yield; mp 247-248 °C; ^1H NMR (400 MHz, CDCl_3) δ 12.07 (brs, 1H), 8.29 (d, $J = 7.3$ Hz, 2H), 8.07 (dd, $J = 6.9, 2.0$ Hz, 1H), 8.03 (d, $J = 8.2$ Hz, 1H), 7.75-7.67 (m, 4H), 7.59-7.49 (m, 4H), 7.36 (d, $J = 7.6$ Hz, 1H), 7.13-7.09 (m, 1H), 6.79-6.73 (m, 2H), 6.53 (d, $J = 8.1$ Hz, 1H); ^{13}C NMR (100MHz, CDCl_3) δ 154.1, 153.1, 144.3, 140.1, 139.4, 136.8, 133.6, 131.1, 129.2, 128.8, 128.8, 128.4, 127.8, 126.6, 126.5, 126.3, 126.2, 125.9, 125.5, 122.4, 120.6, 119.6, 115.4, 114.6, 111.2; HRMS (ESI) m/z calcd. For $\text{C}_{27}\text{H}_{19}\text{N}_2$ ($M+1$) 371.1548, found 371.1549.

4-(2-nitrophenyl)-2-phenyl- α -carboline (2f)



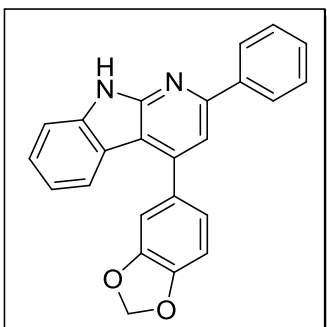
Yellow solid, 93% yield; mp 238-239 °C; ^1H NMR (400 MHz, CDCl_3) δ 11.83 (brs, 1H), 8.26 (d, $J = 8.2$ Hz, 1H), 8.20 (d, $J = 7.4$ Hz, 2H), 7.81 (t, $J = 7.5$ Hz, 1H), 7.73 (t, $J = 7.8$ Hz, 1H), 7.66 (d, $J = 7.5$ Hz, 1H), 7.57-7.50 (m, 4H), 7.17 (t, $J = 7.6$ Hz, 1H), 7.02 (d, $J = 7.9$ Hz, 1H), 6.93 (t, $J = 7.5$ Hz, 1H), 6.54 (d, $J = 8.2$ Hz, 1H); ^{13}C NMR (100MHz, CDCl_3) δ 154.6, 153.0, 148.7, 141.6, 140.1, 139.6, 134.3, 133.6, 132.0, 129.8, 129.4, 129.1, 128.1, 126.9, 125.1, 121.5, 120.3, 120.1, 113.3, 111.8; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_3\text{O}_2$ ($M+1$) 366.1243, found 366.1242.

4-(3-methoxyphenyl)-2-phenyl- α -carboline (2g)



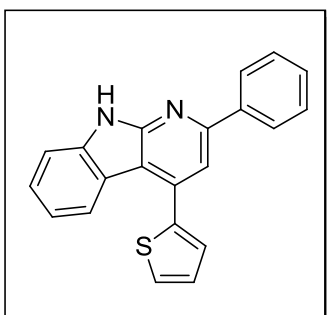
Yellow solid, 71% yield; mp 194-195 °C; ^1H NMR (400 MHz, CDCl_3) δ 11.91 (brs, 1H), 8.25-8.23 (m, 2H), 7.69 (d, $J = 7.9$ Hz, 1H), 7.61 (s, 1H), 7.59-7.49 (m, 4H), 7.36 (d, $J = 7.6$ Hz, 1H), 7.31-7.30 (m, 1H), 7.21-7.17 (m, 1H), 7.11 (dd, $J = 8.2, 2.5$ Hz, 1H), 7.00 (t, $J = 7.6$ Hz, 1H), 6.54 (d, $J = 8.2$ Hz, 1H), 3.90 (3H, s, CH_3); ^{13}C NMR (100MHz, CDCl_3) δ 159.9, 154.3, 153.1, 145.9, 140.6, 140.1, 139.3, 129.9, 129.1, 128.8, 127.7, 126.4, 122.5, 121.1, 120.6, 119.6, 114.5, 114.3, 114.0, 112.7, 111.2, 55.4; HRMS (ESI) m/z calcd. For $\text{C}_{24}\text{H}_{19}\text{N}_2\text{O}$ ($M+1$) 351.1497, found 351.1500.

4-(benzo[d][1,3]dioxol-5-yl)-2-phenyl- α -carboline (2h)



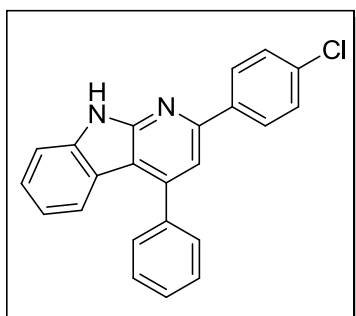
White solid, 82% yield; mp 242-243 °C; ^1H NMR (400 MHz, CDCl_3) δ 11.41 (brs, 1H), 8.19 (d, $J = 7.2$ Hz, 2H), 7.74 (d, $J = 8.0$ Hz, 1H), 7.56-7.48 (m, 4H), 7.25-7.19 (m, 3H), 7.04-7.01 (m, 2H), 6.66 (d, $J = 8.6$ Hz, 1H), 6.10 (s, 1H); ^{13}C NMR (100MHz, CDCl_3) δ 154.5, 153.5, 148.3, 148.2, 146.0, 140.4, 139.5, 133.3, 129.3, 129.0, 127.9, 126.6, 122.7, 122.6, 120.8, 119.7, 114.6, 113.0, 111.5, 109.5, 108.9, 101.6; HRMS (ESI) m/z calcd. For $\text{C}_{24}\text{H}_{17}\text{N}_2\text{O}_2$ ($M+1$) 365.1290, found 365.1290.

2-phenyl-4-(thiophen-2-yl)- α -carboline (2i)



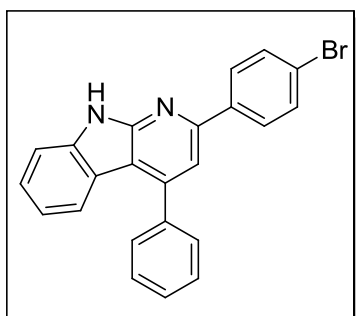
White solid, 73% yield; mp 249-250 °C; ^1H NMR (400 MHz, CDCl_3) δ 11.37 (brs, 1H), 8.20 (d, $J = 7.1$ Hz, 2H), 8.00 (d, $J = 8.06$ Hz, 1H), 7.66 (s, 1H), 7.62 (dd, $J = 3.5, 0.7$ Hz, 1), 7.57-7.48 (m, 4H), 7.29 (dd, $J = 5.0, 3.6$ Hz, 1H), 7.23 (d, $J = 7.1$ Hz, 1), 7.06 (t, $J = 7.6$ Hz, 1H), 6.66 (d, $J = 8.1$ Hz, 1H); ^{13}C NMR (100MHz, CDCl_3) δ 154.2, 153.4, 140.3, 139.9, 139.3, 138.7, 129.1, 128.9, 127.8, 127.7, 127.7, 126.6, 122.3, 120.5, 119.6, 115.1, 112.9, 111.4; HRMS (ESI) m/z calcd. For $\text{C}_{21}\text{H}_{15}\text{N}_2\text{S}$ ($M+1$) 327.0956, found 327.0955.

2-(4-chlorophenyl)-4-phenyl- α -carboline (2j)



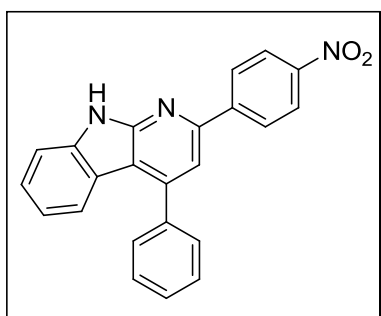
White solid, 96% yield; mp 271-273 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 12.11 (brs, 1H), 8.23 (d, J = 7.4 Hz, 2H), 7.80 (d, J = 8.4 Hz, 2H), 7.69 (d, J = 8.4 Hz, 2H), 7.54-7.50 (m, 4H), 7.46-7.40 (m, 2H), 7.06 (t, J = 7.8 Hz, 1H); ^{13}C NMR (100MHz, $(\text{CD}_3)_2\text{SO}$) δ 153.6, 153.1, 144.2, 140.1, 139.6, 137.9, 134.1, 131.0, 129.4, 129.3, 129.2, 127.4, 127.0, 122.2, 120.1, 119.9, 113.3, 111.9, 111.7; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_2\text{Cl}$ ($M+1$) 355.1002, found 355.0999.

2-(4-bromophenyl)-4-phenyl- α -carboline (2k)



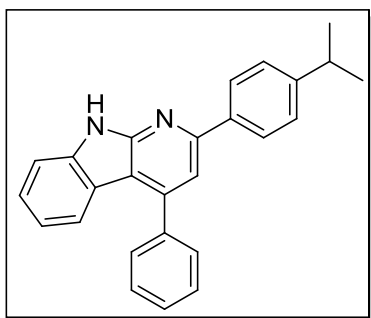
White solid, 80% yield; mp 287-288 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 12.11 (brs, 1H), 8.20 (d, J = 8.5 Hz, 2H), 7.78-7.76 (m, 2H), 7.70-7.68 (m, 2H), 7.65-7.59 (m, 3H), 7.53 (d, J = 8.8 Hz, 2H), 7.41 (t, J = 7.7 Hz, 1H); ^{13}C NMR (100MHz, $(\text{CD}_3)_2\text{SO}$) δ 152.4, 151.6, 145.1, 139.6, 138.4, 138.3, 131.5, 1288, 128.7, 128.7, 128.5, 126.5, 122.2, 121.7, 119.7, 119.2, 112.7, 111.6, 111.3; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_2\text{Br}$ ($M+1$) 399.0497, found 399.0498.

2-(4-nitrophenyl)-4-phenyl- α -carboline (2l)



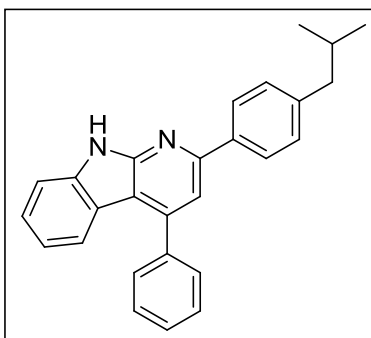
Yellow solid, 96% yield; mp 296-297 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 12.19 (brs, 1H), 8.49 (d, J = 8.9 Hz, 2H), 8.31 (d, J = 9.0 Hz, 2H), 7.81 (s, 1H), 7.78-7.75 (m, 2H), 7.66-7.58 (m, 3H), 7.55-7.53 (m, 2H), 7.43 (t, J = 8.9 Hz, 1H), 7.04 (t, J = 7.5 Hz, 1H); ^{13}C NMR (100MHz, $(\text{CD}_3)_2\text{SO}$) δ 152.9, 150.6, 147.8, 145.7, 145.6, 140.5, 138.7, 129.4, 129.3, 129.3, 129.1, 128.3, 127.6, 124.3, 122.5, 120.0, 119.9, 114.4, 113.1, 111.9; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_3\text{O}_2$ ($M+1$) 366.1243, found 366.1241.

2-(4-isopropylphenyl)-4-phenyl- α -carboline (2m)



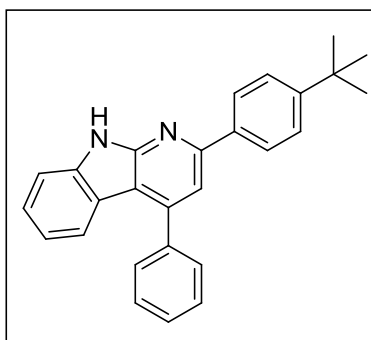
White solid, 52% yield; mp 272-273 °C; ^1H NMR (400 MHz, CDCl_3) δ 12.55 (brs, 1H), 8.18 (d, J = 8.0 Hz, 2H), 7.78 (d, J = 7.0 Hz, 2H), 7.63-7.54 (m, 5H), 7.44 (d, J = 8.1 Hz, 2H), 7.11 (t, J = 7.7 Hz, 1H), 6.96 (t, J = 7.6 Hz, 1H), 6.29 (d, J = 8.0 Hz, 1H), 3.05 (sep, J = 6.9 Hz, 1H), 1.37 (d, J = 6.9 Hz, 6H); ^{13}C NMR (100MHz, CDCl_3) δ 154.7, 153.7, 150.0, 146.4, 139.7, 139.6, 138.2, 128.9, 128.8, 128.2, 127.5, 126.3, 122.3, 120.7, 119.5, 114.4, 112.9, 111.7, 34.31, 24.3; HRMS (ESI) m/z calcd. For $\text{C}_{26}\text{H}_{23}\text{N}_2$ ($M+1$) 363.1861, found 363.1858.

2-(4-isobutylphenyl)-4-phenyl- α -carboline (2n)



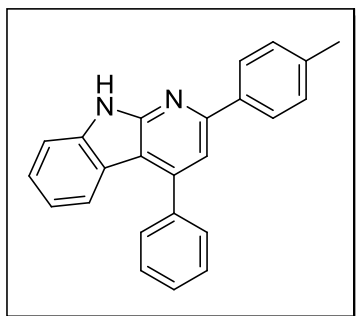
White solid, 61% yield; mp 241.5-242.2°C; ^1H NMR (400 MHz, CDCl_3) δ 11.47 (brs, 1H), 8.13 (d, J = 8.0 Hz, 2H), 7.75 (d, J = 7.0 Hz, 2H), 7.62-7.54 (m, 5H), 7.32 (d, J = 7.9 Hz, 2H), 7.17 (t, J = 7.5 Hz, 1H), 6.90 (t, J = 7.6 Hz, 1H), 6.70 (1H, d, J = 8.0 Hz, CH), 2.58 (2H, d, J = 7.1 Hz, 2H), 1.96 (n, J = 6.7 Hz, 1H), 0.98 (d, J = 6.5 Hz, 6H); ^{13}C NMR δ 154.6, 153.5, 146.3, 142.9, 139.5, 137.8, 130.1, 128.9, 128.8, 127.7, 126.4, 122.4, 120.8, 119.6, 114.4, 112.8, 111.6, 45.4, 30.5, 22.7; HRMS (ESI) m/z calcd. For $\text{C}_{27}\text{H}_{25}\text{N}_2$ ($M+1$) 377.2012, found 377.2018.

2-(4-(tert-butyl)phenyl)-4-phenyl- α -carboline (2o)



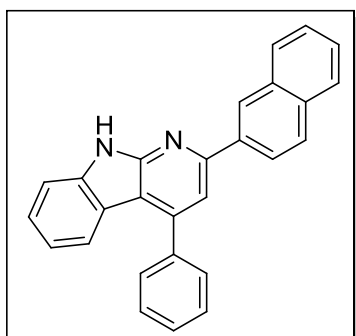
White solid, 60% yield; mp 237-238 °C; ^1H NMR (400 MHz, CDCl_3) δ 12.45 (brs, 1H), 8.18 (d, J = 8.4 Hz, 2H), 7.77 (d, J = 6.7 Hz, 2H), 7.63-7.56 (m, 7H), 7.10 (t, J = 7.6 Hz, 1H), 6.96 (t, J = 7.5 Hz, 1H), 6.30 (d, J = 8.1 Hz, 2H), 1.43 (s, 9H); ^{13}C NMR (100MHz, CDCl_3) δ 154.7, 153.6, 152.2, 146.3, 139.6, 139.6, 137.7, 128.9, 128.8, 127.9, 126.3, 122.3, 120.7, 119.5, 114.5, 112.9, 111.7, 34.9, 31.6; HRMS (ESI) m/z calcd. For $\text{C}_{27}\text{H}_{25}\text{N}_2$ ($M+1$) 377.2018, found 377.2021.

4-phenyl-2-(p-tolyl)- α -carboline (2p)



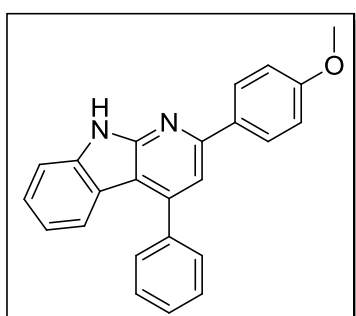
White solid, 60% yield; mp 252-254 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 12.05 (brs, 1H), 8.12 (d, $J = 8.2$ Hz, 2H), 7.77-7.75 (m, 2H), 7.65-7.56 (m, 4H), 7.54-7.51 (m, 2H), 7.39 (t, $J = 7.7$ Hz, 1H), 7.30 (d, $J = 8.2$ Hz, 2H), 7.02 (t, $J = 7.5$ Hz, 1H), 2.36 (s, 3H); ^{13}C NMR (100MHz, $(\text{CD}_3)_2\text{SO}$) δ 153.6, 153.1, 145.5, 139.9, 139.2, 138.7, 136.9, 129.8, 129.3, 129.2, 129.1, 127.2, 126.8, 122.1, 120.4, 119.7, 113.0, 111.8, 111.6, 21.1; HRMS (ESI) m/z calcd. For $\text{C}_{24}\text{H}_{19}\text{N}_2$ ($M+1$) 335.1548, found 355.1548.

2-(naphthalen-2-yl)-4-phenyl- α -carboline (2q)



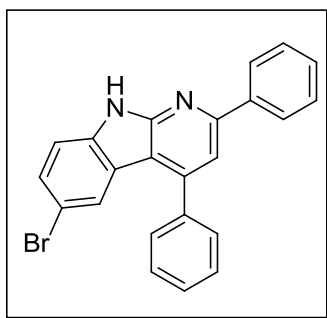
White solid, 73% yield; mp 276-277 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 12.14 (brs, 1H), 8.22 (s, 1H), 8.45 (dd, $J = 8.6, 1.6$ Hz, 1H), 8.08-8.04 (m, 2H), 7.97-7.95 (m, 1H), 7.87 (s, 1H), 7.83-7.81 (m, 2H), 7.68-7.53 (m, 7H), 7.42 (t, $J = 7.7$ Hz, 1H), 7.05 (t, $J = 7.6$ Hz, 1H); ^{13}C NMR (100MHz, $(\text{CD}_3)_2\text{SO}$) δ 153.3, 153.2, 145.7, 140.1, 139.2, 137.1, 133.7, 133.6, 129.3, 129.3, 129.1, 129.1, 128.6, 128.0, 127.0, 127.0, 126.9, 126.5, 125.2, 122.2, 120.4, 119.8, 113.7, 112.0, 111.9; HRMS (ESI) m/z calcd. For $\text{C}_{27}\text{H}_{19}\text{N}_2$ ($M+1$) 371.1548, found 371.1548.

2-(4-methoxyphenyl)-4-phenyl- α -carboline (2r)



White solid, 54% yield; mp 236-237 °C; ^1H NMR (400 MHz, CDCl_3) δ 11.63 (brs, 1H), 8.18 (d, $J = 8.8$ Hz, 2H), 7.78-7.75 (m, 2H), 7.62-7.54 (m, 5H), 7.23-7.19 (m, 1H), 7.07 (d, $J = 8.8$ Hz, 2H), 6.99 (t, $J = 7.2$ Hz, 1H), 6.72 (d, $J = 8.1$ Hz, 2H), 3.89 (s, 3H); ^{13}C NMR (100MHz, CDCl_3) δ 160.7, 154.4, 153.4, 146.3, 139.6, 139.4, 133.0, 129.1, 128.9, 128.8, 126.4, 122.5, 121.1, 119.8, 114.7, 114.0, 112.5, 111.5, 55.7; HRMS (ESI) m/z calcd. For $\text{C}_{24}\text{H}_{19}\text{N}_2\text{O}$ ($M+1$) 351.1497, found 351.1497.

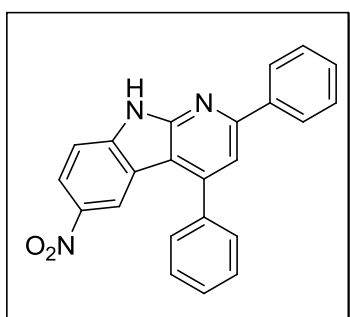
6-bromo-2,4-diphenyl- α -carboline (2s)



White solid, 82% yield; mp 259-260 °C; ^1H NMR (400 MHz, $(\text{CD}_3)_2\text{SO}$) δ 12.28 (brs, 1H), 8.24 (d, $J = 7.3$ Hz, 2H), 7.77 (d, $J = 6.7$ Hz, 2H), 7.70-7.59 (m, 5H), 7.55-7.43 (m, 5H); ^{13}C NMR (100MHz, $(\text{CD}_3)_2\text{SO}$) δ 154.5, 153.2, 146.1, 139.5, 138.7, 138.7, 129.5, 129.5, 129.4, 129.4, 129.2, 129.0, 127.5, 124.3, 122.2, 113.9, 113.7, 111.6, 110.9;

HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_2\text{Br}$ ($M+1$) 399.0497, found 399.0497.

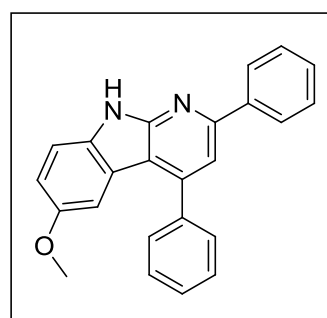
6-nitro-2,4-diphenyl- α -carboline (2t)



Pale yellow solid, 77% yield; mp 272-273 °C; ^1H NMR (400 MHz, CDCl_3) δ 12.78 (brs, 1H), 8.60 (d, $J = 2.1$ Hz, 1H), 8.22-8.20 (m, 2H), 8.06 (dd, $J = 9.0, 2.2$ Hz, 1H), 7.78-7.76 (m, 2H), 7.69-7.59 (m, 7H), 6.28 (d, $J = 9.0$ Hz, 1H); ^{13}C NMR (100MHz, CDCl_3) δ 156.4, 154.6, 147.9, 143.0, 141.4, 139.8, 137.9, 129.9, 129.8, 129.7, 129.5, 128.6, 128.3,

122.3, 120.4, 119.2, 116.2, 113.3, 111.3; HRMS (ESI) m/z calcd. For $\text{C}_{23}\text{H}_{16}\text{N}_3\text{O}_2$ ($M+1$) 366.1243, found 366.1241.

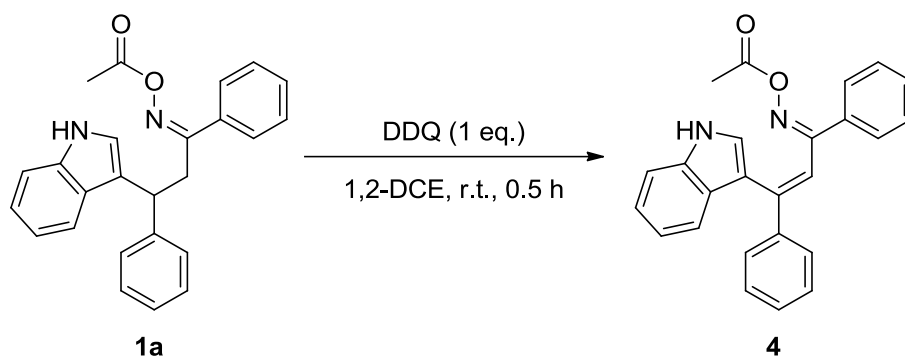
6-methoxy-2,4-diphenyl- α -carboline (2u)



White solid, 65% yield; mp 201-202 °C; ^1H NMR (400 MHz, CDCl_3) δ 12.06 (brs, 1H), 8.24 (d, $J = 7.1$ Hz, 2H), 7.77 (d, $J = 7.0$ Hz, 2H), 7.62-7.49 (m, 7H), 7.11 (d, $J = 2.3$ Hz, 1H), 6.83 (dd, $J = 8.8, 2.5$ Hz, 1H), 6.37 (d, $J = 8.8$ Hz, 1H), 3.66 (s, 3H); ^{13}C NMR (100MHz, CDCl_3) δ 154.4, 153.9, 153.6, 146.4, 140.4, 139.3, 134.5, 129.3, 128.9, 128.9, 128.9,

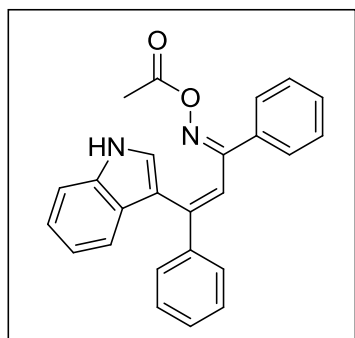
128.9, 128.3, 121.1, 115.4, 114.1, 113.1, 112.2, 105.7, 55.8; HRMS (ESI) m/z calcd. For $\text{C}_{24}\text{H}_{19}\text{N}_2\text{O}$ ($M+1$) 351.1497, found 351.1500.

Synthesis of alkenyl oxime ester 4



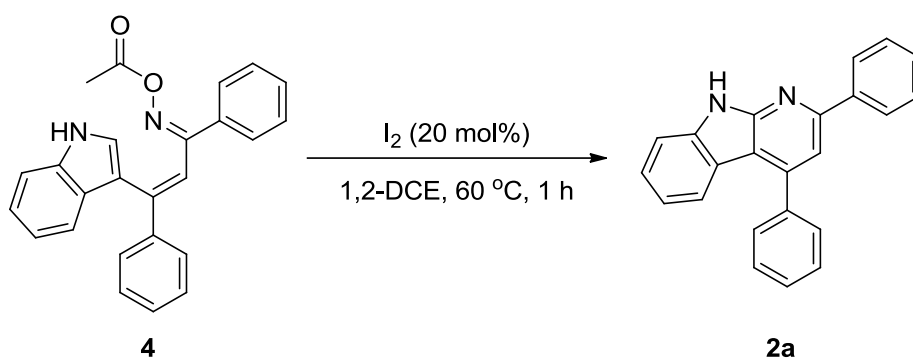
A mixture of indolyloxime ester **1a** (1 mmol) and 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone (DDQ, 0.227g, 1 eq.) in 1,2-dichloroethane (1,2-DCE, 10 mL) was stirred at ambient temperature for 30 min. After completion of reaction, the mixture was diluted with CH₂Cl₂ (20 mL). The organic layer was washed with aq. 1M NaOH (10 mL) for two times. The combined water layer was extracted with CH₂Cl₂ (20 mL) for three times. The combined organic layer was dried over MgSO₄ and concentrated under reduced pressure. The residue was purified by recrystallation from CH₂Cl₂/hexane as solvent to afford alkenyl oxime ester **4**.

(1Z,2Z)-3-(1H-indol-3-yl)-1,3-diphenylprop-2-en-1-one O-acetyl oxime (**4**)



Brown solid, 90% yield; two isomers 10:1; mp 106-108 °C; ¹H NMR (400 MHz, CDCl₃) δ 8.64 (brs, 1H), 7.78 (d, *J* = 7.9 Hz, 1H), 7.49 (d, *J* = 7.2 Hz, 2H), 7.44 (d, *J* = 7.9 Hz, 1H), 7.28-7.26 (m, 1H), 7.22 (t, *J* = 7.5 Hz, 2H), 7.17-7.03 (m, 9H), 6.96 (d, *J* = 2.7 Hz, 1H), 2.17 (s, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 169.3, 164.1, 146.7, 140.2, 137.2, 134.6, 130.1, 129.8, 128.9, 128.5, 127.9, 127.9, 127.6, 125.9, 123.1, 121.2, 120.7, 118.8, 114.9, 112.1, 77.5; HRMS (ESI) *m/z* calcd. For C₂₅H₂₀N₂O₂Na (M+23) 403.1422, found 403.1423.

Control experiment of α -carboline

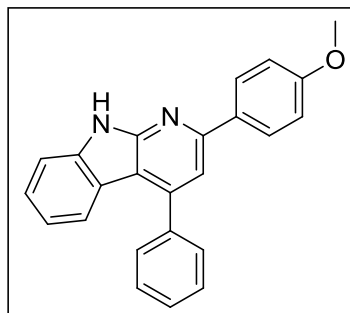
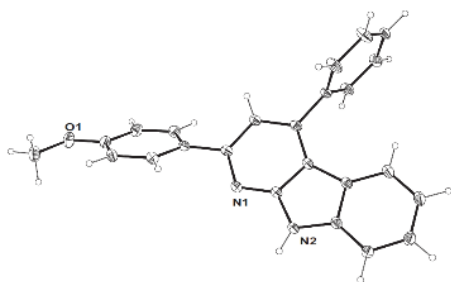


General procedure:

A mixture of alkenyl oxime ester **4** (0.5 mmol) and iodine (0.025g, 20 mol%) in 1,2-DCE (5 mL) was heated to 60 °C for 1 h. After completion of the reaction, the mixture was allowed to cool to ambient temperature and diluted with ethyl acetate (25 mL). The organic layer was washed with aq. $Na_2S_2O_3$ (5 mL) and aq. $NaHCO_3$ (5 mL) for two times. The organic layer was dried over $MgSO_4$ and concentrated under reduced pressure to afford α -carboline **2a** in 65% yield which were determined from crude 1H NMR spectrum with dibromomethane 10(μ L) as internal standard.

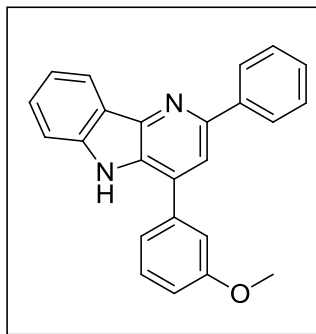
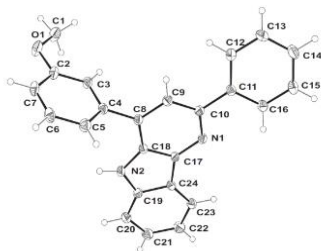
X-ray data of carbolines 2r/3g and intermediate 4

Table S4. Crystal data and structure refinement for **2r** (CCDC number: 1515102)



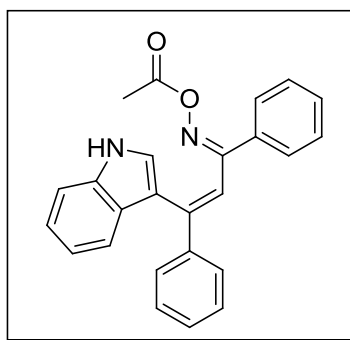
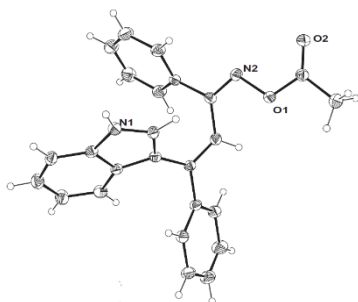
Identification code	d18452	
Empirical formula	C ₂₄ H ₁₈ N ₂ O	
Formula weight	350.40	
Temperature	200(2) K	
Wavelength	0.71073 Å	
Crystal system	Triclinic	
Space group	P -1	
Unit cell dimensions	a = 9.4800(12) Å	α = 88.685(4)°.
	b = 13.2295(16) Å	β = 73.346(4)°.
	c = 15.0067(19) Å	γ = 86.478(4)°.
Volume	1799.7(4) Å ³	
Z	4	
Density (calculated)	1.293 Mg/m ³	
Absorption coefficient	0.080 mm ⁻¹	
F(000)	736	
Crystal size	0.47 x 0.25 x 0.06 mm ³	
Theta range for data collection	2.25 to 25.03°.	
Index ranges	-11 ≤ h ≤ 11, -15 ≤ k ≤ 15, -17 ≤ l ≤ 17	
Reflections collected	62260	
Independent reflections	6332 [R(int) = 0.0483]	
Completeness to theta = 25.03°	99.5 %	
Absorption correction	multi-scan	
Max. and min. transmission	0.9952 and 0.9635	
Refinement method	Full-matrix least-squares on F ²	
Data / restraints / parameters	6332 / 0 / 489	
Goodness-of-fit on F ²	1.084	
Final R indices [I > 2σ(I)]	R1 = 0.0374, wR2 = 0.0892	
R indices (all data)	R1 = 0.0530, wR2 = 0.1040	
Largest diff. peak and hole	0.169 and -0.190 e.Å ⁻³	

Table S5. Crystal data and structure refinement for **3g** (CCDC number: 1515101)



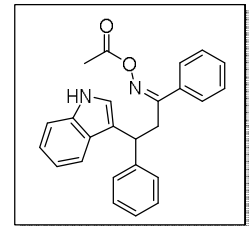
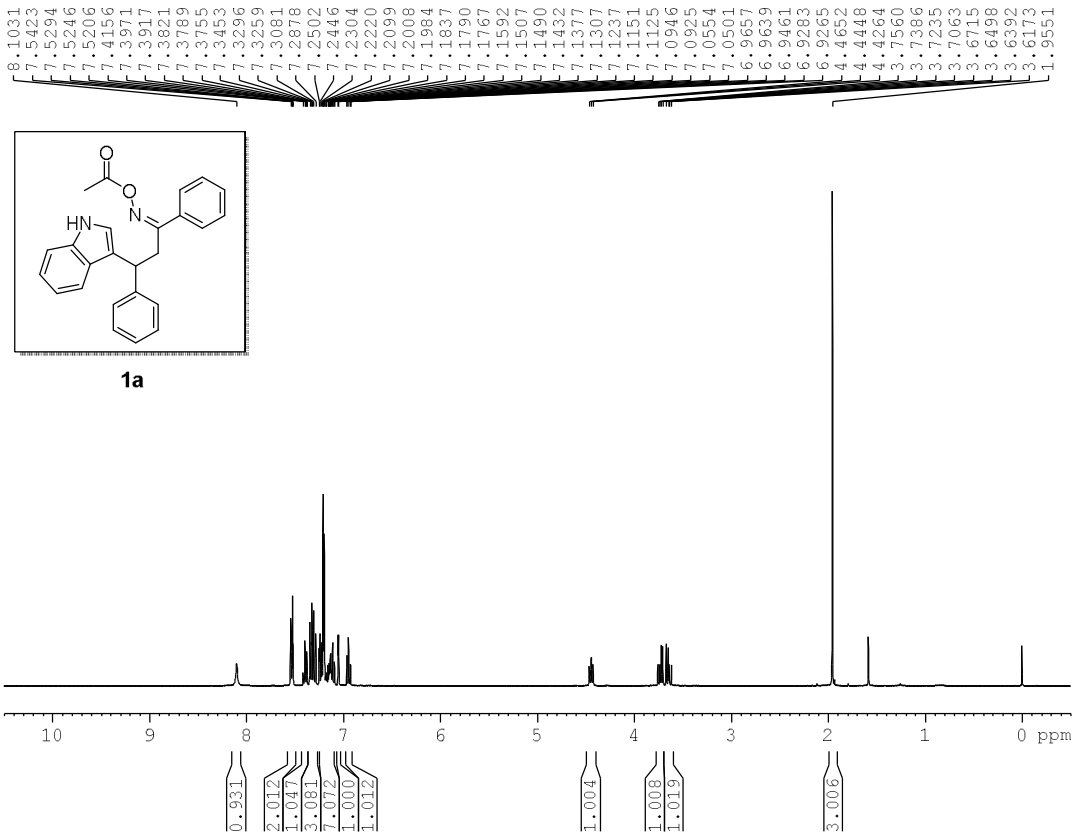
Identification code	ch15606a	
Empirical formula	C ₂₄ H ₁₈ N ₂ O	
Formula weight	350.40	
Temperature	200(2) K	
Wavelength	0.71073 Å	
Crystal system	Monoclinic	
Space group	P 21/n	
Unit cell dimensions	a = 13.365(2) Å	α = 90°.
	b = 17.037(3) Å	β = 98.932(3)°.
	c = 16.781(3) Å	γ = 90°.
Volume	3774.6(10) Å ³	
Z	8	
Density (calculated)	1.233 Mg/m ³	
Absorption coefficient	0.076 mm ⁻¹	
F(000)	1472	
Crystal size	0.34 x 0.26 x 0.21 mm ³	
Theta range for data collection	1.71 to 25.09°.	
Index ranges	-15 ≤ h ≤ 15, -20 ≤ k ≤ 19, -19 ≤ l ≤ 19	
Reflections collected	23348	
Independent reflections	6606 [R(int) = 0.0456]	
Completeness to theta = 25.09°	98.6 %	
Absorption correction	multi-scan	
Max. and min. transmission	0.9842 and 0.9746	
Refinement method	Full-matrix least-squares on F ²	
Data / restraints / parameters	6606 / 0 / 487	
Goodness-of-fit on F ²	1.058	
Final R indices [I > 2σ(I)]	R1 = 0.0505, wR2 = 0.1344	
R indices (all data)	R1 = 0.0789, wR2 = 0.1512	
Largest diff. peak and hole	0.368 and -0.379 e.Å ⁻³	

Table S6. Crystal data and structure refinement for **4** (CCDC number: 1515742)



Identification code	ch18179	
Empirical formula	C ₂₅ H ₂₀ ClO N ₂ O ₂	
Formula weight	380.43	
Temperature	200(2) K	
Wavelength	0.71073 Å	
Crystal system	Triclinic	
Space group	P -1	
Unit cell dimensions	a = 8.2571(7) Å	α = 66.416(5)°.
	b = 16.8590(15) Å	β = 86.395(5)°.
	c = 17.1654(15) Å	γ = 89.790(5)°.
Volume	2185.0(3) Å ³	
Z	4	
Density (calculated)	1.156 Mg/m ³	
Absorption coefficient	0.074 mm ⁻¹	
F(000)	800	
Crystal size	0.39 x 0.35 x 0.11 mm ³	
Theta range for data collection	1.32 to 25.46°.	
Index ranges	-9 ≤ h ≤ 9, -20 ≤ k ≤ 19, -20 ≤ l ≤ 18	
Reflections collected	19218	
Independent reflections	7965 [R(int) = 0.0512]	
Completeness to theta = 25.46°	98.4 %	
Absorption correction	multi-scan	
Max. and min. transmission	0.9919 and 0.9717	
Refinement method	Full-matrix least-squares on F ²	
Data / restraints / parameters	7965 / 0 / 523	
Goodness-of-fit on F ²	1.064	
Final R indices [I > 2σ(I)]	R1 = 0.0921, wR2 = 0.2654	
R indices (all data)	R1 = 0.1235, wR2 = 0.2855	
Largest diff. peak and hole	0.495 and -0.379 e.Å ⁻³	

(Z)-3-(1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime



1a

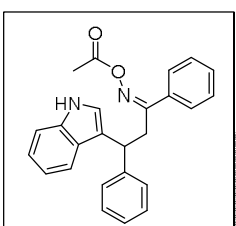
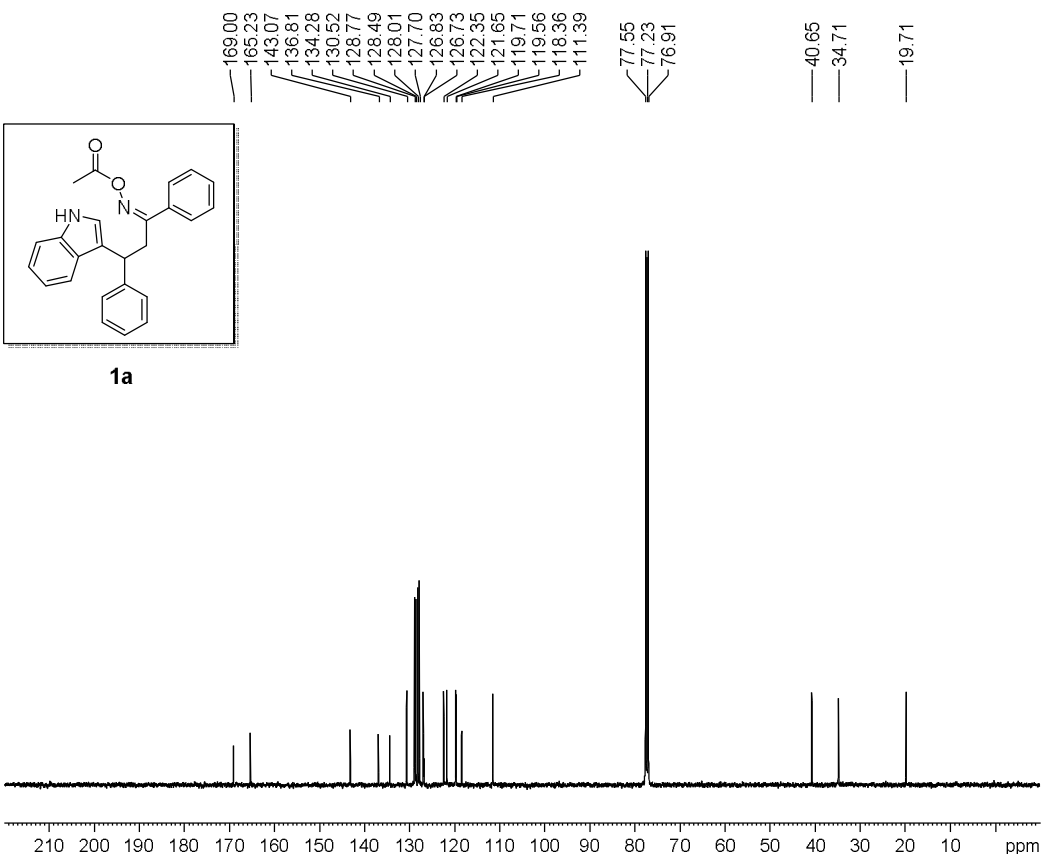
Current Data Parameters
 NAME 20161224
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161224
 Time 19.17
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 39.72
 DW 69.333 usec
 DE 10.50 usec
 TE 298.0 K
 D1 2.00000000 sec
 TDO

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.90 usec
 PLW1 15.00000000 W

F2 - Processing parameters
 SI 16384
 SF 400.1300160 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime



1a

Current Data Parameters
 NAME 20161224
 EXPNO 2
 PROCNO 1

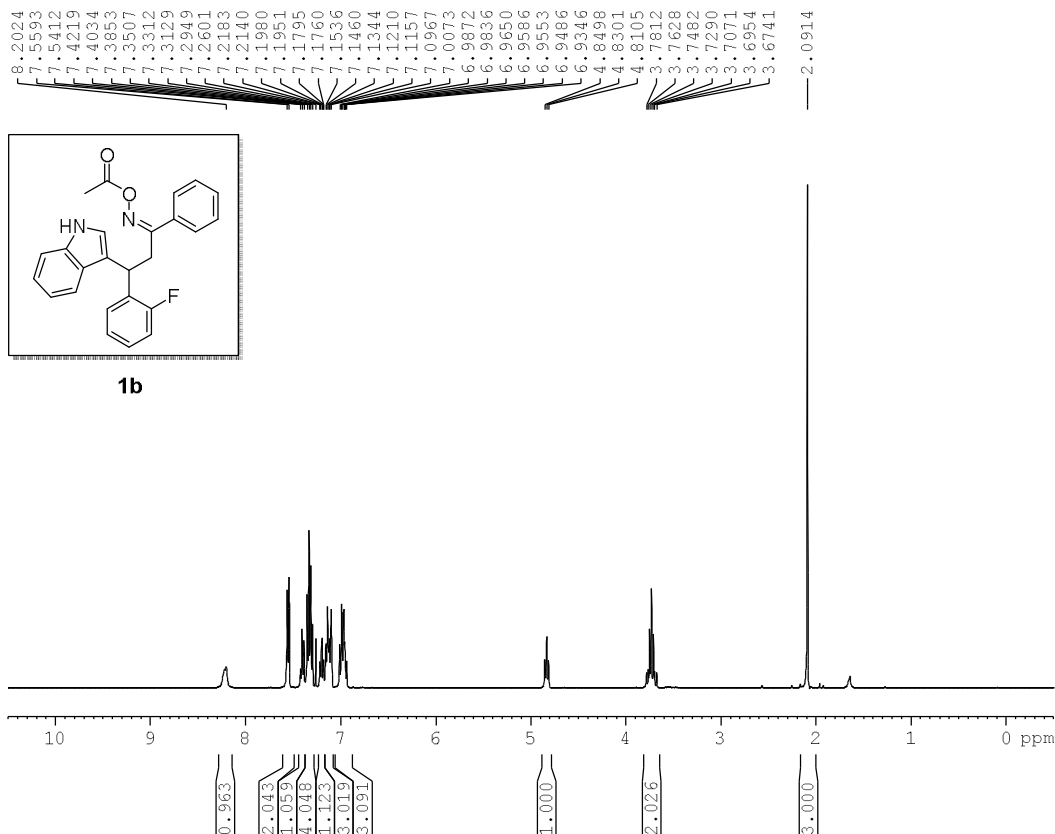
F2 - Acquisition Parameters
 Date_ 20161224
 Time 19.19
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1037
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.5 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6228298 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 47.50000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.33750001 W
 PLW13 0.27338001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127500 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

(Z)-3-(2-fluorophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime



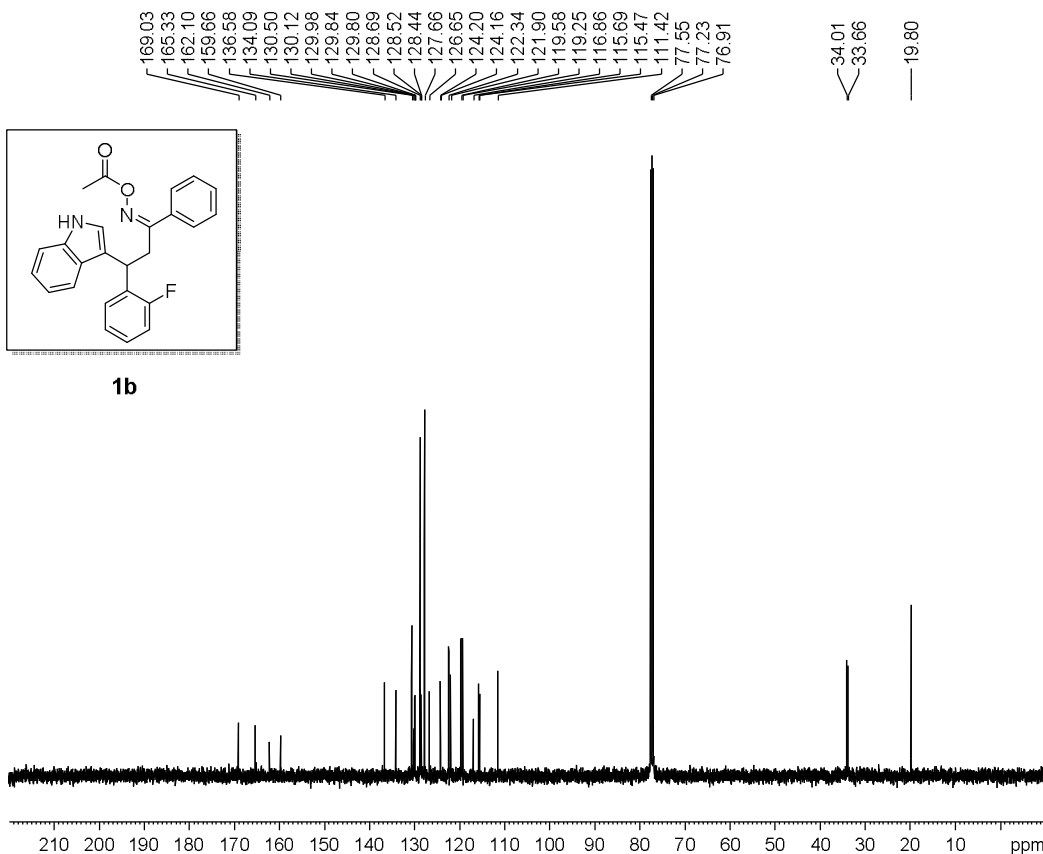
Current Data Parameters
 NAME B(2-F chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140303
 Time 20.19
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 295.7 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300091 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(2-fluorophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME B(2-F chalcone)
 EXPNO 513
 PROCNO 1

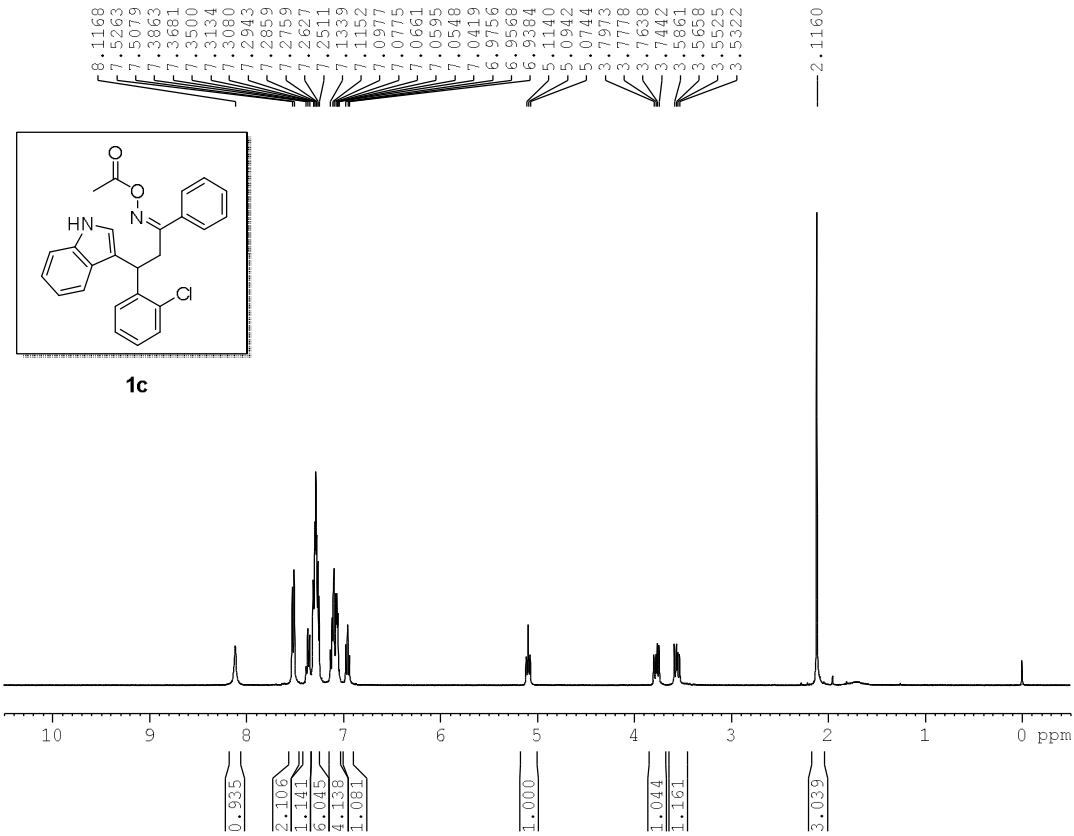
F2 - Acquisition Parameters
 Date_ 20140303
 Time 20.23
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 246
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 296.0 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

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

(Z)-3-(2-chlorophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime



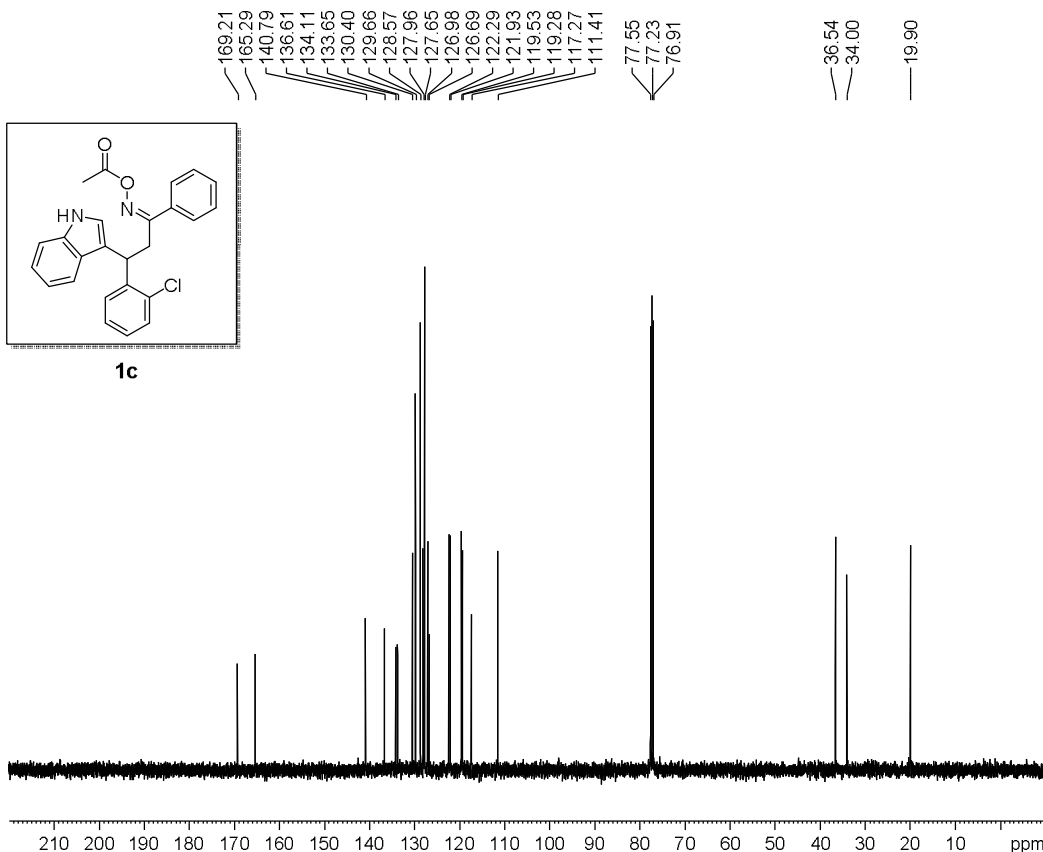
Current Data Parameters
NAME 20161227
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20161227
Time 16:05
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 298.7 K
D1 2.0000000 sec
TD0

===== CHANNEL f1 =====
NUC1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16584
SF 400.1300130 MHz
EM
WDW 0
SSB 0
LB 0 Hz
GB 0
PC 1.00

(Z)-3-(2-chlorophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
NAME C(2-Cl chalcone)
EXPNO 513
PROCNO 1

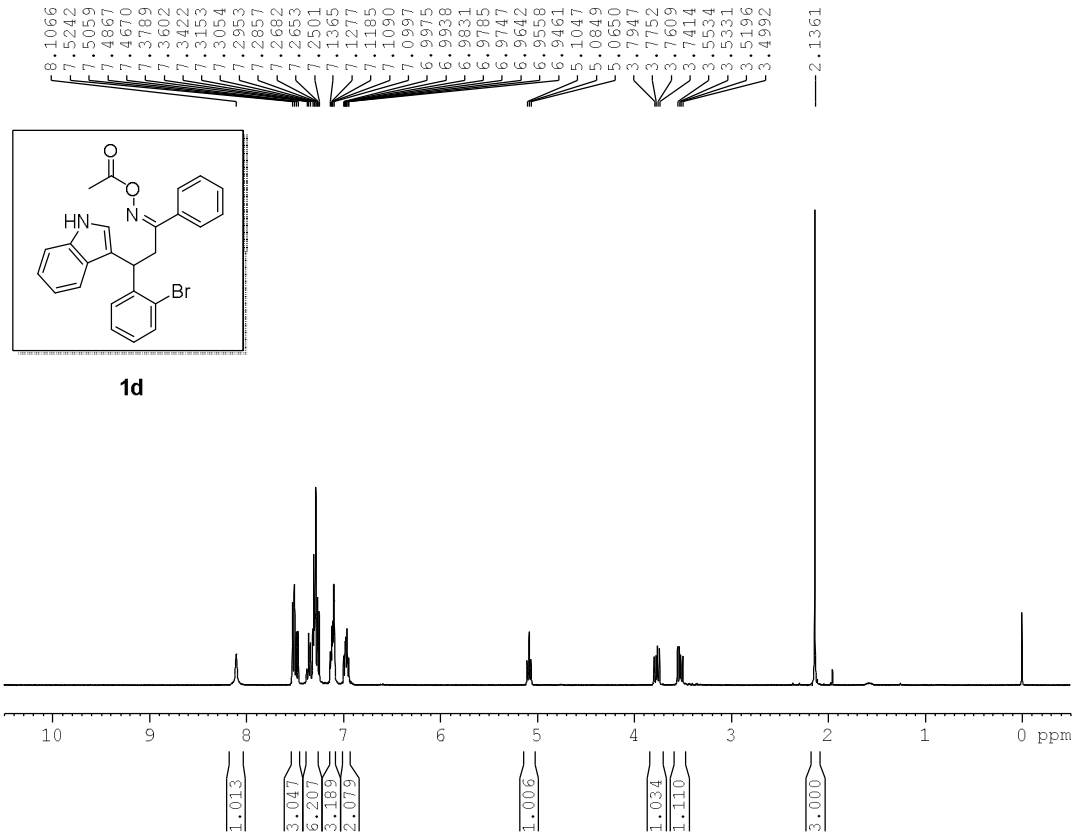
F2 - Acquisition Parameters
Date_ 20130208
Time 19:01
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 100
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 2048
DW 20.800 usec
DE 6.50 usec
TE 301.0 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.40 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 3.00 dB
PL12 23.70 dB
PL13 23.70 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127579 MHz
EM
WDW 0
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

(Z)-3-(2-bromophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime



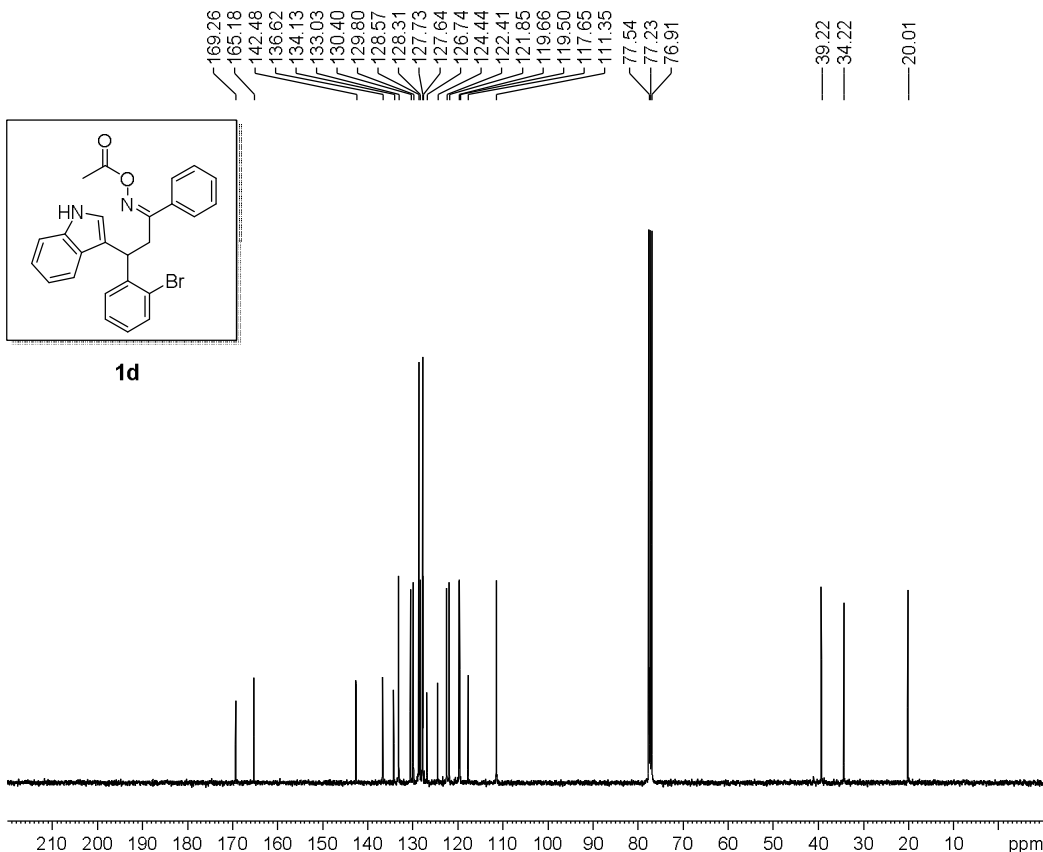
Current Data Parameters
 NAME 20161223
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161223
 Time 19.37
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.6 K
 D1 2.0000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16584
 SF 400.1300133 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(2-bromophenyl)-3-(1H-indol-3-yl)-1-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME D(2-Br chalcone)
 EXPNO 513
 PROCNO 1

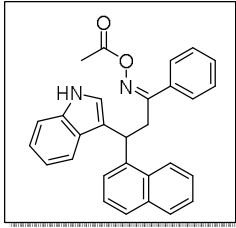
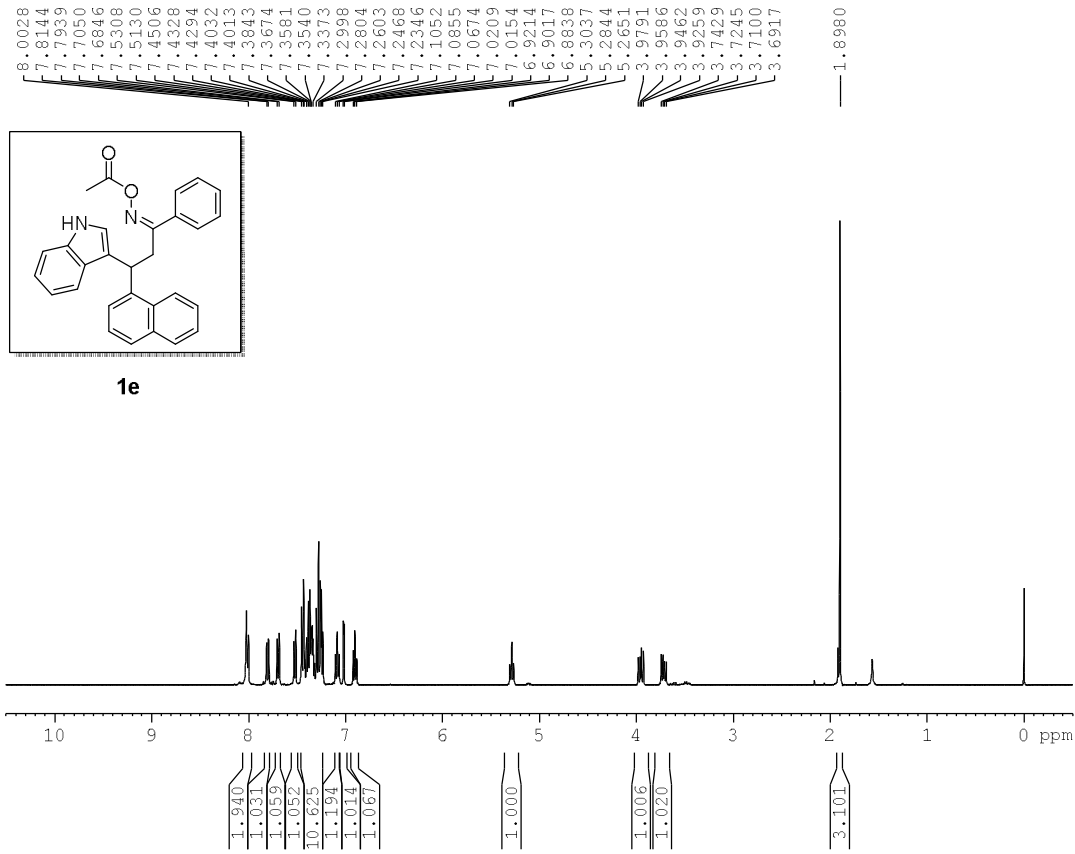
F2 - Acquisition Parameters
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 Time 19.16
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.1 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6233324 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127526 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-3-(naphthalen-1-yl)-1-phenylpropan-1-one O-acetyl oxim



1e

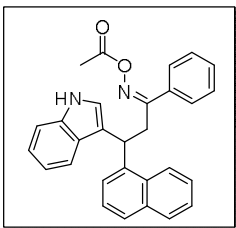
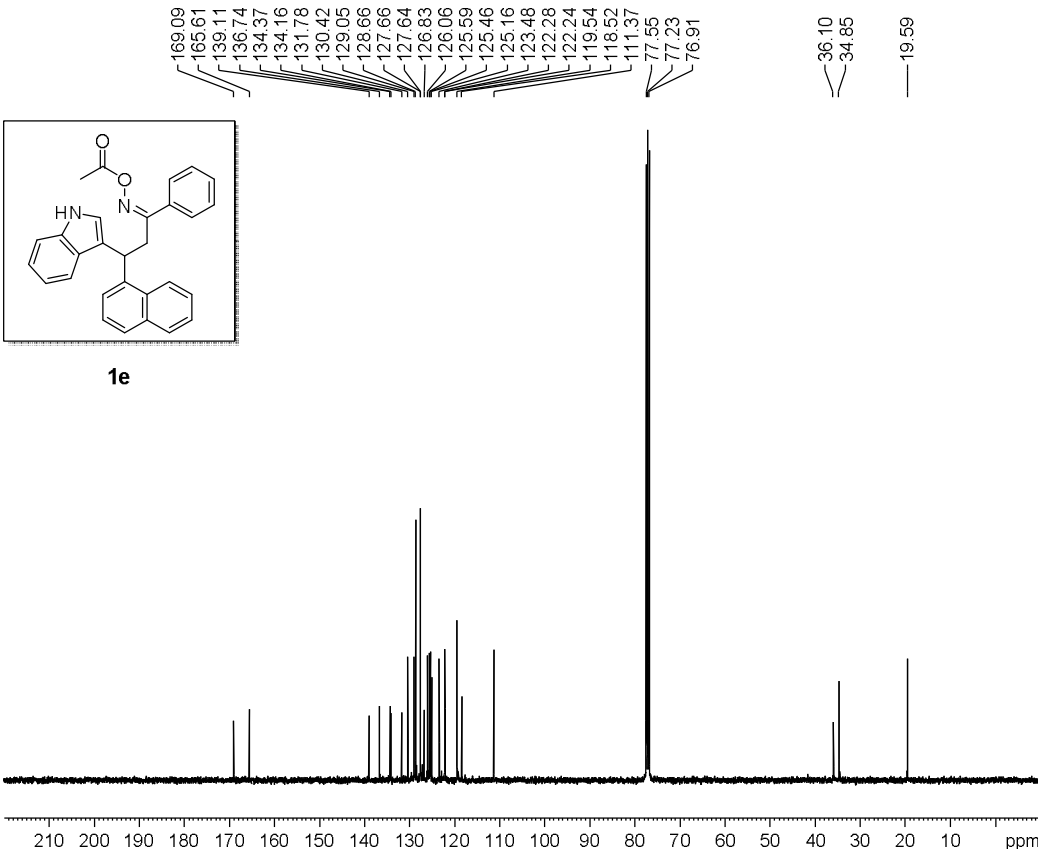
Current Data Parameters
 NAME 20161224
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161224
 Time 18.26
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.7 K
 D1 2.00000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300144 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-3-(naphthalen-1-yl)-1-phenylpropan-1-one O-acetyl oxim



1e

Current Data Parameters
 NAME E(1-naphthyl chalcone)
 EXPNO 513
 PROCNO 1

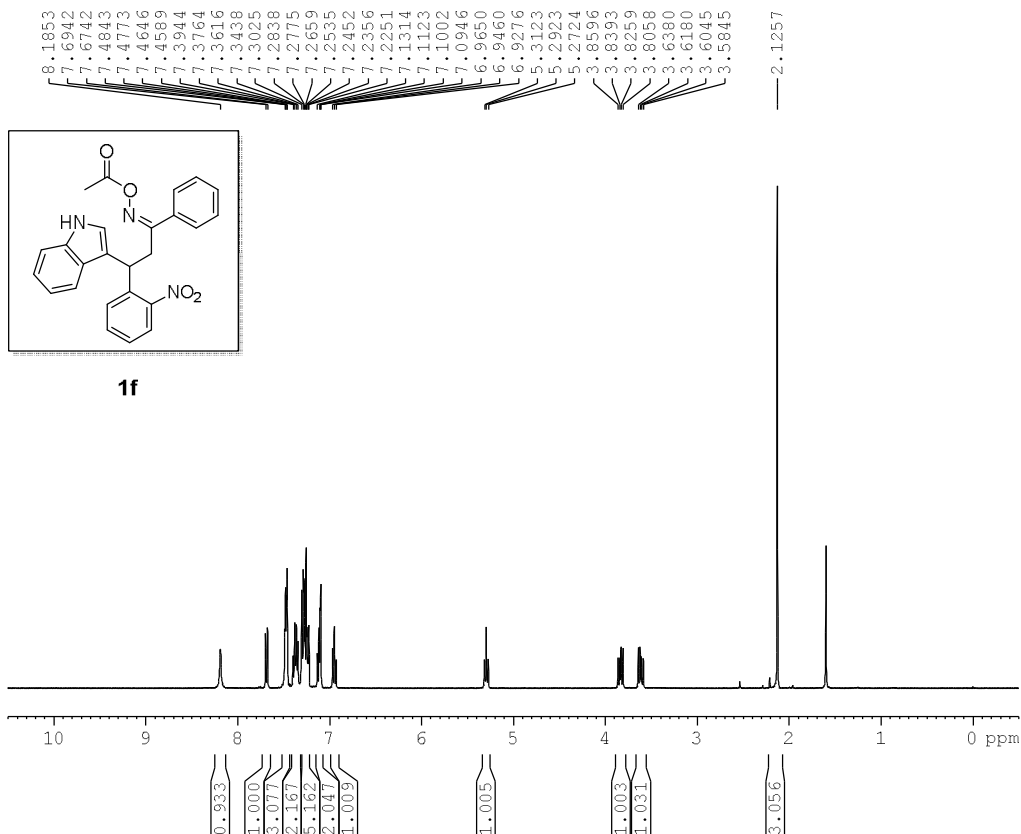
F2 - Acquisition Parameters
 Date_ 20140331
 Time 2.12
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1500
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 300.4 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-3-(2-nitrophenyl)-1-phenylpropan-1-one O-acetyl oxime



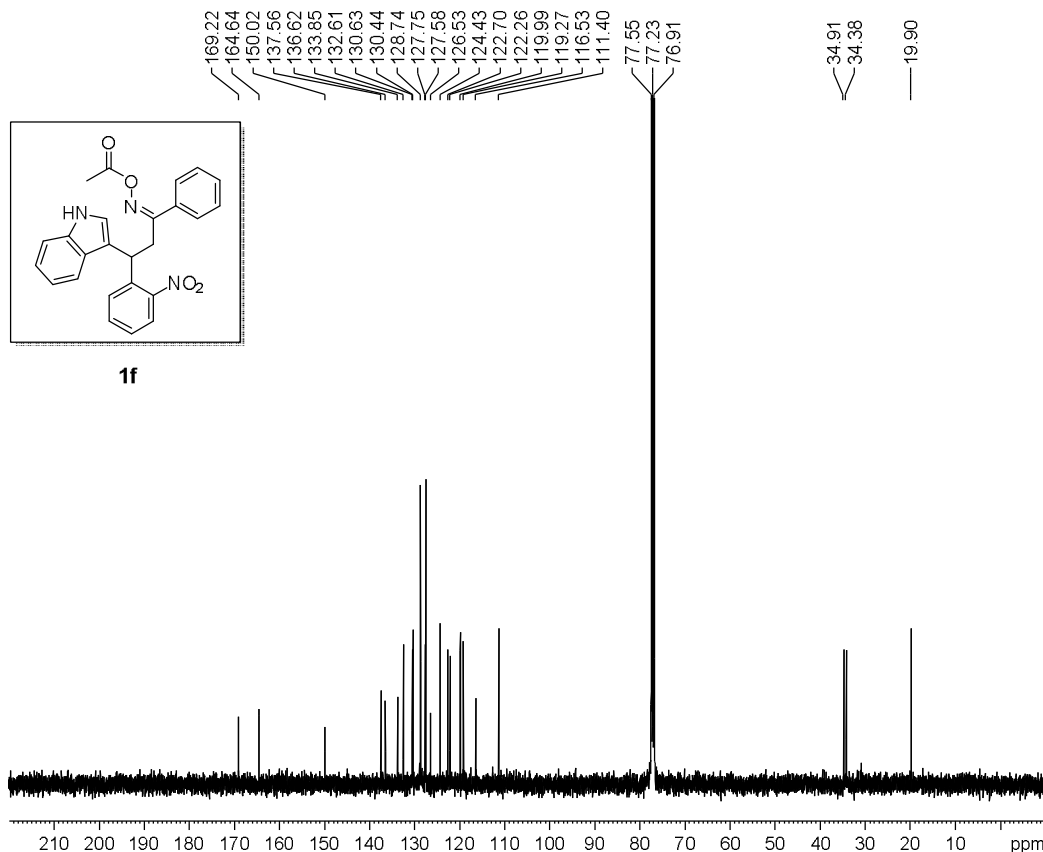
Current Data Parameters
 NAME F(2-NO2 chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140328
 Time 17.41
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 181
 DW 69.000 usec
 DE 6.50 usec
 TE 297.9 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-3-(2-nitrophenyl)-1-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME F(2-NO2 chalcone)
 EXPNO 513
 PROCNO 1

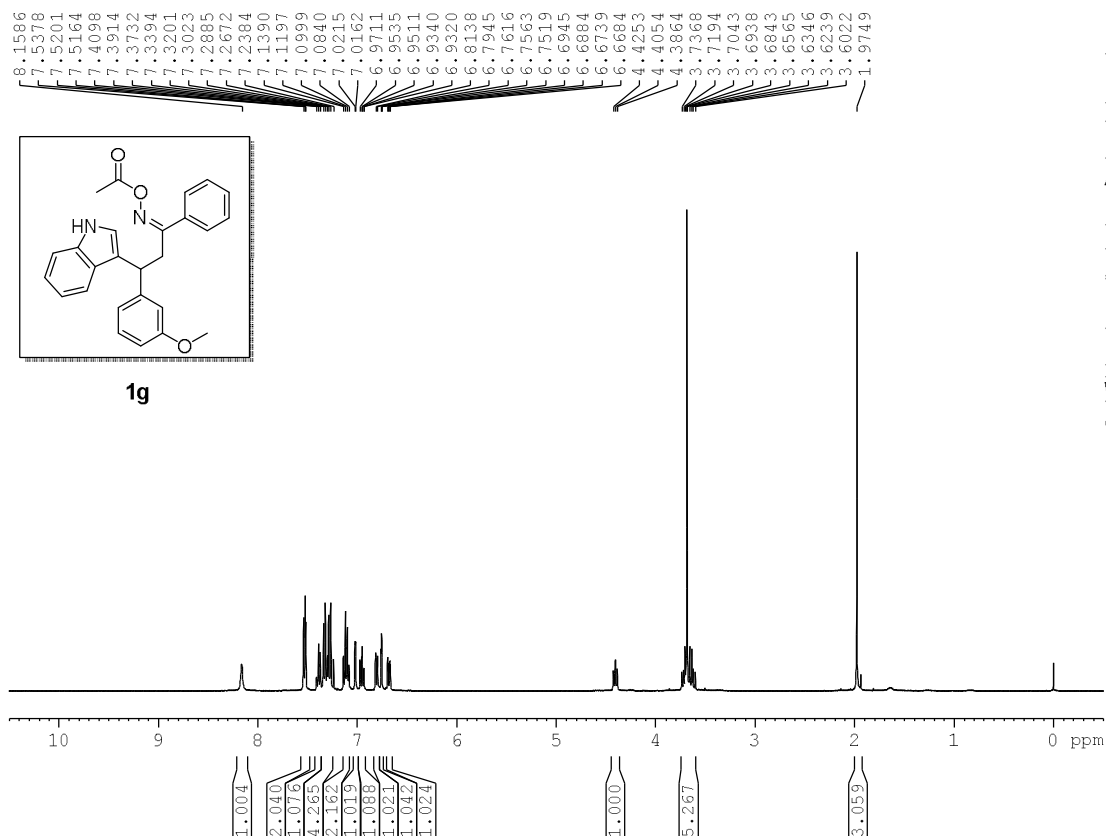
F2 - Acquisition Parameters
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 Time 21.06
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1941
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 32768
 DW 20.900 usec
 DE 6.50 usec
 TE 300.7 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-3-(3-methoxyphenyl)-1-phenylpropan-1-one O-acetyl oxime



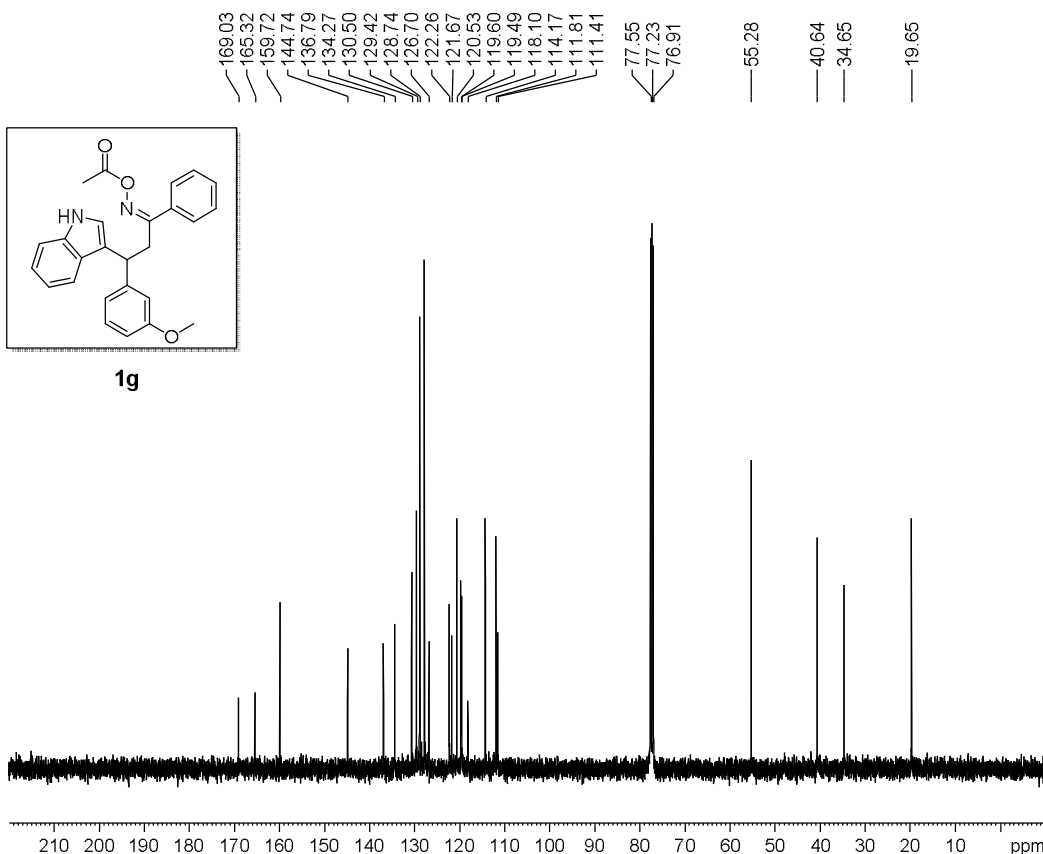
Current Data Parameters
 NAME 20161226
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161228
 Time 16.50
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.4 K
 D1 2.0000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16584
 SF 400.1300179 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-3-(3-methoxyphenyl)-1-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME G(3-OMe chalcone)
 EXPNO 513
 PROCNO 1

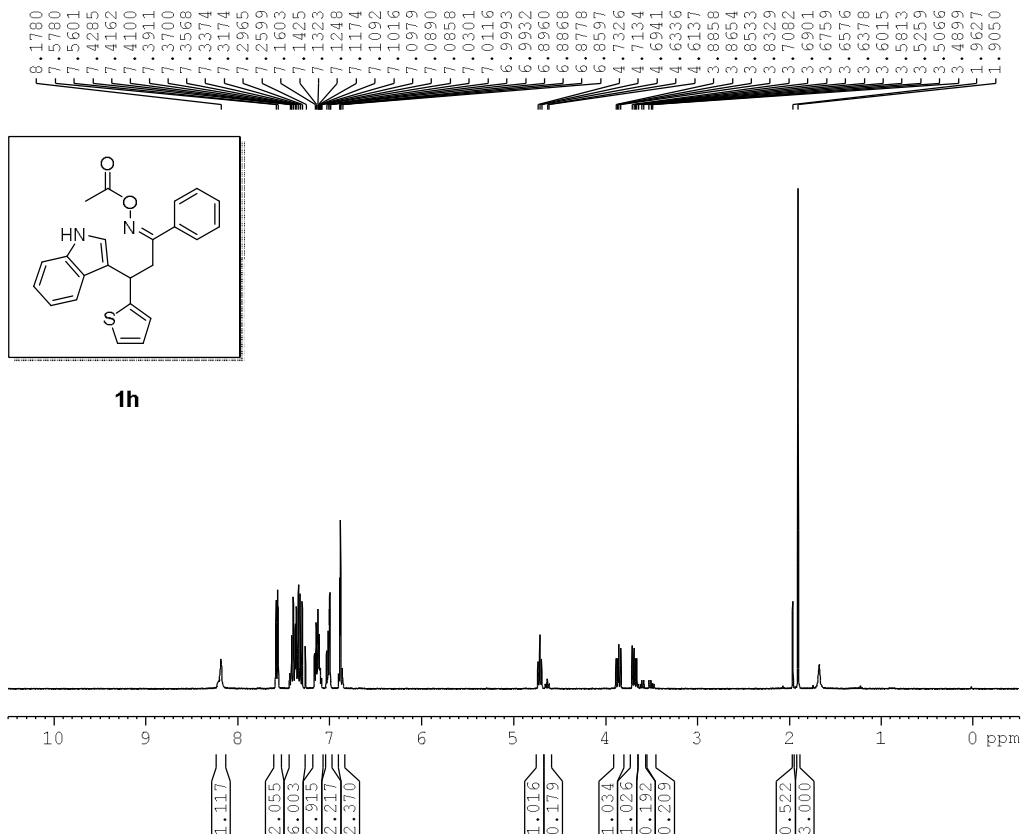
F2 - Acquisition Parameters
 Date_ 20140328
 Time 13.38
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 393
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 299.9 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127536 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-phenyl-3-(thiophen-2-yl)propan-1-one O-acetyl oxime

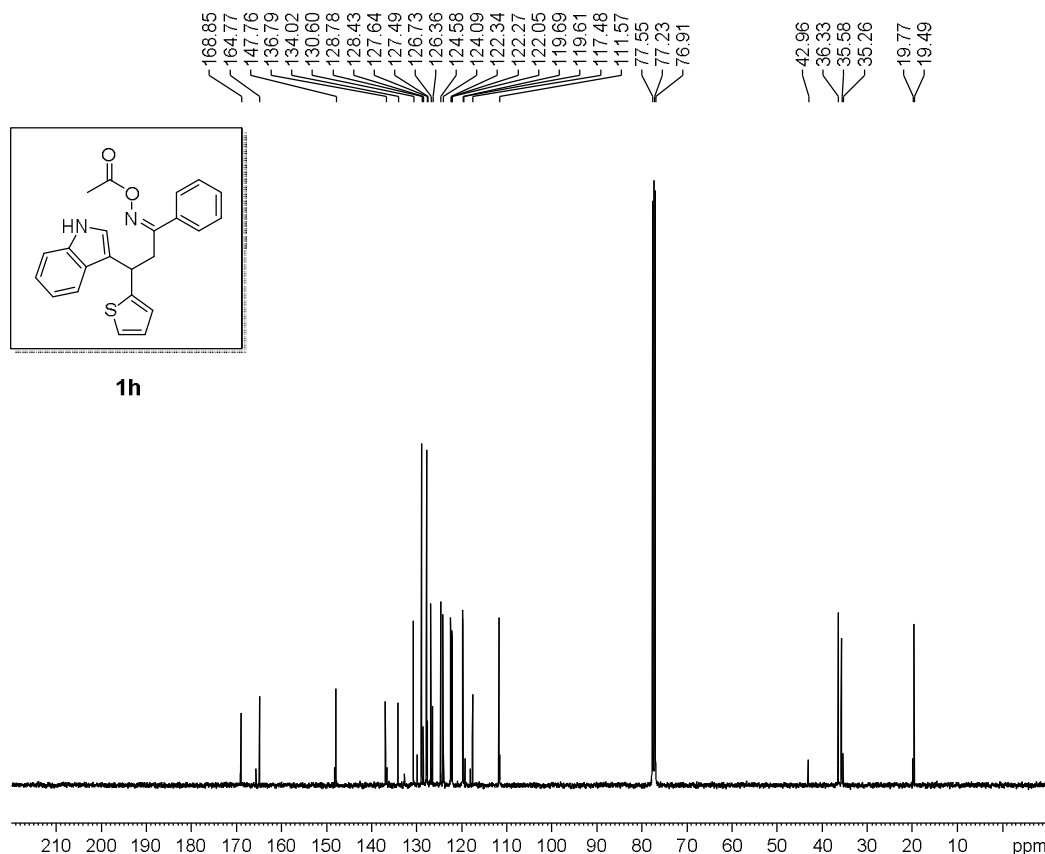


Current Data Parameters
NAME l(2-thiophene chalcone)
EXPNO 51
PROCNO 1

F2 - Acquisition Parameters
Date_ 20161024
Time 17.59
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7211.539 Hz
FIDRES 0.220079 Hz
AQ 2.2719147 sec
RG 4.01
DW 69.333 usec
DE 10.50 usec
TE 298.1 K
D1 2.0000000 sec
TD0 1

==== CHANNEL f1 =====
SFO1 400.1324008 MHz
NUC1 1H
P1 12.90 usec
PLW1 15.00000000 W
F2 - Processing parameters
SI 16384
SF 400.1300101 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00

(Z)-3-(1H-indol-3-yl)-1-phenyl-3-(thiophen-2-yl)propan-1-one O-acetyl oxime



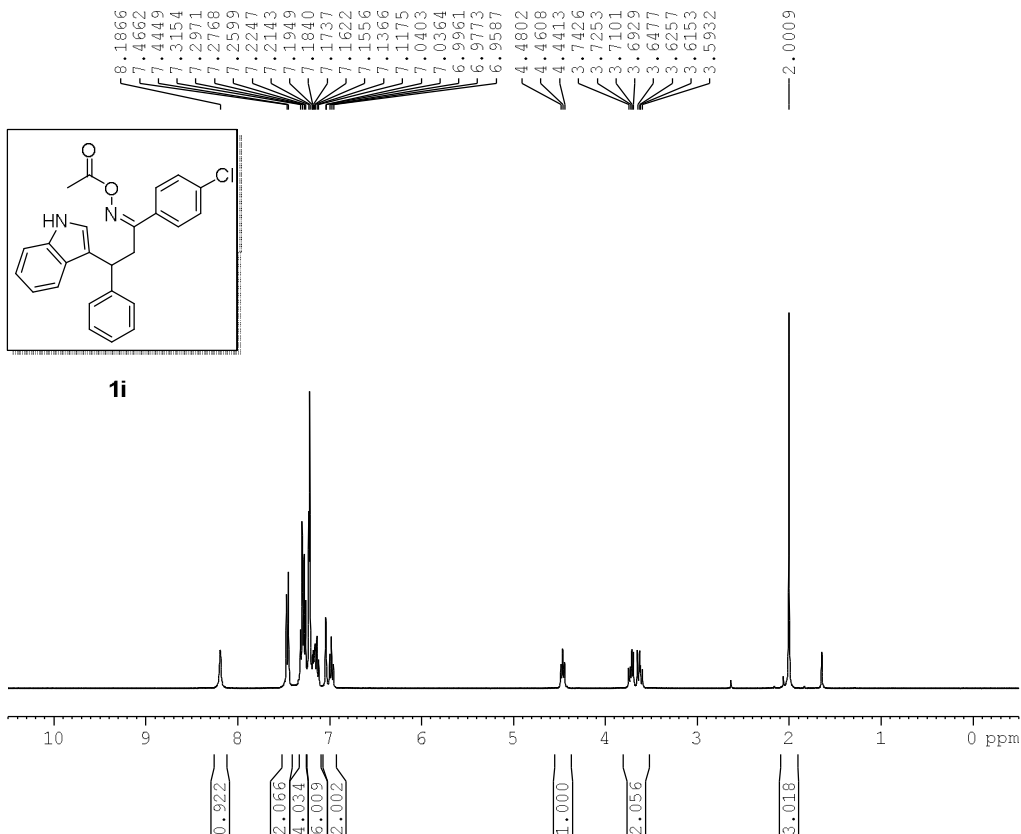
Current Data Parameters
NAME l(2-thiophene chalcone)
EXPNO 513
PROCNO 1

F2 - Acquisition Parameters
Date_ 20161024
Time 18.03
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 1014
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 198.09
DW 20.900 usec
DE 6.50 usec
TE 299.2 K
D1 2.0000000 sec
D11 0.03000000 sec
TD0 1

==== CHANNEL f1 =====
SFO1 100.6228298 MHz
NUC1 13C
P1 10.00 usec
PLW1 47.50000000 W
==== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 90.00 usec
PLW2 15.00000000 W
PLW12 0.33750001 W
PLW13 0.27338001 W

F2 - Processing parameters
SI 32768
SF 100.6127524 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.00

(Z)-1-(4-chlorophenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one O-acetyl oxime



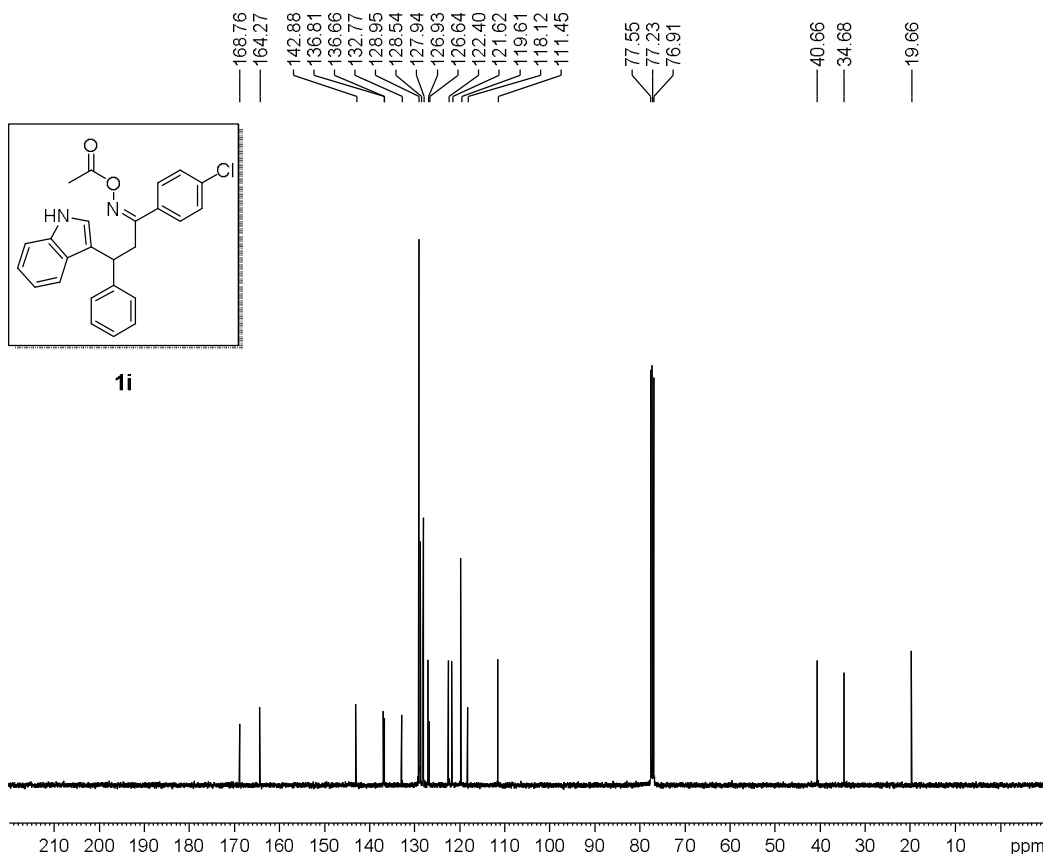
Current Data Parameters
 NAME J(4-Cl chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140329
 Time 17.19
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 181
 DW 69.000 usec
 DE 6.50 usec
 TE 300.8 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 11.80 usec
 PL1 3.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300091 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-1-(4-chlorophenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME J(4-Cl chalcone)
 EXPNO 513
 PROCNO 1

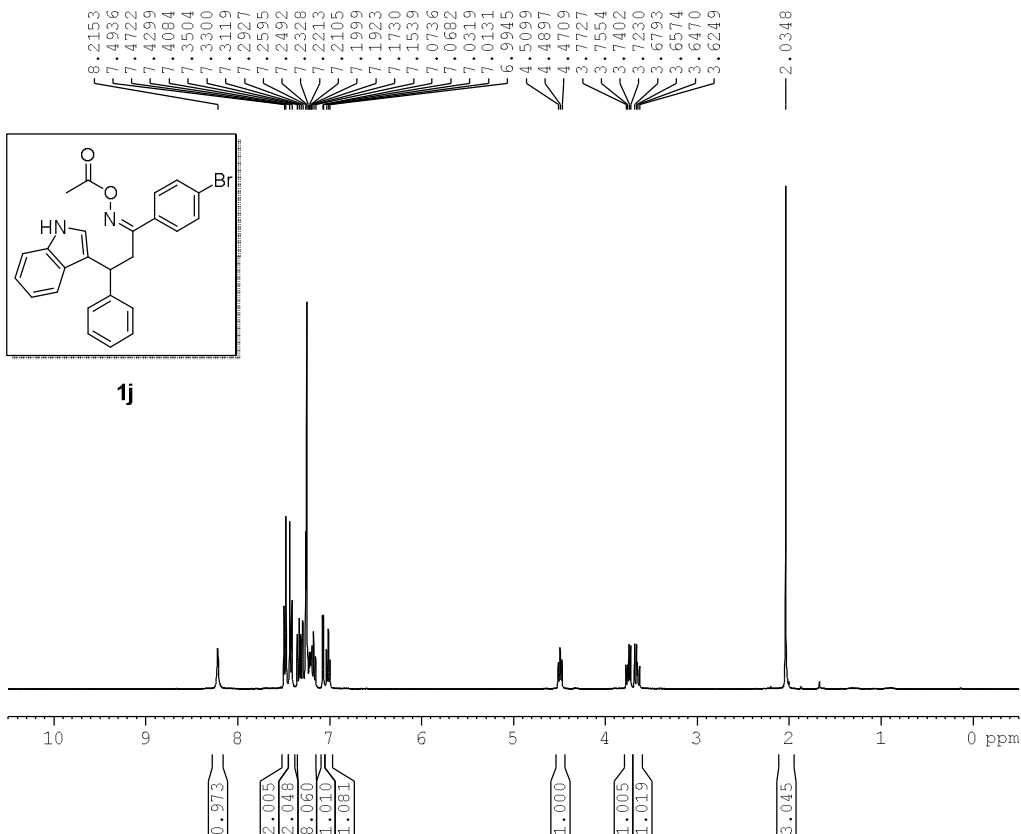
F2 - Acquisition Parameters
 Date_ 20140329
 Time 17.23
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 874
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 16384
 DW 20.800 usec
 DE 6.50 usec
 TE 301.1 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127522 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(Z)-1-(4-bromophenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one O-acetyl oxime



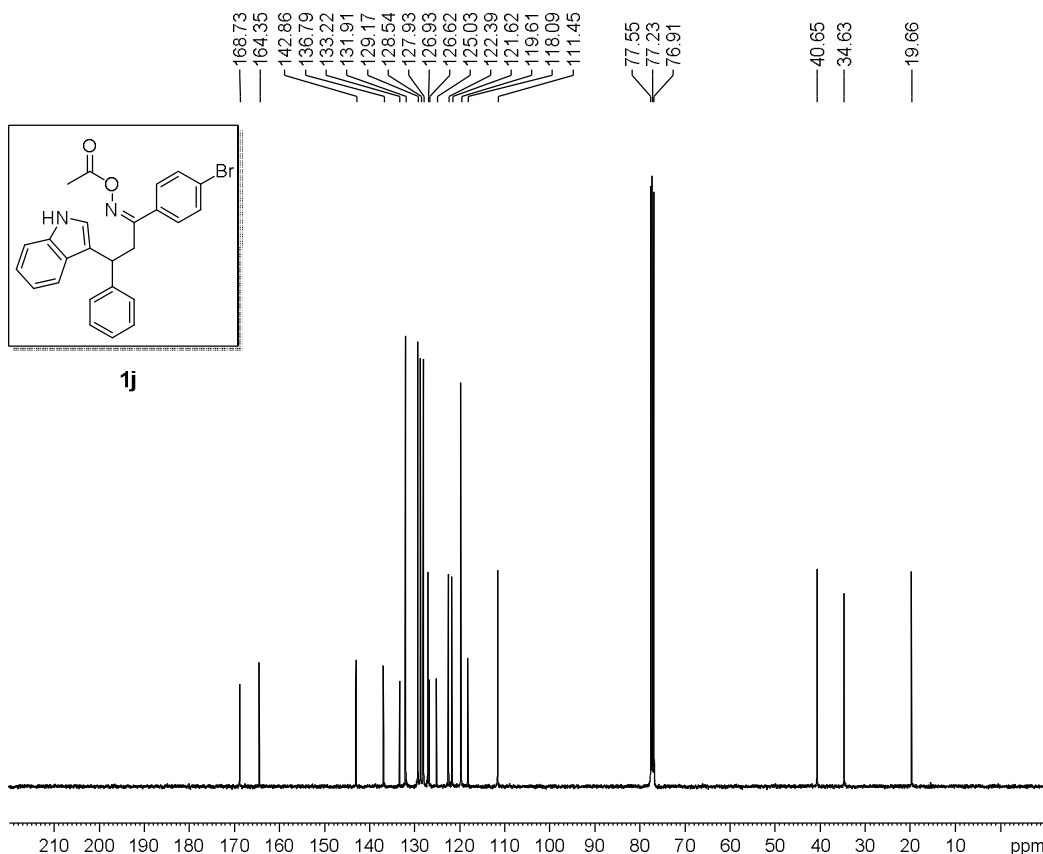
Current Data Parameters
 NAME K(4-Br chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150110
 Time 15.21
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 71.42
 DW 69.353 usec
 DE 10.52 usec
 TE 297.5 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16384
 SF 400.1289948 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-1-(4-bromophenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME K(4-Br chalcone)
 EXPNO 513
 PROCNO 1

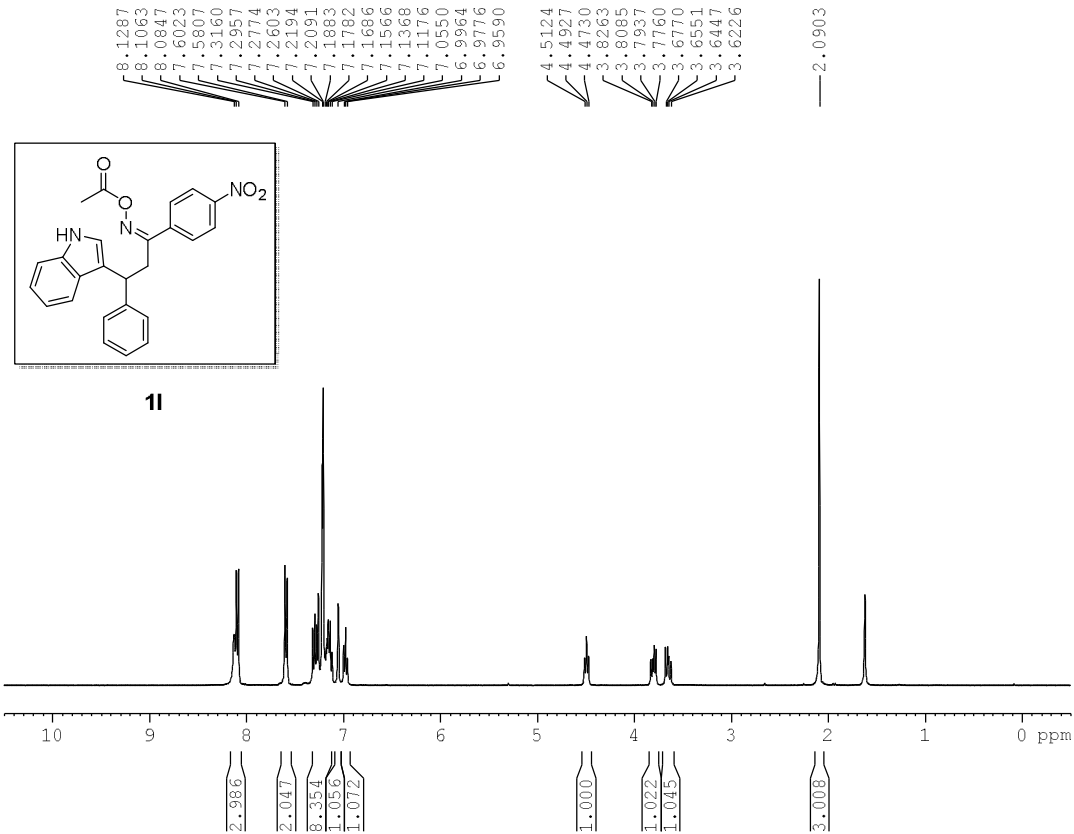
F2 - Acquisition Parameters
 Date_ 20150109
 Time 2.16
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.6 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

==== CHANNEL f2 =====
 SFO2 400.1318005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127531 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(4-nitrophenyl)-3-phenylpropan-1-one O-acetyl oxime



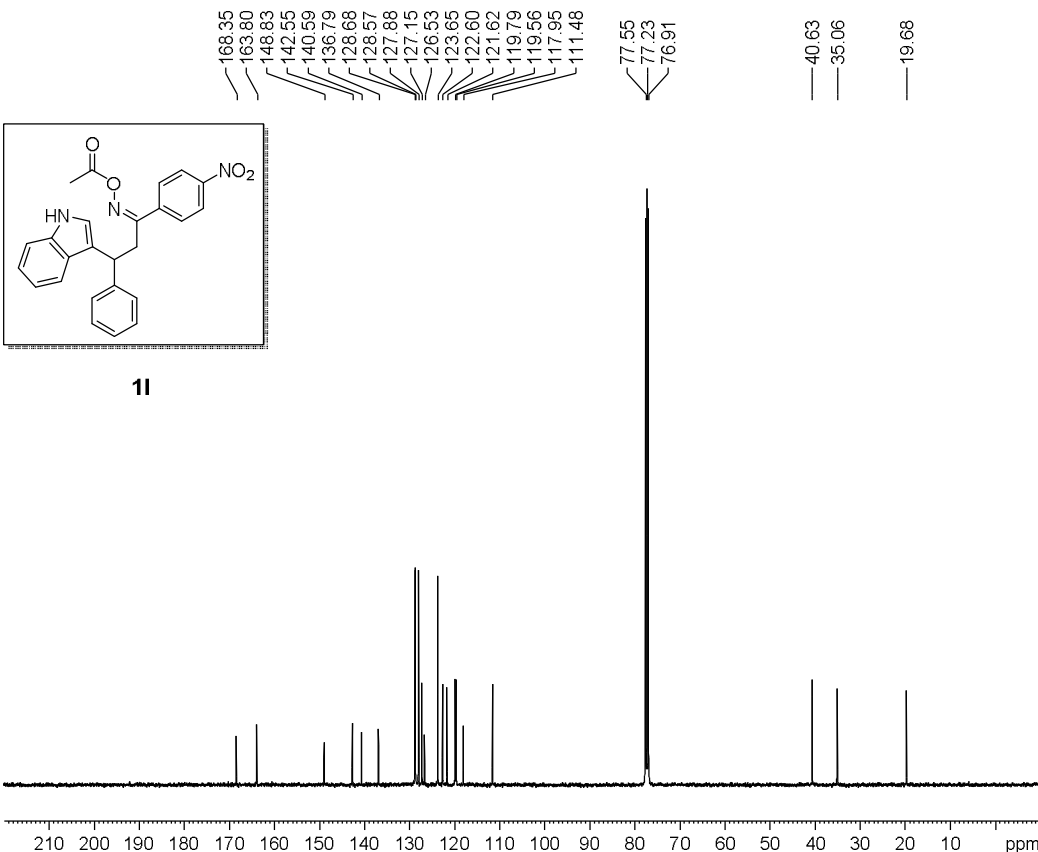
Current Data Parameters
 NAME 20161109
 EXPNO 5
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161109
 Time 7.01
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 296.2 K
 D1 2.0000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300088 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(4-nitrophenyl)-3-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME L(4-NO2 chalcone)
 EXPNO 513
 PROCNO 1

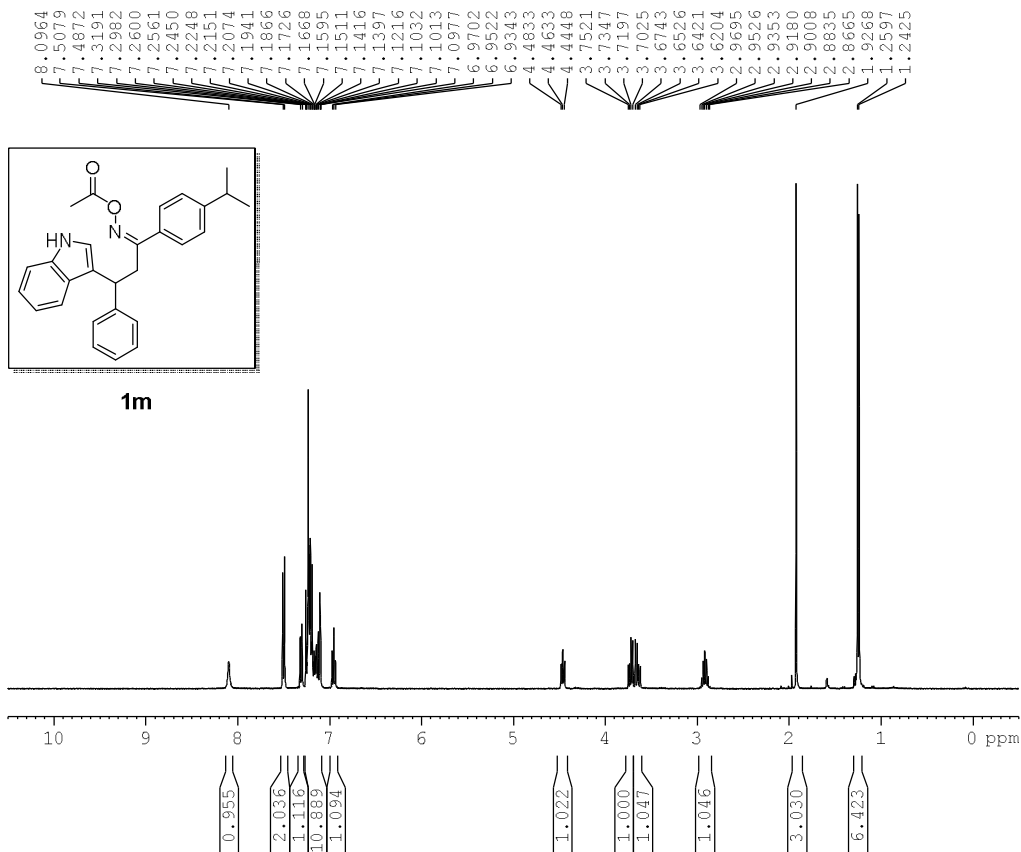
F2 - Acquisition Parameters
 Date_ 20140330
 Time 20.39
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1500
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.4 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.623324 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127498 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(4-isopropylphenyl)-3-phenylpropan-1-one O-acetyl oxime



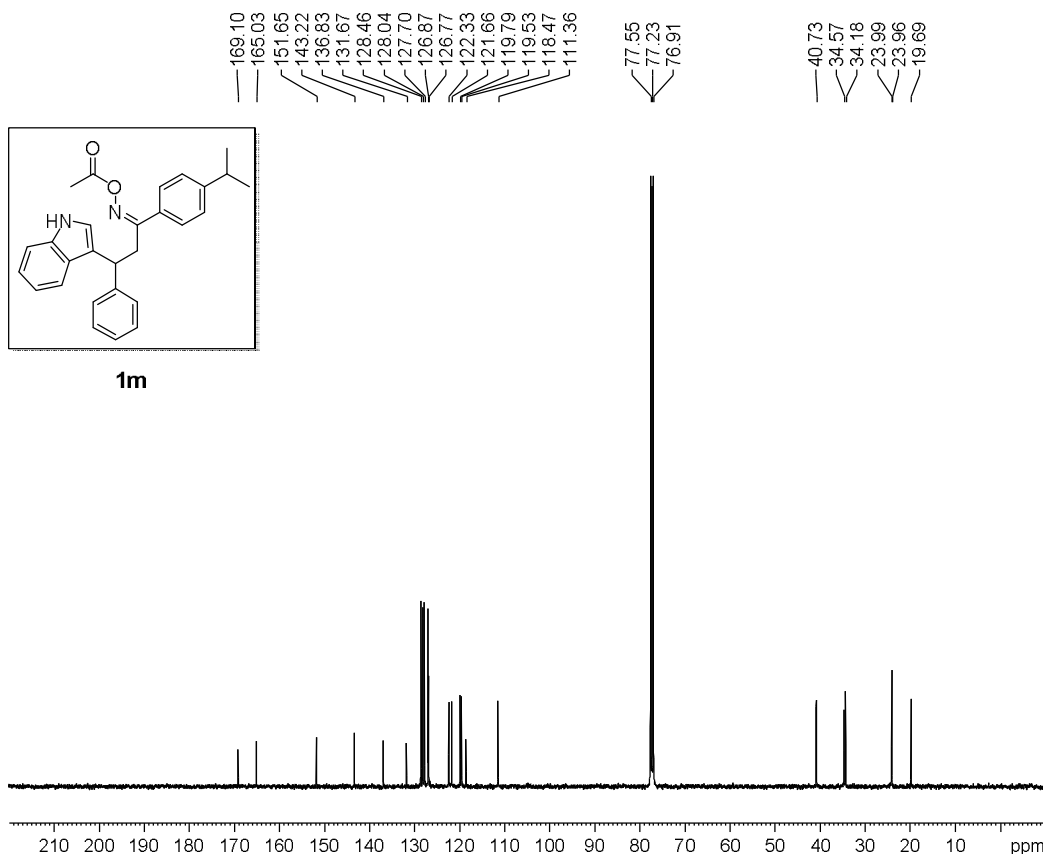
Current Data Parameters
 NAME M(4-cumene chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150120
 Time 15.27
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 89.09
 DW 69.333 usec
 DE 10.52 usec
 TE 297.8 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16384
 SF 400.1300092 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(4-isopropylphenyl)-3-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME M(4-cumene chalcone)
 EXPNO 513
 PROCNO 1

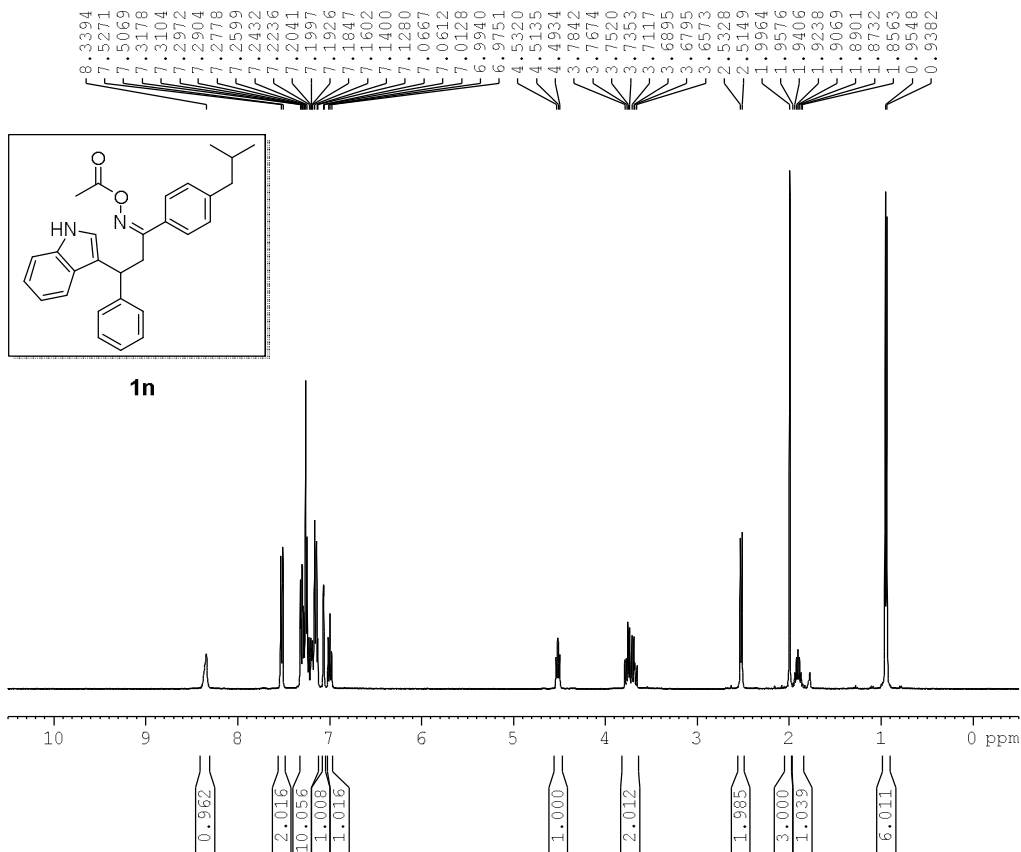
F2 - Acquisition Parameters
 Date_ 20150120
 Time 17.09
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1239
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.7 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

===== CHANNEL f2 =====
 SFO2 400.1318005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127491 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(4-isobutylphenyl)-3-phenylpropan-1-one O-acetyl oxime



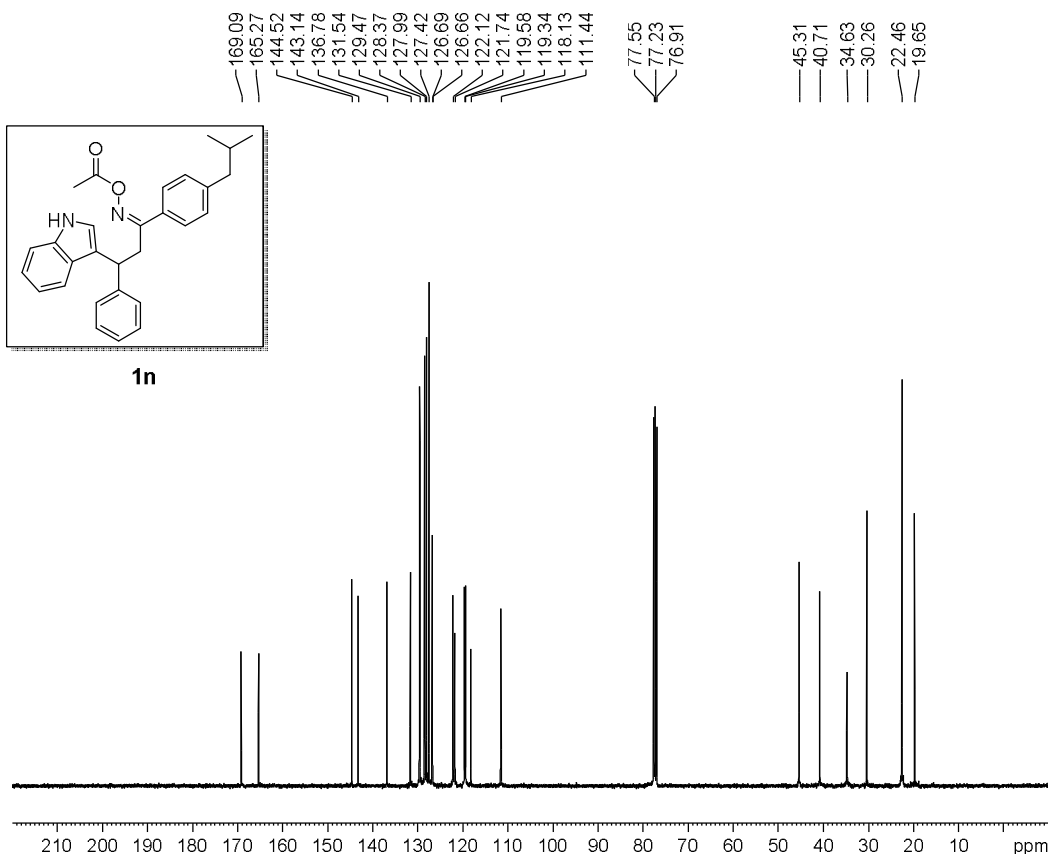
Current Data Parameters
 NAME N(4-isobutyl chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140204
 Time 13.40
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 57
 DW 69.000 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 11.80 usec
 PL1 3.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300019 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(4-isobutylphenyl)-3-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME N(4-isobutyl chalcone)
 EXPNO 513
 PROCNO 1

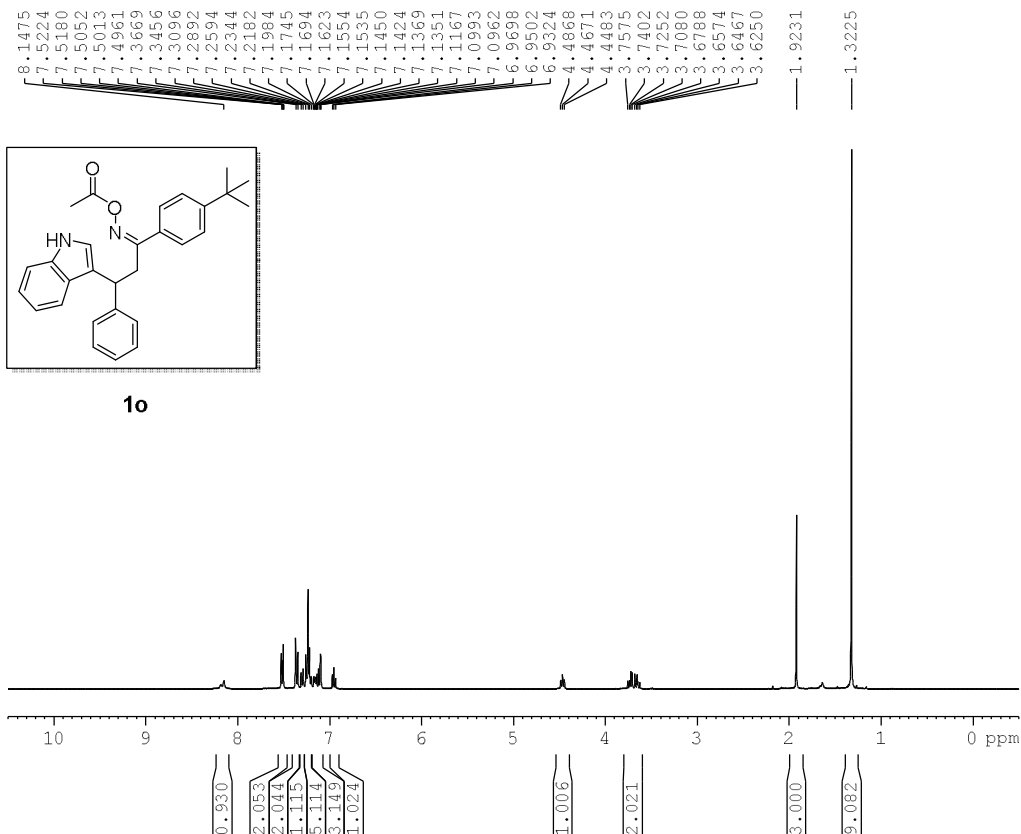
F2 - Acquisition Parameters
 Date_ 20140204
 Time 13.42
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2759
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 4096
 DW 20.800 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 3.00 dB
 PL12 23.70 dB
 PL13 23.70 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127603 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(Z)-1-(4-(tert-butyl)phenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one O-acetyl oxime



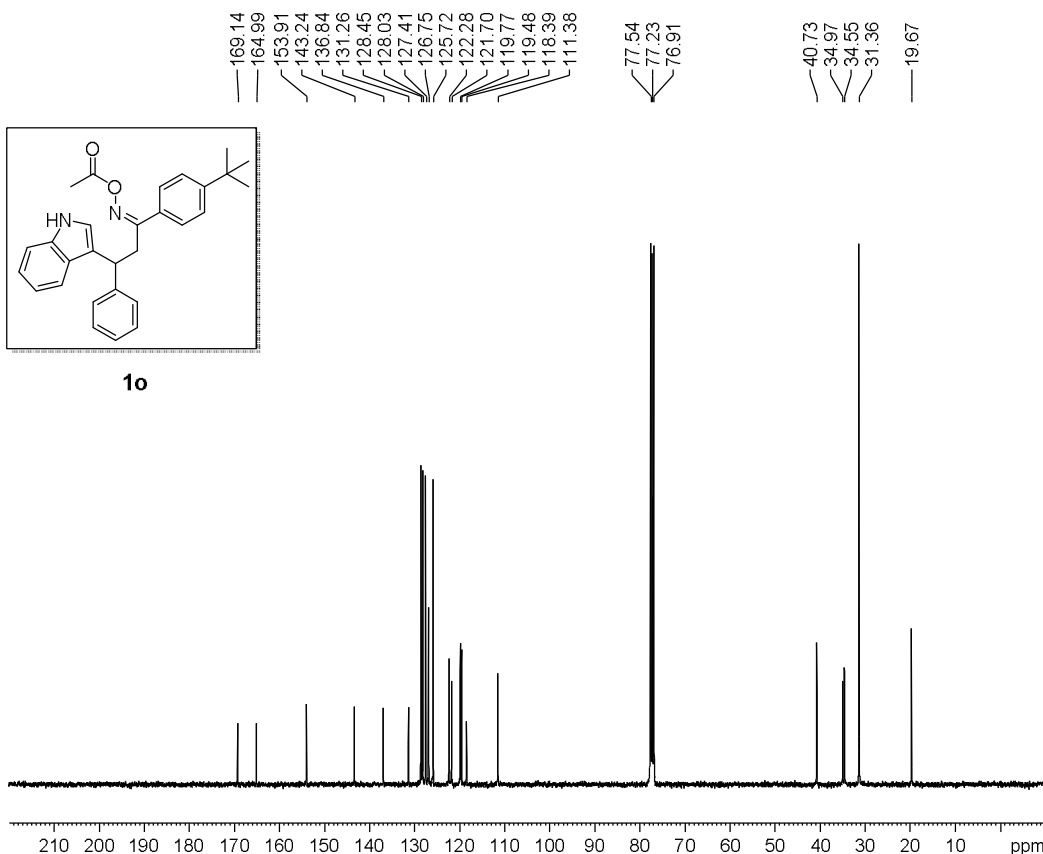
Current Data Parameters
 NAME O(4-t-butyl chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140422
 Time 23.23
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 63.59
 DW 69.333 usec
 DE 10.52 usec
 TE 298.2 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16384
 SF 400.1300096 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-1-(4-(tert-butyl)phenyl)-3-(1H-indol-3-yl)-3-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME O(4-t-butyl chalcone)
 EXPNO 513
 PROCNO 1

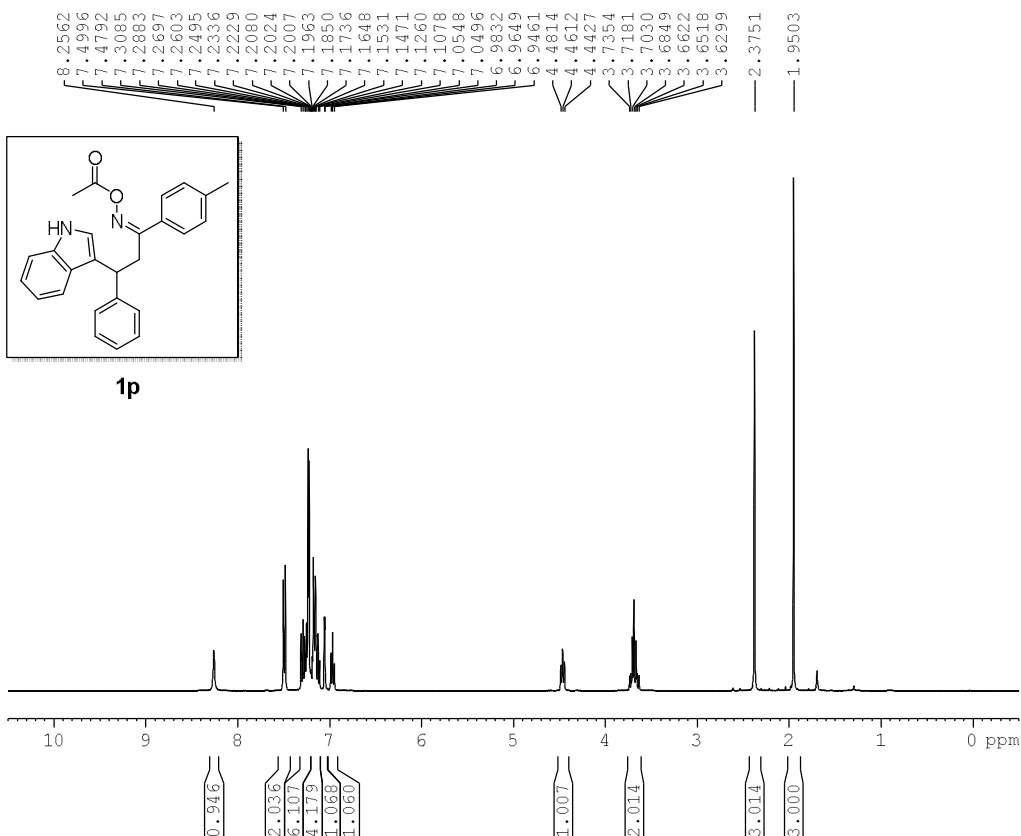
F2 - Acquisition Parameters
 Date_ 20140422
 Time 23.25
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1333
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.2 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127509 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-3-phenyl-1-(p-tolyl)propan-1-one O-acetyl oxime



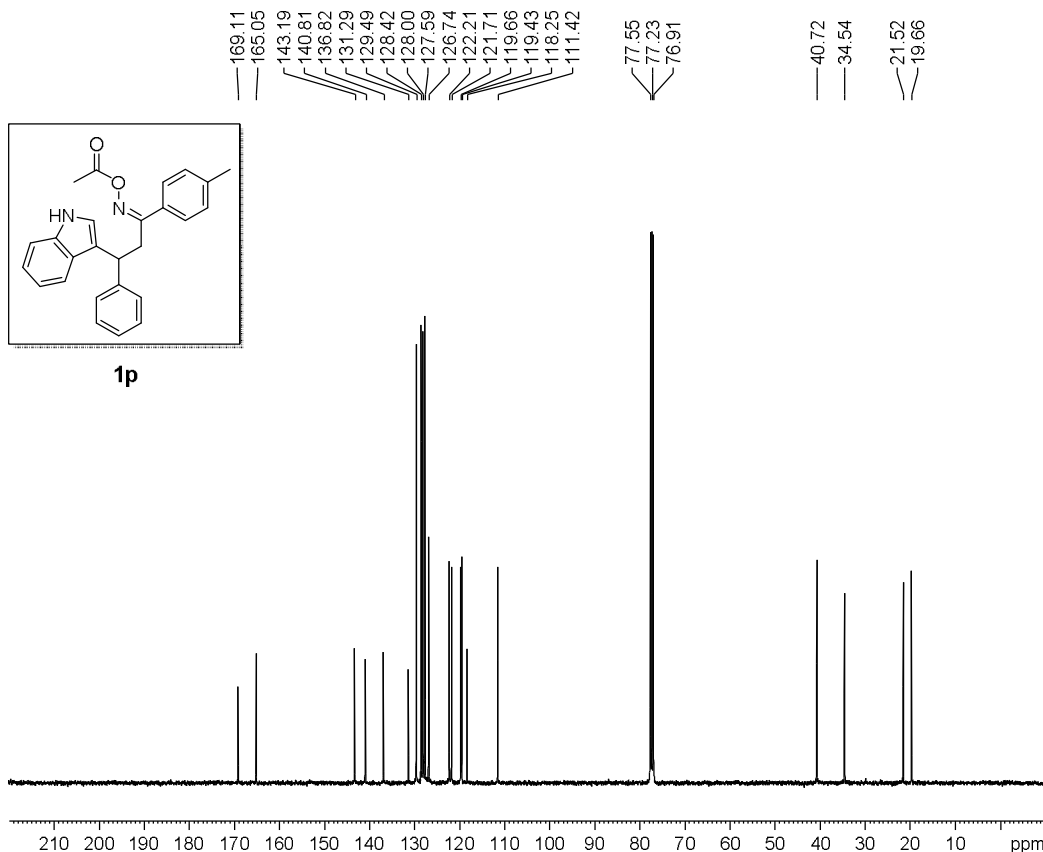
Current Data Parameters
 NAME P(4-Me chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140329
 Time 16.12
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 51.8
 DW 69.333 usec
 DE 10.52 usec
 TE 298.6 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.00000000 W

F2 - Processing parameters
 SI 16384
 SF 400.1300093 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-3-phenyl-1-(p-tolyl)propan-1-one O-acetyl oxime



Current Data Parameters
 NAME P(4-Me chalcone)
 EXPNO 513
 PROCNO 1

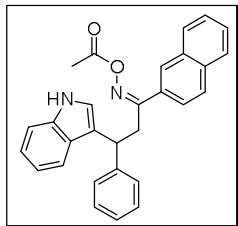
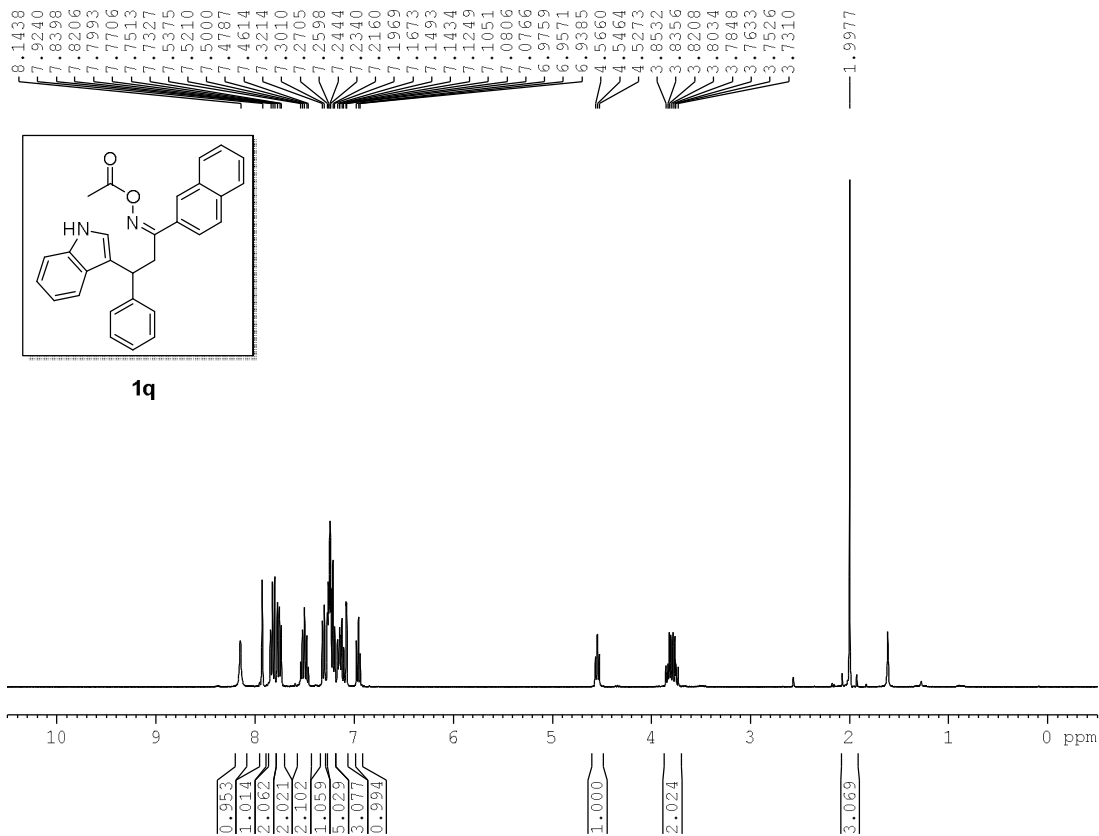
F2 - Acquisition Parameters
 Date_ 20140329
 Time 16.14
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1163
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.800 usec
 DE 6.50 usec
 TE 298.7 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233324 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.00000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127543 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(naphthalen-2-yl)-3-phenylpropan-1-one O-acetyl oxime



1q

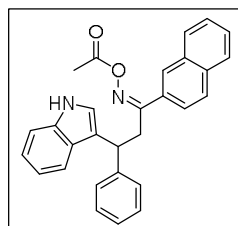
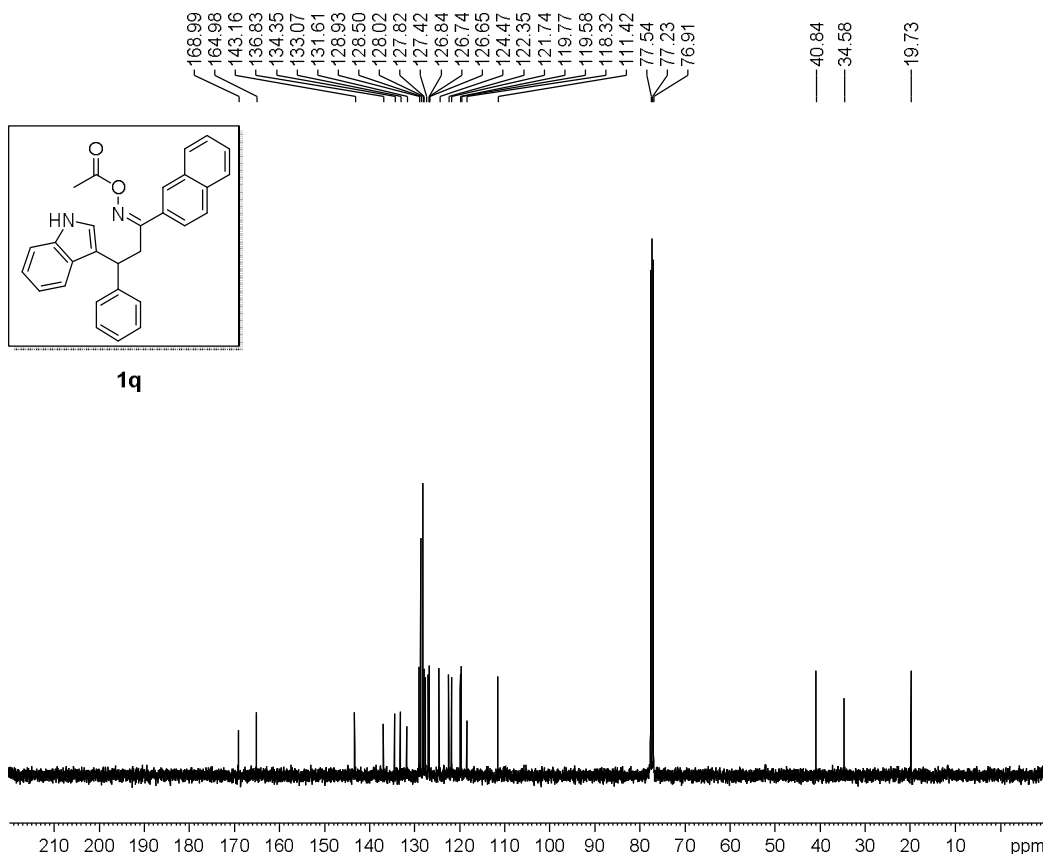
Current Data Parameters
 NAME Q(2-naphthyl chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140328
 Time 14.57
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 299.4 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300096 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(naphthalen-2-yl)-3-phenylpropan-1-one O-acetyl oxime



1q

Current Data Parameters
 NAME Q(2-naphthyl chalcone)
 EXPNO 513
 PROCNO 1

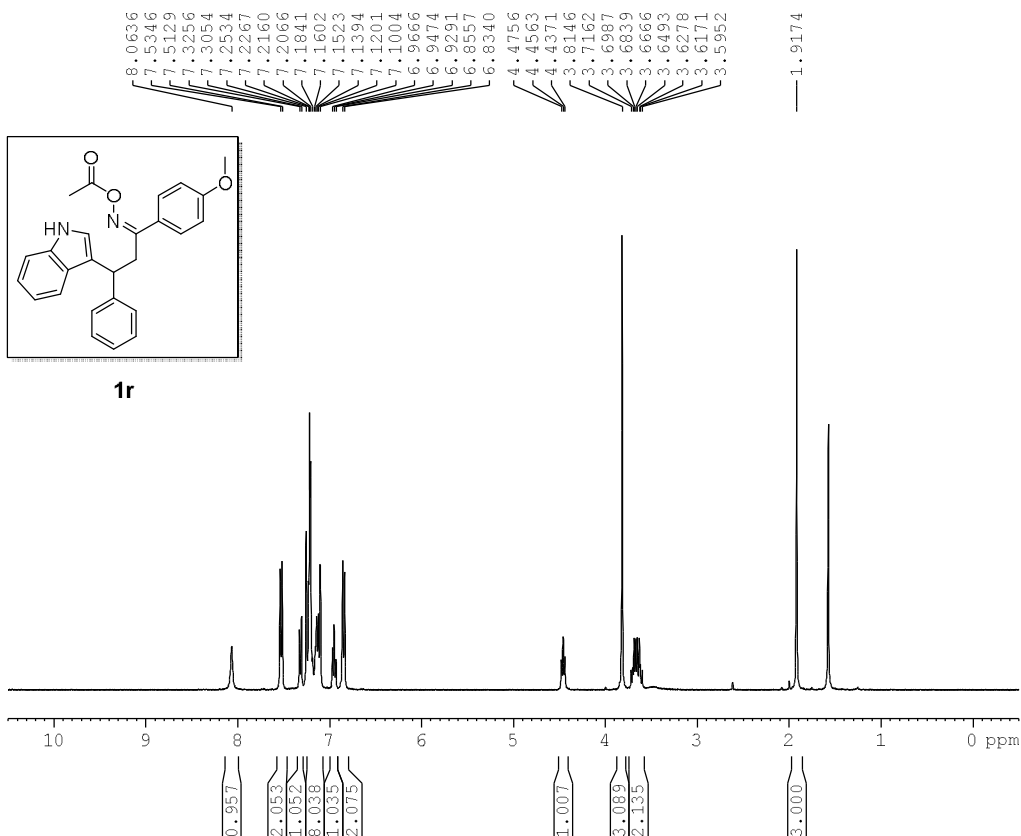
F2 - Acquisition Parameters
 Date_ 20140328
 Time 15.03
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 190
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 299.7 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127511 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(4-methoxyphenyl)-3-phenylpropan-1-one O-acetyl oxime



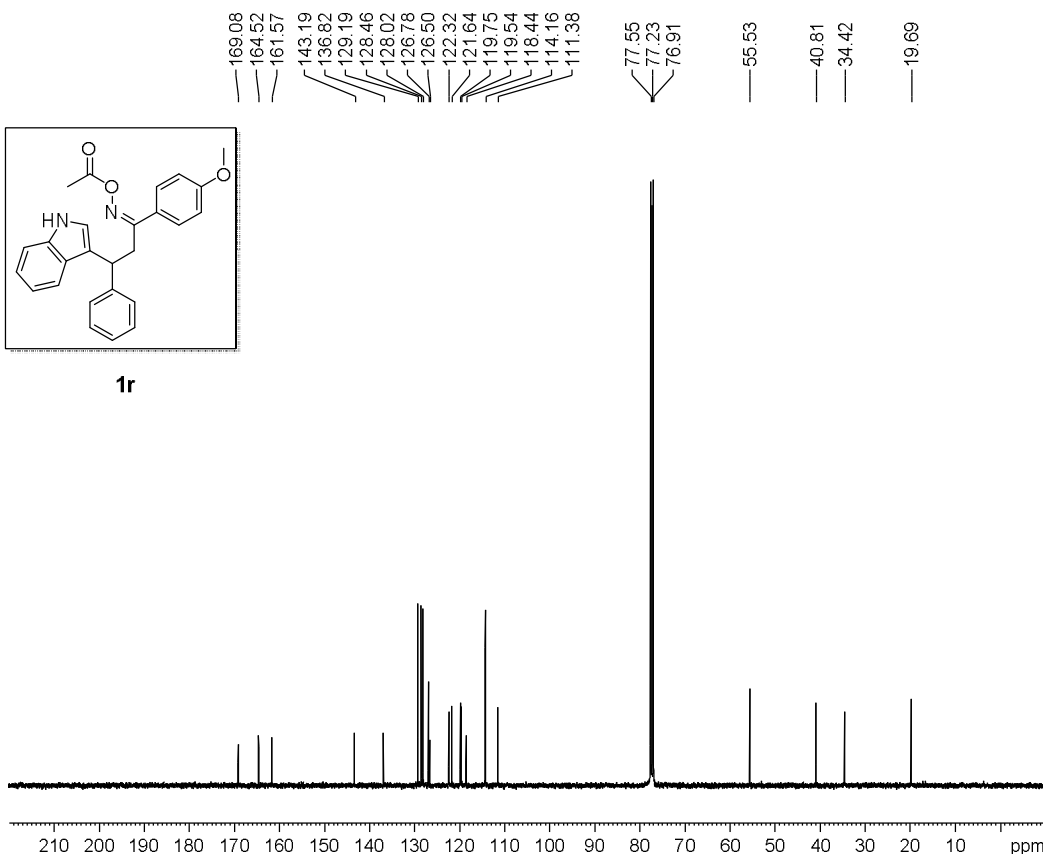
Current Data Parameters
 NAME R(4-OMe chalcone)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140327
 Time 18.20
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 256
 DW 69.000 usec
 DE 6.50 usec
 TE 299.8 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(1H-indol-3-yl)-1-(4-methoxyphenyl)-3-phenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME R(4-OMe chalcone)
 EXPNO 513
 PROCNO 1

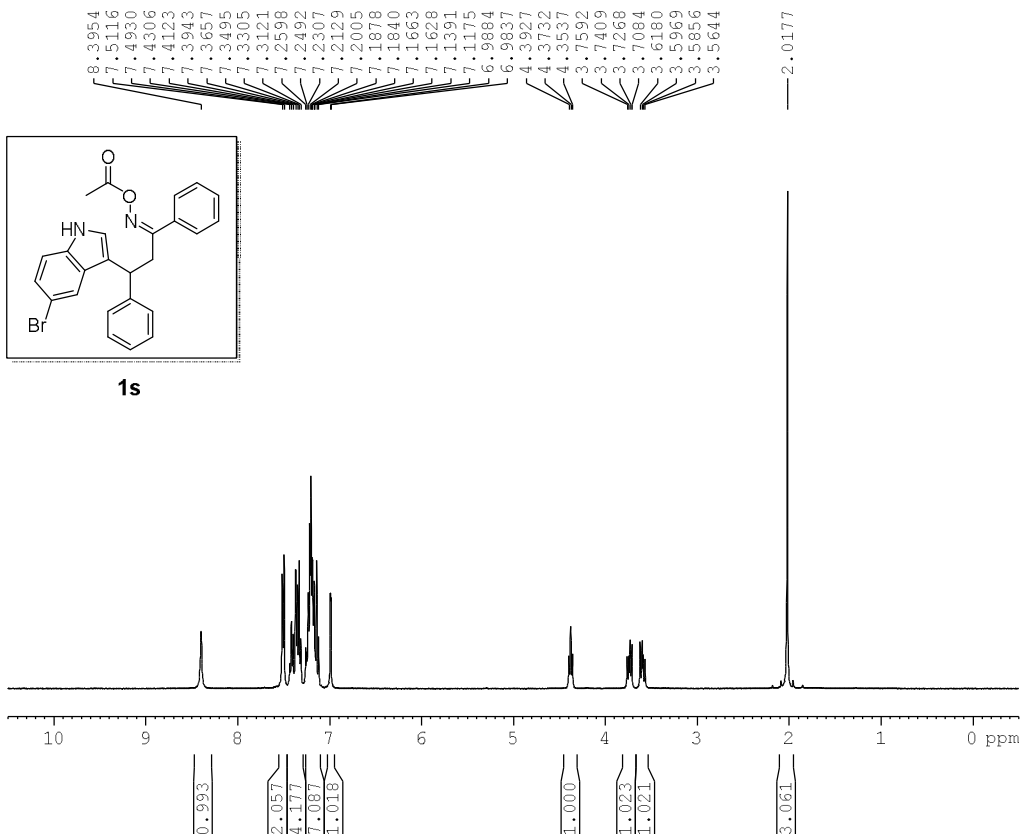
F2 - Acquisition Parameters
 Date_ 20140324
 Time 18.05
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1300
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 299.4 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127498 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(Z)-3-(5-bromo-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime



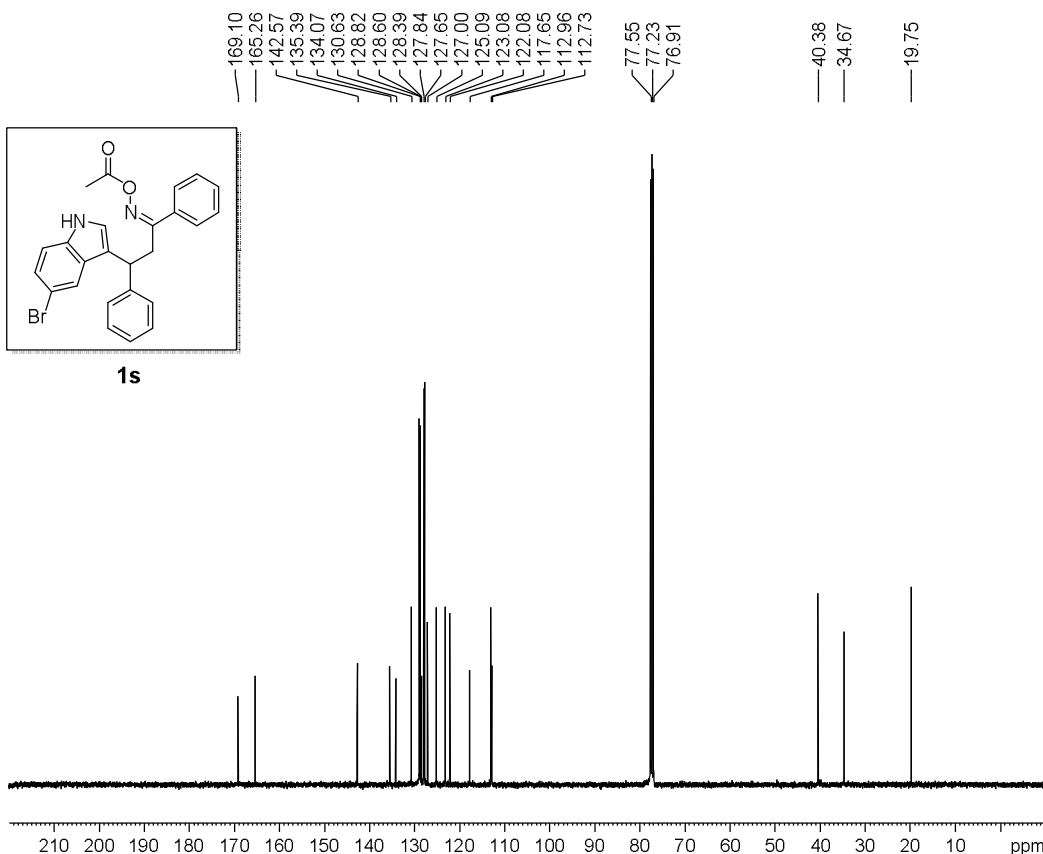
Current Data Parameters
 NAME S(5-Br indole)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140225
 Time 17.30
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 295.6 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300092 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(5-bromo-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME S(5-Br indole)
 EXPNO 513
 PROCNO 1

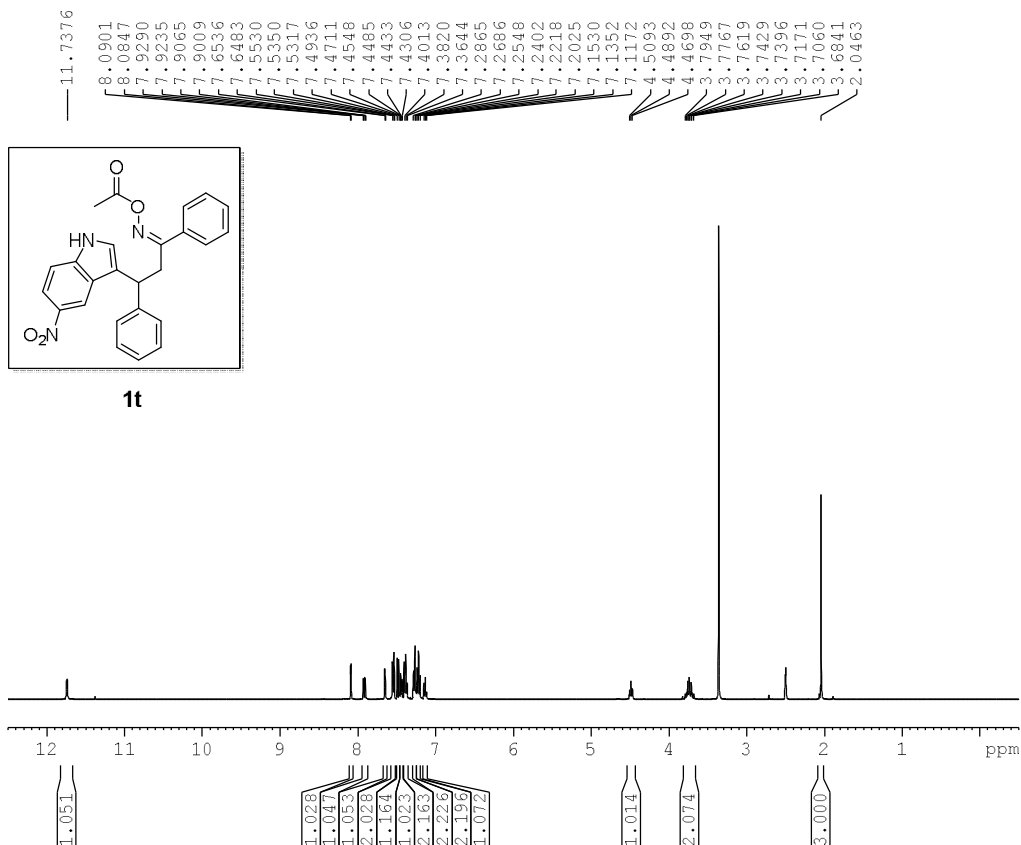
F2 - Acquisition Parameters
 Date_ 20140226
 Time 0.17
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1581
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 4096
 DW 20.800 usec
 DE 6.50 usec
 TE 296.1 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127528 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(Z)-3-(5-nitro-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime



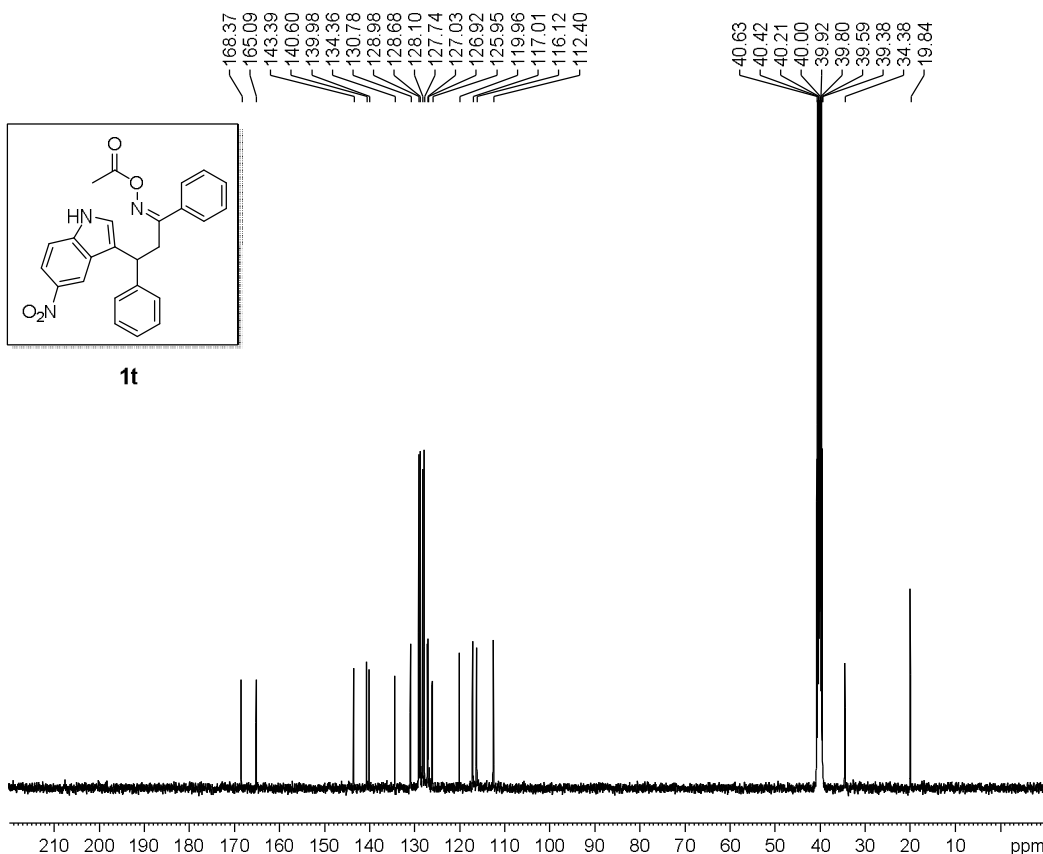
Current Data Parameters
 NAME T(5-NO2 indole)
 EXPNO 51
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140501
 Time 22.42
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 71.42
 DW 69.353 usec
 DE 10.52 usec
 TE 298.0 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16384
 SF 400.1300030 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

(Z)-3-(5-nitro-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime



Current Data Parameters
 NAME T(5-NO2 indole)
 EXPNO 513
 PROCNO 1

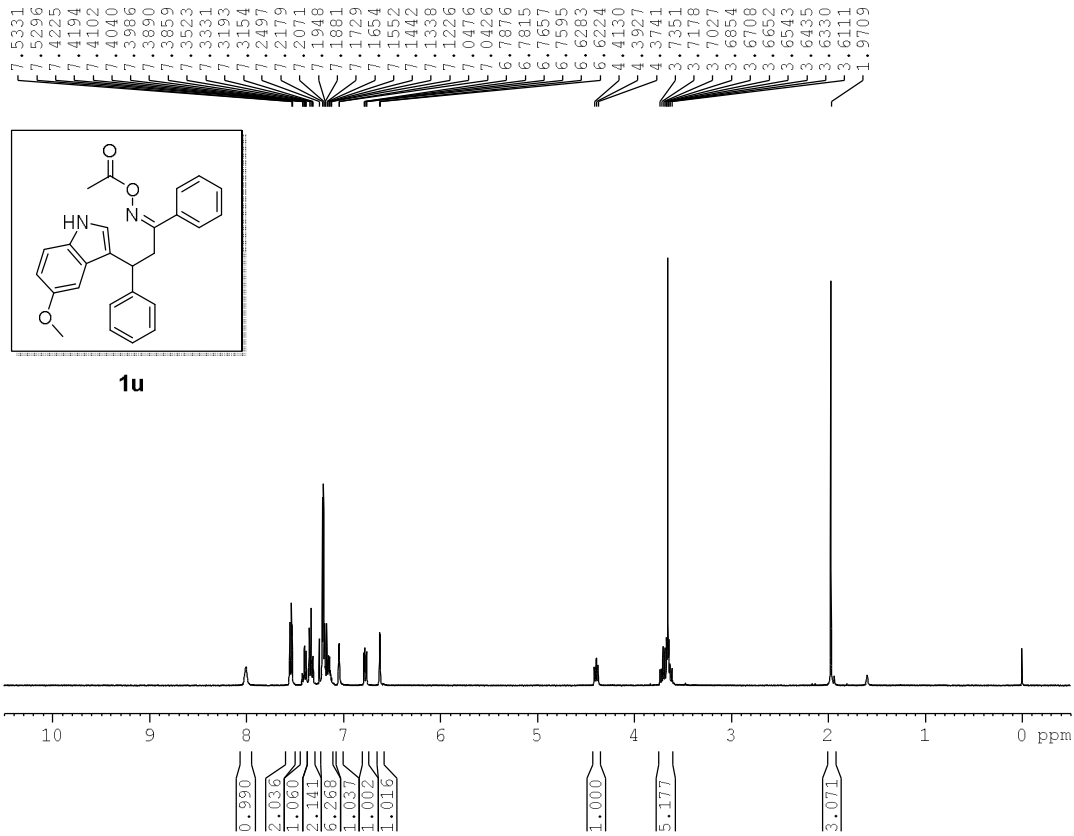
F2 - Acquisition Parameters
 Date_ 20140501
 Time 22.45
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1500
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127685 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

(Z)-3-(5-methoxy-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime



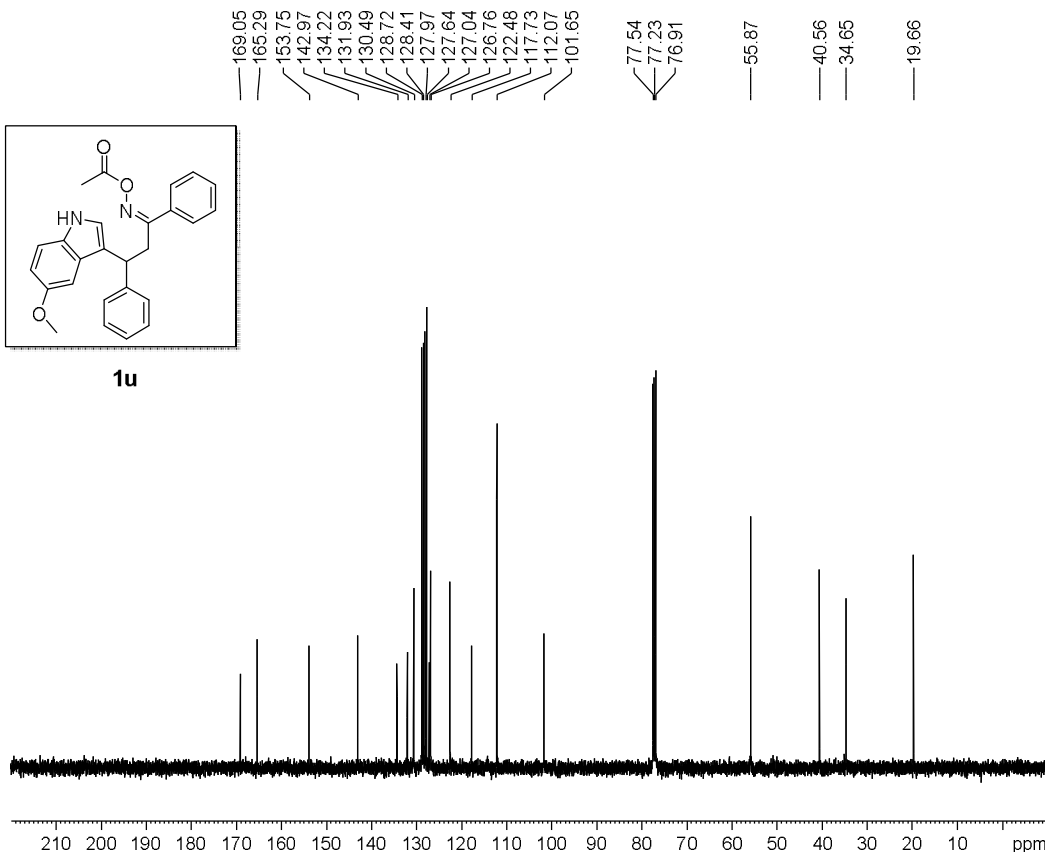
Current Data Parameters
NAME 20161226
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20161228
Time 16.46
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 296.3 K
D1 2.00000000 sec
TDO

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 16384
SF 400.1300135 MHz
EM
WDW 0
SSB 0
LB 0 Hz
GB 0
PC 1.00

(Z)-3-(5-methoxy-1H-indol-3-yl)-1,3-diphenylpropan-1-one O-acetyl oxime



Current Data Parameters
NAME T(5-OMe indole)
EXPNO 513
PROCNO 1

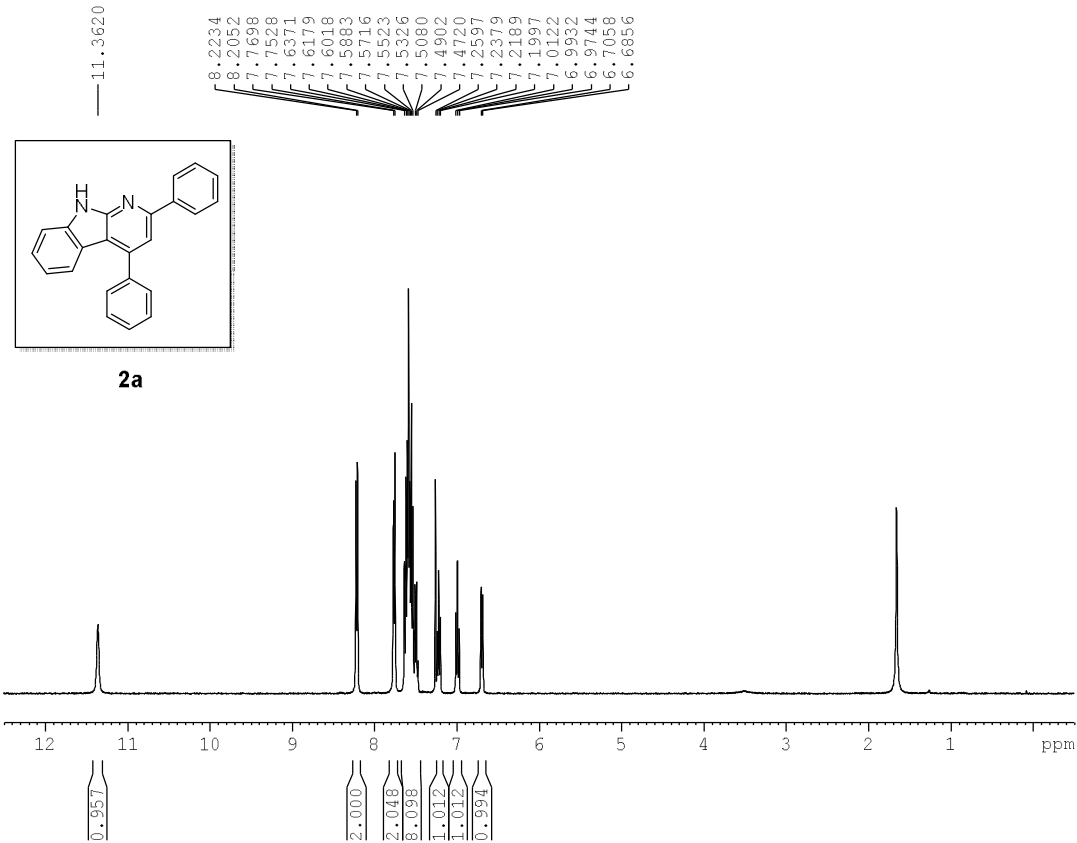
F2 - Acquisition Parameters
Date_ 20130123
Time 17.55
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 72
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 2048
DW 20.800 usec
DE 6.50 usec
TE 298.4 K
D1 2.00000000 sec
D11 0.03000000 sec
TDO 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.40 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 3.00 dB
PL12 20.70 dB
PL13 23.70 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127602 MHz
EM
WDW 0
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

2,4-diphenyl- α -carboline



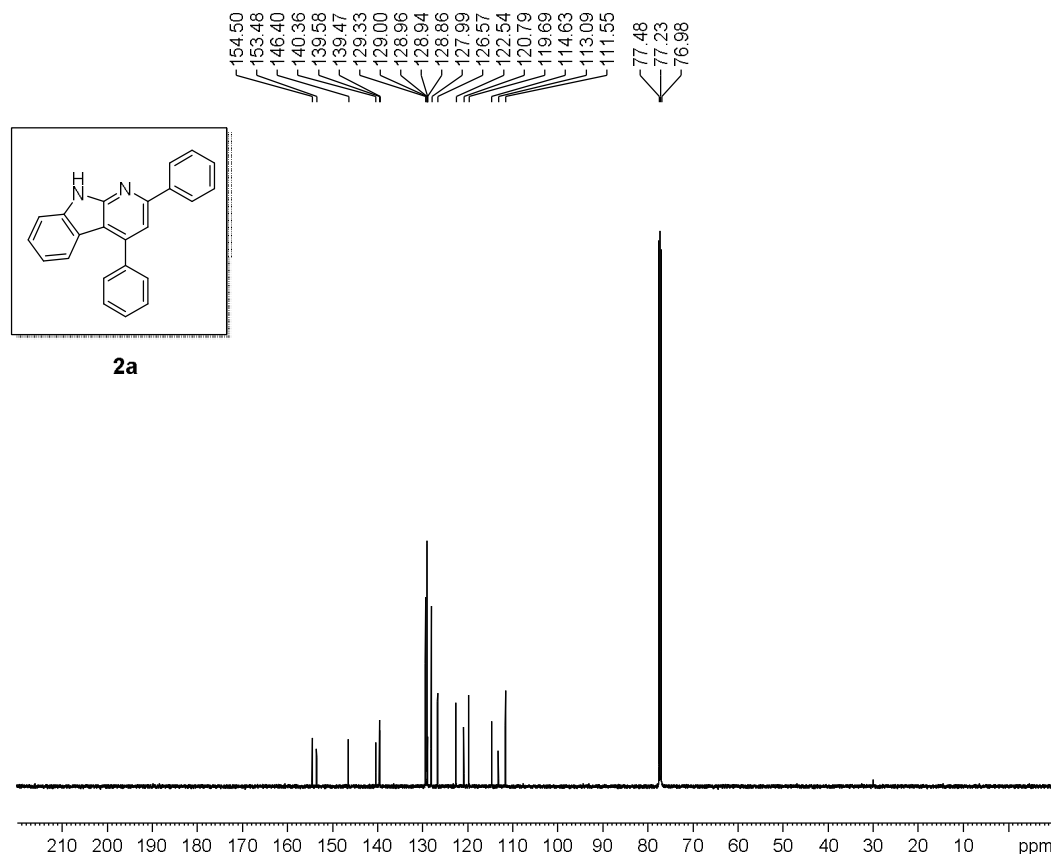
Current Data Parameters
 NAME 20161108
 EXPNO 3
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161108
 Time_ 0.37
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 295.8 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16584
 SF 400.1300095 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2,4-diphenyl- α -carboline



Current Data Parameters
 NAME A(no substrate)
 EXPNO 613
 PROCNO 1

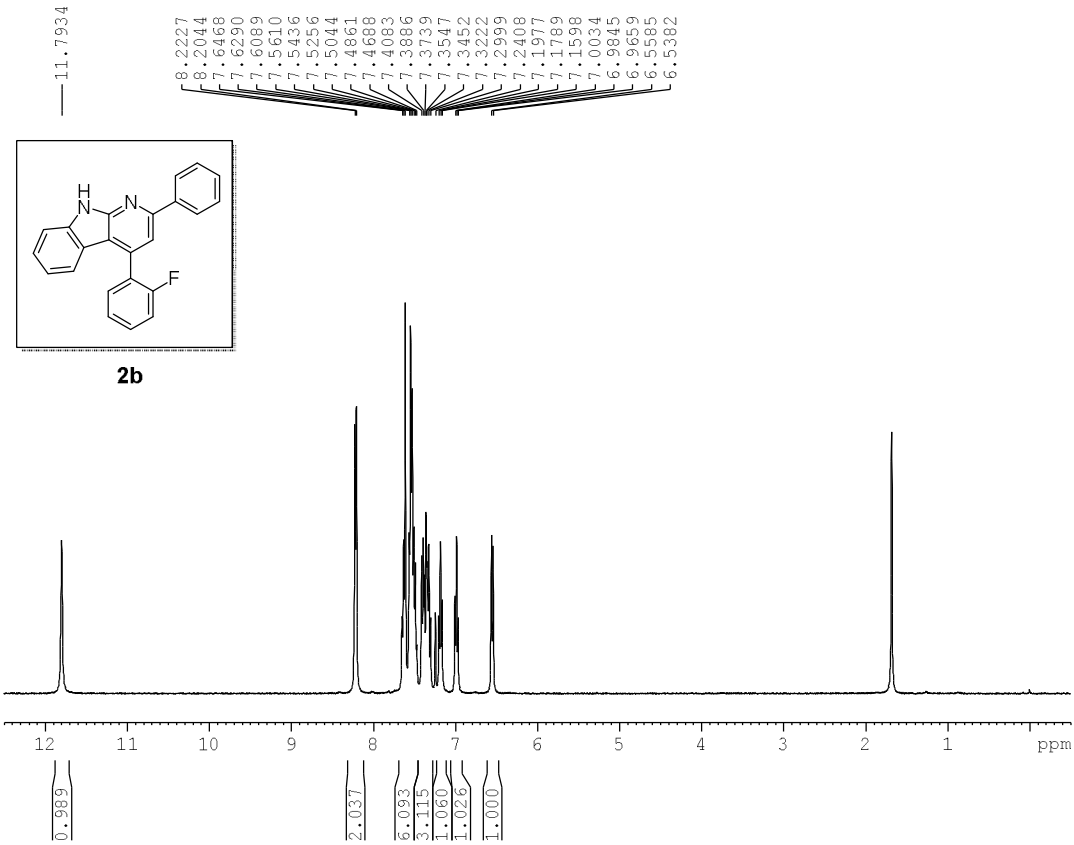
F2 - Acquisition Parameters
 Date_ 20121003
 Time_ 19.15
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 1024
 DS 0
 SWH 30030.029 Hz
 FIDRES 0.458222 Hz
 AQ 1.0911744 sec
 RG 8192
 DW 16.650 usec
 DE 6.50 usec
 TE 300.0 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 10.00 usec
 PL1 6.50 dB
 SFO1 125.7709931 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -0.60 dB
 PL12 15.20 dB
 PL13 18.20 dB
 SFO2 500.1320005 MHz

F2 - Processing parameters
 SI 65536
 SF 125.7577646 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

4-(2-fluorophenyl)-2-phenyl- α -carboline



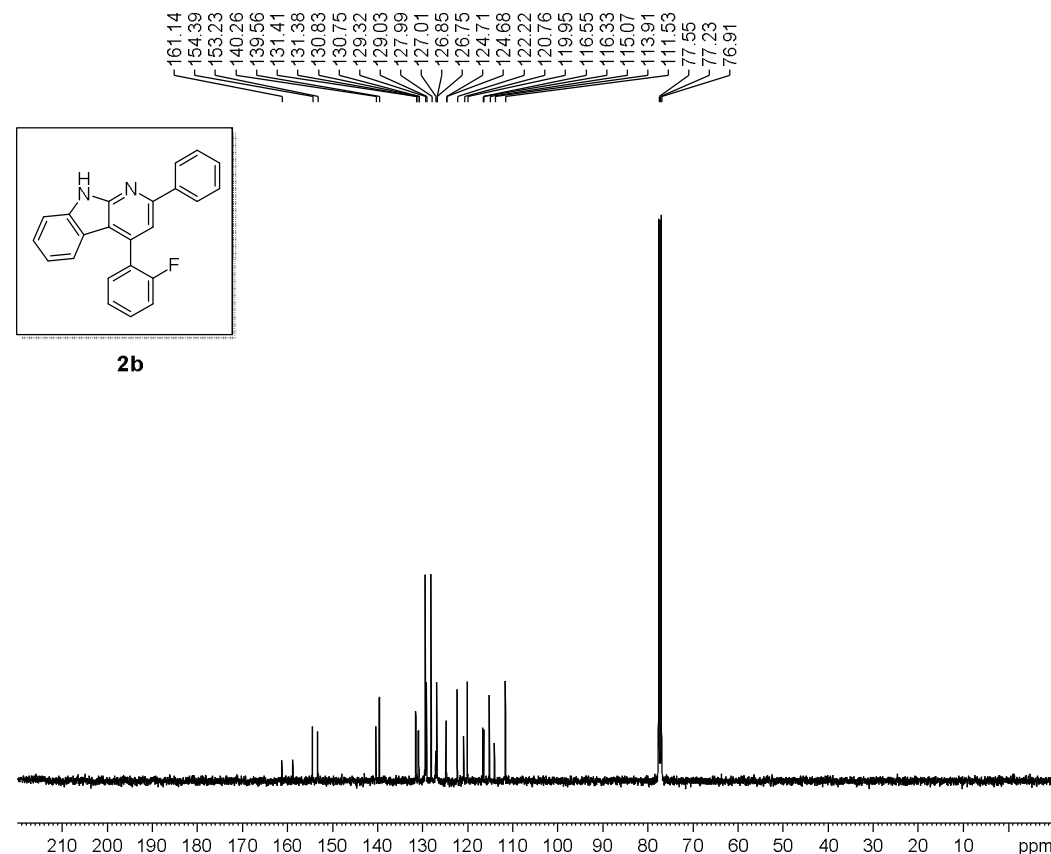
Current Data Parameters
 NAME B(2-F chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161025
 Time 19.38
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 4.01
 DW 69.333 usec
 DE 10.50 usec
 TE 298.0 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.90 usec
 PLW1 15.00000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300180 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-(2-fluorophenyl)-2-phenyl- α -carboline



Current Data Parameters
 NAME B(2-F chalcone)
 EXPNO 613
 PROCNO 1

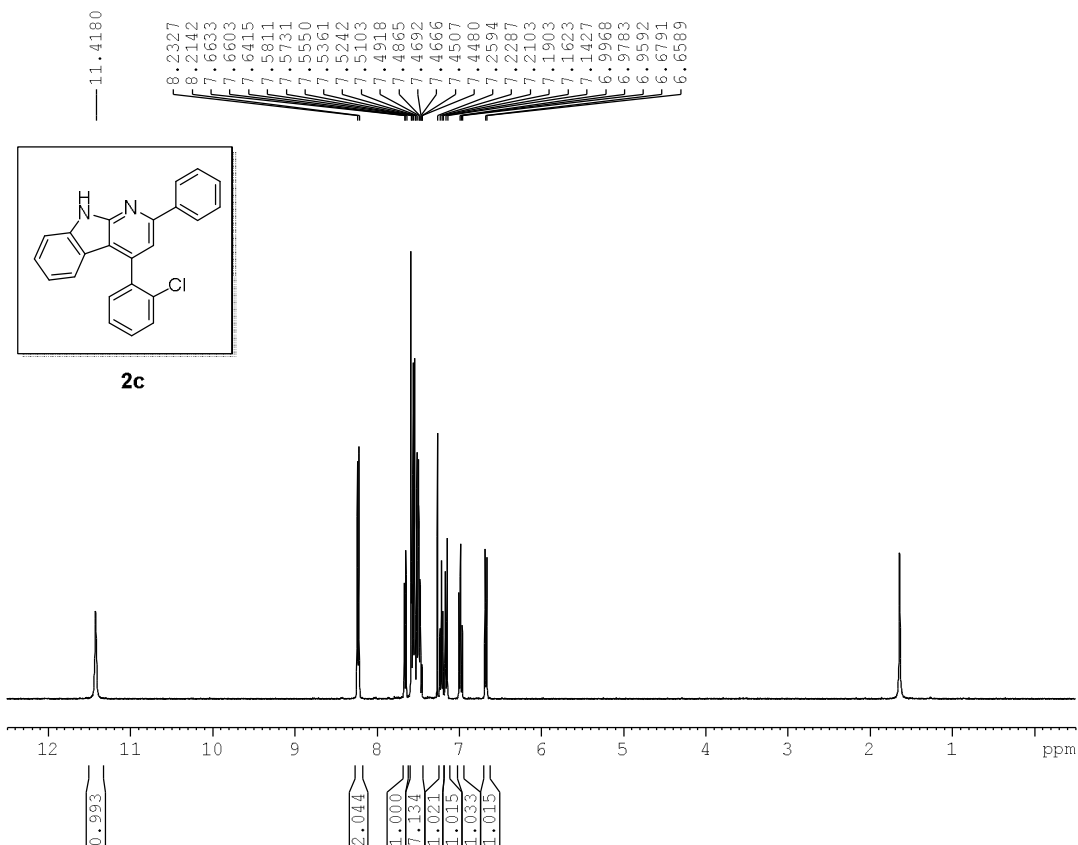
F2 - Acquisition Parameters
 Date_ 20161021
 Time 19.42
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 524
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6228298 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 47.50000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.33750001 W
 PLW13 0.27338001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127482 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

4-(2-chlorophenyl)-2-phenyl- α -carboline



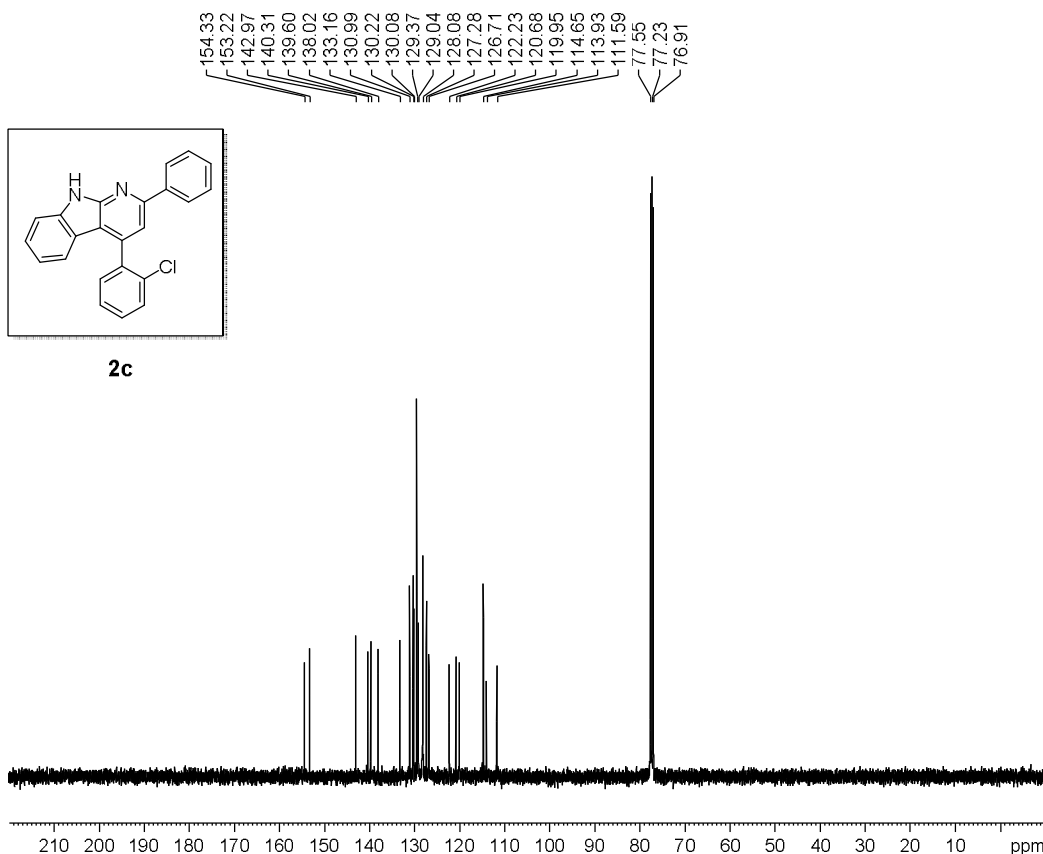
Current Data Parameters
 NAME C(2-Cl chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161104
 Time 18:57
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 4.01
 DW 69.333 usec
 DE 10.50 usec
 TE 298.2 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1304009 MHz
 NUC1 1H
 P1 12.90 usec
 PLW1 15.00000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300104 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-(2-chlorophenyl)-2-phenyl- α -carboline



Current Data Parameters
 NAME C(2-Cl chalcone)
 EXPNO 613
 PROCNO 1

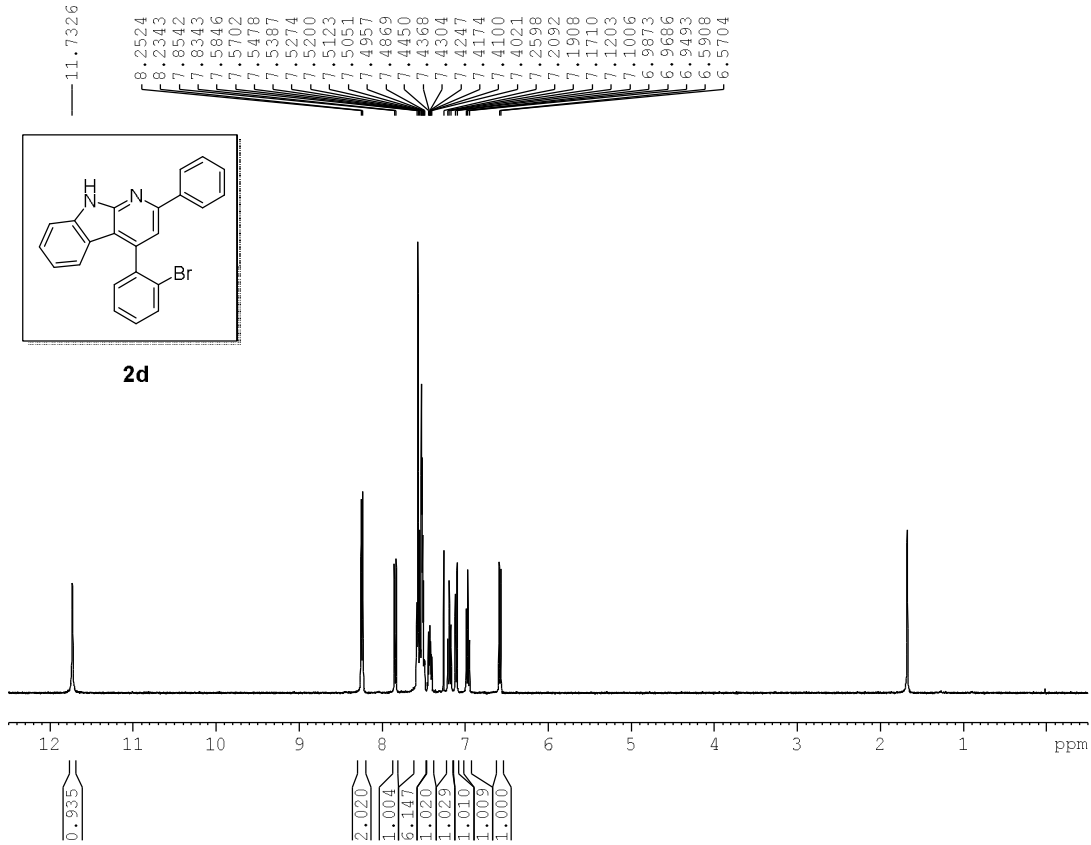
F2 - Acquisition Parameters
 Date_ 20141121
 Time 10:53
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 504
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 298.8 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 13C
 P1 10.50 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

==== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -0.60 dB
 PL12 15.00 dB
 PL13 18.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127469 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

4-(2-bromophenyl)-2-phenyl- α -carboline



```

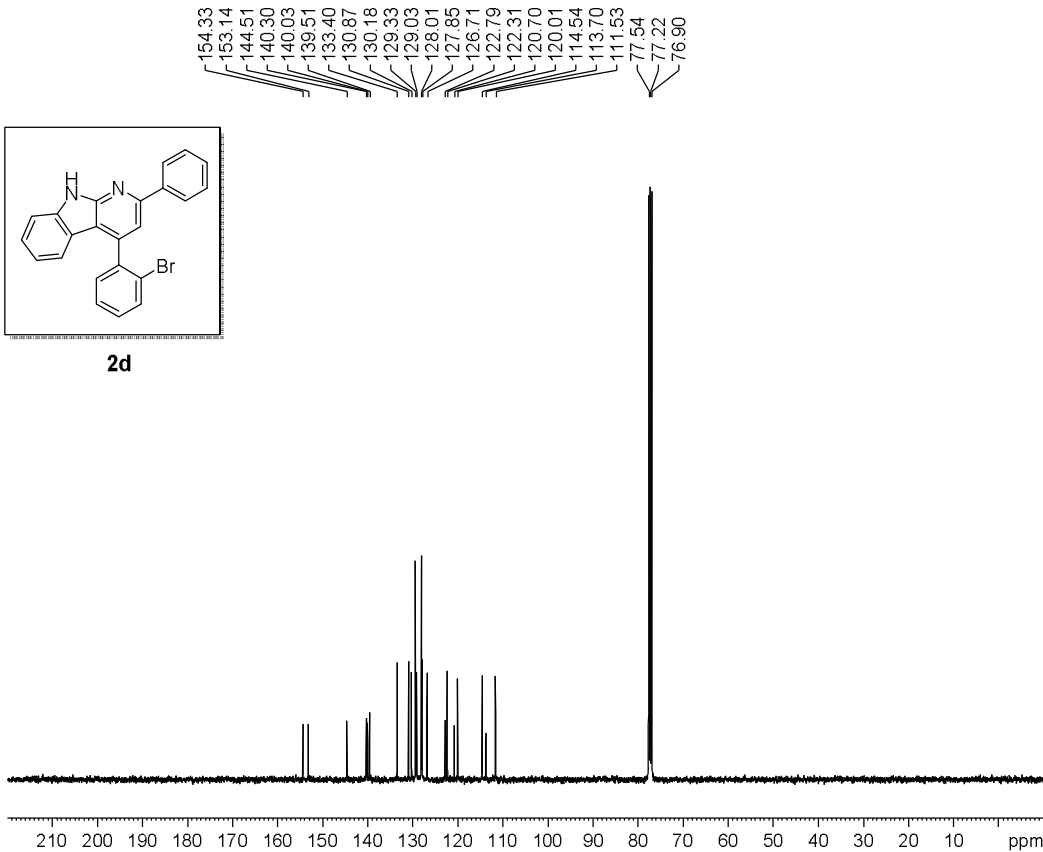
Current Data Parameters
NAME      D(2-Br chalcone)
EXPNO    61
PROCNO   1

F2 - Acquisition Parameters
Date_    20161026
Time     17.22
INSTRUM spect
PROBHD   5 mm PABBO BB/
PULPROG zg30
TD       32768
SOLVENT  CDCl3
NS       1
DS       0
SWH      7211.539 Hz
FIDRES   0.220079 Hz
AQ       2.2719147 sec
RG       113.31
DW       69.333 usec
DE       10.50 usec
TE       298.1 K
D1       2.0000000 sec
TDO      1

===== CHANNEL f1 =====
SFO1    400.1324009 MHz
NUC1     1H
P1      12.90 usec
PLW1    15.00000000 W

F2 - Processing parameters
SI      16584
SF      400.1300102 MHz
WDW     EM
SSB     0
LB      0 Hz
GB      0
PC      1.00
    
```

4-(2-bromophenyl)-2-phenyl- α -carboline



```

Current Data Parameters
NAME      D(2-Br chalcone)
EXPNO    613
PROCNO   1

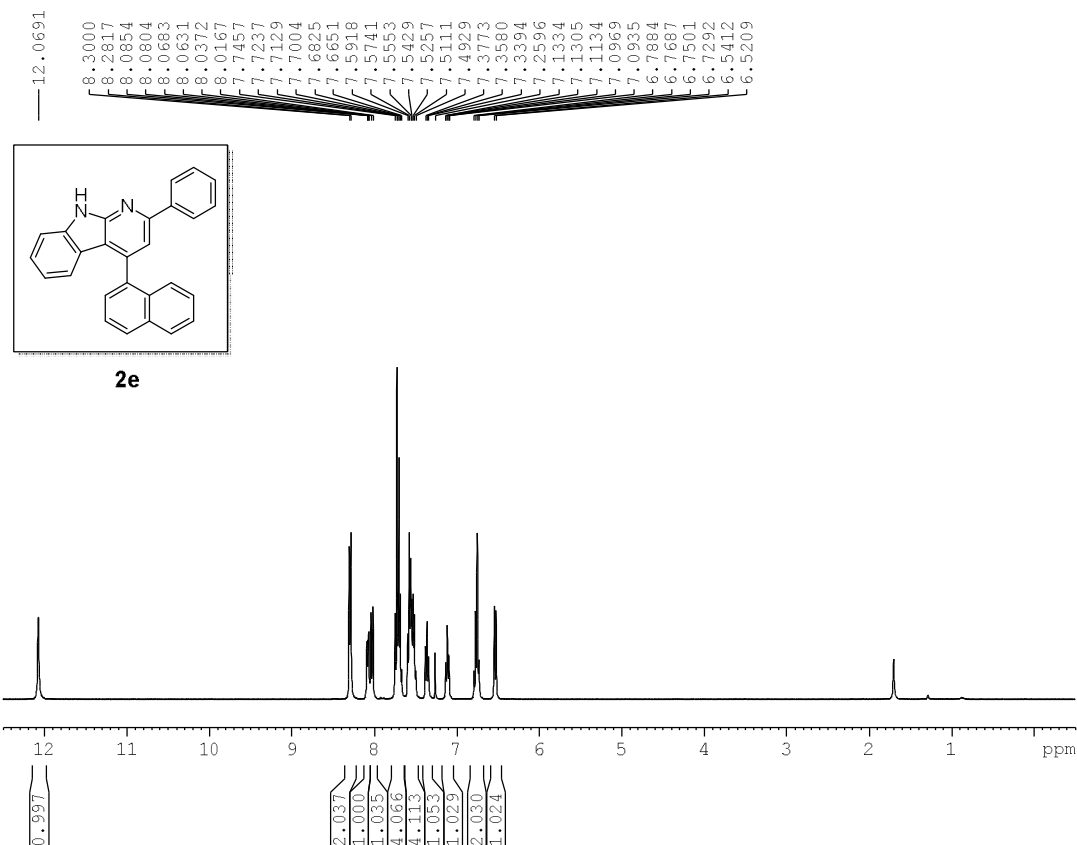
F2 - Acquisition Parameters
Date_    20161026
Time     17.24
INSTRUM spect
PROBHD   5 mm PABBO BB/
PULPROG zgpg30
TD       32768
SOLVENT  CDCl3
NS       870
DS       0
SWH      24038.461 Hz
FIDRES   0.733596 Hz
AQ       0.6815744 sec
RG       198.09
DW       20.900 usec
DE       6.50 usec
TE       298.7 K
D1       2.0000000 sec
D11     0.03000000 sec
TDO      1

===== CHANNEL f1 =====
SFO1    100.6228298 MHz
NUC1     13C
P1      10.00 usec
PLW1    47.50000000 W

===== CHANNEL f2 =====
SFO2    400.1316005 MHz
NUC2     1H
CPDPRG2 waltz16
PCPD2   90.00 usec
PLW2    15.00000000 W
PLW12   0.33750001 W
PLW13   0.27338001 W

F2 - Processing parameters
SI      32768
SF      100.6127497 MHz
WDW     EM
SSB     0
LB      2.00 Hz
GB      0
PC      1.00
    
```

4-(naphthalen-1-yl)-2-phenyl- α -carboline

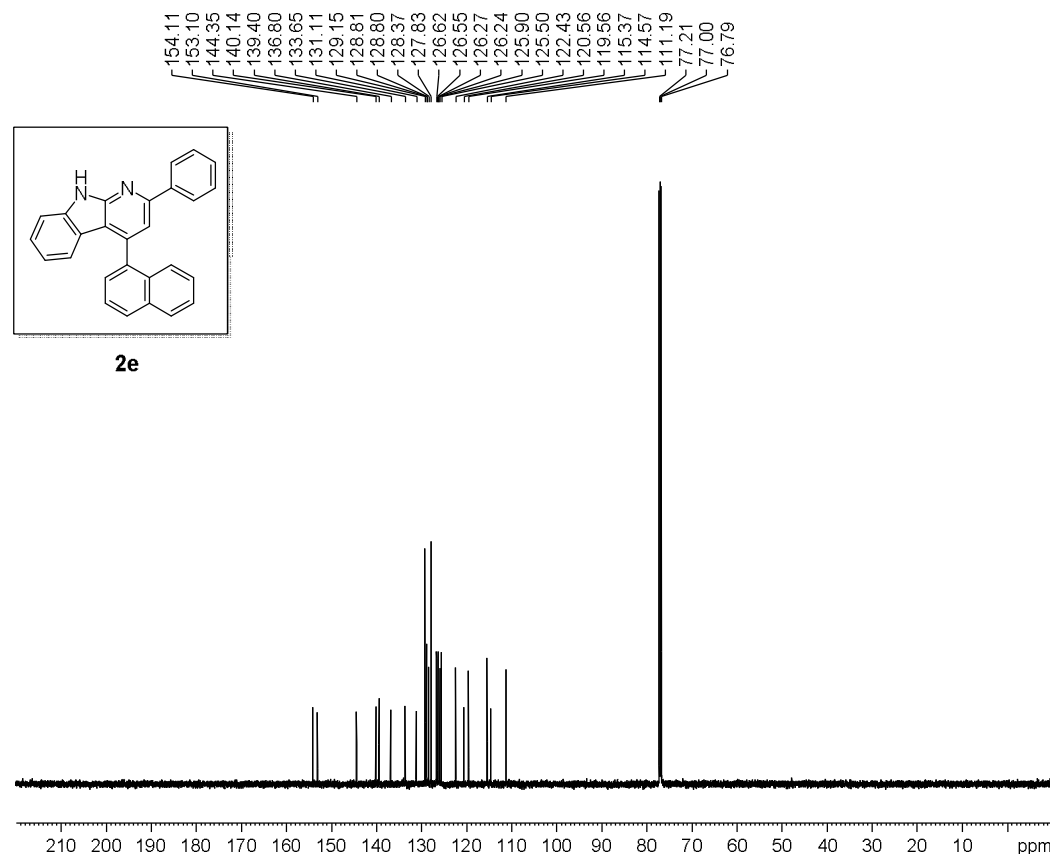


Current Data Parameters
NAME E(1-naphthyl chalcone)
EXPNO 61
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150113
Time 17.07
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7211.539 Hz
FIDRES 0.220079 Hz
AQ 2.2719147 sec
RG 89.08
DW 69.333 usec
DE 10.52 usec
TE 297.4 K
D1 2.0000000 sec
TDO 1

==== CHANNEL f1 =====
SFO1 400.1324009 MHz
NUC1 1H
P1 12.80 usec
PLW1 15.00000000 W
F2 - Processing parameters
SI 16584
SF 400.1300091 MHz
EM
WDW 0
SSB 0
LB 0 Hz
GB 0
PC 1.00

4-(naphthalen-1-yl)-2-phenyl- α -carboline



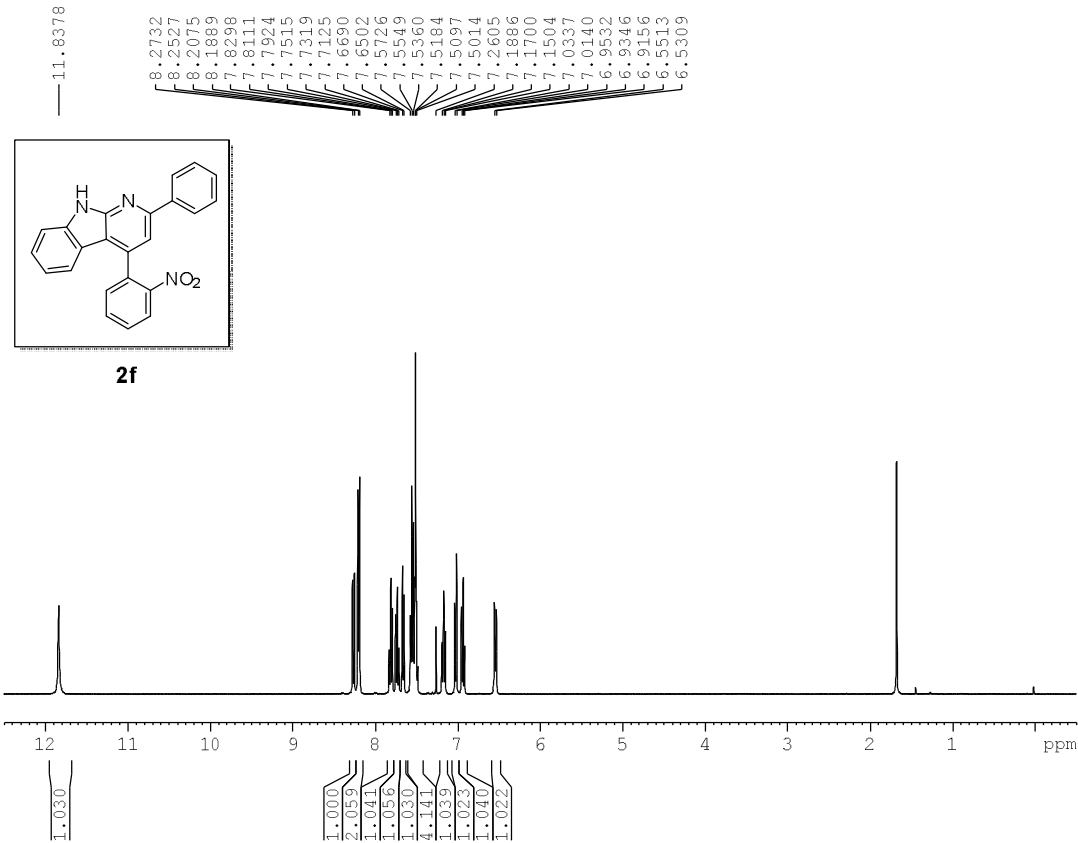
Current Data Parameters
NAME E(1-naphthyl chalcone)
EXPNO 613
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150116
Time 15.31
INSTRUM spect
PROBHD 5 mm PATBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 200
DS 0
SWH 36057.691 Hz
FIDRES 0.550197 Hz
AQ 0.9087659 sec
RG 2050
DW 13.957 usec
DE 6.50 usec
TE 300.3 K
D1 2.0000000 sec
D11 0.03000000 sec
TDO 1

==== CHANNEL f1 =====
SFO1 150.9287115 MHz
NUC1 13C
P1 10.80 usec
PLW1 50.00000000 W
==== CHANNEL f2 =====
SFO2 600.1724007 MHz
NUC2 1H
CPDPRG2 waltz64
PCPD2 70.00 usec
PLW2 30.00000000 W
PLW12 1.03470004 W
PLW13 0.50700003 W

F2 - Processing parameters
SI 65536
SF 150.9128737 MHz
EM
WDW 0
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

4-(2-nitrophenyl)-2-phenyl- α -carboline



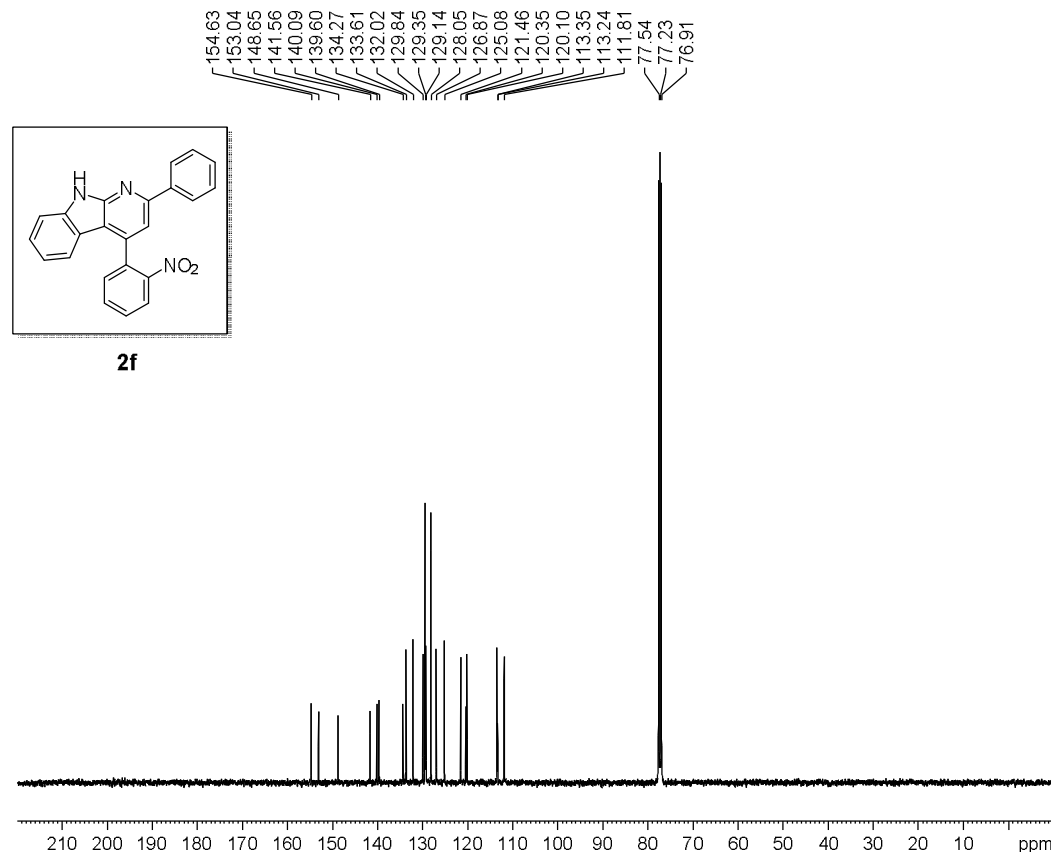
Current Data Parameters
 NAME F(2-NO2 chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161022
 Time 18.32
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 113.31
 DW 69.333 usec
 DE 10.50 usec
 TE 298.5 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.90 usec
 PLW1 15.00000000 W

F2 - Processing parameters
 SI 16384
 SF 400.1300101 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-(2-nitrophenyl)-2-phenyl- α -carboline



Current Data Parameters
 NAME F(2-NO2 chalcone)
 EXPNO 613
 PROCNO 1

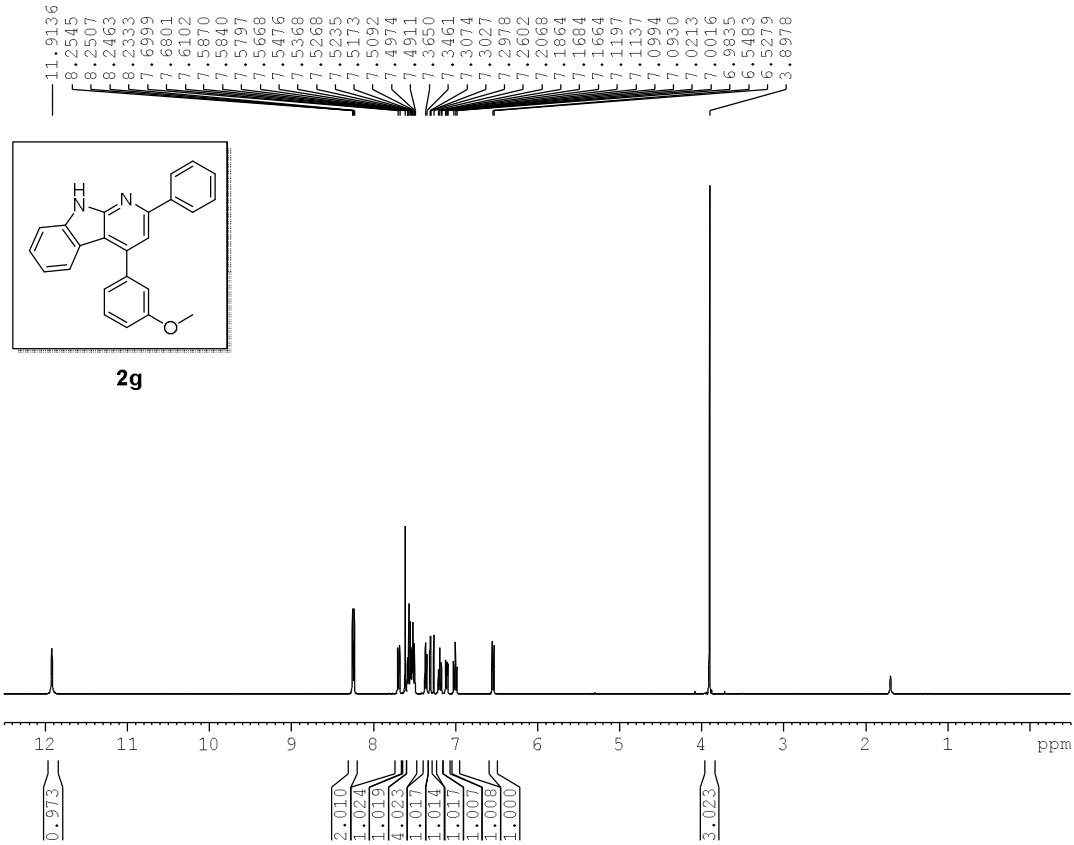
F2 - Acquisition Parameters
 Date_ 20161022
 Time 18.39
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1163
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 299.4 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6228298 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 47.50000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.33750001 W
 PLW13 0.27338001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127486 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

4-(3-methoxyphenyl)-2-phenyl- α -carboline



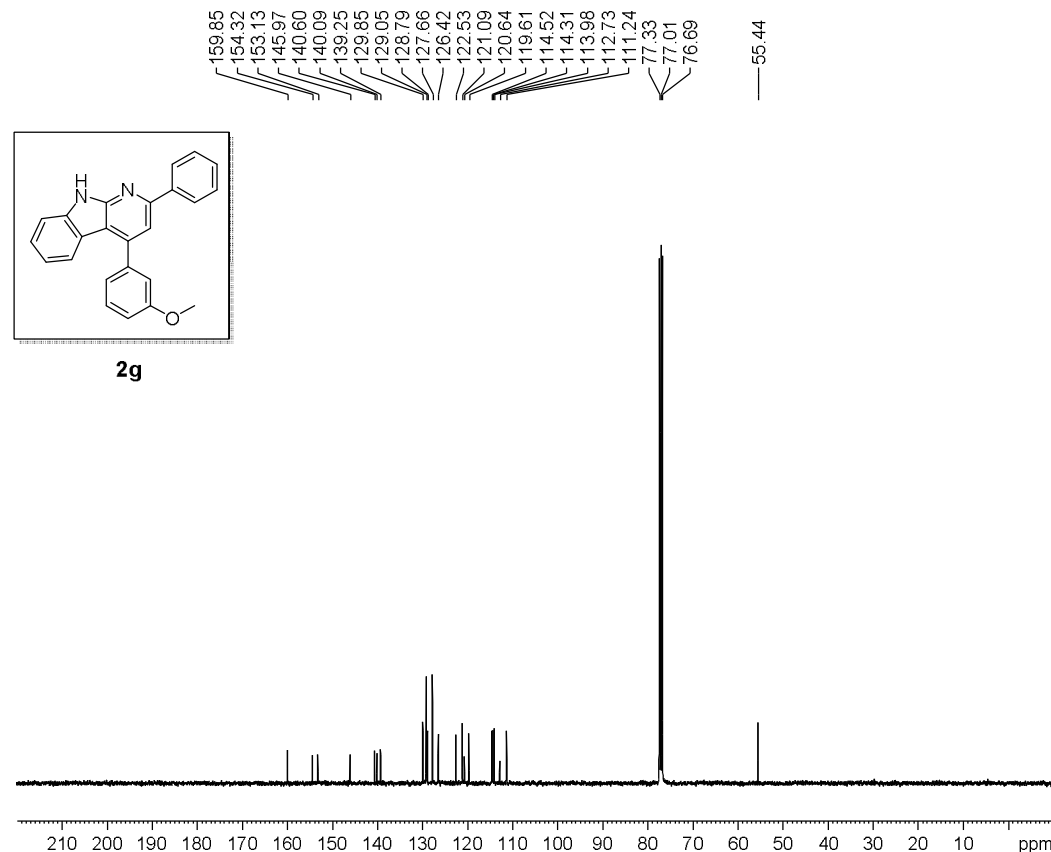
Current Data Parameters
 NAME G(3-OMe chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150802
 Time 20.32
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 8
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 297.0 K
 D1 2.00000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 15.00 usec
 PL1 5.30 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 18584
 SF 400.1300091 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-(3-methoxyphenyl)-2-phenyl- α -carboline



Current Data Parameters
 NAME G(3-OMe chalcone)
 EXPNO 613
 PROCNO 1

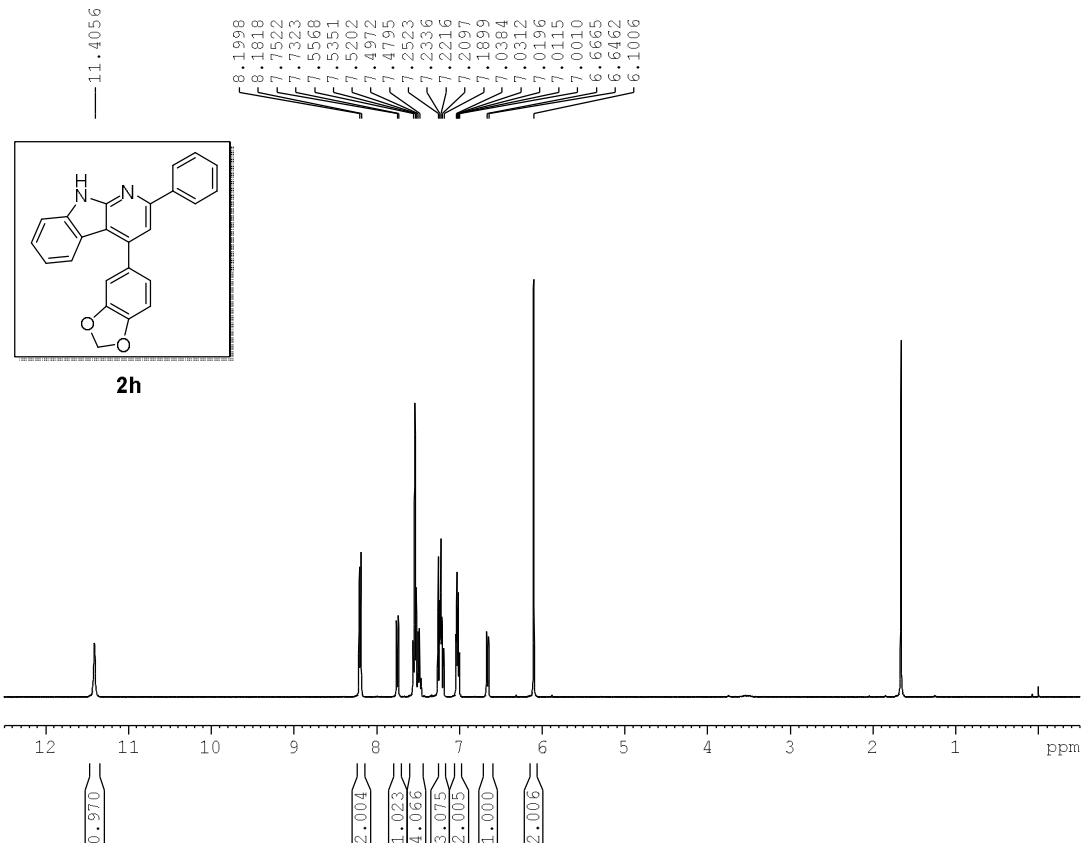
F2 - Acquisition Parameters
 Date_ 20150831
 Time 17.05
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1213
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.9 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 47.50000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.33750001 W
 PLW13 0.27338001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127685 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

4-(benzo[d][1,3]dioxol-5-yl)-2-phenyl- α -carboline



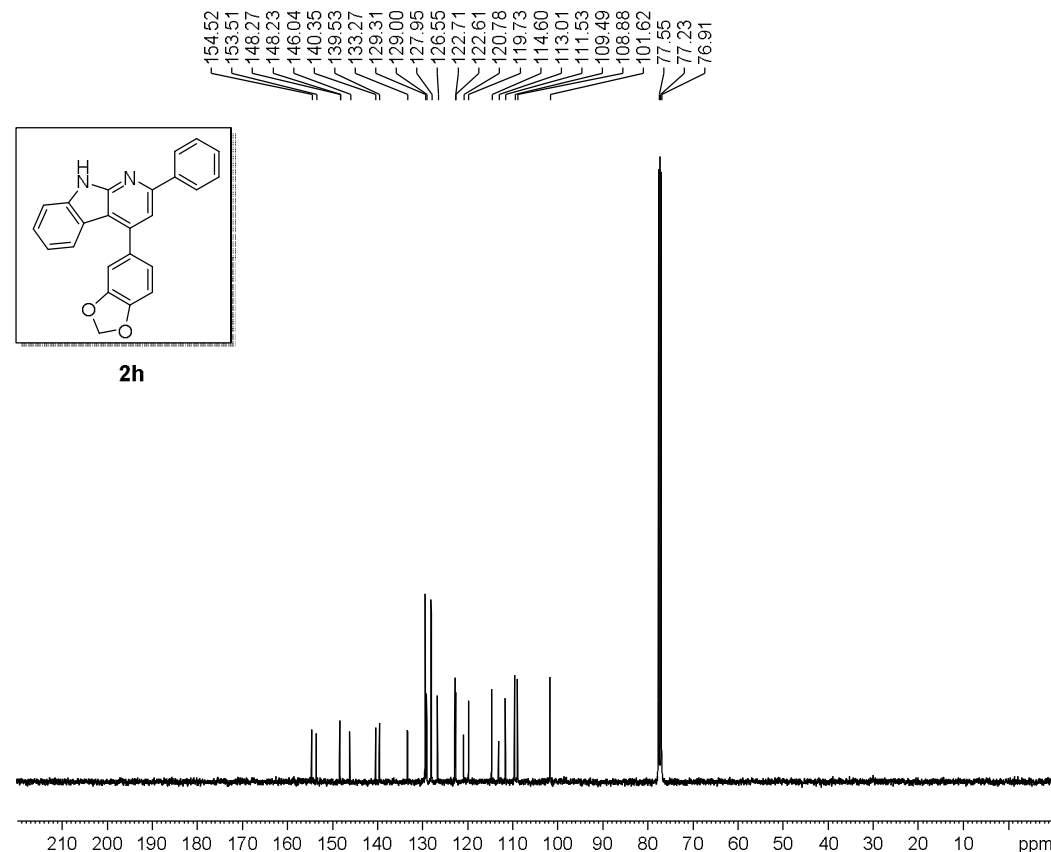
Current Data Parameters
 NAME H(piperonyl chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161021
 Time 16.43
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 297.3 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.40 usec
 PL1 1.80 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16584
 SF 400.1300128 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-(benzo[d][1,3]dioxol-5-yl)-2-phenyl- α -carboline



Current Data Parameters
 NAME H(piperonyl chalcone)
 EXPNO 613
 PROCNO 1

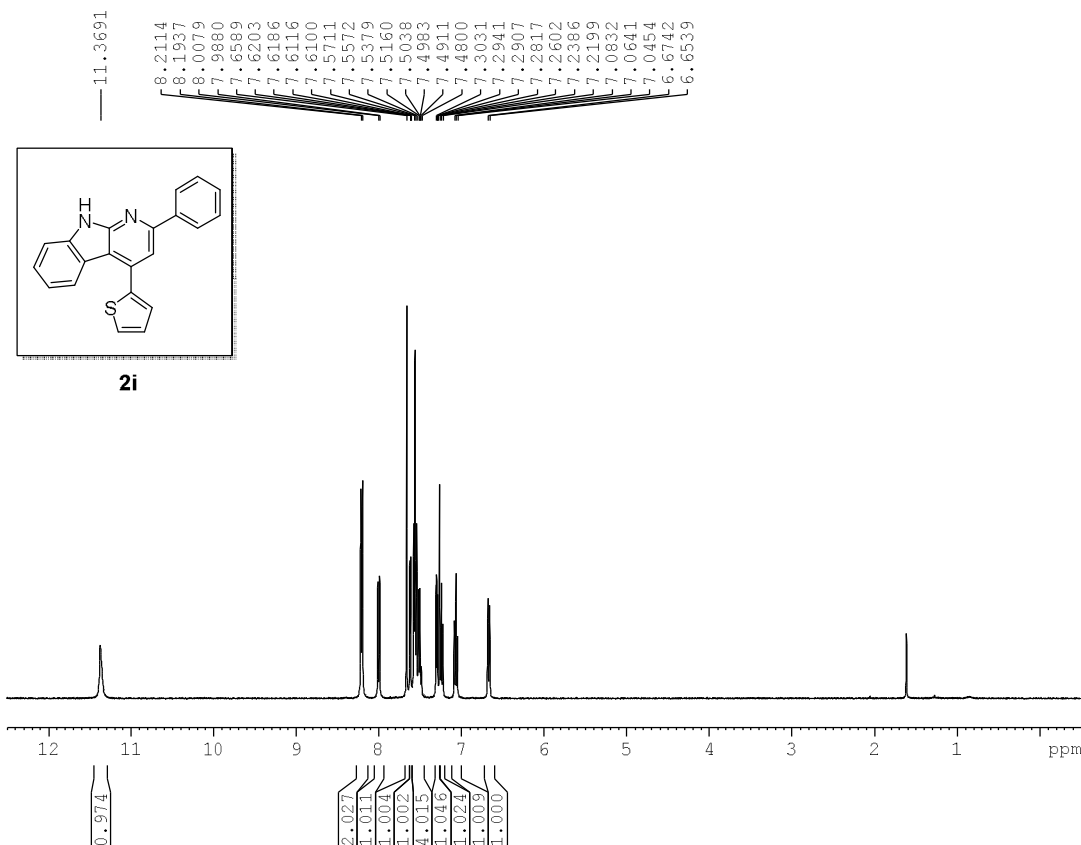
F2 - Acquisition Parameters
 Date_ 20141126
 Time 18.25
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 725
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.9 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127473 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-phenyl-4-(thiophen-2-yl)- α -carboline



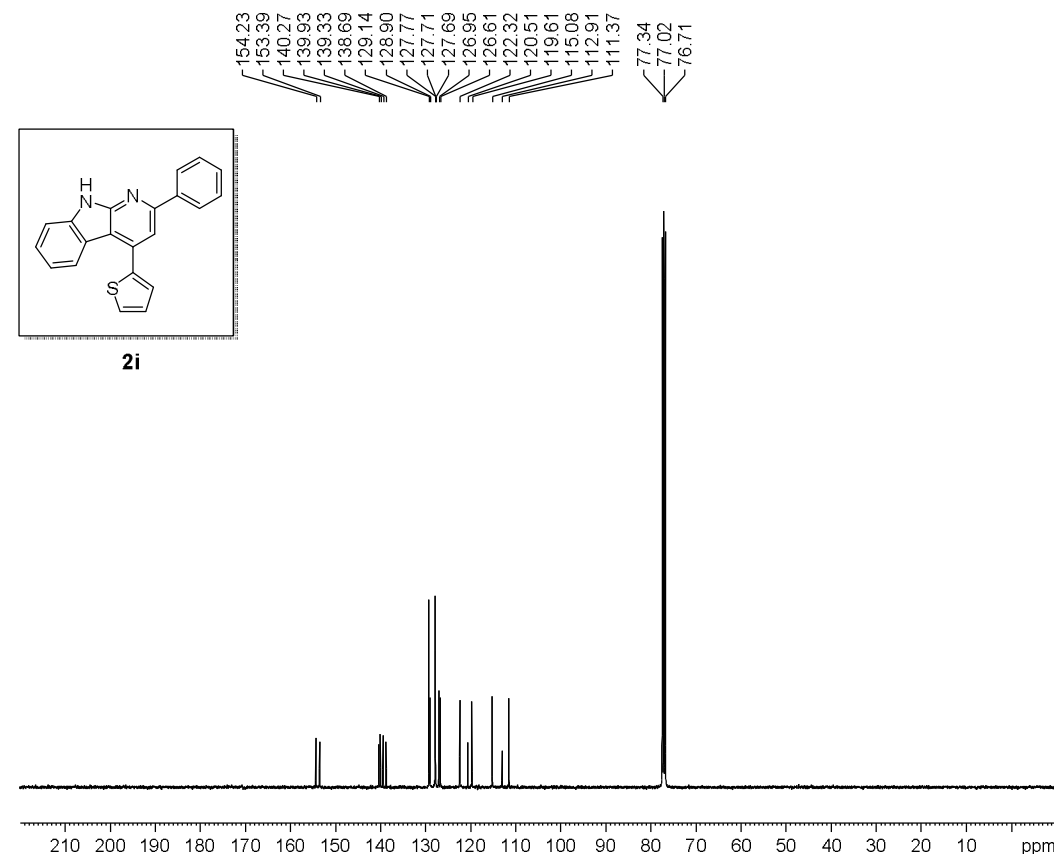
Current Data Parameters
 NAME l(2-thiophene chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150108
 Time 21.33
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 8
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 198.09
 DW 69.333 usec
 DE 10.52 usec
 TE 298.8 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.00000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300089 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-phenyl-4-(thiophen-2-yl)- α -carboline



Current Data Parameters
 NAME l(2-thiophene chalcone)
 EXPNO 613
 PROCNO 1

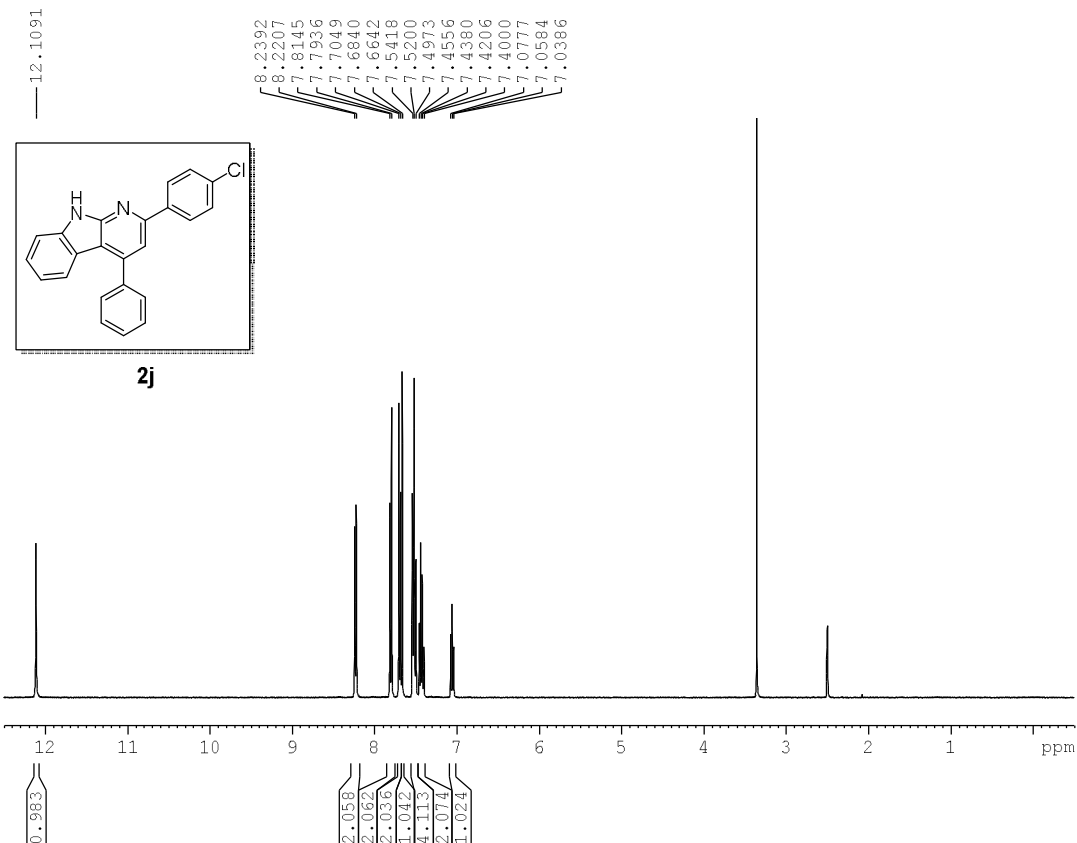
F2 - Acquisition Parameters
 Date_ 20150108
 Time 23.53
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.8 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.00000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127685 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-chlorophenyl)-4-phenyl- α -carboline



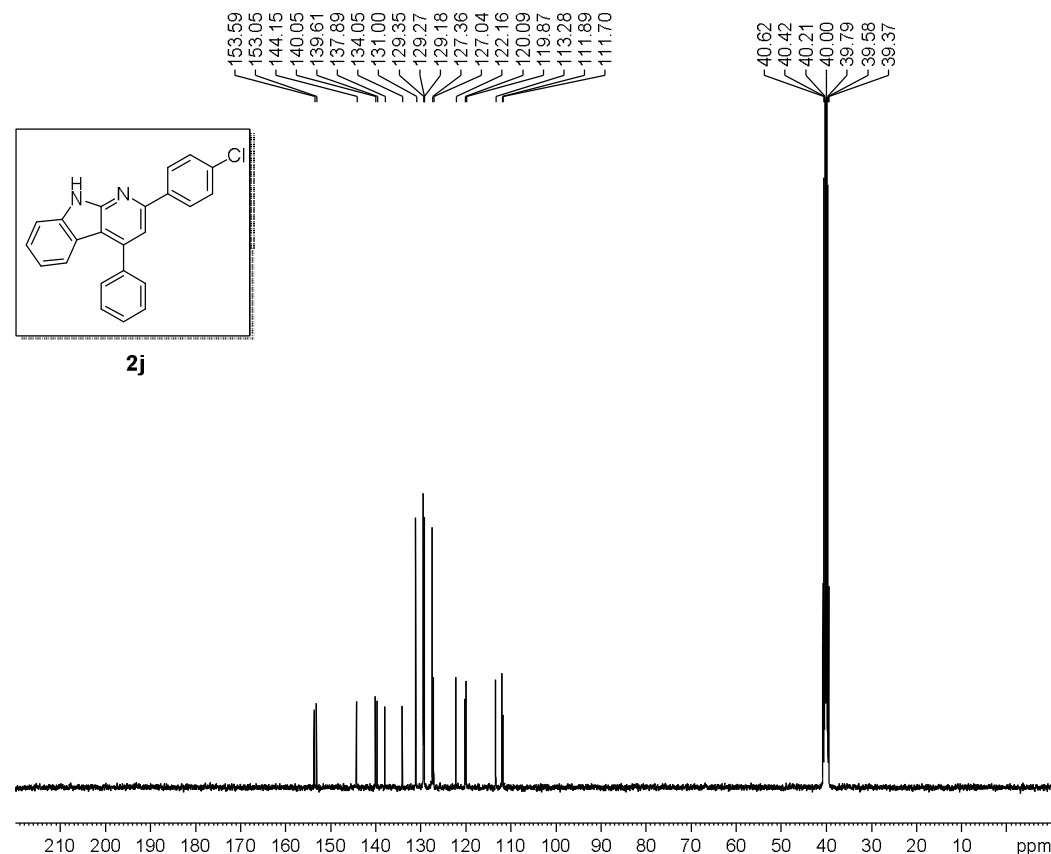
Current Data Parameters
 NAME J(4-Cl chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150403
 Time 17.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 4.01
 DW 69.333 usec
 DE 10.52 usec
 TE 298.0 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300025 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-chlorophenyl)-4-phenyl- α -carboline



Current Data Parameters
 NAME J(4-Cl chalcone)
 EXPNO 613
 PROCNO 1

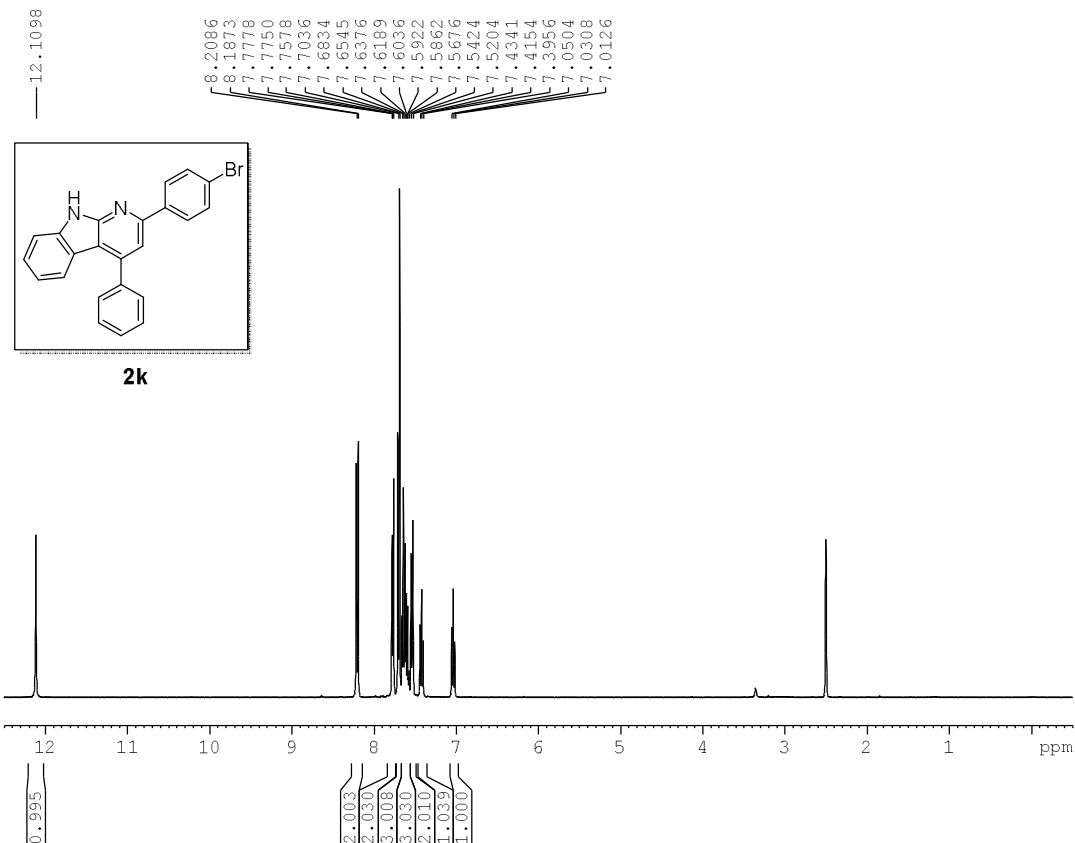
F2 - Acquisition Parameters
 Date_ 20150317
 Time 17.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1200
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.9 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127708 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-bromophenyl)-4-phenyl- α -carboline



```

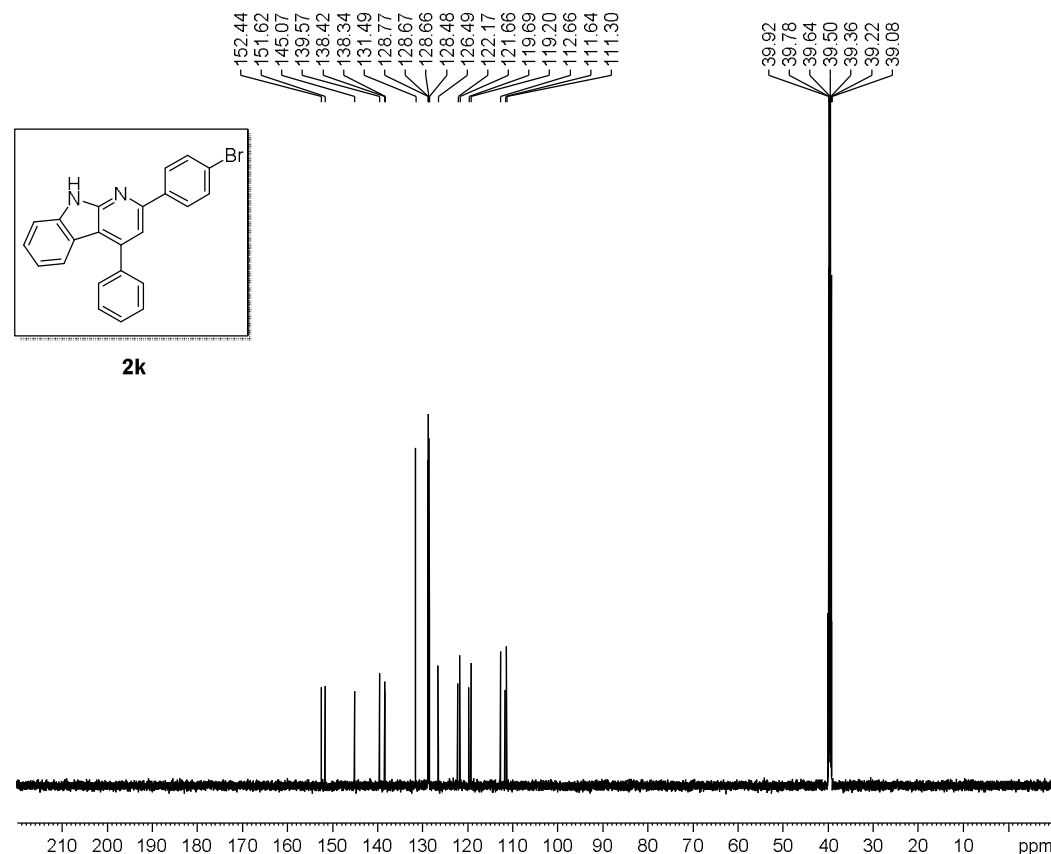
Current Data Parameters
NAME      K(4-Br chalcone)
EXPNO    61
PROCNO   1

F2 - Acquisition Parameters
Date_    20141222
Time     19.47
INSTRUM  spect
PROBHD   5 mm BBO BB-1H
PULPROG  zg30
TD        32768
SOLVENT  DMSO
NS        16
DS        0
SWH       7246.377 Hz
FIDRES    0.221142 Hz
AQ        2.2609921 sec
RG        114
DW        69.000 usec
DE        6.50 usec
TE        295.8 K
D1        2.0000000 sec
TD0       1

===== CHANNEL f1 =====
NUC1      1H
P1        15.00 usec
PL1       -5.85 dB
SFO1      400.1324008 MHz

F2 - Processing parameters
SI        16384
SF        400.1300026 MHz
WDW       EM
SSB       0
LB        0 Hz
GB        0
PC        1.00
    
```

2-(4-bromophenyl)-4-phenyl- α -carboline



```

Current Data Parameters
NAME      K(4-Br chalcone)
EXPNO    613
PROCNO   1

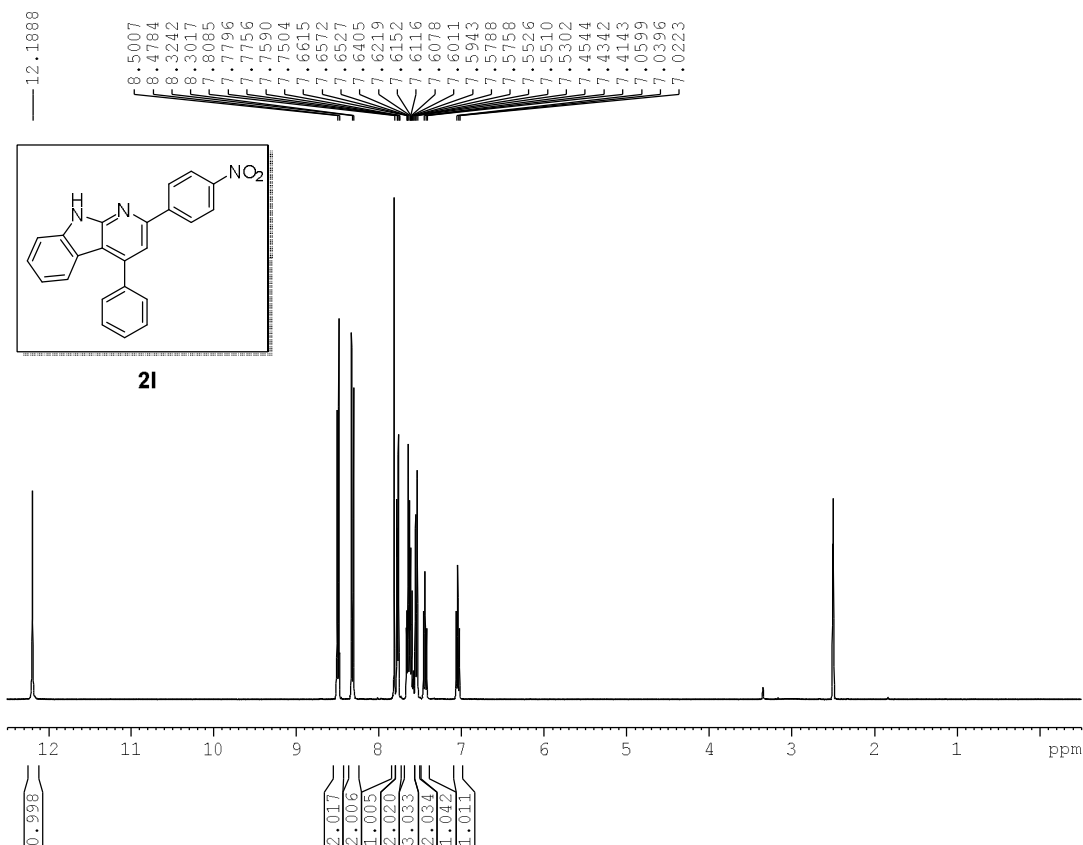
F2 - Acquisition Parameters
Date_    20150116
Time     16.37
INSTRUM  spect
PROBHD   5 mm PATBO BB-
PULPROG  zgpg30
TD        65536
SOLVENT  DMSO
NS        146
DS        0
SWH       36057.691 Hz
FIDRES    0.550197 Hz
AQ        0.9087659 sec
RG        2050
DW        13.957 usec
DE        6.50 usec
TE        310.0 K
D1        2.0000000 sec
D11      0.03000000 sec
TD0       1

===== CHANNEL f1 =====
SFO1      150.9287115 MHz
NUC1      13C
P1        10.80 usec
PLW1      50.0000000 W

===== CHANNEL f2 =====
SFO2      600.1724007 MHz
NUC2      1H
CPDPRG2  waltz64
PCPD2    70.00 usec
PLW2     30.0000000 W
PLW12    1.03470004 W
PLW13    0.50700003 W

F2 - Processing parameters
SI        65536
SF        150.9129582 MHz
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.00
    
```


2-(4-nitrophenyl)-4-phenyl- α -carboline



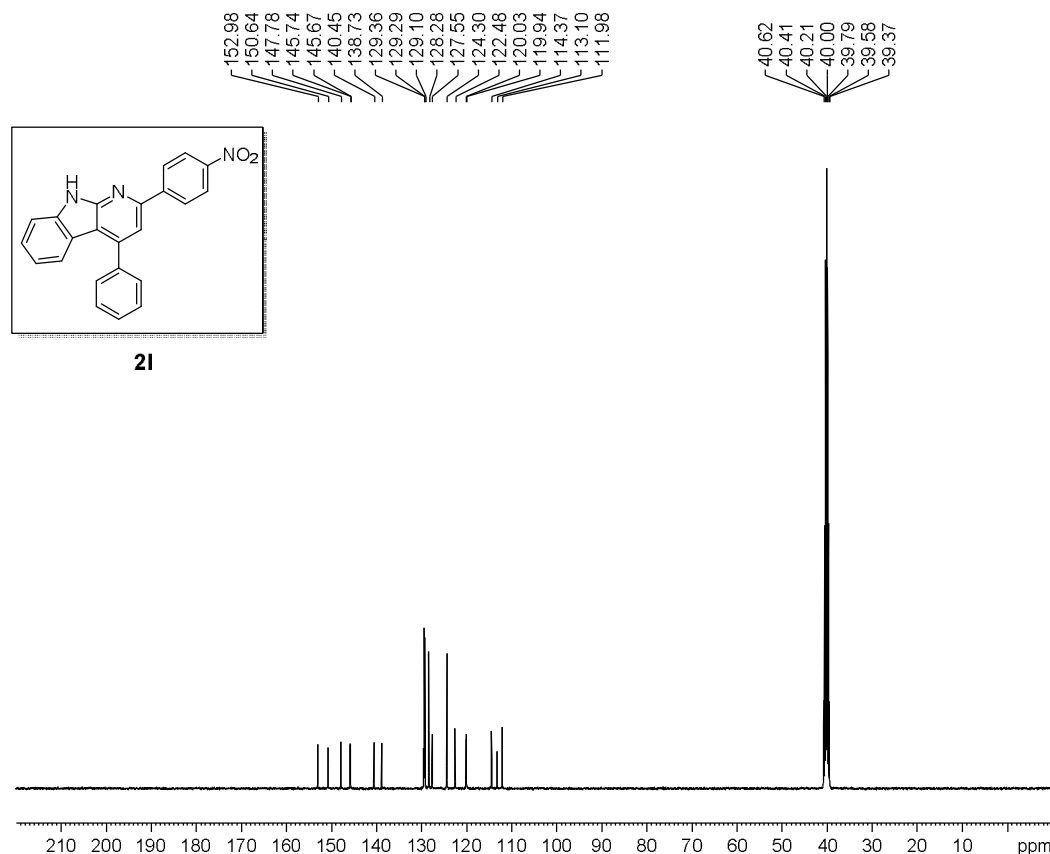
Current Data Parameters
 NAME L(4-NO2 chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20141213
 Time 13.25
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.4 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 15.00 usec
 PL1 -5.85 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 18584
 SF 400.1300028 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-nitrophenyl)-4-phenyl- α -carboline



Current Data Parameters
 NAME L(4-NO2 chalcone)
 EXPNO 613
 PROCNO 1

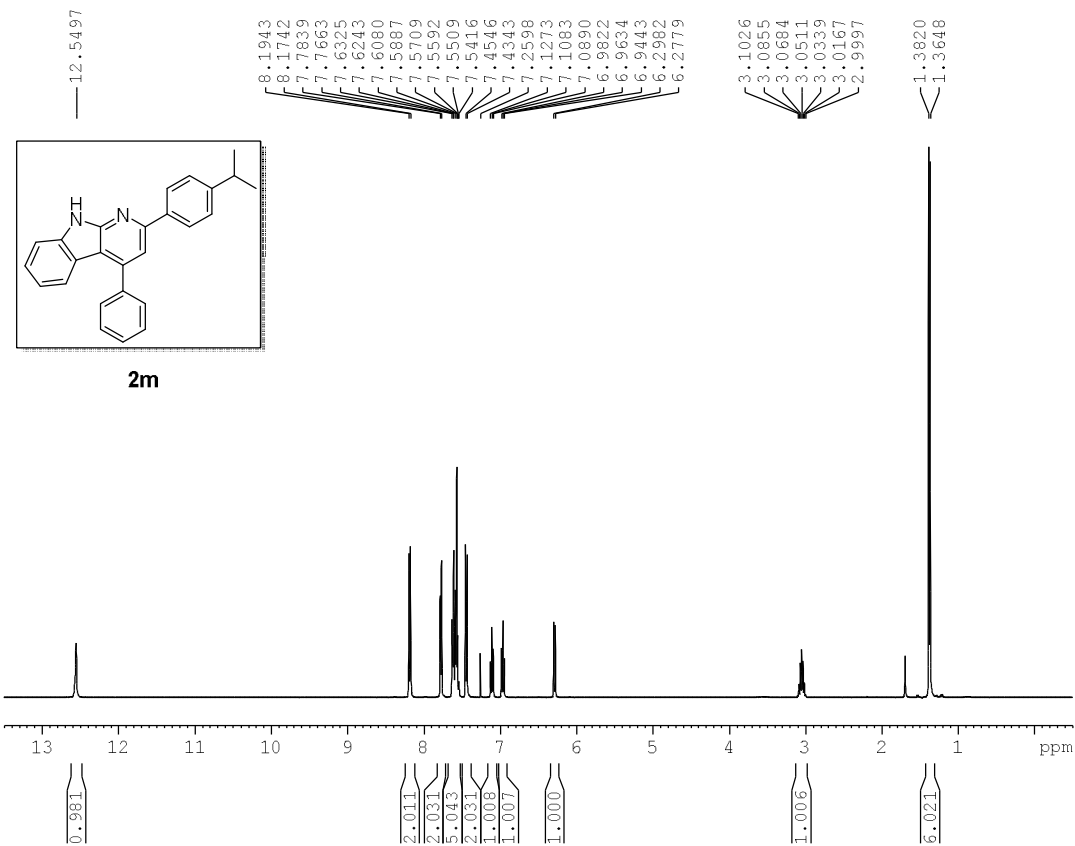
F2 - Acquisition Parameters
 Date_ 20141213
 Time 19.18
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 2000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.4 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.00000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127712 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-isopropylphenyl)-4-phenyl- α -carboline



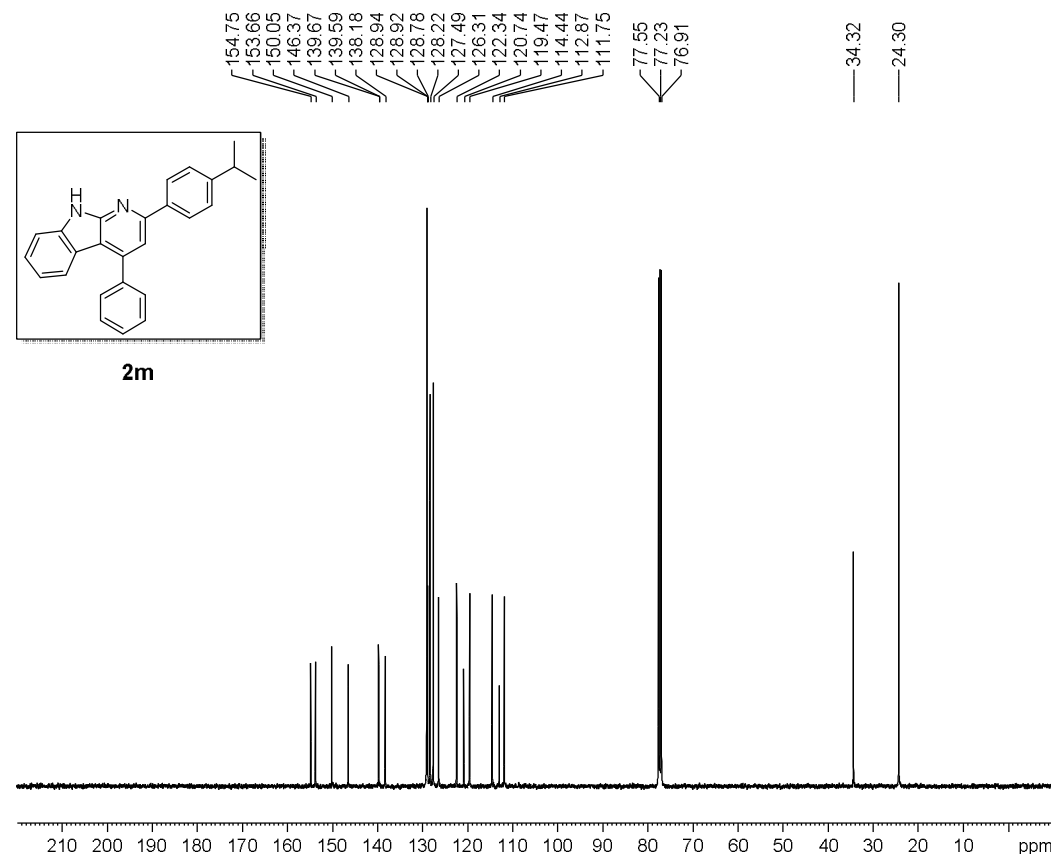
Current Data Parameters
 NAME M(4-cumene chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150209
 Time 18:55
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.1 K
 D1 2.00000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 15.00 usec
 PL1 -5.85 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300095 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-isopropylphenyl)-4-phenyl- α -carboline



Current Data Parameters
 NAME M(4-cumene chalcone)
 EXPNO 613
 PROCNO 1

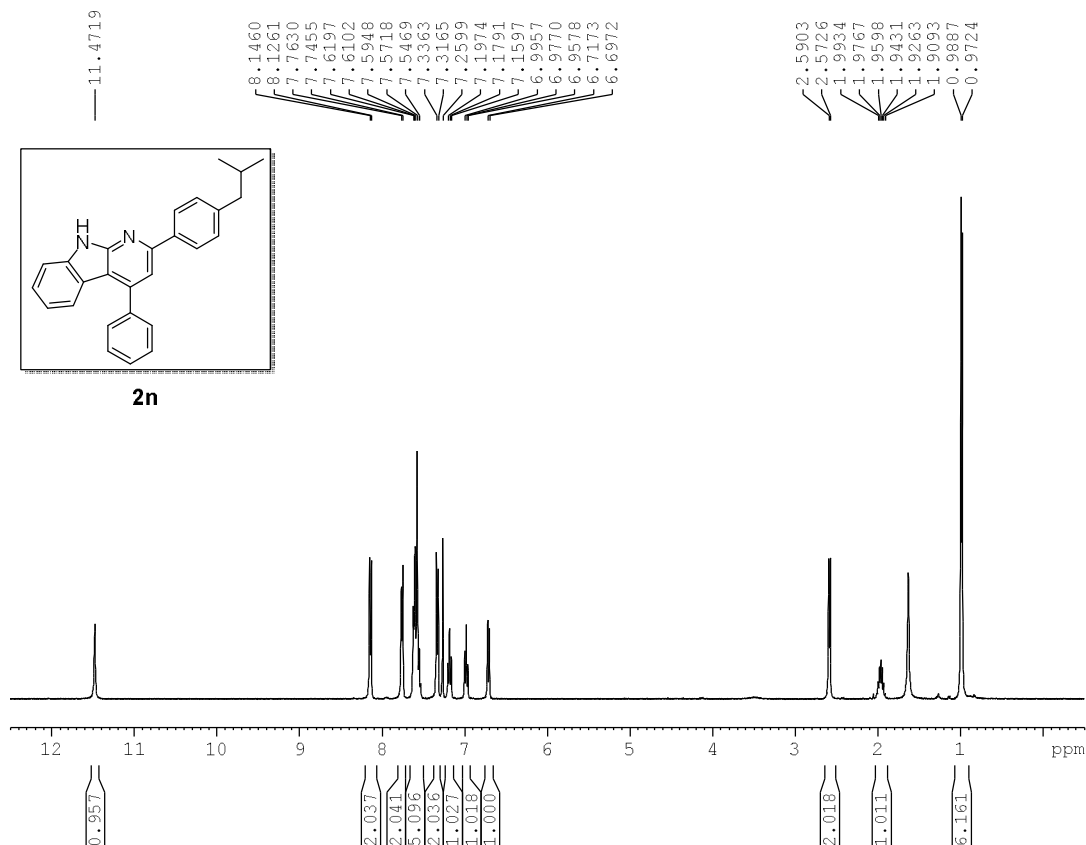
F2 - Acquisition Parameters
 Date_ 20150227
 Time 23:06
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1200
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.00000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127508 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-isobutylphenyl)-4-phenyl- α -carboline



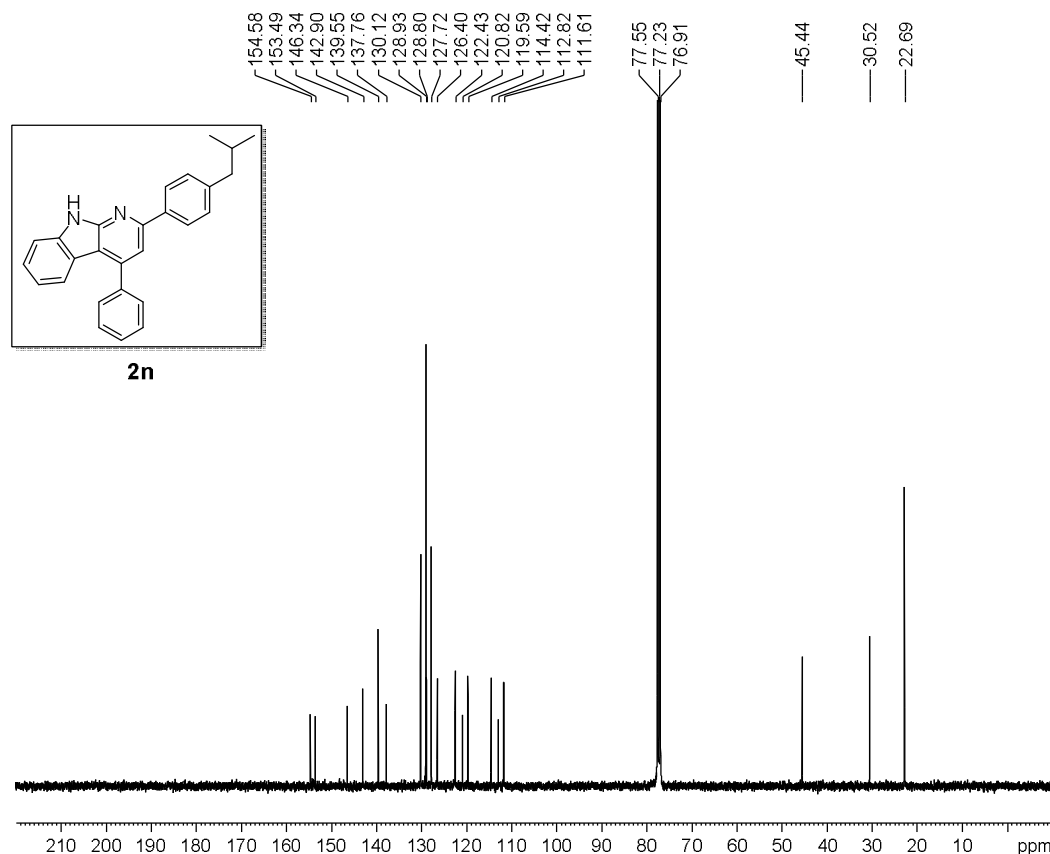
Current Data Parameters
 NAME N(4-isobutyl chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140228
 Time 1.42
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 223.1
 DW 69.000 usec
 DE 6.50 usec
 TE 296.1 K
 D1 2.0000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 ¹H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300091 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-isobutylphenyl)-4-phenyl- α -carboline



Current Data Parameters
 NAME N(4-isobutyl chalcone)
 EXPNO 613
 PROCNO 1

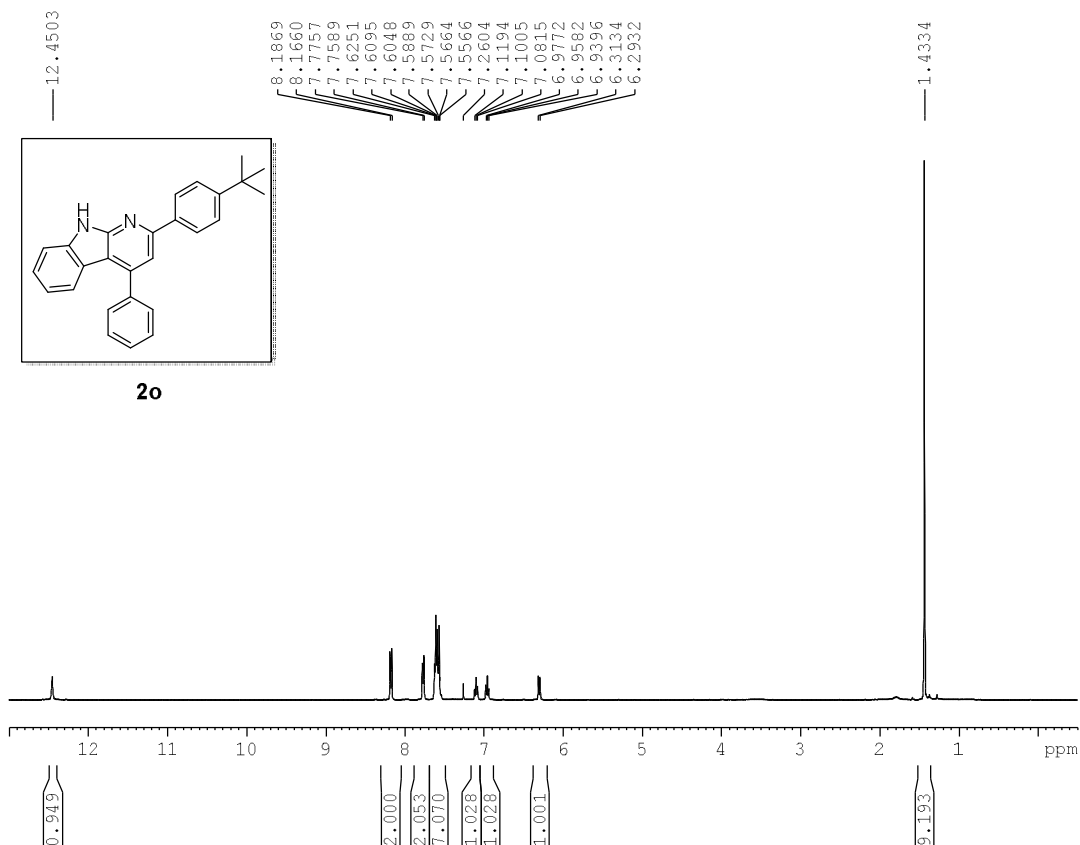
F2 - Acquisition Parameters
 Date_ 20140226
 Time 2.19
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1749
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 296.1 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 ¹³C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 ¹H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127490 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

2-(4-(tert-butyl)phenyl)-4-phenyl- α -carboline



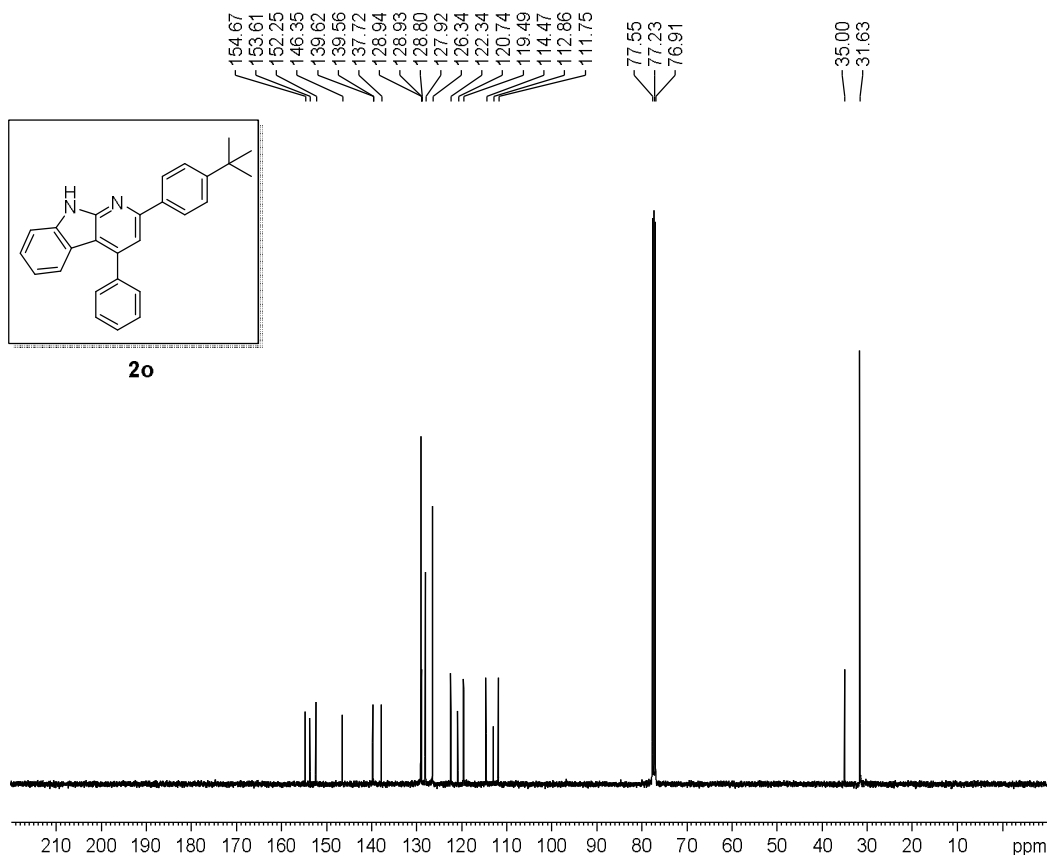
Current Data Parameters
 NAME O(4-t-butyl chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150410
 Time 17.30
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 161.3
 DW 69.000 usec
 DE 6.50 usec
 TE 293.9 K
 D1 2.0000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 21.45 usec
 PL1 -5.85 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16584
 SF 400.1300093 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-(tert-butyl)phenyl)-4-phenyl- α -carboline



Current Data Parameters
 NAME O(4-t-butyl chalcone)
 EXPNO 613
 PROCNO 1

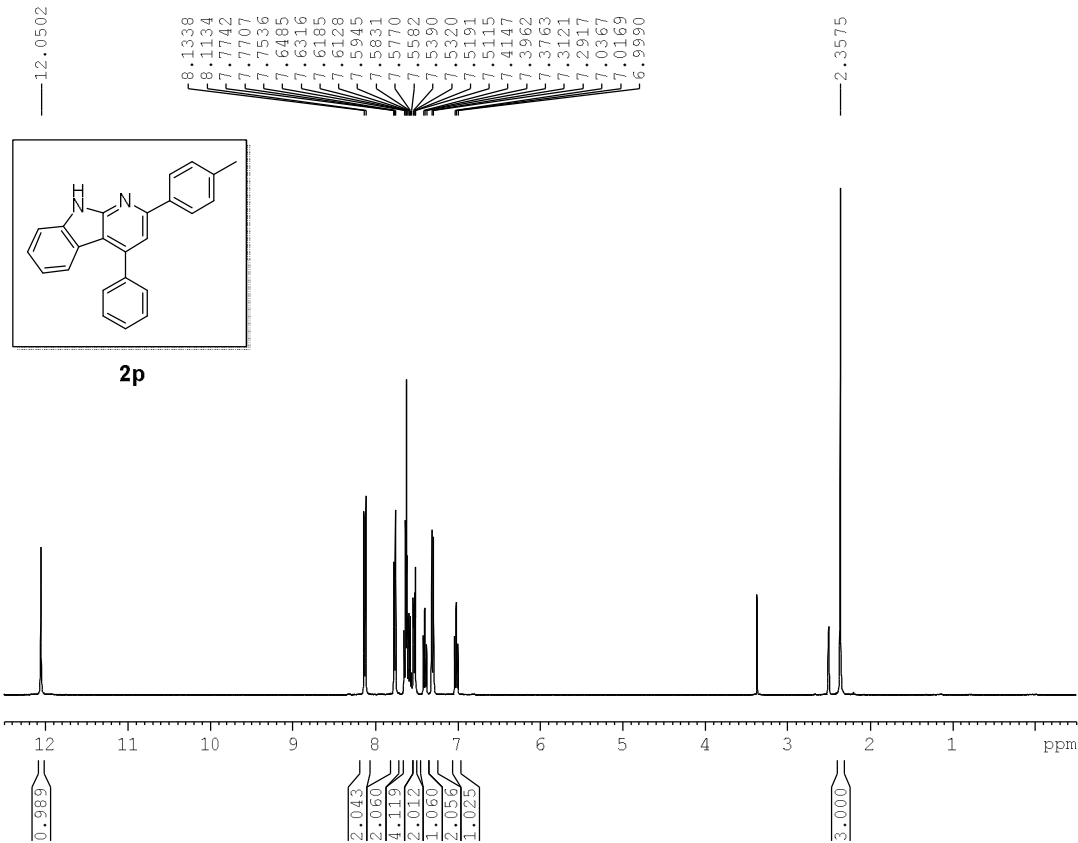
F2 - Acquisition Parameters
 Date_ 20150410
 Time 18.06
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1200
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 294.0 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 10.00 usec
 PL1 6.70 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -5.85 dB
 PL12 6.00 dB
 PL13 9.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127469 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

4-phenyl-2-(p-tolyl)- α -carboline



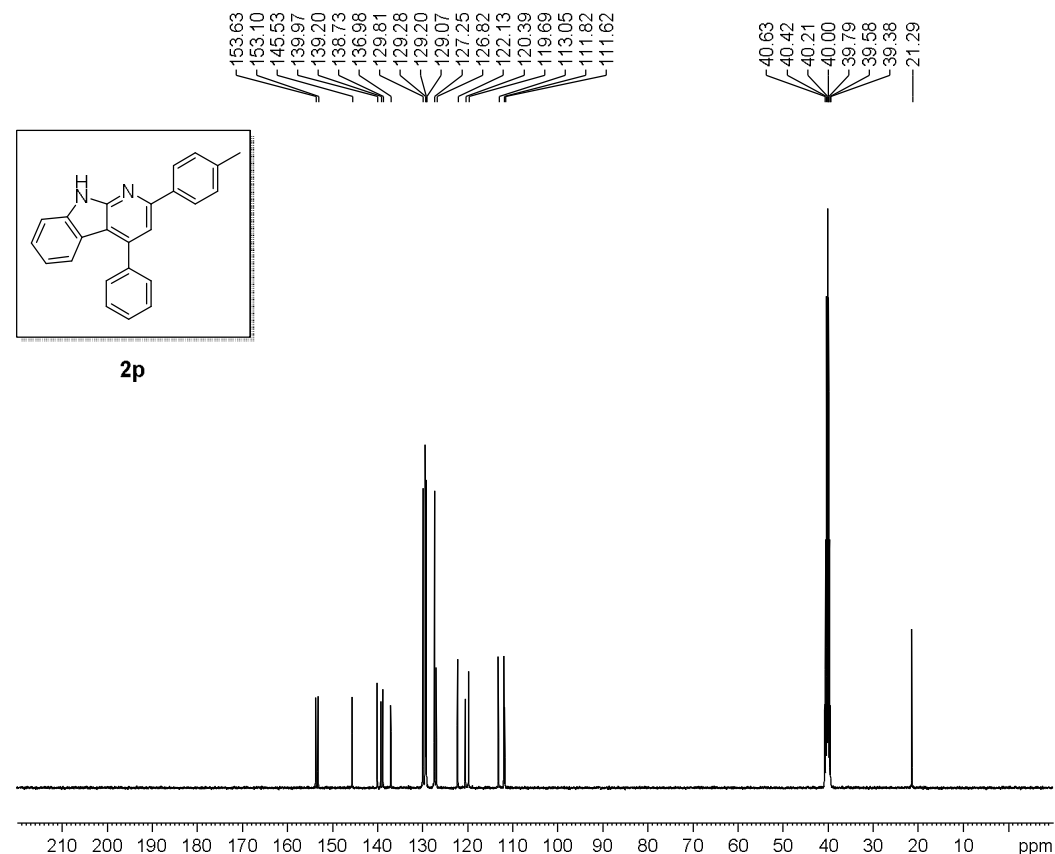
Current Data Parameters
 NAME P(4-Me chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150105
 Time_ 19.37
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 63.58
 DW 69.333 usec
 DE 10.62 usec
 TE 297.7 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300024 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-phenyl-2-(p-tolyl)- α -carboline



Current Data Parameters
 NAME P(4-Me chalcone)
 EXPNO 613
 PROCNO 1

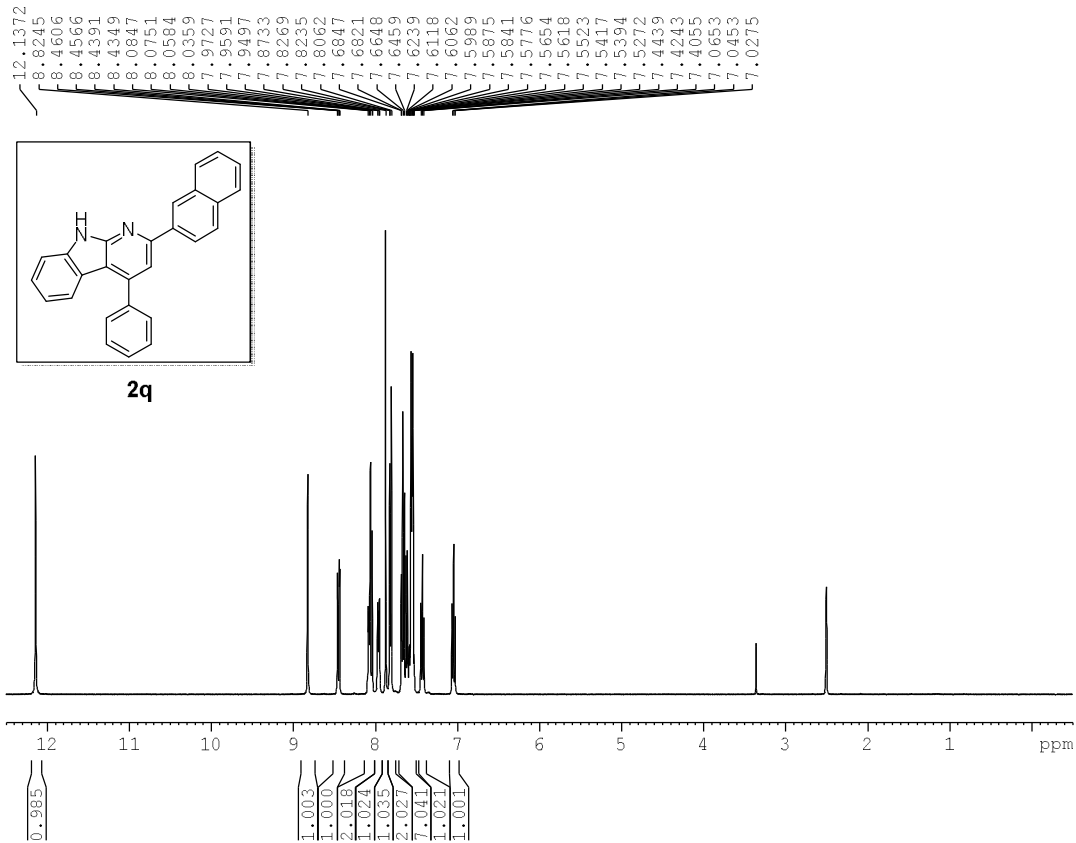
F2 - Acquisition Parameters
 Date_ 20150108
 Time_ 22.10
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 2000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.6 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127683 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(naphthalen-2-yl)-4-phenyl- α -carboline



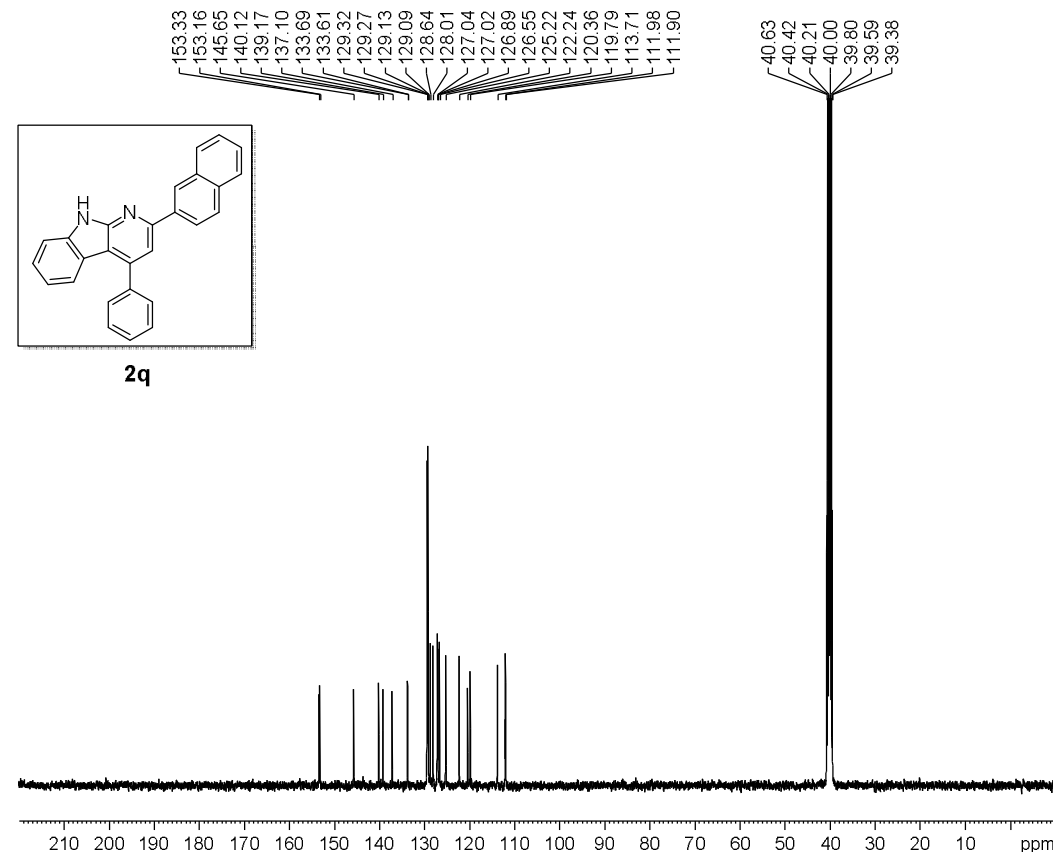
Current Data Parameters
 NAME Q(2-naphthyl chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150305
 Time 18.13
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 89.08
 DW 69.333 usec
 DE 10.52 usec
 TE 297.3 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300024 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(naphthalen-2-yl)-4-phenyl- α -carboline



Current Data Parameters
 NAME Q(2-naphthyl chalcone)
 EXPNO 613
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150304
 Time 17.10
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.4 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

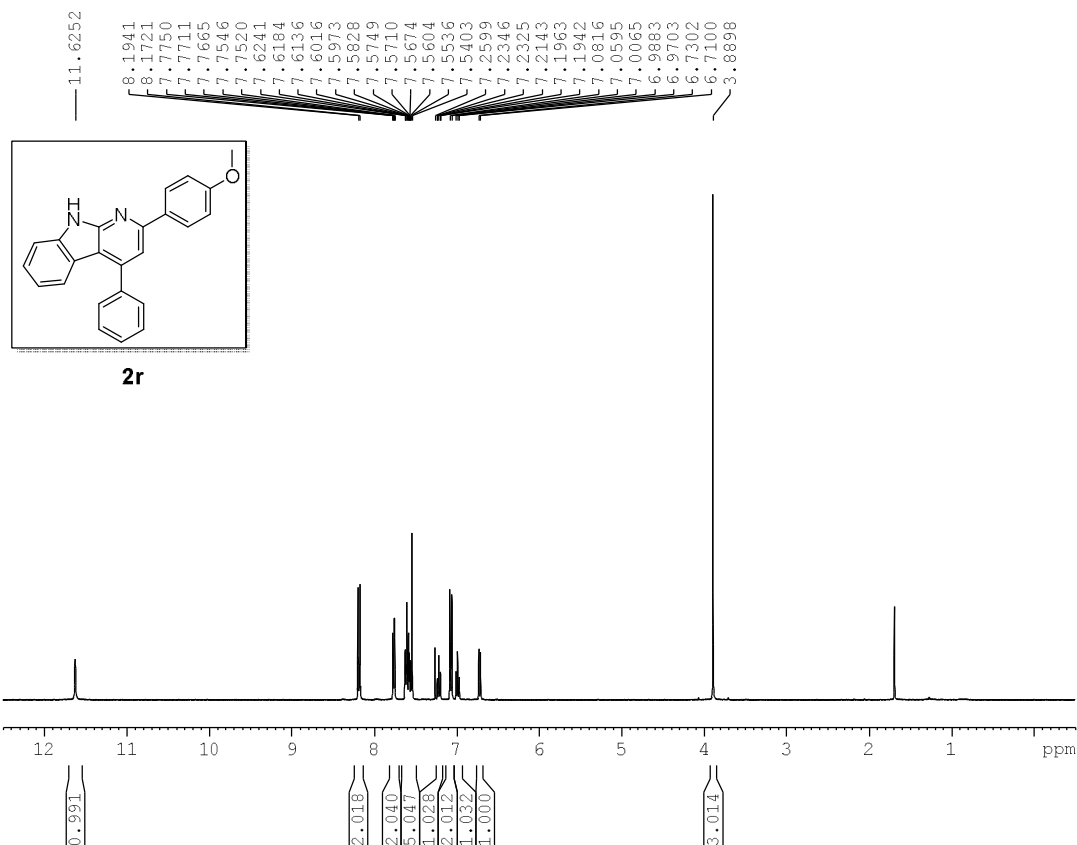
F2 - Processing parameters
 SI 32768
 SF 100.6127685 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-methoxyphenyl)-4-phenyl- α -carboline

Current Data Parameters
 NAME R(4'-OMe chalcone)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150112
 Time 17.09
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 39.72
 DW 69.333 usec
 DE 10.52 usec
 TE 297.5 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W
 F2 - Processing parameters
 SI 16584
 SF 400.1300092 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00



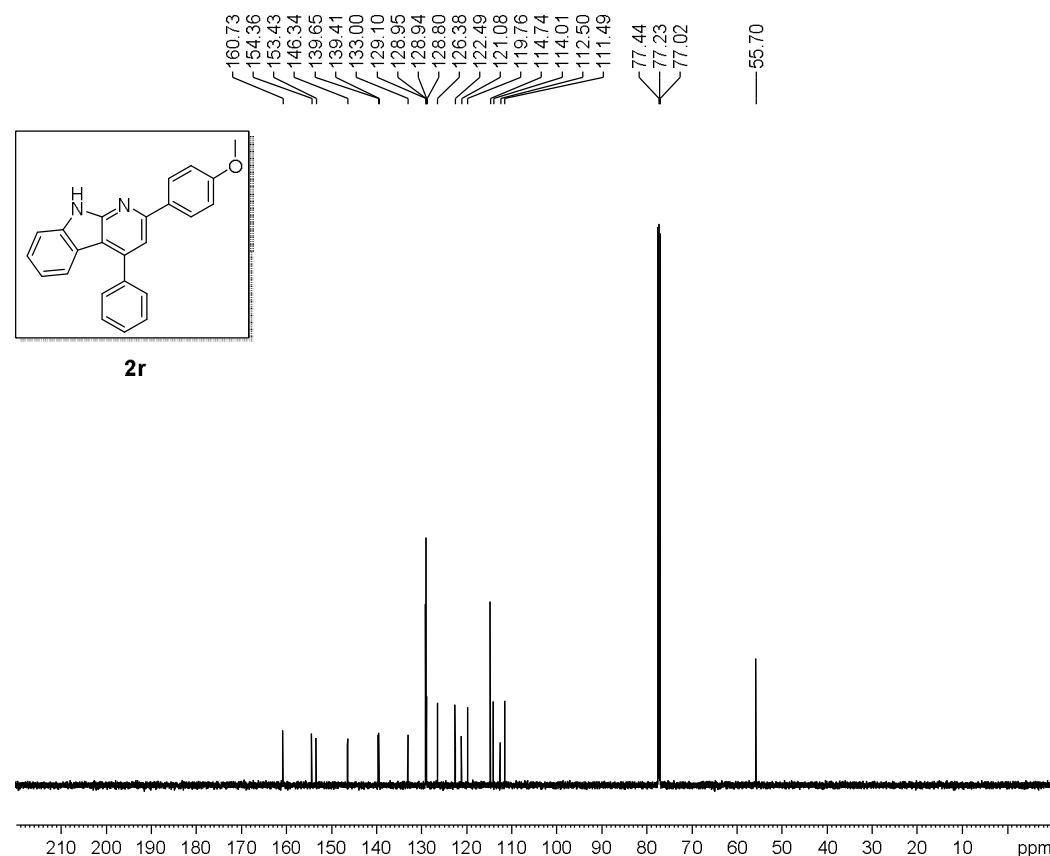
2-(4-methoxyphenyl)-4-phenyl- α -carboline

Current Data Parameters
 NAME R(4'-OMe chalcone)
 EXPNO 613
 PROCNO 1

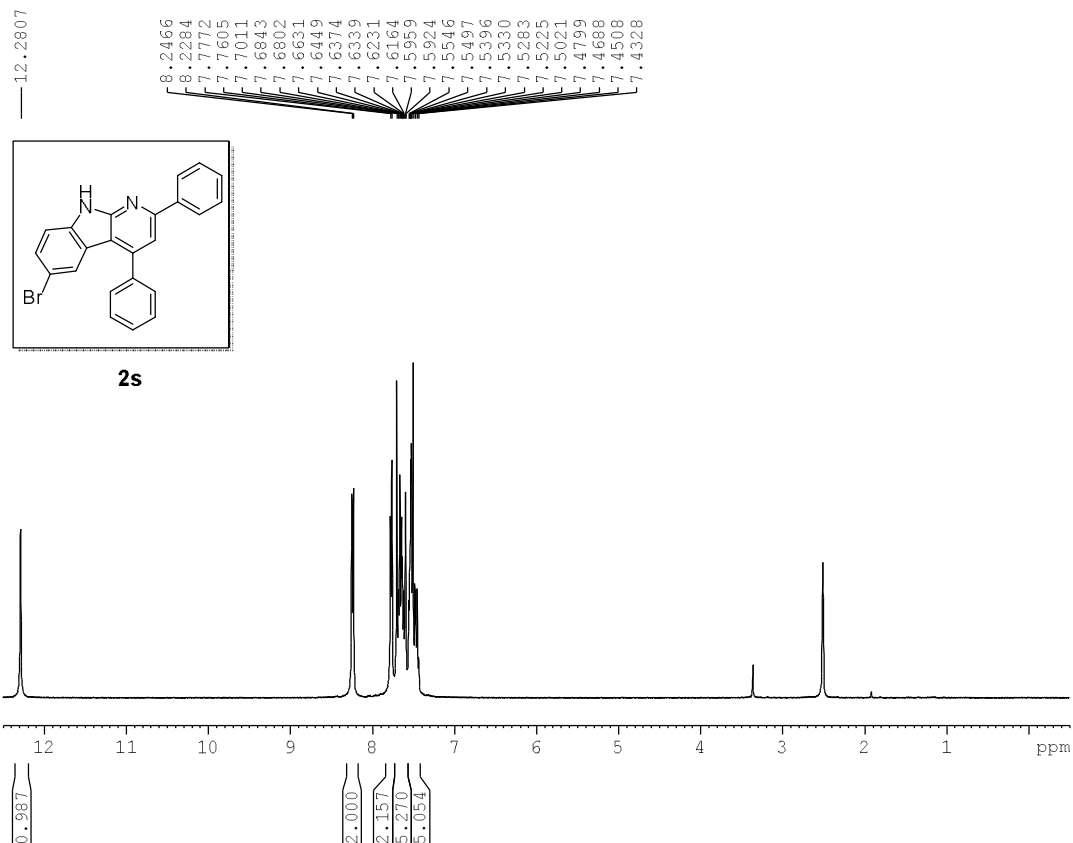
F2 - Acquisition Parameters
 Date_ 20150116
 Time 16.52
 INSTRUM spect
 PROBHD 5 mm PATBO BB-
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 160
 DS 0
 SWH 36057.691 Hz
 FIDRES 0.550197 Hz
 AQ 0.9087659 sec
 RG 2050
 DW 13.957 usec
 DE 6.50 usec
 TE 310.0 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 150.9287115 MHz
 NUC1 13C
 P1 10.80 usec
 PLW1 50.0000000 W
 ===== CHANNEL f2 =====
 SFO2 600.1724007 MHz
 NUC2 1H
 CPDPRG2 waltz64
 PCPD2 70.00 usec
 PLW2 30.0000000 W
 PLW12 1.03470004 W
 PLW13 0.50700003 W

F2 - Processing parameters
 SI 65536
 SF 150.9128313 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00



6-bromo-2,4-diphenyl- α -carboline



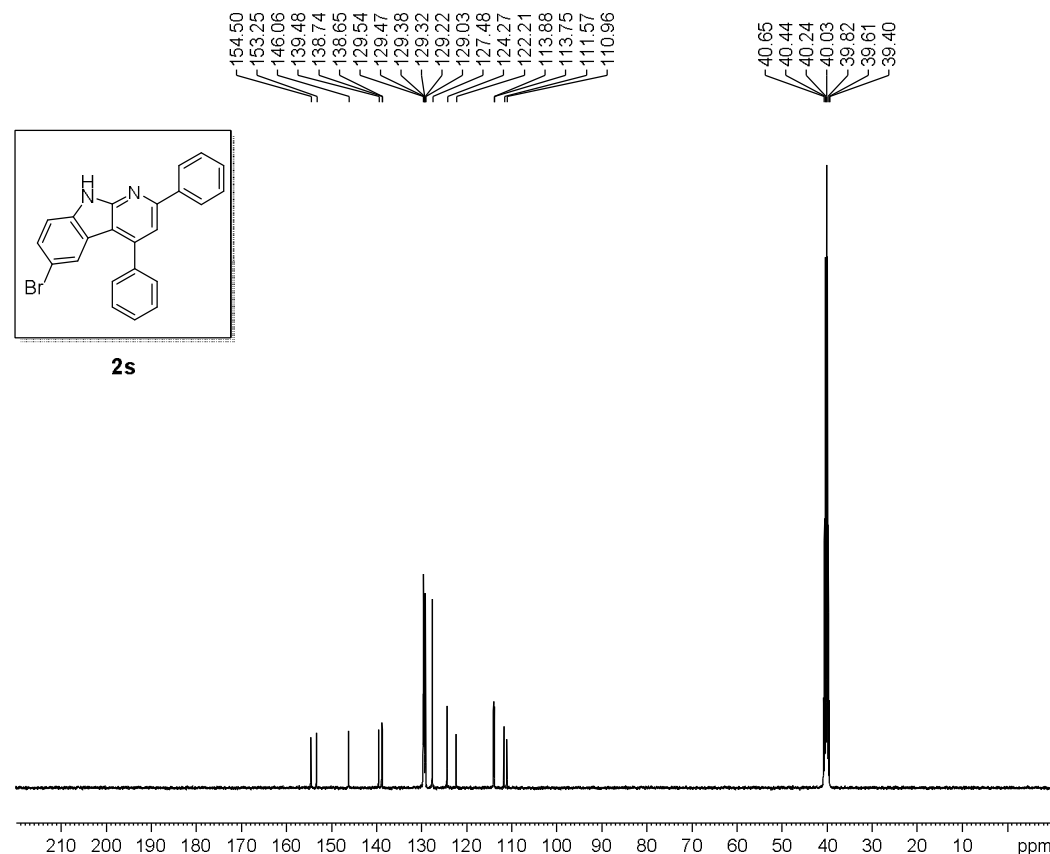
Current Data Parameters
 NAME S(5-Br indole)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20150128
 Time 14.43
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 89.08
 DW 69.333 usec
 DE 10.52 usec
 TE 297.6 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300000 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

6-bromo-2,4-diphenyl- α -carboline



Current Data Parameters
 NAME S(5-Br indole)
 EXPNO 613
 PROCNO 1

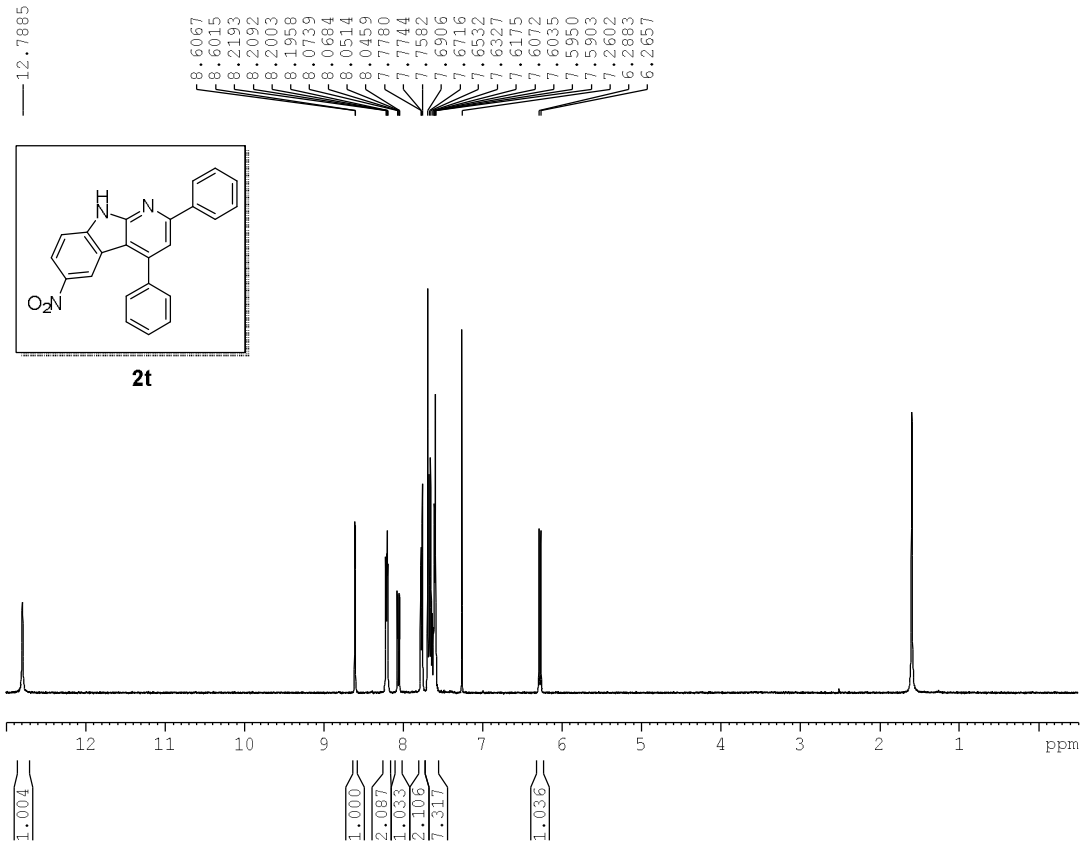
F2 - Acquisition Parameters
 Date_ 20150128
 Time 17.03
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1255
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.4 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127685 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

6-nitro-2,4-diphenyl- α -carboline



Current Data Parameters
 NAME T(5-NO2 indole)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161105
 Time 15.55
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 4.01
 DW 69.333 usec
 DE 10.50 usec
 TE 297.9 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.90 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300098 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

6-nitro-2,4-diphenyl- α -carboline



Current Data Parameters
 NAME T(5-NO2 indole)
 EXPNO 613
 PROCNO 1

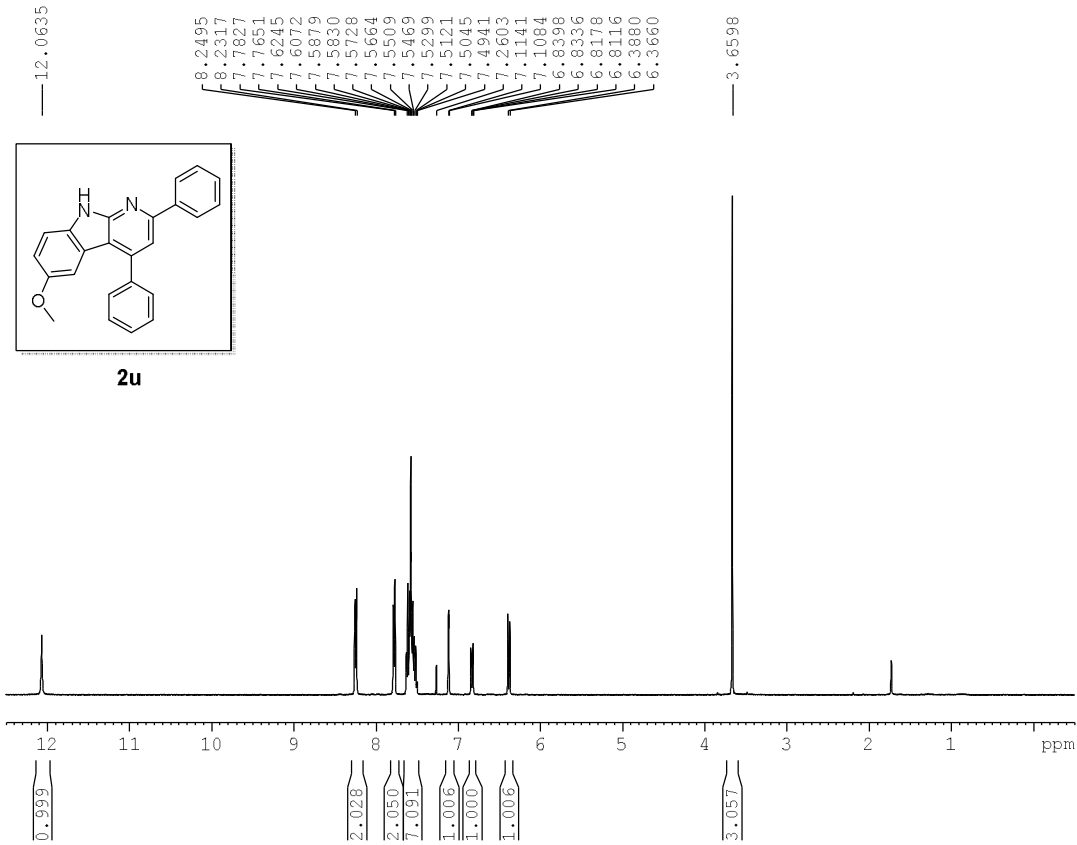
F2 - Acquisition Parameters
 Date_ 20161024
 Time 22.53
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1500
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.7 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6228298 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 47.5000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.33750001 W
 PLW13 0.27338001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127472 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

6-methoxy-2,4-diphenyl- α -carboline



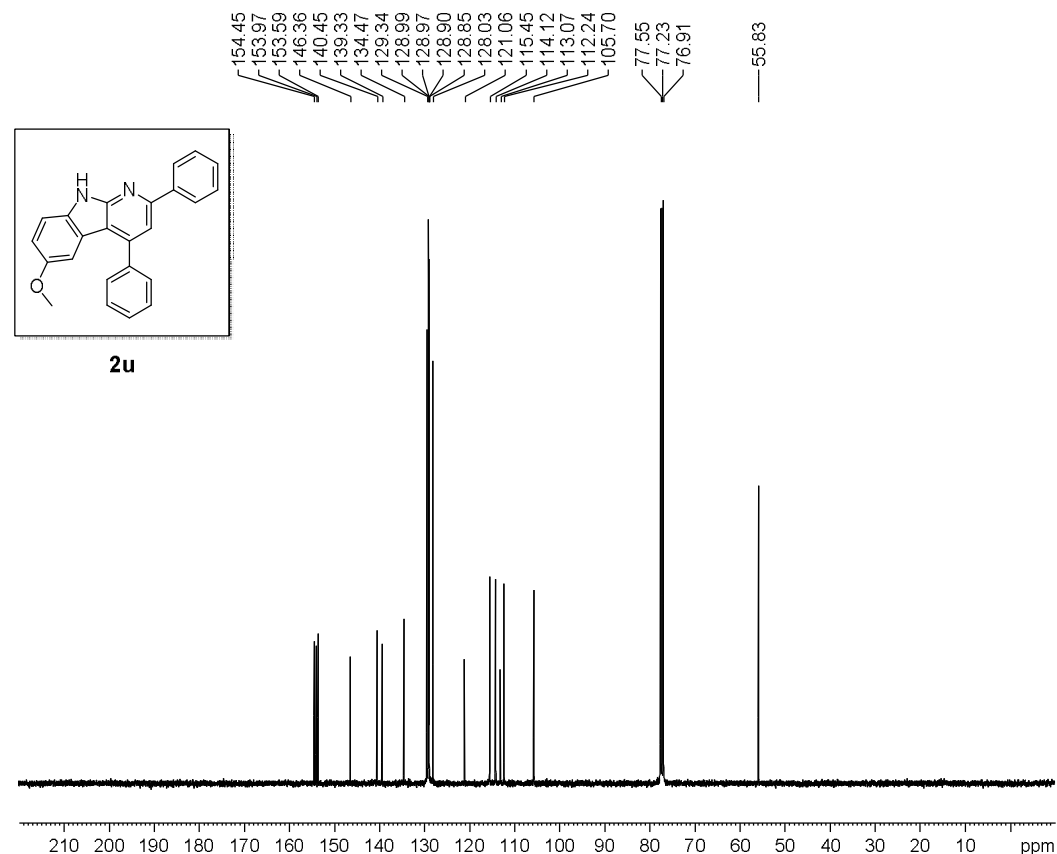
Current Data Parameters
 NAME U(5-OMe indole)
 EXPNO 61
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20141222
 Time 17:01
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 295.6 K
 D1 2.00000000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 1H
 P1 15.00 usec
 PL1 -5.85 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300091 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

6-methoxy-2,4-diphenyl- α -carboline



Current Data Parameters
 NAME U(5-OMe indole)
 EXPNO 613
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20141220
 Time 17:13
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1623
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 4096
 DW 20.800 usec
 DE 6.50 usec
 TE 295.5 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

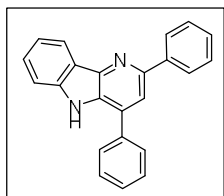
==== CHANNEL f1 =====
 NUC1 13C
 P1 10.00 usec
 PL1 6.70 dB
 SFO1 100.6233325 MHz

==== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -5.85 dB
 PL12 9.10 dB
 PL13 12.10 dB
 SFO2 400.1316005 MHz

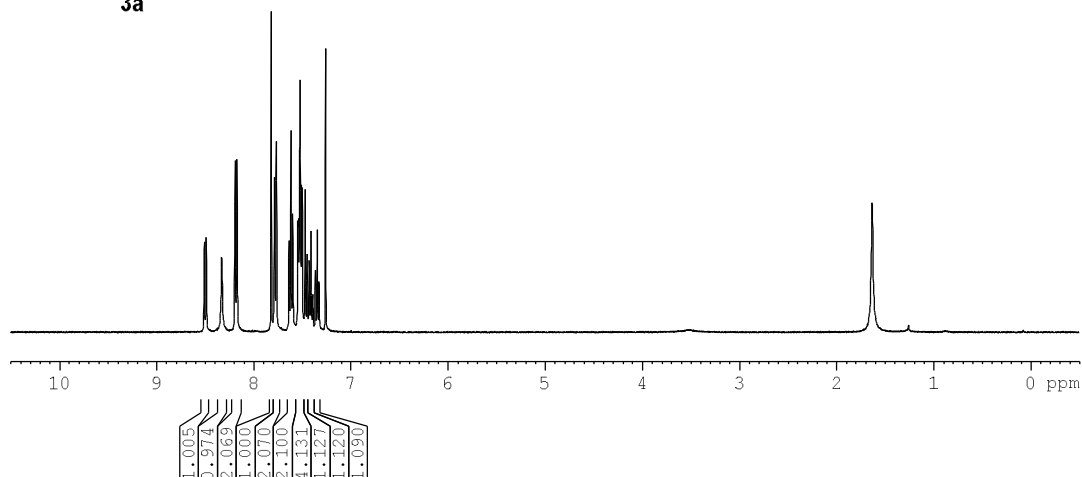
F2 - Processing parameters
 SI 32768
 SF 100.6127505 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

2,4-diphenyl-5-carboline

8.5077
8.4882
8.3281
8.1898
8.1714
7.8191
7.7879
7.7845
7.7664
7.6343
7.6159
7.5965
7.5449
7.5418
7.5385
7.5328
7.5250
7.5201
7.5042
7.5002
7.4688
7.4487
7.4290
7.4105
7.3923
7.3646
7.3460
7.3279
7.2598



3a



Current Data Parameters
NAME 20161109
EXPNO 4
PROCNO 1

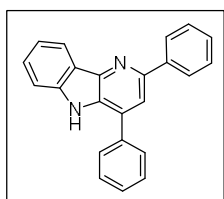
F2 - Acquisition Parameters
Date_ 20161109
Time 4.48
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 296.0 K
D1 2.00000000 sec
TD0

===== CHANNEL f1 =====
NUC1 1H
P1 14.40 usec
PL1 1.80 dB
SFO1 400.1324008 MHz

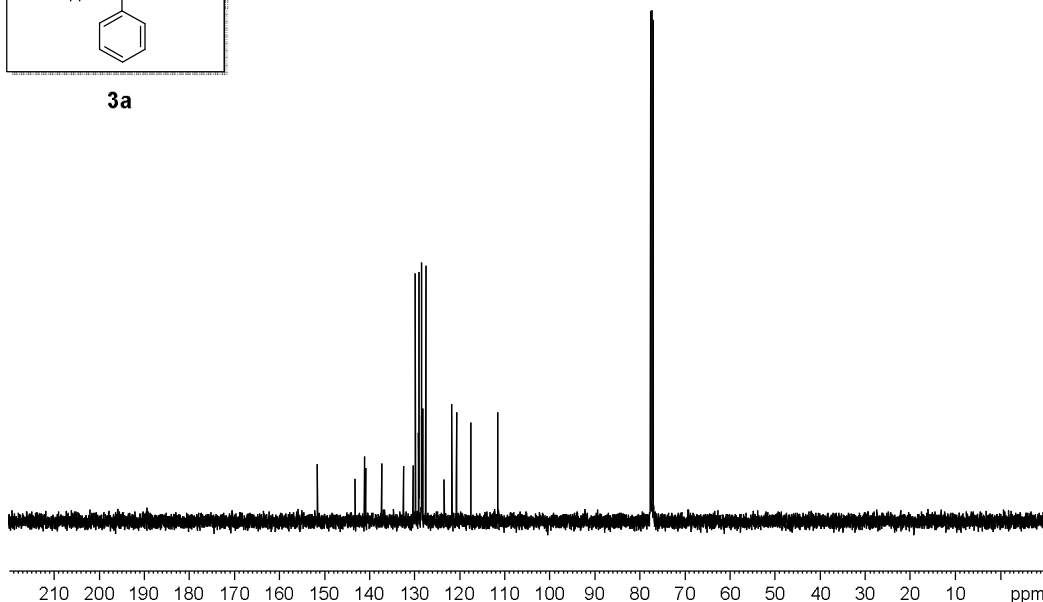
F2 - Processing parameters
SI 16584
SF 400.1300098 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00

2,4-diphenyl-5-carboline

151.43
143.11
141.01
140.74
137.20
132.37
130.20
129.69
128.98
128.90
128.35
128.24
128.05
127.36
123.31
121.60
120.61
117.43
111.41
77.55
77.23
76.91



3a



Current Data Parameters
NAME A(no substrate)
EXPNO 713
PROCNO 1

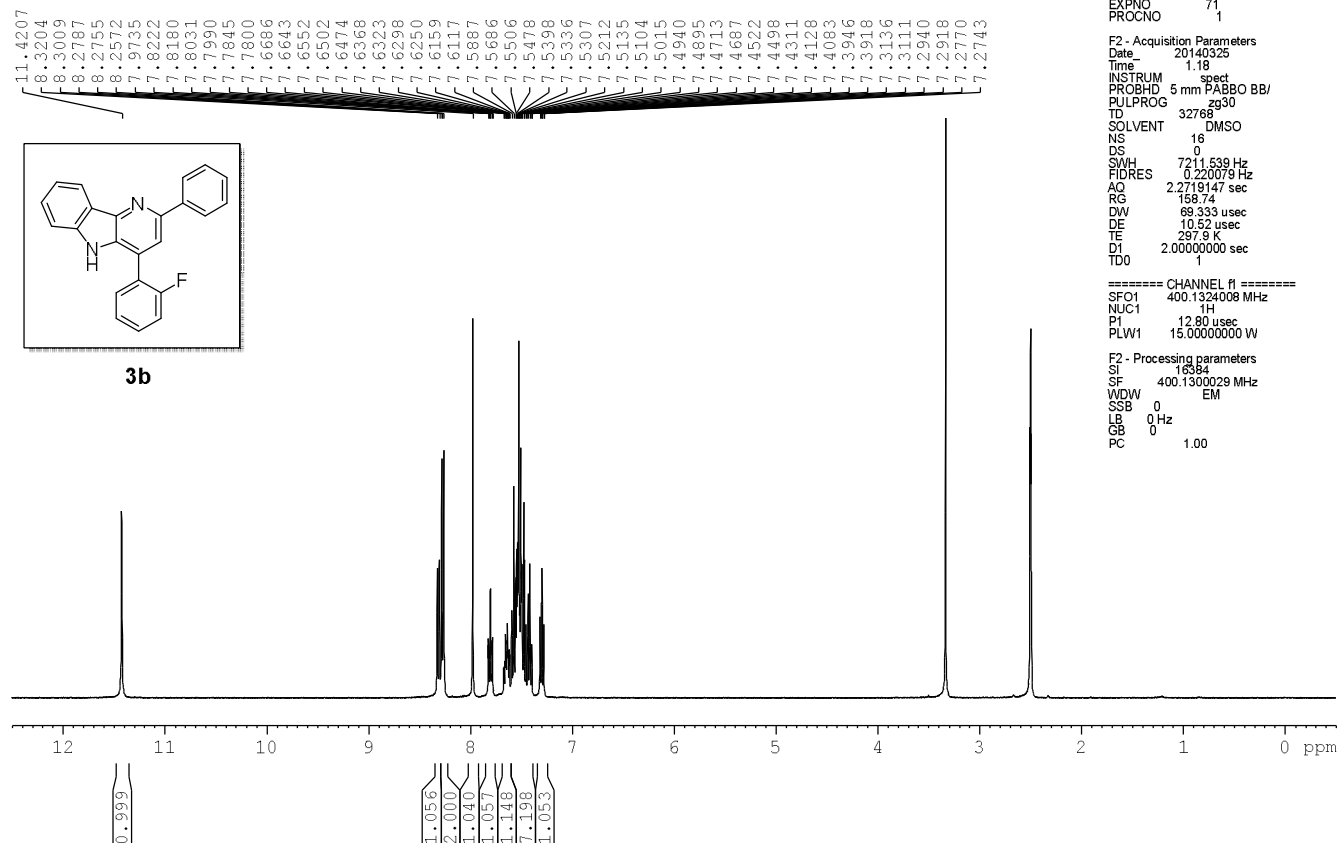
F2 - Acquisition Parameters
Date_ 20121006
Time 15.42
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 100
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 2048
DW 20.800 usec
DE 6.50 usec
TE 299.3 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 9.40 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

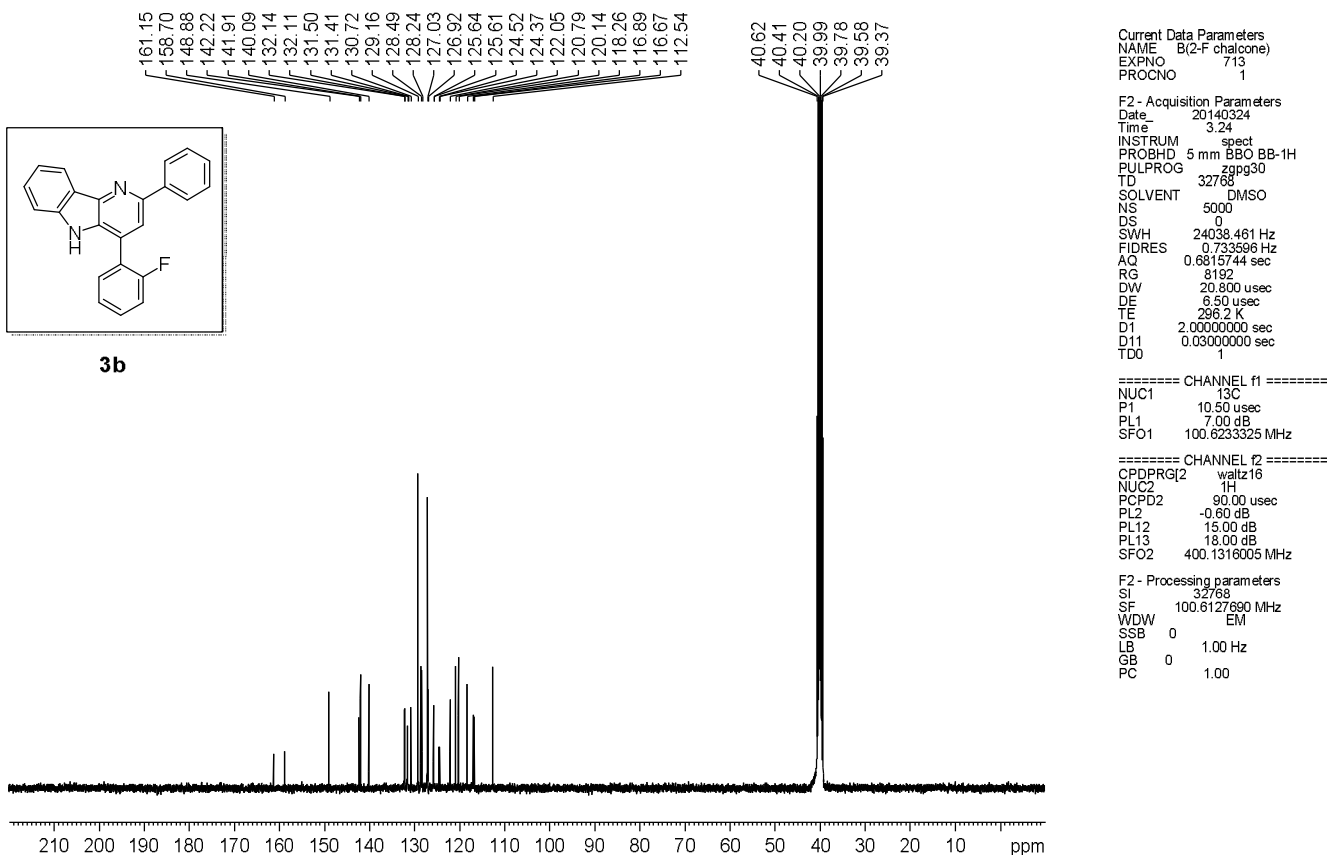
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 3.00 dB
PL12 20.70 dB
PL13 23.70 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127507 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

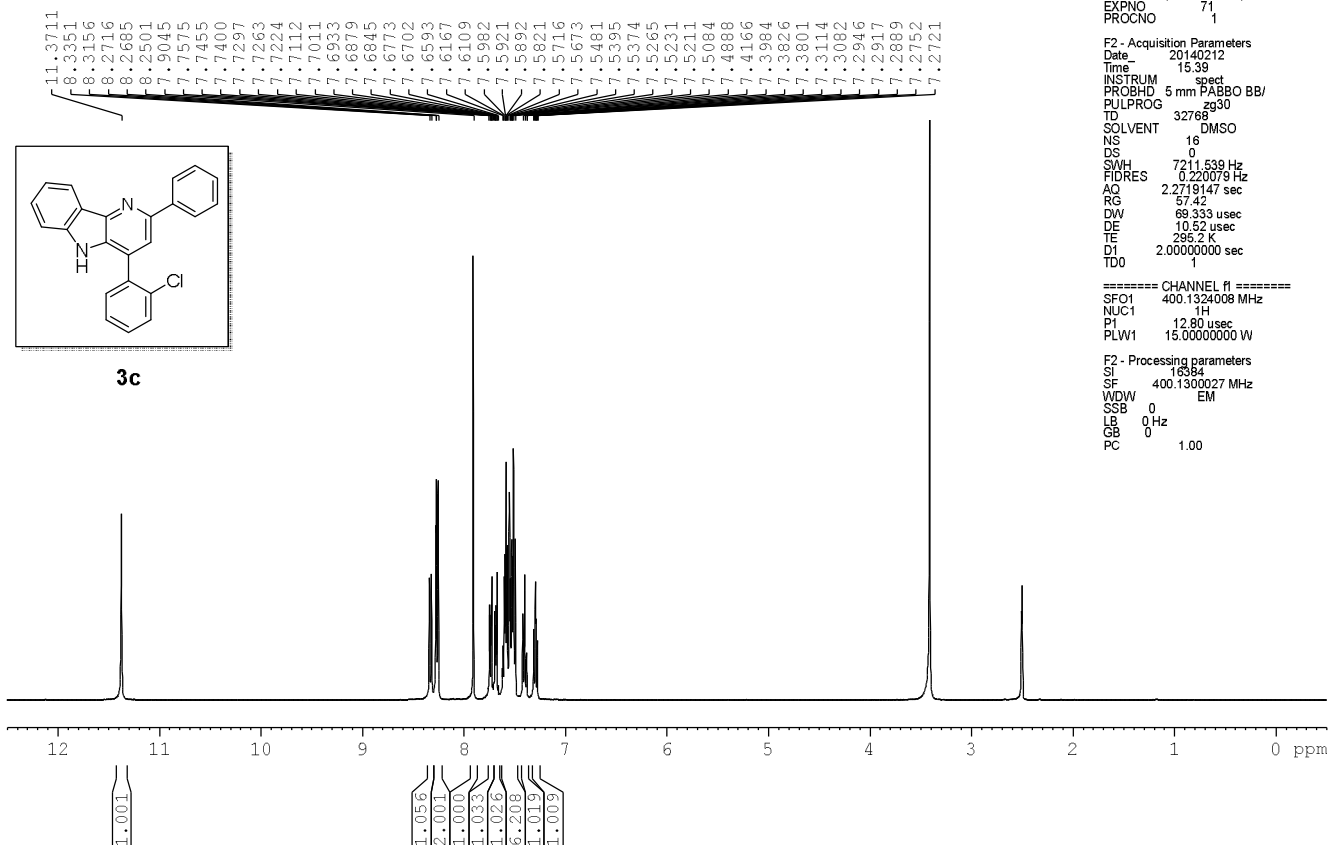
4-(2-fluorophenyl)-2-phenyl-δ-carboline



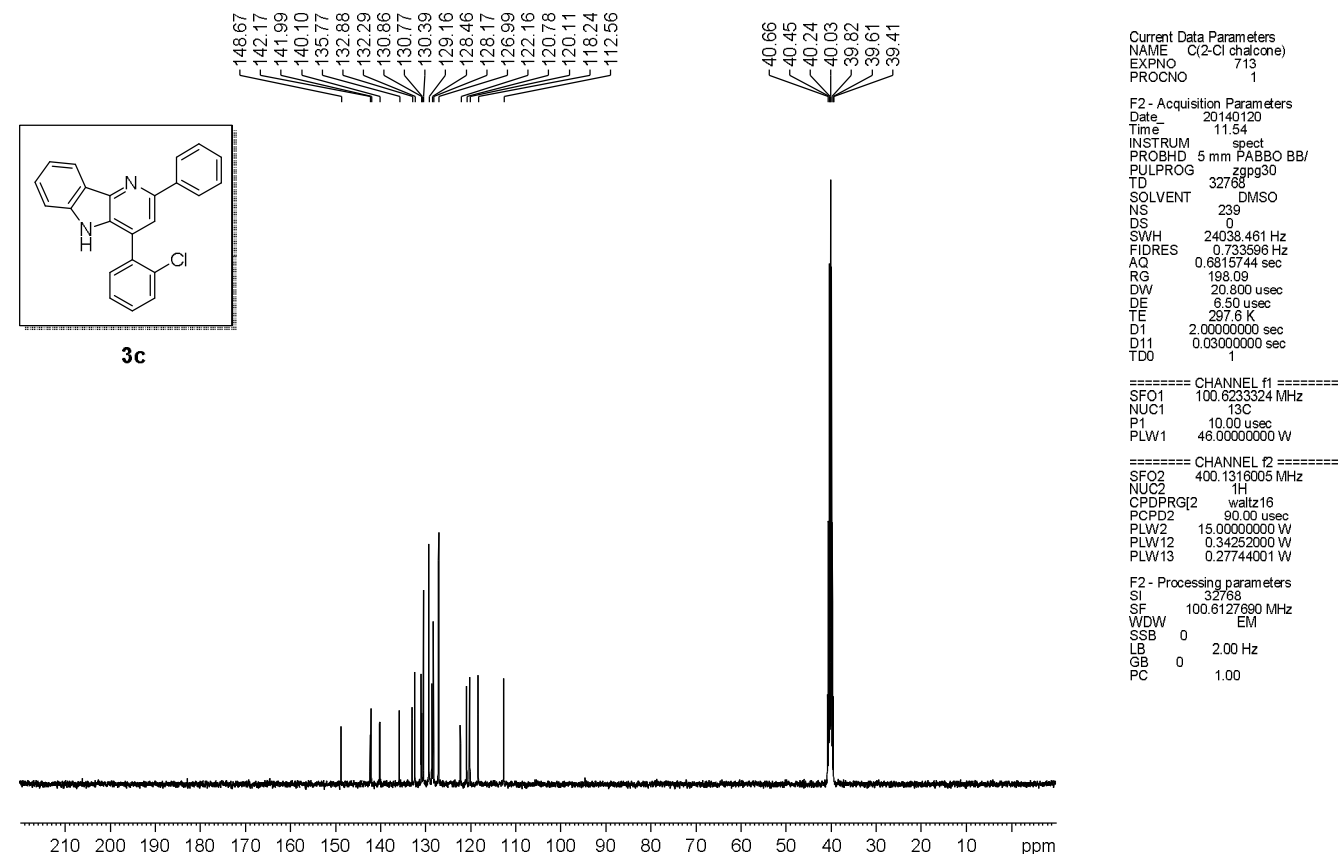
4-(2-fluorophenyl)-2-phenyl-δ-carboline



4-(2-chlorophenyl)-2-phenyl- δ -carboline



4-(2-chlorophenyl)-2-phenyl- δ -carboline



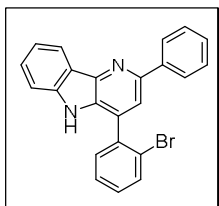
4-(2-bromophenyl)-2-phenyl- δ -carboline

Current Data Parameters
 NAME D(2-Br chalcone)
 EXPNO 71
 PROCNO 1

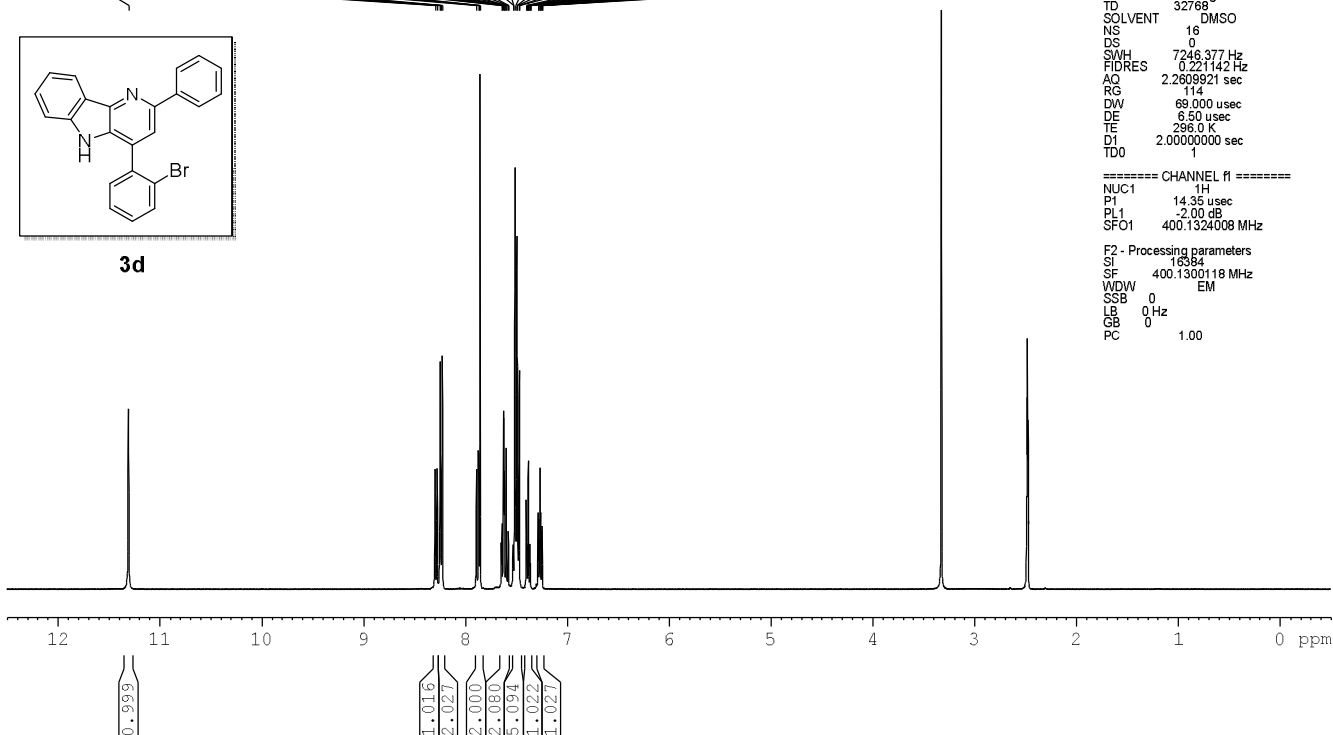
F2 - Acquisition Parameters
 Date_ 20140321
 Time 17.58
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 296.0 K
 D1 2.0000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 ¹H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz
 F2 - Processing parameters
 SI 16384
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

11.3053
 8.2935
 8.2740
 8.2448
 8.2416
 8.2374
 8.2237
 7.8683
 7.8685
 7.8661
 7.8537
 7.6421
 7.6370
 7.6233
 7.6181
 7.6137
 7.6115
 7.5959
 7.5936
 7.5772
 7.5743
 7.5273
 7.5257
 7.5066
 7.4929
 7.4891
 7.4731
 7.4690
 7.4021
 7.3990
 7.3963
 7.3845
 7.3807
 7.3762
 7.3647
 7.3625
 7.3597
 7.2833
 7.2787
 7.2678
 7.2634
 7.2590
 7.2480
 7.2436



3d



4-(2-bromophenyl)-2-phenyl- δ -carboline

Current Data Parameters
 NAME D(2-Br chalcone)
 EXPNO 713
 PROCNO 1

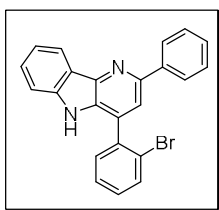
F2 - Acquisition Parameters
 Date_ 20140321
 Time 18.00
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1500
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 296.0 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 ¹³C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

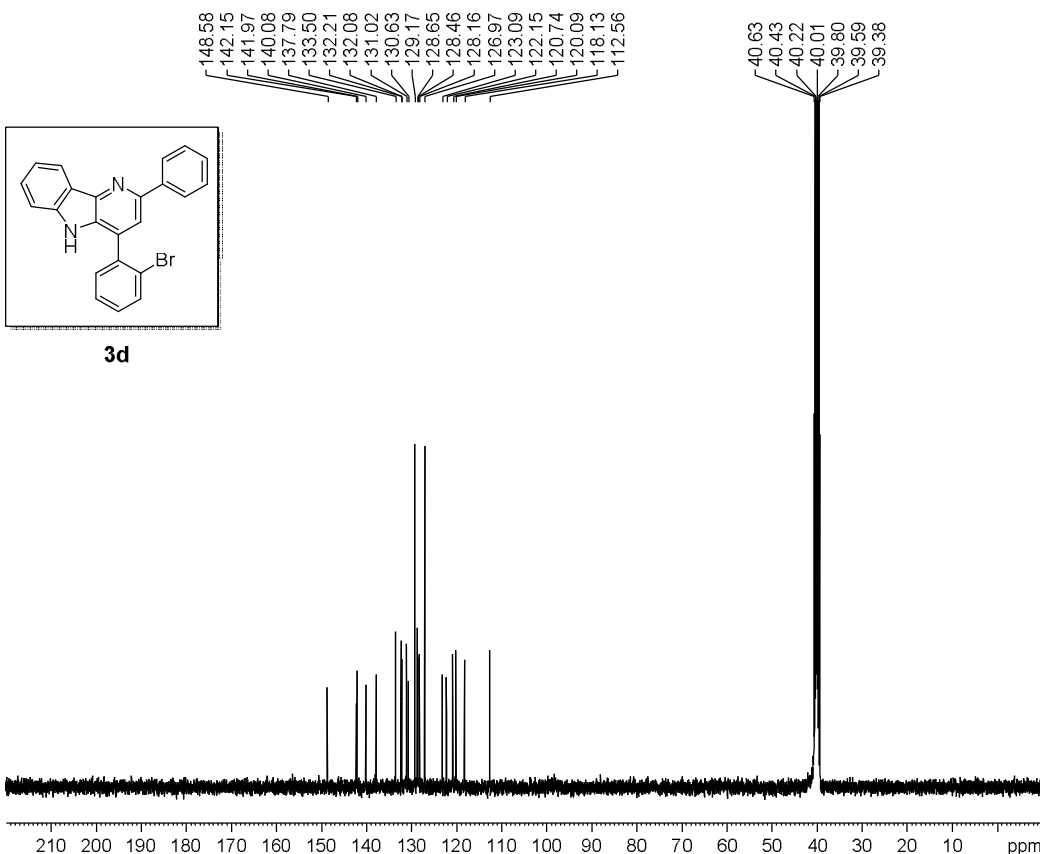
===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 ¹H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

148.58
 142.15
 141.97
 140.08
 137.79
 133.50
 132.21
 132.08
 131.02
 130.63
 129.17
 128.65
 128.46
 128.16
 126.97
 123.09
 122.15
 120.74
 120.09
 118.13
 112.56
 40.63
 40.43
 40.22
 40.01
 39.80
 39.59
 39.38

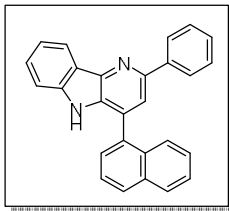


3d

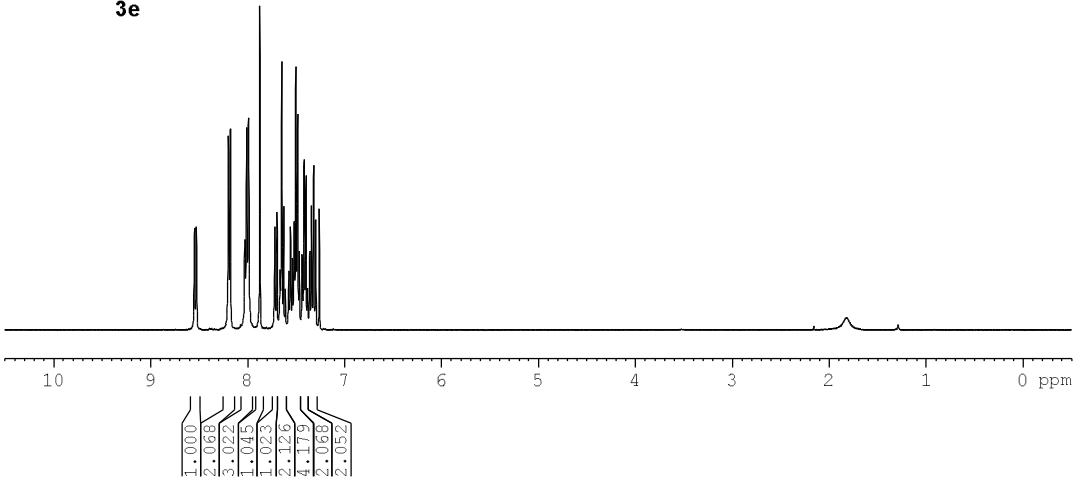


4-(naphthalen-1-yl)-2-phenyl-δ-carboline

8.5276
8.1960
8.1776
8.0295
8.0115
7.9913
7.8731
7.7184
7.6973
7.6628
7.6498
7.6456
7.6269
7.6092
7.5742
7.5552
7.5368
7.5189
7.5006
7.4821
7.4654
7.4361
7.4169
7.3989
7.3809
7.3589
7.3402
7.3190
7.2977
7.2599



3e



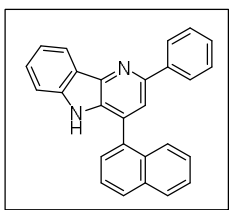
Current Data Parameters
NAME E(1-naphthyl chalcone)
EXPNO 71
PROCNO 1
F2 - Acquisition Parameters
Date_ 20131010
Time 17.54
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 8
DS 0
SWH 7246.377 Hz
FIDRES 0.221142 Hz
AQ 2.2609921 sec
RG 114
DW 69.000 usec
DE 6.50 usec
TE 298.1 K
D1 2.0000000 sec
TDO

===== CHANNEL f1 =====
NUC1 1H
P1 11.90 usec
PL1 3.00 dB
SFO1 400.1324008 MHz

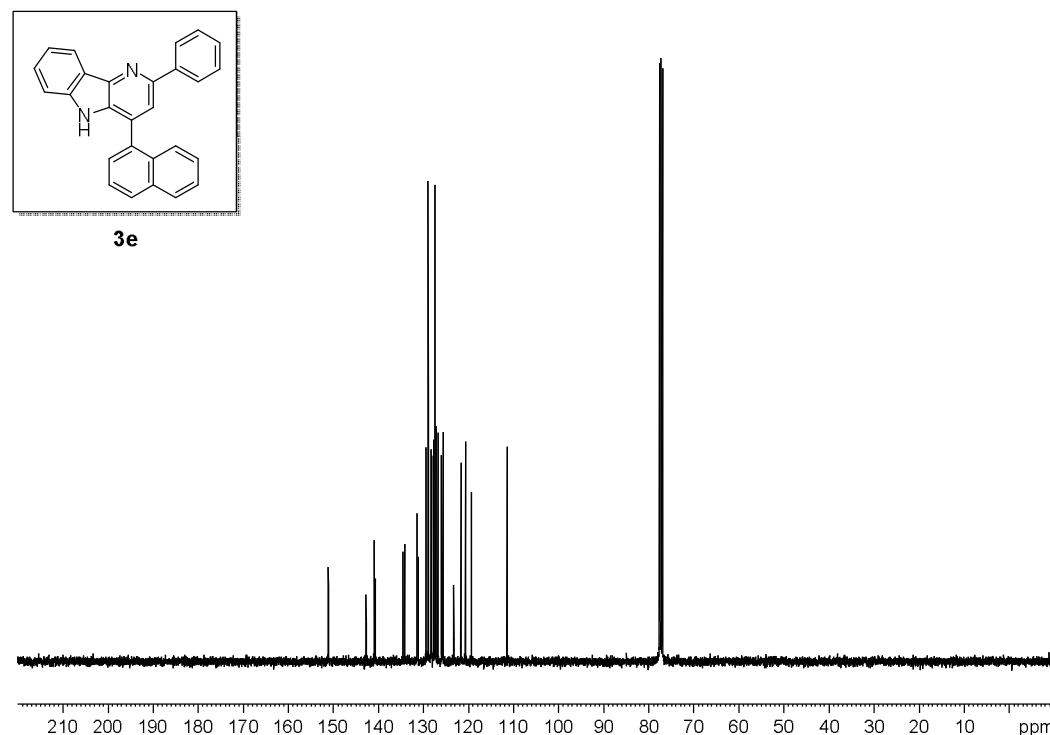
F2 - Processing parameters
SI 18584
SF 400.1300093 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00

4-(naphthalen-1-yl)-2-phenyl-δ-carboline

151.03
142.68
140.90
140.63
134.46
134.11
131.38
131.10
129.41
128.91
128.87
128.26
128.08
127.68
127.39
127.17
126.67
125.92
125.65
123.21
121.64
120.58
119.29
111.39
77.55
77.23
76.91



3e



Current Data Parameters
NAME E(1-naphthyl chalcone)
EXPNO 713
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131010
Time 19.20
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 647
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 8192
DW 20.800 usec
DE 6.50 usec
TE 301.0 K
D1 2.0000000 sec
D11 0.0300000 sec
TDO 1

===== CHANNEL f1 =====
NUC1 13C
P1 10.50 usec
PL1 7.00 dB
SFO1 100.6233325 MHz

===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 -0.60 dB
PL12 15.00 dB
PL13 18.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 32768
SF 100.6127509 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.00

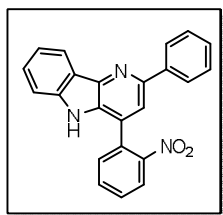
4-(2-nitrophenyl)-2-phenyl-5-carboline

Current Data Parameters
 NAME F(2-NO2 chalcone)
 EXPNO 71
 PROCNO 1

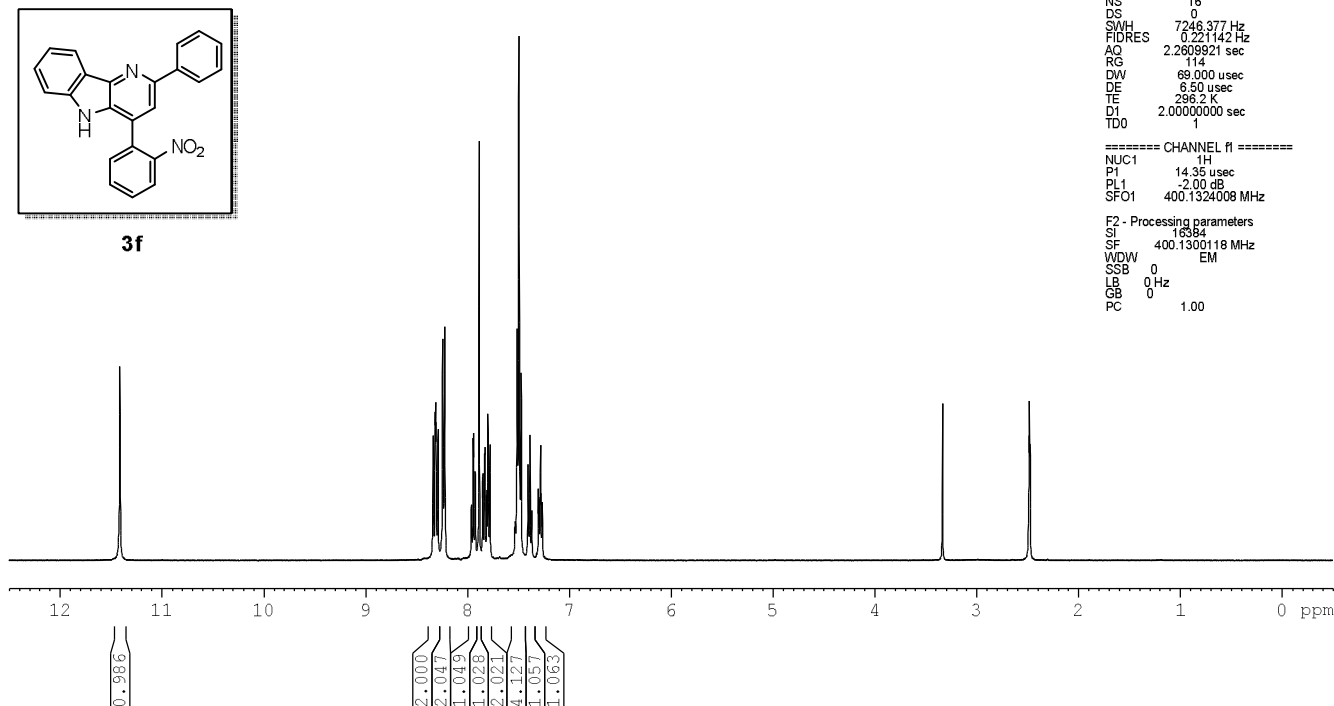
F2 - Acquisition Parameters
 Date_ 20140321
 Time 16.45
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 296.2 K
 D1 2.00000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz
 F2 - Processing parameters
 SI 16384
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

11.4094
 8.3330
 8.3305
 8.3124
 8.3099
 8.3044
 8.2845
 8.2392
 8.2365
 8.2183
 7.9589
 7.9563
 7.9402
 7.9375
 7.9214
 7.9187
 7.8810
 7.8477
 7.8441
 7.8267
 7.8245
 7.8083
 7.8049
 7.7950
 7.7919
 7.7762
 7.7730
 7.5274
 7.5253
 7.5076
 7.5048
 7.4896
 7.4702
 7.4014
 7.3831
 7.3650
 7.2996
 7.2948
 7.2843
 7.2799
 7.2752
 7.2651
 7.2601



3f



4-(2-nitrophenyl)-2-phenyl-5-carboline

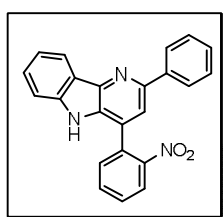
Current Data Parameters
 NAME F(2-NO2 chalcone)
 EXPNO 713
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140321
 Time 17.11
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1293
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.1 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

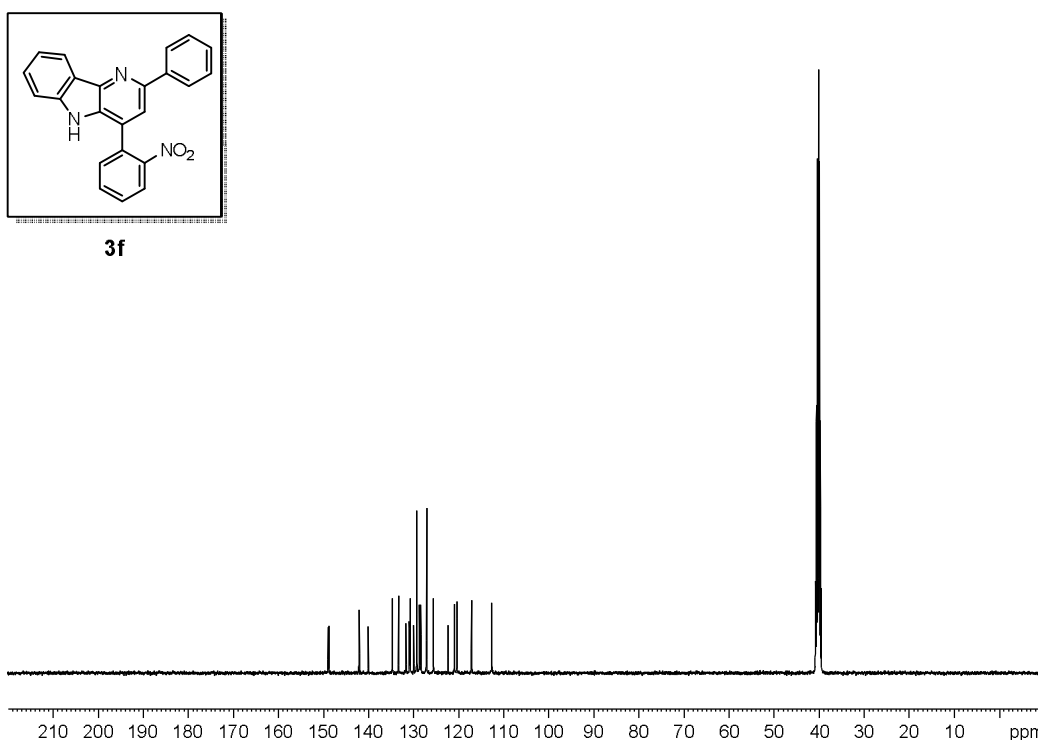
===== CHANNEL f1 =====
 SFO1 100.6233324 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.00000000 W
 ===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

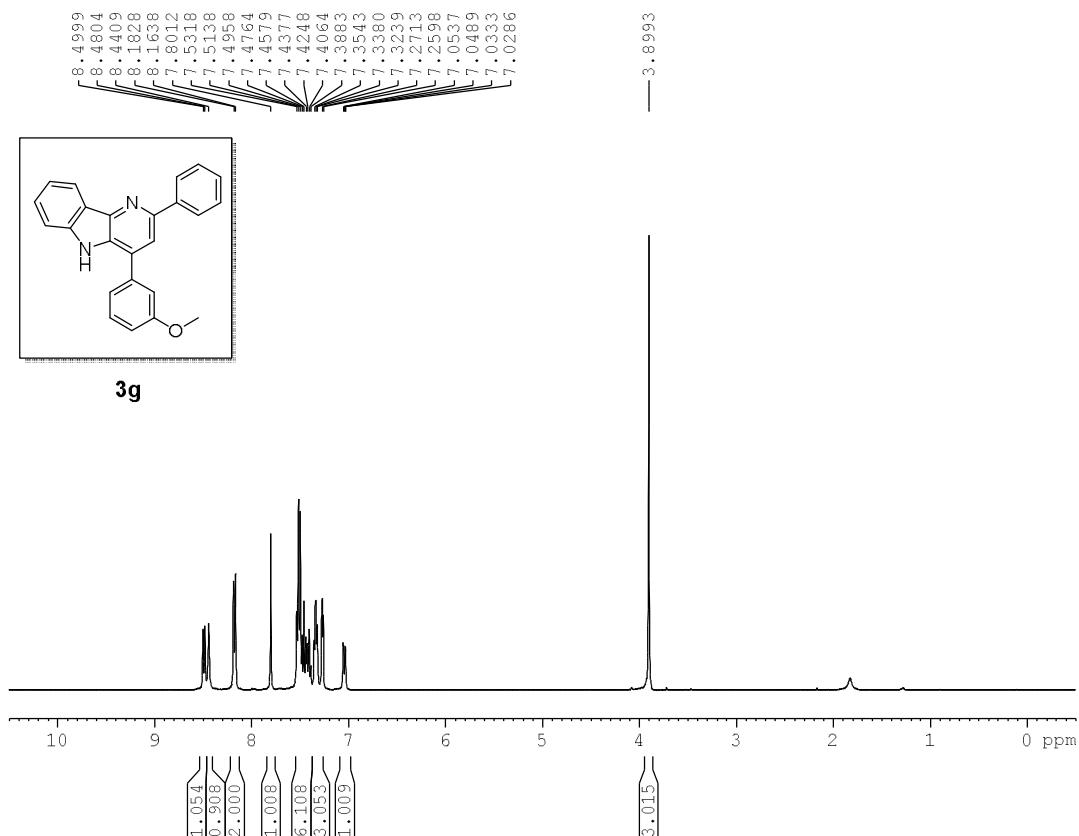
148.82
 148.68
 141.96
 141.93
 139.94
 134.58
 133.22
 131.58
 130.80
 130.64
 129.87
 129.16
 128.53
 128.24
 126.96
 125.44
 122.22
 120.81
 120.26
 116.99
 112.53
 40.65
 40.44
 40.24
 40.03
 39.82
 39.61
 39.40



3f



4-(3-methoxyphenyl)-2-phenyl-δ-carboline



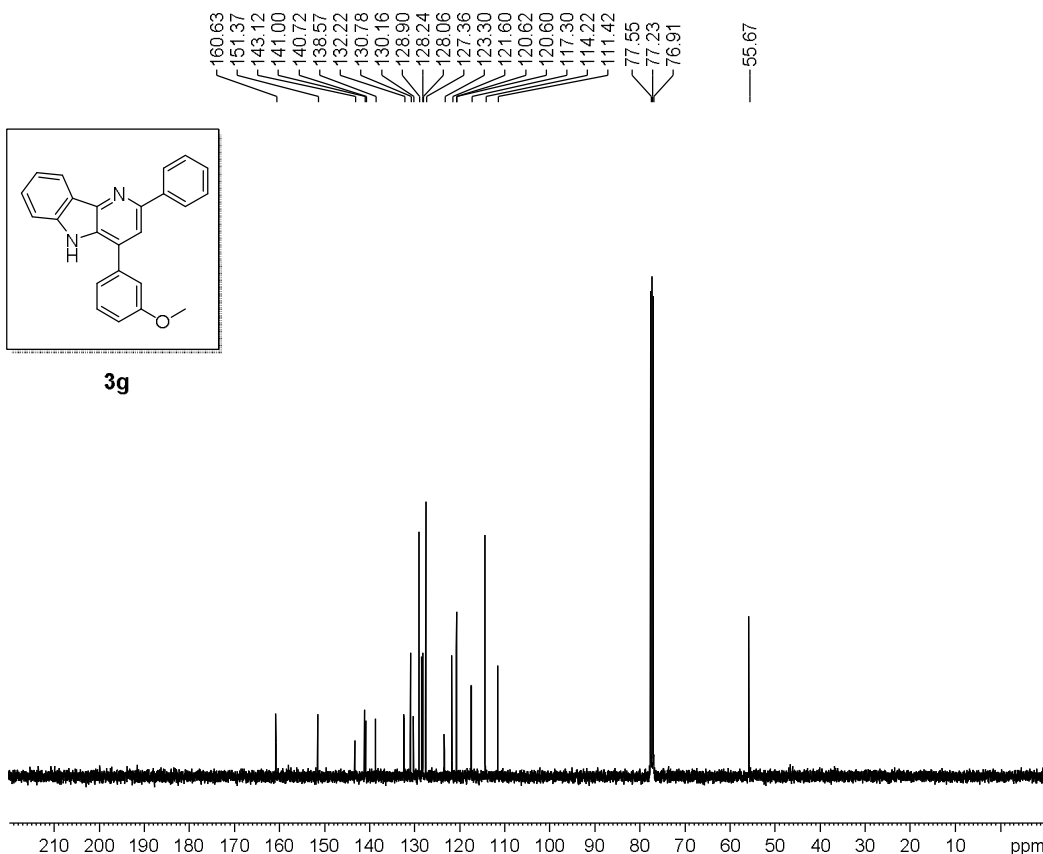
Current Data Parameters
 NAME G(3-OMe chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131010
 Time 18.17
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 8
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.1 K
 D1 2.00000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 11.90 usec
 PL1 3.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16584
 SF 400.1300095 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-(3-methoxyphenyl)-2-phenyl-δ-carboline



Current Data Parameters
 NAME G(3-OMe chalcone)
 EXPNO 713
 PROCNO 1

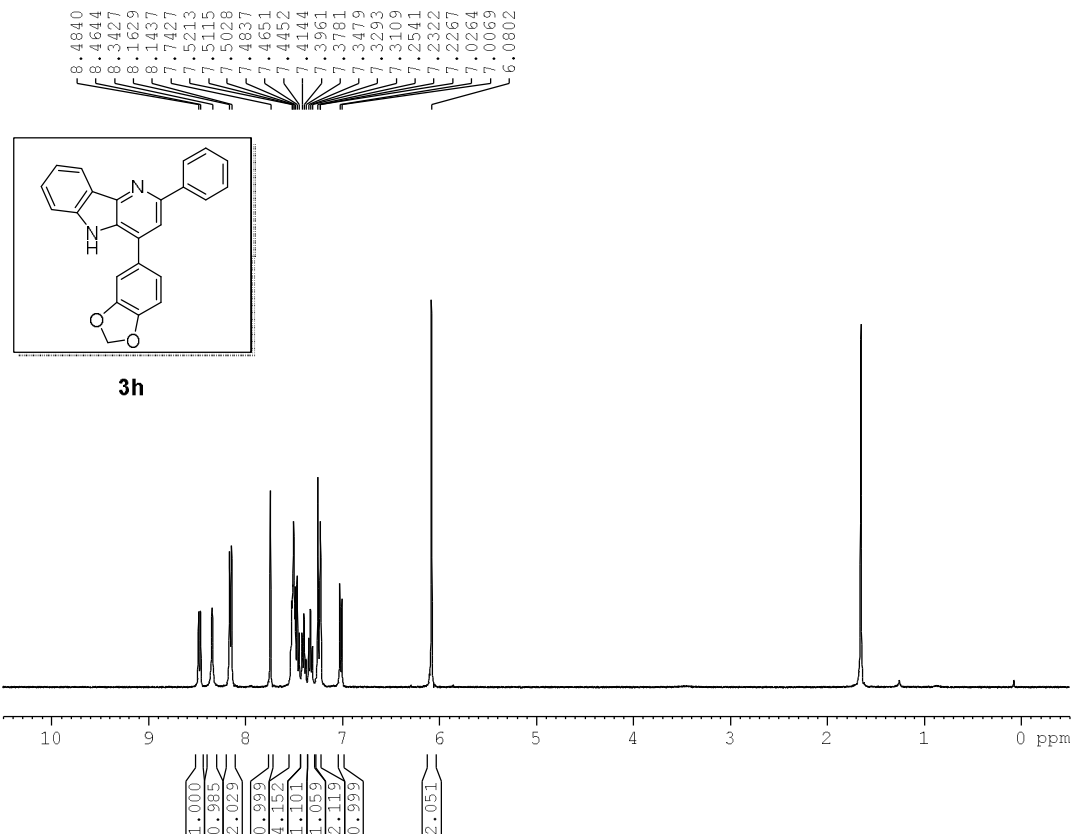
F2 - Acquisition Parameters
 Date_ 20131010
 Time 18.22
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 151
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 300.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 10.50 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -0.60 dB
 PL12 15.00 dB
 PL13 18.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127510 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

4-(benzo[d][1,3]dioxol-5-yl)-2-phenyl- δ -carboline



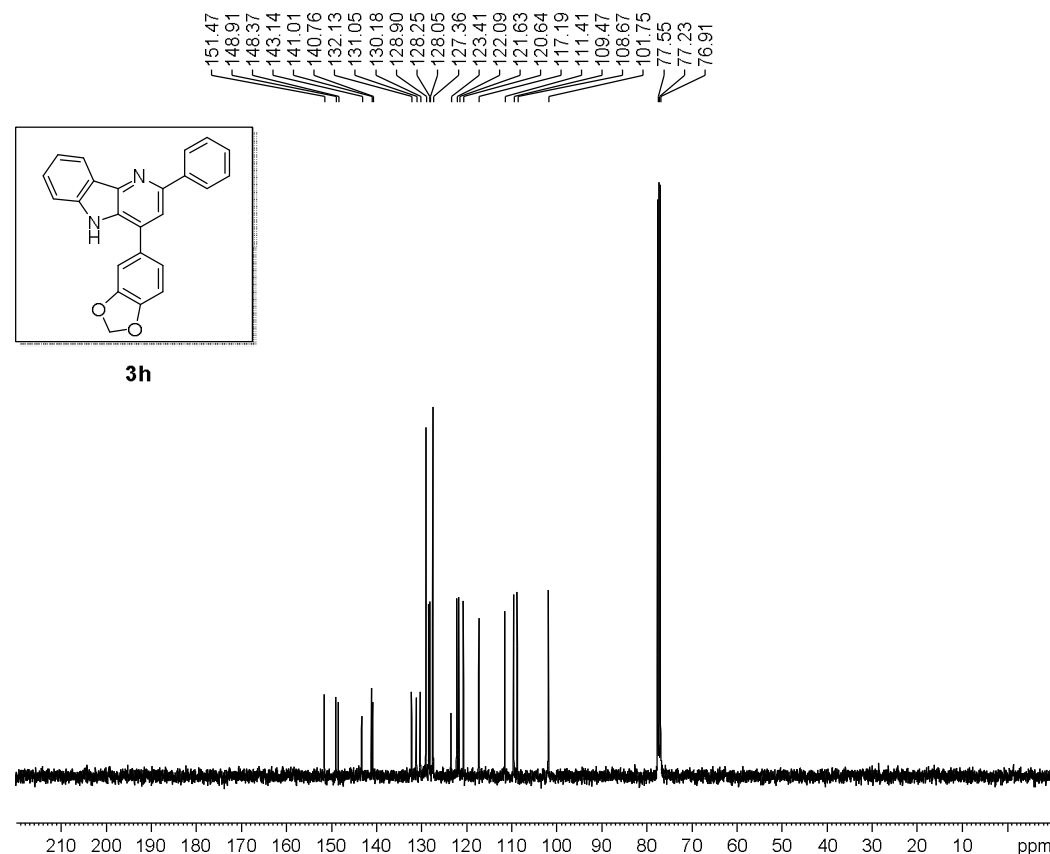
Current Data Parameters
 NAME H(piperonyl chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131011
 Time 21.48
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 8
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 322.5
 DW 69.000 usec
 DE 6.50 usec
 TE 298.2 K
 D1 2.0000000 sec
 TDO

===== CHANNEL f1 =====
 NUC1 1H
 P1 11.90 usec
 PL1 3.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16584
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-(benzo[d][1,3]dioxol-5-yl)-2-phenyl- δ -carboline



Current Data Parameters
 NAME H(piperonyl chalcone)
 EXPNO 713
 PROCNO 1

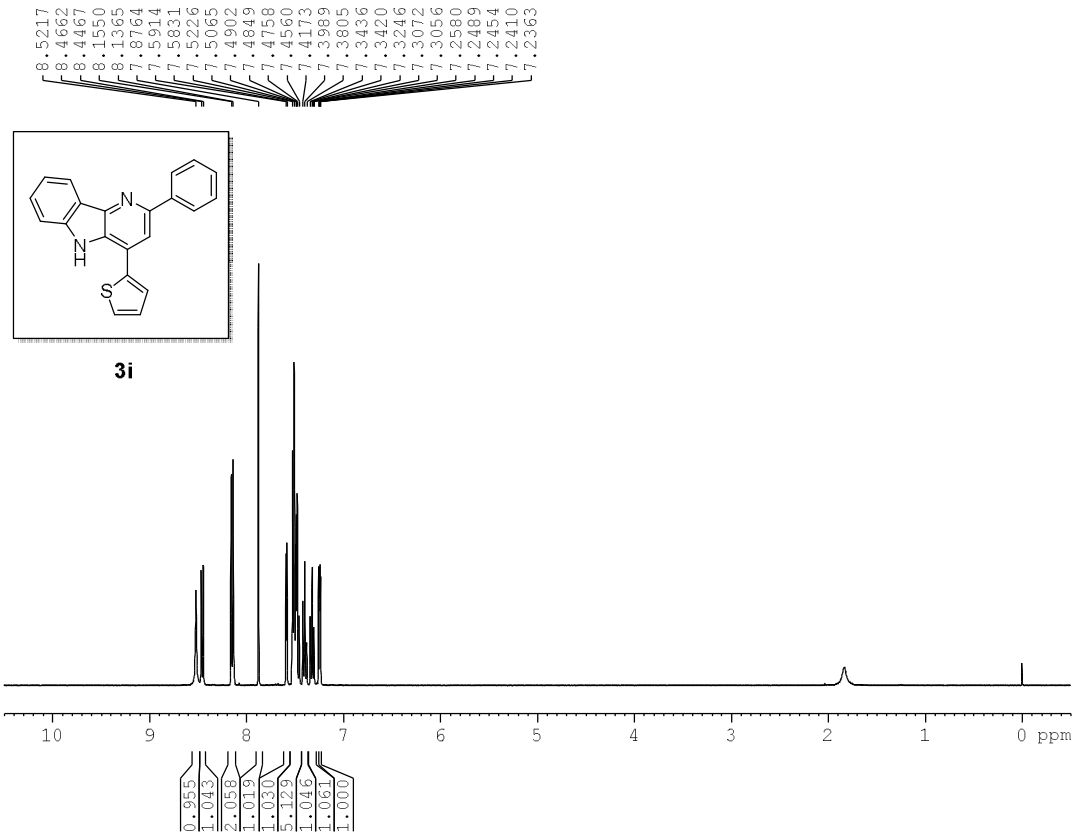
F2 - Acquisition Parameters
 Date_ 20131012
 Time 18.53
 INSTRUM SPECT
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 400
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.2 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.623324 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127476 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-phenyl-4-(thiophen-2-yl)-5-carboline



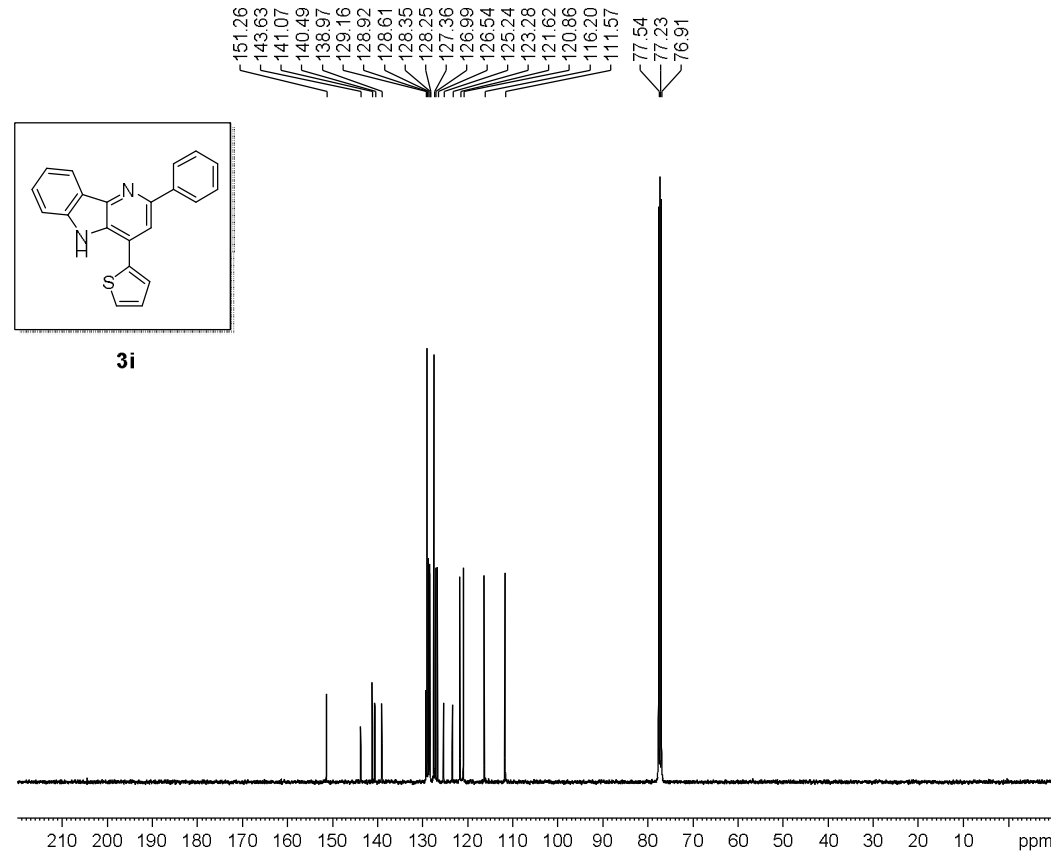
Current Data Parameters
 NAME l(2-thiophene chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20160920
 Time 21.16
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 39.72
 DW 69.333 usec
 DE 10.50 usec
 TE 297.8 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.90 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300176 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-phenyl-4-(thiophen-2-yl)-5-carboline



Current Data Parameters
 NAME l(2-thiophene chalcone)
 EXPNO 713
 PROCNO 1

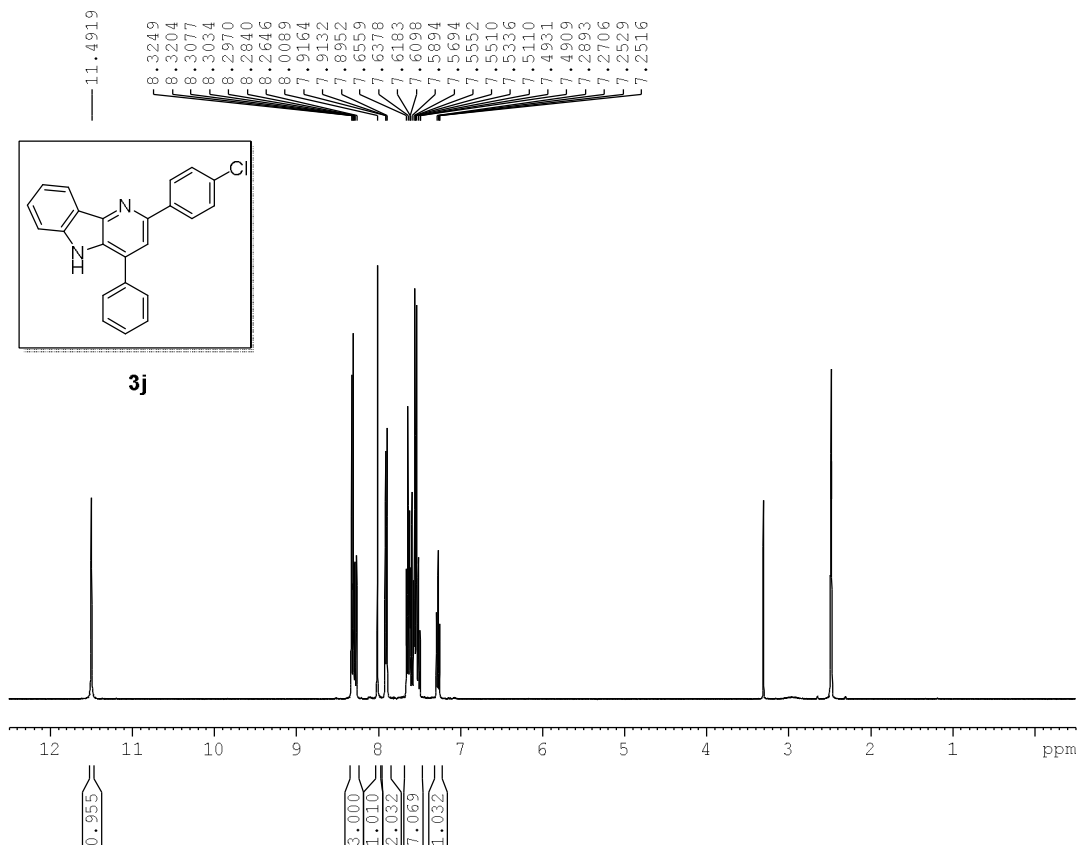
F2 - Acquisition Parameters
 Date_ 20160922
 Time 17.32
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.5 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6228298 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 47.5000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.33750001 W
 PLW13 0.27338001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127516 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-chlorophenyl)-4-phenyl-5-carboline



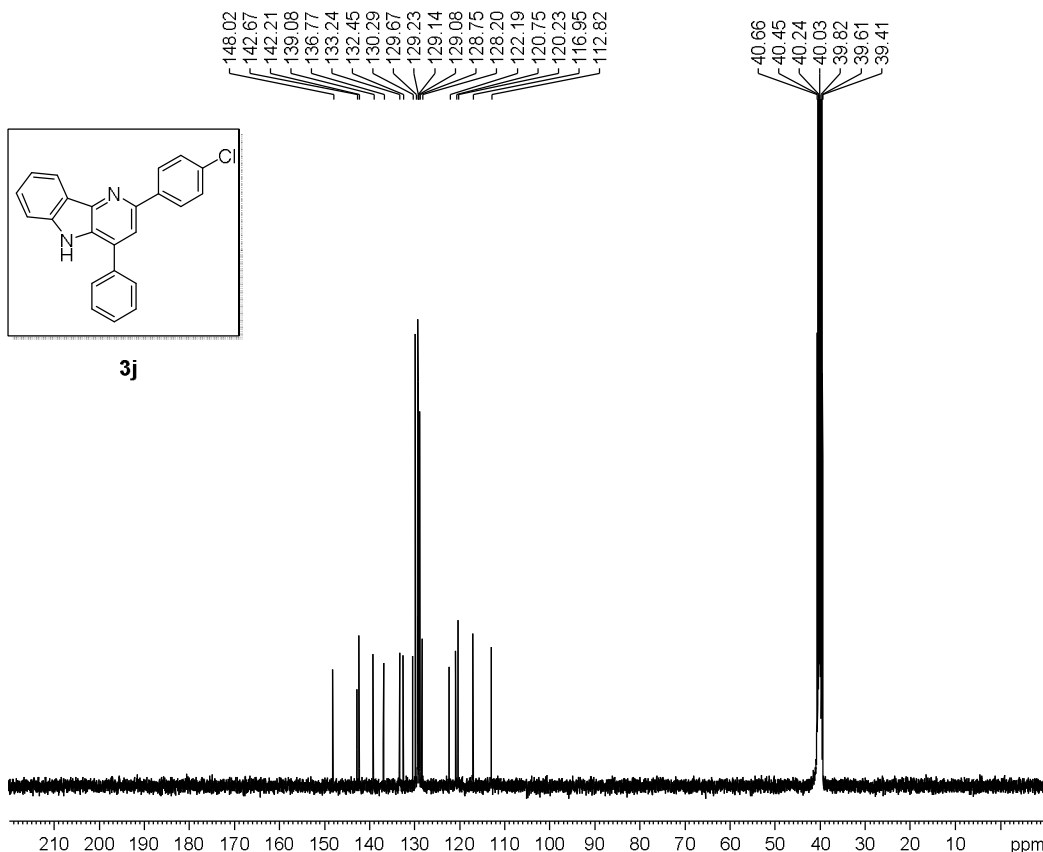
Current Data Parameters
 NAME J(4-Cl chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140320
 Time 22.09
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 181
 DW 69.000 usec
 DE 6.50 usec
 TE 298.7 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-chlorophenyl)-4-phenyl-5-carboline



Current Data Parameters
 NAME J(4-Cl chalcone)
 EXPNO 713
 PROCNO 1

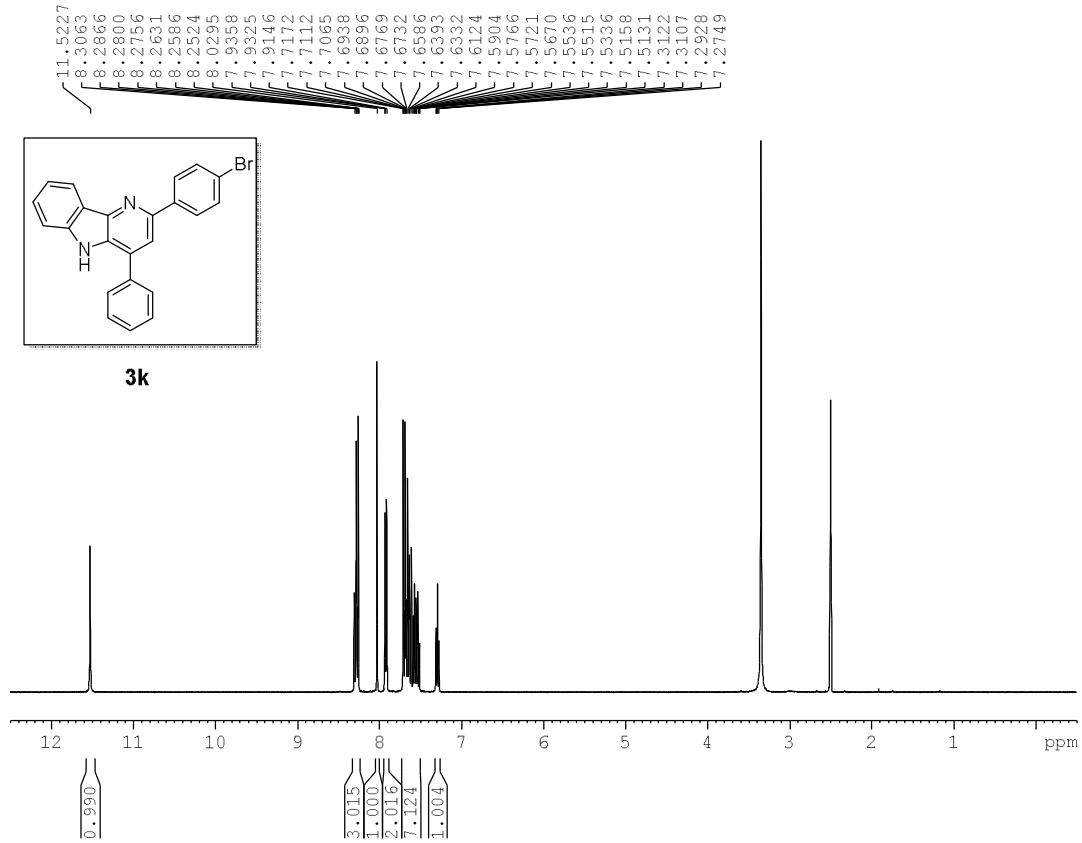
F2 - Acquisition Parameters
 Date_ 20140320
 Time 22.11
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 3000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 16384
 DW 20.800 usec
 DE 6.50 usec
 TE 298.8 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 10.50 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -0.60 dB
 PL12 15.00 dB
 PL13 18.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

2-(4-bromophenyl)-4-phenyl-δ-carboline



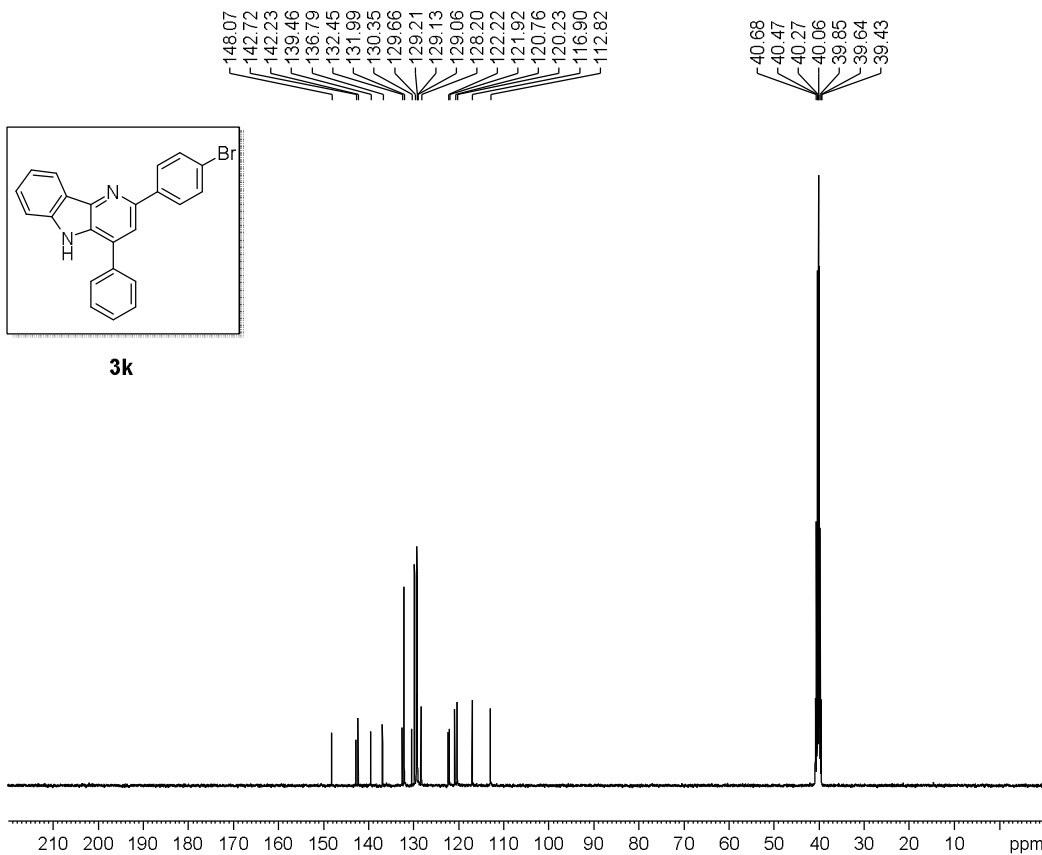
Current Data Parameters
 NAME K(4-Br chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140204
 Time 20.16
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.5 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 1H
 P1 11.90 usec
 PL1 3.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 18584
 SF 400.1300027 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-bromophenyl)-4-phenyl-δ-carboline



Current Data Parameters
 NAME K(4-Br chalcone)
 EXPNO 713
 PROCNO 1

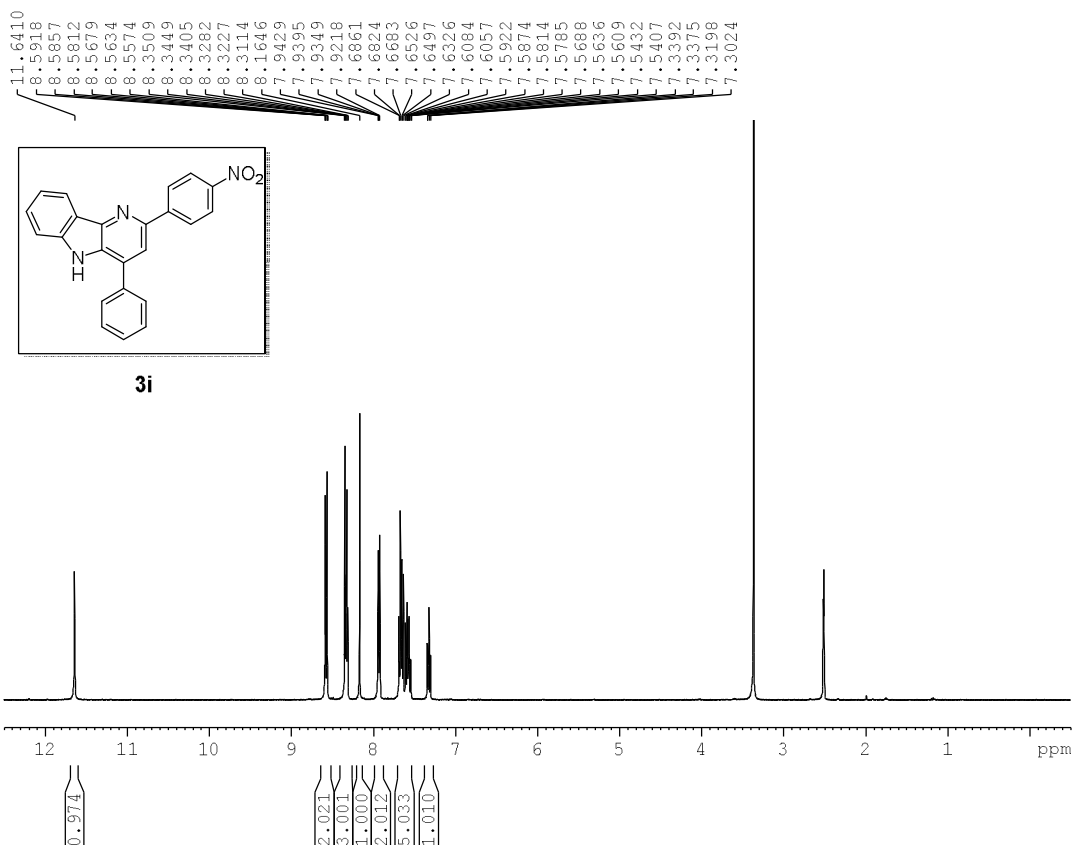
F2 - Acquisition Parameters
 Date_ 20131113
 Time 17.37
 INSTRUM SPECT
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 299.1 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233324 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-nitrophenyl)-4-phenyl-5-carboline

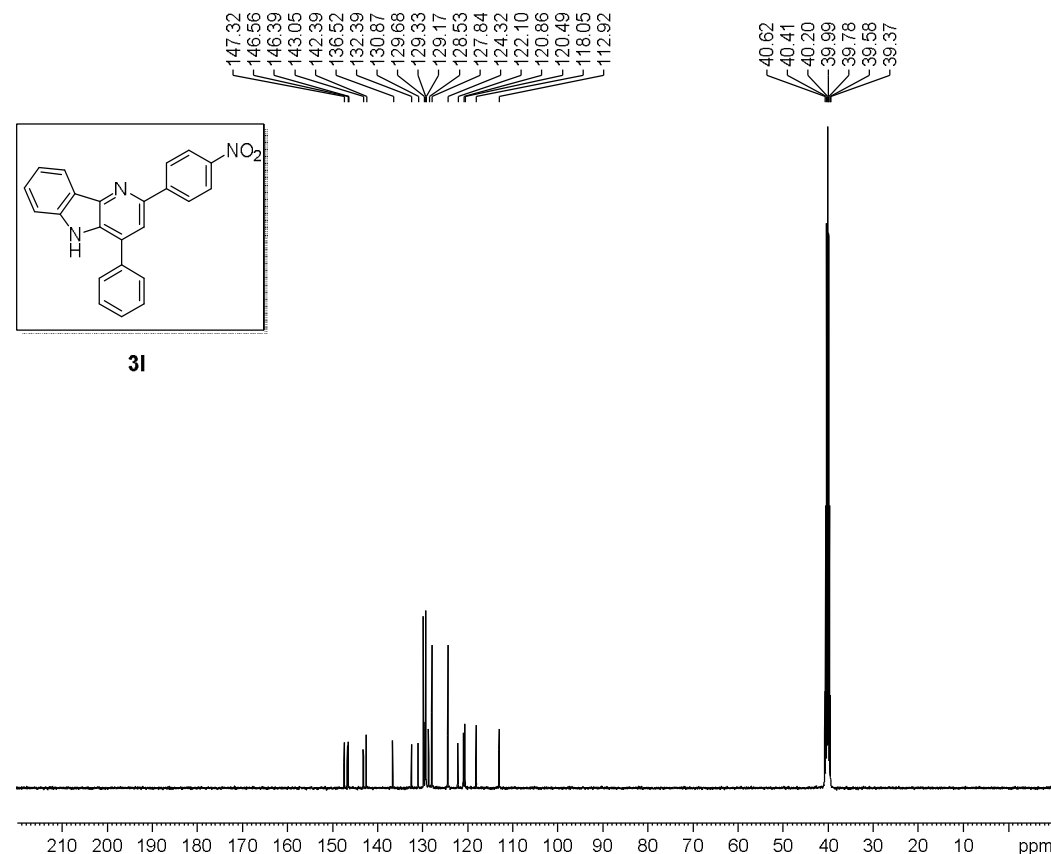


Current Data Parameters
 NAME L(4-NO2 chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140313
 Time_ 20.27
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 78.51
 DW 69.333 usec
 DE 10.52 usec
 TE 297.8 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W
 F2 - Processing parameters
 SI 18584
 SF 400.1300000 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-nitrophenyl)-4-phenyl-5-carboline



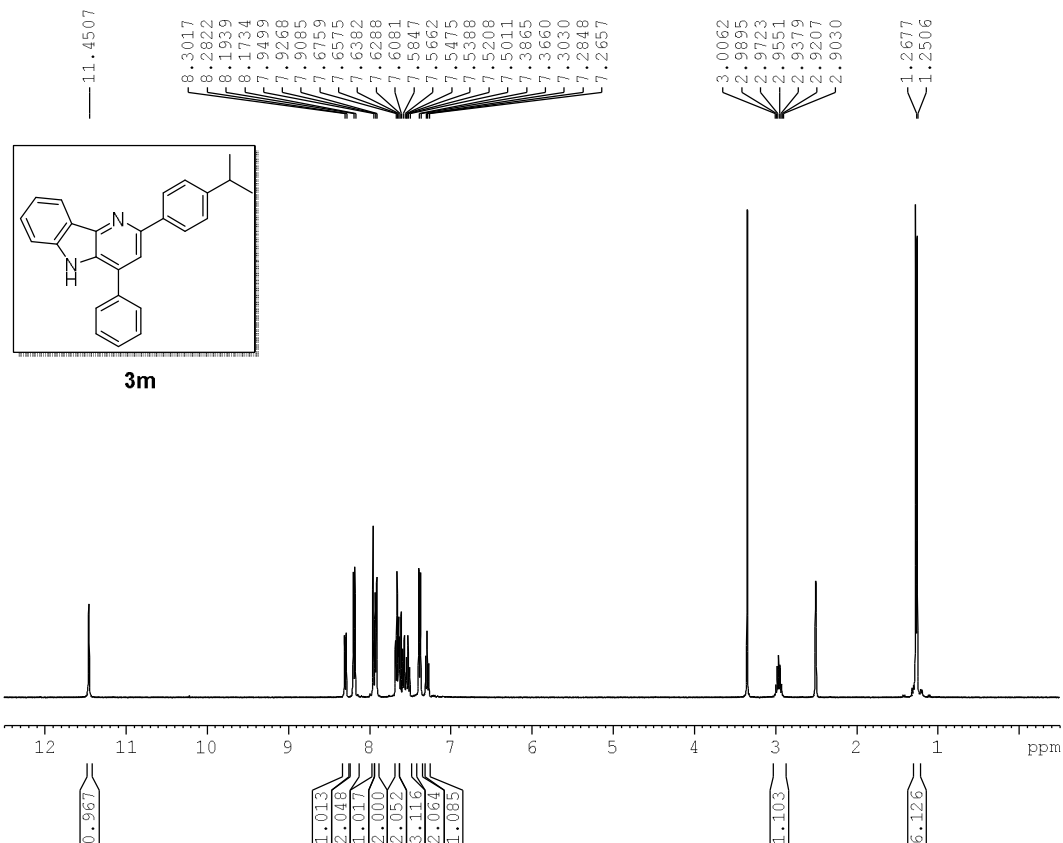
Current Data Parameters
 NAME L(4-NO2 chalcone)
 EXPNO 713
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140316
 Time_ 20.38
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 2000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 297.9 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233324 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W
 ===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-isopropylphenyl)-4-phenyl- δ -carboline



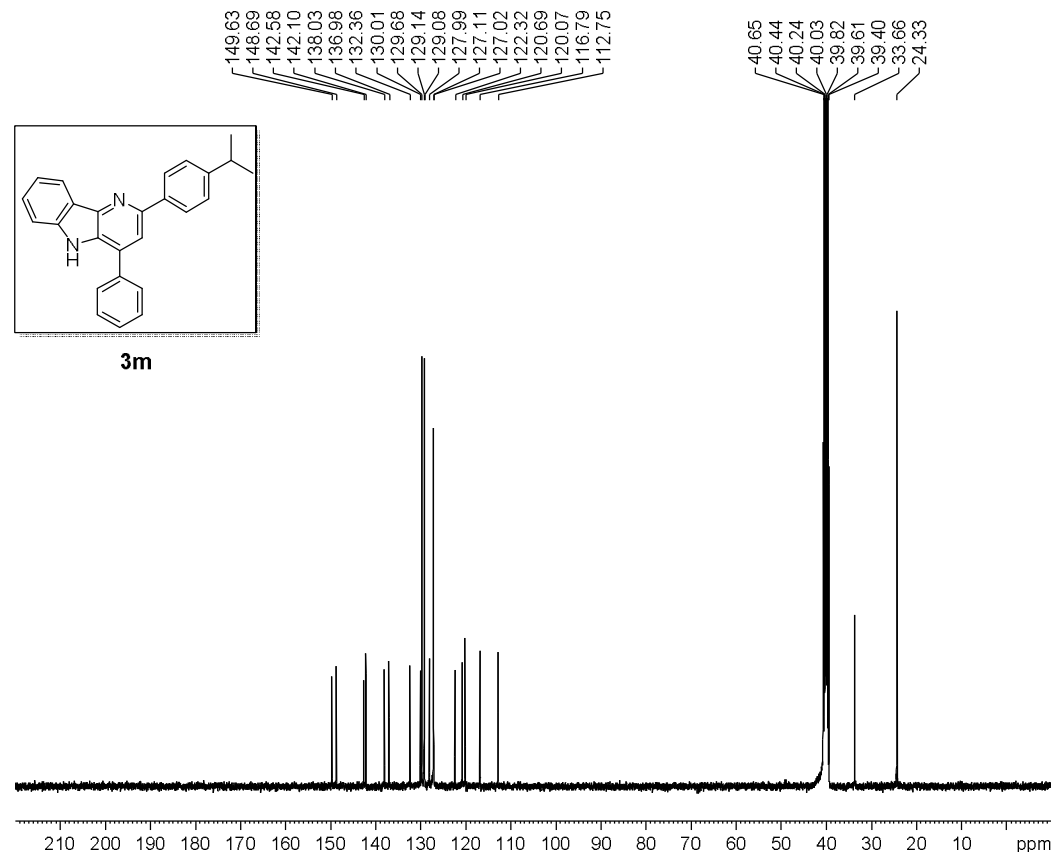
Current Data Parameters
 NAME M(4-cumene chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140414
 Time 12.03
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 181
 DW 69.000 usec
 DE 6.50 usec
 TE 299.6 K
 DT 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300030 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-isopropylphenyl)-4-phenyl- δ -carboline



Current Data Parameters
 NAME M(4-cumene chalcone)
 EXPNO 713
 PROCNO 1

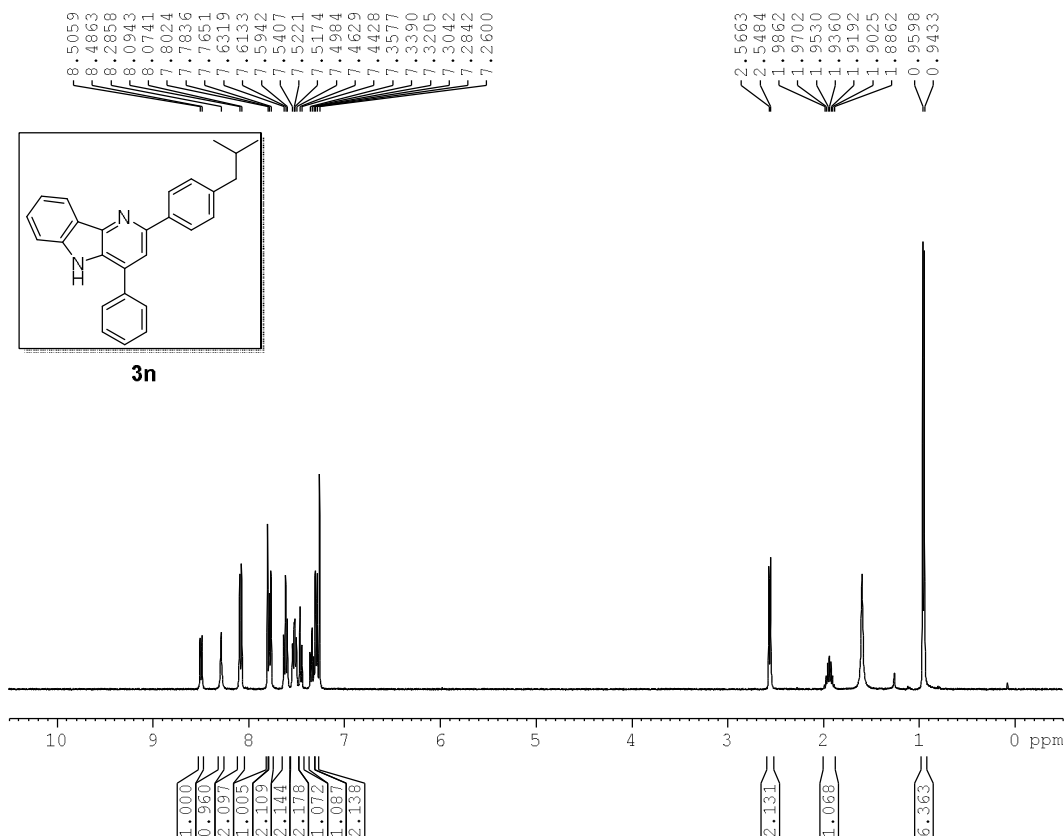
F2 - Acquisition Parameters
 Date_ 20140413
 Time 0.31
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 7000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 16384
 DW 20.800 usec
 DE 6.50 usec
 TE 300.4 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

==== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127600 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

2-(4-isobutylphenyl)-4-phenyl- δ -carboline

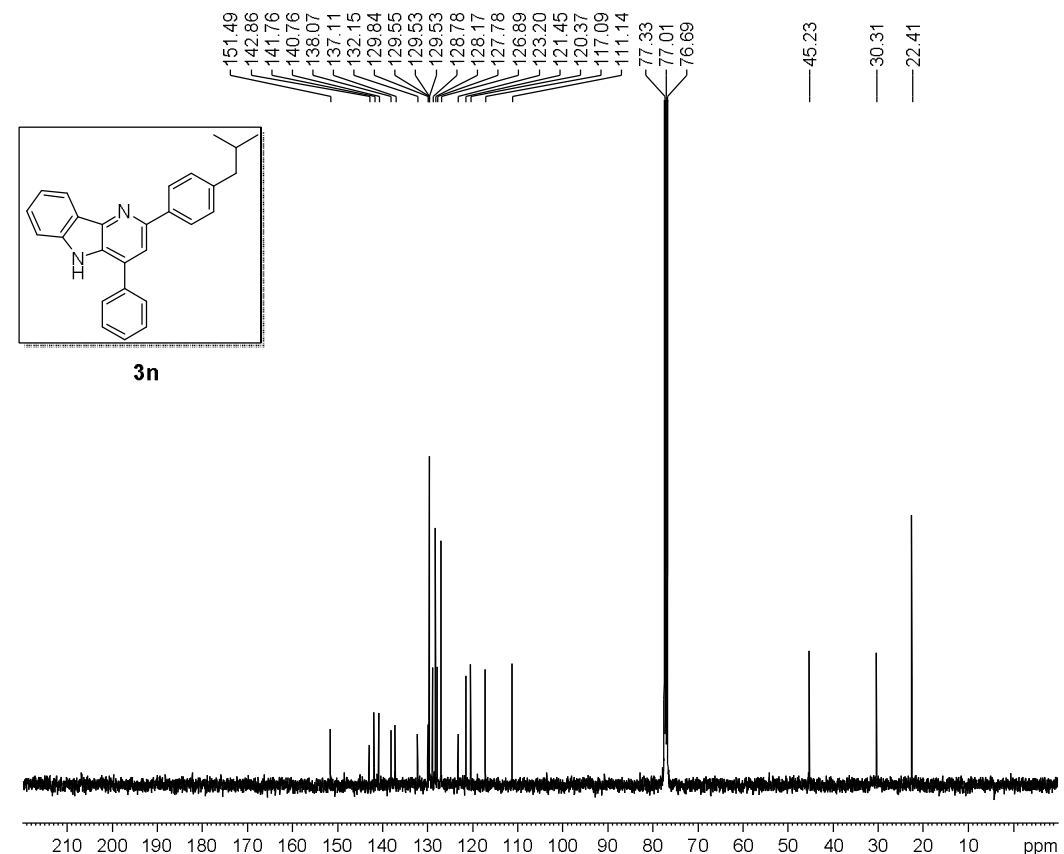


Current Data Parameters
 NAME N(4-isobutyl chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161105
 Time 18.13
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 4.01
 DW 69.333 usec
 DE 10.50 usec
 TE 298.4 K
 D1 2.0000000 sec
 TDO

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.90 usec
 PLW1 15.00000000 W
 F2 - Processing parameters
 SI 16384
 SF 400.1300102 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-isobutylphenyl)-4-phenyl- δ -carboline



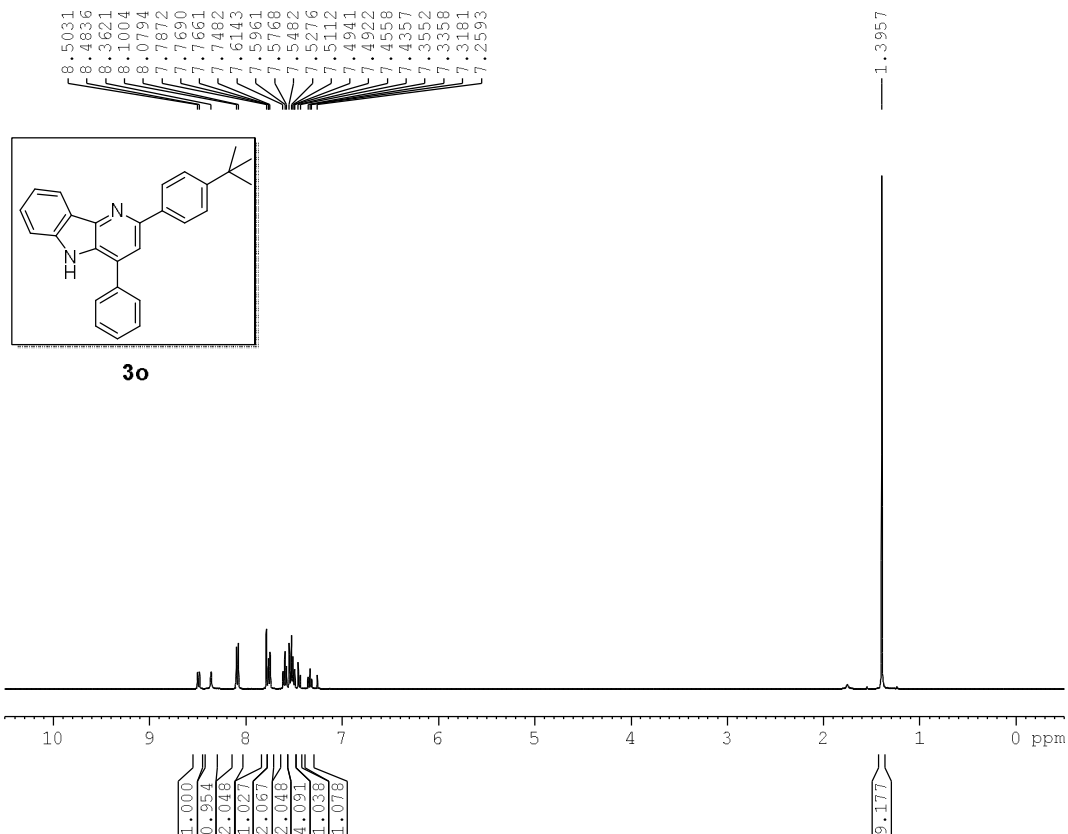
Current Data Parameters
 NAME N(4-isobutyl chalcone)
 EXPNO 713
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20161105
 Time 18.44
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 1780
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.6 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6228298 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 47.50000000 W
 ==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.33750001 W
 PLW13 0.27338001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127685 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

2-(4-(tert-butyl)phenyl)-4-phenyl-5-carboline



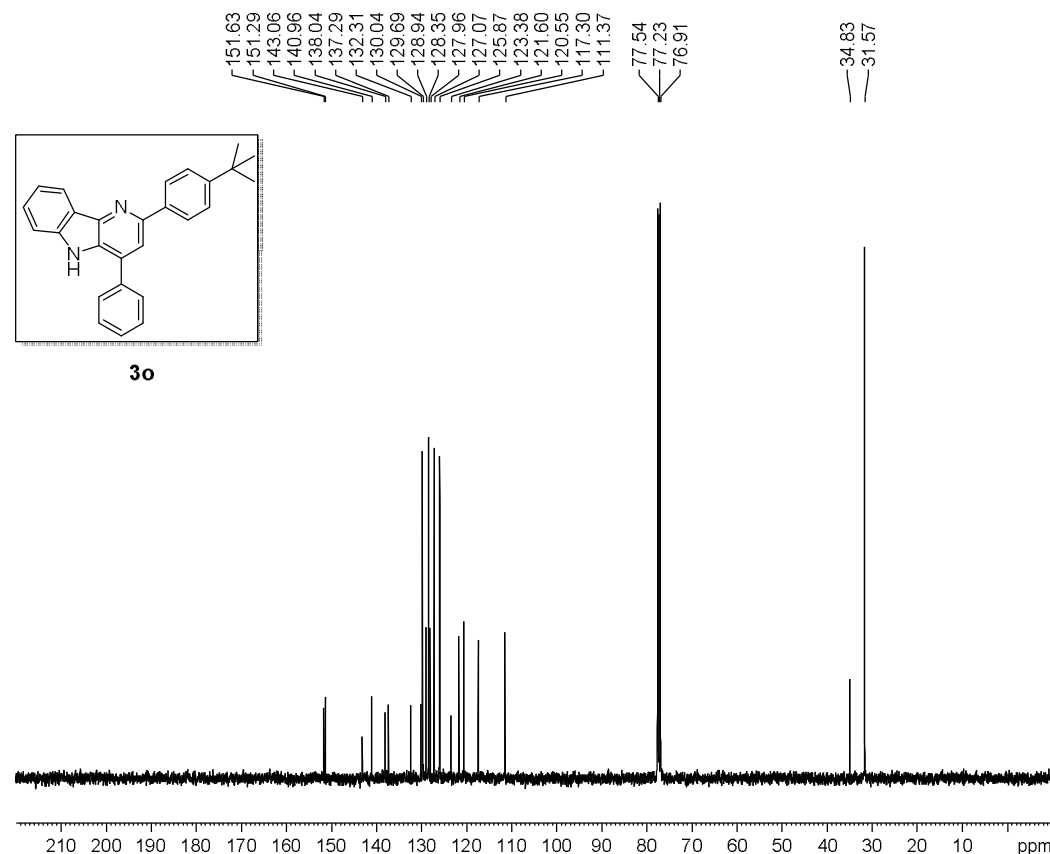
Current Data Parameters
 NAME O(4-t-butyl chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140423
 Time 21.00
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT CDCl3
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 78.51
 DW 69.333 usec
 DE 10.52 usec
 TE 297.9 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324009 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.00000000 W

F2 - Processing parameters
 SI 16584
 SF 400.1300098 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(4-(tert-butyl)phenyl)-4-phenyl-5-carboline



Current Data Parameters
 NAME O(4-t-butyl chalcone)
 EXPNO 713
 PROCNO 1

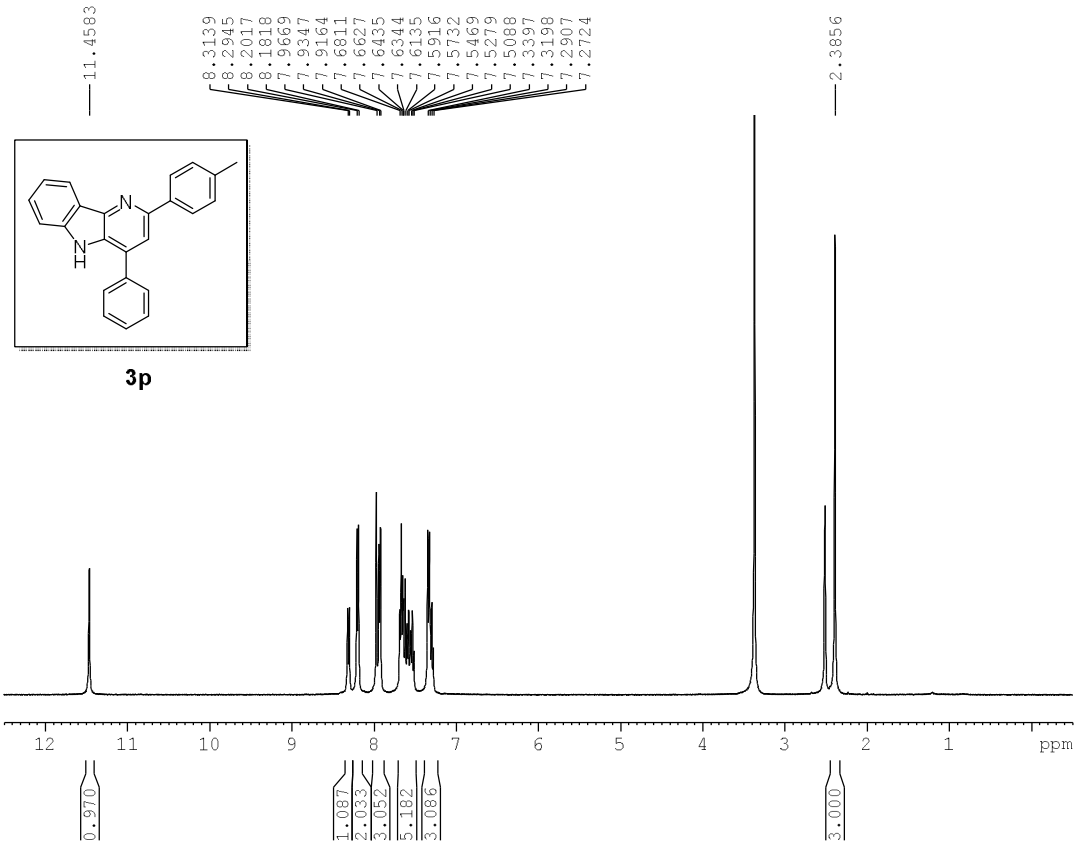
F2 - Acquisition Parameters
 Date_ 20140423
 Time 21.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 267
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.00000000 W

==== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.00000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127503 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

4-phenyl-2-(p-tolyl)-δ-carboline



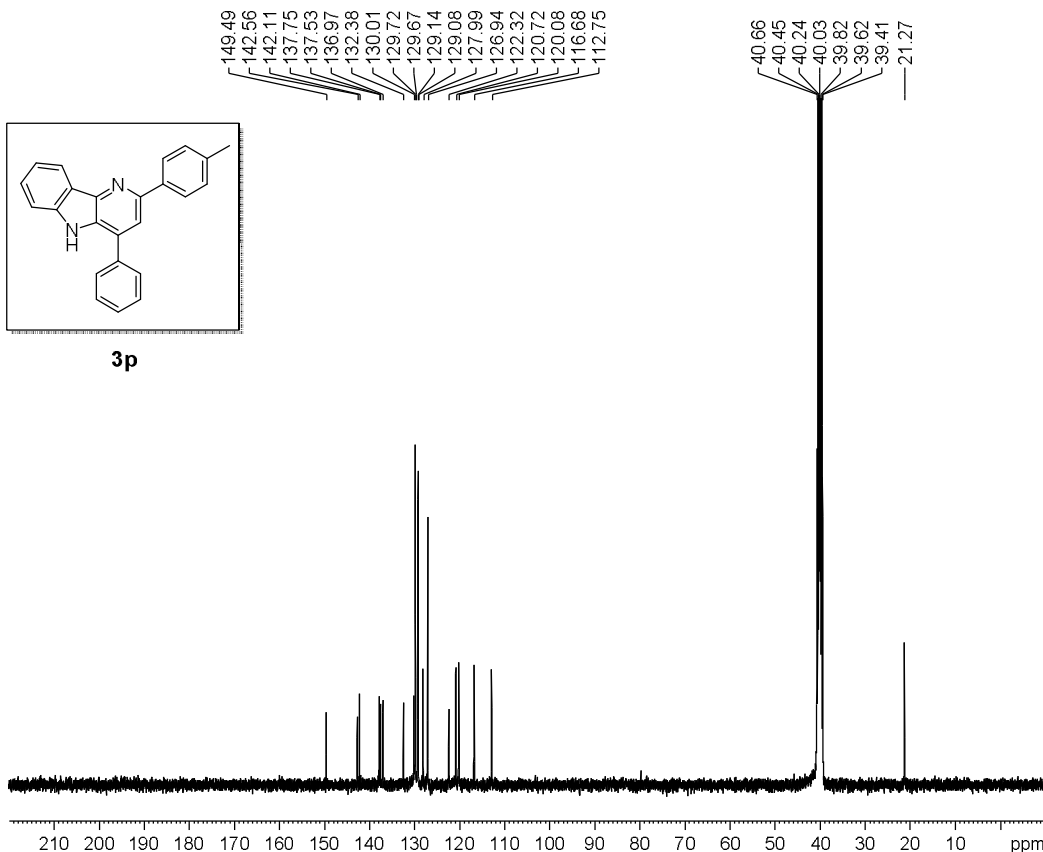
Current Data Parameters
 NAME P(4-Me chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140320
 Time 14.32
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 78.51
 DW 69.333 usec
 DE 10.62 usec
 TE 298.0 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.0000000 W

F2 - Processing parameters
 SI 18584
 SF 400.1300000 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

4-phenyl-2-(p-tolyl)-δ-carboline



Current Data Parameters
 NAME P(4-Me chalcone)
 EXPNO 713
 PROCNO 1

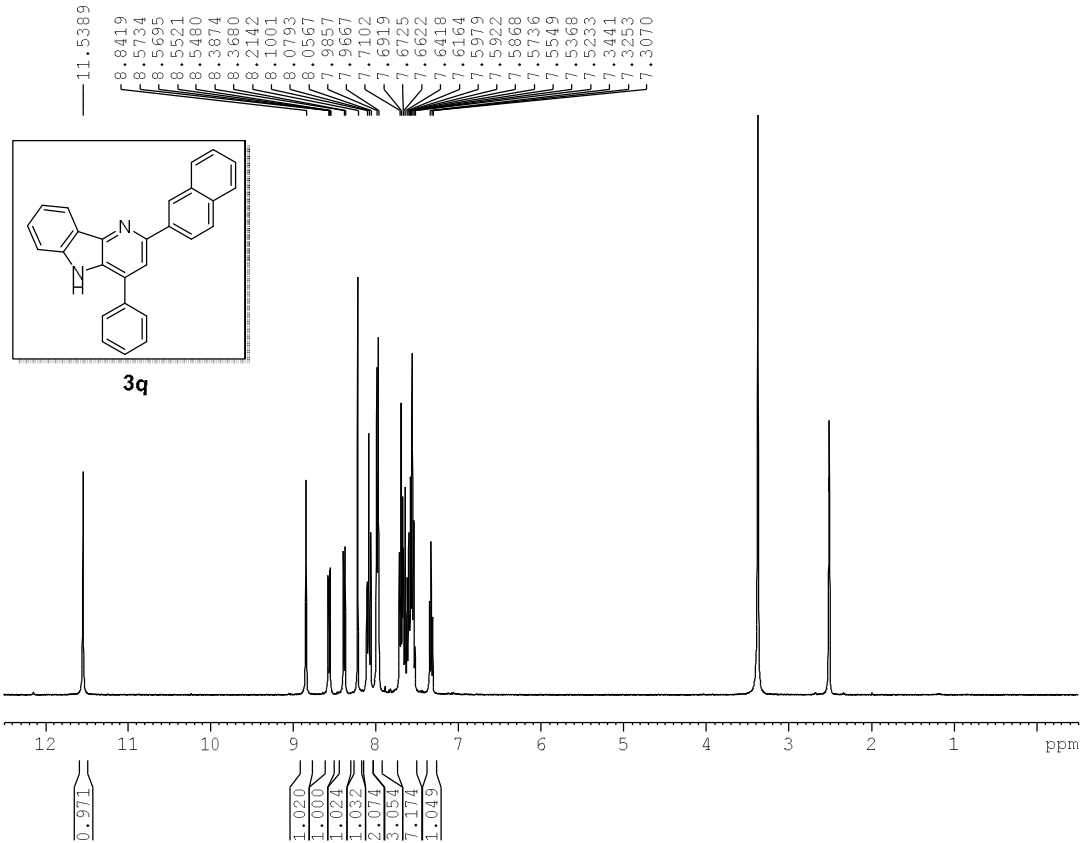
F2 - Acquisition Parameters
 Date_ 20140320
 Time 0.56
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 4000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 300.1 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

==== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

2-(naphthalen-2-yl)-4-phenyl- δ -carboline



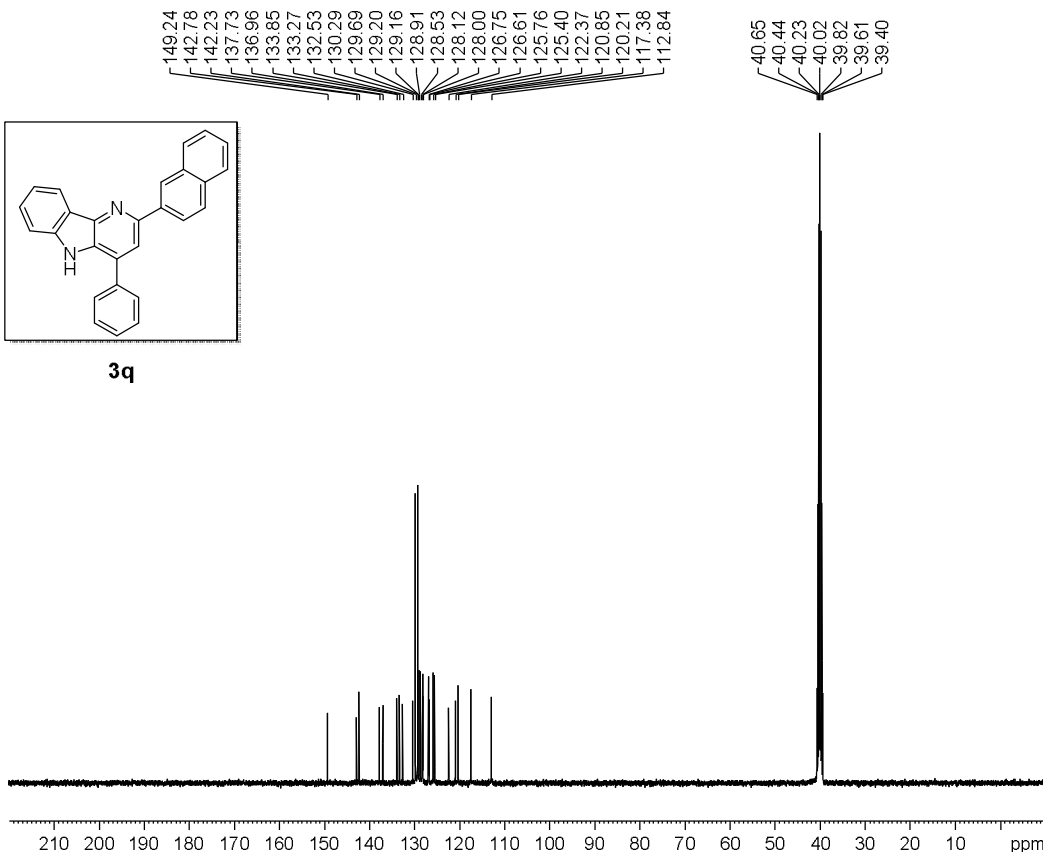
Current Data Parameters
 NAME Q(2-naphthyl chalcone)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140318
 Time 18.53
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7211.539 Hz
 FIDRES 0.220079 Hz
 AQ 2.2719147 sec
 RG 78.51
 DW 69.333 usec
 DE 10.62 usec
 TE 298.0 K
 D1 2.00000000 sec
 TDO 1

==== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.80 usec
 PLW1 15.00000000 W

F2 - Processing parameters
 SI 18584
 SF 400.1300000 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

2-(naphthalen-2-yl)-4-phenyl- δ -carboline



Current Data Parameters
 NAME Q(2-naphthyl chalcone)
 EXPNO 713
 PROCNO 1

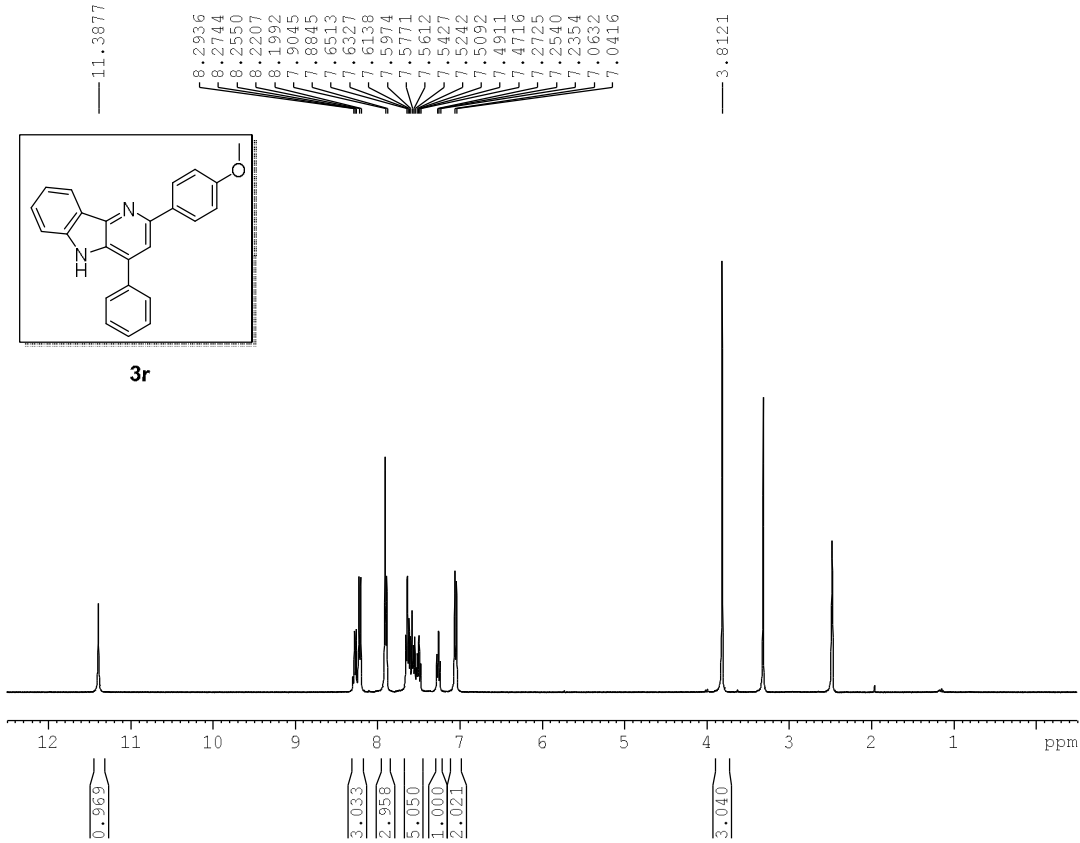
F2 - Acquisition Parameters
 Date_ 20140320
 Time 18.11
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1085
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 298.8 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

==== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

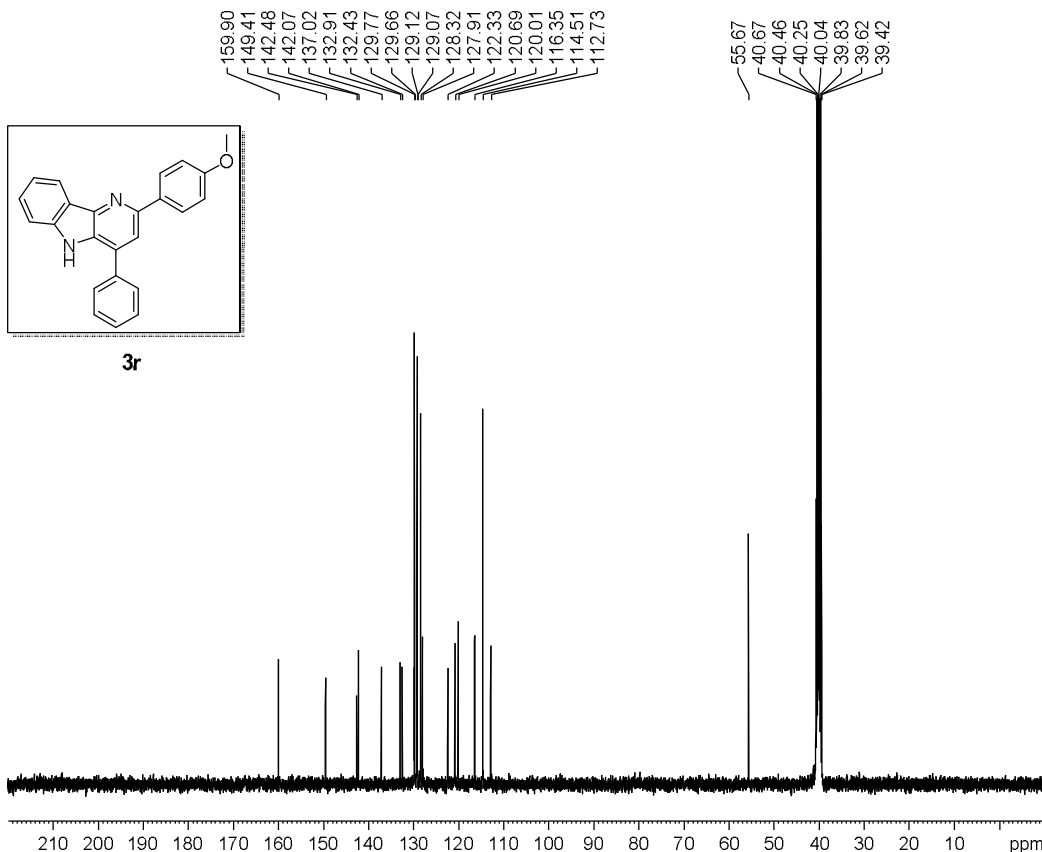
2-(4-methoxyphenyl)-4-phenyl-5-carboline



Current Data Parameters
 NAME R(4-OMe chalcone)
 EXPNO 71
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20131109
 Time 16:21
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 223.1
 DW 69.000 usec
 DE 6.50 usec
 TE 300.1 K
 D1 2.0000000 sec
 TDO

==== CHANNEL f1 =====
 NUC1 1H
 P1 11.90 usec
 PL1 3.00 dB
 SFO1 400.1324008 MHz
 F2 - Processing parameters
 SI 16384
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

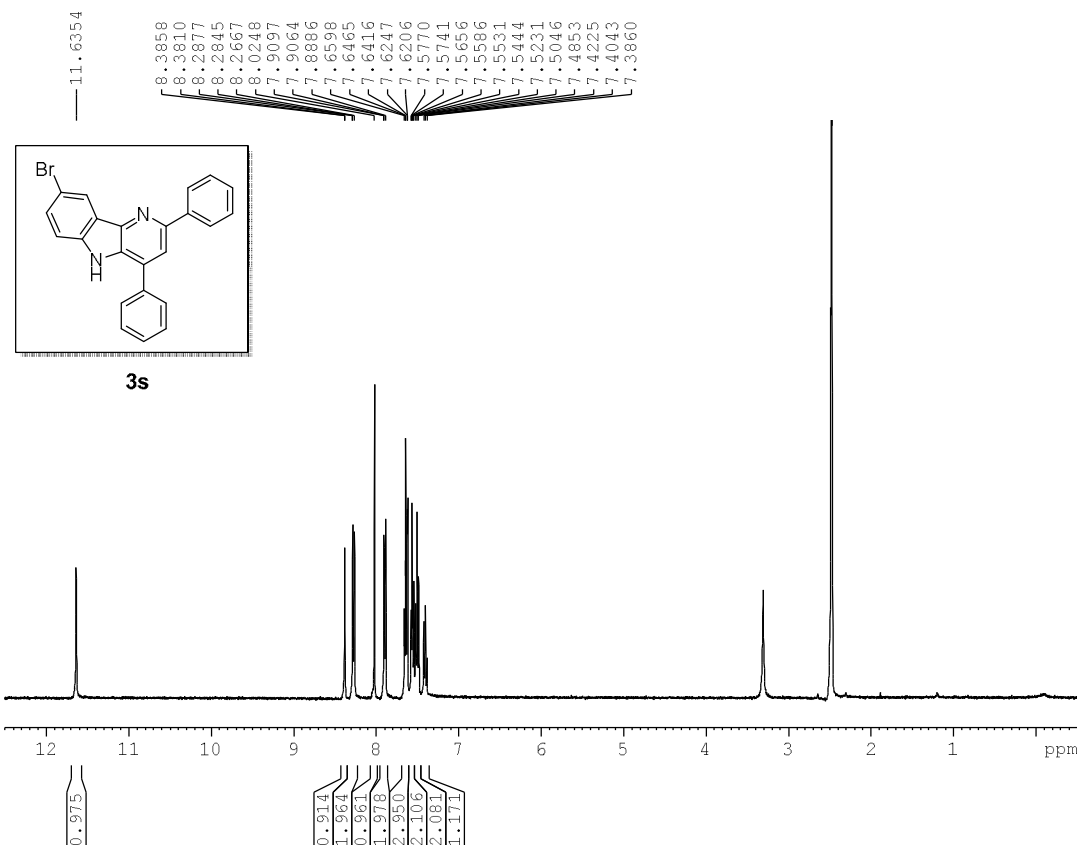
2-(4-methoxyphenyl)-4-phenyl-6-carboline



Current Data Parameters
 NAME R(4-OMe chalcone)
 EXPNO 713
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20131109
 Time 20:03
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 952
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 16384
 DW 20.800 usec
 DE 6.50 usec
 TE 300.5 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 13C
 P1 10.50 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz
 ==== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -0.60 dB
 PL12 15.00 dB
 PL13 18.00 dB
 SFO2 400.1316005 MHz
 F2 - Processing parameters
 SI 32768
 SF 100.6127600 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

8-bromo-2,4-diphenyl-5-carboline



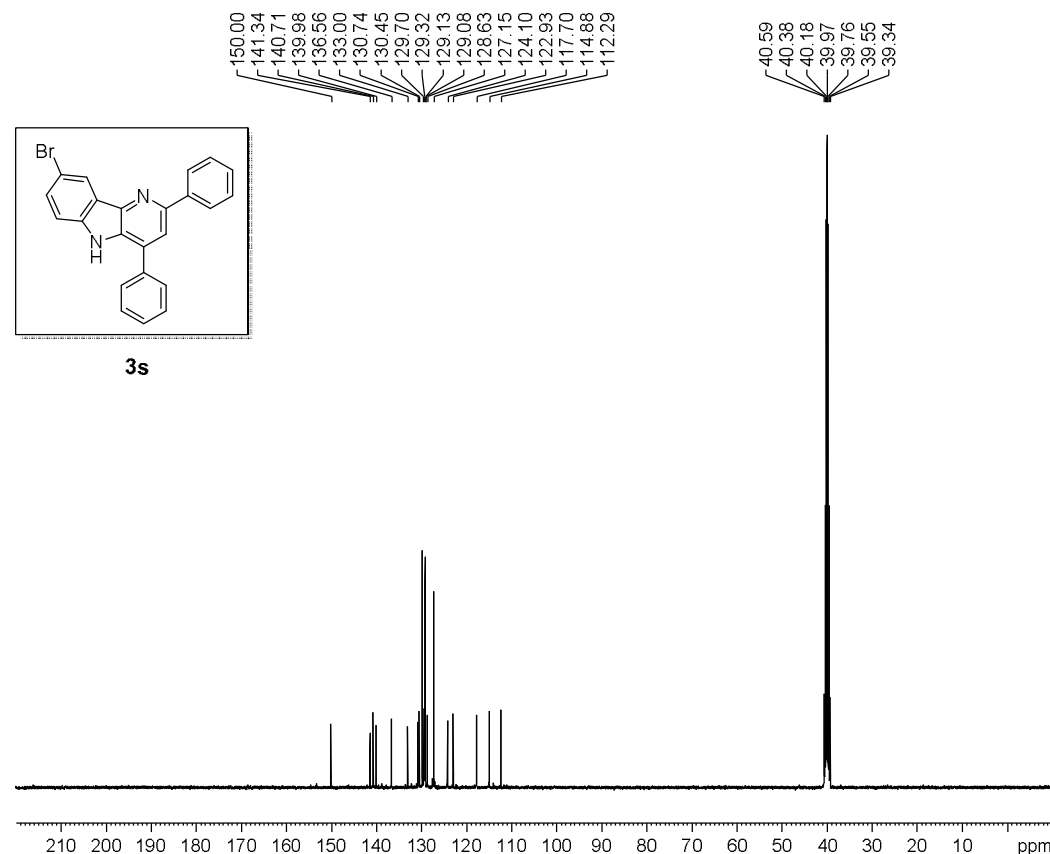
Current Data Parameters
 NAME S(5-Br indole)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140519
 Time 21.20
 INSTRUM spect
 PROBHD 5 mm SEI 1H-13
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.1 K
 D1 2.0000000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 1H
 P1 11.90 usec
 PL1 3.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

8-bromo-2,4-diphenyl-5-carboline



Current Data Parameters
 NAME S(5-Br indole)
 EXPNO 713
 PROCNO 1

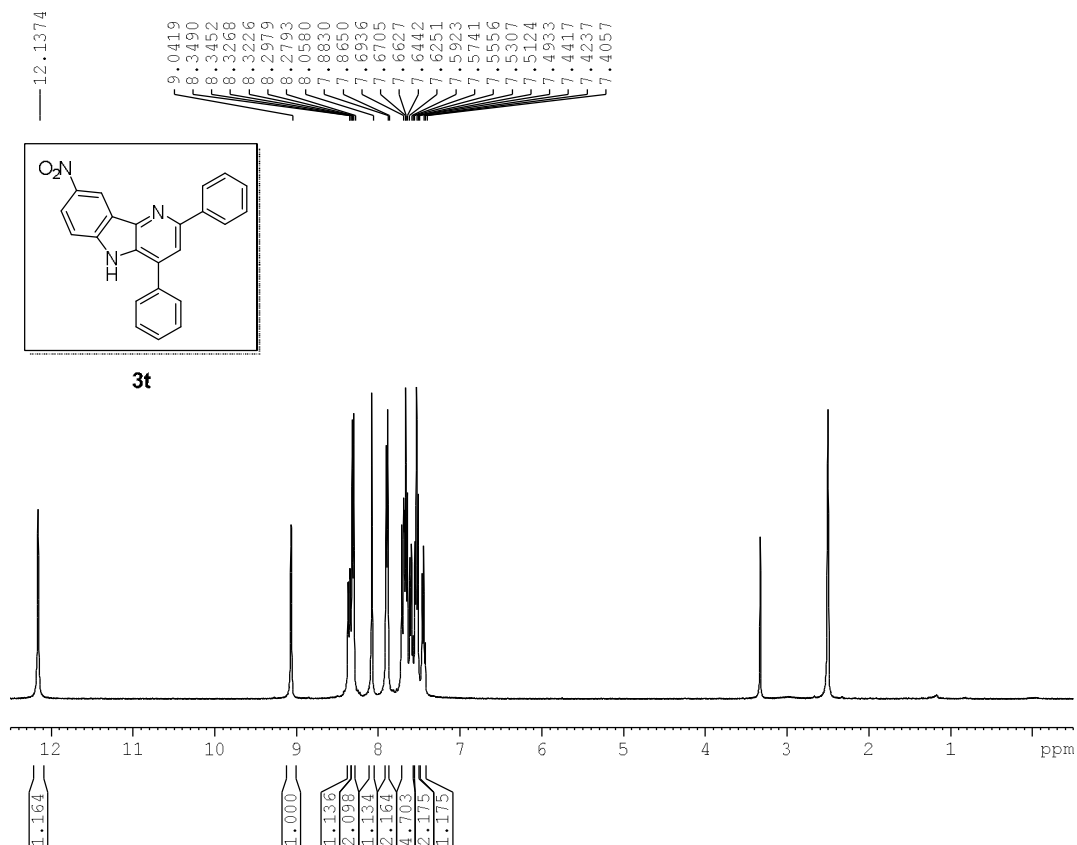
F2 - Acquisition Parameters
 Date_ 20140331
 Time 3.41
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 3000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 8192
 DW 20.800 usec
 DE 6.50 usec
 TE 300.5 K
 D1 2.0000000 sec
 D11 0.03000000 sec
 TDO 1

==== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

==== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

8-nitro-2,4-diphenyl-5-carboline



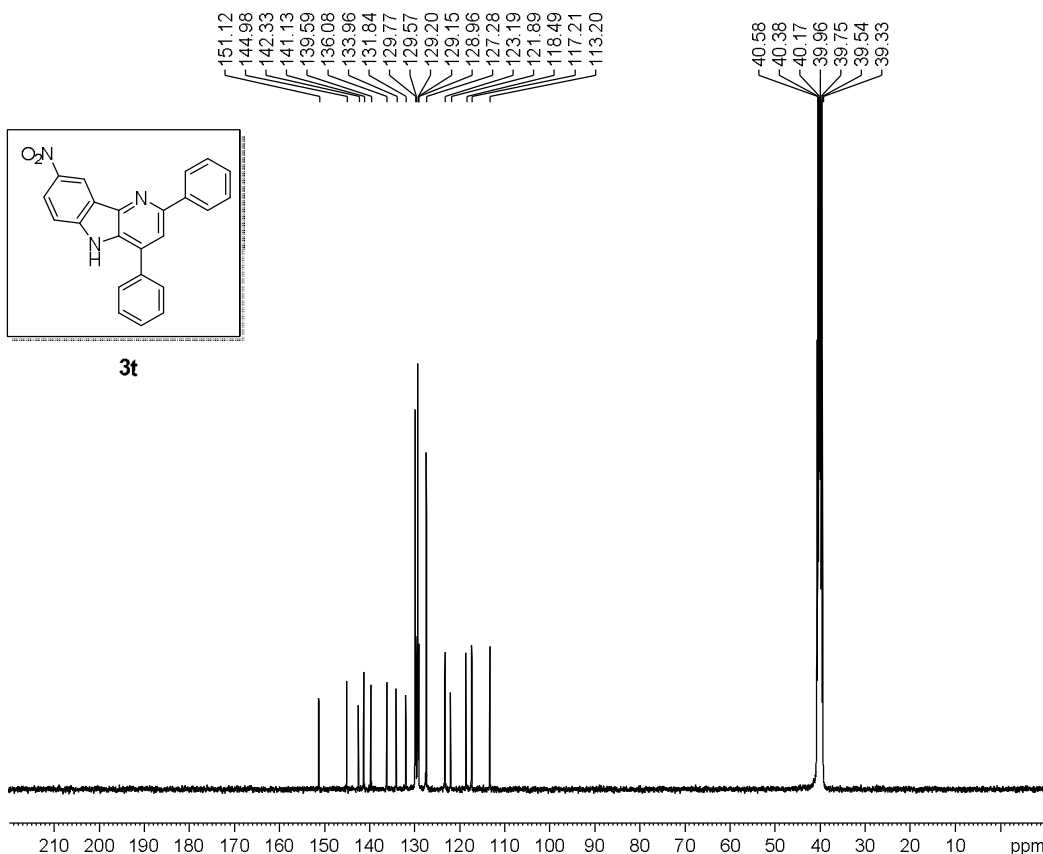
Current Data Parameters
 NAME T(5-NO2 indole)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140731
 Time 10.35
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 114
 DW 69.000 usec
 DE 6.50 usec
 TE 298.6 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 15.00 usec
 PL1 -5.85 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 18584
 SF 400.1300038 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

8-nitro-2,4-diphenyl-5-carboline



Current Data Parameters
 NAME T(5-NO2 indole)
 EXPNO 713
 PROCNO 1

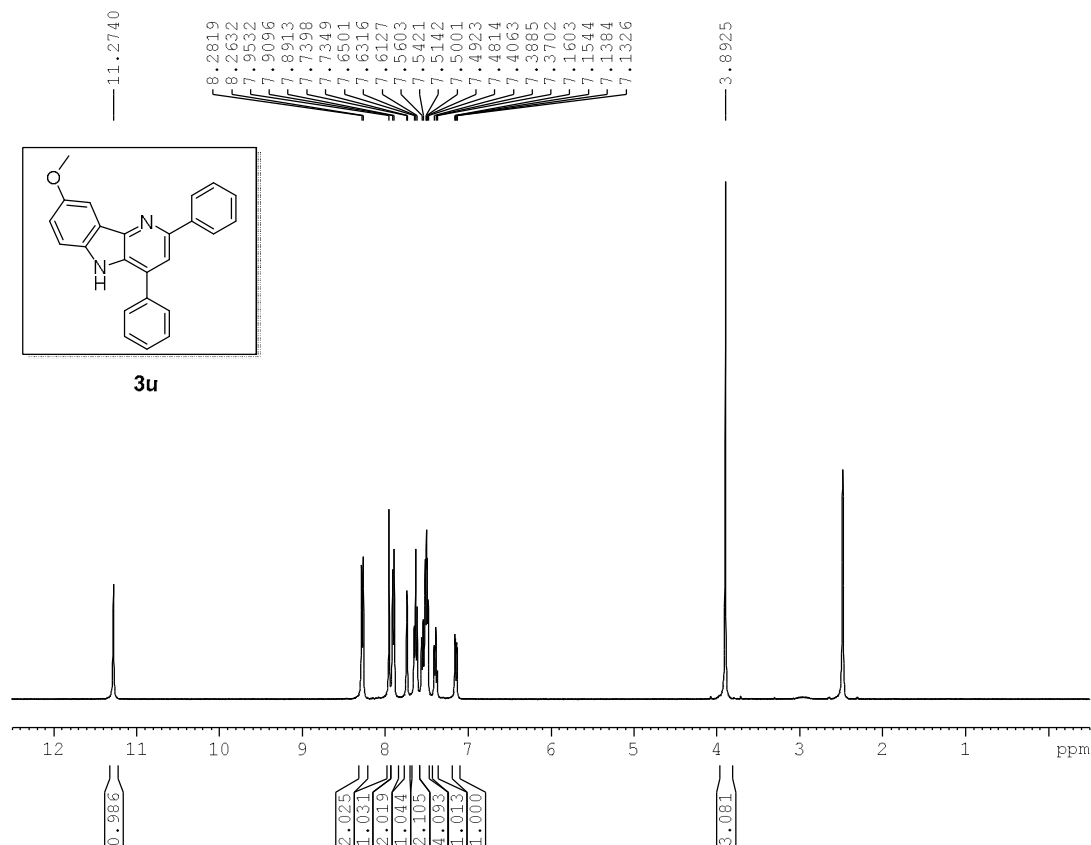
F2 - Acquisition Parameters
 Date_ 20140827
 Time 22.31
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 8000
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 198.09
 DW 20.900 usec
 DE 6.50 usec
 TE 298.5 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 100.6233319 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 46.0000000 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.34252000 W
 PLW13 0.27744001 W

F2 - Processing parameters
 SI 32768
 SF 100.6127685 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.00

8-methoxy-2,4-diphenyl- δ -carboline



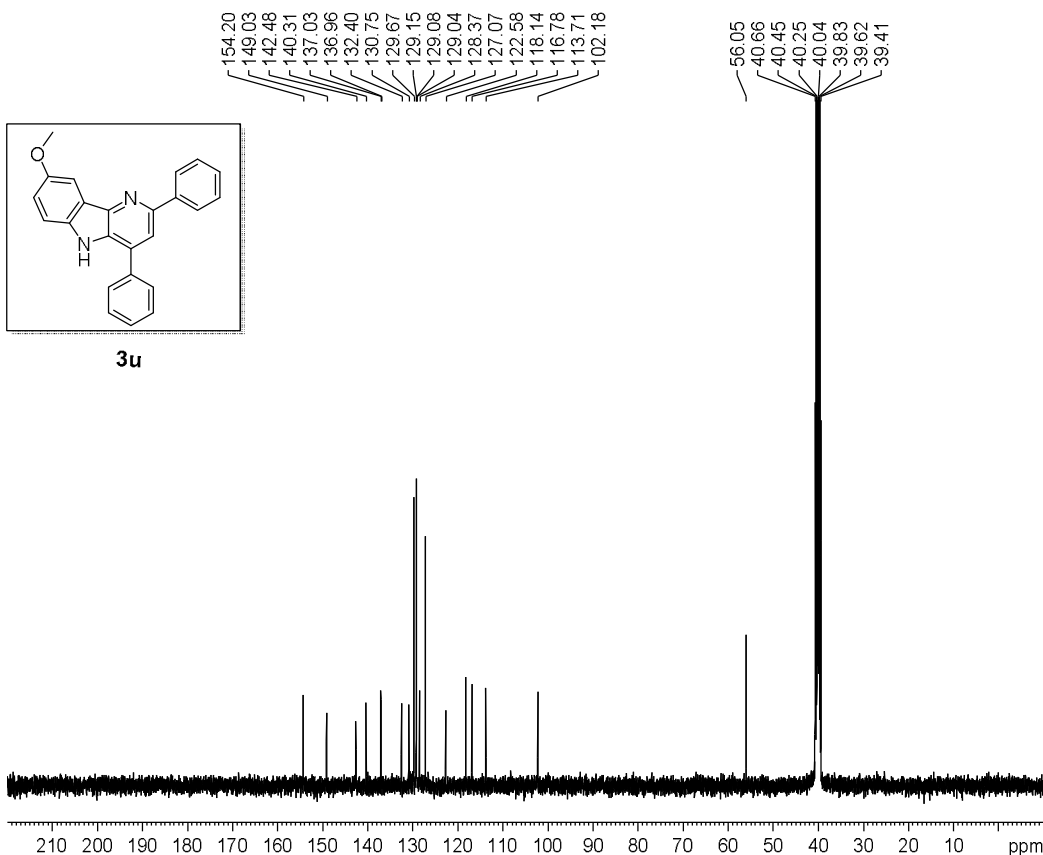
Current Data Parameters
 NAME U(5-OMe indole)
 EXPNO 71
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140320
 Time 20:58
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zg30
 TD 32768
 SOLVENT DMSO
 NS 16
 DS 0
 SWH 7246.377 Hz
 FIDRES 0.221142 Hz
 AQ 2.2609921 sec
 RG 181
 DW 69.000 usec
 DE 6.50 usec
 TE 298.7 K
 D1 2.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 14.35 usec
 PL1 -2.00 dB
 SFO1 400.1324008 MHz

F2 - Processing parameters
 SI 16384
 SF 400.1300118 MHz
 WDW EM
 SSB 0
 LB 0 Hz
 GB 0
 PC 1.00

8-methoxy-2,4-diphenyl- δ -carboline



Current Data Parameters
 NAME U(5-OMe indole)
 EXPNO 713
 PROCNO 1

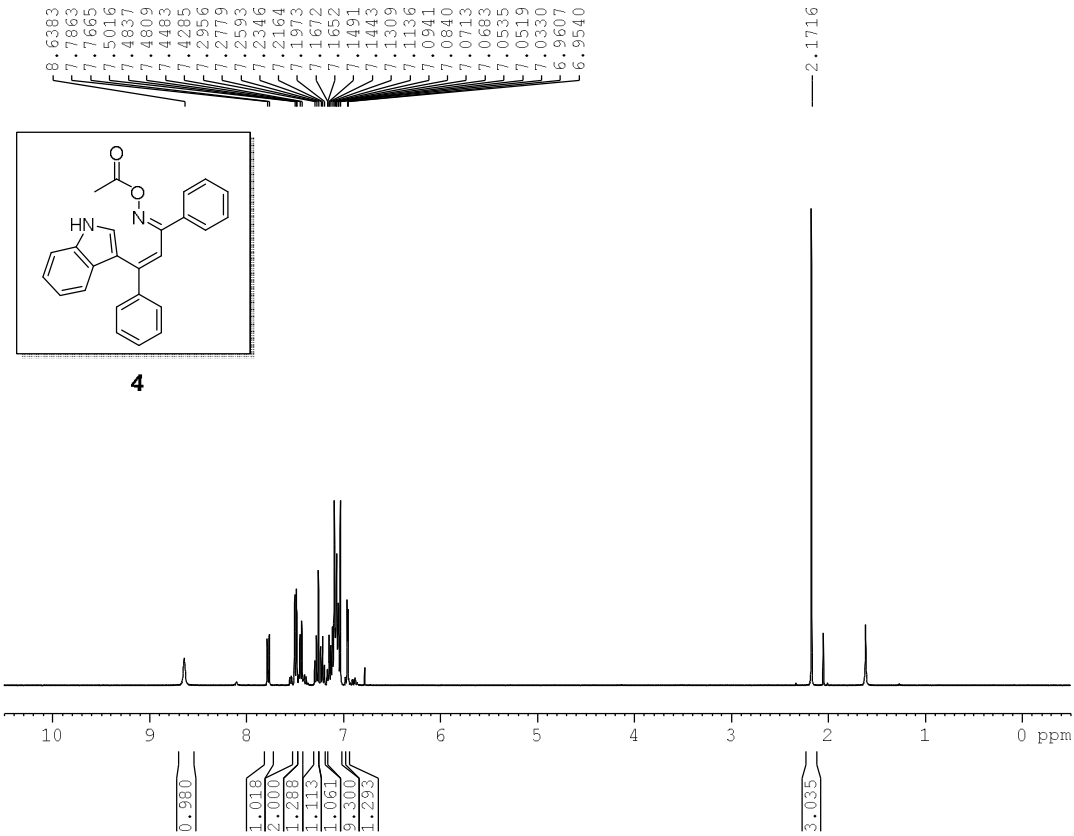
F2 - Acquisition Parameters
 Date_ 20140321
 Time 0:54
 INSTRUM spect
 PROBHD 5 mm BBO BB-1H
 PULPROG zgpg30
 TD 32768
 SOLVENT DMSO
 NS 1500
 DS 0
 SWH 24038.461 Hz
 FIDRES 0.733596 Hz
 AQ 0.6815744 sec
 RG 16384
 DW 20.800 usec
 DE 6.50 usec
 TE 298.8 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 13C
 P1 9.40 usec
 PL1 7.00 dB
 SFO1 100.6233325 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 -2.00 dB
 PL12 13.95 dB
 PL13 17.00 dB
 SFO2 400.1316005 MHz

F2 - Processing parameters
 SI 32768
 SF 100.6127660 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.00

(1Z,2Z)-3-(1H-indol-3-yl)-1,3-diphenylprop-2-en-1-one O-acetyl oxime



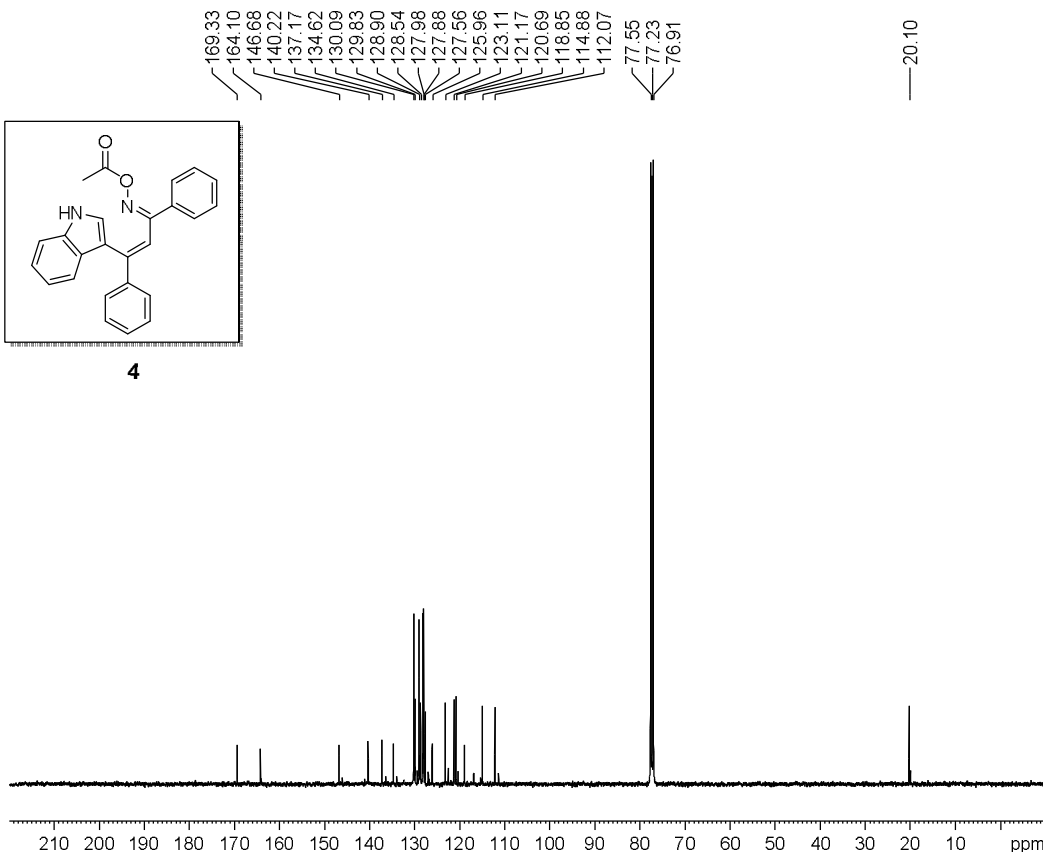
Current Data Parameters
NAME intermediate
EXPNO 3
PROCNO 1

F2 - Acquisition Parameters
Date_ 20161104
Time 18.54
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7211.539 Hz
FIDRES 0.220079 Hz
AQ 2.2719147 sec
RG 4.01
DW 69.333 usec
DE 10.50 usec
TE 298.2 K
D1 2.0000000 sec
TDO

==== CHANNEL f1 =====
SFO1 400.1324009 MHz
NUC1 1H
P1 12.90 usec
PLW1 15.00000000 W

F2 - Processing parameters
SI 16384
SF 400.1300104 MHz
EM
WDW 0
SSB 0
LB 0 Hz
GB 0
PC 1.00

(1Z,2Z)-3-(1H-indol-3-yl)-1,3-diphenylprop-2-en-1-one O-acetyl oxime



Current Data Parameters
NAME 20161105N
EXPNO 4
PROCNO 1

F2 - Acquisition Parameters
Date_ 20161105
Time 16.17
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 32768
SOLVENT CDCl3
NS 1479
DS 0
SWH 24038.461 Hz
FIDRES 0.733596 Hz
AQ 0.6815744 sec
RG 198.09
DW 20.900 usec
DE 6.50 usec
TE 298.2 K
D1 2.0000000 sec
D11 0.03000000 sec
TDO 1

==== CHANNEL f1 =====
SFO1 100.6228298 MHz
NUC1 13C
P1 10.00 usec
PLW1 47.50000000 W

==== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 90.00 usec
PLW2 15.00000000 W
PLW12 0.33750001 W
PLW13 0.27338001 W

F2 - Processing parameters
SI 32768
SF 100.6127496 MHz
EM
WDW 0
SSB 0
LB 2.00 Hz
GB 0
PC 1.00