

Supporting Information

An efficient method to access the spiro pseudo indoxyl ketones: Evaluation of monoamine oxidase inhibitory effects of indoxyl and their *N*-benzylated derivatives

Karuppaiah Perumal,^a Jiseong Lee,^b Sesuraj Babiola Annes,^a Subburethinam Ramesh,^{*a},
T. M. Rangarajan,^c Bijo Mathew,^d and Hoon Kim ^{*b}

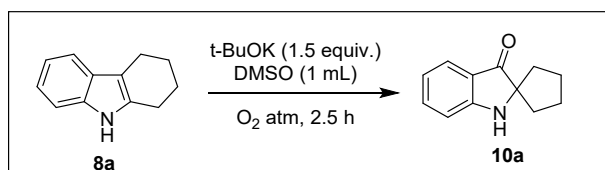
^a *Department of Chemistry, School of Chemical and Biotechnology, SASTRA Deemed University, Thanjavur 613 401, Tamil Nadu, India. E-mail: rameshsbdu@gmail.com*

^b *Department of Pharmacy, and Research Institute of Life Pharmaceutical Sciences, Suncheon National University, Suncheon 57922, Republic of Korea. E-mail: hoon@sunchon.ac.kr*

^c *Department of Chemistry, Sri Venkateswara College, University of Delhi, New Delhi, India.*

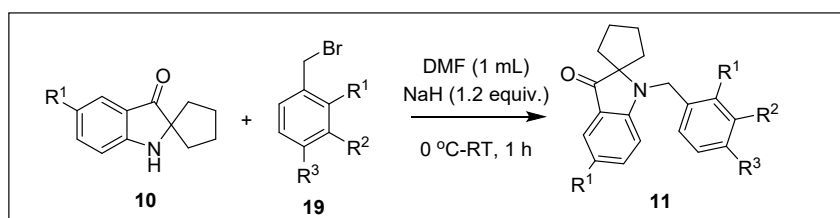
^d *Department of Pharmaceutical Chemistry, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham, AIMS Health Sciences Campus, Kochi 682 041, India.*

Synthesis of spiro pseudo indoxyl derivative:

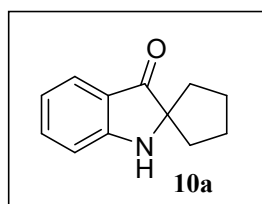


The reaction was carried out in an oven-dried 10 mL round bottom flask. Tetrahydrocarbazole **8a** (1 equiv.) was dissolved in 1 mL of DMSO and t-BuOK (1.5 equiv.) was added portion-wise and kept under an oxygen atmosphere for about 2.5 hours. After the conversion of starting material, the reaction mass was quenched using saturated ammonium chloride and washed with water, the organic layer was separated by using ethyl acetate. The collected organic layer was evaporated and subjected to column chromatography to get pure product **10a**. Finally, the purified, isolated product **10a** was confirmed by NMR and HRMS spectroscopy.

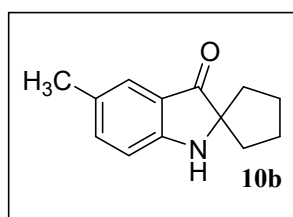
Synthesis of N-benzylated pseudo indoxyl derivative:



Synthesized spirocyclic indolinone **10** (1 equiv.) was dissolved in 1 mL of DMF and benzyl bromide **19** (1.5 equiv.) was added into the reaction vial. The reaction mass was kept in ice-cold water and NaH (1.2 equiv.) was added slowly under a nitrogen atmosphere. The conversion was monitored by TLC. After the completion of the reaction, the crude mass was worked up by using saturated ammonium chloride, and the organic layer was extracted using ethyl acetate. The collected ethyl acetate layer was again washed with cold brine solution. The organic layer was evaporated and subjected to column chromatography for further purification. The purified compound **11** was confirmed by NMR and HRMS spectroscopy.

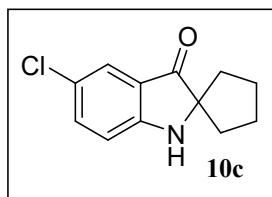


spiro[cyclopentane-1,2'-indolin]-3'-one (10a): yield 69% (129.20mg); Fluorescent yellow solid; mp 90-92 °C ; R_f 0.5 (5% Ethyl Acetate in hexane); ¹H NMR (300 MHz, CDCl₃, δ ppm) 7.61 (1H, d, J = 3.0 Hz), 7.43 (1H, t, J = 6.0 Hz), 6.84-6.79 (2H, m), 5.00 (1H, s), 2.11-2.05 (2H, m), 2.00-1.93 (2H, m), 1.88-1.83 (2H, m), 1.75-1.70 (2H, m). ¹³C NMR (100 MHz, CDCl₃, δ ppm) 205.18, 159.99, 136.93, 124.64, 120.71, 118.77, 112.28, 74.52, 38.08, 25.48; HRMS (m/z): [M+H]⁺ calcd for C₁₂H₁₃NO: 188.1074; found: 188.1075.

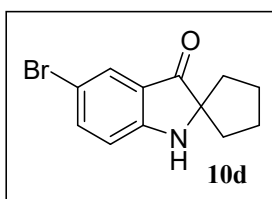


5'-methylspiro[cyclopentane-1,2'-indolin]-3'-one (10b): yield 64% (128.81mg); Fluorescent yellow Semi Solid; R_f 0.5 (5% Ethyl Acetate in hexane); ¹H NMR (300 MHz, CDCl₃, δ ppm) 7.41 (1H, s), 7.28 (1H, m), 6.77 (1H, d, J = 8.31 Hz), 4.66 (1H, s), 2.29 (3H, s), 2.11-2.03 (2H, m), 1.99-1.91 (2H, m), 1.86-1.79 (2H, m), 1.73-1.67 (2H, m). ¹³C NMR (150 MHz, CDCl₃, δ ppm) 205.21, 158.45,

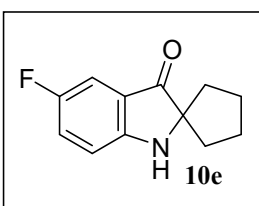
138.27, 128.32, 123.90, 120.94, 112.31, 74.86, 38.11, 25.42, 20.47; HRMS (m/z): [M+H]⁺ calcd for C₁₃H₁₅NO: 202.1229; found: 202.1232.



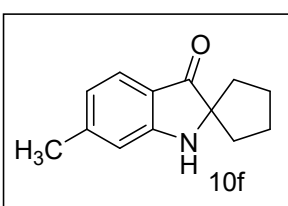
5'-chlorospiro[cyclopentane-1,2'-indolin]-3'-one (10c): yield 55% (121.93mg); Fluorescent yellow Semi-Solid; R_f 0.5 (5% Ethyl Acetate in hexane); ¹H NMR (600 MHz, CDCl₃, δ ppm) 7.56 (1H, d, J = 2.13 Hz), 7.37 (1H, dd, J = 2.22 Hz & 8.64 Hz), 6.78 (1H, d, J = 8.64 Hz), 4.88 (1H, s), 2.11-2.03 (2H, m), 2.00-1.94 (2H, m), 1.85-1.78 (2H, m), 1.76-1.69 (2H, m). ¹³C NMR (125 MHz, CDCl₃, δ ppm) 204.00, 158.15, 136.79, 124.02, 123.94, 121.59, 113.39, 75.36, 38.10, 25.43; HRMS (m/z): [M+H]⁺ calcd for C₁₂H₁₂ClNO: 222.0686; found: 222.0686.



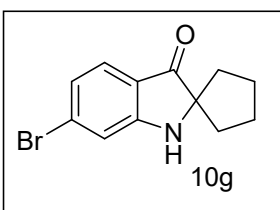
5'-bromospiro[cyclopentane-1,2'-indolin]-3'-one (10d): yield 67% (178.31mg); Fluorescent yellow semi-solid; R_f 0.5 (5% Ethyl Acetate in hexane); ¹H NMR (600 MHz, CDCl₃, δ ppm) 7.72 (1H, d, J = 0.81 Hz), 7.50 (1H, dd, J = 3.0 Hz & 6.0 Hz), 6.74 (1H, d, J = 6.0 Hz), 4.94 (1H, s), 2.10-2.04 (2H, m), 2.01-1.94 (2H, m), 1.88-1.82 (2H, m), 1.76-1.71 (2H, m). ¹³C NMR (100 MHz, CDCl₃, δ ppm) 203.78, 158.42, 139.38, 127.14, 122.20, 113.79, 110.90, 75.22, 38.11, 25.46; HRMS (m/z): [M+H]⁺ calcd for C₁₂H₁₂BrNO: 266.0181; found: 266.0174.



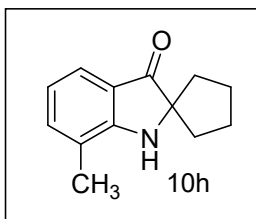
5'-fluorospiro[cyclopentane-1,2'-indolin]-3'-one (10e): yield 46% (94.41mg); Fluorescent yellow semi-solid; R_f 0.5 (5% Ethyl Acetate in hexane); ¹H NMR (600 MHz, CDCl₃, δ ppm) 7.28-7.26 (1H, m), 7.23-7.19 (1H, m), 6.81 (1H, dd, J = 3.0 Hz & 6.0 Hz), 4.76 (1H, s), 2.11-2.05 (2H, m), 2.01-1.94 (2H, m), 1.88-1.81 (2H, m), 1.76-1.71 (2H, m). ¹³C NMR (100 MHz, CDCl₃, δ ppm) 204.91(d, J_{C-F} = 1.9 Hz), 157.79, 156.63, 125.02, 124.77, 121.25 (d, J_{C-F} = 7.2 Hz), 113.46 (d, J_{C-F} = 1.9 Hz), 109.53, 109.32, 75.74, 38.25, 25.45; HRMS (m/z): [M+H]⁺ calcd for C₁₂H₁₈FNO: 206.0981; found: 206.0978.



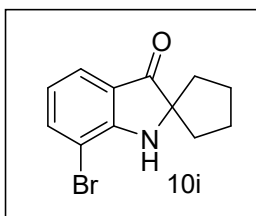
6'-methylspiro[cyclopentane-1,2'-indolin]-3'-one (10f): yield 56% (112mg); Fluorescent yellow solid; mp 77-79 °C R_f 0.5 (5% Ethyl Acetate in hexane); ¹H NMR (600 MHz, CDCl₃, δ ppm) 7.28 (1H, t, J = 7.74 Hz), 6.65 (1H, d, J = 8.16 Hz), 6.63 (1H, d, J = 7.26 Hz), 4.74 (1H, s), 2.58 (3H, s), 2.08-2.03 (2H, m), 1.91-1.93 (2H, m), 1.85-1.80 (2H, m), 1.71-1.67 (2H, m). ¹³C NMR (150 MHz, CDCl₃, δ ppm) 205.67, 160.45, 139.90, 136.27, 120.18, 118.71, 109.39, 74.27, 38.16, 25.39, 18.21; HRMS (m/z): [M+H]⁺ calcd for C₁₃H₁₅NO: 202.1226; found: 206.1234.



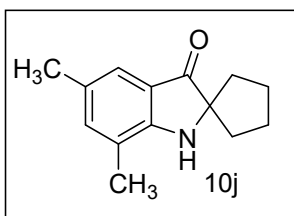
6'-bromospiro[cyclopentane-1,2'-indolin]-3'-one (10g): yield 26% (68mg); Fluorescent yellow semi solid; R_f 0.5 (5% Ethyl Acetate in hexane); ¹H NMR (600 MHz, CDCl₃, δ ppm) 7.45 (1H, d, J = 8.16 Hz), 7.00 (1H, d, J = 1.5 Hz), 6.93 (1H, dd, J = 1.44 & 8.16 Hz), 4.84 (1H, s), 2.09-2.04 (2H, m), 2.00-1.94 (2H, m), 1.85-1.78 (2H, m), 1.73-1.69 (2H, m). ¹³C NMR (150 MHz, CDCl₃, δ ppm) 203.83, 160.05, 132.21, 125.64, 122.16, 119.34, 115.00, 74.86, 38.02, 25.42; HRMS (m/z): [M+H]⁺ calcd for C₁₂H₁₂BrNO: 266.0175; found: 266.0162.



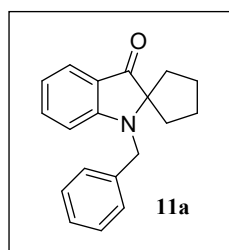
7'-methylspiro[cyclopentane-1,2'-indolin]-3'-one (10h): yield 50% (100 mg); Fluorescent yellow semi solid; R_f 0.5 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (600 MHz, CDCl_3 , δ ppm) 7.41 (1H, d, $J = 7.74$ Hz), 7.21- 7.19 (1H, m), 6.70 (1H, t, $J = 7.44$ Hz), 4.47 (1H, s), 2.14 (3H, s), 2.05-2.00 (2H, m), 1.94-1.89 (2H, m), 1.82-1.78 (2H, m), 1.67 -1.63 (2H, m). $^{13}\text{C NMR}$ (150 MHz, CDCl_3 , δ ppm) 204.54, 158.24, 135.78, 120.92, 120.27, 119.11, 117.87, 73.59, 37.25, 24.53, 14.76; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{13}\text{H}_{15}\text{NO}$: 202.1226; found: 202.1212.



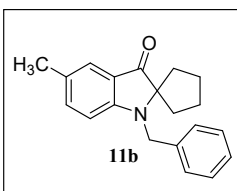
7'-bromospiro[cyclopentane-1,2'-indolin]-3'-one (10i): yield 13% (34mg); Fluorescent yellow solid; R_f 0.5 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (600 MHz, CDCl_3 , δ ppm) 7.59 (2H, dd, $J = 7.68$ & 7.62 Hz), 6.72 (1H, t, $J = 7.68$ Hz), 4.96 (1H, s), 2.12-2.07 (2H, m), 2.01-1.95 (2H, m), 1.91-1.87 (2H, m), 1.79-1.75 (2H, m). $^{13}\text{C NMR}$ (150 MHz, CDCl_3 , δ ppm) 204.59, 157.31, 138.72, 123.58, 121.96, 119.52, 105.93, 74.99, 38.10, 25.48; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{12}\text{H}_{12}\text{BrNO}$: 266.0175; found: 266.0107.



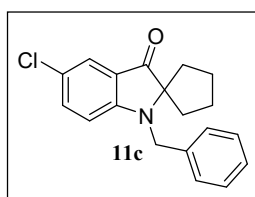
5',7'-dimethylspiro[cyclopentane-1,2'-indolin]-3'-one (10j): yield 28% (60mg); Fluorescent yellow solid; mp 100-102 °C; R_f 0.5 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (300 MHz, CDCl_3 , δ ppm) 7.20 (1H, d, $J = 3.0$ Hz), 7.05 (1H, s), 4.34 (1H, s), 2.20 (3H, s), 2.12 (3H, s), 2.04-1.98 (2H, m), 1.93-1.86 (2H, m), 1.82-1.77 (2H, m), 1.66-1.61 (2H, m). $^{13}\text{C NMR}$ (150 MHz, CDCl_3 , δ ppm) 204.53, 156.71, 137.37, 127.52, 120.33, 120.20, 119.49, 73.96, 37.33, 24.52, 19.49, 14.72; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{14}\text{H}_{17}\text{NO}$: 216.1383; found: 216.1380.



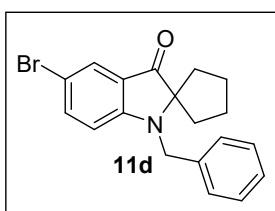
1'-benzylspiro[cyclopentane-1,2'-indolin]-3'-one (11a): yield 91% (252.404mg); Fluorescent yellow solid; mp 92-94 °C; R_f 0.75 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (300 MHz, CDCl_3 , δ ppm) 7.62-7.60 (1H, m), 7.33-7.30 (3H, m), 7.27-7.23 (3H, m), 6.72-6.69 (1H, m), 6.46 (1H, d, $J = 10.0$ Hz), 4.57 (2H, s), 2.02-1.92 (4H, m), 1.85-1.76 (4H, m). $^{13}\text{C NMR}$ (125 MHz, CDCl_3 , δ ppm) 205.64, 159.78, 138.13, 137.09, 128.81, 127.25, 126.25, 124.73, 117.05, 109.04, 77.14, 46.32, 34.70, 26.19. ; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{19}\text{H}_{19}\text{NO}$: 278.1545; found: 278.1542.



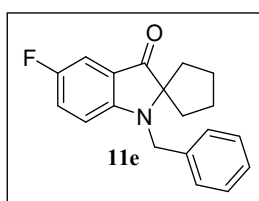
1'-benzyl-5'-methylspiro[cyclopentane-1,2'-indolin]-3'-one (11b): yield 87% (253.51mg); Fluorescent yellow solid; mp 140-142 °C ; R_f 0.75 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (600 MHz, CDCl_3 , δ ppm) 7.418-7.416 (1H, m), 7.33-7.31 (2H, m), 7.27-7.23 (3H, m), 7.16 (1H, dd, $J = 1.8, 8.4$ Hz), 6.37 (1H, d, $J = 8.4$ Hz), 4.55 (2H, s), 2.24 (3H, s), 2.03-1.93 (4H, m), 1.84-1.76 (4H, m). $^{13}\text{C NMR}$ (125 MHz, CDCl_3 , δ ppm) 205.65, 158.36, 138.43, 138.40, 128.76, 127.18, 126.27, 124.15, 108.94, 77.42, 46.50, 38.16, 34.72, 26.21, 25.46, 20.35; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{20}\text{H}_{21}\text{NO}$: 292.1701; found: 292.1684.



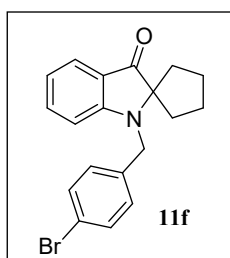
1'-benzyl-5'-chlorospiro[cyclopentane-1,2'-indolin]-3'-one (11c): yield 75% (233.86mg); Fluorescent yellow semi-solid; R_f 0.75 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (600 MHz, CDCl_3 , δ ppm) 7.56 (1H, d, $J= 2.1$ Hz), 7.35-7.32 (2H, m), 7.29-7.27 (1H, m), 7.25 (1H, dd, $J= 2.2, 8.7$ Hz), 7.22-7.21 (2H, m), 6.39 (1H, d, $J= 8.7$ Hz), 4.56 (2H, s), 2.03-1.94 (4H, m), 1.85-1.78 (4H, m). $^{13}\text{C NMR}$ (125 MHz, CDCl_3 , δ ppm) 205.38, 159.51, 137.23, 137.16, 131.95, 128.00, 124.85, 121.05, 119.03, 117.39, 108.90, 76.73, 45.89, 34.72, 26.16; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{19}\text{H}_{18}\text{ClNO}$: 312.1155; found: 312.1150.



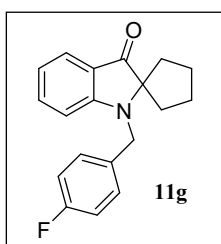
1'-benzyl-5'-bromospiro[cyclopentane-1,2'-indolin]-3'-one (11d): yield 77% (274.32mg); Fluorescent yellow solid; mp 154-156 °C ; R_f 0.75 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (600 MHz, CDCl_3 , δ ppm) 7.70 (1H, d, $J= 2.04$ Hz), 7.35 (1H, dd, $J= 2.1, 8.76$ Hz), 7.33-7.31 (2H, m), 7.27-7.26 (1H, m), 7.19-7.18 (2H, m), 6.33 (1H, d, $J= 8.76$ Hz), 4.55 (2H, s), 2.01-1.91 (4H, m), 1.83-1.76 (4H, m). $^{13}\text{C NMR}$ (125 MHz, CDCl_3 , δ ppm) 204.24, 158.23, 139.39, 137.46, 128.92, 127.44, 127.13, 126.16, 120.47, 110.73, 109.16, 77.67, 46.28, 34.69, 26.10; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{19}\text{H}_{18}\text{BrNO}$: 356.0650; found: 358.0626.



1'-benzyl-5'-fluorospiro[cyclopentane-1,2'-indolin]-3'-one (11e): yield 62% (183.12mg); Fluorescent yellow solid; mp 144-142 °C; R_f 0.75 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (600 MHz, CDCl_3 , δ ppm) 7.34-7.31 (2H, m), 7.28-7.25 (2H, m), 7.22 (2H, d, $J= 7.2$ Hz), 7.08-7.04 (1H, m), 6.35 (1H, dd, $J= 3.6, 8.9$ Hz), 4.53 (2H, s), 2.03-1.92 (4H, m), 1.85-1.75 (4H, s) $^{13}\text{C NMR}$ (100 MHz, CDCl_3 , δ ppm) 205.25 (d, $J_{\text{C-F}} = 3.1$ Hz), 156.67 (d, $J_{\text{C-F}} = 12.6$ Hz), 137.88, 128.89, 127.38, 126.21, 124.85(d, $J_{\text{C-F}} = 25.3$ Hz), 109.72 (q, $J_{\text{C-F}} = 7.3$ & 23.4 Hz) , 78.03, 46.59, 34.75, 26.13; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{19}\text{H}_{18}\text{FNO}$: 296.1451; found: 296.1445.

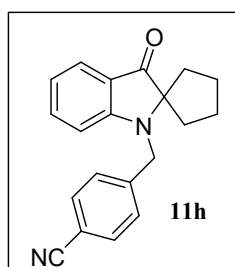


1'-(4-bromobenzyl)spiro[cyclopentane-1,2'-indolin]-3'-one (11f): yield 81% (288.57mg); Fluorescent yellow solid; mp 92- 95 °C; R_f 0.75 (5% Ethyl Acetate in hexane); $^1\text{H NMR}$ (600 MHz, CDCl_3 , δ ppm) 7.62 (1H, d, $J= 7.6$ Hz), 7.45 (2H, d, $J= 8.72$ Hz), 7.34 (1H, t, $J= 7.26$ Hz), 7.12 (2H, d, $J= 7.98$ Hz), 6.73 (1H, t, $J=7.26$ Hz), 6.42 (1H, d, $J=8.28$ Hz), 4.52 (2H, s), 2.03-1.95 (4H, m), 1.81-1.78 (4H, m); $^{13}\text{C NMR}$ (100 MHz, CDCl_3 , δ ppm) 205.38, 159.50, 137.23, 137.16, 131.95, 128.00, 124.85, 121.05, 119.03, 117.39, 108.90, 77.20, 45.88, 34.72, 26.16; HRMS (m/z): $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{19}\text{H}_{18}\text{BrNO}$: 356.0650; found: 356.0651.



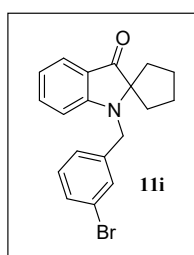
1'-(4-fluorobenzyl)spiro[cyclopentane-1,2'-indolin]-3'-one (11g): yield 62% (183.12mg); Fluorescent yellow solid; mp 150-152 °C, R_f 0.75 (5% Ethyl Acetate in hexane). $^1\text{H NMR}$ (600 MHz, CDCl_3 , δ ppm) 7.62-7.60 (1H, m), 7.34-7.31 (1H, m), 7.21-7.19 (2H, m), 7.01 (2H, d, $J= 8.64$ Hz), 6.71 (1H, t, $J=7.74$ Hz), 6.42 (1H, d, $J= 8.28$ Hz), 4.53 (2H, s), 2.02-1.92 (4H, m), 1.81-1.75 (4H, m). $^{13}\text{C NMR}$ (100 MHz, CDCl_3 , δ ppm) 205.49,

159.61, 137.13, 133.74, 127.84, 127.76, 124.82, 118.99, 117.27, 115.72 (d, $J_{C-F} = 21.4$ Hz), 108.94, 77.13, 45.76, 34.69, 26.17; HRMS (m/z): $[M+H]^+$ calcd for $C_{19}H_{18}FNO$: 296.1451; found: 296.1451.



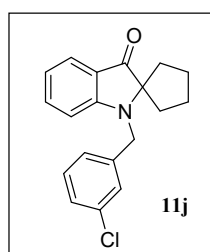
4-((3'-oxospiro[cyclopentane-1,2'-indolin]-1'-yl)methyl)benzonitrile (11h): yield 27% (81.64mg); Fluorescent yellow solid; mp 112-114 °C; R_f 0.75 (5% Ethyl Acetate in hexane); 1H NMR (600 MHz, $CDCl_3$, δ ppm) 7.65-7.63 (3H, m), 7.37-7.34 (3H, m), 6.77 (1H, t, $J = 7.5$ Hz), 6.37 (1H, d, $J = 8.28$ Hz), 4.62 (2H, s), 2.66-1.95 (4H, m), 1.78-1.75 (4H, m). ^{13}C NMR (125 MHz, $CDCl_3$, δ ppm) 204.94, 159.20, 143.91, 137.19, 132.68, 127.01, 124.98, 119.22, 118.54, 117.79, 111.41, 108.64, 77.09, 46.24, 34.67, 26.03; HRMS (m/z): $[M+H]^+$ calcd for $C_{19}H_{18}N_2O$:

303.1497; found: 303.1492.



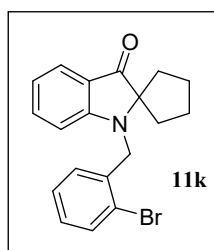
1'-(3-bromobenzyl)spiro[cyclopentane-1,2'-indolin]-3'-one (11i): yield 72% (256.51mg); Fluorescent semi-solid; R_f 0.75 (5% Ethyl Acetate in hexane); 1H NMR (600 MHz, $CDCl_3$, δ ppm) 7.64-7.62 (1H, m), 7.41-7.39 (2H, m), 7.37-7.34 (1H, m), 7.21-7.16 (2H, m), 6.75 (1H, t, $J = 7.74$ Hz), 6.44 (1H, d, $J = 8.28$ Hz), 4.54 (2H, s), 2.05-1.94 (4H, m), 1.82-1.79 (4H, m). ^{13}C NMR (100 MHz, $CDCl_3$, δ ppm) 205.23, 159.51, 140.73, 137.14, 130.49, 130.41, 129.32, 124.85, 124.82, 123.00, 119.12, 117.48,

108.89, 77.15, 45.98, 34.69, 26.09; HRMS (m/z): $[M+H]^+$ calcd for $C_{19}H_{18}BrNO$: 356.0650; found: 356.0643.



1'-(3-chlorobenzyl)spiro[cyclopentane-1,2'-indolin]-3'-one (11j): yield 75% (233.87mg); Fluorescent yellow semi-solid; R_f 0.75 (5% Ethyl Acetate in hexane); 1H NMR (600 MHz, $CDCl_3$, δ ppm) 7.63-7.61 (1H, m), 7.35-7.33 (1H, m), 7.26-7.22 (3H, m), 7.12-7.10 (1H, m), 6.74-6.72 (1H, m), 6.42 (1H, d, $J = 8.34$ Hz), 4.53 (2H, s), 2.03-1.92 (4H, m), 1.81-1.78 (4H, m). ^{13}C NMR (125 MHz, $CDCl_3$, δ ppm) 205.34, 159.51, 140.44, 137.18, 134.81, 130.14, 127.55, 126.36, 124.82, 124.38, 119.06,

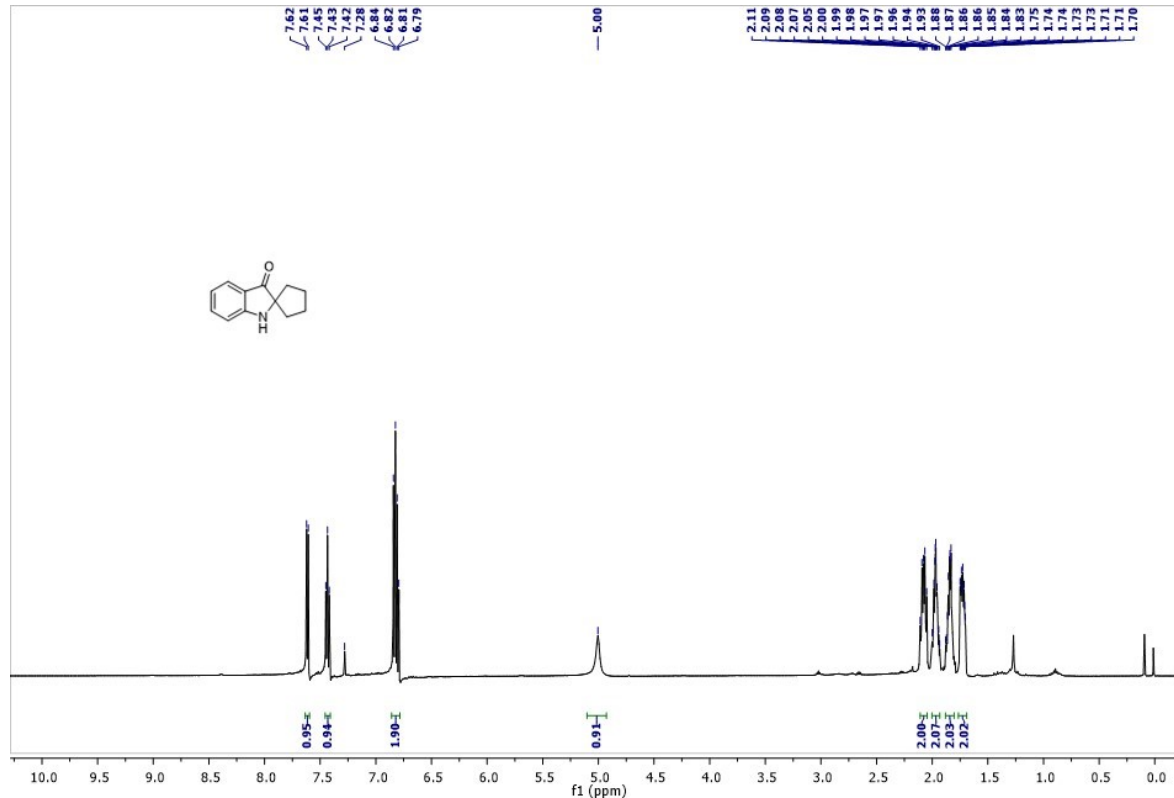
117.45, 108.89, 77.13, 46.01, 34.72, 26.15.; HRMS (m/z): $[M+H]^+$ calcd for $C_{19}H_{18}ClNO$: 312.1155; found: 312.1151.



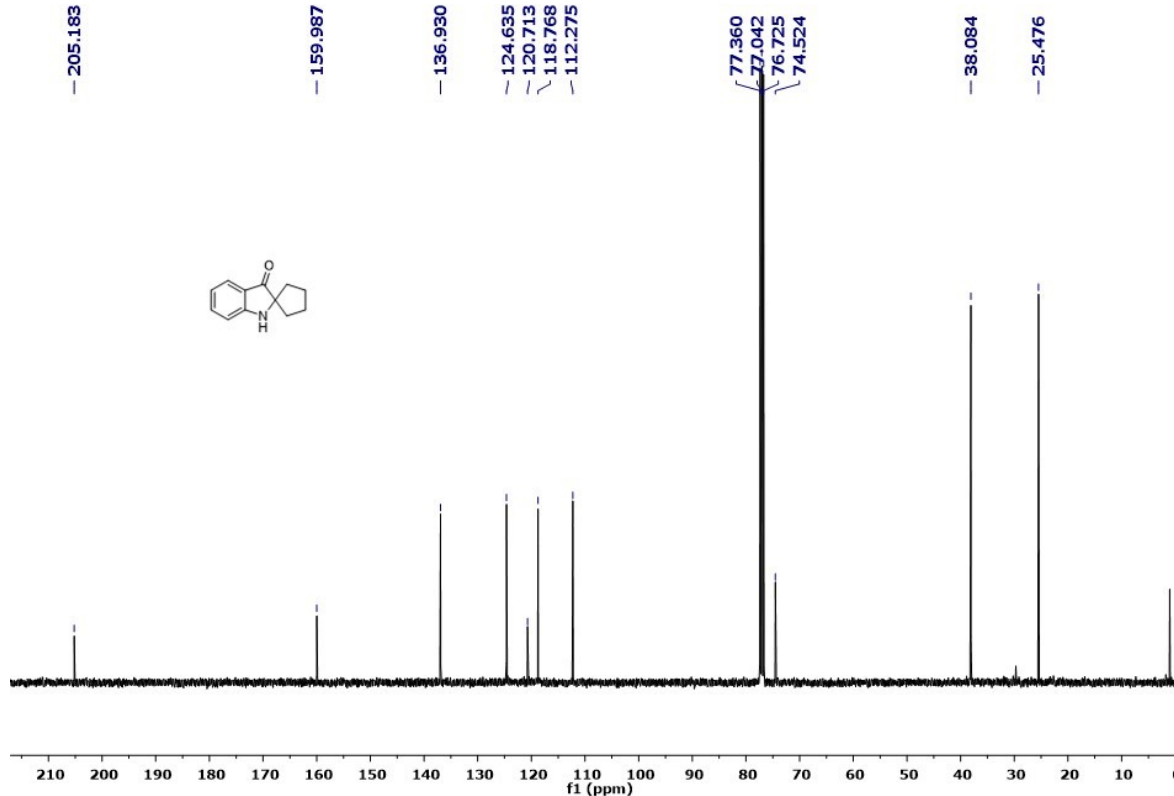
1'-(2-bromobenzyl)spiro[cyclopentane-1,2'-indolin]-3'-one (11k): yield 42% (149.63mg); Fluorescent yellow solid; mp 135-137 °C; R_f 0.75 (5% Ethyl Acetate in hexane); 1H NMR (600 MHz, $CDCl_3$, δ ppm) 7.64-63 (1H, m), 7.59 (1H, dd, $J = 1.2, 7.92$ Hz), 7.36-7.34 (1H, m), 7.22-7.19 (1H, m), 7.15-7.12 (1H, m), 7.09-7.08 (1H, m), 6.75-6.73 (1H, m), 6.39 (1H, d, $J = 8.28$ Hz) 4.56 (2H, s), 2.03-1.91 (4H, m), 1.82-1.74 (4H, m). ^{13}C NMR (100 MHz, $CDCl_3$, δ ppm) 205.43, 159.46, 137.26, 136.39,

132.96, 128.77, 127.75, 124.83, 122.30, 118.91, 117.39, 108.82, 77.25, 77.19, 46.81, 34.77, 26.08; HRMS (m/z): $[M+H]^+$ calcd for $C_{19}H_{18}BrNO$: 356.0650; found: 356.0644.

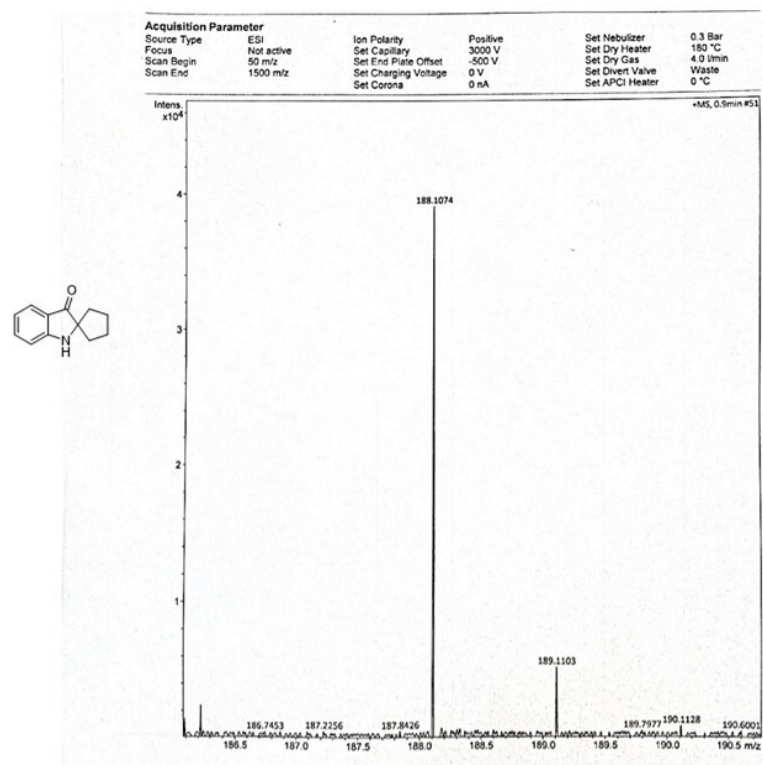
1H NMR of 10 a



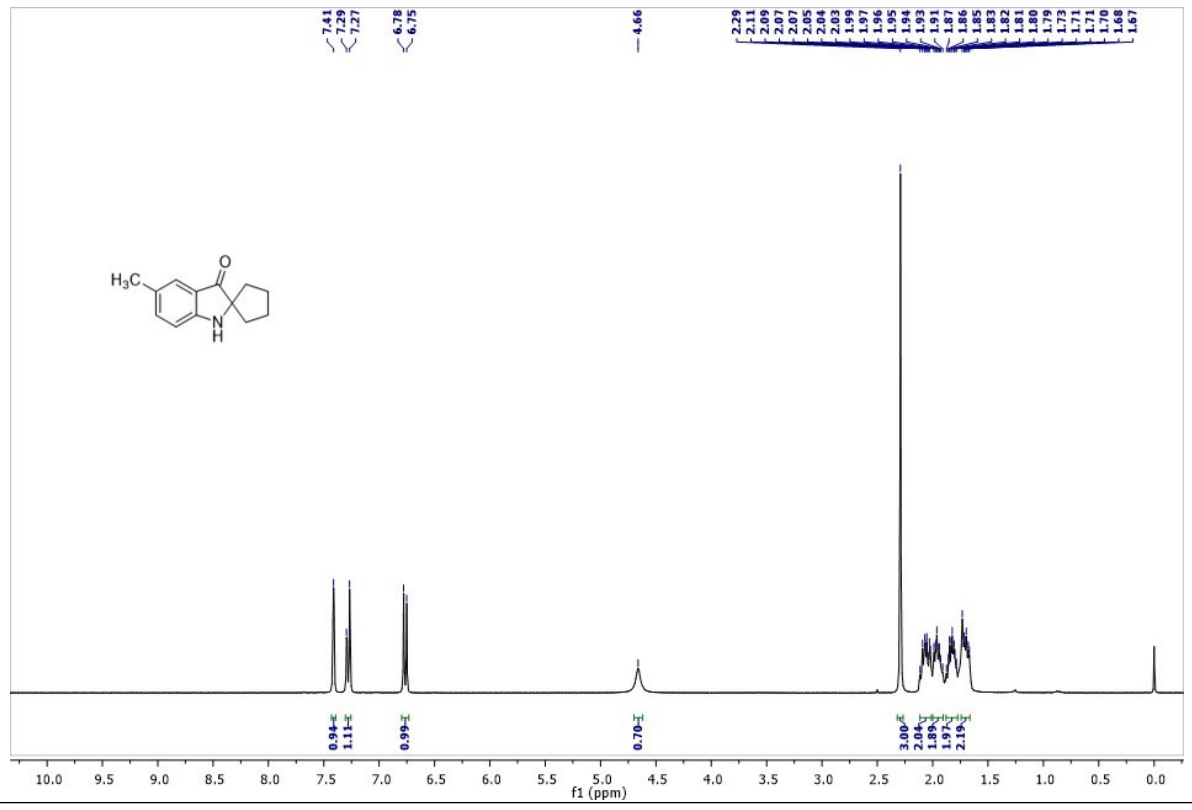
13C NMR of 10 a



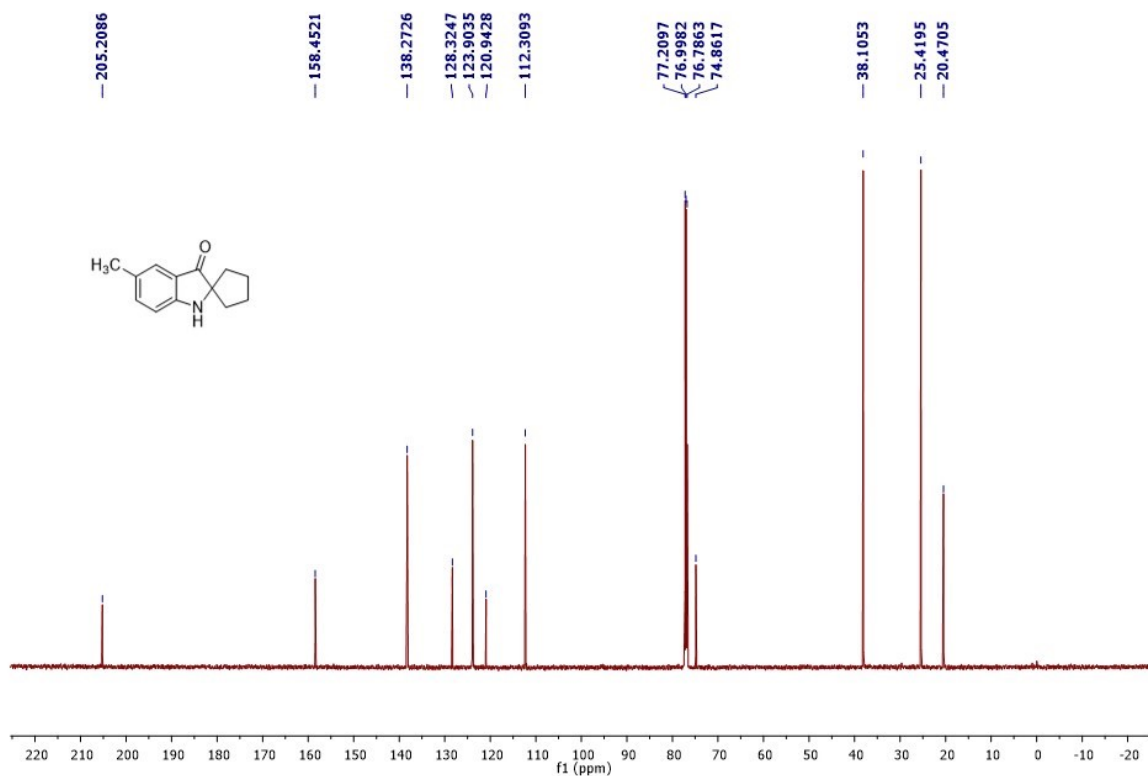
HRMS of 10 a



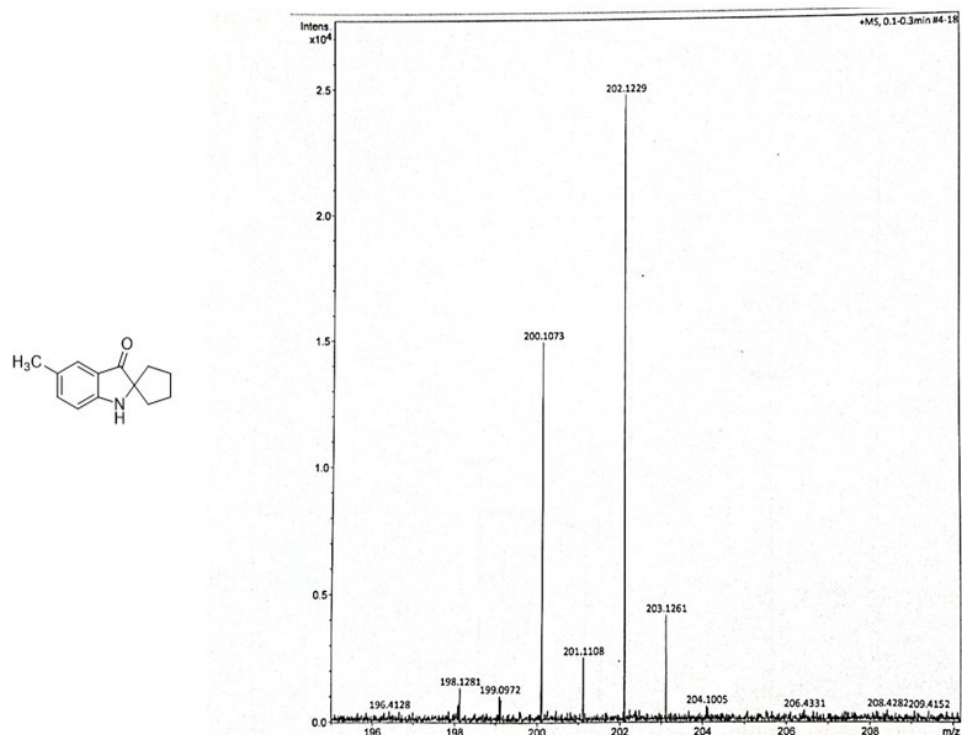
¹H NMR of 10 b



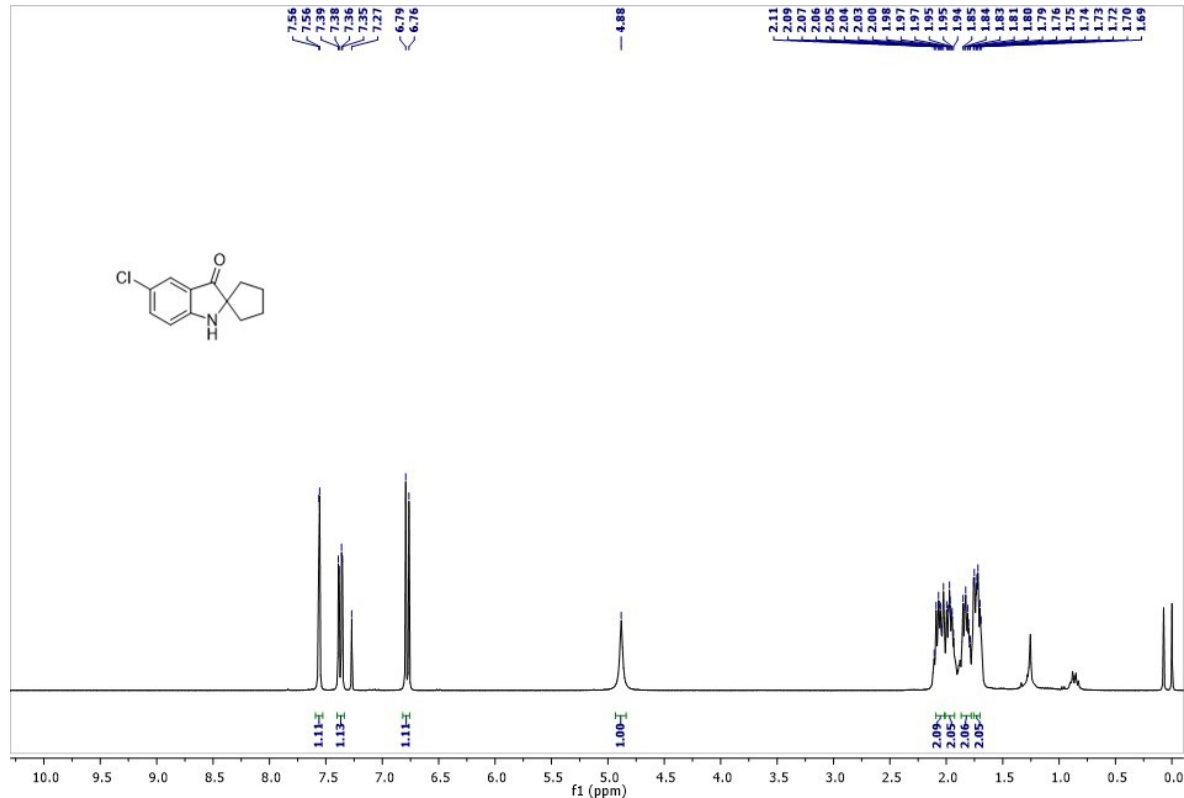
¹³C NMR of 10 b



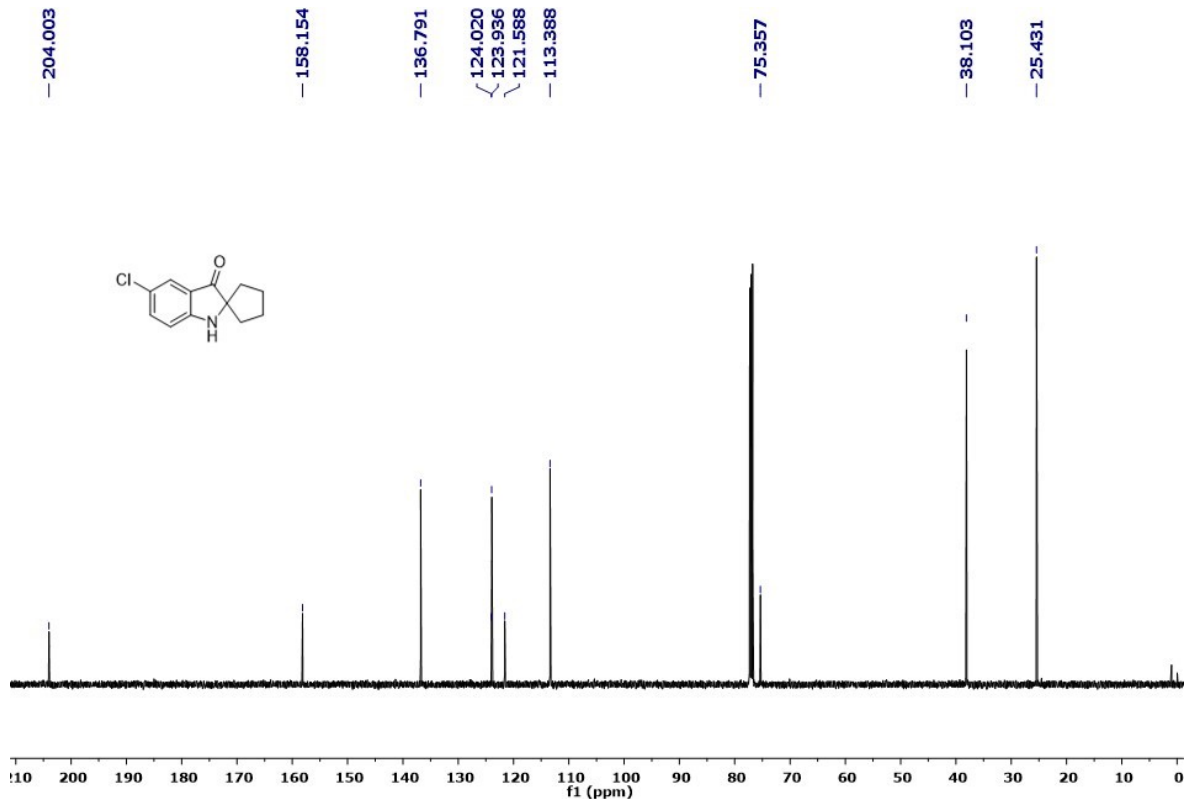
HRMS of 10 b



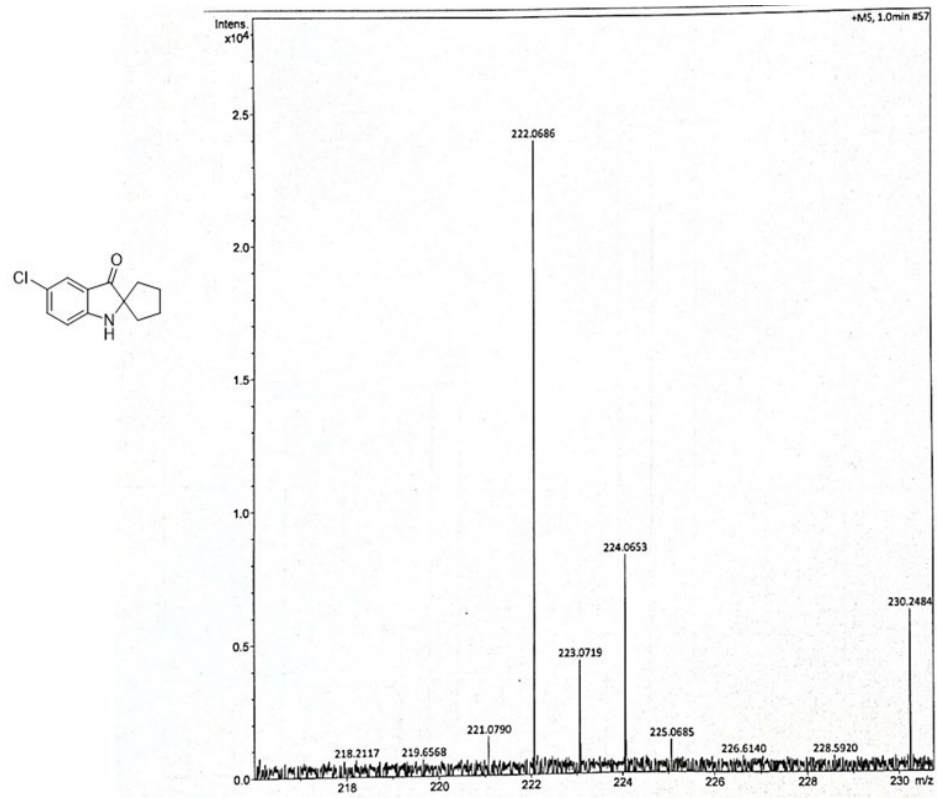
1H NMR of 10 c



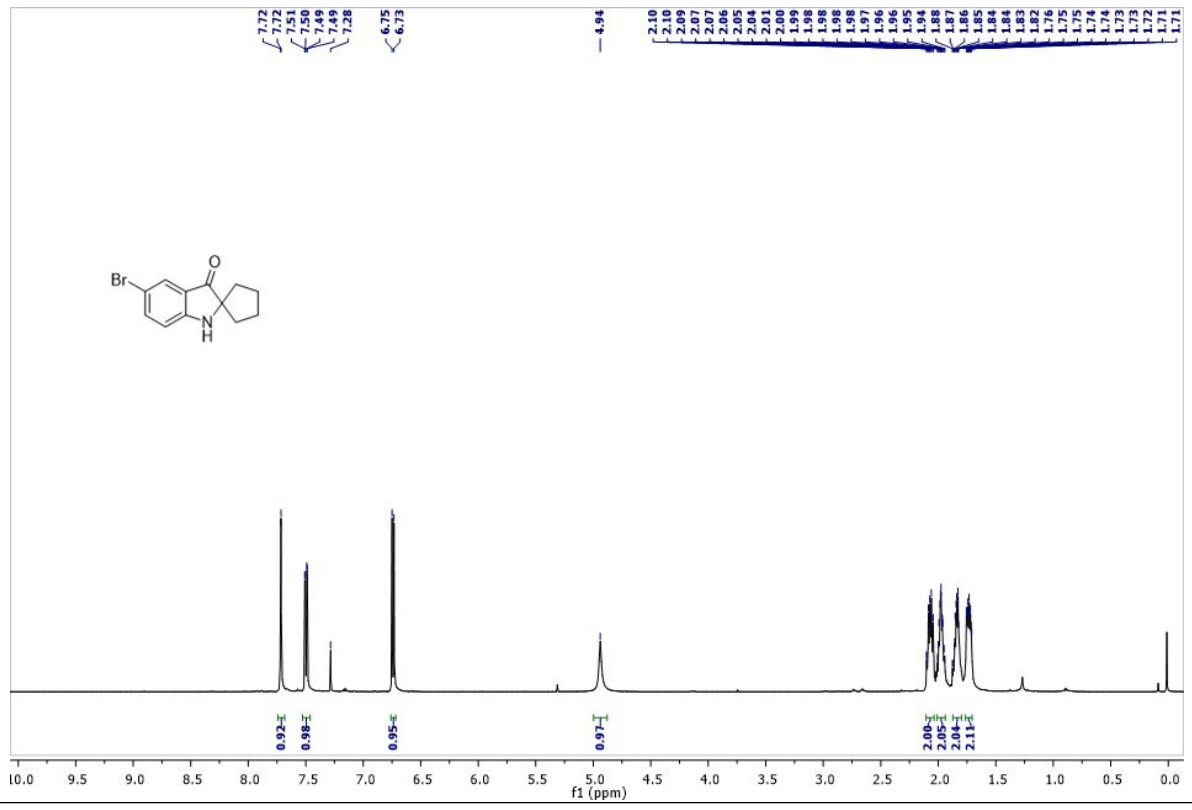
13C NMR of 10 c



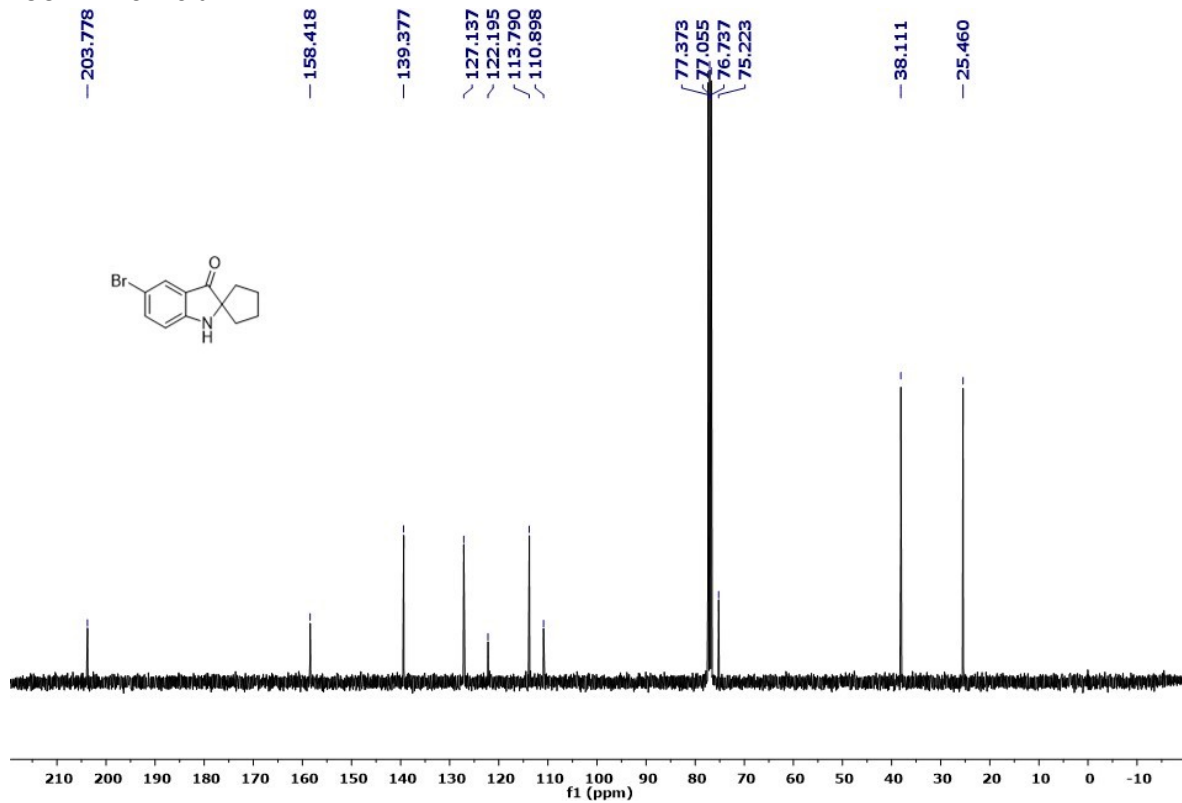
HRMS of 10 c



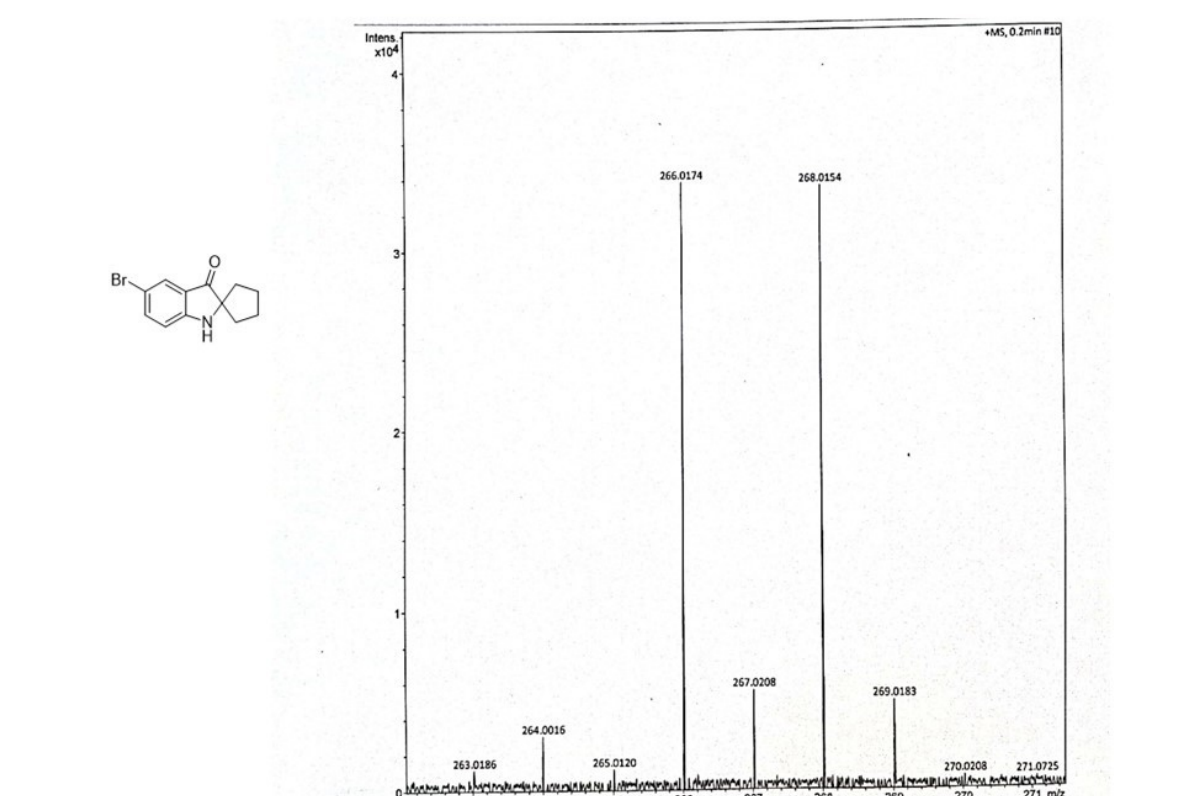
¹H NMR of 10 d



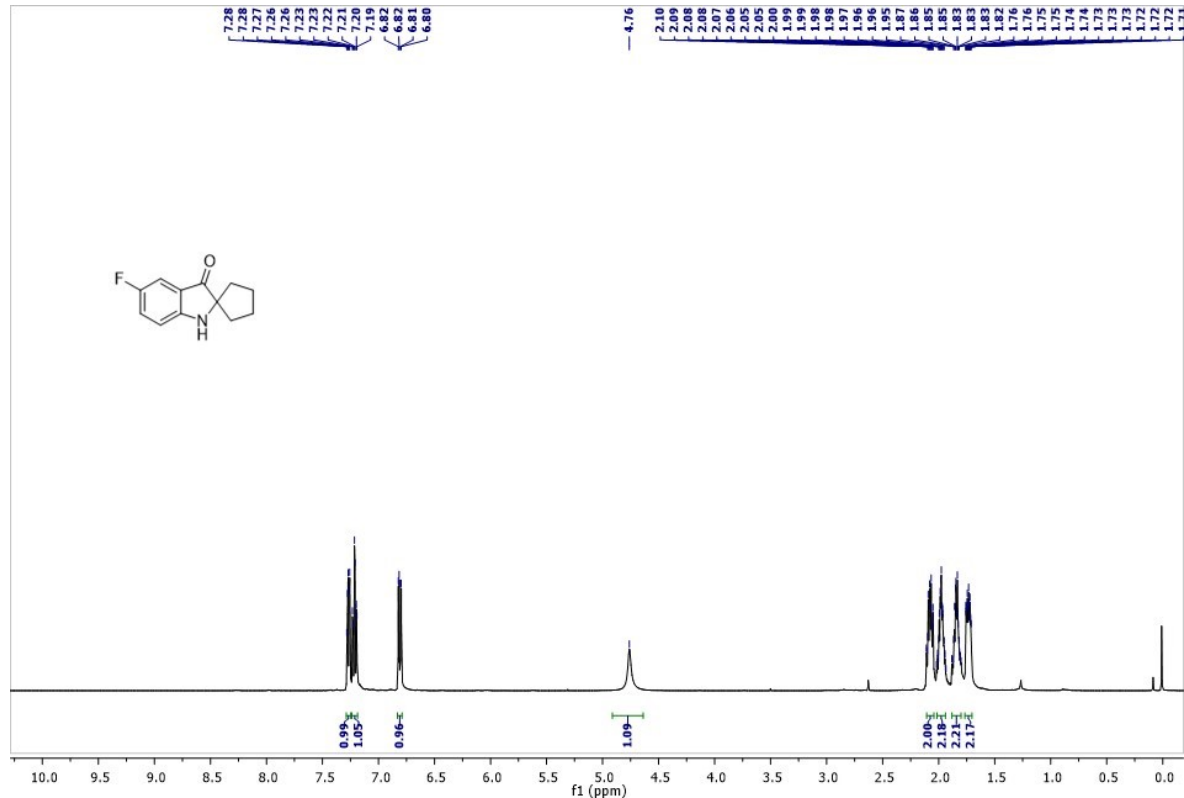
13C NMR of 10 d



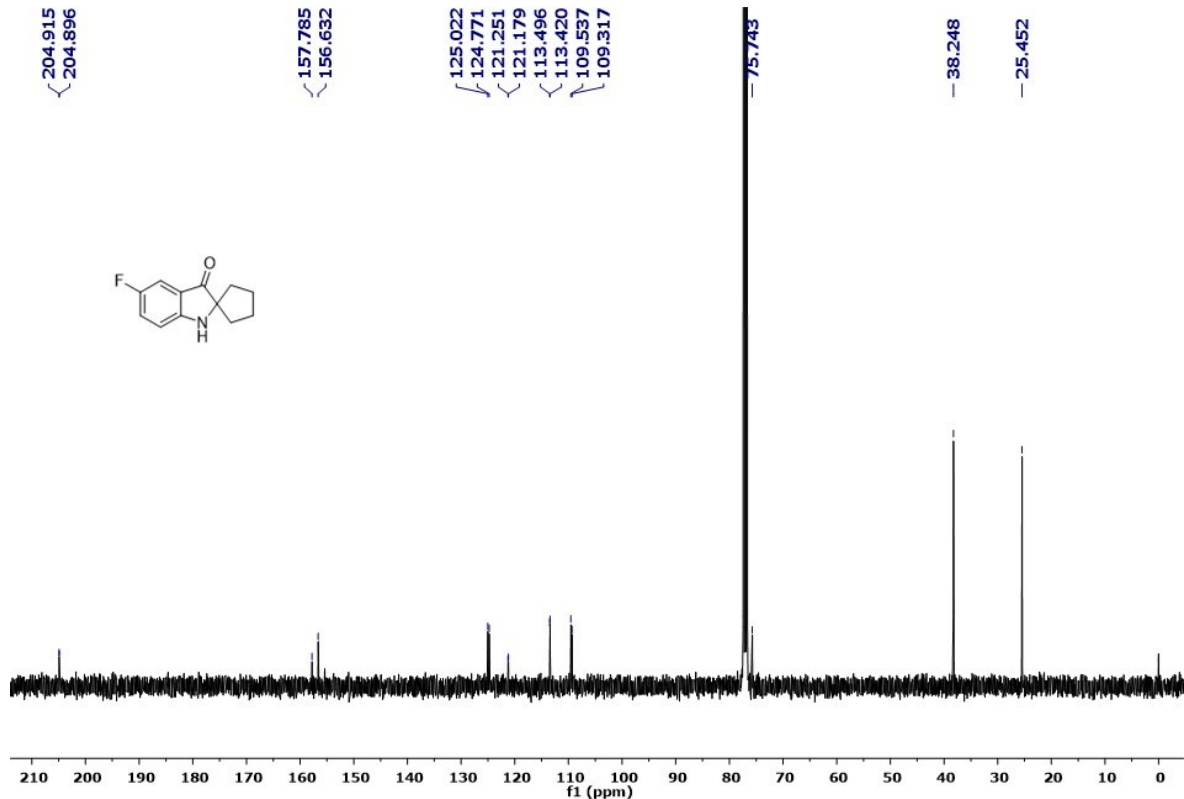
HRMS of 10 d



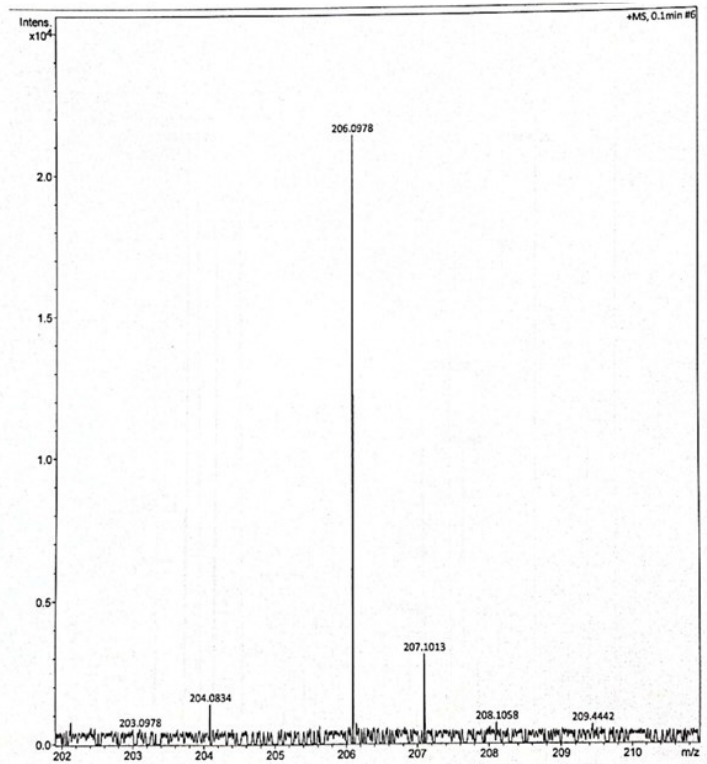
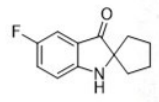
1H NMR of 10 e



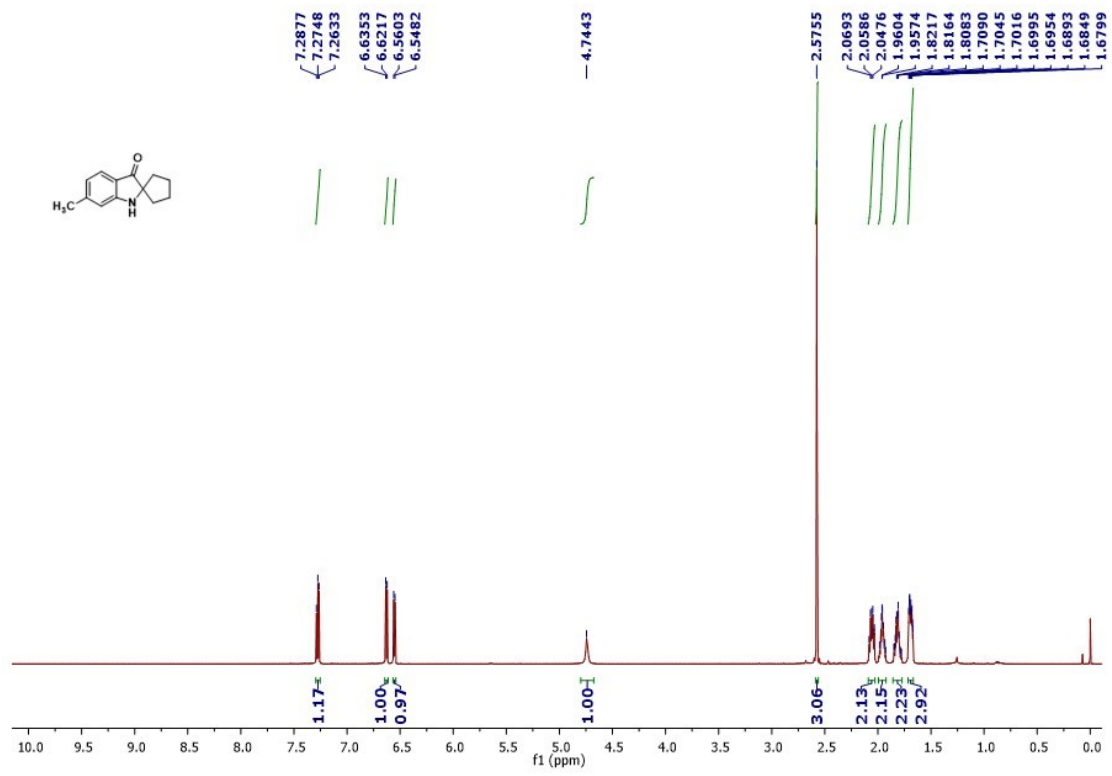
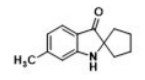
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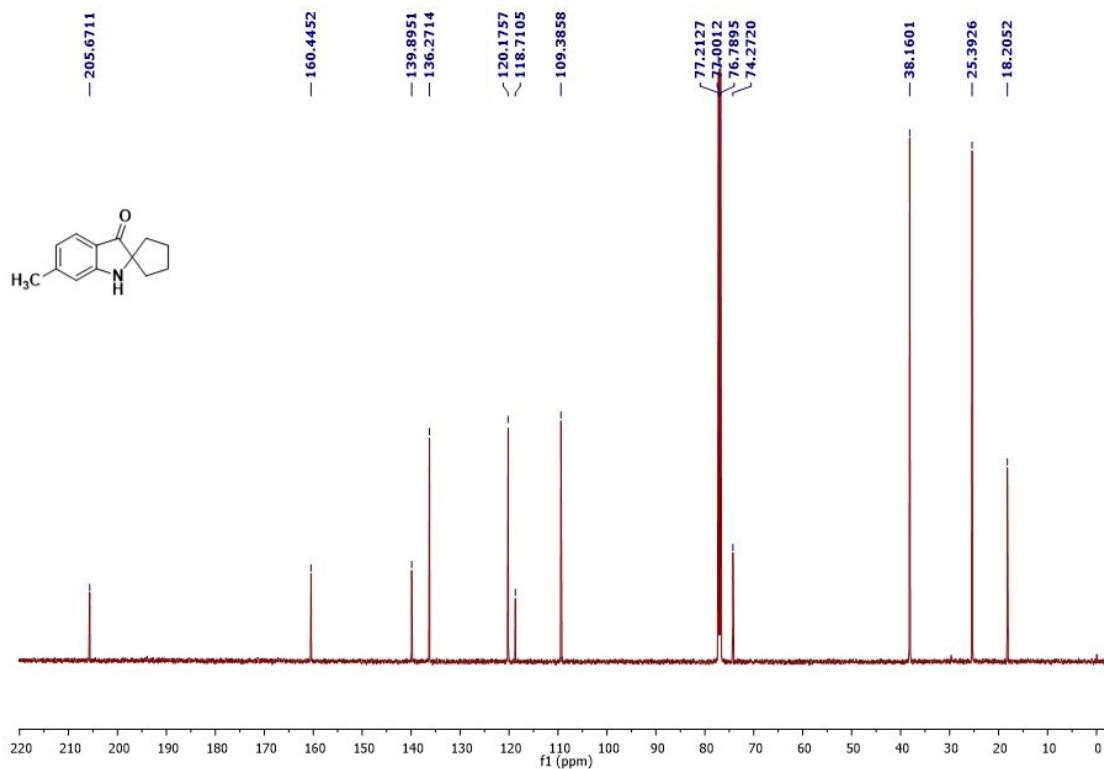
HRMS of 10 e



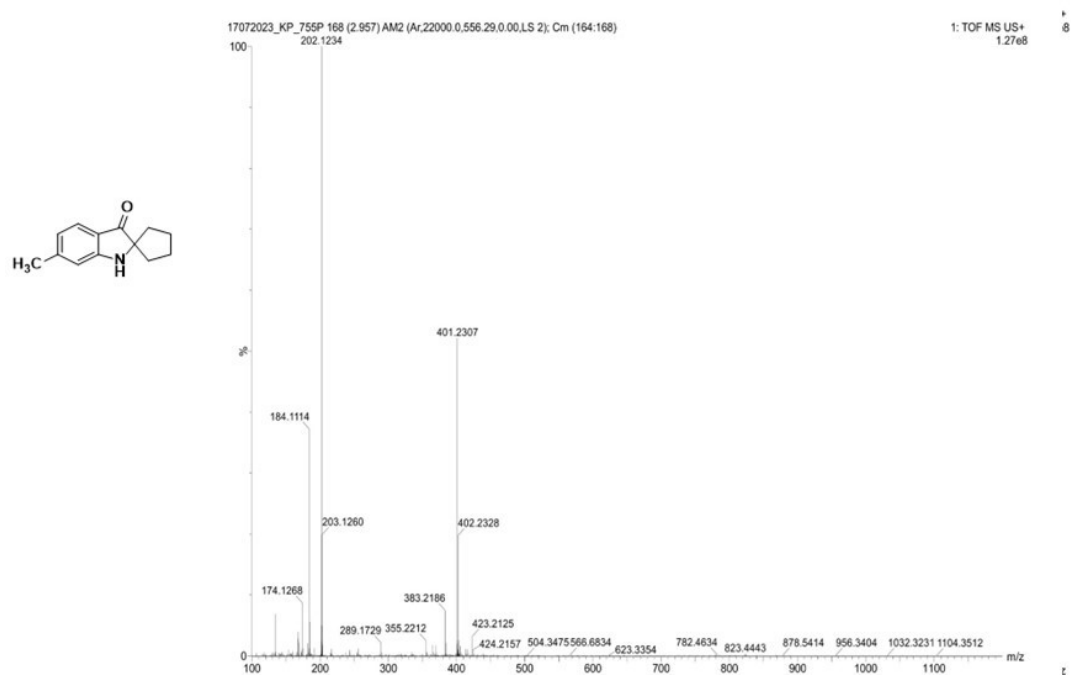
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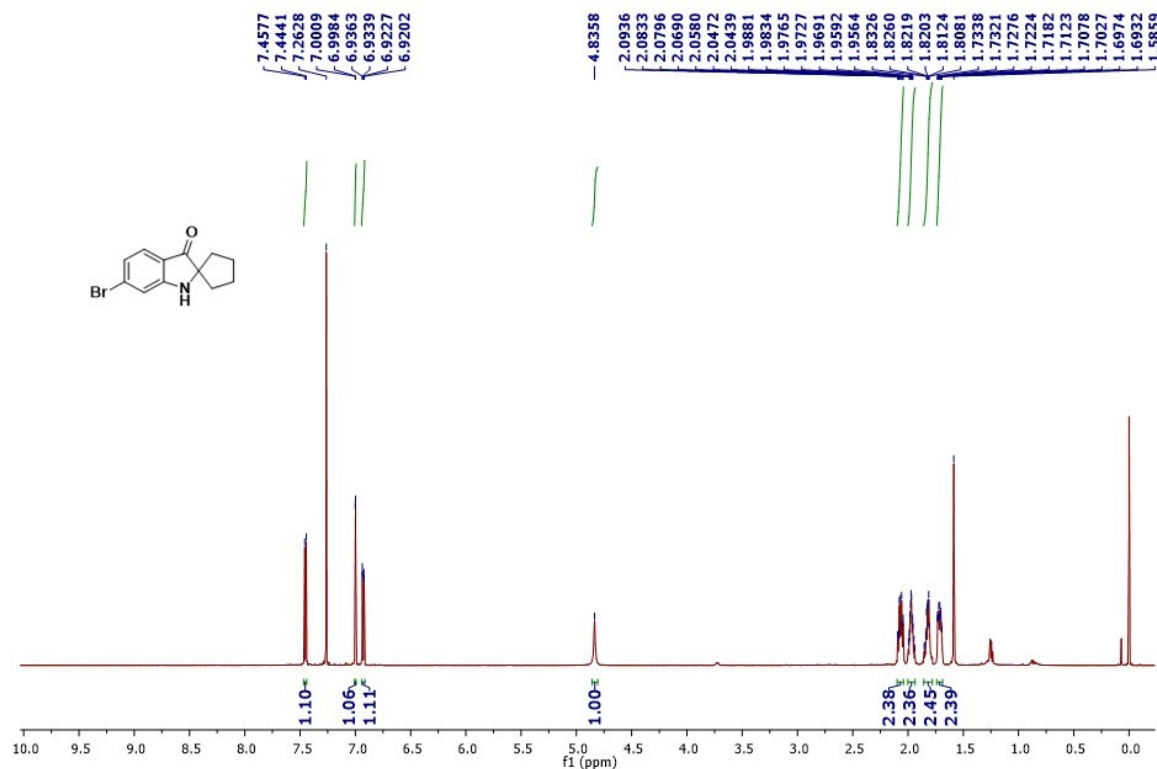
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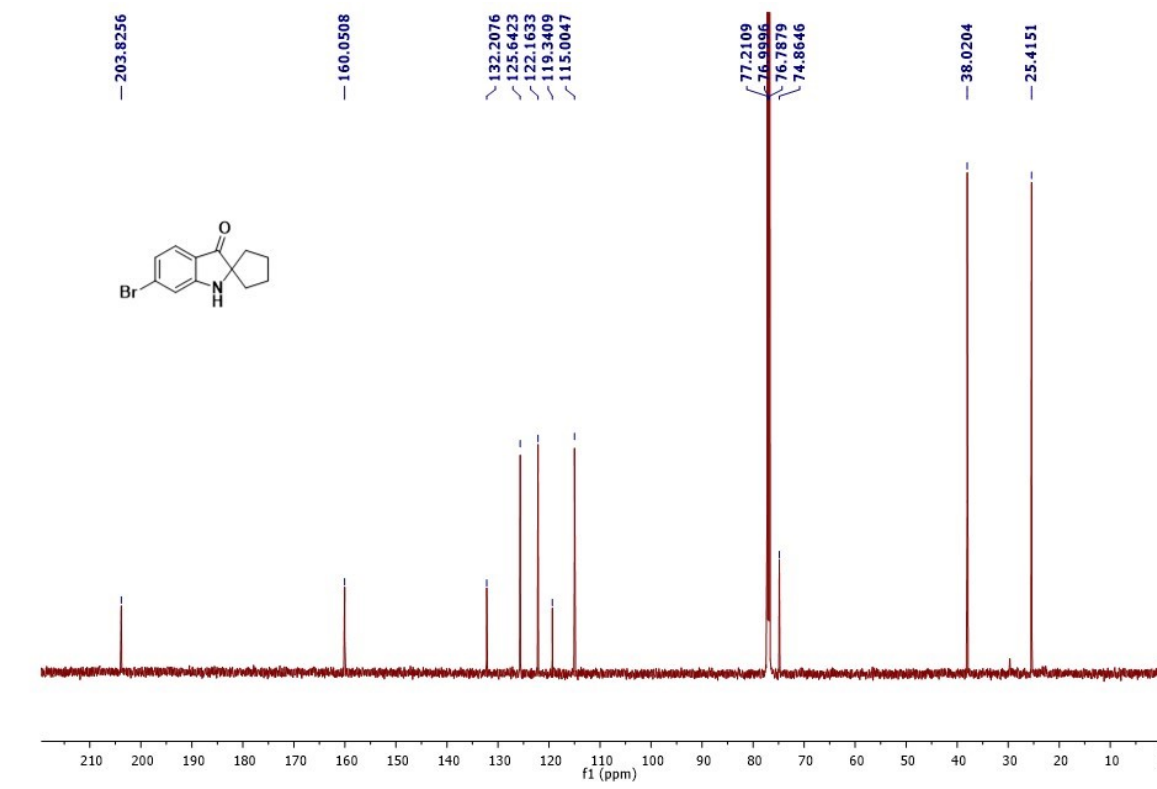
HRMS of 10 f



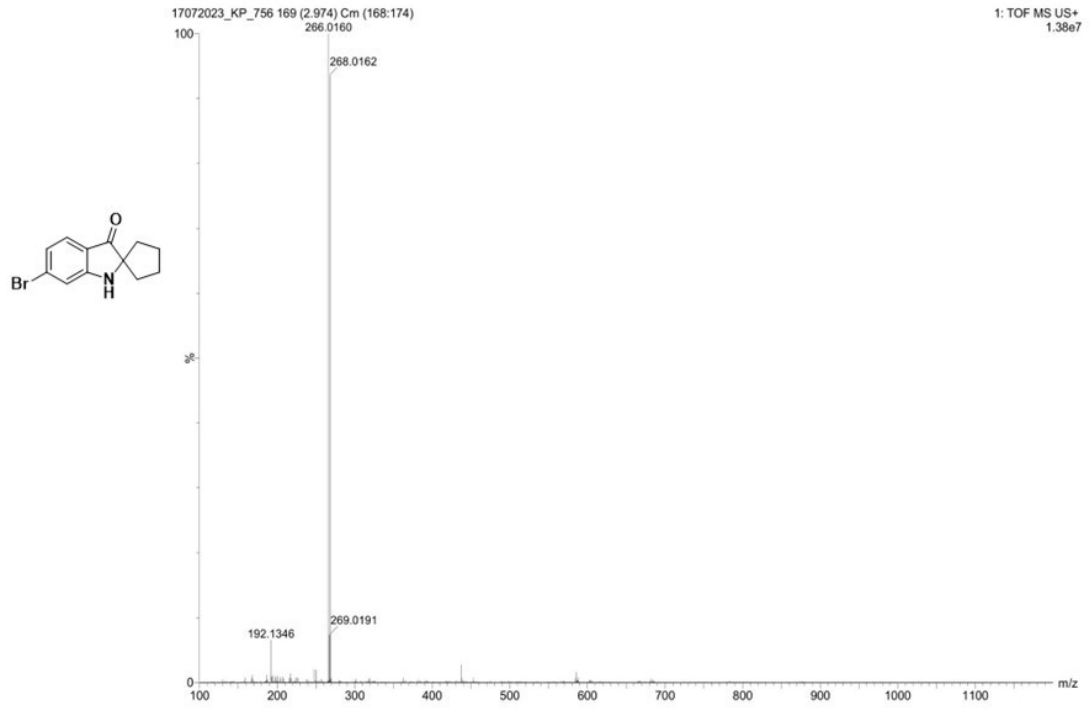
1H NMR of 10 g



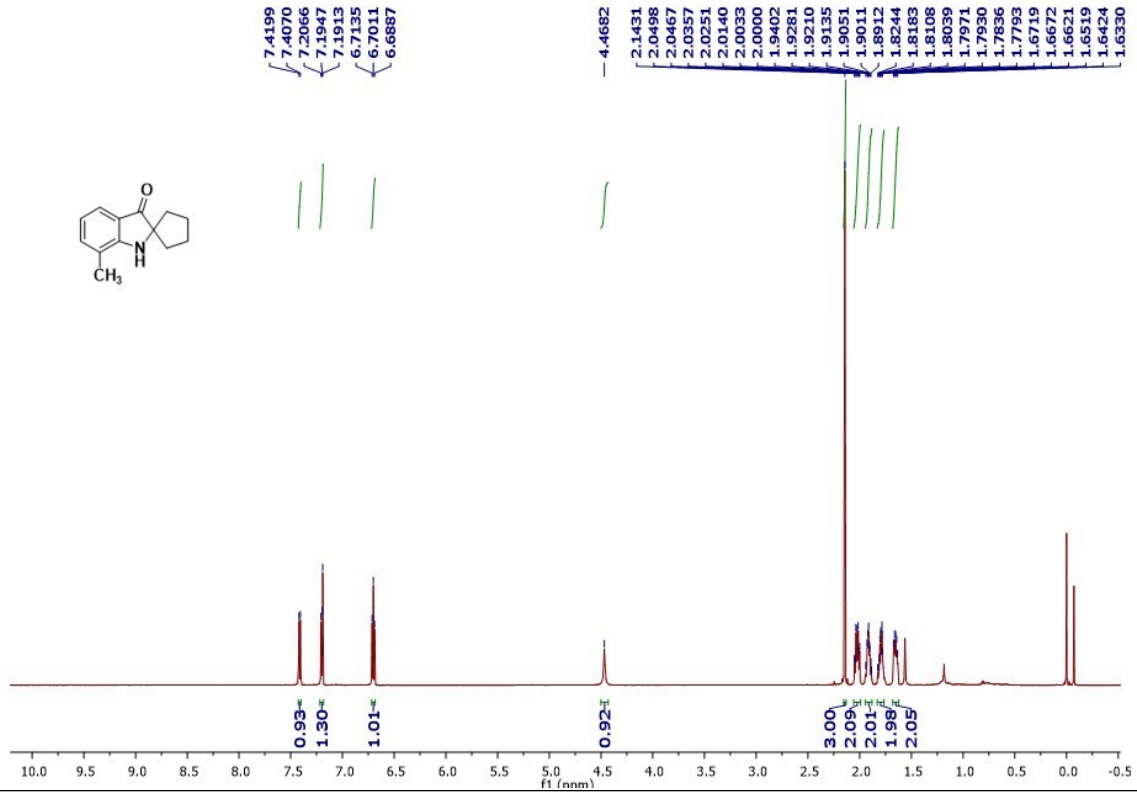
13C NMR of 10 g



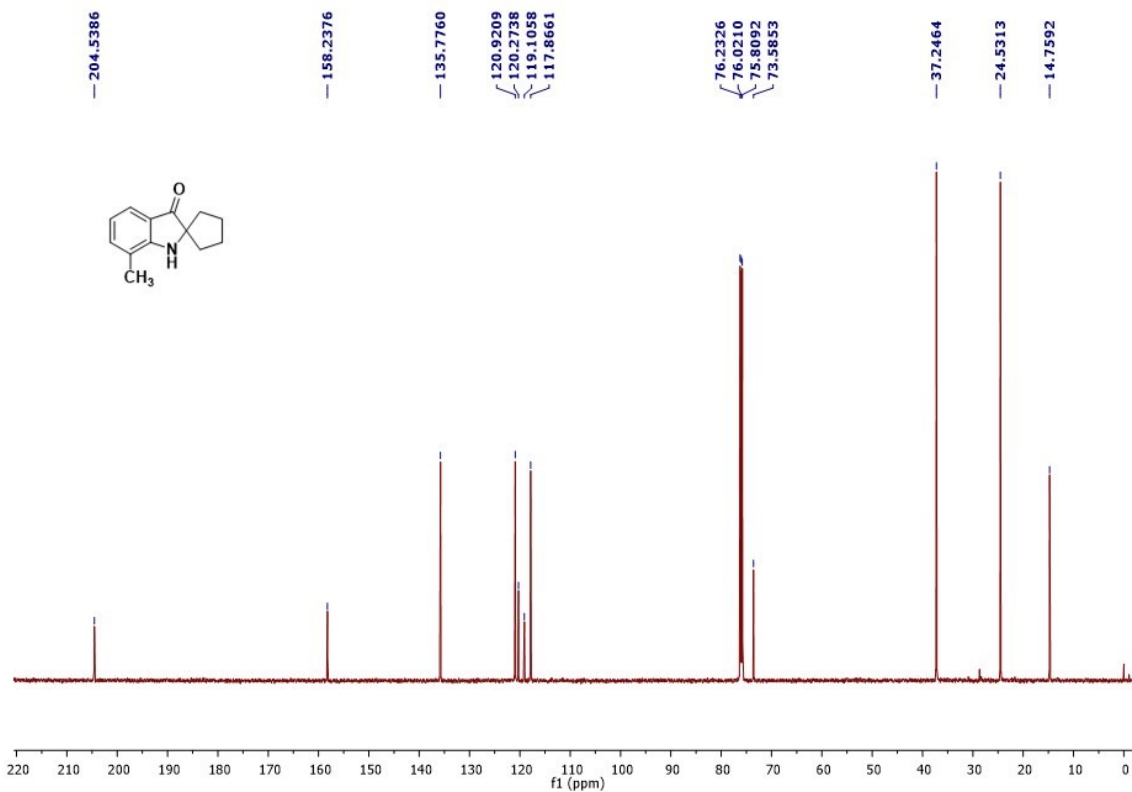
HRMS of 10 g



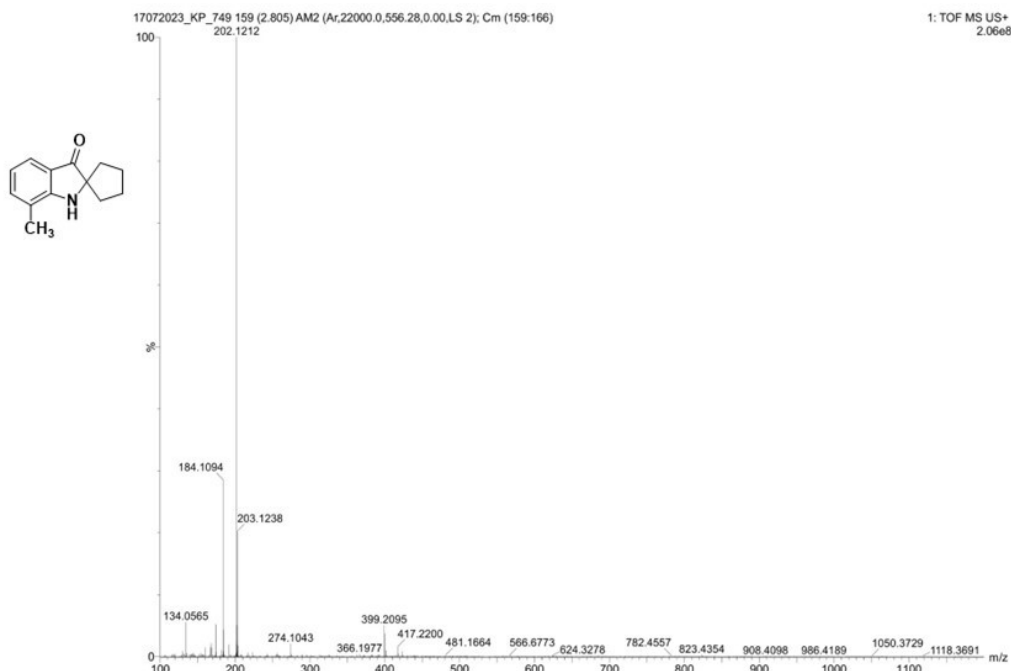
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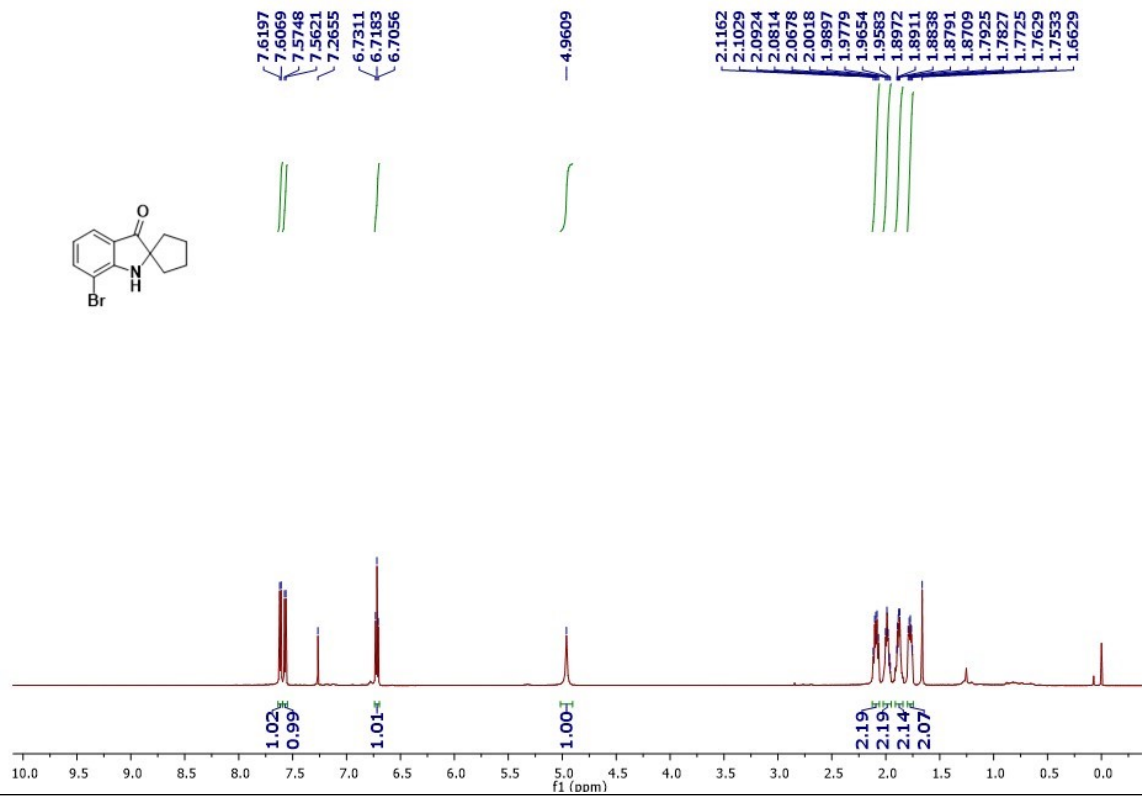
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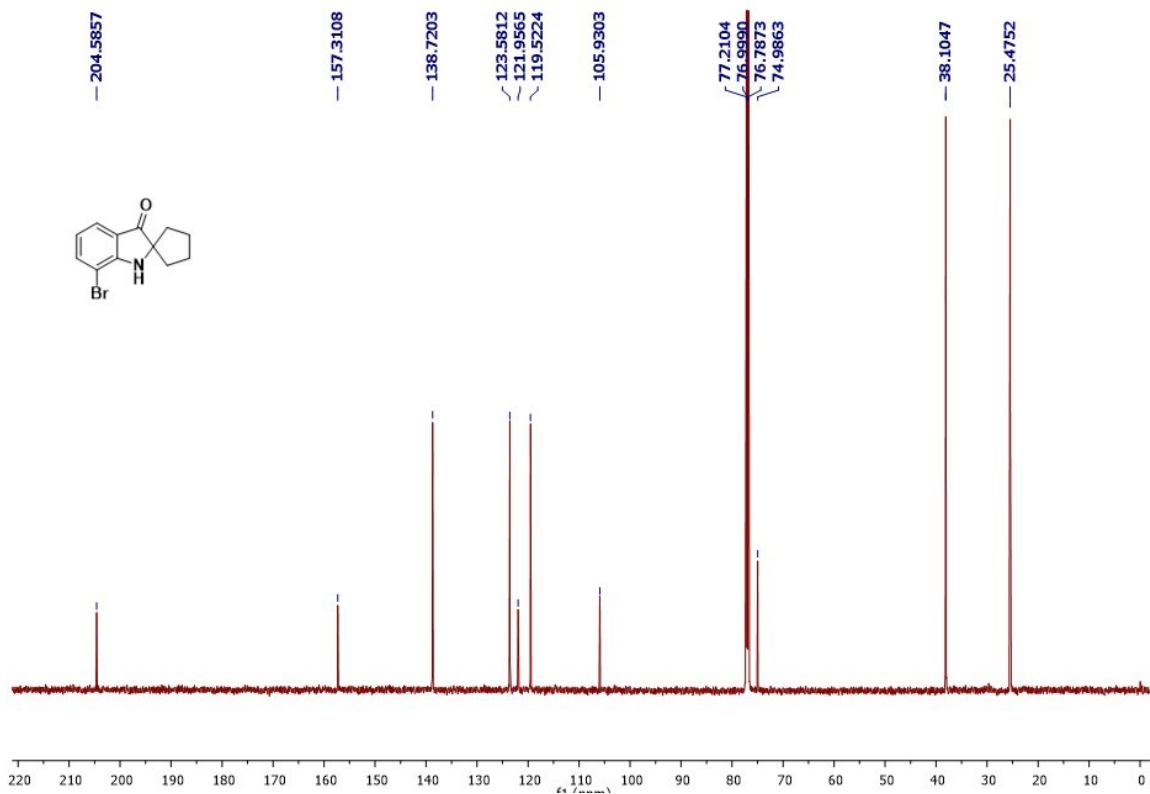
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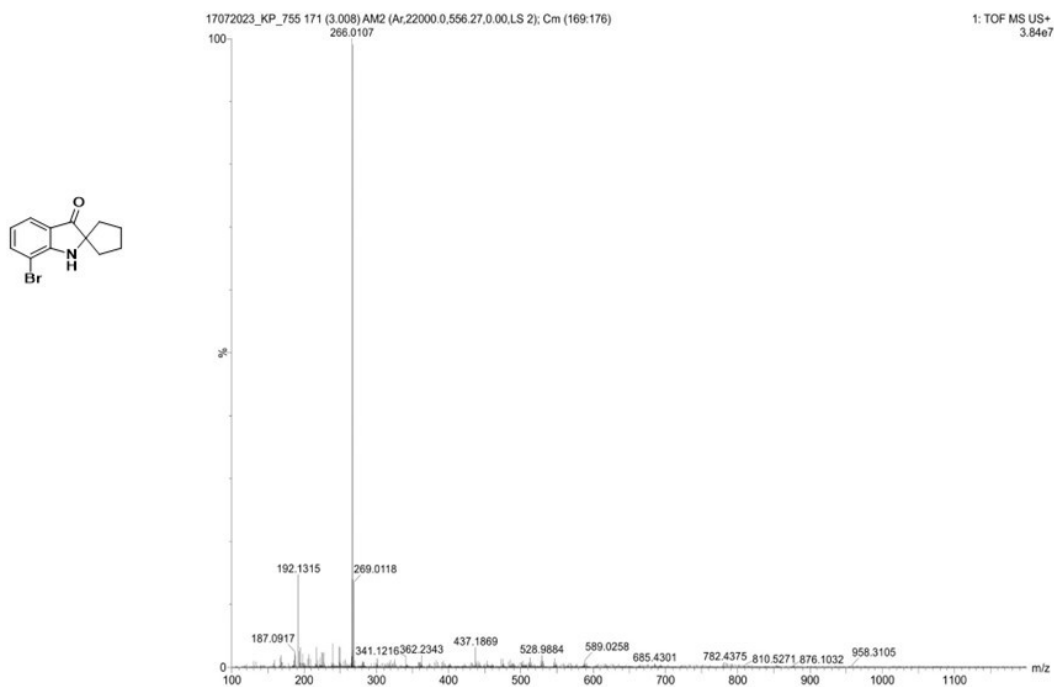
1H NMR of 10 i



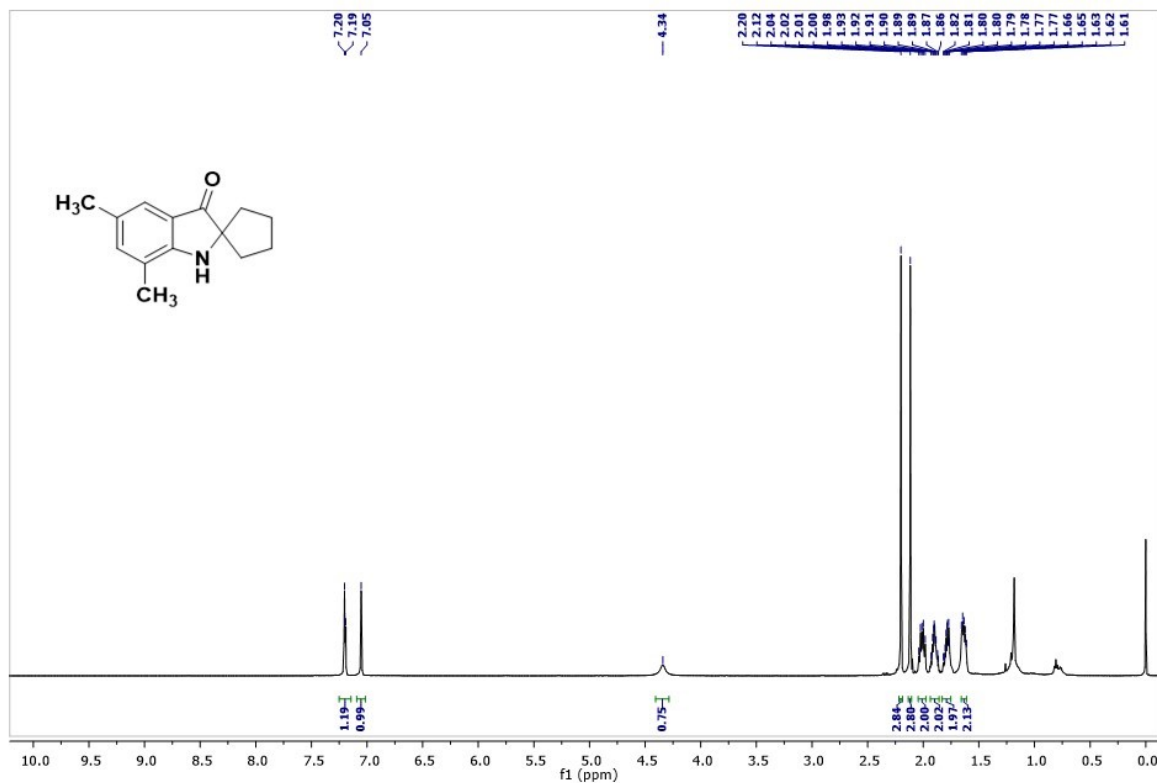
13C NMR of 10 i



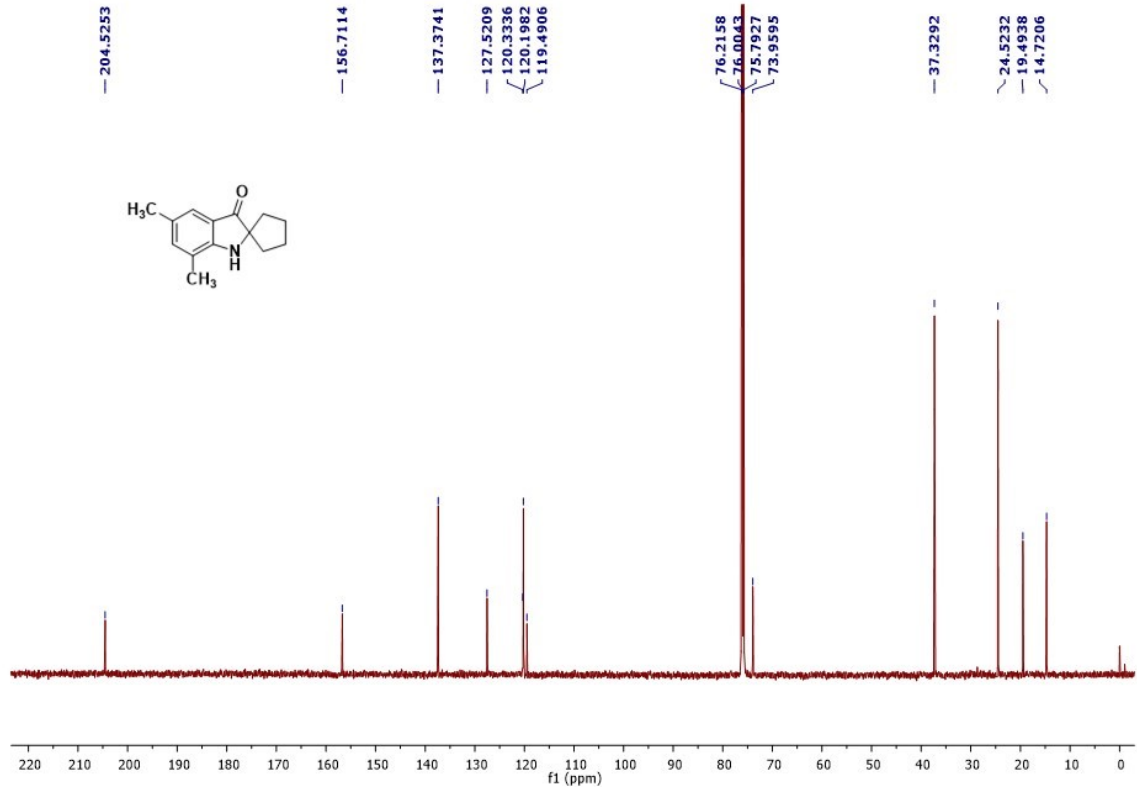
HRMS of 10 i



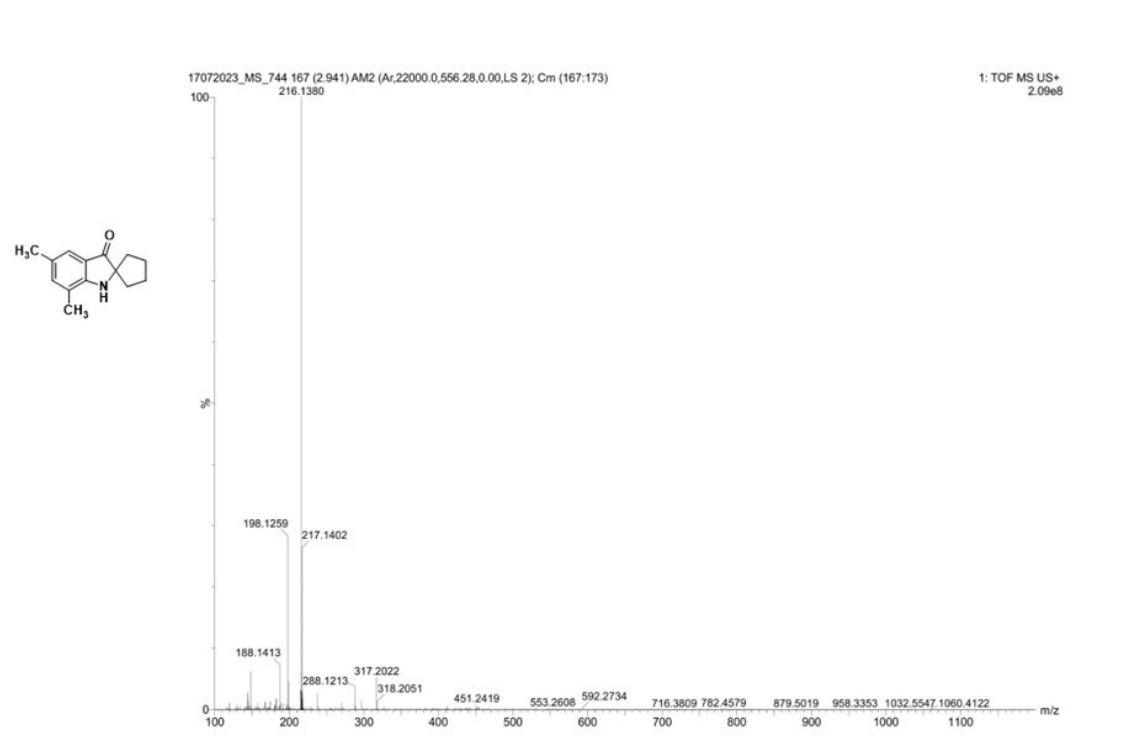
¹H NMR of 10 j



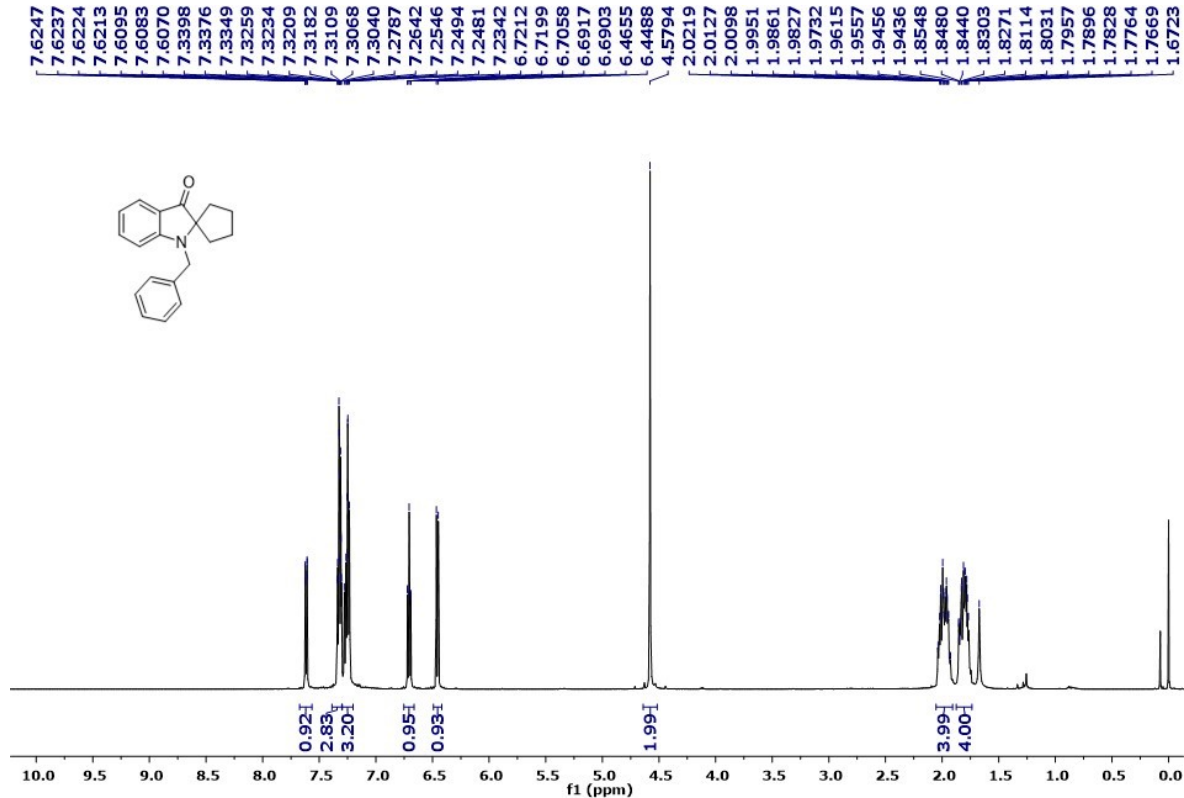
13C NMR of 10 j



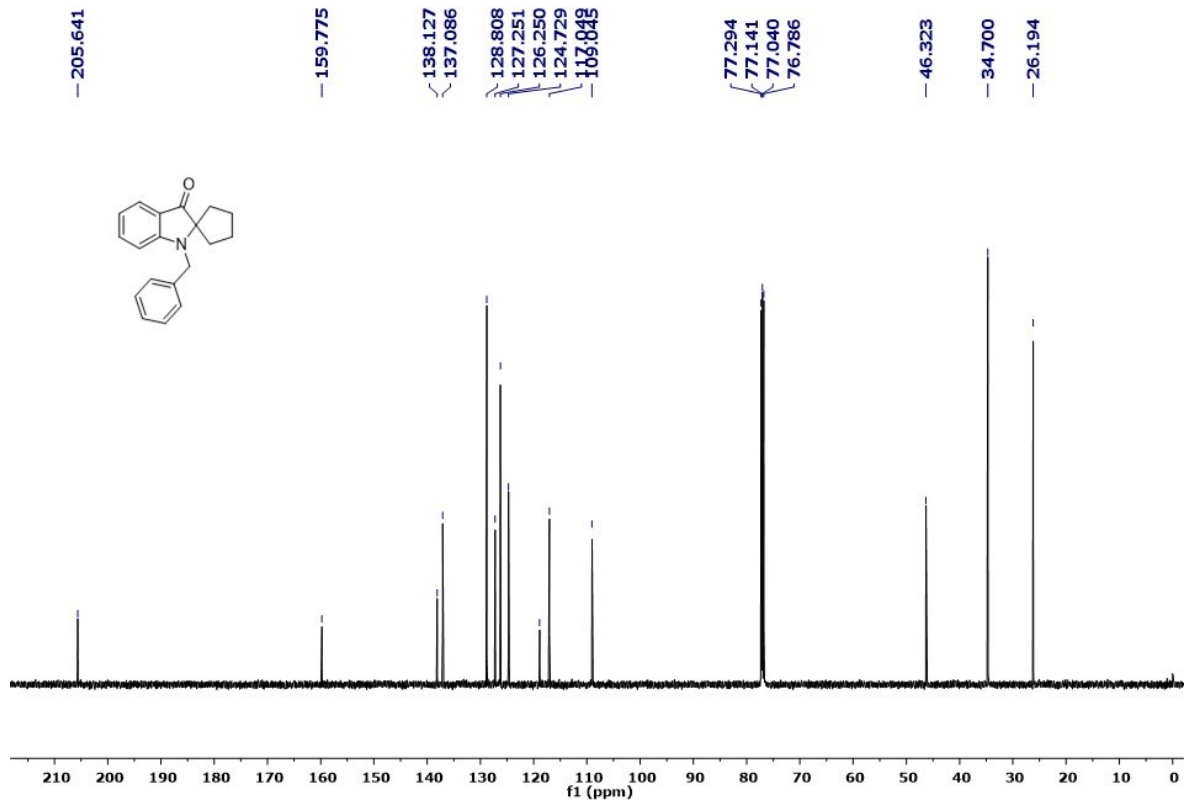
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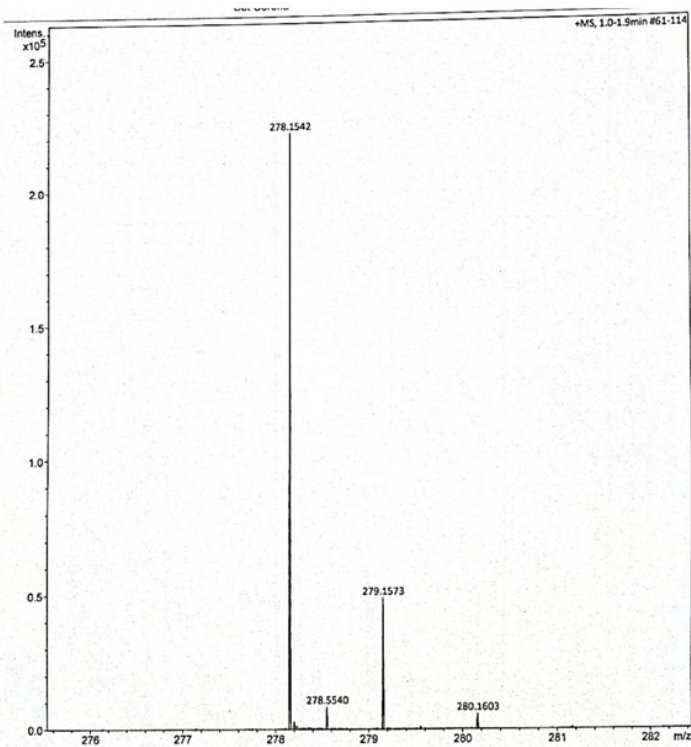
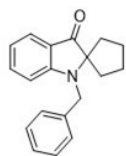
1H NMR of a



13C NMR of 11 a



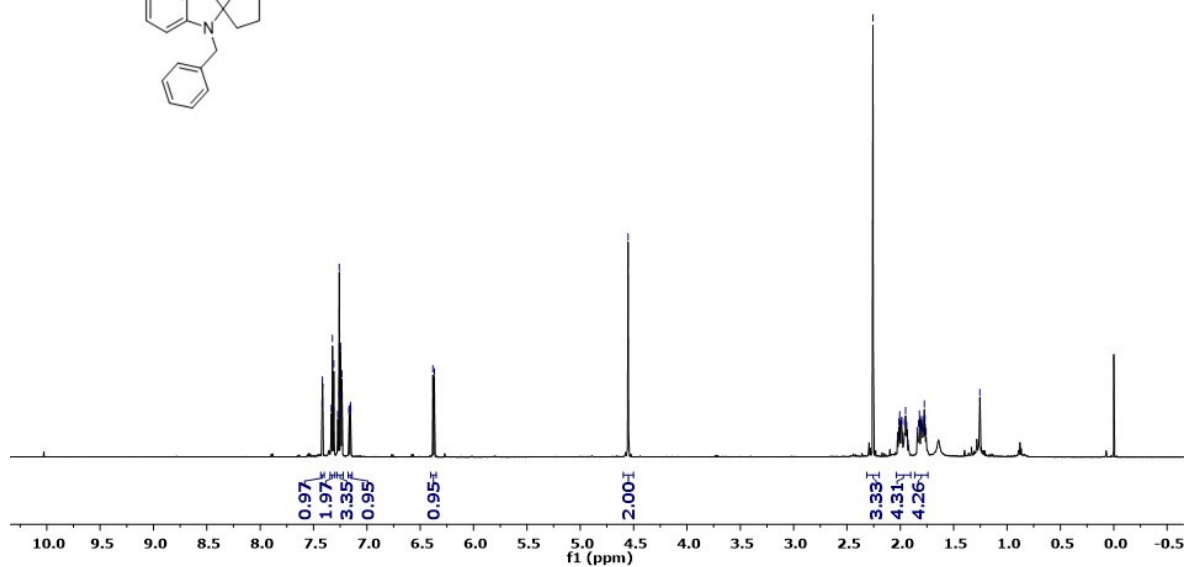
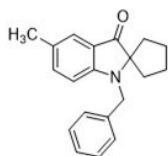
HRMS of 11 a



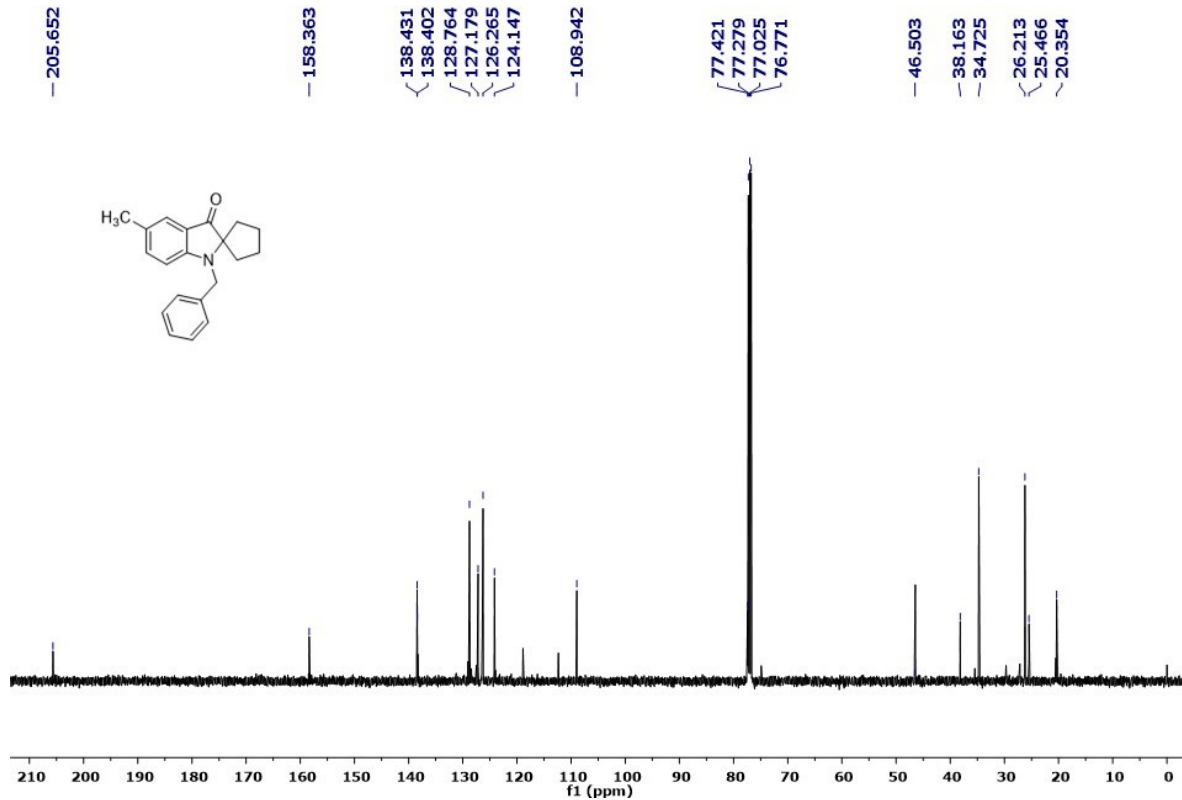
¹H NMR of 11 b

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7.3223
7.3097
7.2733
7.2609
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7.2458
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6.3815
6.3675

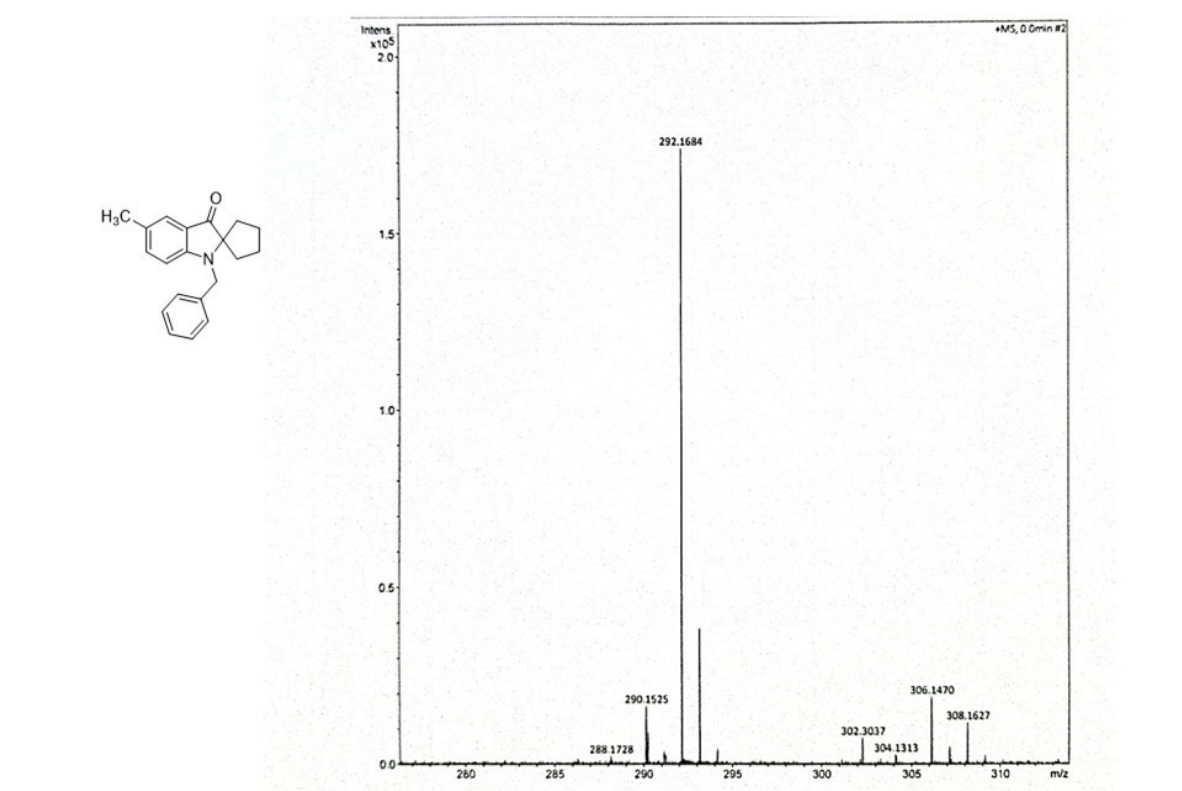
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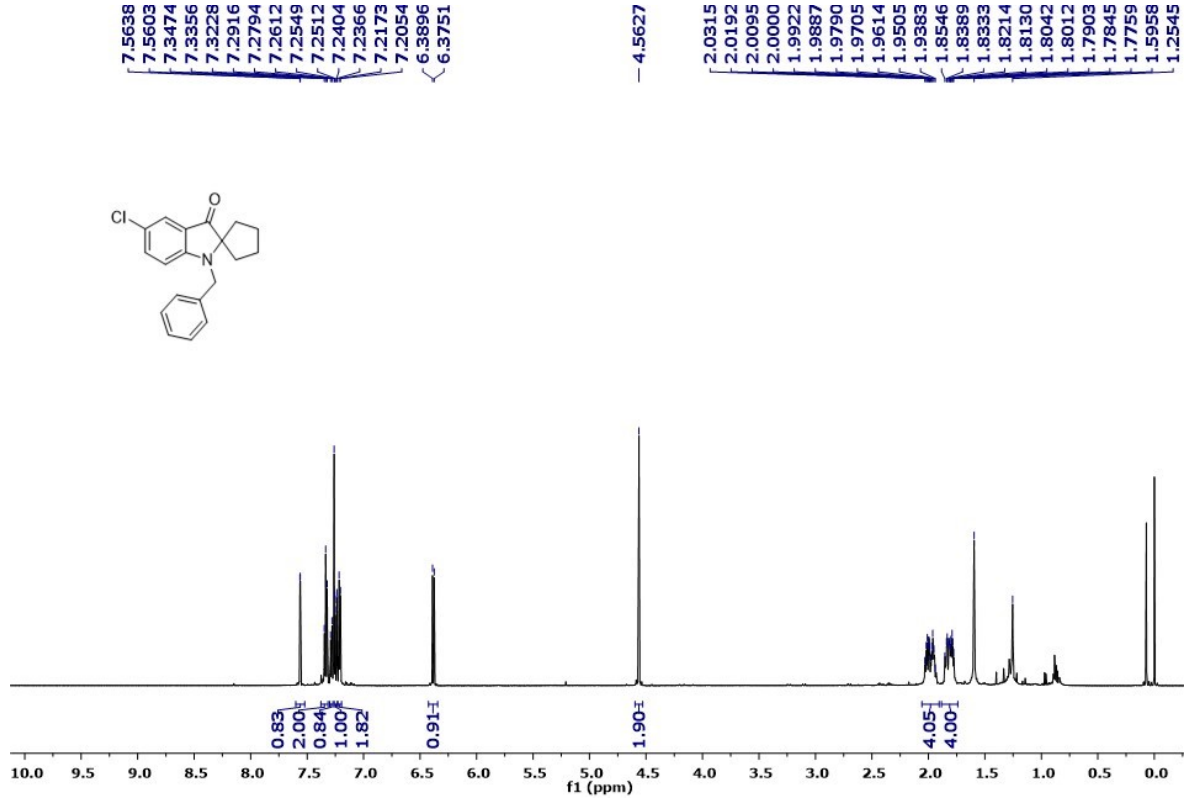
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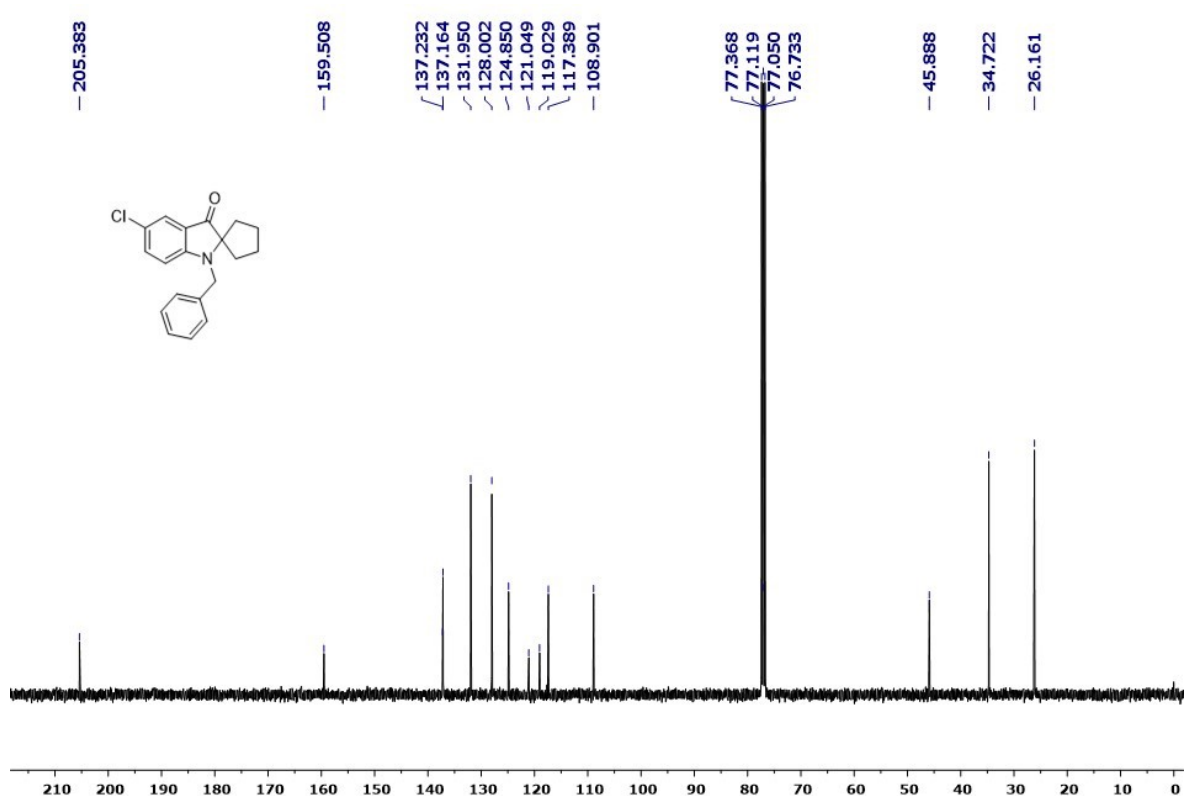
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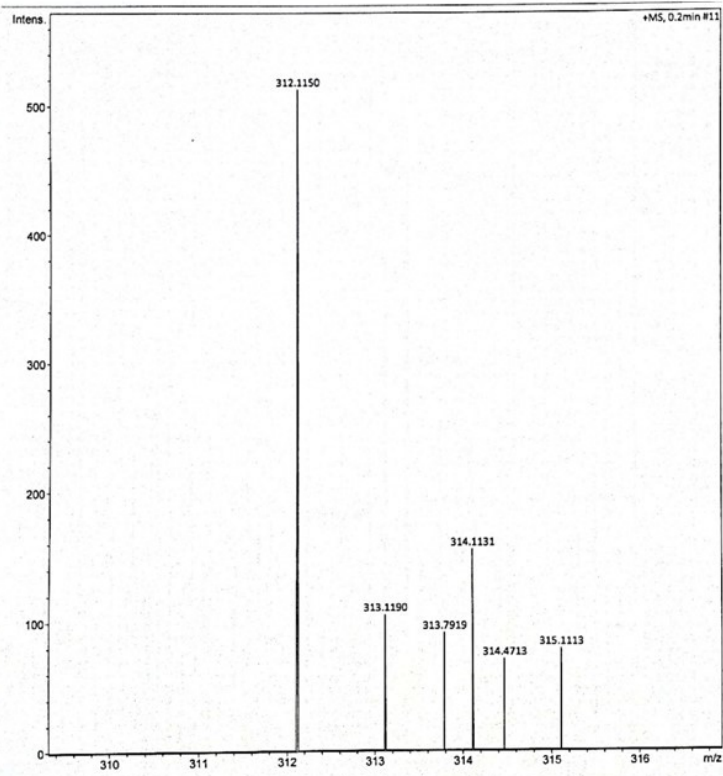
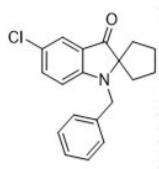
1H NMR of 11 c



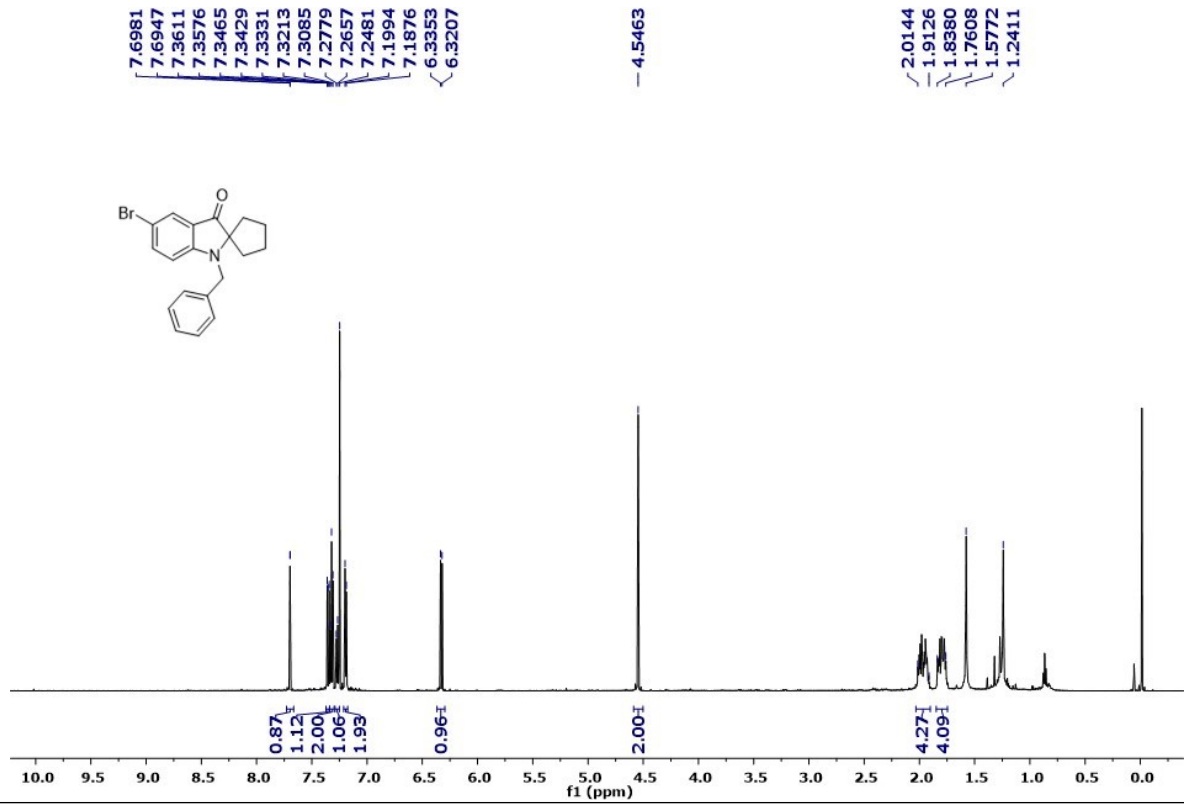
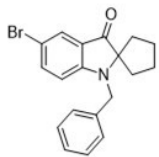
13C NMR of 11 c



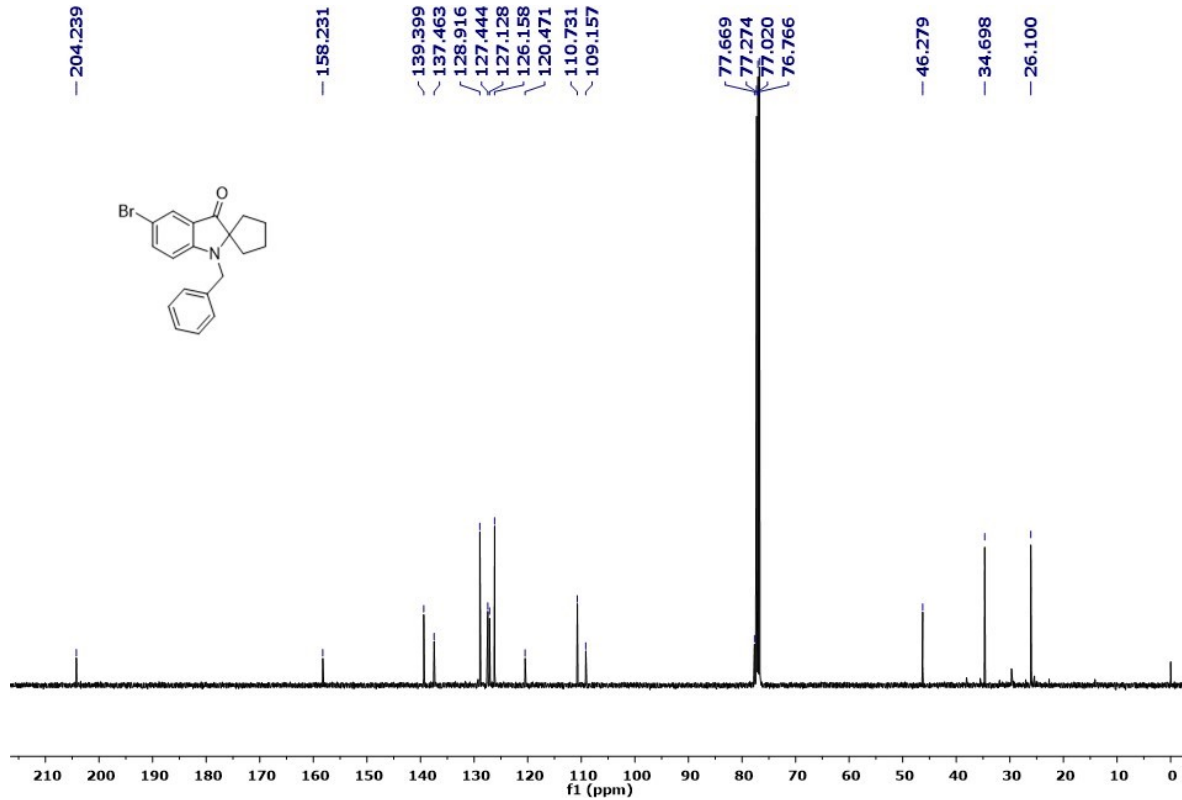
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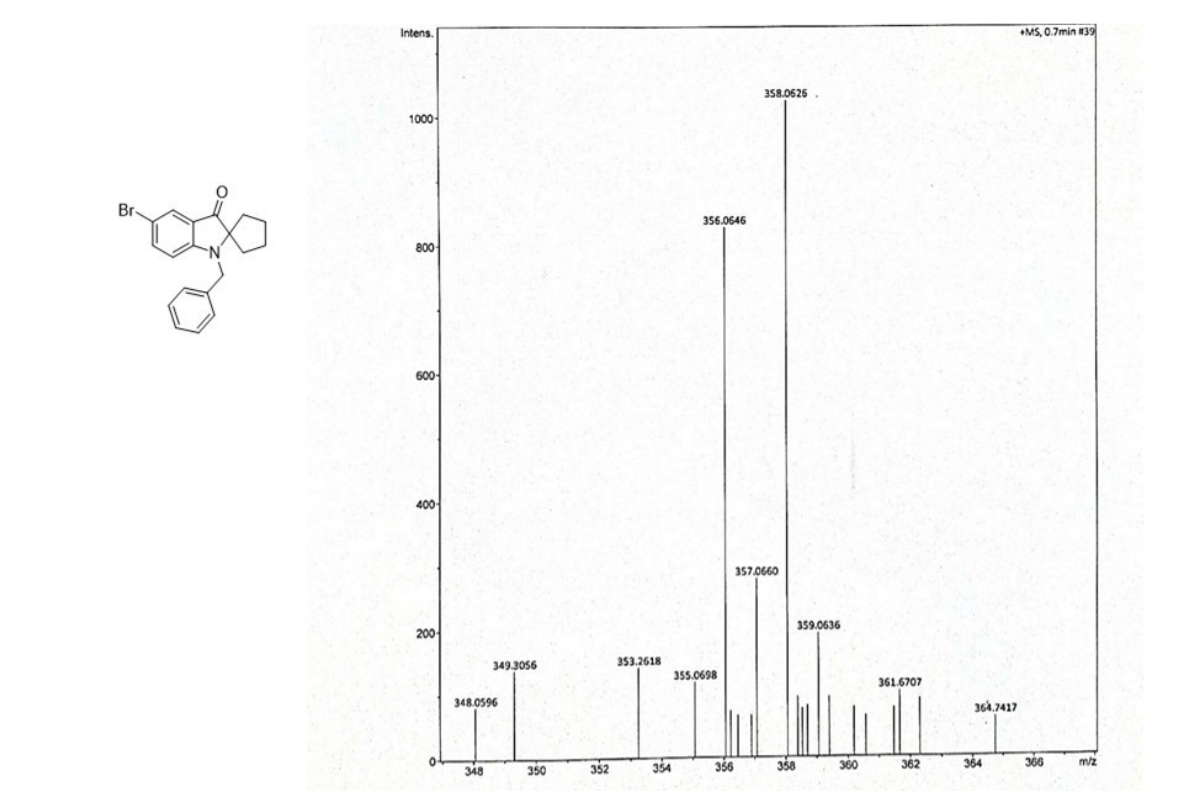
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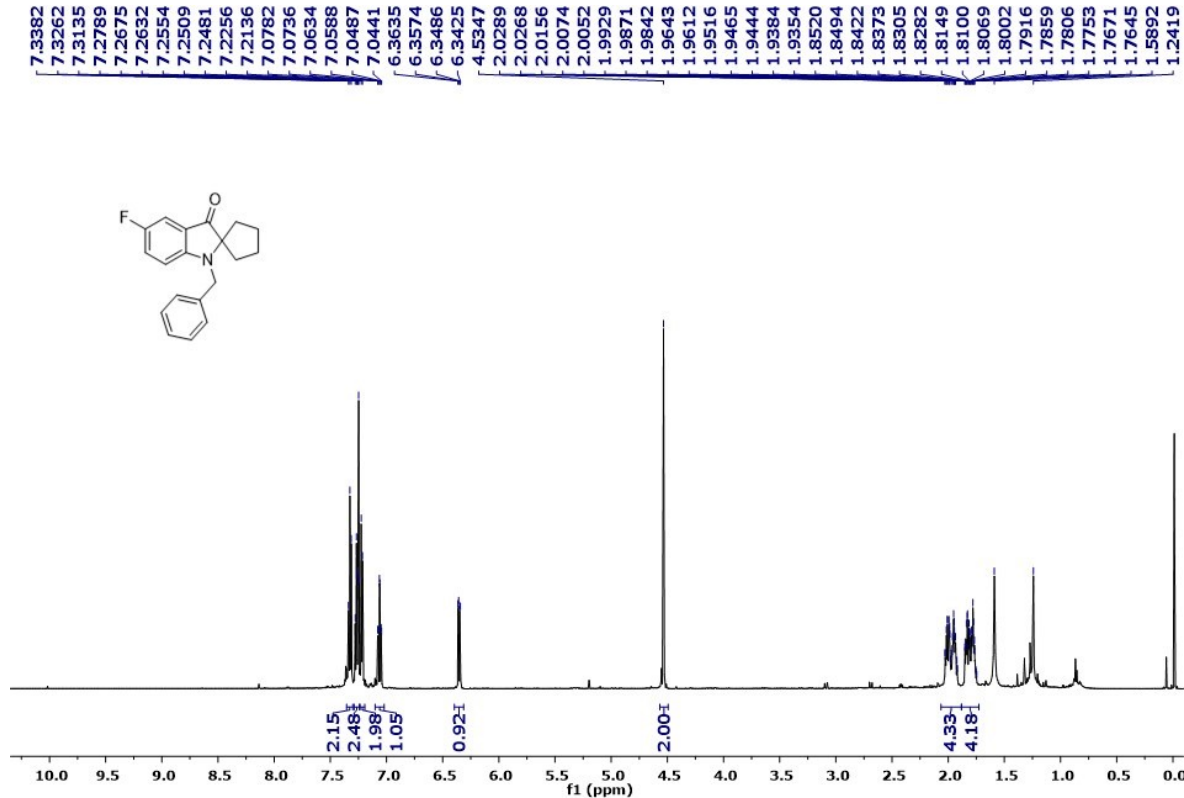
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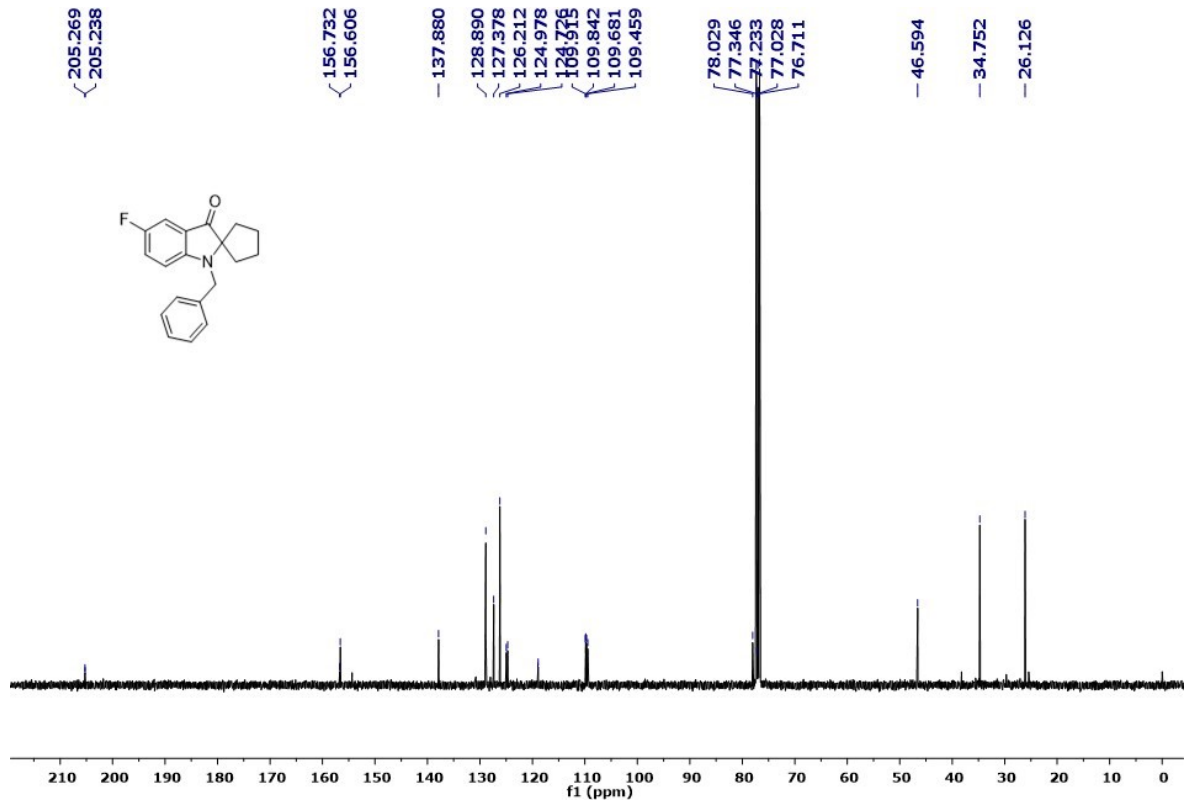
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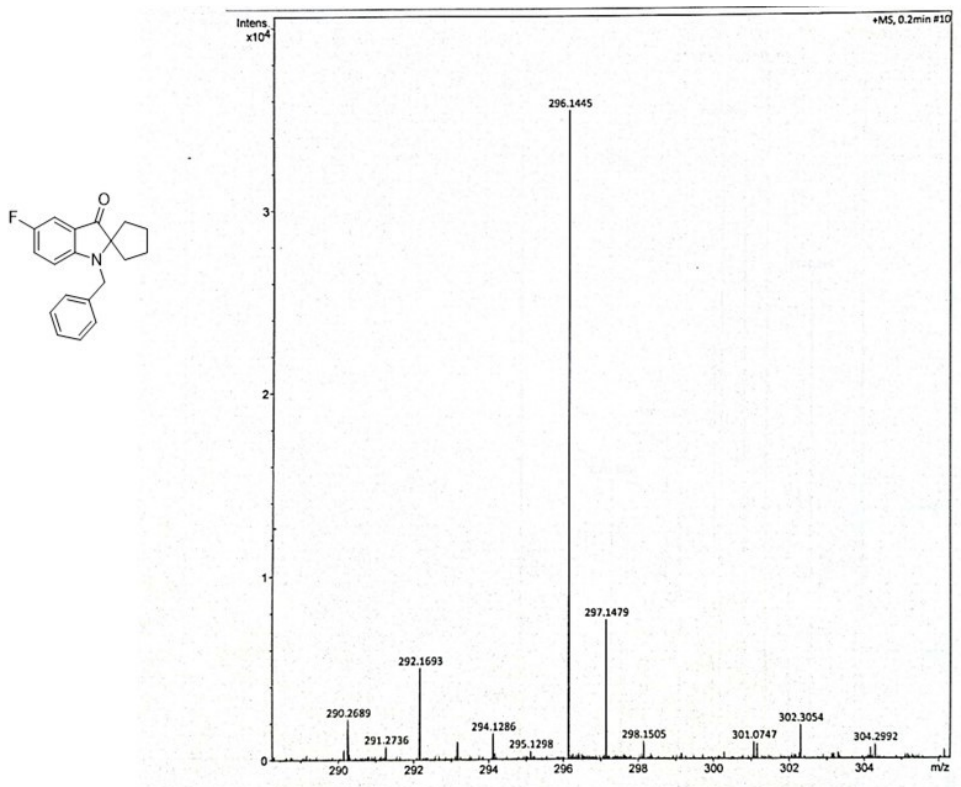
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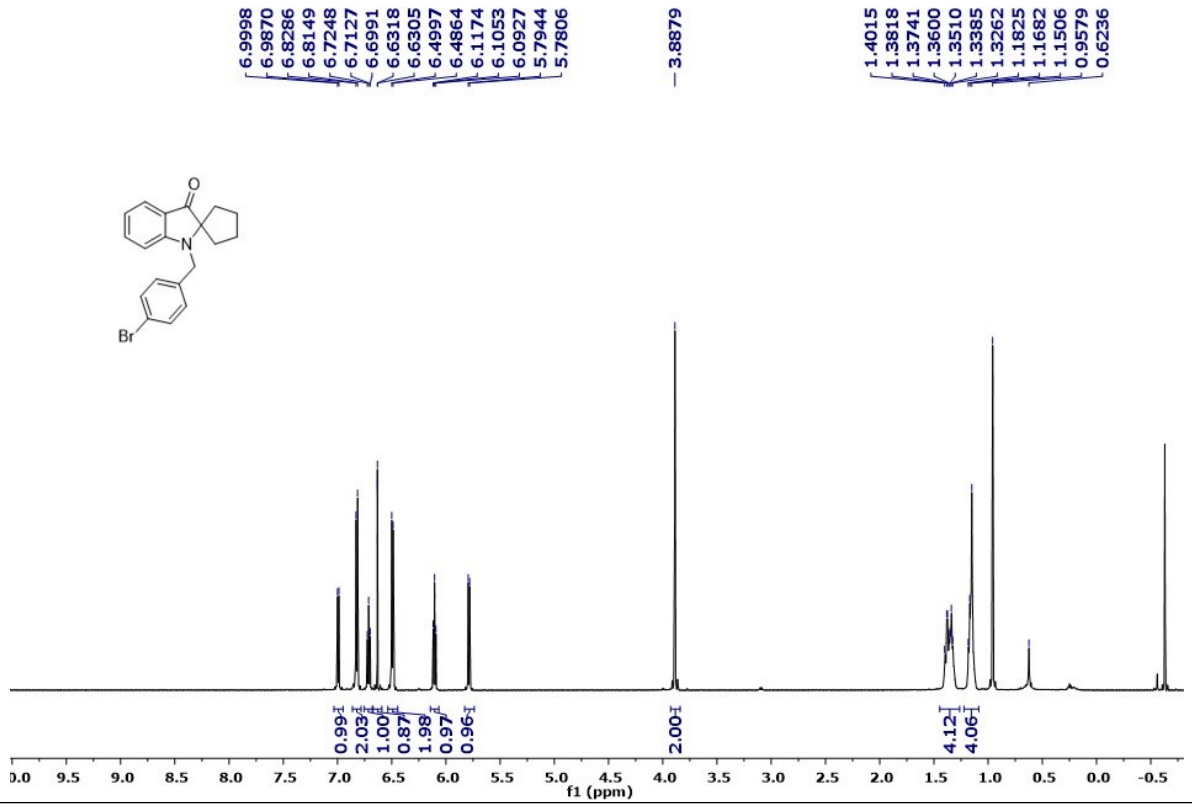
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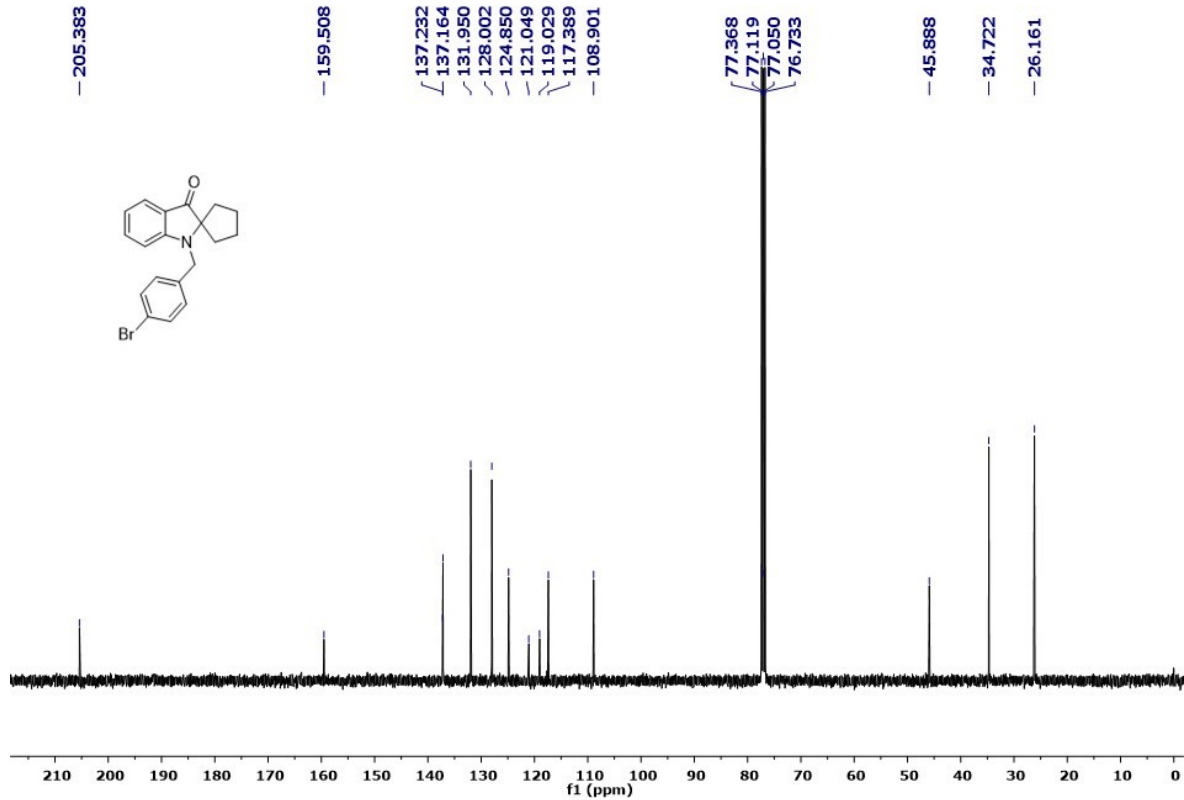
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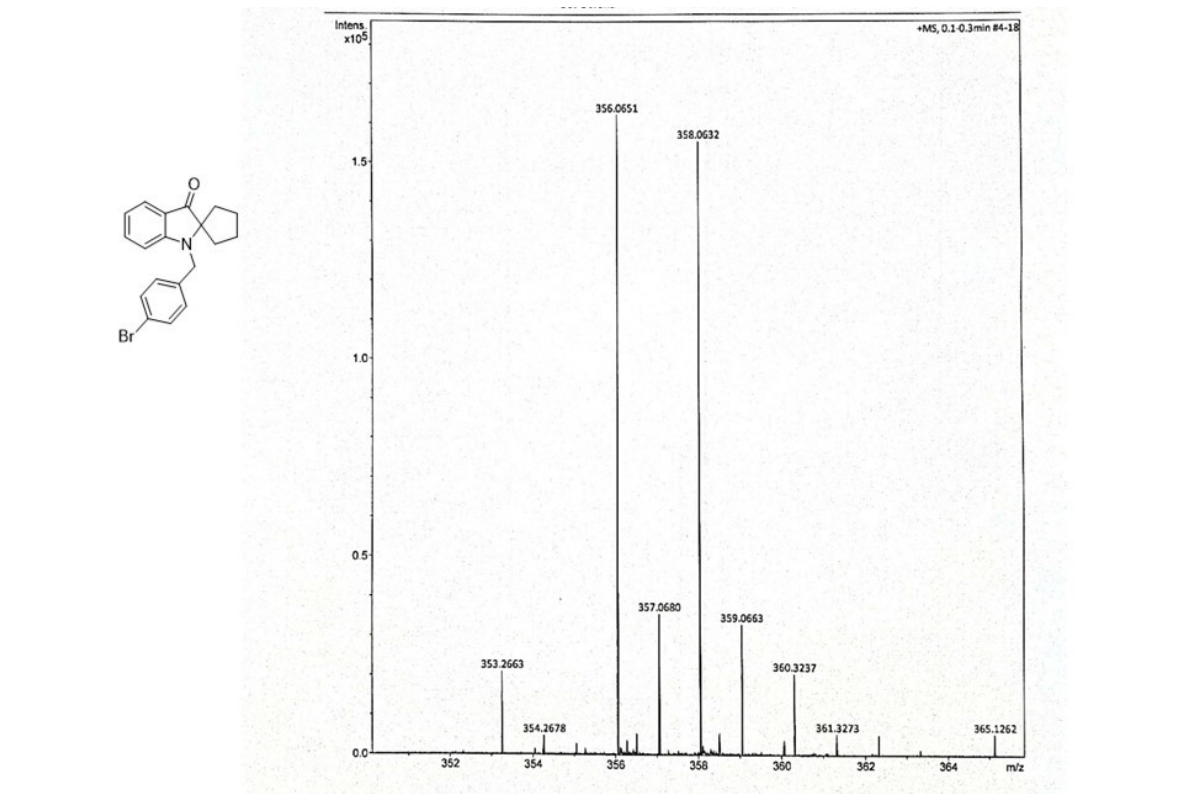
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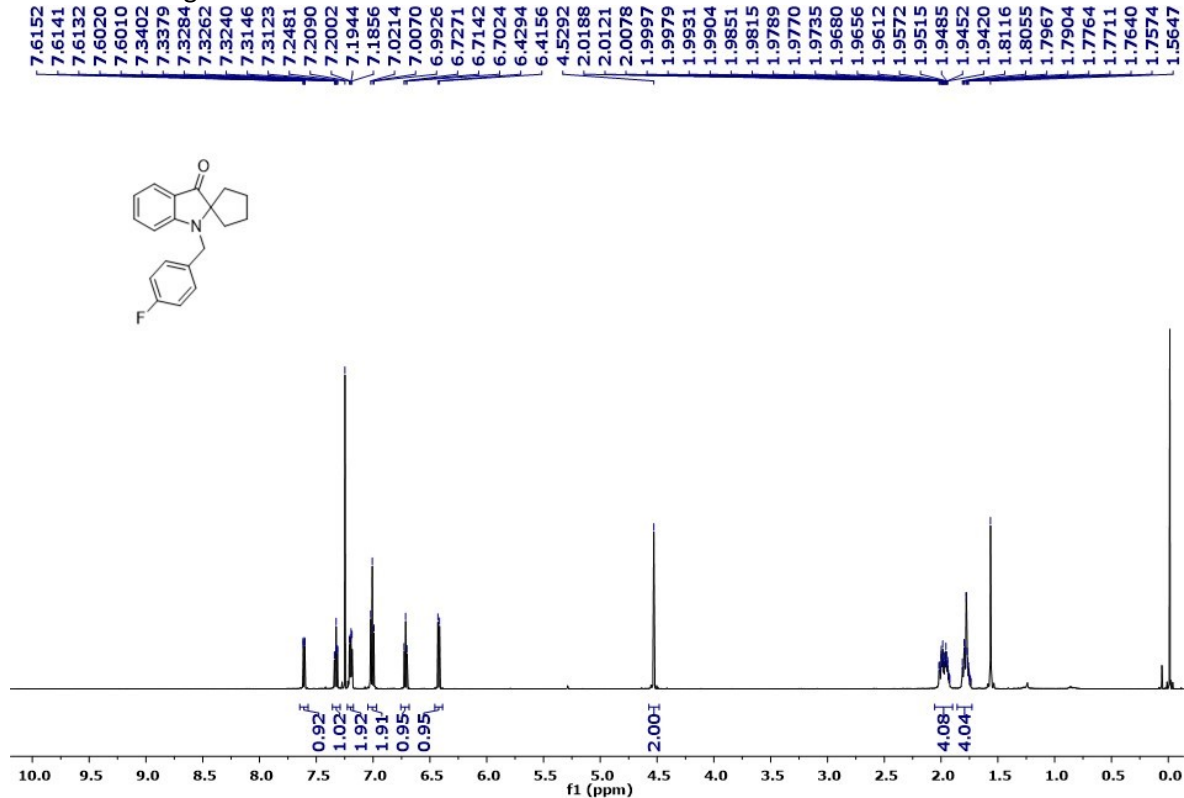
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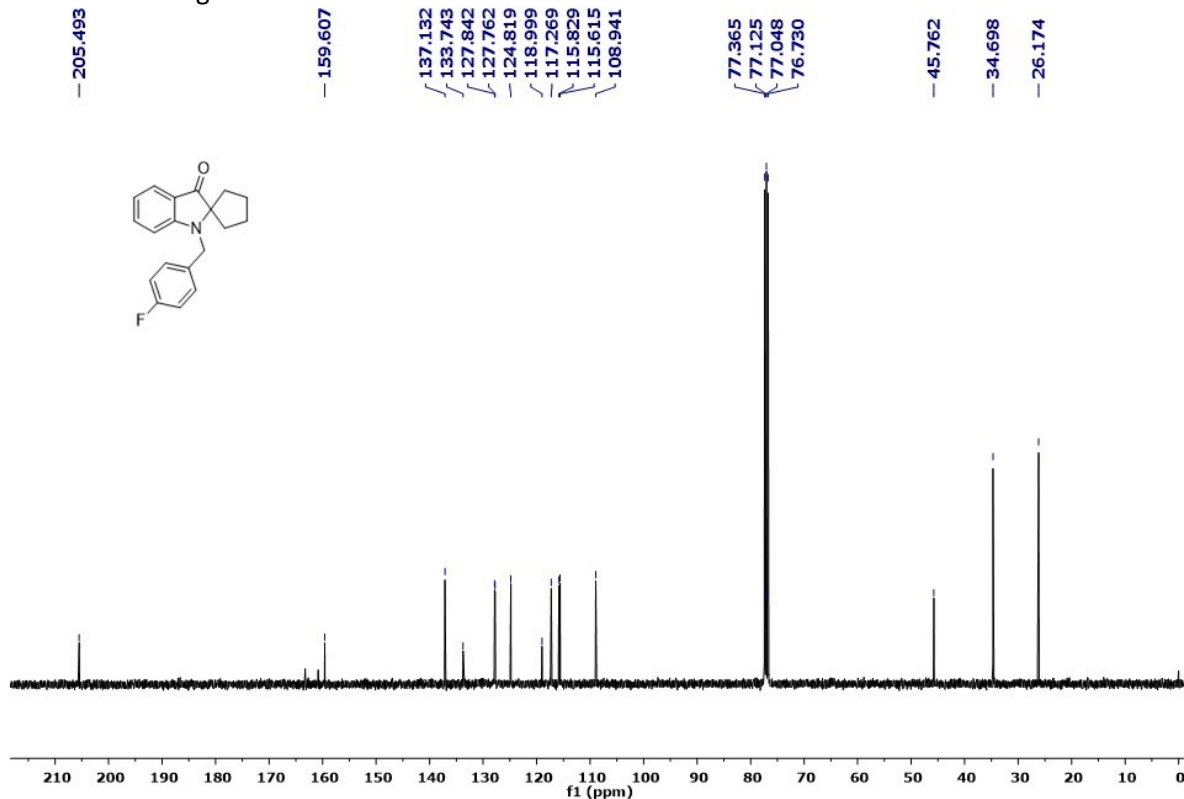
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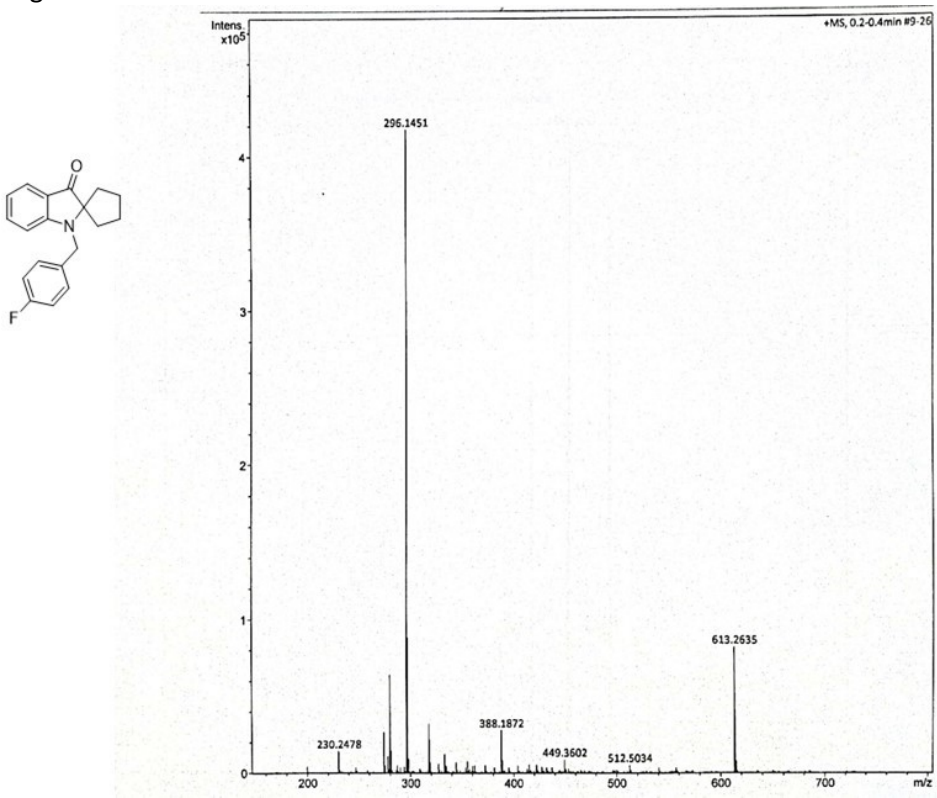
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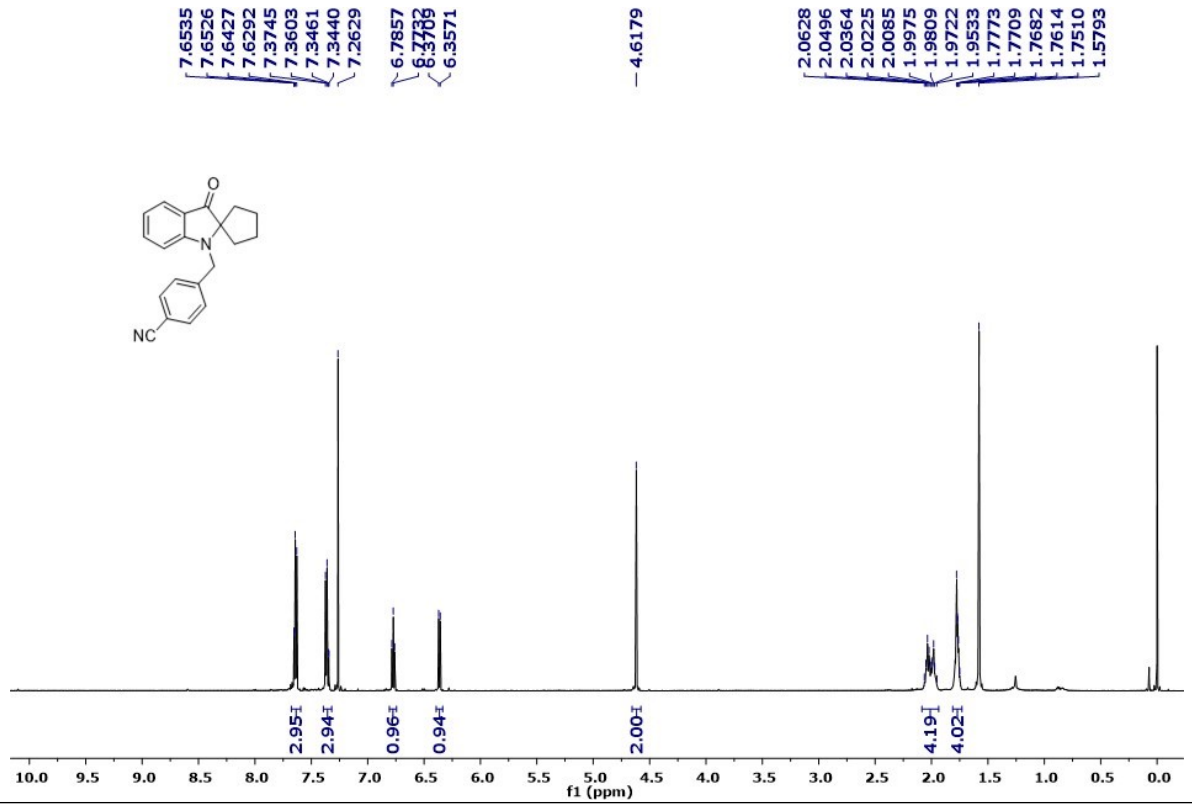
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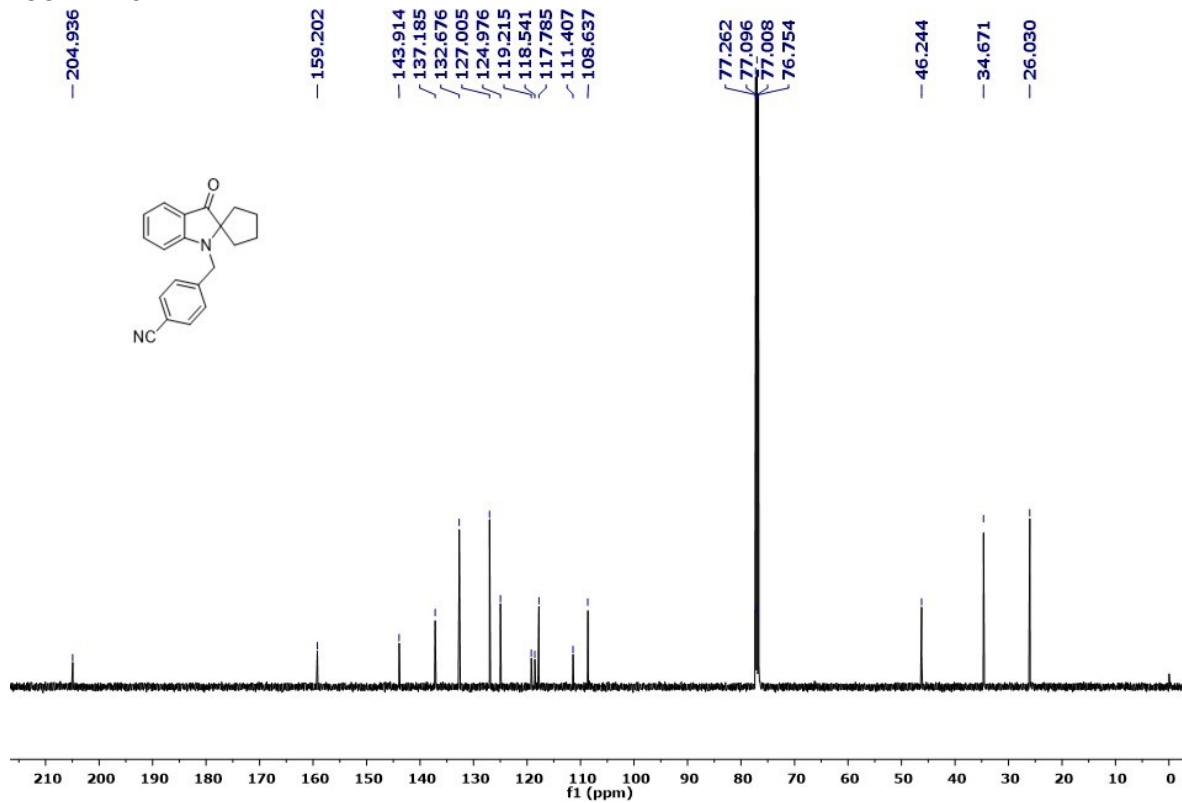
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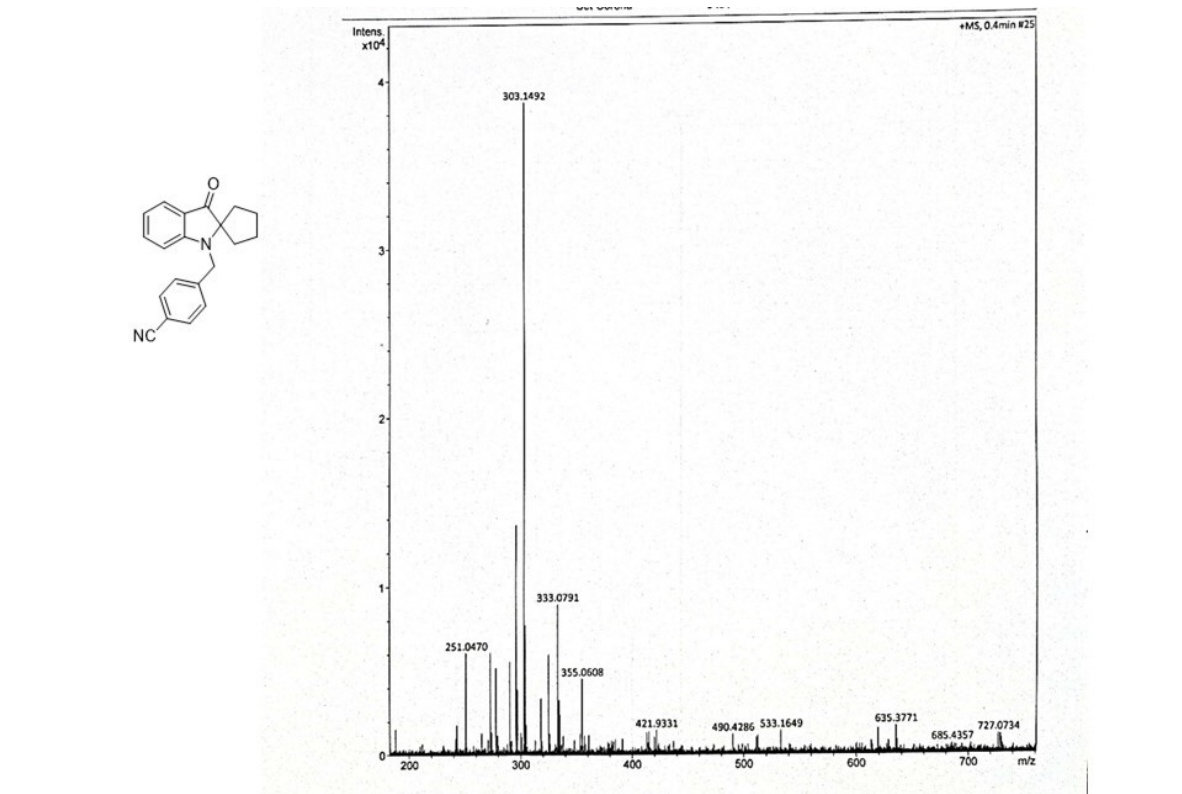
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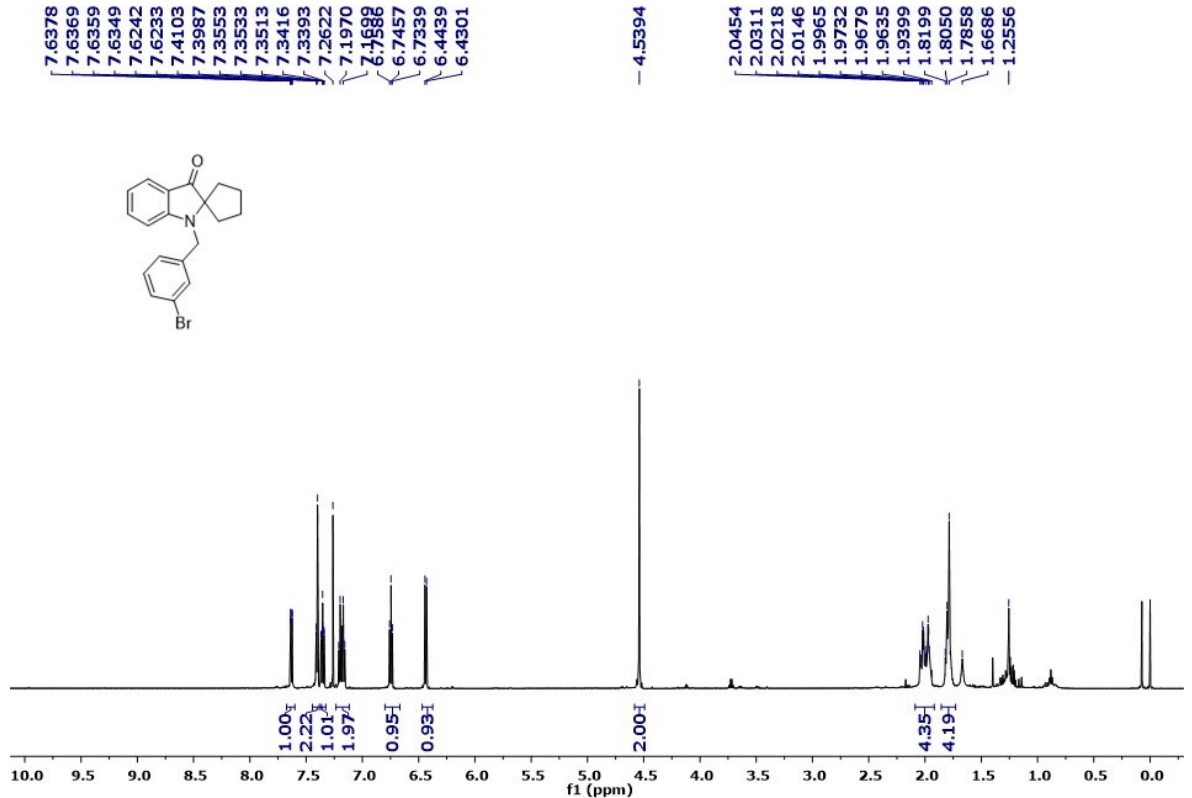
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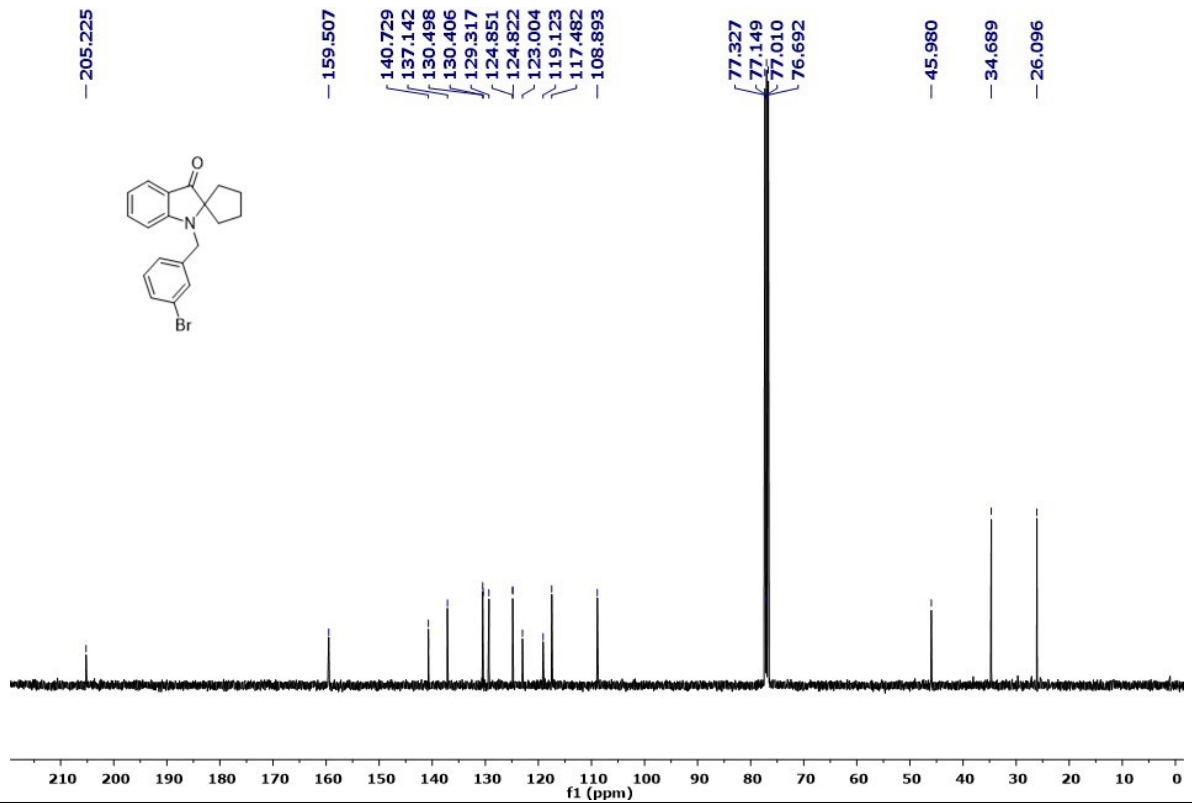
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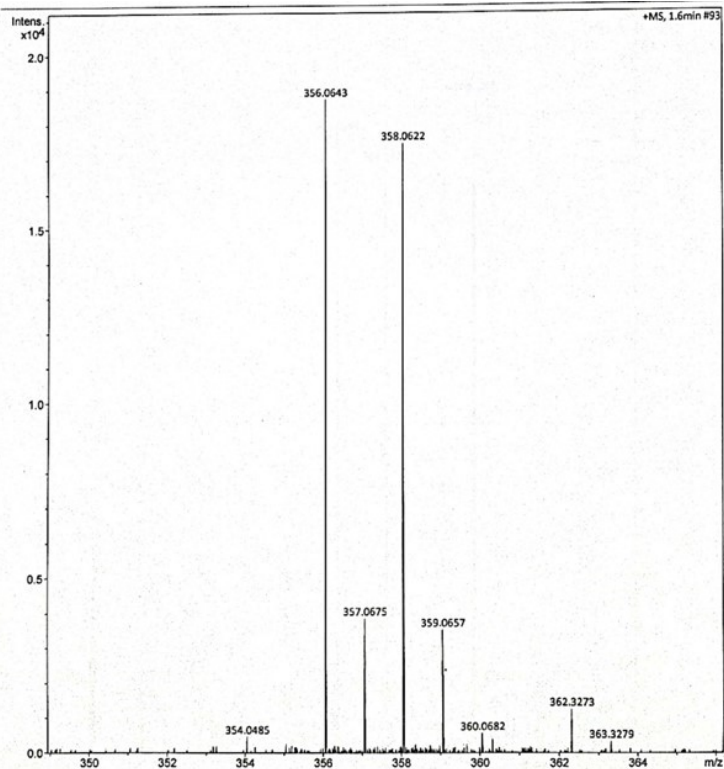
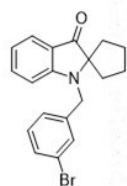
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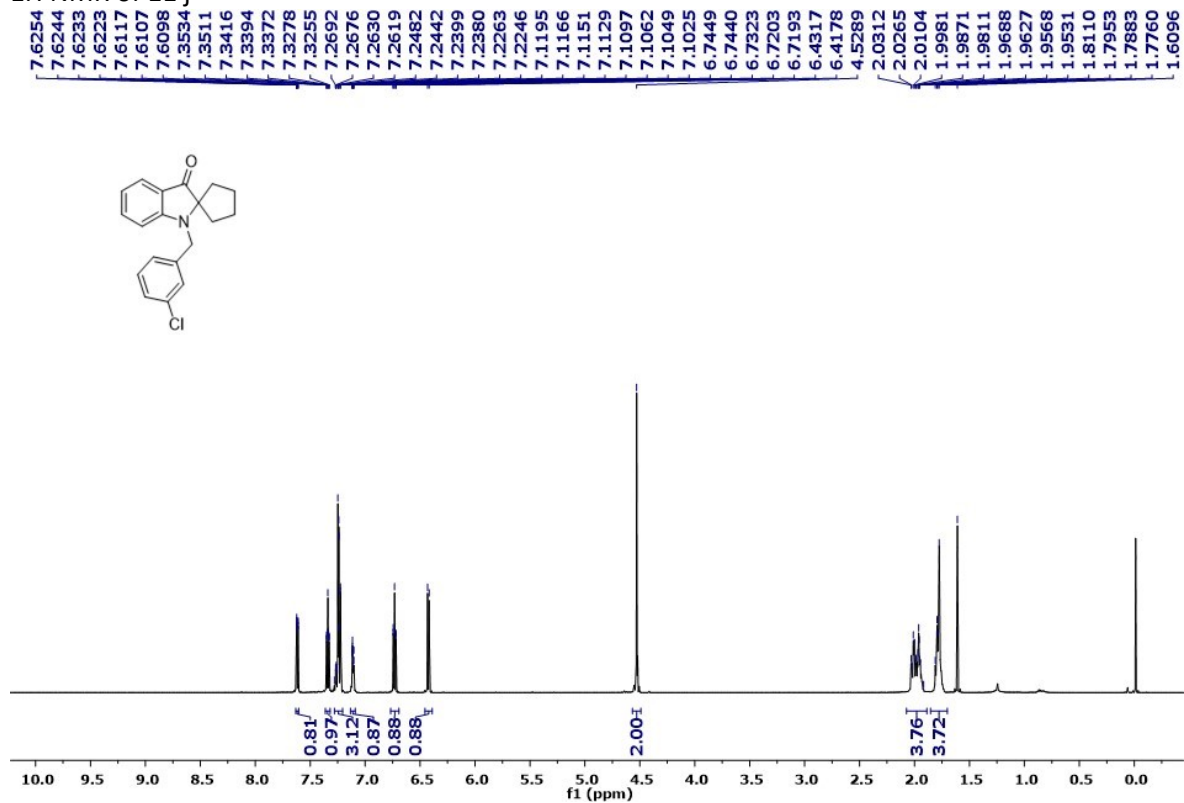
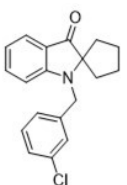
13C NMR of 11 i



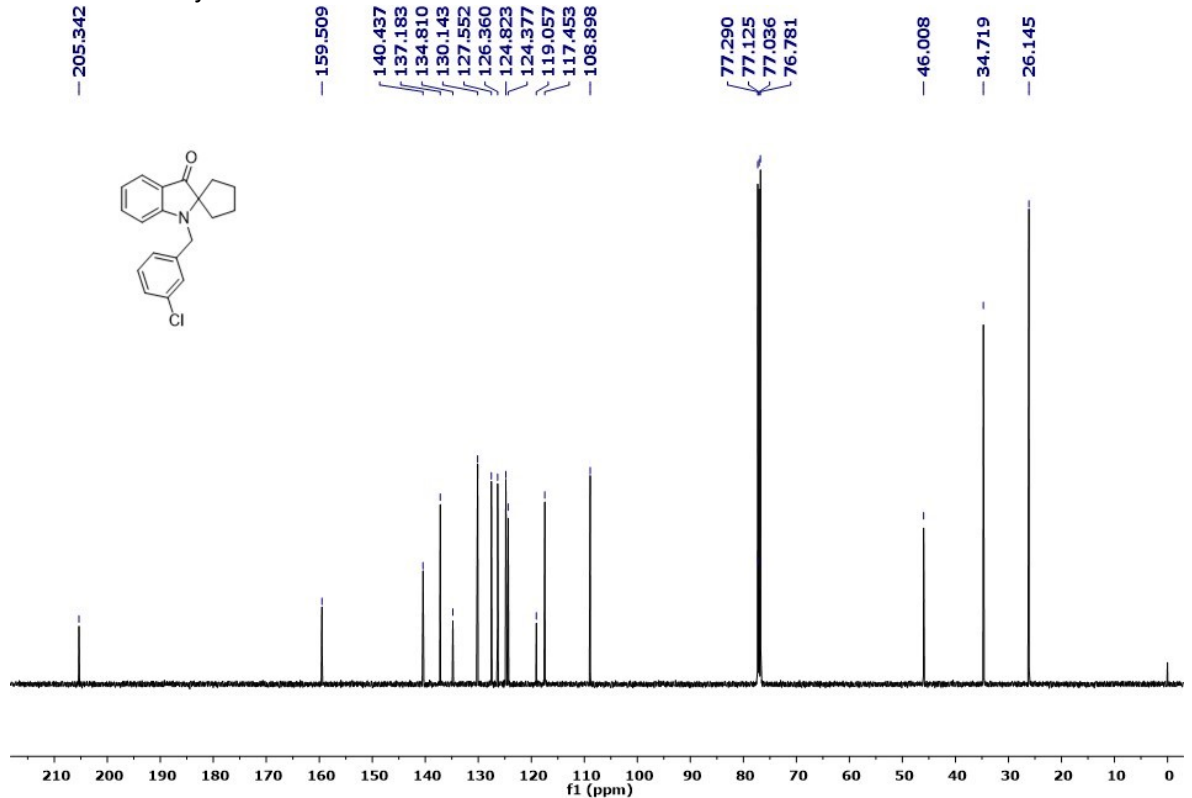
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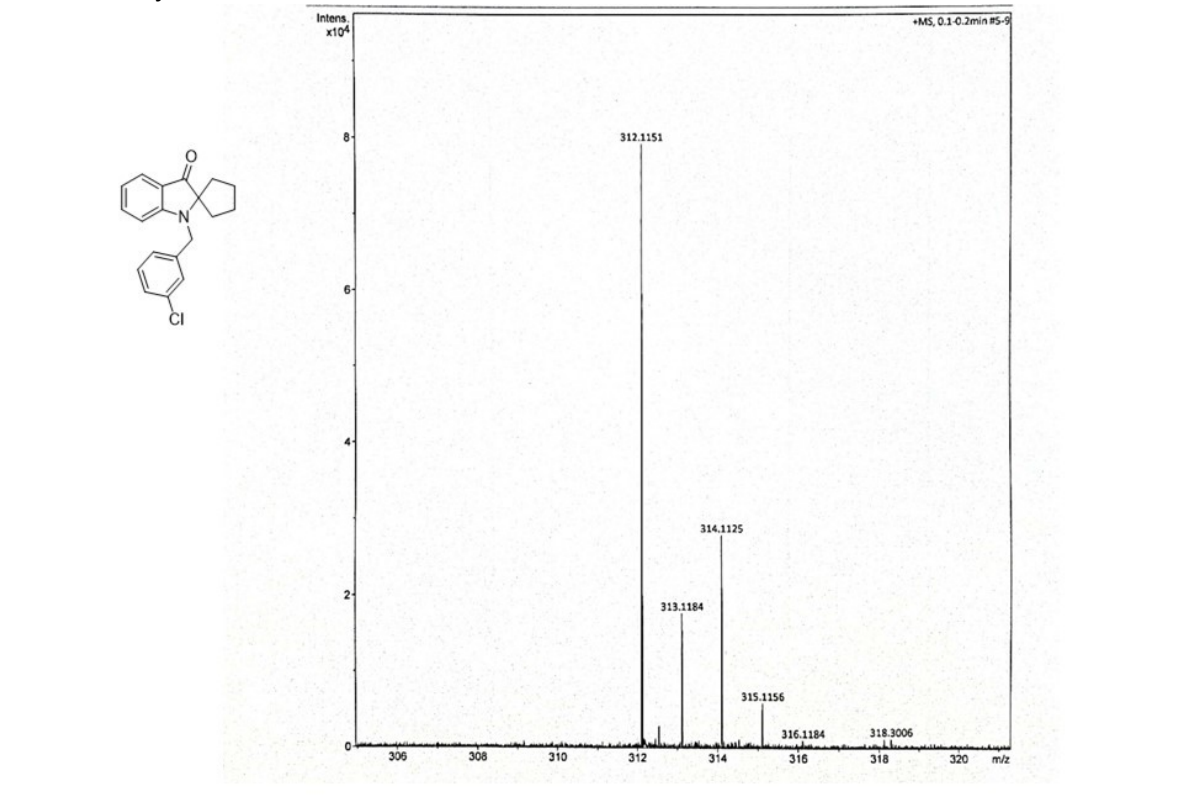
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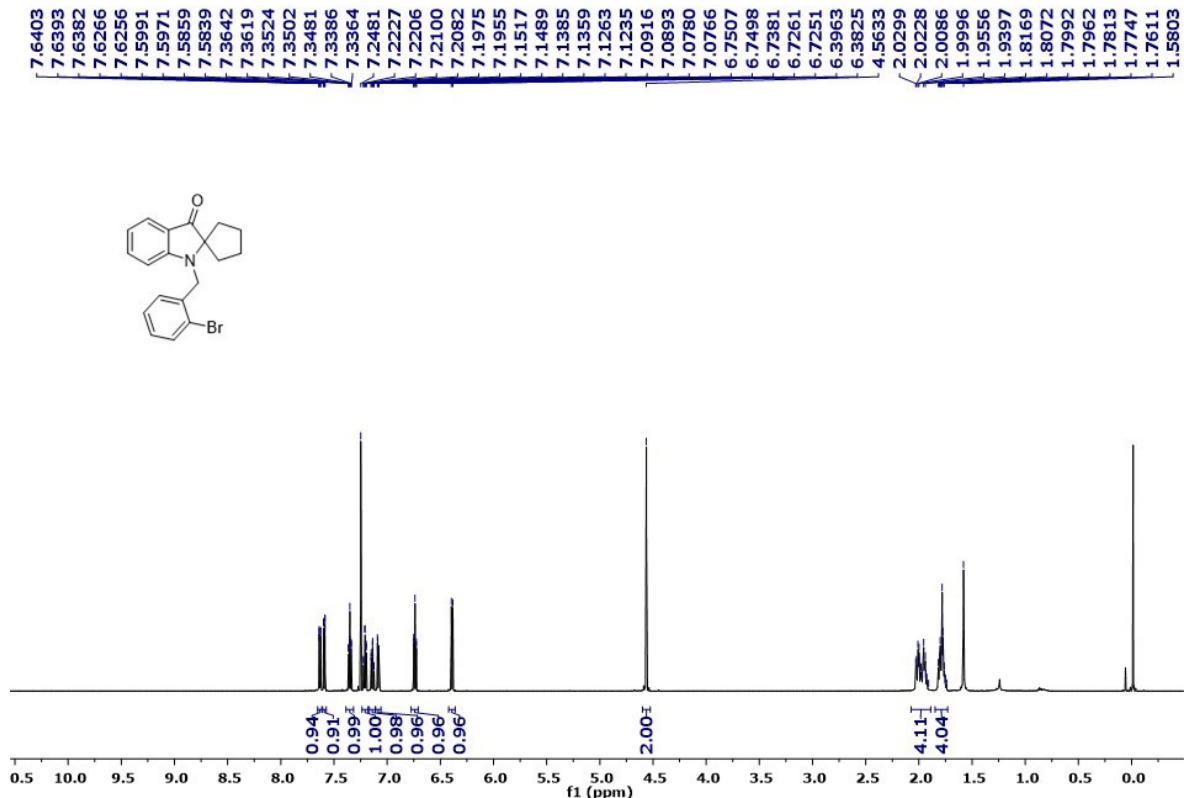
¹³C NMR of 11 j



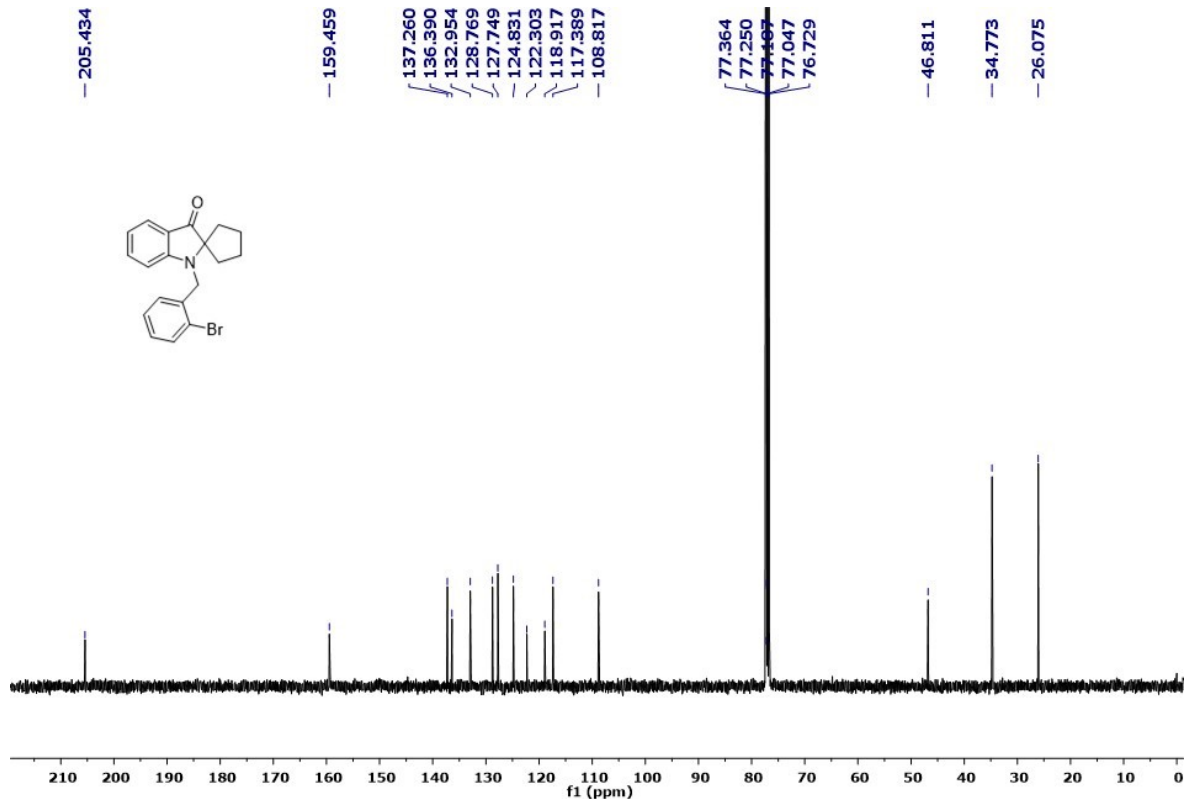
HRMS of 11 j



1H NMR of 11 k



13C NMR of 11 k



HRMS of 11 k

