Supporting Information for

Facile construction of diverse polyheterocyclic scaffolds via gold-catalysed dearomative spirocyclization/1,6-addition cascade

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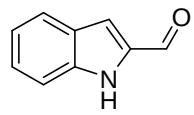
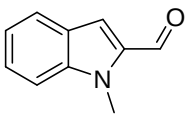
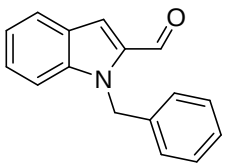
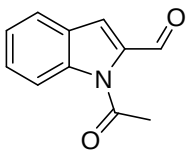
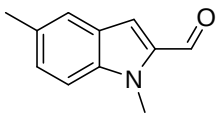
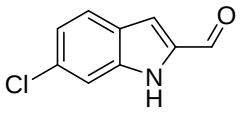
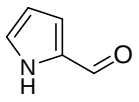
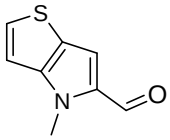
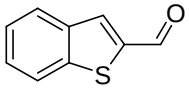
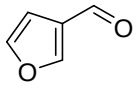
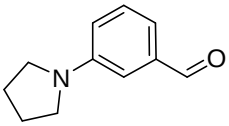
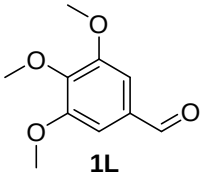
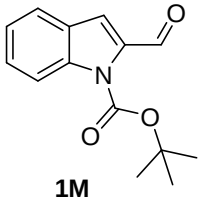
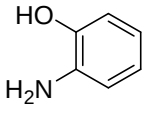
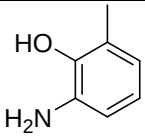
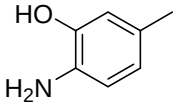
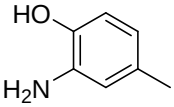
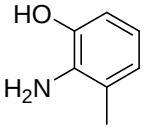
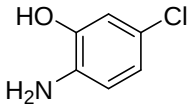
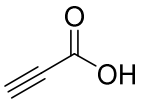
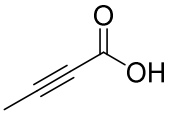
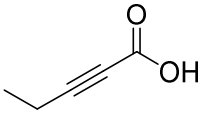
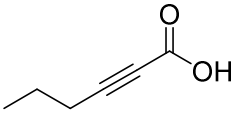
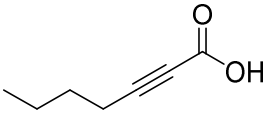
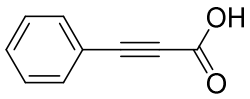
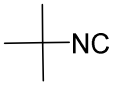
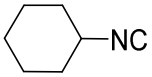
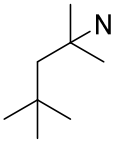
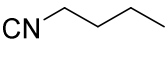
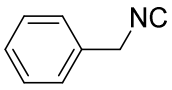
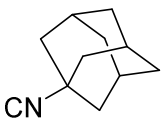
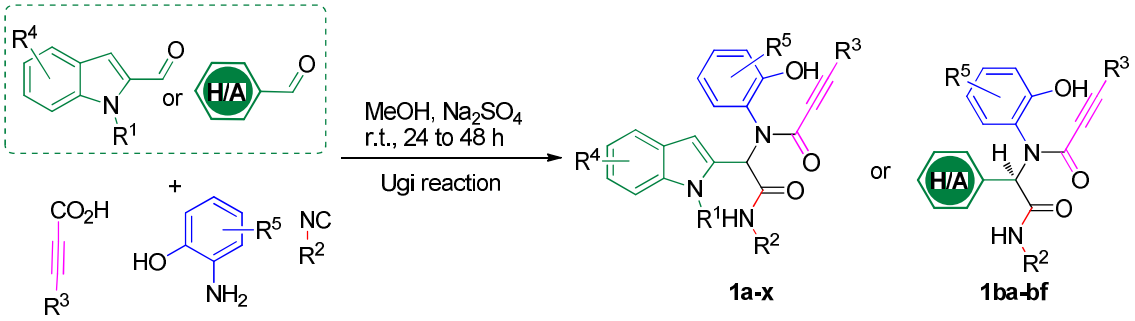
General Methods

NMR spectra were recorded on a 300, 400 or 600 MHz instrument using $CDCl_3$ or DMSO-d_6 as solvent. For Ugi adducts, the mixture of $CDCl_3$ and DMSO-d_6 was applied as solvent wherever is necessary. The ^1H and ^{13}C chemical shifts are reported in parts per million relative to tetramethylsilane as an internal standard. Spectra were acquired on a quadrupole orthogonal acceleration time-of-flight mass spectrometer (Synapt G2 HDMS, Waters, Milford, MA). Samples were infused at 3uL/min and spectra were obtained in positive (or: negative) ionization mode with a resolution of 15000 (FWHM) using leucine enkephalin as lock mass. For chromatography, analytical TLC plates and 70-230 mesh silica gel were used. All the solvents and chemicals were purchased and used as available. Data for ^1H NMR are recorded as follows: chemical shift (δ, ppm), multiplicity (s = singlet, d = doublet, t = triplet, m = multiplet or unresolved, brs = broad singlet, coupling constant (s) in Hz, integration). Data for ^{13}C NMR are reported in terms of chemical shift (δ, ppm).

General procedure for the synthesis of Ugi products

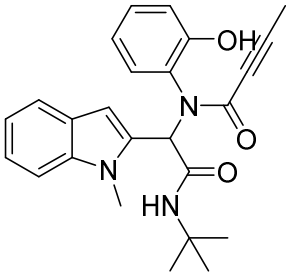
Table S1: Starting materials for Ugi reaction

Aldehydes	 **1A**  **1B**  **1C**  **1D**  **1E**  **1F**  **1G**  **1H**  **1I**  **1J**  **1K**  **1L**  **1M**
Amines	 **2A**  **2B**  **2C**  **2D**  **2E**  **2F**
Acids	 **3A**  **3B**  **3C**  **3D**  **3E**  **3F**
Isonitriles	 **4A**  **4B**  **4C**  **4D**  **4E**  **4F**



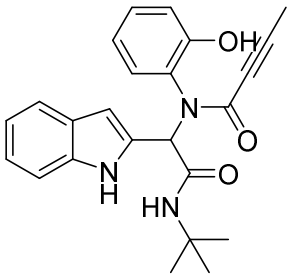
A screw-cap vial equipped with a magnetic stir bar was charged with aldehyde (0.8 mmol, 1.0 equiv.), amine (0.88 mmol, 1.1 equiv.), alkylnoic acid (0.88 mmol, 1.1 equiv), isonitrile (0.88 mmol, 1.1 equiv.), Na_2SO_4 (0.2 g) and methanol (3 mL). The reaction mixture was stirred at room temperature for 24-48 h. The reaction solution was diluted with water (25 mL) and extracted with EtOAc (50 mL). The organic layer was washed with brine (25 mL), dried over $MgSO_4$ and then concentrated under reduced pressure. The obtained residue was purified by column chromatography on silica gel with EtOAc/Heptane (v/v, 1/2) to provide the desired Ugi products **1a-x** and **1ba-bf** as solid.

N-(2-(*tert*-butylamino)-1-(1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxyphenyl)but-2-ynamide **(1a)**



Pale yellow solid, Yield 68%, Melting point: 137-138 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.62 (s, 1H), 8.56 (s, 1H), 7.36 (d, *J* = 8.4 Hz, 2H), 7.12 – 7.03 (m, 1H), 6.97 – 6.78 (m, 3H), 6.65 (d, *J* = 8.1 Hz, 1H), 6.43 (t, *J* = 7.5 Hz, 1H), 6.19 (s, 1H), 6.18 (s, 1H), 3.75 (s, 3H), 1.68 (s, 3H), 1.33 (s, 9H). **^{13}C NMR (101 MHz, DMSO-*d*$_6$)** δ = 171.4, 156.2, 155.0, 137.4, 132.5, 131.2, 130.7, 126.8, 125.7, 122.2, 120.9, 119.7, 118.7, 117.1, 110.2, 102.6, 90.5, 74.1, 60.2, 57.6, 51.8, 30.4, 28.8, 28.5, 28.4, 21.2, 14.6, 3.7, 3.6. **HRMS (ESI)** calculated for $C_{25}H_{28}N_3O_3$ $[M+H]^+$: 418.2131, found 418.2122.

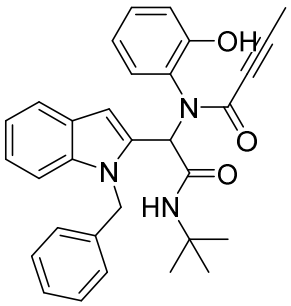
N-(2-(*tert*-butylamino)-1-(1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxyphenyl)but-2-ynamide **(1b)**



Pale yellow solid, Yield 77%, Melting point: 175-177 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.57 (s, 1H), 11.22 (s, 1H), 8.64 (s, 1H), 7.33 (d, *J* = 7.8 Hz, 1H), 7.23 (d, *J* = 8.1 Hz, 1H), 7.03 (dd, *J* = 7.9, 1.6 Hz, 1H), 6.99 (t, *J* = 7.6 Hz, 1H), 6.94 – 6.89 (m, 1H), 6.85 (t, *J* = 7.5 Hz, 1H), 6.63 (dd, *J* = 8.2, 1.3 Hz, 1H), 6.44 (t, *J* = 7.5 Hz, 1H), 6.07 (s, 2H), 1.68 (s, 3H), 1.33 (s, 9H). **^{13}C NMR (101 MHz, DMSO-*d*$_6$)** δ = 171.3, 156.2, 154.8, 136.6, 132.3, 131.5, 130.4, 127.5, 125.9, 122.0, 120.7, 119.3, 118.4,

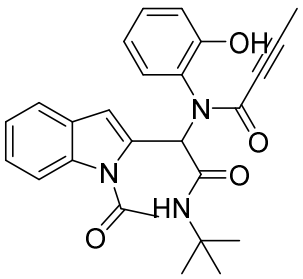
116.9, 111.4, 102.2, 90.1, 74.2, 59.7, 51.8, 28.5, 3.6. **HRMS (ESI)** calculated for $C_{24}H_{26}N_3O_3$ $[M+H]^+$: 404.1974, found 404.1966.

N-(1-(1-benzyl-1*H*-indol-2-yl)-2-(*tert*-butylamino)-2-oxoethyl)-*N*-(2-hydroxyphenyl)but-2-ynamide **(1c)**



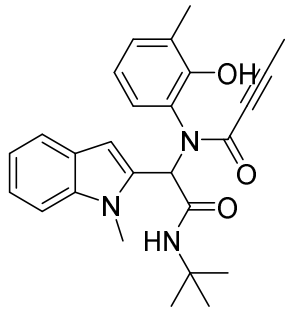
Pale yellow solid, Yield 35%, Melting point: 164-165 ^oC. **^{1}H NMR (300 MHz, DMSO-d_6)** δ = 11.63 (s, 1H), 8.59 (s, 1H), 7.42 – 7.29 (m, 5H), 7.24 – 7.16 (m, 2H), 7.09 – 7.00 (m, 1H), 6.95 – 6.82 (m, 2H), 6.65 (dd, *J* = 8.2, 1.4 Hz, 1H), 6.26 (s, 1H), 6.23 – 6.15 (m, 2H), 5.70 (dd, *J* = 7.9, 1.7 Hz, 1H), 5.56 (d, *J* = 16.7 Hz, 1H), 5.46 (d, *J* = 16.7 Hz, 1H), 1.63 (s, 3H), 1.30 (s, 9H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.2, 156.1, 155.0, 138.2, 137.3, 132.3, 131.6, 130.5, 129.0, 128.1, 128.0, 127.0, 125.5, 122.6, 121.0, 120.0, 118.5, 116.9, 111.1, 103.8, 90.3, 74.1, 60.2, 57.8, 51.9, 47.0, 28.7, 28.5, 28.4, 21.2, 14.6, 3.6. **HRMS (ESI)** calculated for $C_{31}H_{32}N_3O_3$ $[M+H]^+$: 494.2444, found 494.2458.

N-(1-(1-acetyl-1*H*-indol-2-yl)-2-(*tert*-butylamino)-2-oxoethyl)-*N*-(2-hydroxyphenyl)but-2-ynamide **(1d)**



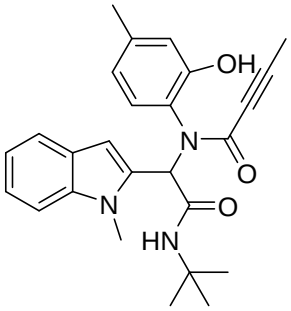
Pale yellow solid, Yield 57%, Melting point: 185-187 ^oC. **^{1}H NMR (300 MHz, DMSO-d_6)** δ = 11.47 (s, 1H), 11.24 (s, 1H), 8.62 (s, 1H), 7.35 (d, *J* = 7.9 Hz, 1H), 7.24 (dd, *J* = 8.0, 1.0 Hz, 1H), 7.00 (ddd, *J* = 8.2, 7.0, 1.2 Hz, 1H), 6.95 – 6.79 (m, 2H), 6.48 – 6.40 (m, 1H), 6.31 – 6.19 (m, 1H), 6.07 (s, 1H), 6.05 (s, 1H), 2.03 (s, 3H), 1.69 (s, 3H), 1.33 (s, 9H). **^{13}C NMR (101 MHz, DMSO-d_6)** δ = 171.8, 169.4, 156.0, 155.0, 135.1, 132.2, 130.5, 129.4, 127.4, 125.8, 125.5, 123.8, 119.7, 118.5, 117.0, 116.0, 115.1, 90.0, 74.2, 57.1, 51.8, 28.8, 28.5, 28.5, 24.2, 3.6. **HRMS (ESI)** calculated for $C_{26}H_{38}N_3O_4$ $[M+H]^+$: 446.2080, found 446.2083

N-(2-(tert-butylamino)-1-(1-methyl-1H-indol-2-yl)-2-oxoethyl)-N-(2-hydroxy-3-methylphenyl) but-2-ynamide **(1e)**



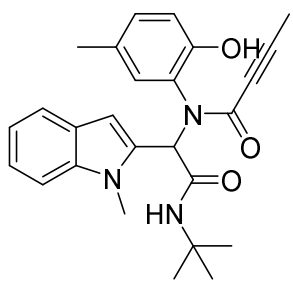
Yellow solid, Yield 65% (Mixture of rotamers ≈1: 2), Melting point: 196-197 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 9.26 (s, 1H), 7.87 (s, 0.39H), 7.75 (d, *J* = 8.7 Hz, 0.54H), 7.63 (s, 1H), 7.42 (t, *J* = 8.0 Hz, 0.60H), 7.35 (dd, *J* = 8.1, 4.5 Hz, 1.22H), 7.16 – 7.10 (m, 0.40H), 7.10 – 7.04 (m, 0.64H), 6.97 (t, *J* = 7.4 Hz, 0.39H), 6.92 (t, *J* = 7.5 Hz, 0.63H), 6.51 (d, *J* = 2.6 Hz, 0.36H), 6.47 (dd, *J* = 8.7, 2.8 Hz, 0.56H), 6.33 (s, 0.35H), 6.29 (s, 0.52H), 6.27 – 6.23 (m, 1H), 6.12 (dd, *J* = 8.6, 2.6 Hz, 0.38H), 6.08 (d, *J* = 8.6 Hz, 0.46H), 6.03 (s, 0.57H), 3.68 (s, 1.32H), 3.66 (s, 1.61H), 1.74 (s, 1.07H), 1.70 (s, 2.02H), 1.25 (s, 9H), 1.20 (s, 3H). **^{13}C NMR (101 MHz, DMSO-*d*$_6$)** δ = 168.0, 166.4, 156.9, 156.8, 154.9, 154.8, 140.4, 138.3, 137.6, 137.2, 135.0, 133.5, 133.0, 130.3, 129.6, 129.3, 127.1, 126.9, 121.9, 120.8, 119.6, 117.0, 116.3, 113.0, 112.5, 110.3, 110.1, 104.7, 103.7, 89.3, 79.6, 74.8, 56.5, 56.0, 51.0, 50.8, 30.6, 30.3, 28.8, 28.7, 28.6, 18.9, 17.7, 3.6. **HRMS (ESI)** calculated for $C_{26}H_{30}N_3O_3$ $[M+H]^+$: 432.2287, found 432.2290.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl) but-2-ynamide **(1f)**



Pale yellow solid, Yield 57%, Melting point: 209-210 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.51 (s, 1H), 8.52 (s, 1H), 7.44 – 7.25 (m, 2H), 7.11 – 7.03 (m, 1H), 6.95 – 6.88 (m, 1H), 6.74 (d, *J* = 8.0 Hz, 1H), 6.48 – 6.43 (m, 1H), 6.24 (dd, *J* = 8.1, 2.0 Hz, 1H), 6.16 (s, 2H), 3.73 (s, 3H), 2.02 (s, 3H), 1.69 (s, 3H), 1.31 (s, 9H). **^{13}C NMR (101 MHz, DMSO-*d*$_6$)** δ = 171.4, 155.8, 155.2, 140.0, 137.5, 132.6, 130.8, 126.8, 123.2, 122.2, 121.0, 119.7, 119.6, 117.7, 110.2, 102.6, 90.5, 79.7, 74.2, 57.5, 51.8, 30.4, 28.5, 21.2, 3.71. **HRMS (ESI)** calculated for $C_{26}H_{30}N_3O_3$ $[M+H]^+$: 432.2287, found 432.2274.

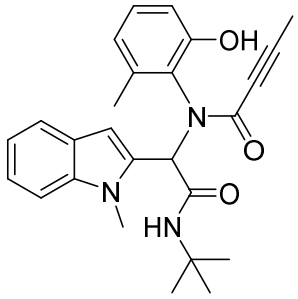
N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-5-methylphenyl) but-2-ynamide **(1g)**



Pale yellow solid, Yield 77%, Melting point: 137-138 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.29 (s, 1H), 8.51 (s, 1H), 7.36 (d, *J* = 7.8 Hz, 2H), 7.11 – 7.03 (m, 1H), 6.91 (t, *J* = 7.5 Hz, 1H), 6.71 (dd, *J* = 8.3, 2.1 Hz, 1H), 6.66 (s, 1H), 6.52 (d, *J* = 8.2 Hz, 1H), 6.15 (s, 2H), 3.73 (s, 3H), 1.88 (s, 3H), 1.69 (s, 3H), 1.31 (s, 9H). **^{13}C NMR**

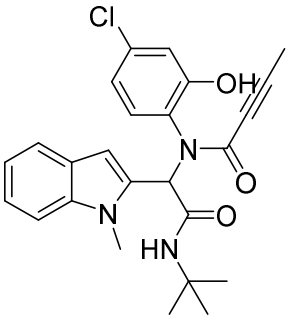
(151 MHz, DMSO-d_6) δ = 171.3, 154.9, 153.8, 137.5, 132.6, 131.2, 127.1, 126.8, 125.3, 122.2, 120.9, 119.7, 116.7, 110.1, 102.7, 90.3, 79.6, 74.2, 57.6, 51.8, 30.5, 28.8, 28.5, 20.0, 3.6. **HRMS (ESI)** calculated for $C_{26}H_{30}N_3O_3$ $[M+H]^+$: 432.2287, found 432.2283.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-6-methylphenyl) but-2-ynamide **(1h)**



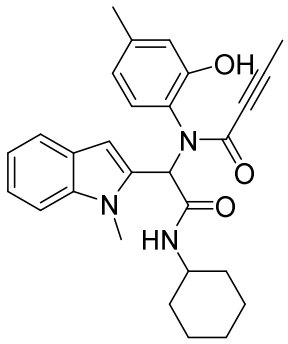
Pale yellow solid, Yield 37%, Melting point: 182-183 ^oC. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.69 (s, 1H), 8.51 (s, 1H), 7.35 (dd, *J* = 8.0, 2.9 Hz, 2H), 7.09 (t, *J* = 7.6 Hz, 1H), 6.92 (t, *J* = 7.5 Hz, 1H), 6.86 (t, *J* = 7.8 Hz, 1H), 6.56 (d, *J* = 8.0 Hz, 1H), 6.37 (d, *J* = 7.4 Hz, 1H), 6.28 (s, 1H), 6.12 (s, 1H), 3.74 (s, 3H), 1.98 (s, 3H), 1.68 (s, 3H), 1.26 (s, 9H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.6, 156.7, 155.3, 138.3, 137.6, 131.4, 130.1, 126.8, 124.9, 122.3, 120.9, 120.3, 119.9, 114.5, 110.6, 103.8, 88.9, 79.6, 73.9, 57.5, 51.8, 30.9, 28.4, 18.2, 3.6. **HRMS (ESI)** calculated for $C_{26}H_{30}N_3O_3$ $[M+H]^+$: 432.2287, found 432.2279.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(4-chloro-2-hydroxyphenyl)but-2-ynamide **(1i)**



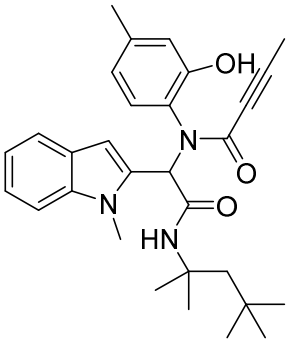
Yellow solid, Yield 47%, Melting point: 226-228 ^oC. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 12.16 (s, 1H), 8.63 (s, 1H), 7.38 (t, *J* = 7.4 Hz, 2H), 7.10 (t, *J* = 7.6 Hz, 1H), 6.95 (t, *J* = 7.8 Hz, 2H), 6.71 (d, *J* = 2.4 Hz, 1H), 6.49 (dd, *J* = 8.5, 2.4 Hz, 1H), 6.17 (s, 2H), 3.74 (s, 3H), 1.73 (s, 3H), 1.31 (s, 9H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.4, 157.3, 154.7, 137.5, 134.3, 132.7, 132.1, 126.7, 125.0, 122.4, 121.0, 119.8, 118.8, 117.0, 110.2, 102.6, 91.0, 79.6, 74.0, 57.5, 52.0, 30.4, 28.8, 28.4, 3.6. **HRMS (ESI)** calculated for $C_{25}H_{27}ClN_3O_3$ $[M+H]^+$: 452.1741, found 452.1735.

N-(2-(cyclohexylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl) but-2-ynamide **(1j)**



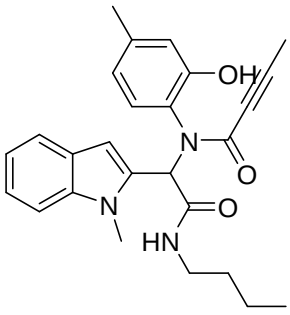
Pale yellow solid, Yield 39%, Melting point: 162-163 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.48 (s, 1H), 8.73 (d, *J* = 7.6 Hz, 1H), 7.37 (d, *J* = 8.3 Hz, 2H), 7.08 (t, *J* = 7.7 Hz, 1H), 6.91 (t, *J* = 7.5 Hz, 1H), 6.72 (d, *J* = 8.0 Hz, 1H), 6.48 (s, 1H), 6.24 (d, *J* = 8.3 Hz, 1H), 6.18 (s, 1H), 6.14 (s, 1H), 3.74 (s, 3H), 3.71 – 3.60 (m, 1H), 2.02 (s, 3H), 1.85 – 1.71 (m, 3H), 1.69 (s, 3H), 1.65 – 1.49 (m, 2H), 1.36 – 1.18 (m, 3H), 1.17 – 0.98 (m, 2H). **^{13}C NMR (151 MHz, DMSO-*d*$_6$)** δ = 171.0, 155.8, 155.2, 140.1, 137.5, 132.4, 130.8, 126.8, 123.1, 122.2, 121.0, 119.7, 117.7, 110.2, 102.8, 90.5, 79.7, 74.2, 57.1, 49.2, 32.3, 32.1, 30.4, 25.5, 24.8, 24.7, 21.2, 3.7. **HRMS (ESI)** calculated for $C_{28}H_{32}N_3O_3$ $[M+H]^+$: 458.2444, found 458.2450.

N-(2-hydroxy-4-methylphenyl)-*N*-(1-(1-methyl-1*H*-indol-2-yl)-2-oxo-2-((2,4,4-trimethylpentan-2-yl)amino)ethyl)but-2-ynamide **(1k)**



Pale yellow solid, Yield 87%, Melting point: 149-150 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.52 (s, 1H), 8.36 (s, 1H), 7.36 (d, *J* = 8.4 Hz, 2H), 7.07 (t, *J* = 7.8 Hz, 1H), 6.91 (t, *J* = 7.5 Hz, 1H), 6.69 (d, *J* = 8.0 Hz, 1H), 6.47 (s, 1H), 6.23 (dd, *J* = 8.1, 1.9 Hz, 1H), 6.19 (s, 1H), 6.15 (s, 1H), 3.73 (s, 3H), 2.01 (s, 3H), 1.94 (d, *J* = 14.7 Hz, 1H), 1.69 (s, 3H), 1.56 (d, *J* = 14.7 Hz, 1H), 1.38 (s, 3H), 1.31 (s, 3H), 0.94 (s, 9H). **^{13}C NMR (151 MHz, DMSO-*d*$_6$)** δ = 171.0, 155.8, 155.1, 140.0, 137.4, 132.6, 130.8, 126.8, 123.3, 122.1, 120.9, 119.6, 117.7, 110.2, 102.8, 90.4, 79.7, 74.3, 57.6, 55.9, 51.0, 31.8, 31.7, 31.5, 30.4, 29.0, 28.6, 21.2, 3.7. **HRMS (ESI)** calculated for $C_{30}H_{38}N_3O_3$ $[M+H]^+$: 488.2913, found 488.2911.

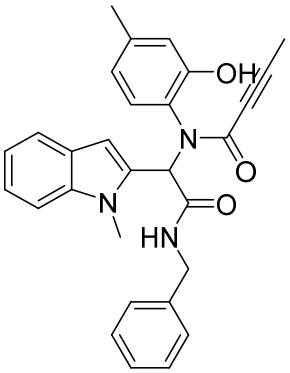
N-(2-(butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(1l)**



Pale yellow solid, Yield 52%, Melting point: 172-173 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.46 (s, 1H), 8.84 (t, *J* = 5.7 Hz, 1H), 7.39 – 7.27 (m, 2H), 7.08 (t, *J* = 7.6 Hz, 1H), 6.92 (t, *J* = 7.5 Hz, 1H), 6.72 (d, *J* = 8.0 Hz, 1H), 6.49 (s, 1H), 6.24 (d, *J* = 7.4 Hz, 1H), 6.19 (s, 1H), 6.14 (s, 1H), 3.74 (s, 3H), 3.20 (q, *J* = 6.5 Hz, 2H), 2.02 (s, 3H), 1.69 (s, 3H), 1.45 – 1.35 (m, 2H), 1.31 – 1.18 (m, 2H), 0.85 (t, *J* = 7.3 Hz, 3H). **^{13}C NMR (101 MHz, DMSO-*d*$_6$)** δ = 172.0, 155.8, 155.2, 140.1, 137.5, 132.3,

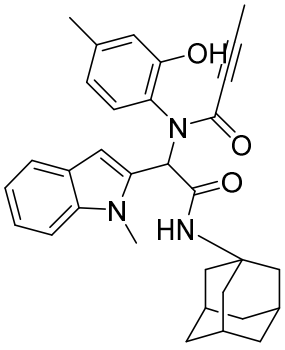
130.8, 126.8, 123.1, 122.3, 120.9, 119.7, 117.7, 110.3, 102.9, 90.5, 74.2, 57.1, 31.0, 30.4, 21.2, 19.8, 14.0, 3.7. **HRMS (ESI)** calculated for $C_{26}H_{30}N_3O_3$ $[M+H]^+$: 432.2287, found 432.2279.

N-(2-(benzylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(1m)**



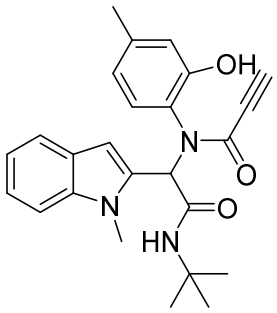
Pale yellow solid, Yield 55%, Melting point: 196-197 ^oC. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.31 (s, 1H), 9.36 (t, *J* = 5.9 Hz, 1H), 7.50 – 7.19 (m, 8H), 7.08 (t, *J* = 7.9 Hz, 1H), 6.92 (t, *J* = 7.6 Hz, 1H), 6.75 (d, *J* = 7.9 Hz, 1H), 6.50 (s, 1H), 6.27 (s, 1H), 6.16 (s, 1H), 4.52 (dd, *J* = 15.1, 6.1 Hz, 1H), 4.38 (dd, *J* = 15.1, 5.3 Hz, 1H), 3.75 (s, 3H), 2.03 (s, 3H), 1.70 (s, 3H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 172.3, 155.7, 155.2, 140.2, 138.4, 137.5, 132.0, 130.9, 128.8, 128.6, 127.9, 127.9, 127.7, 127.6, 126.7, 123.1, 122.3, 120.9, 119.9, 119.8, 117.7, 110.3, 103.1, 90.7, 74.1, 57.2, 43.4, 30.3, 21.2, 3.7. **HRMS (ESI)** calculated for $C_{29}H_{28}N_3O_3$ $[M+H]^+$: 466.2131, found 466.2128.

N-(2-((3s,5s,7s)-adamantan-1-ylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(1n)**



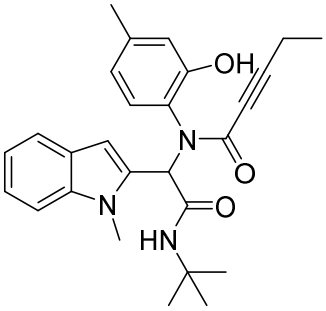
Light red solid, Yield 67%, Melting point: 162-163 ^oC. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.49 (s, 1H), 8.40 (s, 1H), 7.37 (t, *J* = 7.6 Hz, 2H), 7.08 (t, *J* = 7.7 Hz, 1H), 6.91 (t, *J* = 7.5 Hz, 1H), 6.74 (d, *J* = 7.9 Hz, 1H), 6.46 (s, 1H), 6.24 (dd, *J* = 8.1, 1.8 Hz, 1H), 6.16 (s, 1H), 6.15 (s, 1H), 3.72 (s, 3H), 2.06 – 2.02 (m, 3H), 2.01 (s, 2H), 1.98 – 1.90 (m, 6H), 1.69 (s, 2H), 1.64 (s, 6H), 1.25 (s, 1H), 0.86 (t, *J* = 6.6 Hz, 1H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.2, 155.8, 155.1, 140.0, 137.5, 132.7, 130.8, 126.8, 123.2, 122.2, 121.0, 119.7, 119.6, 117.7, 110.2, 102.6, 90.4, 74.2, 57.6, 52.5, 40.9, 36.3, 31.7, 30.4, 29.3, 29.2, 28.8, 22.6, 21.2, 14.4, 3.7. **HRMS (ESI)** calculated for $C_{32}H_{36}N_3O_3$ $[M+H]^+$: 510.2757, found 510.2755.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)propiolamide **(1o)**



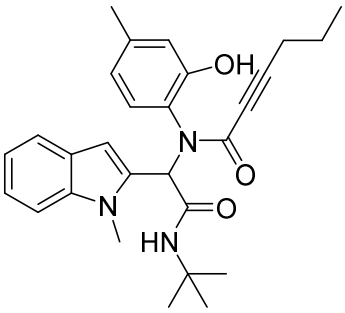
Yellow solid, Yield 77%, Melting point: 209-211 °C. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.50 (s, 1H), 8.56 (s, 1H), 7.41 – 7.33 (m, 2H), 7.08 (t, *J* = 7.6 Hz, 1H), 6.92 (t, *J* = 7.5 Hz, 1H), 6.79 (d, *J* = 8.0 Hz, 1H), 6.48 (s, 1H), 6.28 – 6.22 (m, 1H), 6.17 (s, 1H), 6.17 (s, 1H), 4.19 (s, 1H), 3.75 (s, 3H), 2.02 (s, 3H), 1.31 (s, 9H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.2, 155.9, 154.4, 140.5, 137.5, 132.3, 130.8, 126.8, 122.8, 122.3, 121.0, 119.8, 119.7, 117.8, 110.3, 102.7, 83.1, 76.6, 57.7, 51.9, 30.4, 28.8, 28.5, 21.2. **HRMS (ESI)** calculated for $C_{25}H_{28}N_3O_3$ $[M+H]^+$: 418.2131, found 418.2128.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)pent-2-ynamide **(1p)**



Pale yellow solid, Yield 83%, Melting point: 235-237 °C. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.50 (s, 1H), 8.53 (s, 1H), 7.37 (dd, *J* = 8.1, 3.6 Hz, 2H), 7.08 (t, *J* = 7.6 Hz, 1H), 6.91 (t, *J* = 7.5 Hz, 1H), 6.73 (d, *J* = 8.0 Hz, 1H), 6.47 (s, 1H), 6.25 (dd, *J* = 8.1, 1.9 Hz, 1H), 6.17 (s, 1H), 6.16 (s, 1H), 3.74 (s, 3H), 2.04 (q, *J* = 7.4 Hz, 2H), 2.02 (s, 3H), 1.31 (s, 9H), 0.71 (t, *J* = 7.4 Hz, 3H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.5, 155.9, 155.2, 140.1, 137.5, 132.7, 130.9, 126.8, 123.4, 122.2, 121.0, 119.7, 119.6, 117.5, 110.2, 102.5, 95.2, 79.6, 74.5, 57.4, 51.8, 30.4, 28.8, 28.5, 21.2, 12.9, 11.9. **HRMS (ESI)** calculated for $C_{27}H_{32}N_3O_3$ $[M+H]^+$: 446.2444, found 446.2438.

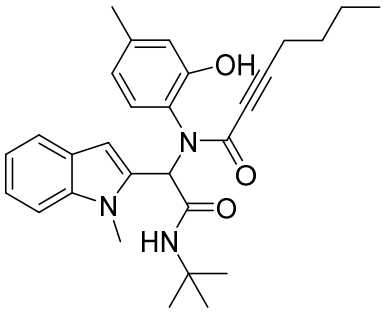
N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)hex-2-ynamide **(1q)**



Pale yellow solid, Yield 88%, Melting point: 203-204 °C. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.50 (s, 1H), 8.53 (s, 1H), 7.44 – 7.26 (m, 2H), 7.08 (t, *J* = 7.6 Hz, 1H), 6.91 (t, *J* = 7.5 Hz, 1H), 6.73 (d, *J* = 8.0 Hz, 1H), 6.46 (s, 1H), 6.24 (dd, *J* = 8.1, 1.9 Hz, 1H), 6.16 (s, 2H), 3.74 (s, 3H), 2.05 (t, *J* = 6.7 Hz, 2H), 2.01 (s, 3H), 1.31 (s, 9H), 1.17 – 0.95 (m, 2H), 0.59 (t, *J* = 7.3 Hz, 3H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.5, 156.0, 155.2, 140.1, 137.5, 132.7, 130.9, 126.8, 123.3, 122.2, 121.0, 119.7, 119.6, 117.6, 110.2, 102.5, 93.9, 75.2, 57.4, 51.8, 30.4,

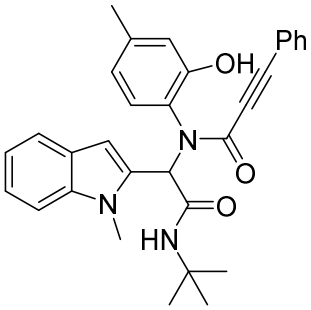
28.5, 21.1, 21.0, 20.1, 13.1. **HRMS (ESI)** calculated for $C_{28}H_{34}N_3O_3$ $[M+H]^+$: 460.2600, found 460.2594.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl) hept-2-ynamide **(1r)**



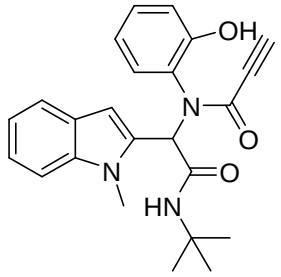
White solid, Yield 63%, Melting point: 206-207 °C. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.49 (s, 1H), 8.52 (s, 1H), 7.50 – 7.20 (m, 2H), 7.08 (t, *J* = 7.6 Hz, 1H), 6.91 (t, *J* = 7.5 Hz, 1H), 6.73 (d, *J* = 8.0 Hz, 1H), 6.47 (s, 1H), 6.24 (dd, *J* = 8.1, 1.9 Hz, 1H), 6.16 (s, 2H), 3.74 (s, 3H), 2.08 (t, *J* = 6.4 Hz, 2H), 2.02 (s, 3H), 1.31 (s, 9H), 1.09 – 0.88 (m, 4H), 0.68 (t, *J* = 7.1 Hz, 3H). **^{13}C NMR (101 MHz, DMSO-d_6)** δ = 171.5, 156.0, 155.2, 140.1, 137.5, 132.7, 130.8, 126.8, 123.3, 122.2, 121.0, 119.7, 119.6, 117.6, 110.2, 102.5, 94.0, 79.7, 75.1, 57.4, 51.8, 30.4, 29.5, 28.5, 21.2, 17.9, 13.8. **HRMS (ESI)** calculated for $C_{29}H_{36}N_3O_3$ $[M+H]^+$: 474.2757, found 474.2745.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)-3-phenylpropiolamide **(1s)**



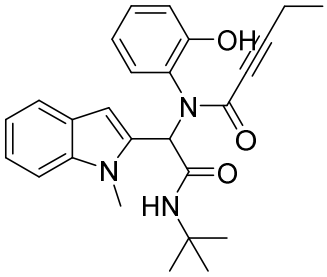
Yellow solid, Yield 19%, Melting point: 219-220 °C. **^{1}H NMR (600 MHz, DMSO-d_6)** δ = 11.63 (s, 1H), 8.62 (s, 1H), 7.47 – 7.38 (m, 3H), 7.35 (t, *J* = 7.8 Hz, 2H), 7.11 (t, *J* = 7.8 Hz, 1H), 7.06 (d, *J* = 7.6 Hz, 2H), 6.94 (t, *J* = 7.6 Hz, 1H), 6.89 (d, *J* = 8.0 Hz, 1H), 6.55 (s, 1H), 6.34 (d, *J* = 7.8 Hz, 1H), 6.25 (s, 1H), 6.23 (s, 1H), 3.80 (s, 3H), 2.09 (s, 3H), 1.34 (s, 9H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.3, 170.8, 156.2, 155.1, 140.6, 137.5, 132.7, 132.5, 132.5, 131.2, 131.1, 129.3, 129.3, 126.8, 123.3, 122.3, 121.0, 119.7, 119.7, 119.7, 117.6, 110.3, 102.6, 90.3, 82.7, 60.2, 57.5, 51.9, 30.5, 28.8, 28.5, 21.2, 21.2, 14.6. **HRMS (ESI)** calculated for $C_{31}H_{32}N_3O_3$ $[M+H]^+$: 494.2444, found 494.2439.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxyphenyl) propiolamide **(1t)**



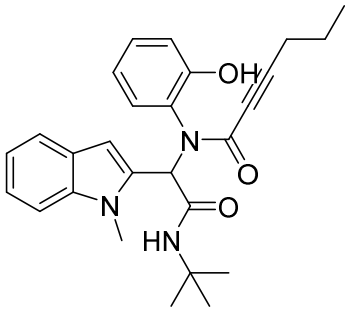
Pale yellow solid, Yield 33%, Melting point: 221-223 °C. **^{1}H NMR (300 MHz, DMSO-*d*$_6$)** δ = 11.65 (s, 1H), 8.64 (s, 1H), 7.50 – 7.25 (m, 2H), 7.10 (t, *J* = 7.9 Hz, 1H), 6.94 (q, *J* = 7.9, 7.4 Hz, 3H), 6.68 (d, *J* = 8.2 Hz, 1H), 6.46 (t, *J* = 7.8 Hz, 1H), 6.22 (s, 2H), 4.22 (s, 1H), 3.78 (s, 3H), 1.34 (s, 9H). **^{13}C NMR (75 MHz, DMSO-*d*$_6$)** δ = 170.6, 155.8, 153.7, 137.0, 131.6, 130.7, 130.5, 126.2, 124.9, 121.8, 119.2, 118.4, 116.8, 109.7, 102.2, 76.1, 76.0, 57.2, 51.4, 50.5, 29.9, 27.9. **HRMS (ESI)** calculated for $C_{24}H_{26}N_3O_3$ $[M+H]^+$: 404.1974, found 404.1962.

N-(2-(*ter*t-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxyphenyl)pent-2-ynamide **(1u)**



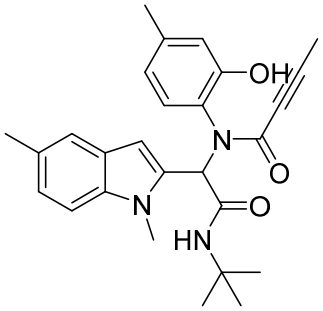
Pale yellow solid, Yield 90%, Melting point: 180-181 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.61 (s, 1H), 8.56 (s, 1H), 7.35 (d, *J* = 8.8 Hz, 2H), 7.11 – 7.01 (m, 1H), 6.96 – 6.81 (m, 3H), 6.64 (dd, *J* = 8.2, 1.4 Hz, 1H), 6.42 (td, *J* = 7.6, 1.5 Hz, 1H), 6.18 (s, 1H), 6.17 (s, 1H), 3.75 (s, 3H), 2.03 (q, *J* = 7.4 Hz, 2H), 1.31 (s, 9H), 0.70 (t, *J* = 7.4 Hz, 3H). **^{13}C NMR (101 MHz, DMSO-*d*$_6$)** δ = 171.4, 156.3, 155.0, 137.5, 132.5, 131.2, 130.6, 126.8, 125.9, 122.2, 120.9, 119.7, 118.7, 117.1, 110.2, 102.6, 95.3, 74.4, 57.5, 51.8, 30.4, 28.8, 28.5, 12.9, 11.8. **HRMS (ESI)** calculated for $C_{26}H_{30}N_3O_3$ $[M+H]^+$: 432.2287, found 432.2297.

N-(2-(*tert*-butylamino)-1-(1-methyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxyphenyl)hex-2-ynamide **(1v)**



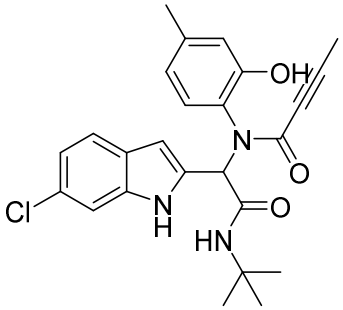
Pale yellow solid, Yield 61%, Melting point: 185-187 °C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.60 (s, 1H), 8.56 (s, 1H), 7.35 (d, *J* = 8.7 Hz, 2H), 7.13 – 7.02 (m, 1H), 6.96 – 6.76 (m, 3H), 6.64 (dd, *J* = 8.2, 1.4 Hz, 1H), 6.42 (td, *J* = 7.6, 1.5 Hz, 1H), 6.18 (s, 1H), 6.17 (s, 1H), 3.75 (s, 3H), 2.04 (t, *J* = 6.7 Hz, 2H), 1.31 (s, 9H), 1.15 – 1.01 (m, 2H), 0.60 (t, *J* = 7.4 Hz, 3H). **^{13}C NMR (101 MHz, DMSO-*d*$_6$)** δ = 171.4, 156.3, 155.0, 137.4, 132.5, 131.2, 130.6, 126.8, 125.9, 122.2, 120.9, 119.7, 118.7, 117.1, 110.2, 102.6, 94.0, 79.6, 75.2, 57.5, 51.8, 30.4, 28.5, 21.0, 20.1, 13.3. **HRMS (ESI)** calculated for $C_{27}H_{32}N_3O_3$ $[M+H]^+$: 446.2444, found 446.2454.

N-(2-(*tert*-butylamino)-1-(1,5-dimethyl-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(1w)**



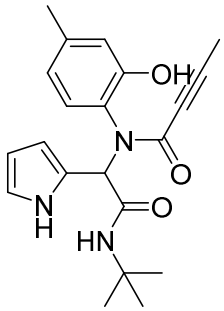
Pale yellow solid, Yield 70%, Melting point: 177-179 ^{o}C. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** δ = 11.50 (s, 1H), 8.50 (s, 1H), 7.24 (d, *J* = 8.4 Hz, 1H), 7.14 (s, 1H), 6.90 (d, *J* = 8.4 Hz, 1H), 6.73 (d, *J* = 8.0 Hz, 1H), 6.46 (s, 1H), 6.24 (d, *J* = 7.8 Hz, 1H), 6.12 (s, 1H), 6.06 (s, 1H), 3.70 (s, 3H), 2.27 (s, 3H), 2.02 (s, 3H), 1.69 (s, 3H), 1.30 (s, 9H). **^{13}C NMR (101 MHz, DMSO-*d*$_6$)** δ = 171.5, 155.8, 155.2, 140.0, 136.0, 132.5, 130.8, 128.2, 127.0, 123.8, 123.2, 120.5, 119.6, 117.6, 109.9, 102.0, 90.4, 79.7, 74.2, 57.6, 51.8, 30.4, 28.5, 21.4, 21.2, 3.7. **HRMS (ESI)** calculated for $C_{27}H_{32}N_3O_3$ $[M+H]^+$: 446.2444, found 446.2444.

N-(2-(*tert*-butylamino)-1-(6-chloro-1*H*-indol-2-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(1x)**



Pale yellow solid, Yield 25%, Melting point: 175-176 ^{o}C. **^{1}H NMR (400 MHz, CDCl$_3$)** δ = 10.48 (s, 1H), 9.77 (s, 1H), 7.50 (d, *J* = 8.5 Hz, 1H), 7.43 (s, 1H), 7.12 (dd, *J* = 8.4, 1.8 Hz, 1H), 6.88 (s, 1H), 6.73 (d, *J* = 7.9 Hz, 1H), 6.56 (dd, *J* = 8.2, 1.7 Hz, 1H), 6.46 – 6.43 (m, 1H), 5.51 (s, 1H), 4.86 (s, 1H), 2.32 (s, 3H), 1.75 (s, 3H), 1.30 (s, 9H). **^{13}C NMR (101 MHz, CDCl$_3$)** δ = 168.3, 157.3, 153.8, 141.4, 137.3, 132.2, 129.3, 128.9, 126.6, 125.6, 121.7, 121.2, 120.3, 118.6, 111.8, 106.1, 92.3, 73.1, 65.4, 52.8, 28.4, 28.3, 21.4, 4.1. **HRMS (ESI)** calculated for $C_{25}H_{27}ClN_3O_3$ $[M+H]^+$: 452.1741, found 452.1728.

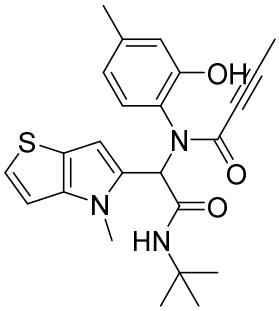
N-(2-(*tert*-butylamino)-2-oxo-1-(1*H*-pyrrol-2-yl)ethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(1ba)**



Yellow solid, Yield 47%, Melting point: 162-174 ^{o}C. **^{1}H NMR (600 MHz, CDCl$_3$)** δ = 10.62 (s, 1H), 9.76 (s, 1H), 6.88 – 6.82 (m, 2H), 6.79 (d, *J* = 7.9 Hz, 1H), 6.57 (d, *J* = 7.4 Hz, 1H), 6.15 (q, *J* = 2.9 Hz, 1H), 6.13 (s, 1H), 5.44 (s, 1H), 4.70 (s, 1H), 2.31 (s, 3H), 1.74 (s, 3H), 1.29 (s, 9H). **^{13}C NMR (151 MHz, CDCl$_3$)** δ = 169.6, 156.9, 153.9, 141.0, 128.9, 126.9,

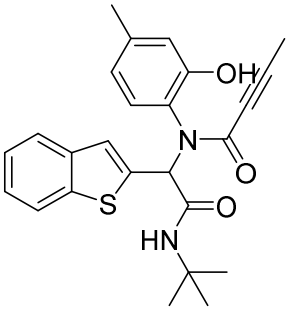
124.6, 120.4, 120.1, 118.5, 117.8, 111.9, 108.6, 108.1, 91.4, 73.3, 65.0, 52.4, 28.4, 28.4, 21.4, 4.0. **HRMS (ESI)** calculated for $C_{21}H_{26}N_3O_3^+$ ([M+H]$^+$): 368.1974, found 368.1966.

N-(2-(*tert*-butylamino)-1-(4-methyl-4*H*-thieno[3,2-*b*]pyrrol-5-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(1bb)**



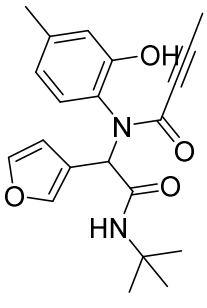
Pale yellow solid, Yield 50%, Melting point: 194-196 ^{o}C. **^{1}H NMR (600 MHz, $CDCl_3$)** δ = 10.68 (s, 1H), 7.09 (d, *J* = 5.3 Hz, 1H), 6.84 (d, *J* = 5.6 Hz, 1H), 6.71 (s, 1H), 6.40 (s, 1H), 6.27 (s, 1H), 6.26 (s, 1H), 6.17 (d, *J* = 8.0 Hz, 1H), 5.84 (s, 1H), 3.69 – 3.36 (m, 3H), 2.17 (s, 3H), 1.69 (s, 3H), 1.36 (s, 9H). **^{13}C NMR (151 MHz, $CDCl_3$)** δ = 170.1, 156.1, 155.5, 140.7, 129.9, 128.8, 124.6, 122.6, 122.0, 120.0, 118.5, 118.3, 109.9, 103.9, 90.6, 73.2, 57.5, 52.8, 32.2, 28.4, 21.3, 4.0. **HRMS (ESI)** calculated for $C_{24}H_{28}N_3O_3S$ [M+H]$^+$: 438.1851, found 438.1855.

N-(1-(benzo[*b*]thiophen-2-yl)-2-(tert-butylamino)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl) but-2-ynamide **(1bc)**



Pale yellow solid, Yield 75%, Melting point: 182-185 ^{o}C. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.20 (s, 1H), 8.64 (s, 1H), 7.87 – 7.66 (m, 2H), 7.37 – 7.17 (m, 3H), 6.74 (d, *J* = 7.9 Hz, 1H), 6.56 (s, 1H), 6.29 (d, *J* = 7.8 Hz, 1H), 6.17 (s, 1H), 2.07 (s, 3H), 1.69 (s, 3H), 1.28 (s, 9H). **^{13}C NMR (101 MHz, DMSO-d_6)** δ = 171.2, 156.0, 155.0, 140.5, 140.1, 138.9, 136.7, 132.5, 126.9, 125.2, 124.8, 124.4, 122.9, 122.8, 122.6, 119.7, 117.5, 90.2, 79.6, 74.2, 61.0, 51.8, 51.0, 28.8, 28.5, 21.3, 3.7. **HRMS (ESI)** calculated for $C_{25}H_{27}N_2O_3S$ [M+H]$^+$: 435.1742, found 435.1730.

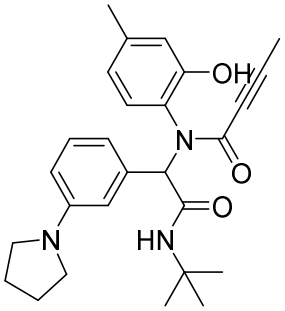
N-(2-(*tert*-butylamino)-1-(furan-3-yl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(1bd)**



Pale yellow solid, Yield 37%, Melting point: 167-168 ^{o}C. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.27 (s, 1H), 8.46 (s, 1H), 7.44 (s, 1H), 7.39 (s, 1H), 6.74 (d, *J* = 7.9 Hz, 1H), 6.57 (d, *J* = 1.8 Hz, 1H), 6.42 (dd, *J* = 8.0, 1.9 Hz, 1H), 6.09 (d, *J* = 1.7 Hz, 1H), 5.74 (s, 1H), 2.16 (s, 3H), 1.70 (s, 3H), 1.27 (s, 9H). **^{13}C NMR (101 MHz, DMSO-d_6)** δ = 172.2, 155.7, 154.9, 143.9, 142.9, 139.9, 132.6, 123.4, 119.7, 118.9, 117.5, 111.1, 89.9, 79.6, 74.4, 57.2, 51.6,

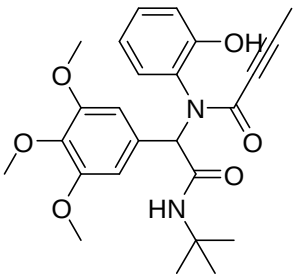
28.5, 21.3, 3.7. **HRMS (ESI)** calculated for $C_{21}H_{25}N_2O_4$ $[M+H]^+$: 369.1814, found 369.1816.

N-(2-(*tert*-butylamino)-2-oxo-1-(3-(pyrrolidin-1-yl)phenyl)ethyl)-*N*-(2-hydroxy-4-methylphenyl) but-2-ynamide **(1be)**



Pale yellow solid, Yield 57%, Melting point: 166-168 ^oC. **^{1}H NMR (600 MHz, DMSO-*d*$_6$)** δ = 11.43 (s, 1H), 8.41 (s, 1H), 6.90 (t, *J* = 7.8 Hz, 1H), 6.54 (d, *J* = 8.0 Hz, 1H), 6.49 (s, 1H), 6.36 – 6.22 (m, 4H), 5.75 (s, 1H), 3.07 (s, 4H), 2.09 (s, 3H), 1.94 – 1.80 (m, 4H), 1.67 (s, 3H), 1.27 (s, 9H). **^{13}C NMR (151 MHz, DMSO-*d*$_6$)** *δ* = 172.7, 156.0, 155.1, 147.8, 139.5, 134.4, 132.7, 129.1, 123.4, 119.4, 117.3, 117.0, 113.6, 112.0, 89.6, 79.6, 74.5, 65.5, 51.6, 47.6, 47.6, 28.6, 25.3, 21.3, 3.7. **HRMS (ESI)** calculated for $C_{27}H_{34}N_3O_3$ $[M+H]^+$: 448.2600, found 448.2595.

N-(2-(*tert*-butylamino)-2-oxo-1-(3,4,5-trimethoxyphenyl)ethyl)-*N*-(2-hydroxyphenyl)but-2-ynamide **(1bf)**



Pale yellow solid, Yield 68%, Melting point: 155-157 ^oC. **^{1}H NMR (400 MHz, DMSO-*d*$_6$)** *δ* = 11.44 (s, 1H), 8.54 (s, 1H), 7.01 (t, *J* = 7.6 Hz, 1H), 6.76 (d, *J* = 7.7 Hz, 1H), 6.70 (d, *J* = 8.0 Hz, 1H), 6.53 – 6.42 (m, 3H), 5.78 (s, 1H), 3.60 (s, 6H), 3.52 (s, 3H), 1.67 (s, 3H), 1.30 (s, 9H). **^{13}C NMR (151 MHz, DMSO-*d*$_6$)** *δ* = 172.2, 170.8, 156.2, 154.8, 152.7, 152.7, 137.8, 133.1, 130.3, 129.3, 125.9, 118.6, 116.7, 107.8, 89.7, 74.4, 65.3, 60.4, 60.2, 56.2, 56.1, 51.7, 28.9, 28.5, 28.5, 21.2, 14.6, 3.6. **HRMS (ESI)** calculated for $C_{25}H_{31}N_2O_6$ $[M+H]^+$: 455.2182, found 455.2179.

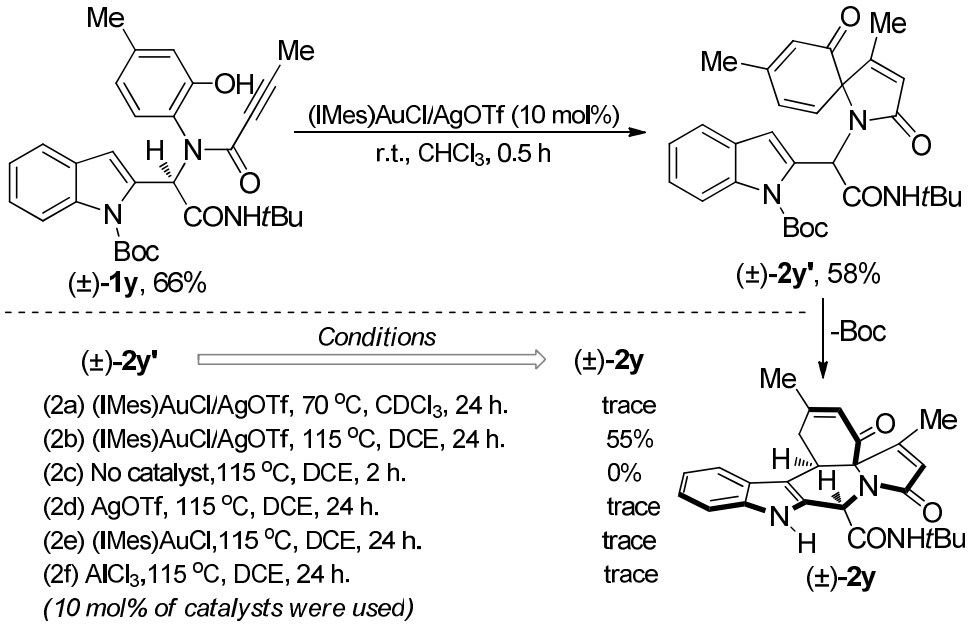
Capture of spirocarbocyclic intermediates and their further reactions

1) Synthesis of spiro intermediate 2y'.

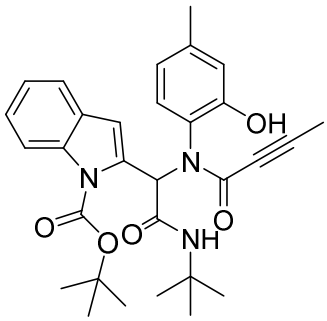
To a glass vial (IMes)AuCl (10 mol%) and AgOTf (10 mol%) were loaded along with chloroform (2 mL) to stir for 1 minute to generate cationic gold catalyst *in situ* without filtration. Ugi products **1y** (100mg, 0.19 mmol) was added and reaction mixture was stirred at room temperature in a screw capped vial for 0.5h. After completion, the reaction mixture was diluted with dichloromethane and evaporated under reduced pressure. The residue obtained was purified by silica gel column chromatography (EtOAc/Heptane = 1: 2) to afford the dearomative spiro intermediate **2y'** in 58% yield (58mg, 0.11 mmol).

2) Transformation of spirocarbocyclic Indole 2y'.

To a glass vial (IMes)AuCl (10 mol%) and AgOTf (10 mol%) were loaded along with chloroform (2 mL) to stir for 1 minute to generate cationic gold catalyst *in situ* without filtration. the dearomative spiro intermediate **2y'** (40mg, 0.075 mmol) was added and reaction mixture was stirred at 115°C in a screw capped vial for 24h. After completion, the reaction mixture was diluted with dichloromethane and evaporated under reduced pressure. The residue obtained was purified by silica gel column chromatography (EtOAc/Heptane = 1: 2) to afford the Boc deprotected **2y** in 55% yield (20mg, 0.04 mmol).

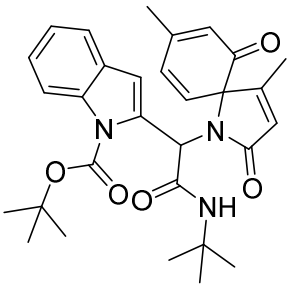


tert-butyl 2-(2-(*tert*-butylamino)-1-(*N*-(2-hydroxy-4-methylphenyl)but-2-ynamido)-2-oxoethyl)-1*H*-indole-1-carboxylate (**1y)**



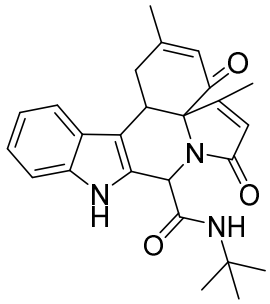
Yellow solid, Yield 66%, Melting point: 205-207 °C. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.57 (s, 1H), 8.64 (s, 1H), 7.95 (d, *J* = 8.5 Hz, 1H), 7.49 (d, *J* = 7.7 Hz, 1H), 7.31 – 7.20 (m, 1H), 7.13 (t, *J* = 7.4 Hz, 1H), 6.81 (d, *J* = 7.9 Hz, 1H), 6.48 (s, 1H), 6.47 (s, 1H), 6.44 (s, 1H), 6.37 – 6.25 (m, 1H), 2.03 (s, 3H), 1.72 (s, 9H), 1.71 (s, 3H), 1.32 (s, 9H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 171.7, 155.9, 154.8, 149.9, 140.2, 136.2, 133.4, 130.4, 128.1, 125.3, 123.4, 123.3, 121.5, 119.6, 117.6, 115.9, 111.4, 90.2, 85.4, 74.2, 60.2, 60.1, 51.8, 28.5, 28.3, 21.2, 21.2, 14.6, 3.7. **HRMS (ESI)** calculated for $C_{30}H_{36}N_3O_5$ $[M+H]^+$: 518.2655, found 518.2665.

tert-butyl 2-(2-(*tert*-butylamino)-1-(4,8-dimethyl-2,10-dioxo-1-azaspiro[4.5]deca-3,6,8-trien-1-yl)-2-oxoethyl)-1*H*-indole-1-carboxylate (**2y'**)



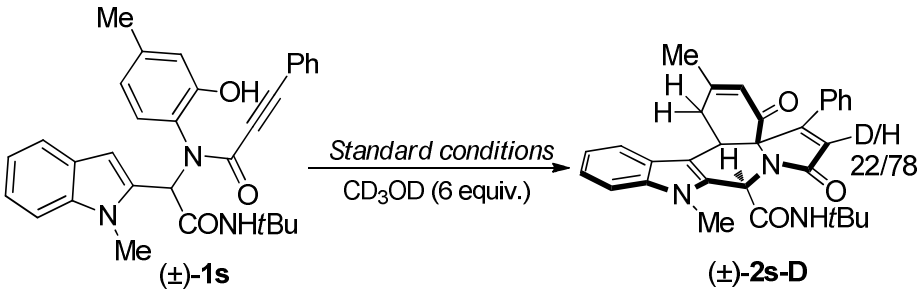
Yellow solid, Yield 58%, Melting point: 161-162 °C. **^{1}H NMR (400 MHz, $CDCl_3$)** δ = 8.06 (d, *J* = 8.4 Hz, 1H), 7.98 (s, 1H), 7.36 (d, *J* = 7.7 Hz, 1H), 7.32 – 7.27 (m, 1H), 7.18 (t, *J* = 7.5 Hz, 1H), 6.32 (s, 1H), 6.27 (s, 1H), 6.07 (q, *J* = 1.6 Hz, 1H), 5.87 (s, 1H), 5.71 (d, *J* = 9.5 Hz, 1H), 5.46 (dd, *J* = 9.5, 1.4 Hz, 1H), 1.66 (s, 9H), 1.65 (s, 3H), 1.48 (s, 9H), 1.37 (s, 3H). **^{13}C NMR (151 MHz, $CDCl_3$)** δ = 196.4, 171.5, 167.6, 157.0, 156.8, 149.7, 137.9, 135.9, 134.9, 128.1, 126.2, 125.3, 124.7, 124.2, 123.1, 121.0, 116.2, 113.3, 85.2, 56.7, 51.4, 34.1, 28.6, 28.4, 28.4, 28.3, 22.4, 22.3, 14.1, 12.1. **HRMS (ESI)** calculated for $C_{30}H_{36}N_3O_5$ $[M+H]^+$: 518.2655, found 518.2659.

tert-butyl 9-(*tert*-butylcarbamoyl)-2,5-dimethyl-4,7-dioxo-1,7,9,14c-tetrahydroindolo[2,3-*c*]pyrrolo[2,1-*j*]quinoline-10(4*H*)-carboxylate (**2y)**



Yellow solid, Yield 55%, Melting point: 175-177 °C. **^{1}H NMR (300 MHz, $CDCl_3$)** δ = 9.44 (s, 1H), 7.75 (s, 1H), 7.65 (d, *J* = 8.0 Hz, 1H), 7.37 (d, *J* = 8.0 Hz, 1H), 7.17 (ddd, *J* = 8.1, 7.1, 1.2 Hz, 1H), 7.08 (ddd, *J* = 8.1, 7.1, 1.2 Hz, 1H), 6.07 (q, *J* = 1.5 Hz, 1H), 5.97 (q, *J* = 2.5, 1.4 Hz, 1H), 5.53 (d, *J* = 2.2 Hz, 1H), 3.87 – 3.67 (m, 2H), 3.37 – 3.19 (m, 1H), 2.24 (d, *J* = 1.5 Hz, 3H), 2.10 (t, *J* = 1.2 Hz, 3H), 1.39 (s, 9H). **^{13}C NMR (151 MHz, $CDCl_3$)** δ = 193.0, 171.8, 167.2, 161.8, 159.2, 137.0, 130.3, 126.5, 125.3, 124.6, 122.0, 119.8, 119.2, 112.1, 106.1, 74.8, 52.9, 51.5, 39.1, 32.7, 31.9, 29.7, 28.4, 24.6, 22.7, 15.4, 14.1. **HRMS (ESI)** calculated for $C_{25}H_{28}N_3O_3$ $[M+H]^+$: 418.2131, found 418.2135.

General procedure for the deuterium exchange experiments for compounds 2s



The cationic gold catalyst (IMes)AuOTf was first generated *in situ* by mixing of (IMes)AuCl (10 mol%) and AgOTf (10 mol%) along with chloroform (2 mL) in a screw-cap vial under

stirring for 5 mins and used without filtration. To this vial with gold catalyst Ugi products **1s** (0.10 mmol) and 6 equivalents of methanol-d_4 were subsequently added. After stirring at 70 ^{o}C for 2 h, the reaction mixture was diluted with dichloromethane and evaporated under reduced pressure. The obtained residue was purified by silica gel column chromatography (EtOAc/Heptane = 1: 2) to afford the fused indole alkaloid mimics **2s-D**.

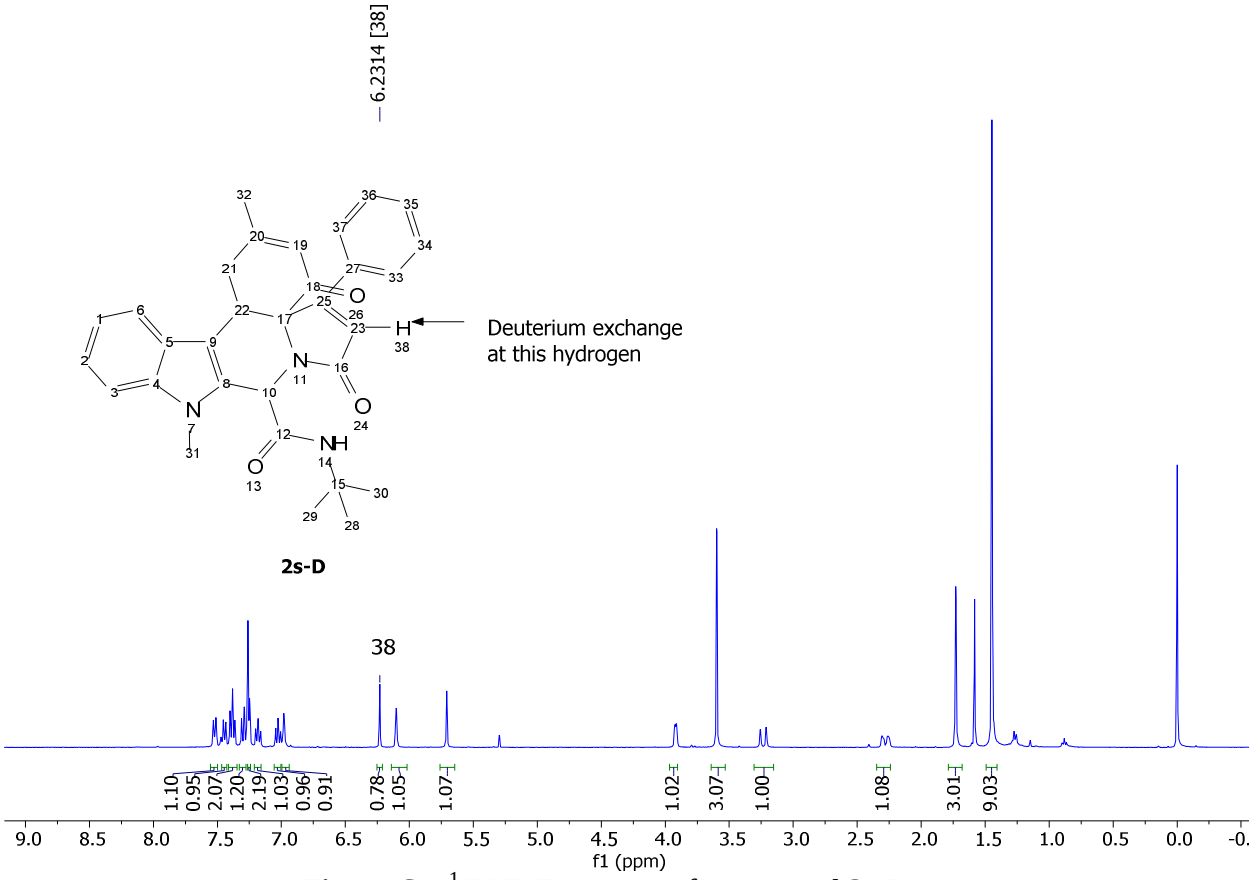
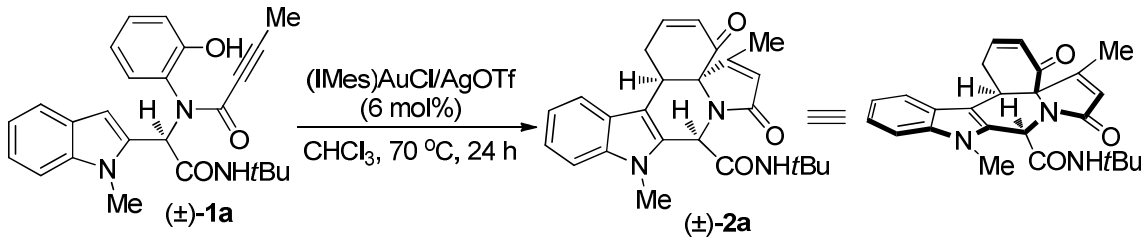


Figure S1. ^{1}H NMR spectra of compound **2s-D**

Scale-up synthesis of heterocycles 2a

1) **Scale-up synthesis of heterocycles 2a**

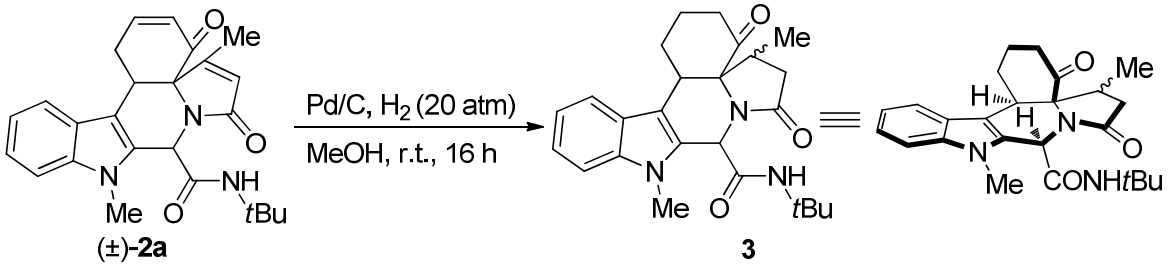


To a glass vial (IMes)AuCl (6 mol%) and AgOTf (6 mol%) were loaded along with chloroform (6 mL) to stir for 1 minute to generate cationic gold catalyst *in situ* without filtration. Ugi products **1a** (0.8g, 1.90 mmol) was added and reaction mixture was stirred at 70 ^{o}C in a screw capped vial for 24h. After completion, the reaction mixture was diluted

with dichloromethane and evaporated under reduced pressure. The residue obtained was purified by silica gel column chromatography (EtOAc/Heptane = 1: 1) to afford the fused indole alkaloid mimic **2a** in 53% yield (0.42 g, 0.99 mmol).

Transformations of heterocycles 2a

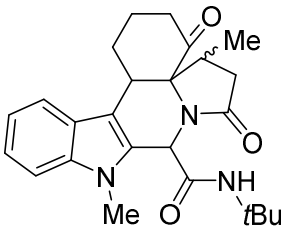
1) Synthesis of compound **3**



(±)-**2a** **3**

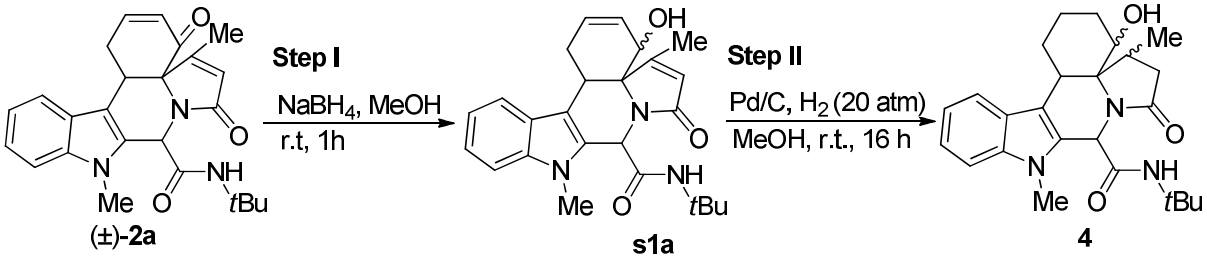
A 10 mL stainless autoclave equipped with a magnetic stirring bar was charged with **2a** (50 mg, 0.120 mmol), MeOH (1.0 mL) and 20% mol Pd/C (5 wt. %, 51 mg), and then hydrogen gas (20 atm) was introduced. After the mixture was stirred at room temperature for 16 h, the mixture was filtered and the filtrate was concentrated under reduced pressure. The crude product was purified by silica gel column chromatography (EtOAc/Heptane = 3: 1) to afford compound **3** (49 mg, 98 % yield).

N-(*tert*-butyl)-5,10-dimethyl-4,7-dioxo-1,2,3,4,5,6,7,9,10,14c-decahydroindolo[2,3-*c*]pyrrolo[2,1-*j*]quinoline-9-carboxamide **3**



White solid, Yield 98% (d.r. = 10: 1), Melting point: 191-193 ^{o}C. The NMR data of major diastereomer is as follows: **^{1}H NMR (400 MHz, $CDCl_3$)** δ = 7.64 (d, *J* = 7.9 Hz, 1H), 7.30 (d, *J* = 8.2 Hz, 1H), 7.21 (t, *J* = 7.6 Hz, 1H), 7.12 – 6.99 (m, 2H), 5.58 (s, 1H), 3.73 (t, *J* = 3.5 Hz, 1H), 3.56 (s, 3H), 2.97 (dt, *J* = 14.3, 3.2 Hz, 1H), 2.69 – 2.54 (m, 3H), 2.35 – 2.15 (m, 3H), 1.82 – 1.69 (m, 2H), 1.41 (s, 9H), 1.25 (d, *J* = 6.4 Hz, 3H). **^{13}C NMR (151 MHz, $CDCl_3$)** δ = 207.4, 175.7, 166.0, 138.4, 131.2, 124.7, 121.7, 119.3, 119.2, 109.4, 108.3, 72.5, 52.2, 51.4, 43.8, 41.4, 40.6, 38.2, 29.9, 28.6, 26.2, 18.8, 17.9. **HRMS (ESI)** calculated for $C_{25}H_{32}N_3O_3$ $[M+H]^+$: 422.2444, found 422.2446.

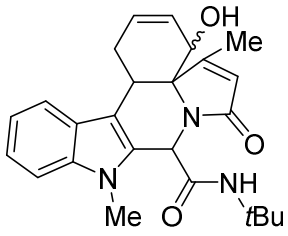
2) Synthesis of compound **4**



Step I: To a glass vial of **2a** (100 mg, 0.240 mmol) in MeOH (2 mL) was slowly added $NaBH_4$ (54.4 mg, 1.437 mmol) at r.t. and the resulting mixture was stirred for 1 h at room temperature. After completion, the mixture was diluted with H_2O (20 mL) and extracted with EtOAc (4× 15 mL). The combined organic layer was washed with brine (15 mL), dried over anhyd Na_2SO_4 and concd under reduced pressure. The crude product was purified by silica gel column chromatography (EtOAc/Heptane = 2: 1) to afford compound **s1a** (94.5mg, 95 % yield).

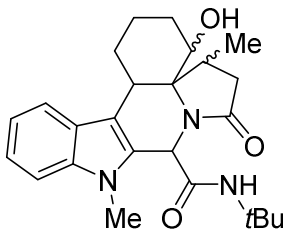
Step II: To a 10 mL stainless autoclave equipped with a magnetic stirring bar were added **s1a** (30 mg, 0.072 mmol), MeOH (1.0 mL) and 20% mol Pd/C (5 wt. %, 31.50 mg). Then hydrogen gas (20 atm) was introduced. The mixture was stirred at room temperature for 16 h. After completion, the mixture was filtered and the filtrate was concentrated under reduced pressure. The crude product was purified by silica gel column chromatography (EtOAc/Heptane = 2: 1) to afford compound **4** (28 mg, 95 % yield).

N-(*tert*-butyl)-4-hydroxy-5,10-dimethyl-7-oxo-3,4,7,9,10,14c-hexahydroindolo[2,3-*c*]pyrrolo[2,1-*j*]quinoline-9-carboxamide **s1a**



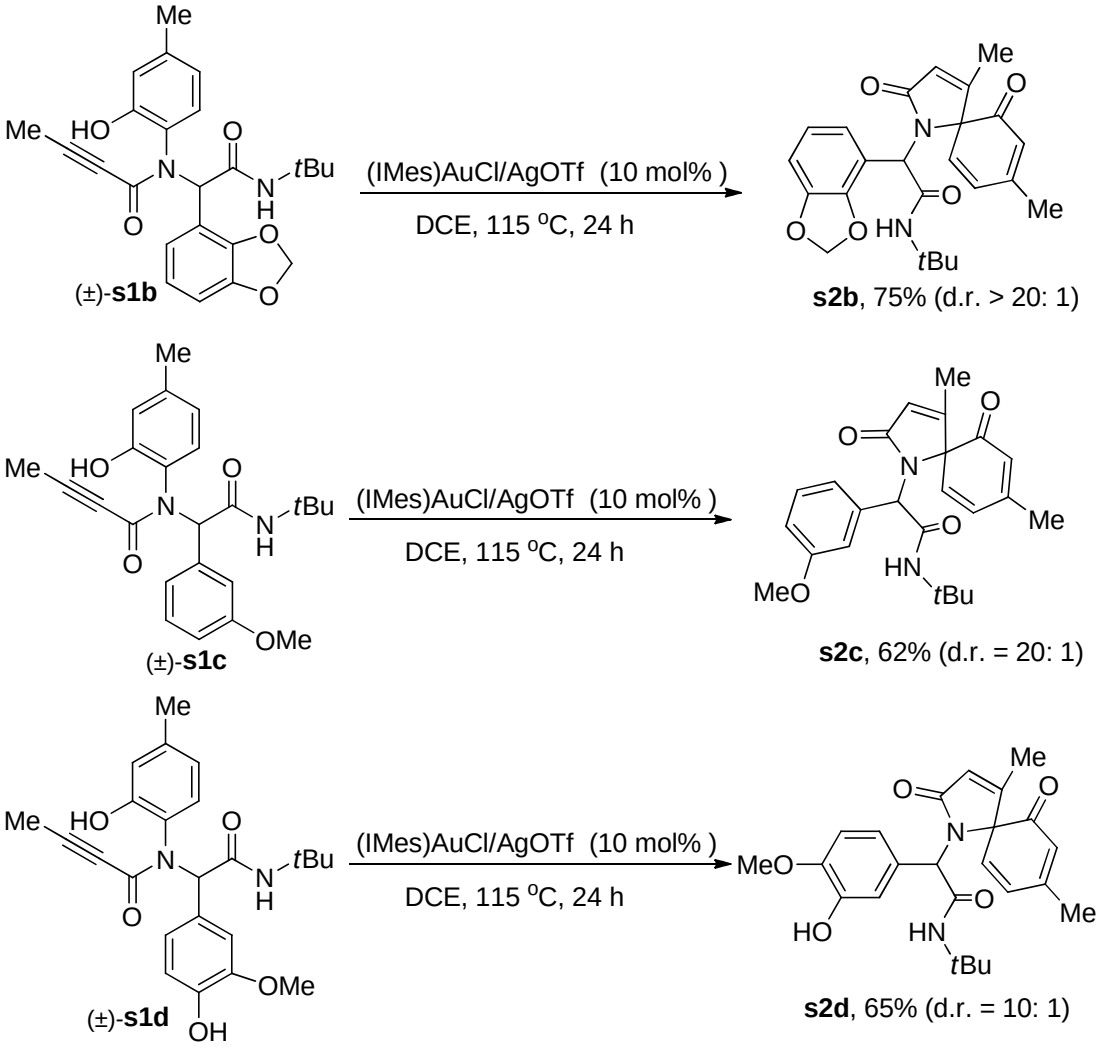
White solid, Yield 98% (d.r. = 9: 1), Melting point: 132-133 ^{o}C. The NMR data of major diastereomer is as follows:**^{1}H NMR (400 MHz, $CDCl_3$)** δ = 7.61 (d, J = 8.1 Hz, 1H), 7.32 (d, J = 8.3 Hz, 1H), 7.23 (t, J = 7.7 Hz, 1H), 7.10 (t, J = 7.5 Hz, 1H), 7.03 (s, 1H), 6.61 (ddd, J = 10.2, 4.9, 2.3 Hz, 1H), 6.02 (s, 1H), 5.85 – 5.77 (m, 1H), 5.74 (s, 1H), 4.65 – 4.54 (m, 1H), 3.78 (d, J = 5.2 Hz, 1H), 3.65 (s, 3H), 2.59 (dt, J = 18.7, 5.8 Hz, 1H), 2.44 – 2.33 (m, 1H), 2.26 (s, 3H), 1.39 (s, 9H). **^{13}C NMR (101 MHz, $CDCl_3$)** δ = 170.8, 168.1, 162.8, 138.4, 127.7, 126.6, 126.0, 125.2, 123.8, 122.0, 120.2, 119.5, 111.4, 109.4, 71.1, 65.0, 51.9, 51.5, 39.3, 32.2, 31.9, 30.4, 28.5, 28.5, 22.7, 16.1, 14.1. **HRMS (ESI)** calculated for $C_{25}H_{30}N_3O_3$ $[M+H]^+$: 420.2287, found 420.2279.

N-(*tert*-butyl)-4-hydroxy-5,10-dimethyl-7-oxo-1,2,3,4,5,6,7,9,10,14c-decahydroindolo[2,3-*c*]pyrrolo[2,1-*j*]quinoline-9-carboxamide **4**

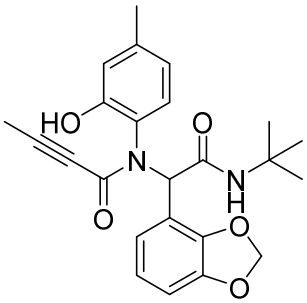


White solid, Yield 95% (d.r. = 9: 1), Melting point: 202-203 ^{o}C. The NMR data of major diastereomer is as follows: **^{1}H NMR (300 MHz, $CDCl_3$)** δ = 7.67 (d, J = 8.0 Hz, 1H), 7.57 (s, 1H), 7.32 (d, J = 8.2 Hz, 1H), 7.21 (ddd, J = 8.2, 7.0, 1.1 Hz, 3H), 7.07 (ddd, J = 8.1, 7.0, 1.1 Hz, 1H), 5.66 (d, J = 1.7 Hz, 1H), 4.42 (dt, J = 11.6, 5.4 Hz, 1H), 3.60 (s, 3H), 3.33 (s, 1H), 2.82 (dt, J = 14.4, 2.5 Hz, 1H), 2.62 – 2.46 (m, 3H), 1.81 – 1.65 (m, 2H), 1.57 – 1.44 (m, 2H), 1.38 (s, 9H), 1.35 (s, 3H). **^{13}C NMR (151 MHz, $CDCl_3$)** δ = 175.6, 168.0, 138.2, 129.2, 125.2, 121.5, 119.8, 119.2, 110.0, 109.3, 70.7, 69.0, 68.9, 52.6, 51.6, 51.4, 46.2, 45.9, 41.2, 41.0, 31.1, 31.0, 30.2, 30.1, 28.5, 28.5, 25.1, 24.8, 23.8, 23.8, 22.7, 22.0, 19.8, 19.7, 19.6. **HRMS (ESI)** calculated for $C_{25}H_{34}N_3O_3$ $[M+H]^+$: 424.2600, found 424.2595.

Examples that only form the spirocarbocyclic products

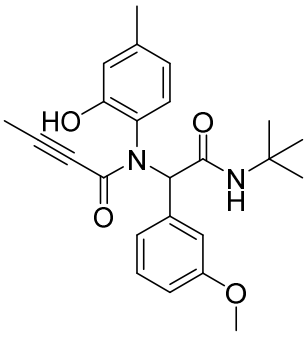


N-(1-(benzo[*d*][1,3]dioxol-4-yl)-2-(*tert*-butylamino)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl) but-2-ynamide **(s1b)**



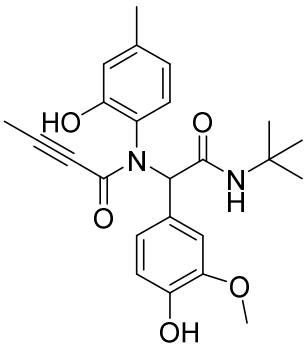
Yellow solid, Yield 55%, Melting point: 181-183 ^{o}C. **^{1}H NMR (400 MHz, DMSO-d_6)** δ = 11.30 (s, 1H), 8.45 (s, 1H), 6.70 (d, *J* = 8.0 Hz, 1H), 6.67 (s, 1H), 6.64 – 6.55 (m, 2H), 6.52 (s, 1H), 6.32 (d, *J* = 7.8 Hz, 1H), 5.92 (s, 1H), 5.90 (s, 1H), 5.76 (s, 1H), 2.12 (s, 3H), 1.68 (s, 3H), 1.26 (s, 9H). **^{13}C NMR (101 MHz, DMSO-d_6)** δ = 172.5, 155.8, 155.0, 147.4, 147.3, 139.7, 132.6, 127.6, 123.7, 123.3, 119.7, 117.3, 110.4, 108.4, 101.5, 89.6, 74.5, 64.7, 51.6, 28.5, 21.3, 3.7. **HRMS (ESI)** calculated for $C_{24}H_{27}N_2O_5$ $[M+H]^+$: 423.1920, found 423.1926.

N-(2-(*tert*-butylamino)-1-(3-methoxyphenyl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(s1c)**



Pale yellow solid, Yield 69%, Melting point: 201-203 ^{o}C. **^{1}H NMR (600 MHz, DMSO-d_6)** δ = 11.34 (s, 1H), 8.48 (s, 1H), 7.05 (t, *J* = 7.9 Hz, 1H), 6.79 – 6.62 (m, 3H), 6.57 (d, *J* = 7.9 Hz, 1H), 6.50 (s, 1H), 6.27 (dd, *J* = 8.0, 2.0 Hz, 1H), 5.81 (s, 1H), 3.62 (s, 3H), 2.09 (s, 3H), 1.68 (s, 3H), 1.27 (s, 9H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 172.3, 159.2, 155.8, 155.0, 139.7, 135.4, 132.7, 129.6, 123.2, 122.2, 119.5, 117.3, 115.8, 114.5, 89.7, 74.4, 65.0, 55.4, 51.6, 28.9, 28.5, 28.5, 21.3, 3.7. **HRMS (ESI)** calculated for $C_{24}H_{29}N_2O_4$ $[M+H]^+$: 409.2127, found 409.2126.

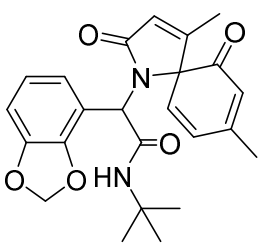
N-(2-(*tert*-butylamino)-1-(4-hydroxy-3-methoxyphenyl)-2-oxoethyl)-*N*-(2-hydroxy-4-methylphenyl)but-2-ynamide **(s1d)**



Pale yellow solid, Yield 89%, Melting point: 133-135 ^{o}C. **^{1}H NMR (600 MHz, DMSO-d_6)** δ = 11.38 (s, 1H), 8.97 (s, 1H), 8.41 (s, 1H), 6.66 (s, 1H), 6.56 (d, *J* = 7.9 Hz, 1H), 6.52 (s, 2H), 6.50 – 6.49 (m, 1H), 6.29 (dd, *J* = 8.0, 2.0 Hz, 1H), 5.73 (s, 1H), 3.58 (s, 3H), 2.10 (s, 3H), 1.68 (s, 3H), 1.27 (s, 9H). **^{13}C NMR (151 MHz, DMSO-d_6)** δ = 172.8, 155.9, 155.0, 147.4, 146.8, 139.5, 132.7, 124.6, 123.5, 122.8, 119.5, 117.2, 115.5, 114.3, 89.5, 79.6, 74.6, 64.9,

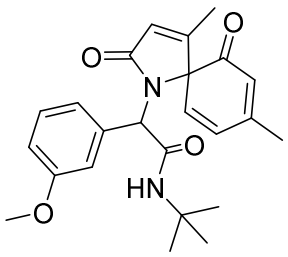
55.9, 51.6, 28.6, 21.3, 3.7. **HRMS (ESI)** calculated for $C_{24}H_{29}N_2O_5$ $[M+H]^+$: 425.2076, found 425.2086.

2-(benzo[*d*][1,3]dioxol-4-yl)-*N*-(*tert*-butyl)-2-(4,8-dimethyl-2,10-dioxo-1-azaspiro[4.5]deca-3,6,8-trien-1-yl)acetamide **(s2b)**



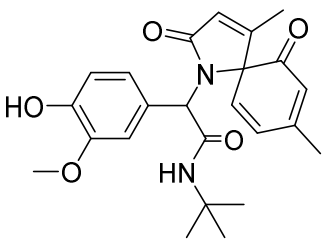
Pale yellow solid, Yield 75% (d.r. > 20: 1), Melting point: 161-163 ^oC. **^{1}H NMR (400 MHz, $CDCl_3$)** δ = 6.94 (s, 1H), 6.87 (s, 1H), 6.73 – 6.64 (m, 2H), 6.28 (d, *J* = 9.5 Hz, 1H), 6.09 (d, *J* = 9.5 Hz, 1H), 6.03 (s, 1H), 5.98 (s, 1H), 5.91 (s, 2H), 4.57 (s, 1H), 2.12 (s, 3H), 1.75 (s, 3H), 1.37 (s, 9H). **^{13}C NMR (151 MHz, $CDCl_3$)** δ = 195.5, 171.6, 167.4, 156.1, 155.9, 147.4, 147.3, 139.1, 129.1, 128.9, 124.9, 124.6, 124.1, 110.5, 107.7, 101.1, 77.6, 62.5, 51.4, 28.5, 23.3, 12.3. **HRMS (ESI)** calculated for $C_{24}H_{27}N_2O_5$ $[M+H]^+$: 423.1920, found 423.1930.

N-(*tert*-butyl)-2-(4,8-dimethyl-2,10-dioxo-1-azaspiro[4.5]deca-3,6,8-trien-1-yl)-2-(3-methoxyphenyl)acetamide **(s2c)**



Pale yellow solid, Yield 62% (d.r. = 20: 1), Melting point: 179-181 ^oC. **^{1}H NMR (600 MHz, $CDCl_3$)** δ = 7.90 (s, 1H), 7.06 (t, *J* = 7.8 Hz, 1H), 6.83 – 6.75 (m, 2H), 6.65 (s, 1H), 6.04 (s, 1H), 6.01 (s, 1H), 5.62 (d, *J* = 9.2 Hz, 1H), 5.50 (d, *J* = 9.5 Hz, 1H), 5.21 (s, 1H), 3.71 (s, 3H), 1.97 (s, 3H), 1.70 (s, 3H), 1.44 (s, 9H). **^{13}C NMR (151 MHz, $CDCl_3$)** δ = 196.2, 172.3, 168.4, 159.3, 157.5, 156.9, 139.4, 136.8, 129.4, 125.6, 124.3, 124.3, 123.1, 115.0, 114.7, 64.1, 55.0, 51.3, 28.5, 23.2, 12.0. **HRMS (ESI)** calculated for $C_{24}H_{29}N_2O_4$ $[M+H]^+$: 409.2127, found 409.2126.

N-(*tert*-butyl)-2-(4,8-dimethyl-2,10-dioxo-1-azaspiro[4.5]deca-3,6,8-trien-1-yl)-2-(4-hydroxy-3-methoxyphenyl)acetamide **(s2d)**



Pale yellow solid, Yield 65% (d.r. =10: 1), Melting point: 196-198 ^oC. **^{1}H NMR (600 MHz, $CDCl_3$)** δ = 7.99 (s, 1H), 6.61 – 6.58 (m, 1H), 6.57 – 6.53 (m, 2H), 6.03 (s, 1H), 5.95 (s, 1H), 5.61 (d, *J* = 9.4 Hz, 1H), 5.46 (d, *J* = 9.4 Hz, 1H), 5.18 (s, 1H), 3.75 (s, 3H), 1.97 (s, 3H), 1.69 (s, 3H), 1.45 (s, 9H). **^{13}C NMR (151 MHz, $CDCl_3$)** δ = 196.5, 172.2, 168.9, 158.2, 156.9, 146.9, 146.2, 139.8, 126.9, 125.1, 124.4,

124.2, 124.2, 114.4, 112.1, 63.7, 55.5, 51.3, 28.5, 23.2, 12.0. **HRMS (ESI)** calculated for $C_{24}H_{29}N_2O_5$ $[M+H]^+$: 425.2076, found 425.2082.

Crystallographic data for compound 2o and 2q

Single crystals suitable for X-ray diffraction were obtained by slow evaporation at room temperature from a d1-chloroform-heptane mixture (1:2 v/v) for **2o**, and an ethyl acetate and heptane mixture (1:3 v/v) for **2q**. X-ray intensity data were collected at 150K for **2o and 2q** on a Rigaku Ultra 18S generator (Xenocs mirrors, Mo Kα radiation, λ = 0.71073 Å) using a MAR345 image plate. The images were interpreted and integrated with CrysAlisPRO[9] and the implemented absorption correction was applied. The structures were solved using Olex2[10] with the ShelXS[11] structure solution program by Direct Methods and refined with the ShelXL[12] refinement package using full-matrix least-squares minimization on F^2. Non-hydrogen atoms were refined anisotropically and hydrogen atoms in the riding mode with isotropic temperature factors fixed at 1.2 times U_{eq} of the parent atoms (1.5 for methyl groups). CCDC 1858541 (**2o**) and 1858542 (**2q**) contain the supplementary crystallographic data for this paper and can be obtained free of charge via http://www.ccdc.cam.ac.uk/getstructures or from the Cambridge Crystallographic Data Centre, 12, Union Road, Cambridge CB2 1EZ, UK; fax: +44-1223-336033; deposit@ccdc.cam.ac.uk).

Table S2: Crystal data and structure refinement details for compound 2o

Compound reference	**2o**
Empirical formula	$C_{25}H_{27}N_3O_3$
Formula weight	417.49
Crystal system	monoclinic
Space group	$P2_1/c$
a/Å	8.69310(18)
b/Å	24.9324(6)
c/Å	9.8261(2)
α/°	90
β/°	90.438(2)
γ/°	90
Volume/Å^3	2129.64(8)
Temperature/K	150(2)
Z	4
ρ_{calc}g/cm^3	1.302
Crystal size/mm^3	0.40 × 0.35 × 0.22

Radiation	MoKα (λ = 0.71073 Å)
Absorption coefficient/mm^{-1}	0.087
F(000)	888.0
Reflections collected	14631
Independent reflections	3992 [R_{int} = 0.0250, R_{sigma} = 0.0185]
Data/restraints/parameters	3992/0/285
Final R indexes [I>=2σ (I)]	R_1 = 0.0396, wR_2 = 0.0970
Final R indexes [all data]	R_1 = 0.0419, wR_2 = 0.0986
Goodness-of-fit	1.084
Largest diff. peak/hole	0.27/-0.25 e.Å^{-3}
CCDC	1858541

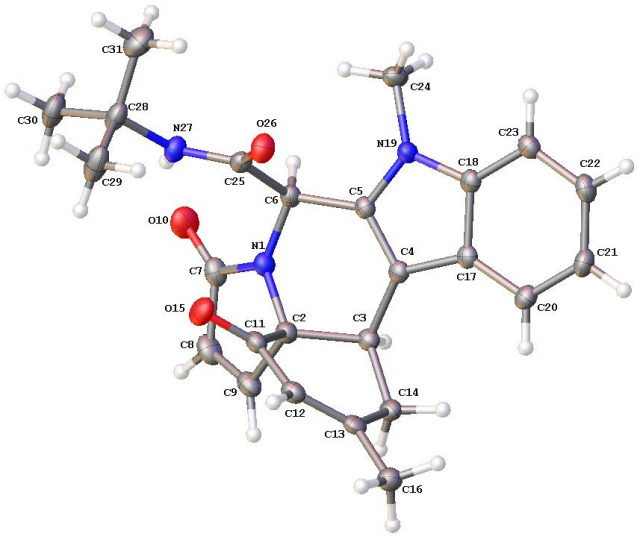


Figure S2. Crystal structure of compound **2o**. Thermal ellipsoids are drawn at the 50% probability level.

Table S3: Crystal data and structure refinement details for compound 2q

Compound reference	**2q**
Empirical formula	$C_{28}H_{33}N_3O_3$
Formula weight	459.57
Crystal system	Triclinic
Space group	*P*-1
a/Å	9.2977(8)
b/Å	9.9446(11)
c/Å	13.8192(11)
α/°	83.641(8)
β/°	73.868(7)
γ/°	74.132(9)
Volume/Å^3	1179.8(2)
Temperature/K	150(2)
Z	2
ρ_{calc}g/cm^3	1.294
Crystal size/mm^3	0.50 × 0.35 × 0.25

Radiation	MoKα (λ = 0.71073 Å)
Absorption coefficient/mm^{-1}	0.085
F(000)	492.0
Reflections collected	17279
Independent reflections	4450 [R_{int} = 0.0264, R_{sigma} = 0.0194]
Data/restraints/parameters	4450/0/313
Final R indexes [I>=2σ (I)]	R_1 = 0.0380, wR_2 = 0.0927
Final R indexes [all data]	R_1 = 0.0401, wR_2 = 0.0943
Goodness-of-fit	1.061
Largest diff. peak/hole	0.32/-0.19 e.Å^{-3}
CCDC	1858542

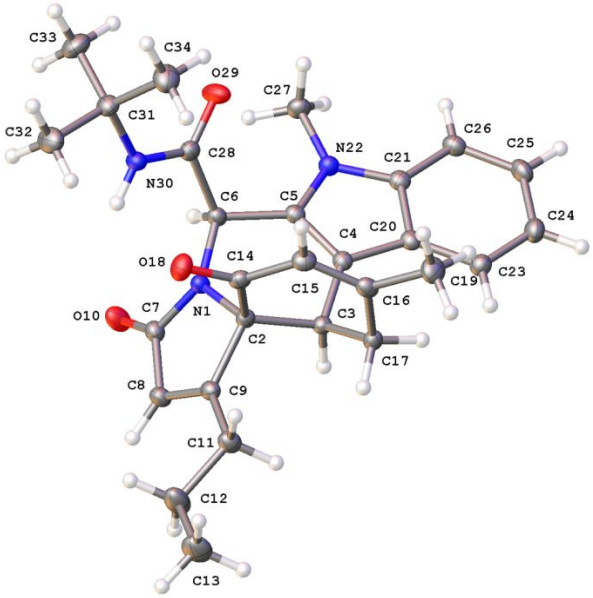


Figure S3. Crystal structure of compound **2q**. Thermal ellipsoids are drawn at the 50% probability level.

References

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Cammi, R.; Pomelli, C.; Ochterski, J. W.; Martin, R. L.; Morokuma, K.; Zakrzewski, V. G.; Voth, G. A.; Salvador, P.; Dannenberg, J. J.; Dapprich, S.; Daniels, A. D.; Farkas, Ö.; Foresman, J. B.; Ortiz, J. V.; Cioslowski, J.; Fox, D. J. Gaussian, Inc., Wallingford CT, **2009**.

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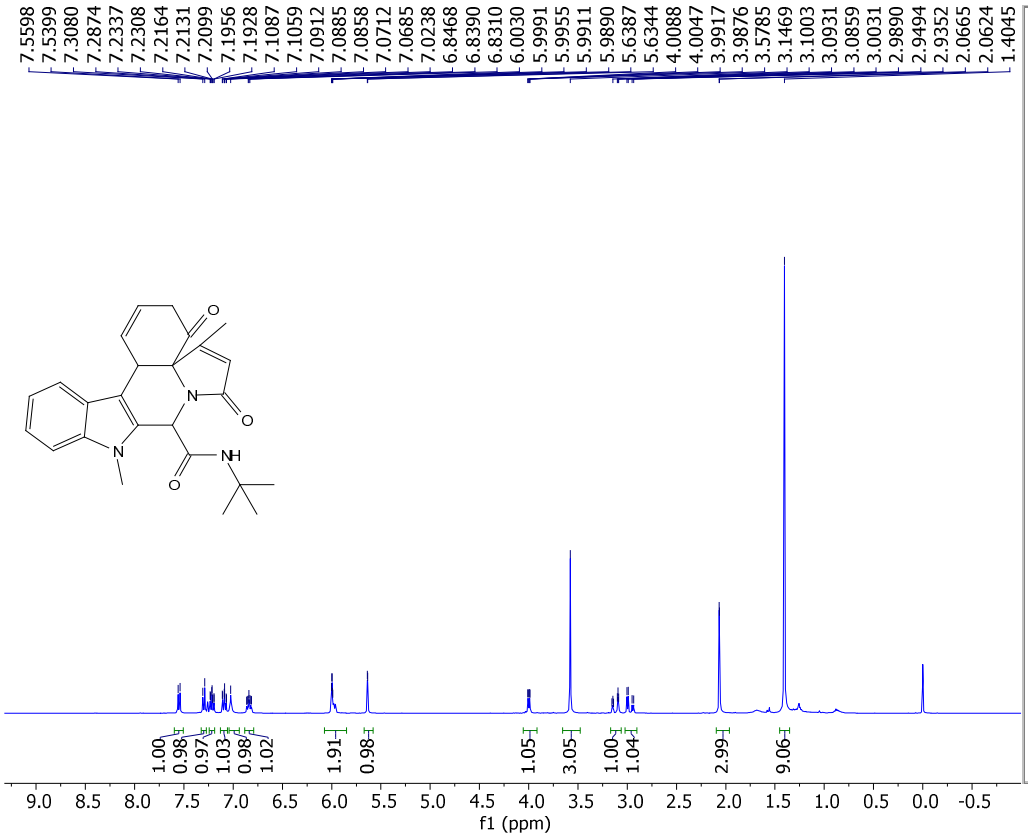
Copies of NMR spectra (Post-Ugi products)

^{1}H and ^{13}C NMR spectra of compound **2a**



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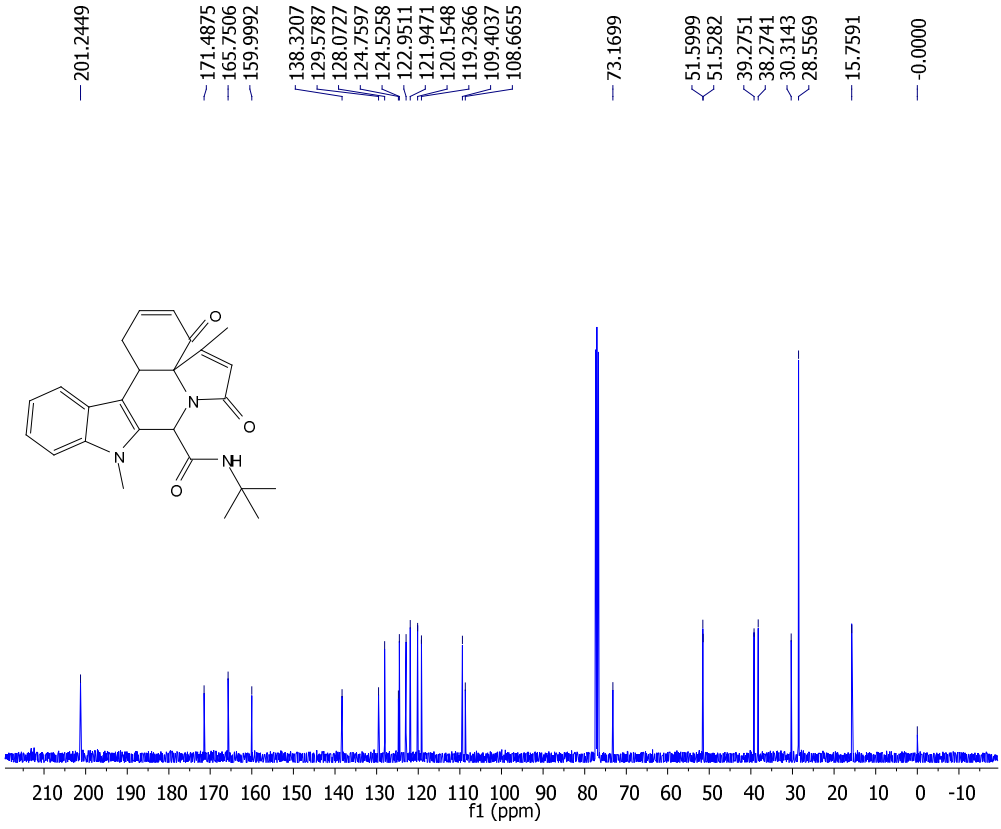

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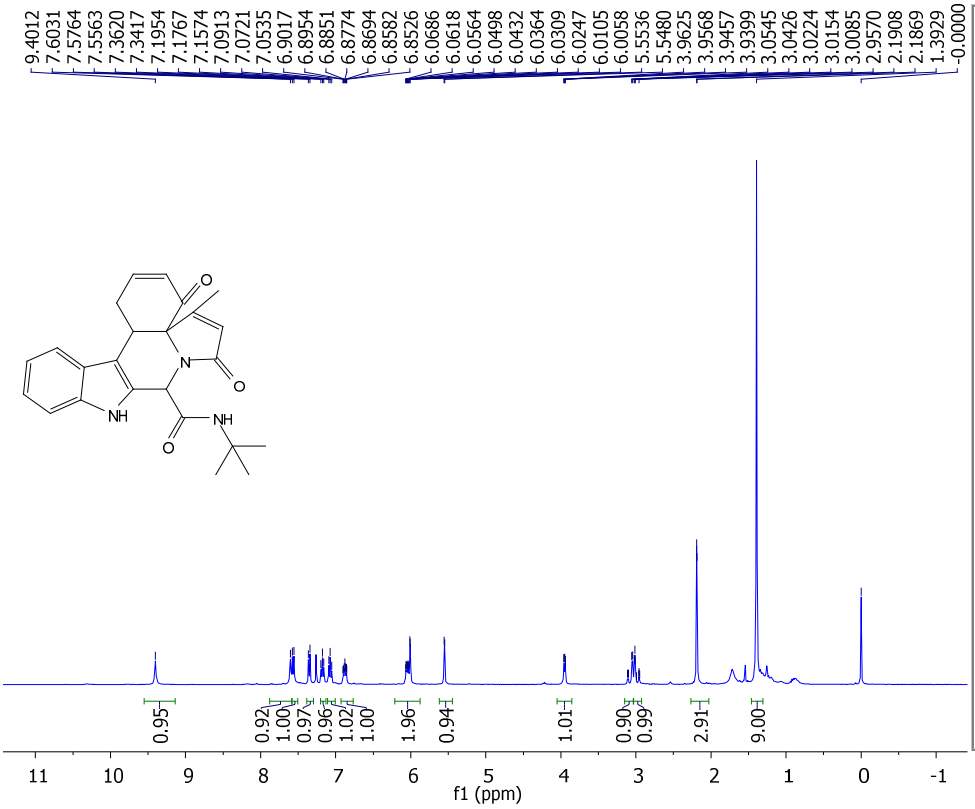
^{1}H and ^{13}C NMR spectra of compound **2b**



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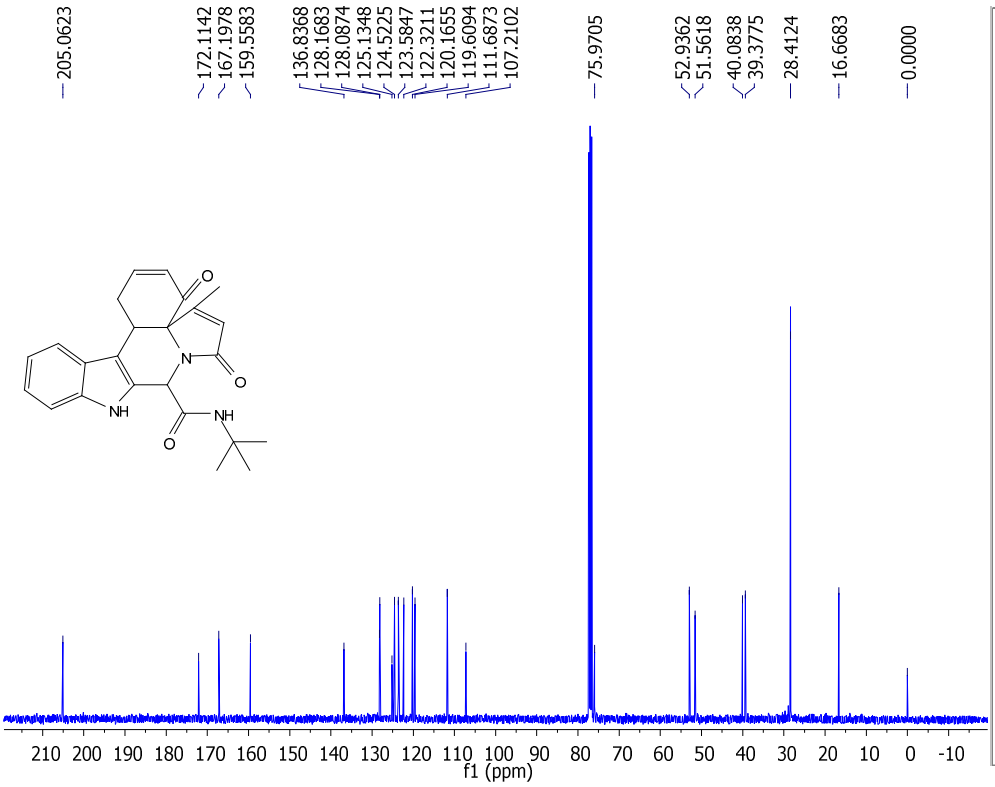

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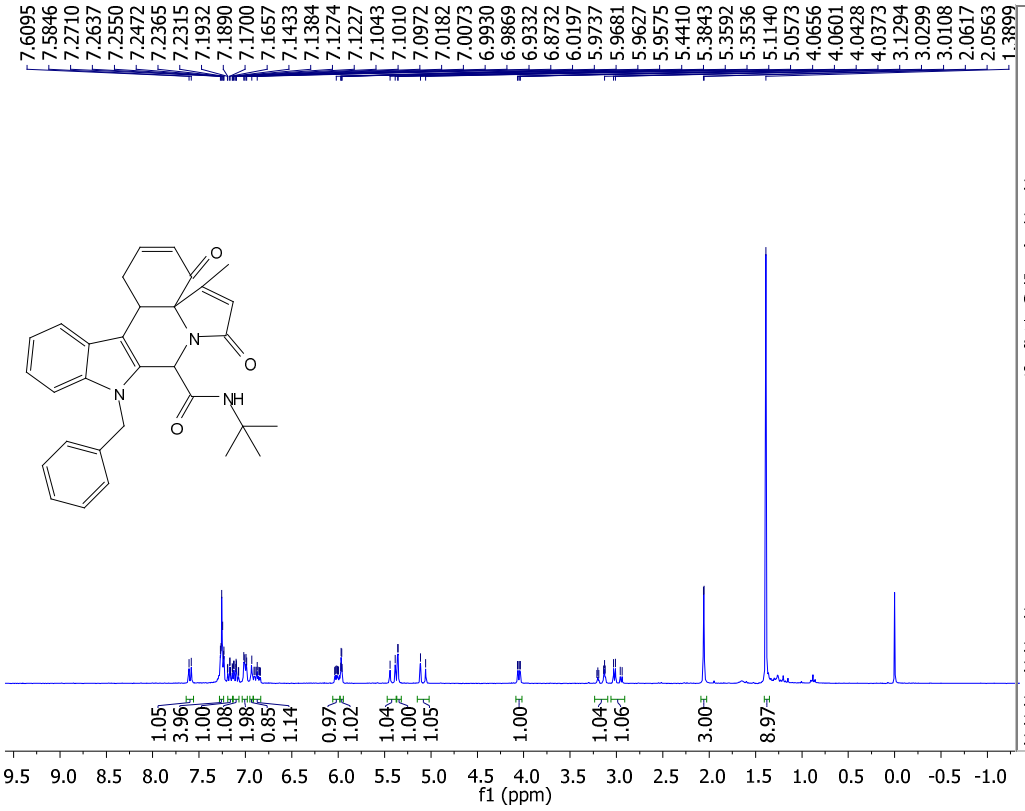
^{1}H and ^{13}C NMR spectra of compound **2c**



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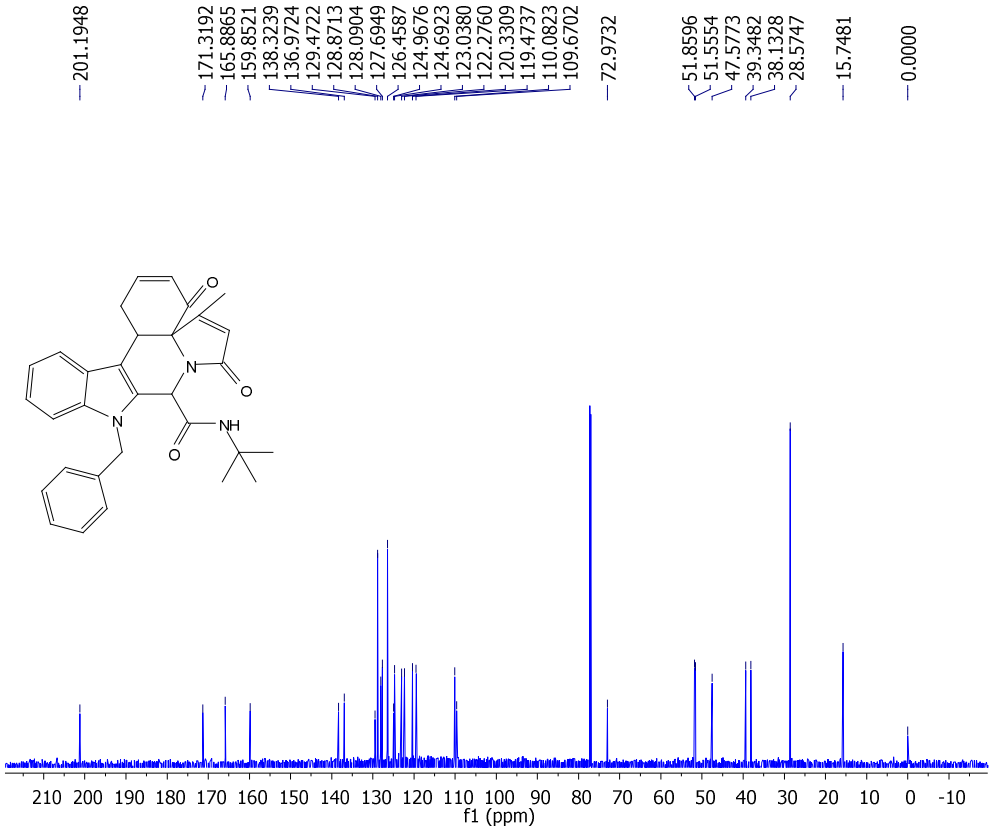

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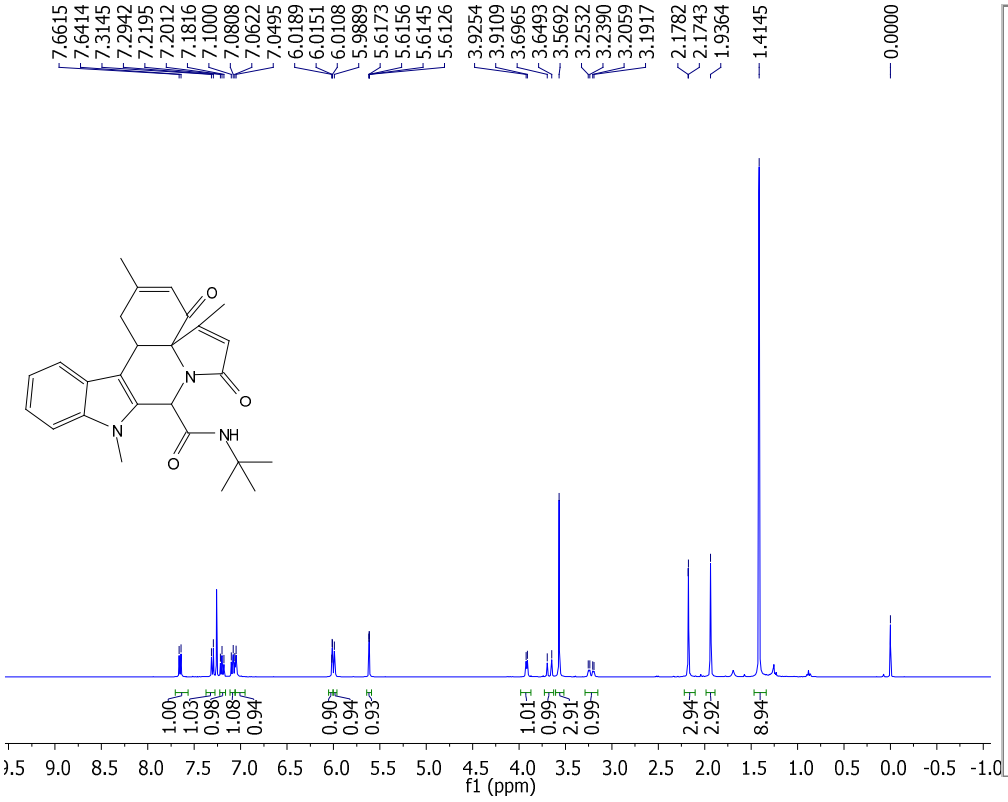
^{1}H and ^{13}C NMR spectra of compound **2f**



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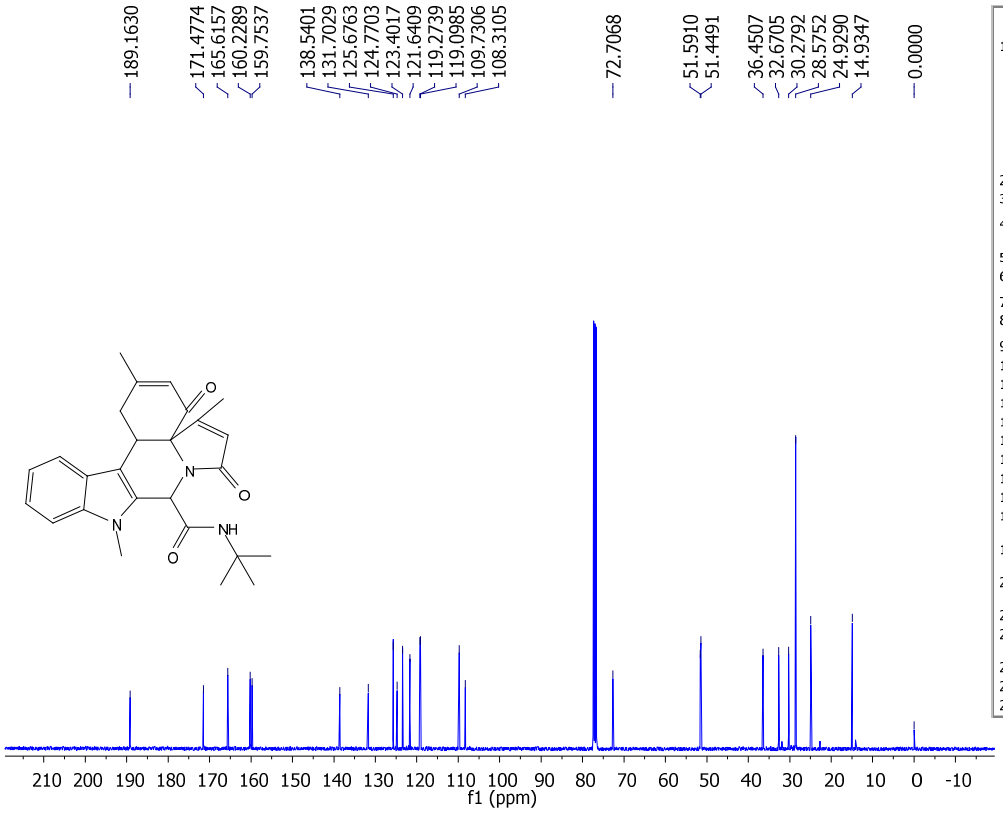

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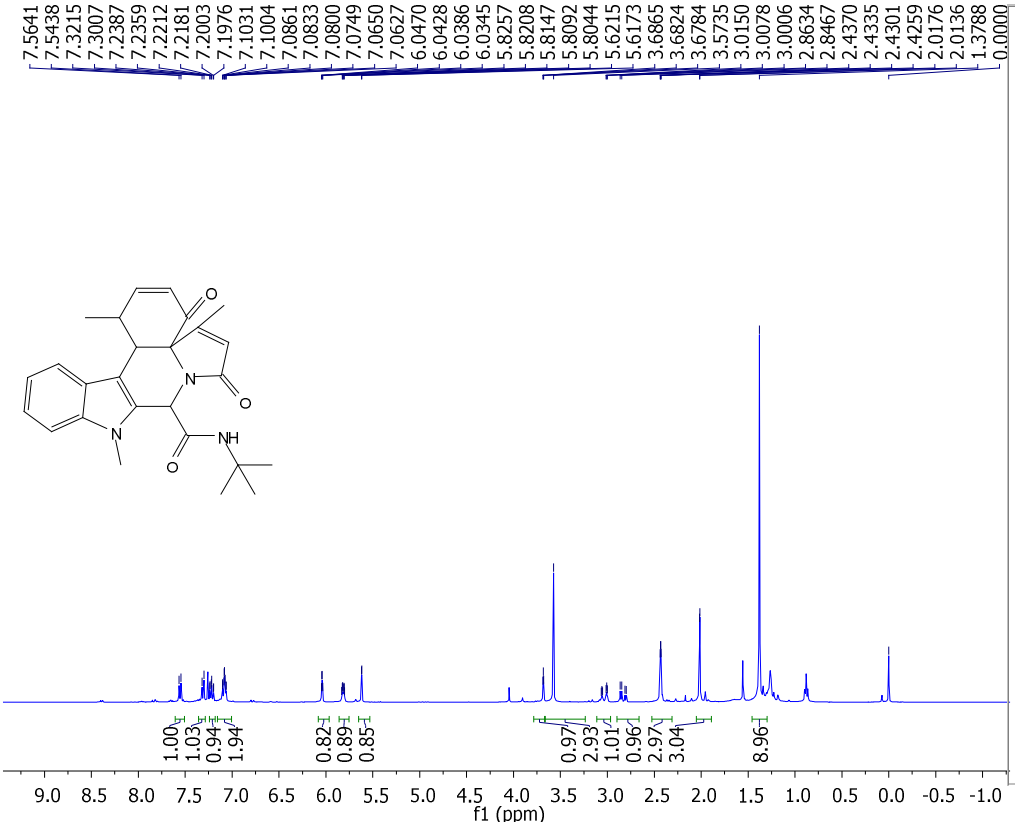
^{1}H and ^{13}C NMR spectra of compound **2g**



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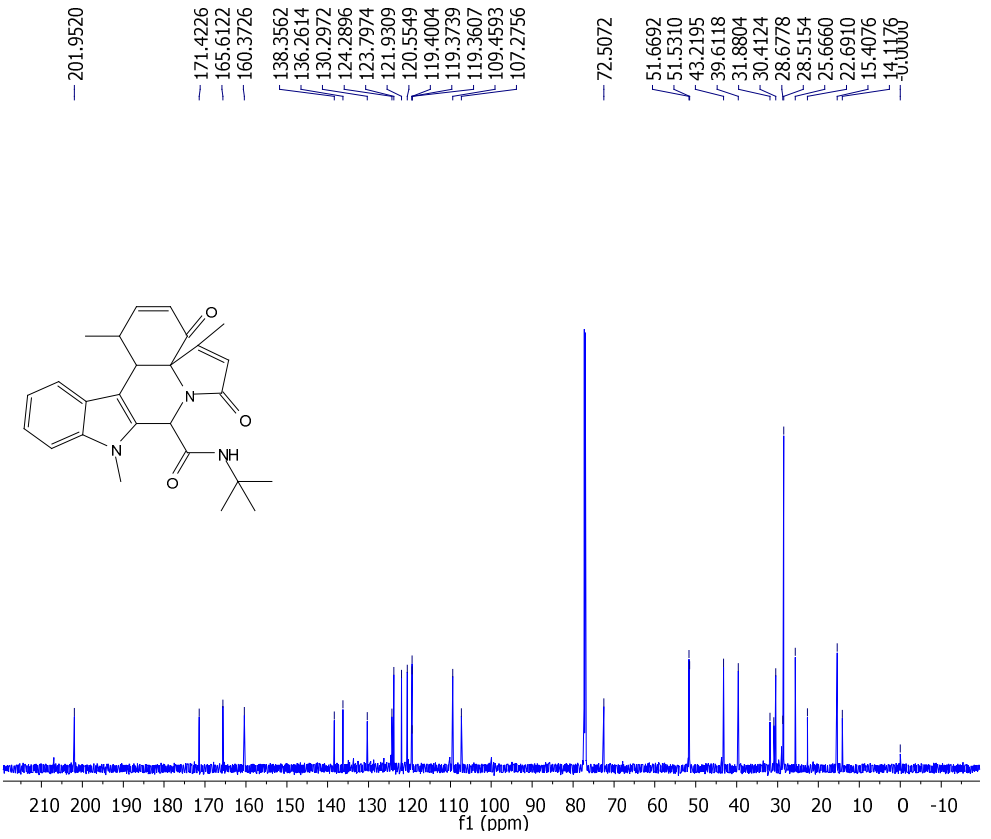

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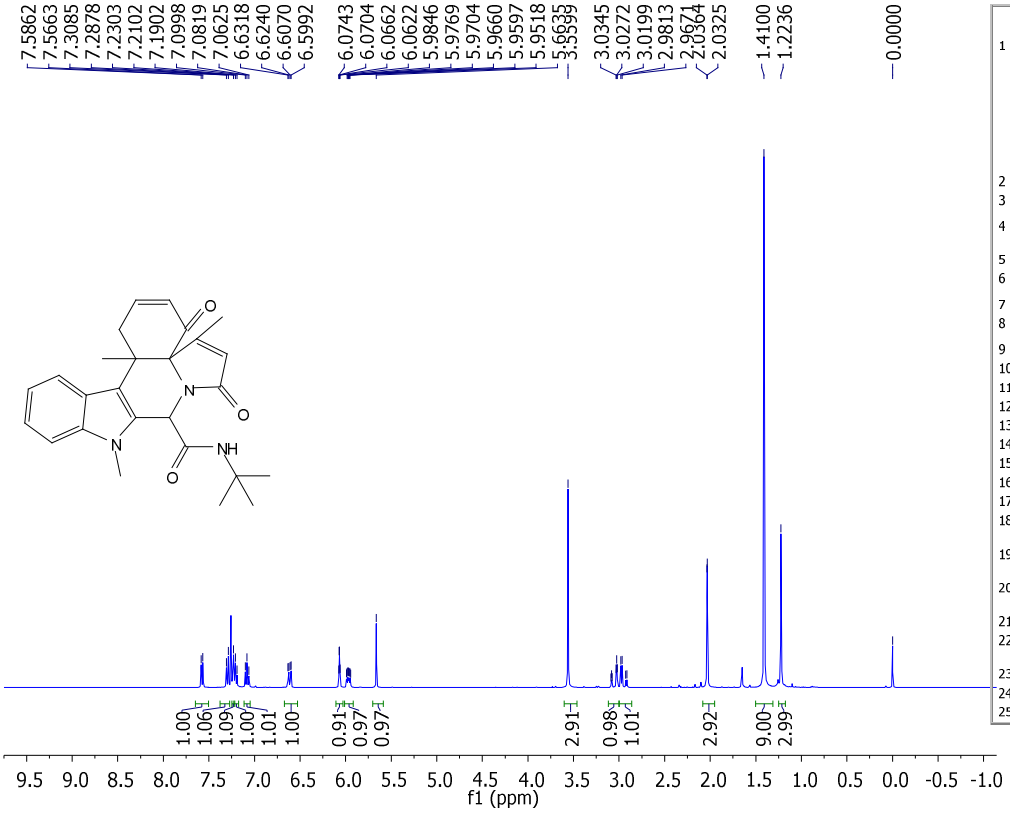
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-17T07:57:56
19	Modification Date	2018-04-17T08:57:56
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2940.7
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2h**



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2 Title	EVDE-YH-002R53
3 Comment	
4 Origin	Bruker BioSpin GmbH
5 Owner	nmr
6 Site	
7 Spectrometer	spect
8 Author	
9 Solvent	CDCl3
10 Temperature	297.2
11 Pulse Sequence	zg30
12 Experiment	1D
13 Number of Scans	16
14 Receiver Gain	48
15 Relaxation Delay	1.0000
16 Pulse Width	9.7500
17 Acquisition Time	3.2768
18 Acquisition Date	2018-04-13T15:05:00
19 Modification Date	2018-04-13T15:06:00
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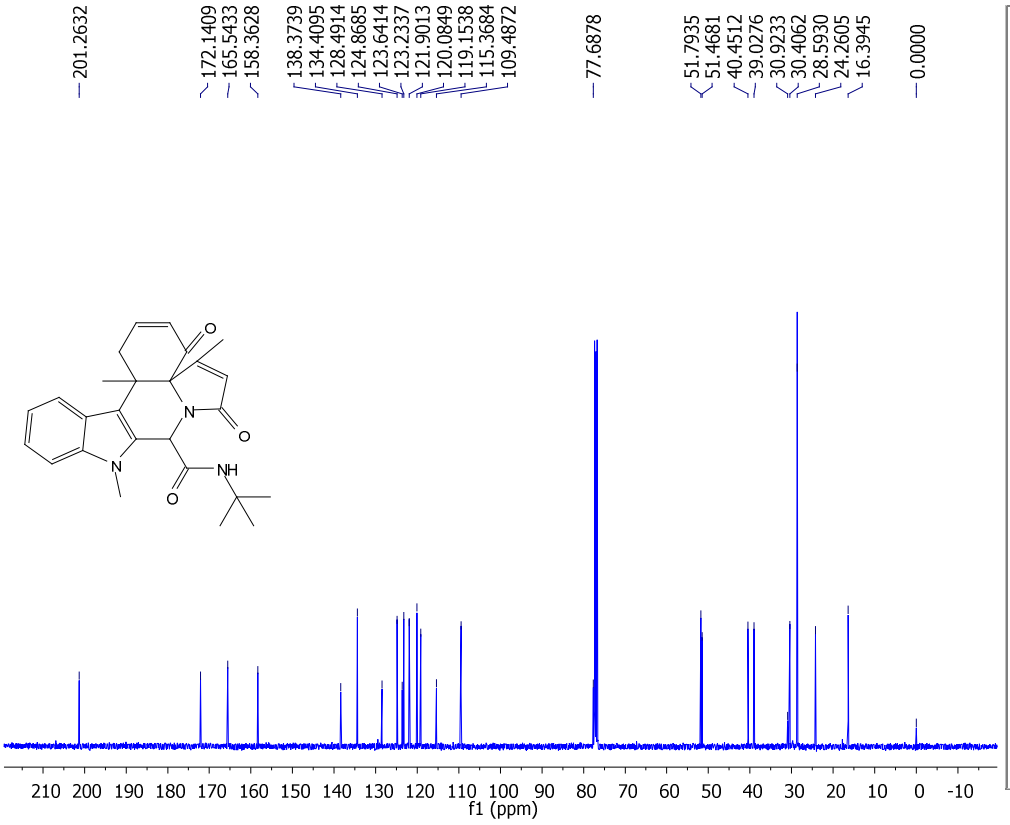
21 Spectral Width	10000.0
22 Lowest Frequency	-2539.4
23 Nucleus	1H
24 Acquired Size	32768
25 Spectral Size	65536



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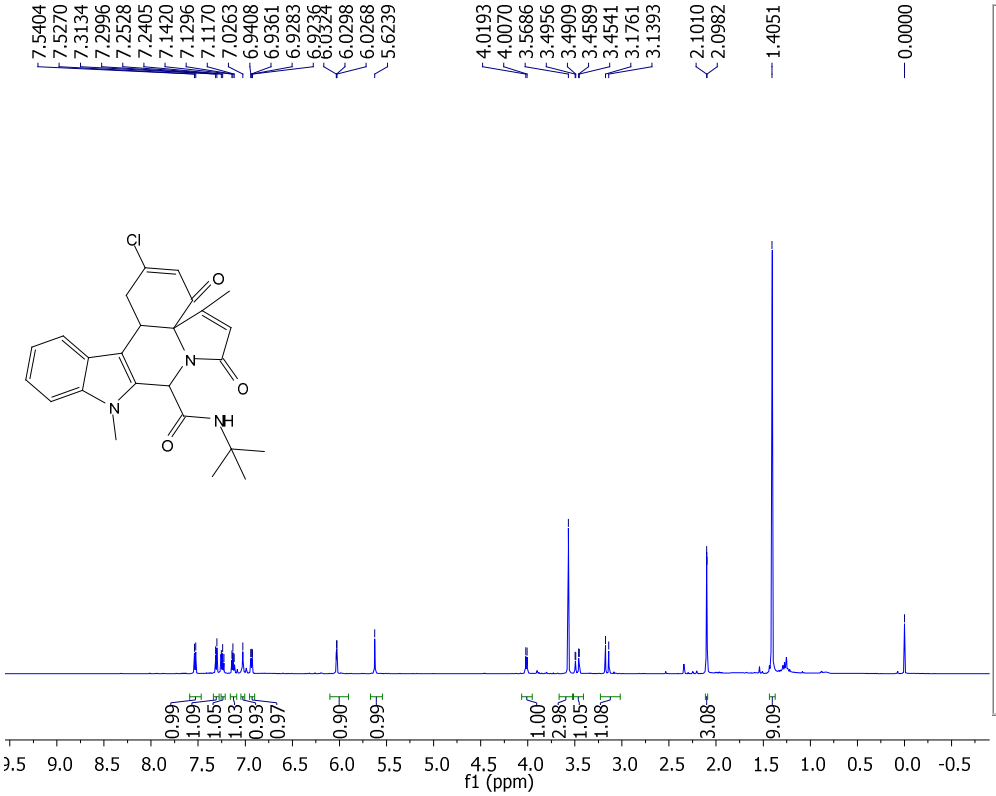
3 Comment	
4 Origin	Bruker BioSpin GmbH
5 Owner	nmr
6 Site	
7 Spectrometer	spect
8 Author	
9 Solvent	CDCl3
10 Temperature	297.5
11 Pulse Sequence	zgpg30
12 Experiment	1D
13 Number of Scans	1024
14 Receiver Gain	201
15 Relaxation Delay	2.0000
16 Pulse Width	7.6500
17 Acquisition Time	1.3631
18 Acquisition Date	2018-04-16T06:59:00
19 Modification Date	2018-04-16T06:59:50
20 Spectrometer Frequency	100.63
21 Spectral Width	24038.5
22 Lowest Frequency	-1958.7
23 Nucleus	13C
24 Acquired Size	32768
25 Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **2i**



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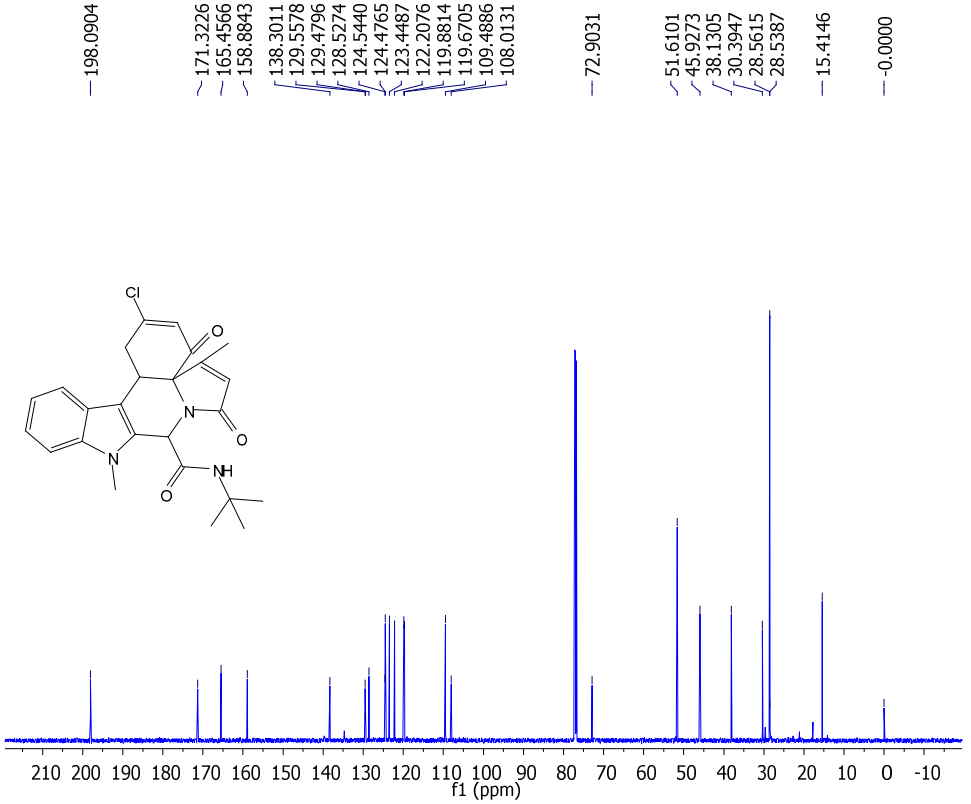
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	8
14	Receiver Gain	101
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-06-04T12:44:56
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2319.2
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	131072



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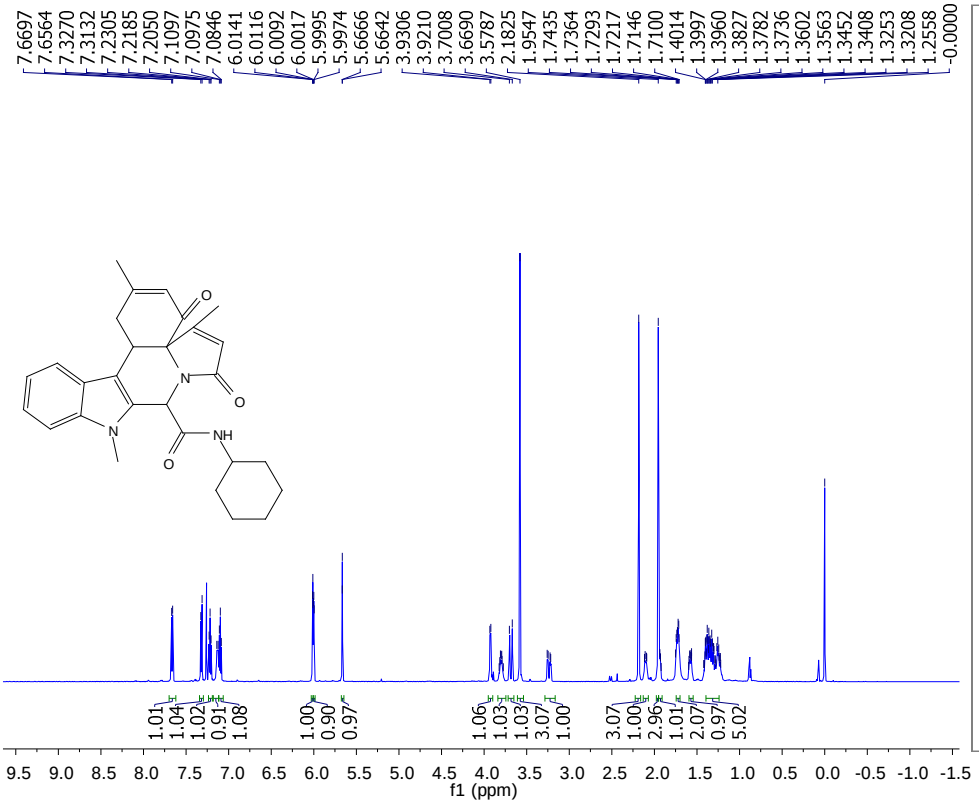
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	0.6816
18	Acquisition Date	2018-06-04T12:24:47
19	Modification Date	2018-06-04T13:24:48
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2941.3
23	Nucleus	13C
24	Acquired Size	24576
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2j**



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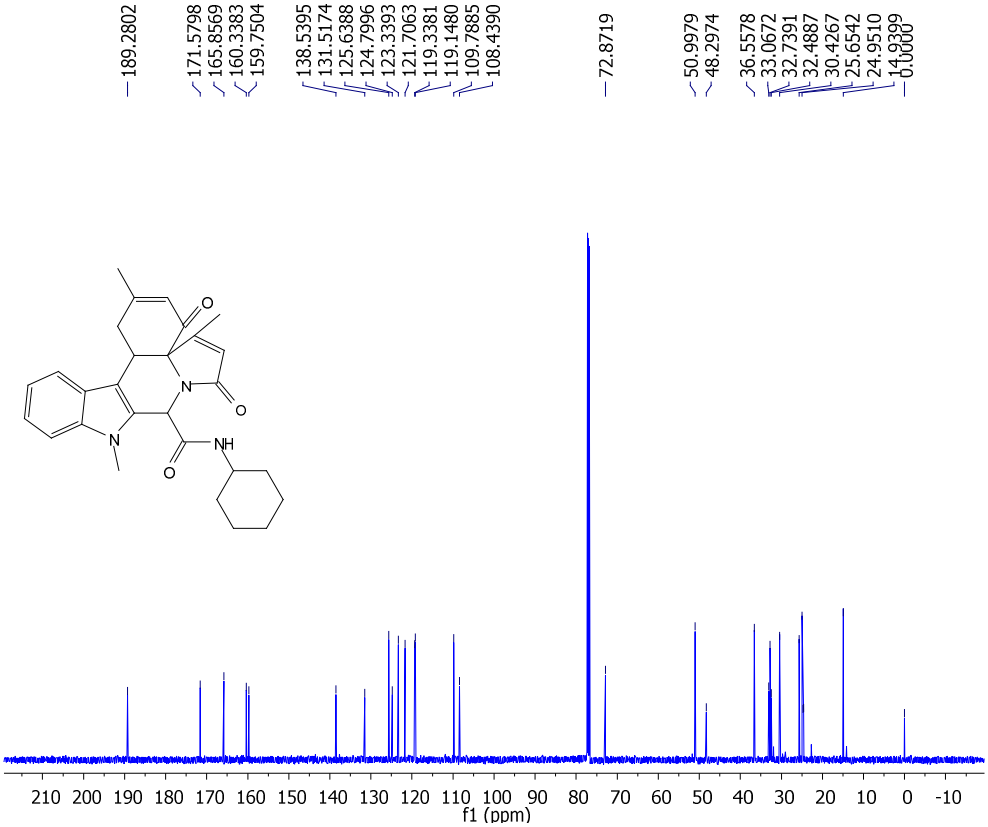
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	90
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-01T13:49:56
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2318.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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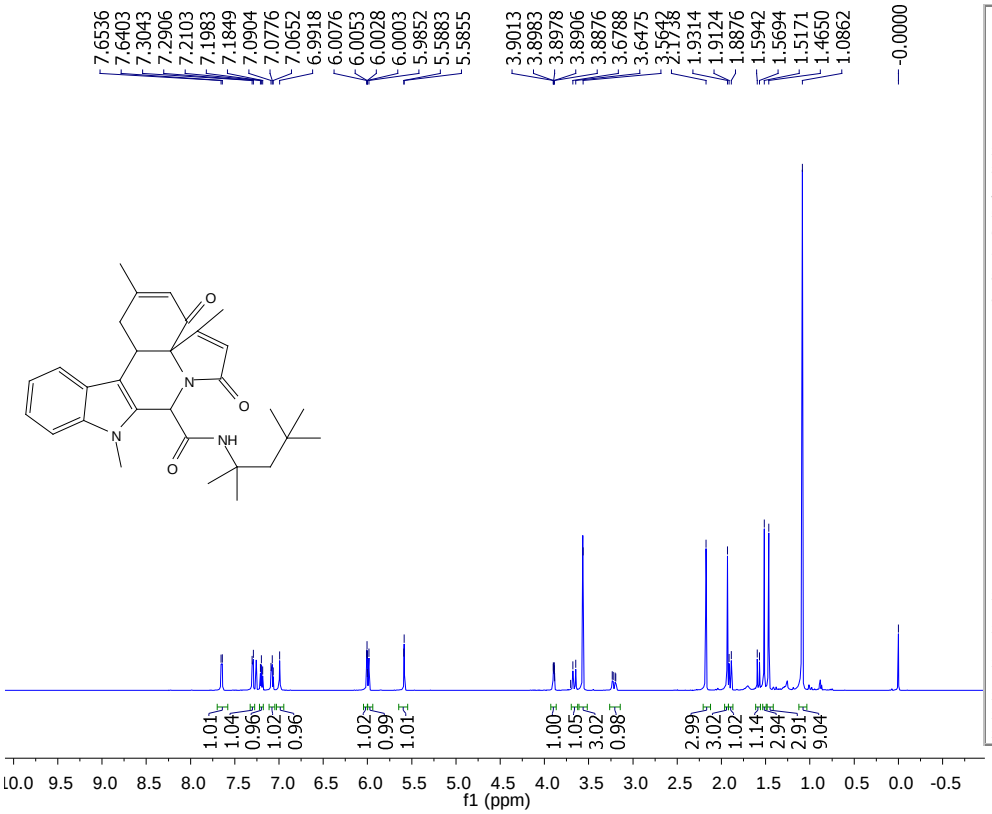
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.5
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	321
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-05-01T12:51:47
19	Modification Date	2018-05-01T14:10:50
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2941.6
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2k**



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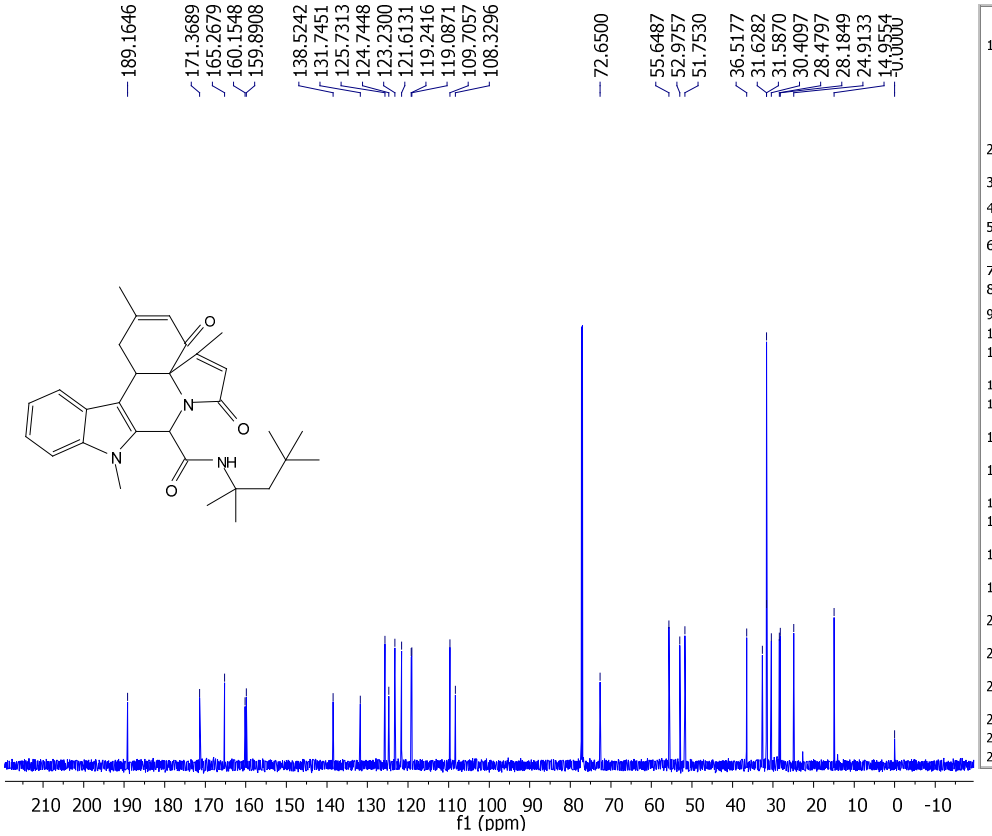
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	90
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-01T14:16:04
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2318.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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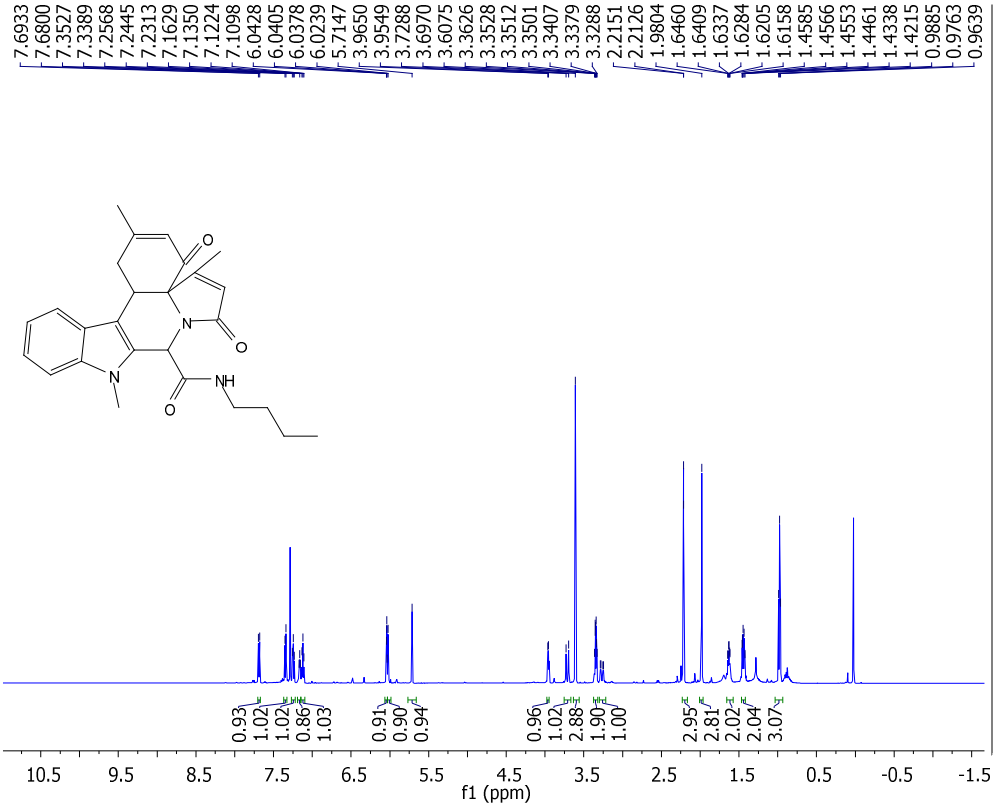
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.5
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	98
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-05-01T13:17:51
19	Modification Date	2018-05-01T14:23:20
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2942.3
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2l**



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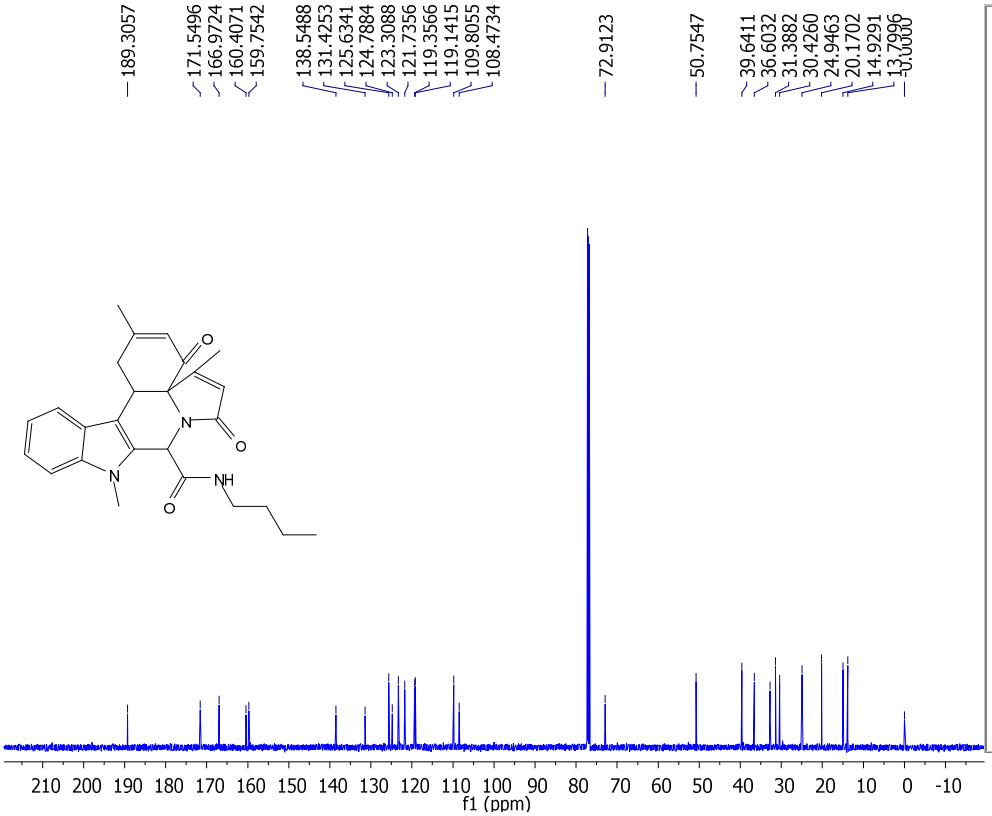
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.8
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	144
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-02T10:21:18
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2303.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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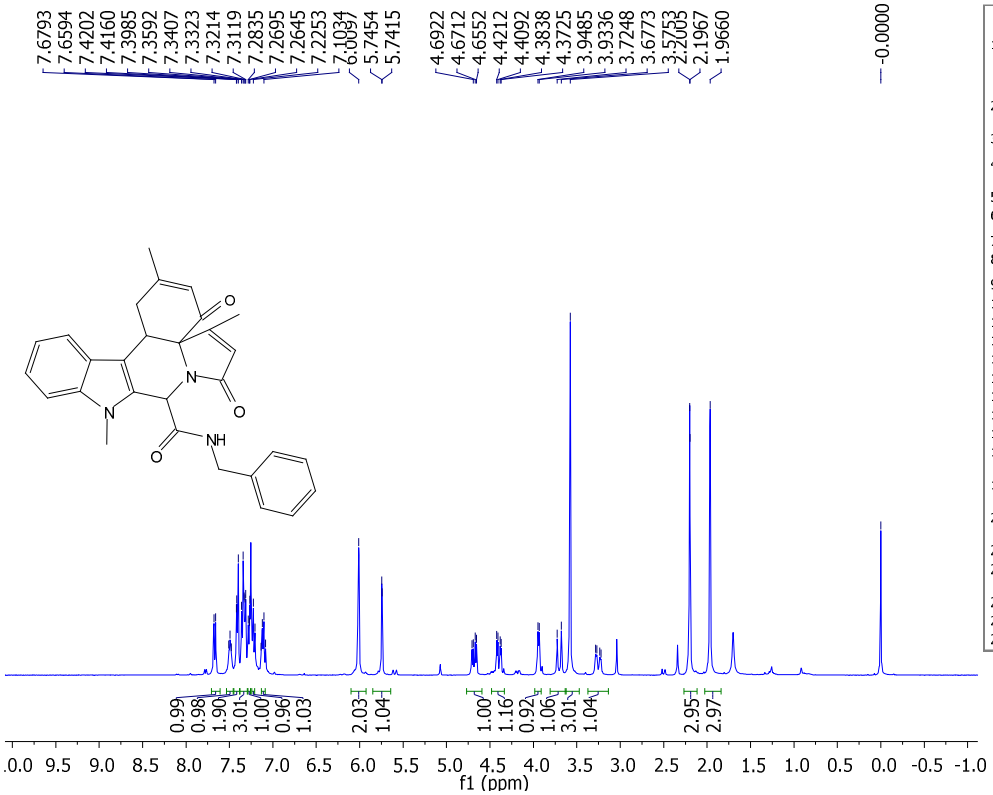
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.3
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	195
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-05-02T09:22:46
19	Modification Date	2018-05-02T10:34:22
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2941.0
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2m**



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5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-31T17:29:00
19	Modification Date	2018-05-31T17:29:08
20	Spectrometer Frequency	400.17
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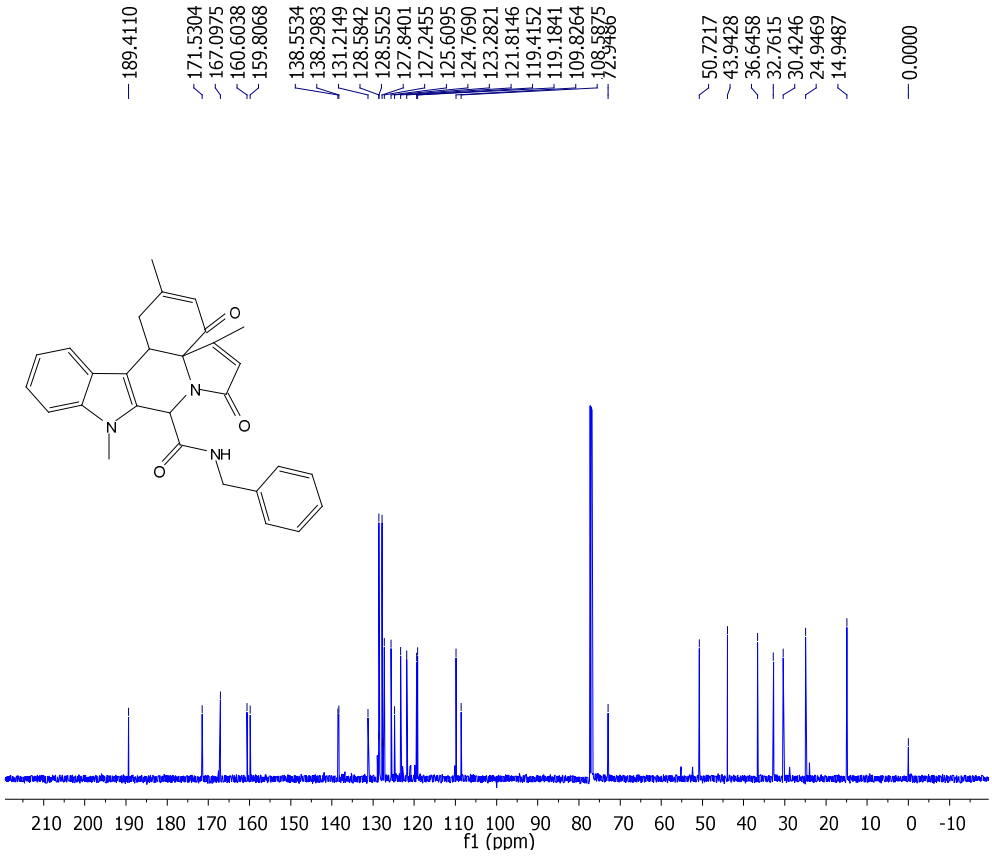
22	Lowest Frequency	-2541.3
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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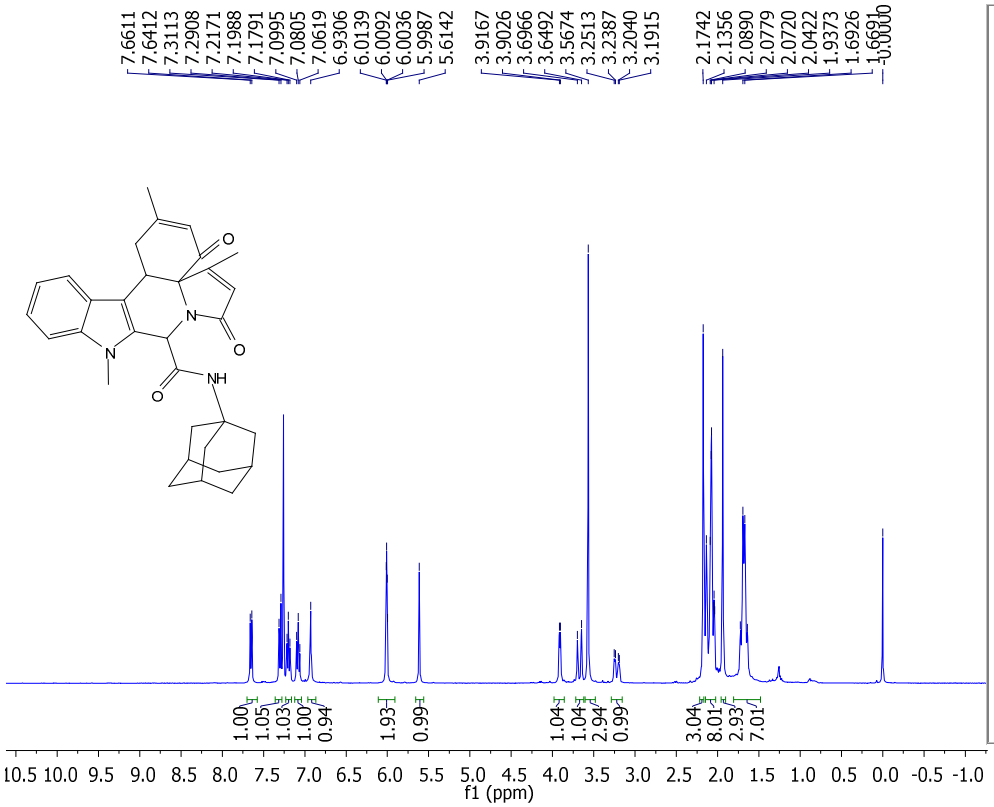
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	339
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	0.6816
18	Acquisition Date	2018-06-04T11:40:43
19	Modification Date	2018-06-04T12:41:00
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2943.1
23	Nucleus	13C
24	Acquired Size	24576
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2n**



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5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	39
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-31T17:19:00
19	Modification Date	2018-05-31T17:19:50
20	Spectrometer Frequency	400.17
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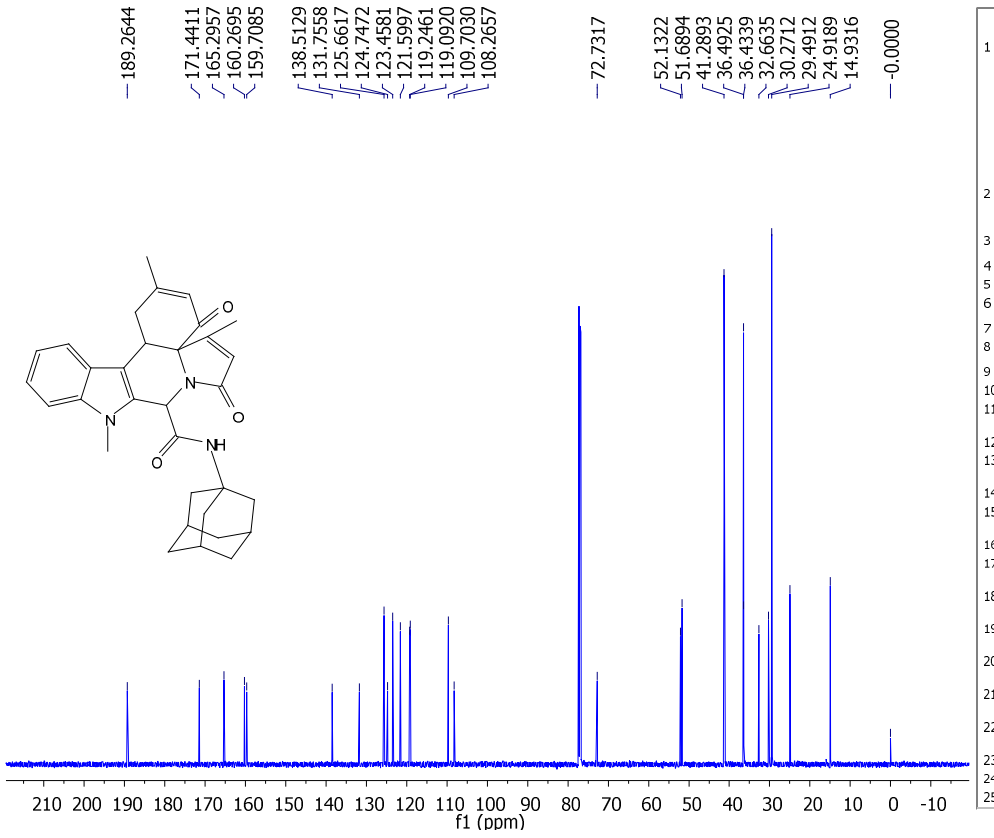
22	Lowest Frequency	-2538.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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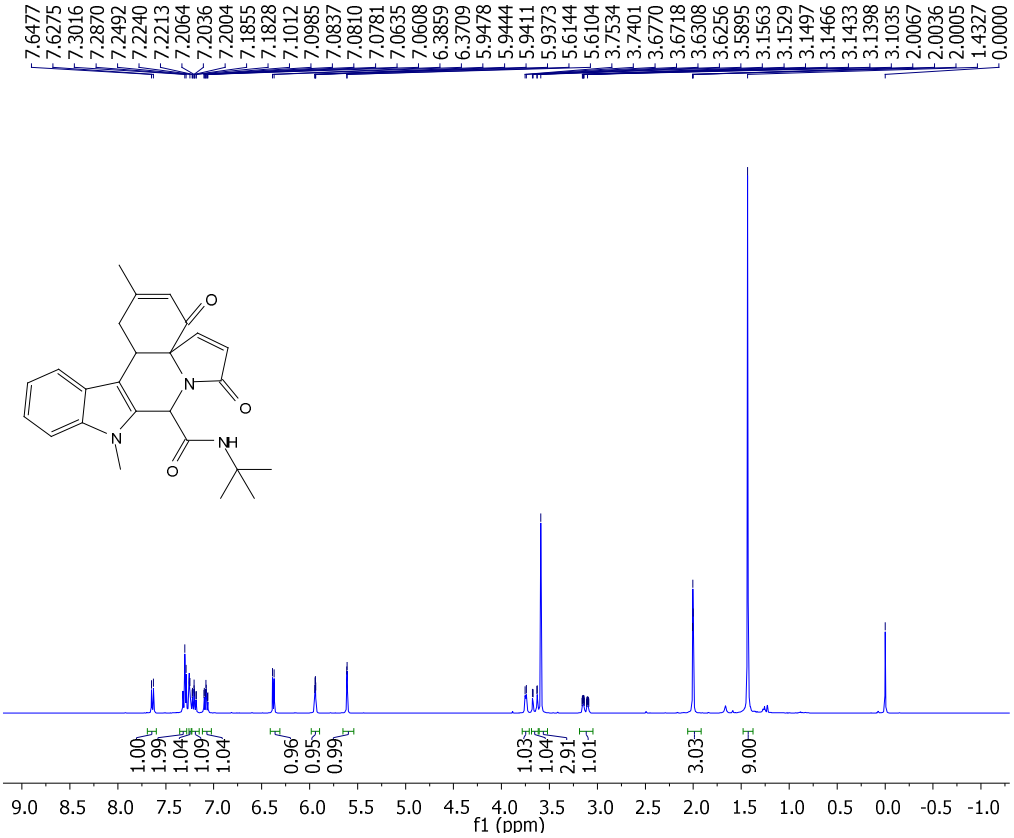
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	493
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	0.6816
18	Acquisition Date	2018-06-04T11:25:15
19	Modification Date	2018-06-04T12:25:22
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2942.3
23	Nucleus	13C
24	Acquired Size	24576
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2o**



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5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-20T12:42:00
19	Modification Date	2018-04-20T12:42:01
20	Spectrometer Frequency	400.17
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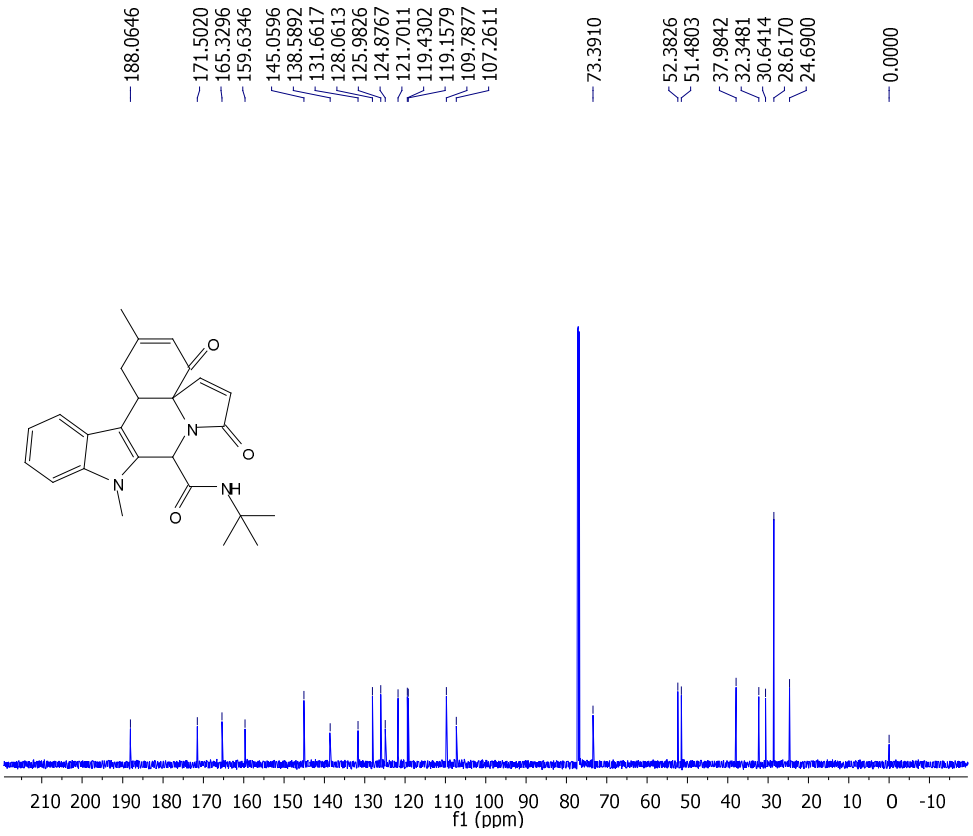
22	Lowest Frequency	-2539.7
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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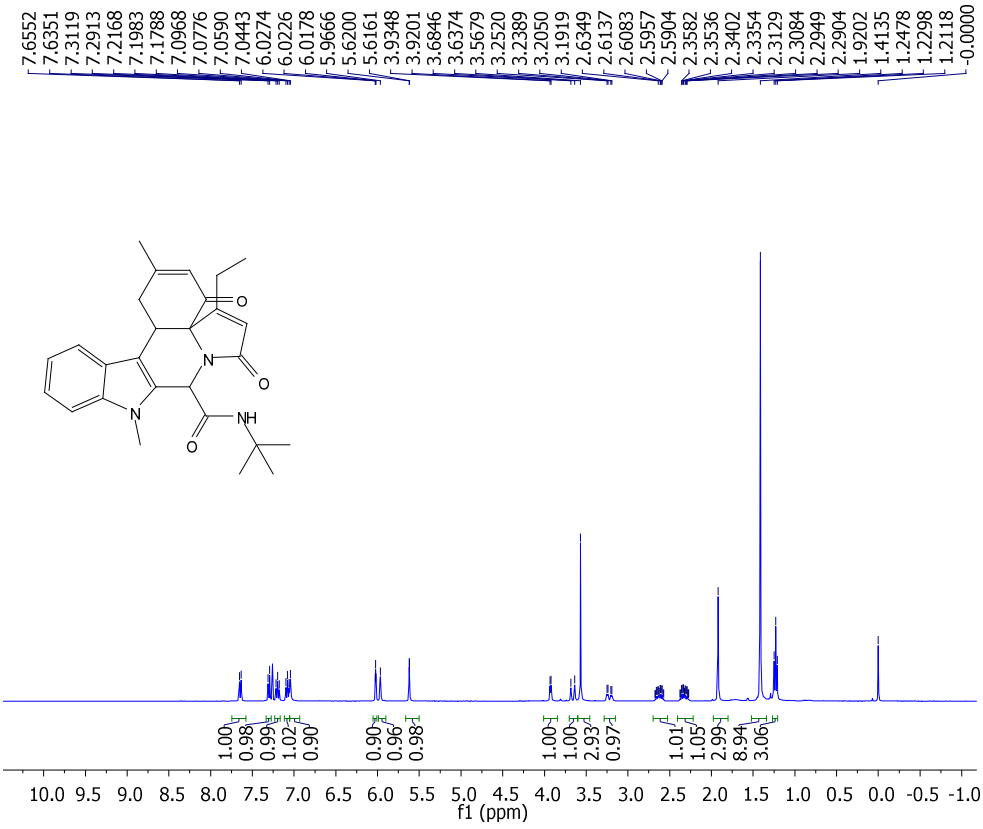
2	Title	EVDE-YH002-R58-13C-20apr2018-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	70
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-20T16:03:55
19	Modification Date	2018-04-20T17:03:56
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2942.2
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2p**



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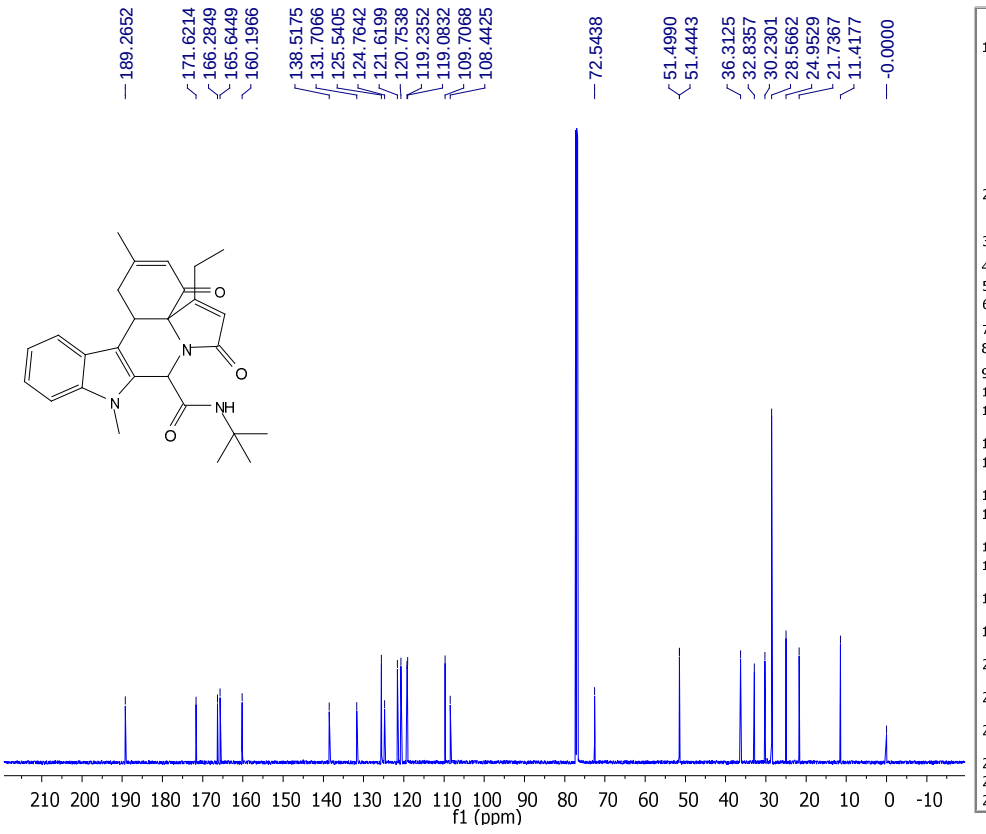
2	Title	EVDE-YH-002R59B
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-20T12:36:00
19	Modification Date	2018-04-20T12:36:41
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2538.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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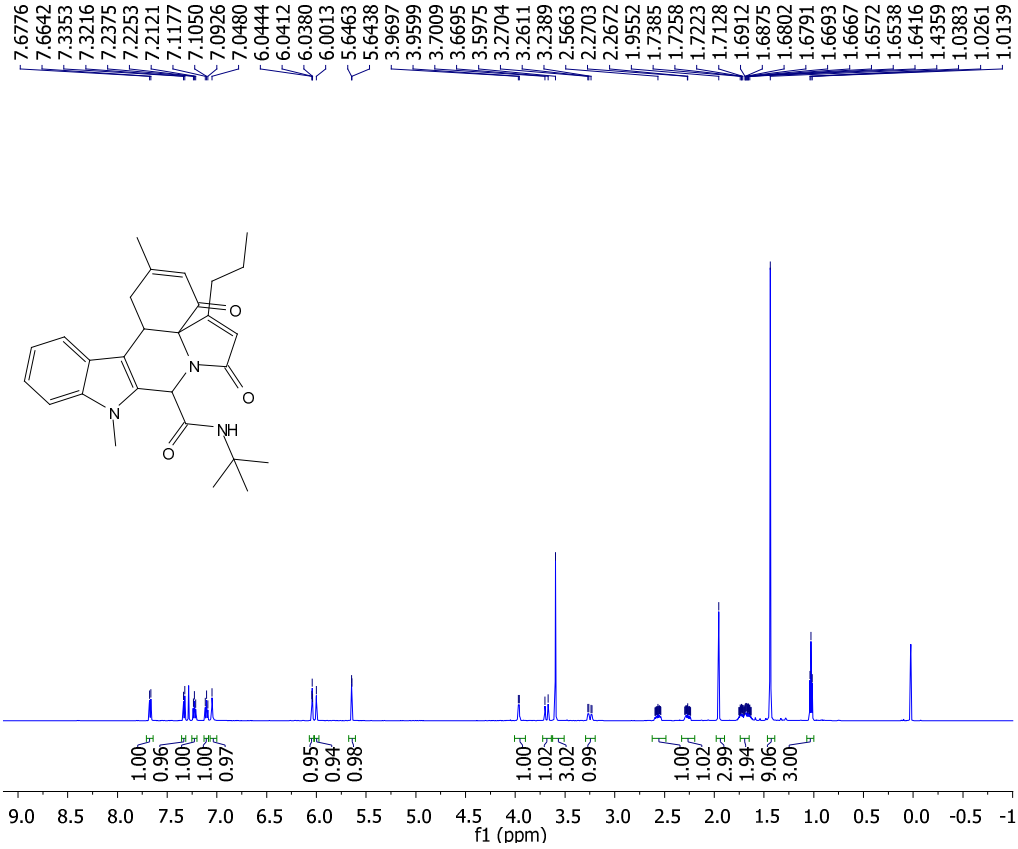
2	Title	EVDE-YH002-R59B-13C-20apr2018-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	643
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-20T16:45:25
19	Modification Date	2018-04-20T17:45:26
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2941.9
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2q**



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3	Comment	
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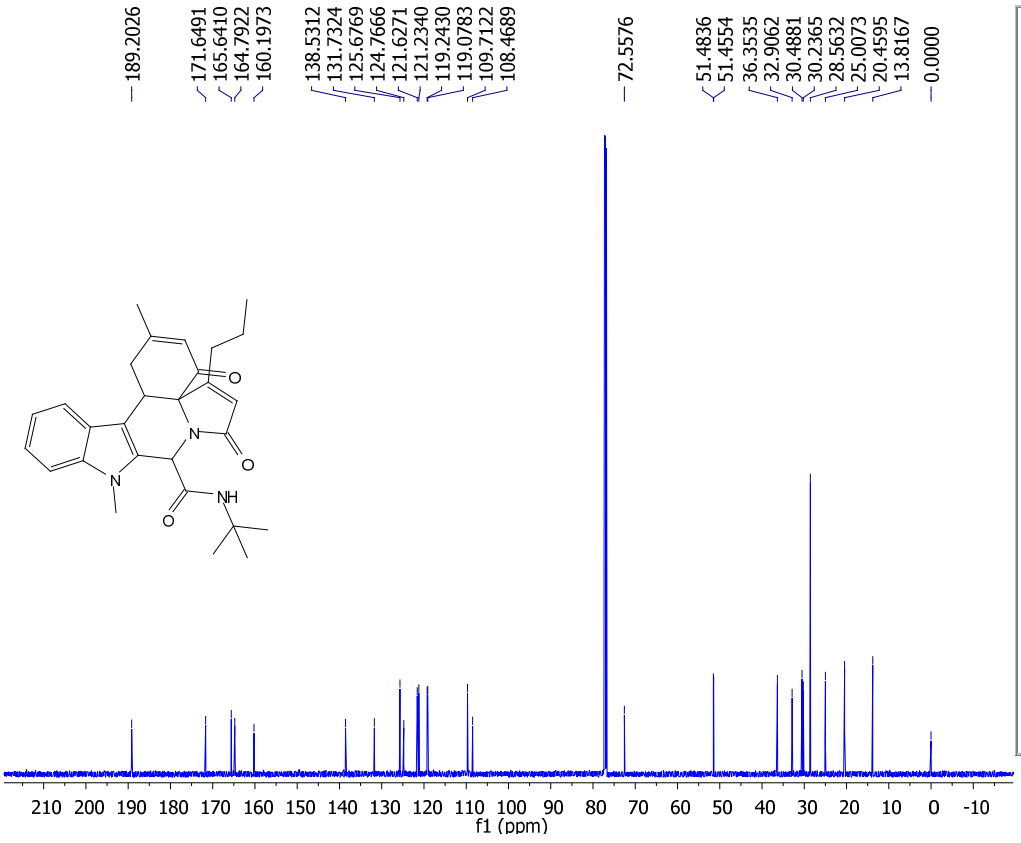
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.8
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	72
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-04-20T14:19:42
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2303.6
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	65536



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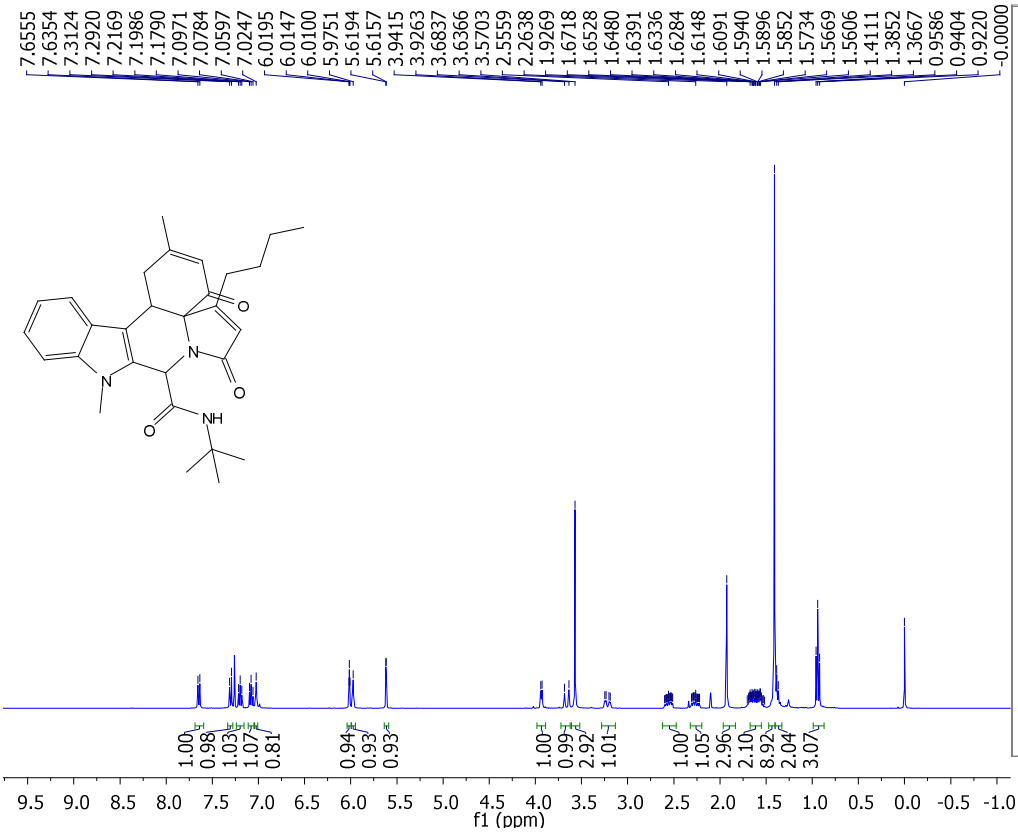
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.2
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	246
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-20T13:35:55
19	Modification Date	2018-04-20T14:35:56
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2941.1
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2r**



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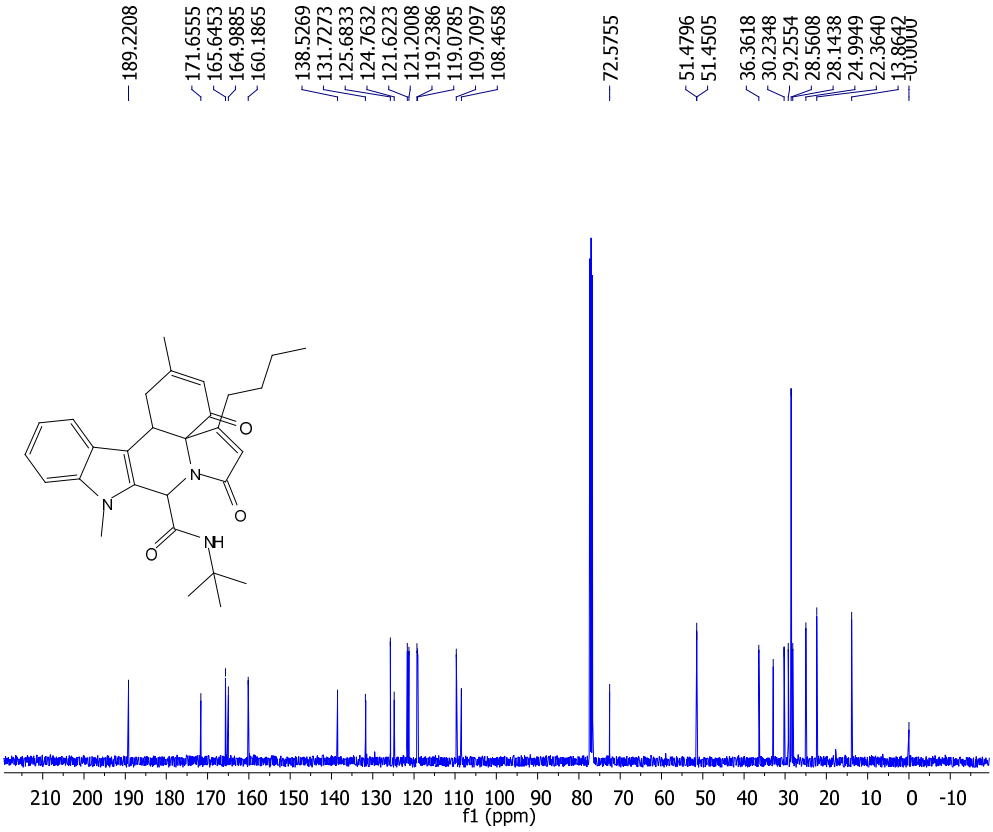
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-30T09:05:00
19	Modification Date	2018-04-30T09:05:25
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2538.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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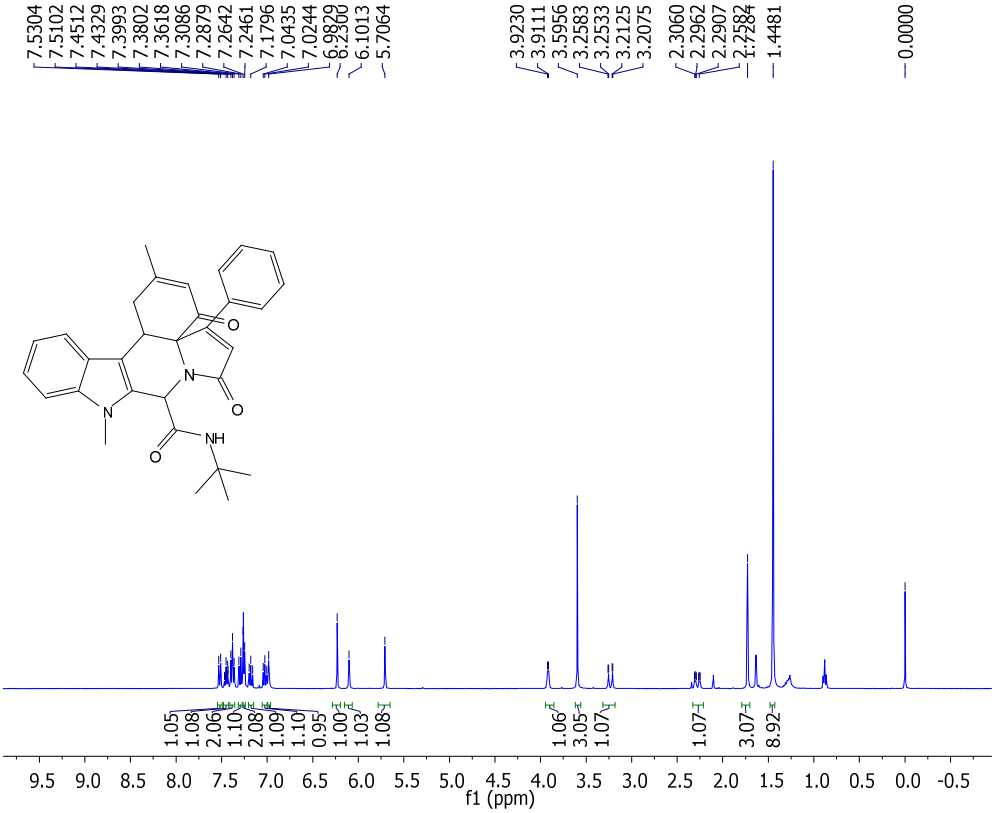
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	284
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-04-30T19:14:00
19	Modification Date	2018-04-30T19:27:13
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1958.8
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **2s**



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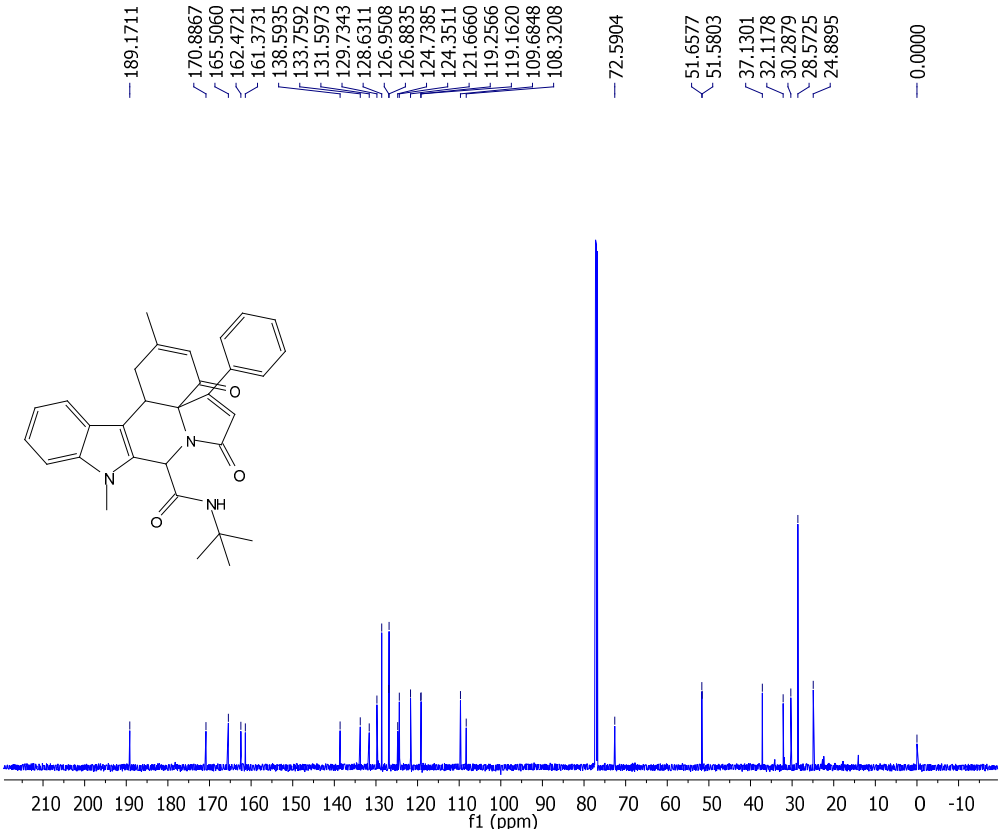
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-07-17T10:41:00
19	Modification Date	2018-07-17T10:41:35
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2539.1
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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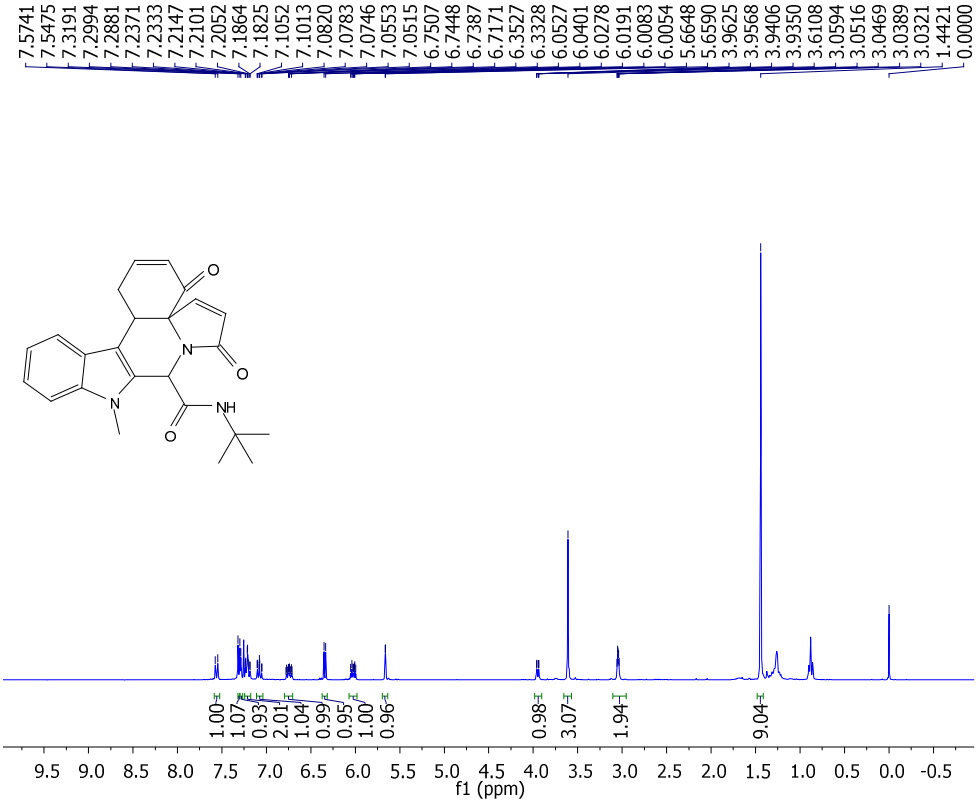
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.1
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	267
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-07-18T08:13:14
19	Modification Date	2018-07-18T10:21:30
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2941.4
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	262144

^{1}H and ^{13}C NMR spectra of compound **2t**



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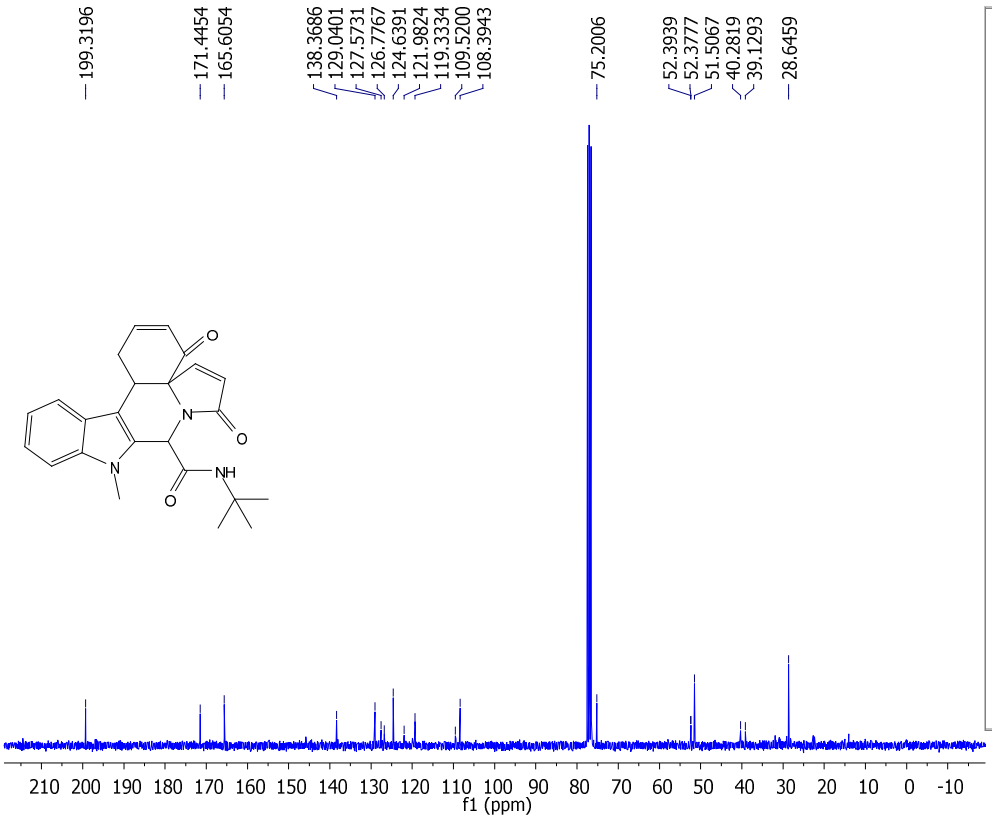
2	Title	EVDE_YH_002R4 5
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmruser
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	295.8
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	8
14	Receiver Gain	575
15	Relaxation Delay	1.0000
16	Pulse Width	9.5000
17	Acquisition Time	2.6543
18	Acquisition Date	2017-11-30T09: 30:00
19	Modification Date	2017-11-30T09: 30:17
20	Spectrometer Frequency	300.13
21	Spectral Width	6172.8
22	Lowest Frequency	-1240.6
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	32768



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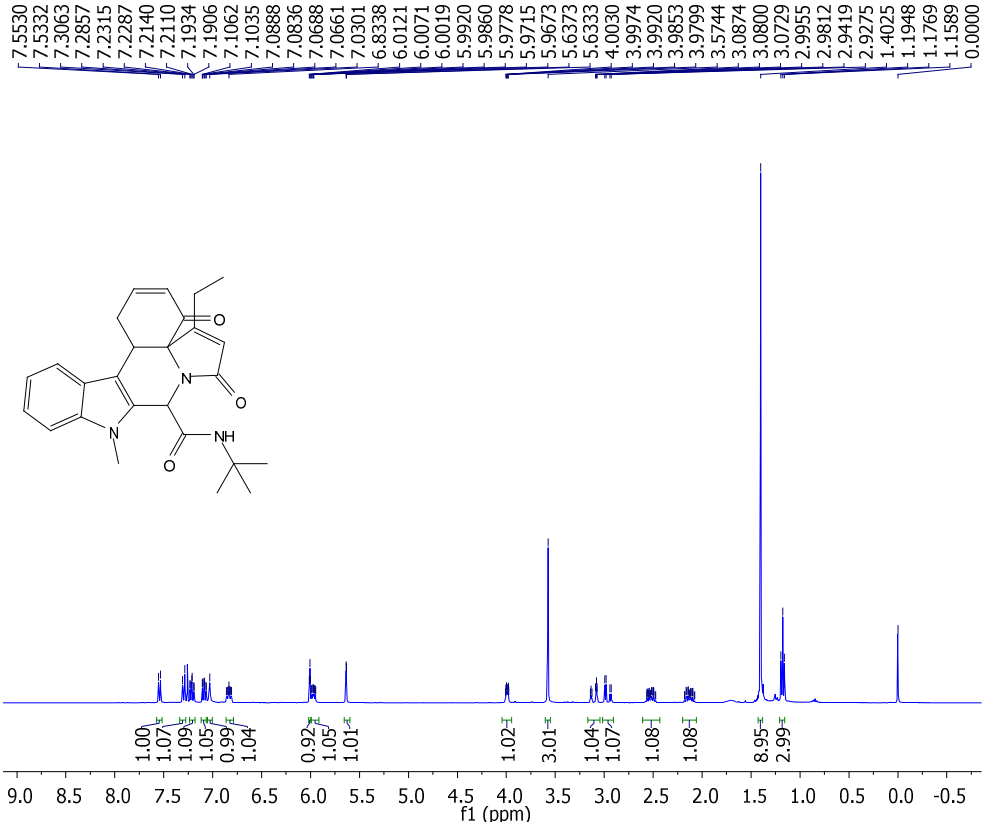
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmruser
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	295.8
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	2500
14	Receiver Gain	16384
15	Relaxation Delay	1.7500
16	Pulse Width	8.2500
17	Acquisition Time	1.8220
18	Acquisition Date	2017-12-01T21: 49:00
19	Modification Date	2017-12-01T21: 49:09
20	Spectrometer Frequency	75.48
21	Spectral Width	17985.6
22	Lowest Frequency	-1446.5
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	65536

^{1}H and ^{13}C NMR spectra of compound **2u**



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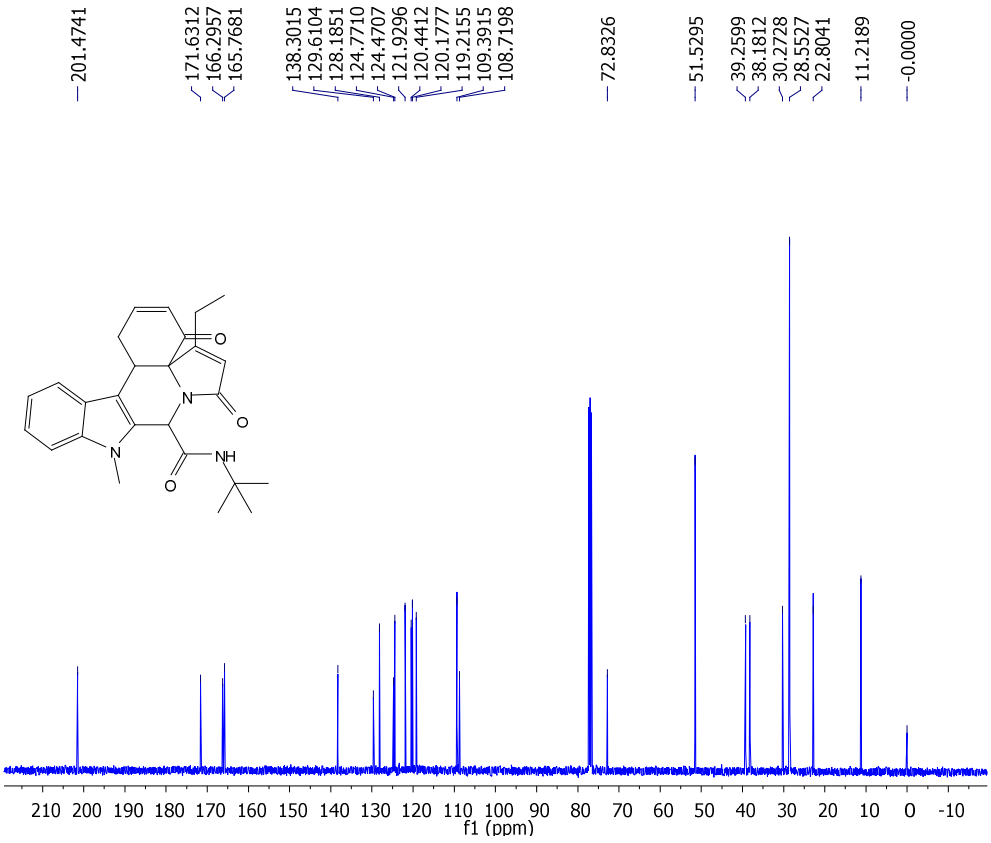
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	296.1
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2017-10-25T13: 15:00
19	Modification Date	2017-10-25T13: 15:22
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2539.2
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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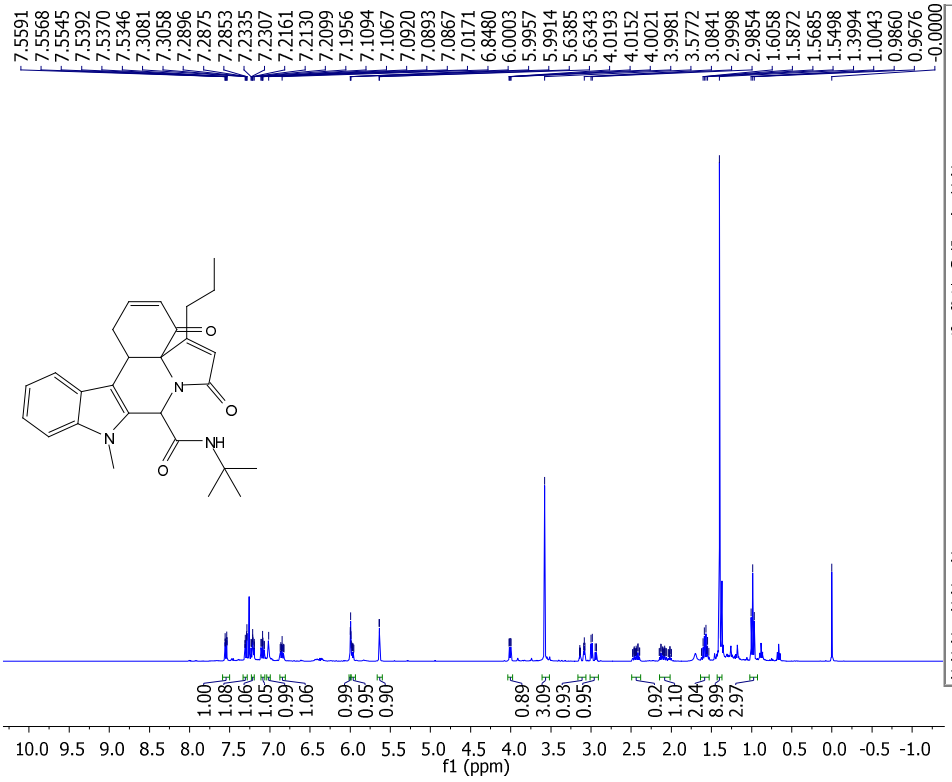
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.1
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	725
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2017-10-27T08: 15:00
19	Modification Date	2017-10-27T08: 15:51
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1958.8
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **2v**



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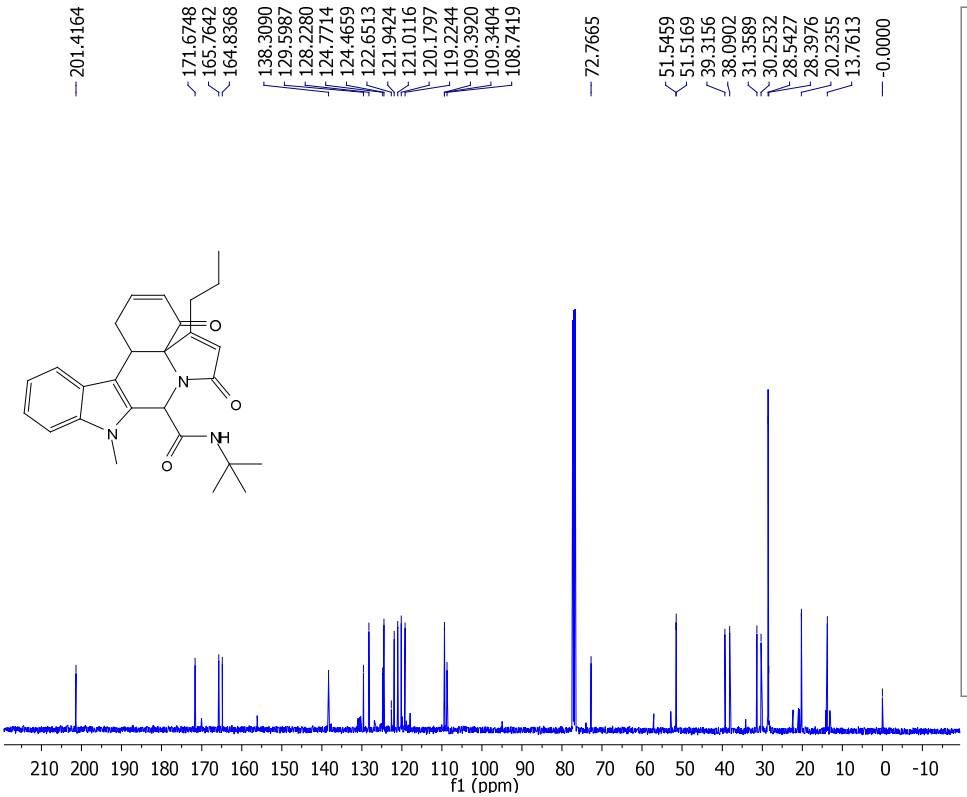
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	296.2
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2017-10-25T13:19:00
19	Modification Date	2017-10-25T13:19:50
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2539.2
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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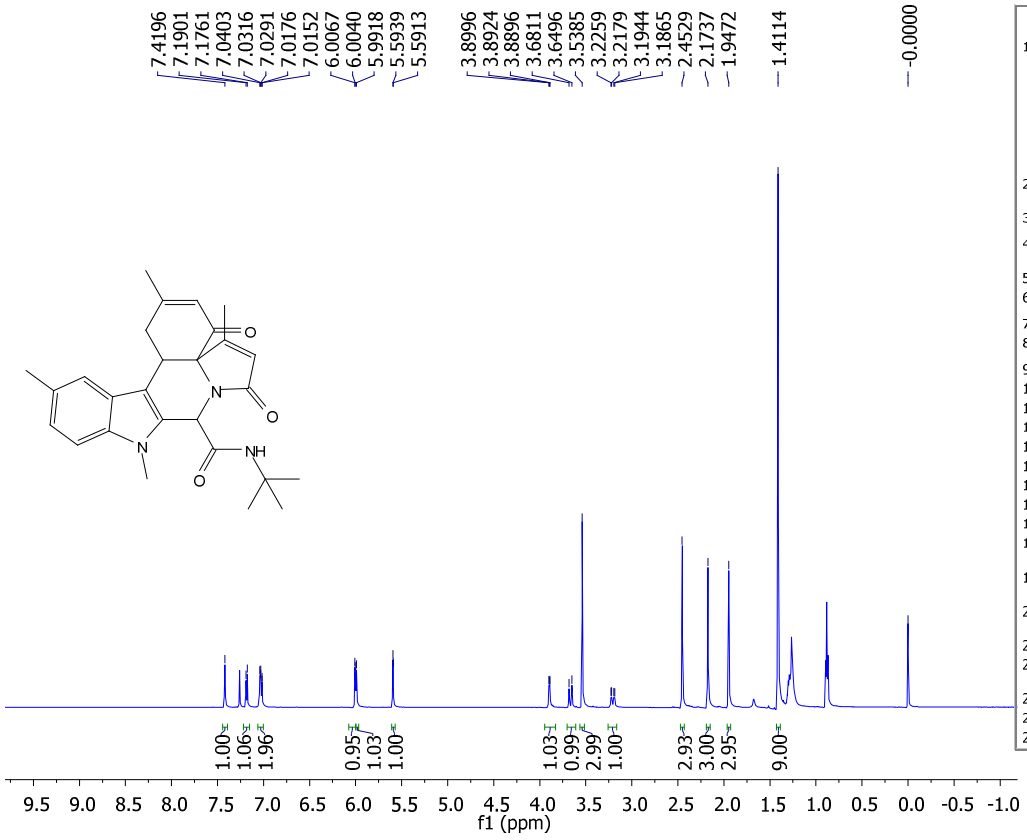
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	296.8
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2017-10-27T21:12:00
19	Modification Date	2017-10-27T21:12:09
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1958.7
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **2w**



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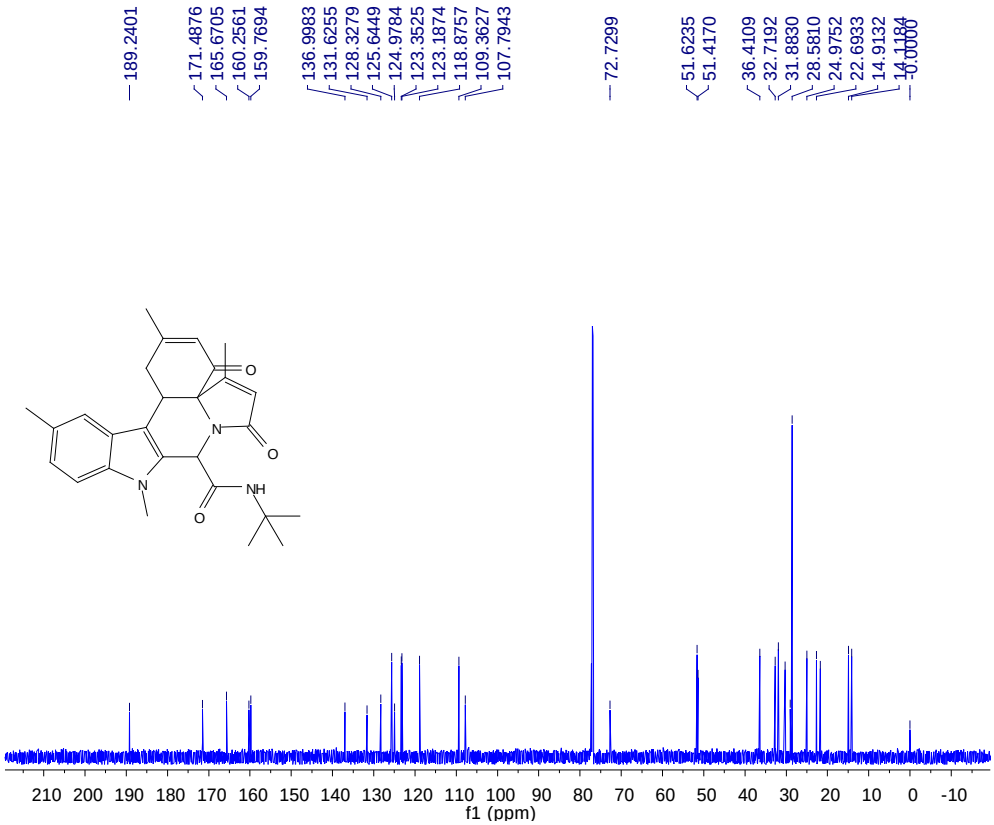
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	81
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-06T20:07:52
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2318.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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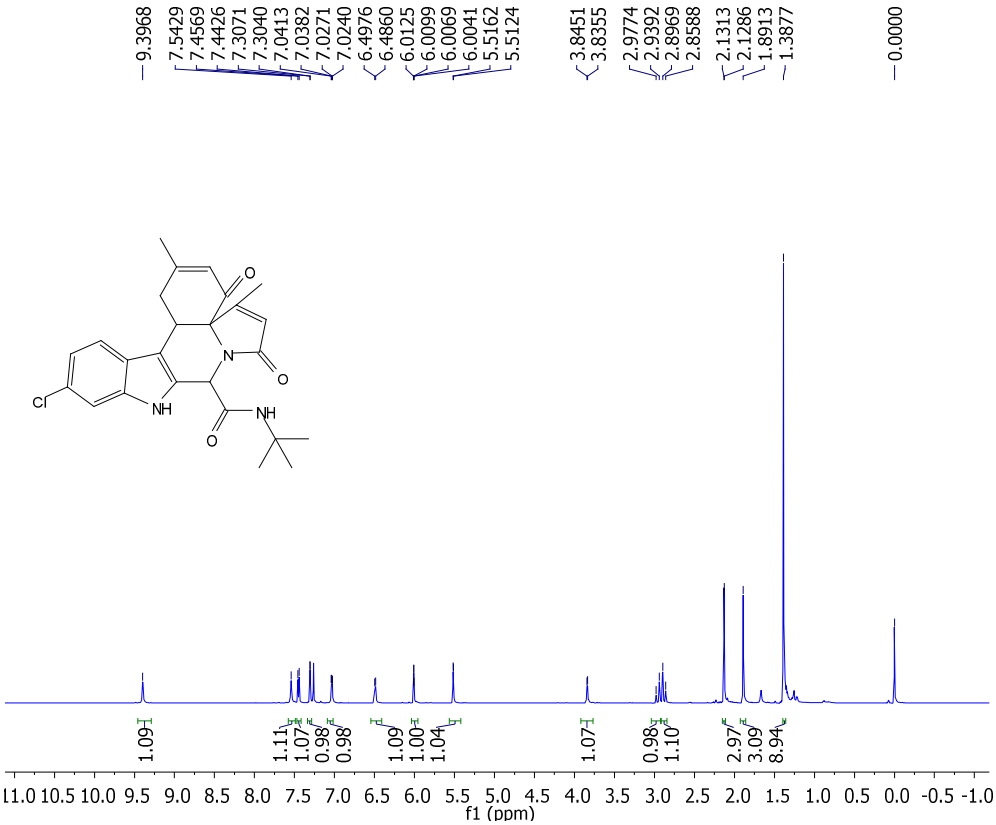
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.5
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	68
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-06T19:09:42
19	Modification Date	2018-05-06T20:12:12
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2941.0
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2x**



	Parameter	Value
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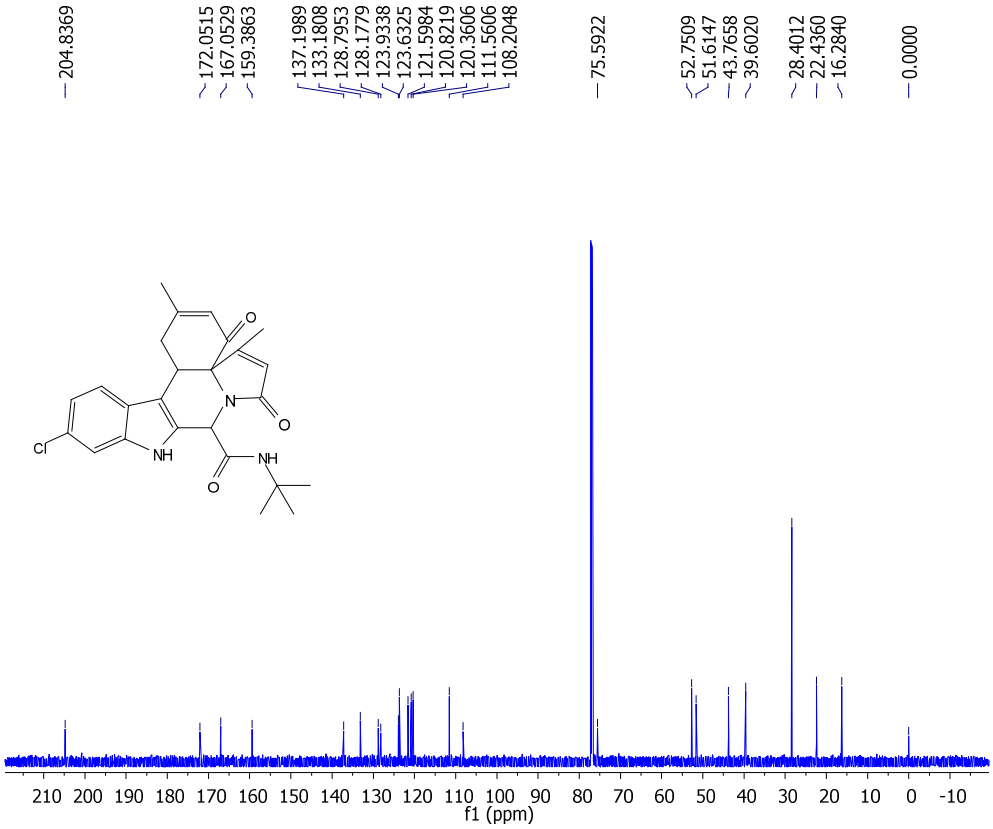
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	161
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-06T19:58:04
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2316.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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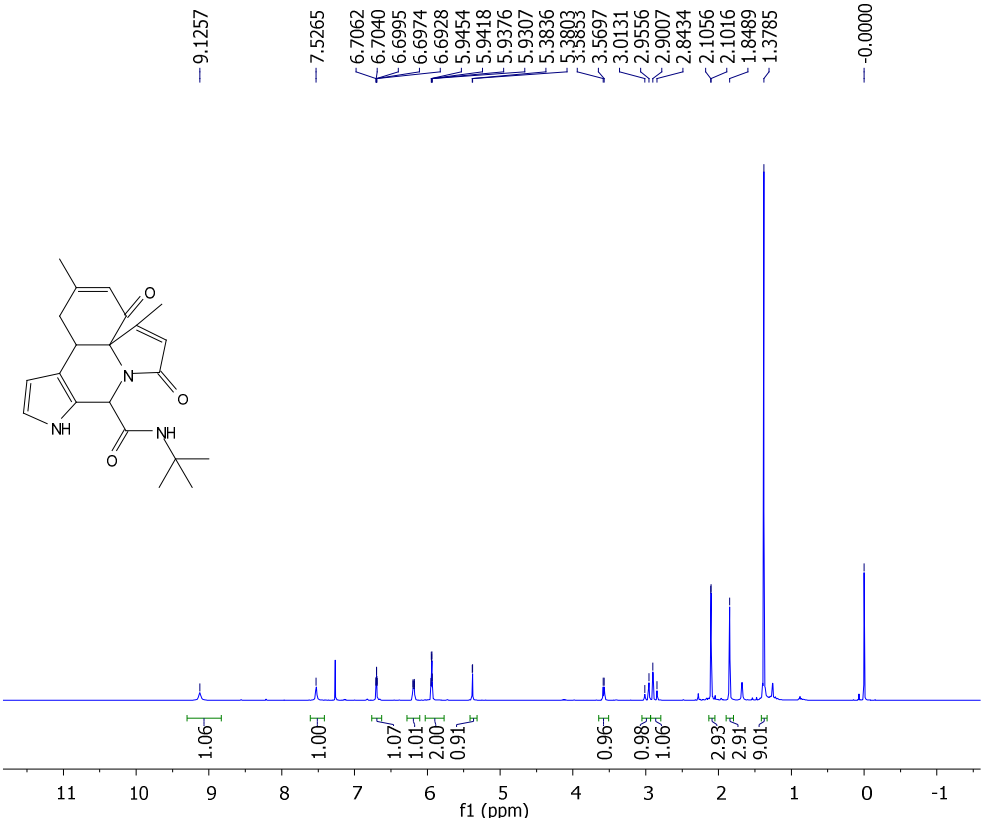
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.4
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	96
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-06T19:00:08
19	Modification Date	2018-05-06T20:03:42
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2940.1
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2ba**



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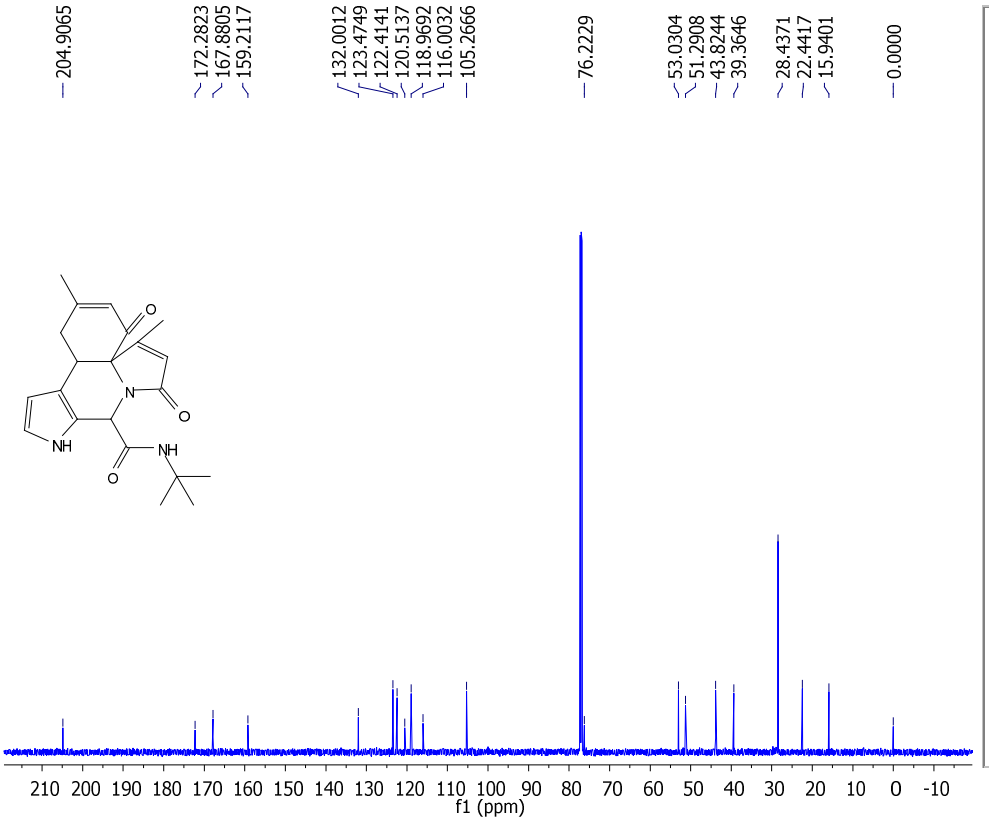
2 Title	EVDE-YH-002R85
3 Comment	
4 Origin	Bruker BioSpin GmbH
5 Owner	nmr
6 Site	
7 Spectrometer	spect
8 Author	
9 Solvent	CDCl3
10 Temperature	298.0
11 Pulse Sequence	zg30
12 Experiment	1D
13 Number of Scans	16
14 Receiver Gain	112
15 Relaxation Delay	1.0000
16 Pulse Width	9.7500
17 Acquisition Time	3.2768
18 Acquisition Date	2018-05-14T08:33:00
19 Modification Date	2018-05-14T08:33:30
20 Spectrometer Frequency	400.17
21 Spectral Width	10000.0
22 Lowest Frequency	-2536.8
23 Nucleus	1H
24 Acquired Size	32768
25 Spectral Size	65536



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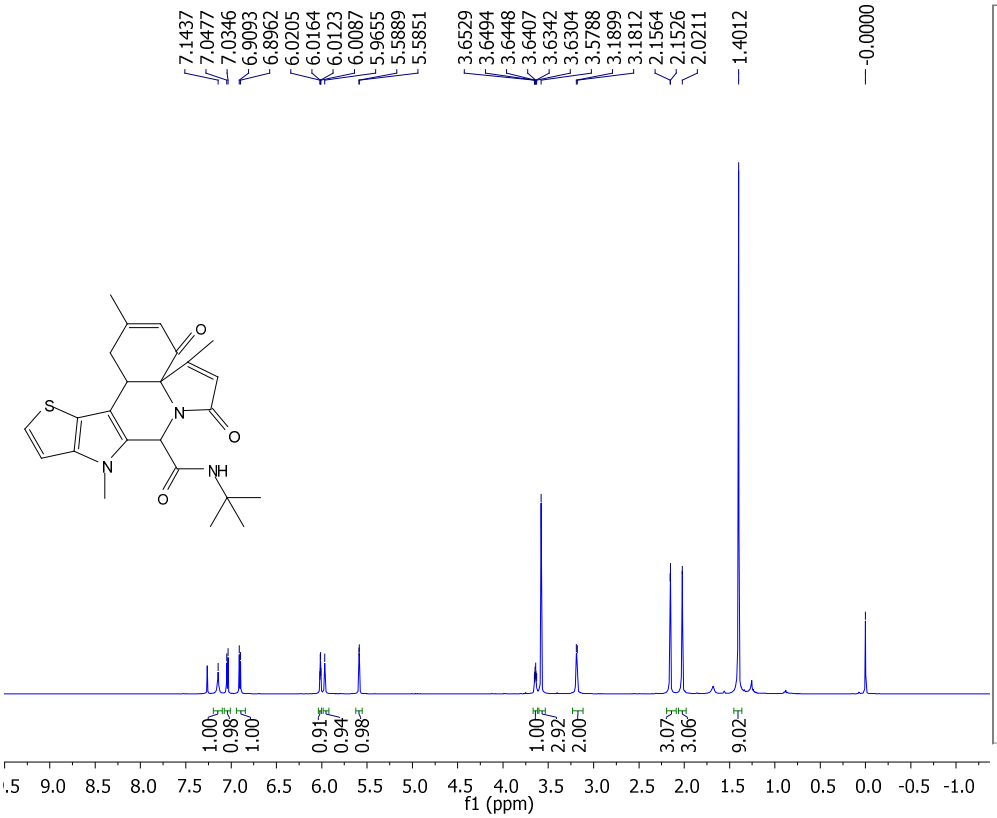
2 Title	EVDE-YH002-R85-13C-bbo5-600/ 2
3 Comment	
4 Origin	Bruker BioSpin GmbH
5 Owner	nmr
6 Site	
7 Spectrometer	spect
8 Author	
9 Solvent	CDCl3
10 Temperature	299.0
11 Pulse Sequence	zgpg30
12 Experiment	1D
13 Number of Scans	256
14 Receiver Gain	2050
15 Relaxation Delay	1.5000
16 Pulse Width	12.0000
17 Acquisition Time	1.1360
18 Acquisition Date	2018-05-14T10:11:05
19 Modification Date	2018-05-14T11:11:06
20 Spectrometer Frequency	150.92
21 Spectral Width	36057.7
22 Lowest Frequency	-2939.4
23 Nucleus	13C
24 Acquired Size	40960
25 Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2bb**



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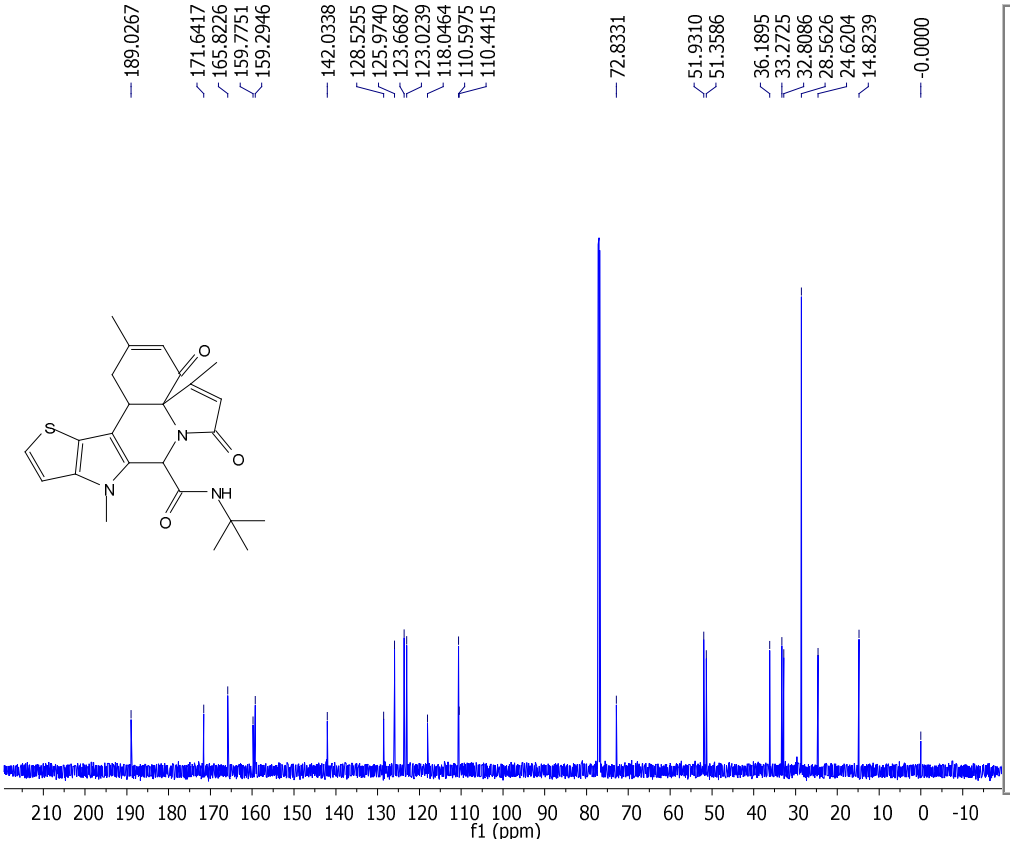
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-14T08:38:00
19	Modification Date	2018-05-14T08:38:01
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2537.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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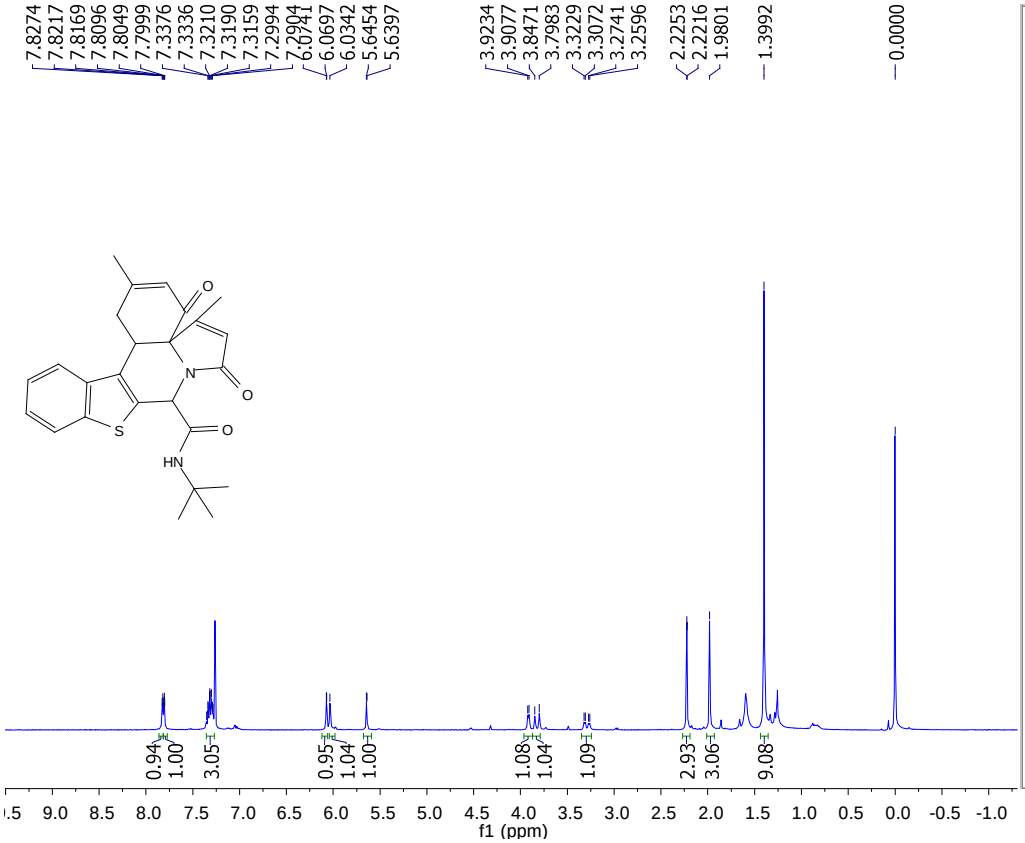
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.2
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	112
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-14T09:51:11
19	Modification Date	2018-05-14T10:56:00
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2941.3
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2bc**



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2	Title	EVDE-YH-002R97
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	201
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-30T08:23:00
19	Modification Date	2018-05-30T08:23:10
20	Spectrometer Frequency	400.17
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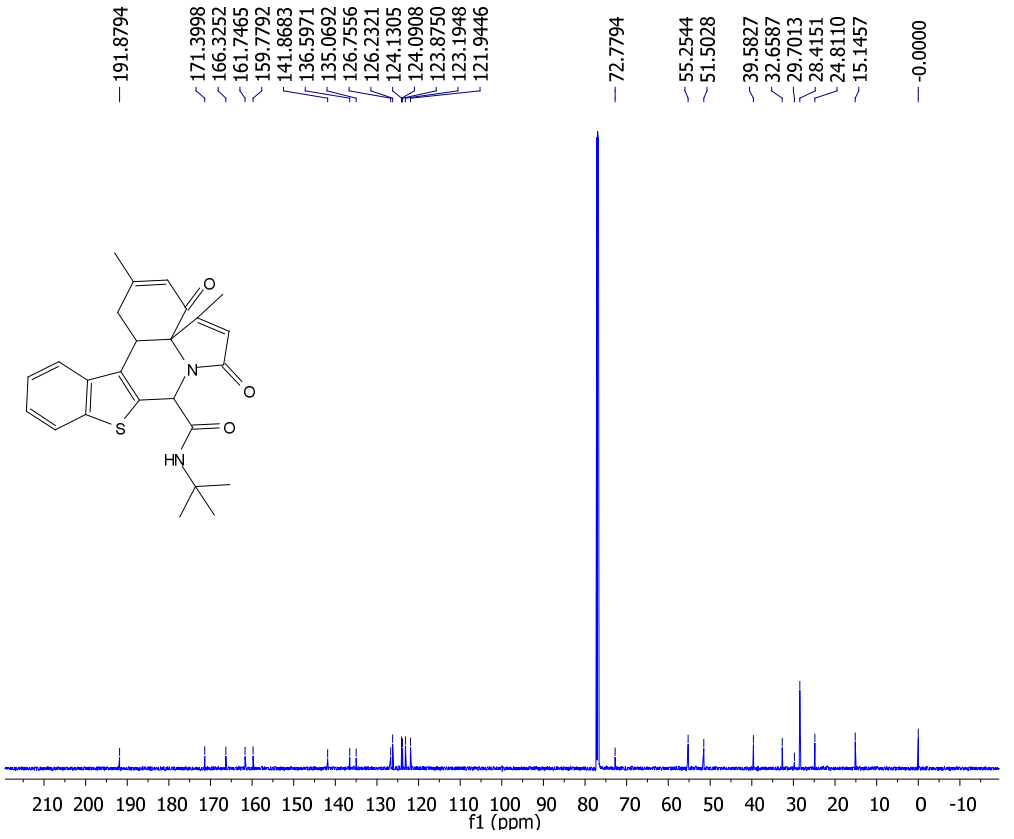
22	Lowest Frequency	-2537.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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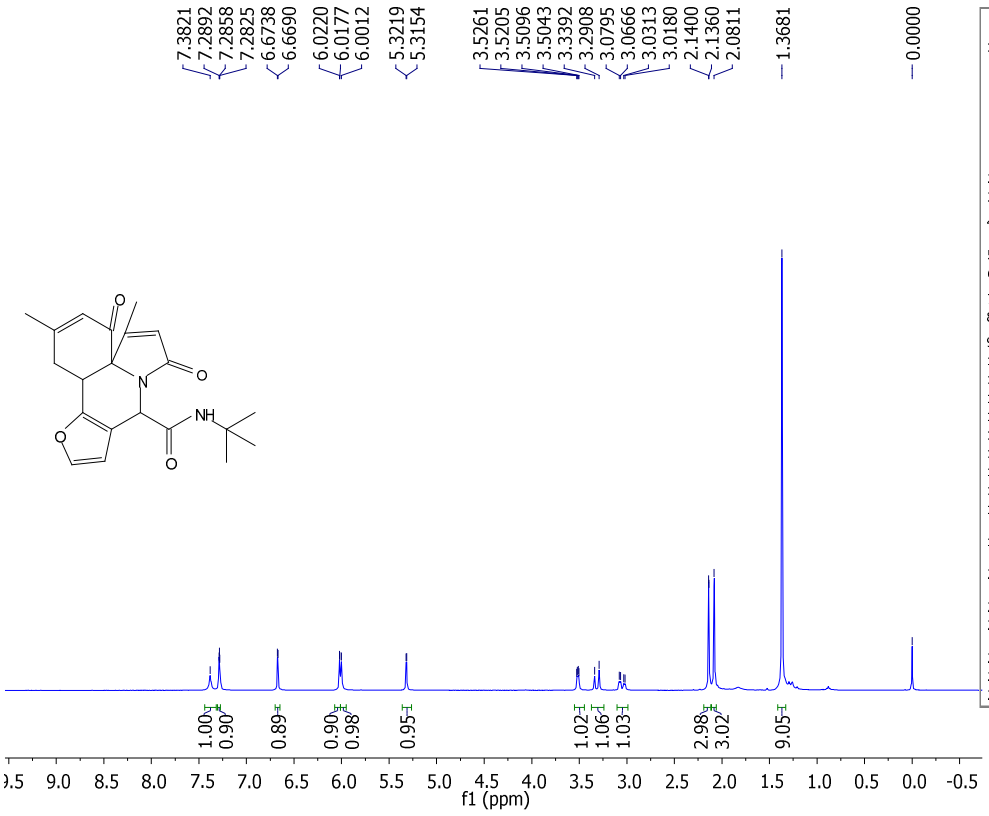
2	Title	EVDE-YH002-R97-13C-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.2
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1014
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-31T12:12:07
19	Modification Date	2018-05-31T14:01:46
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.9
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2bd**



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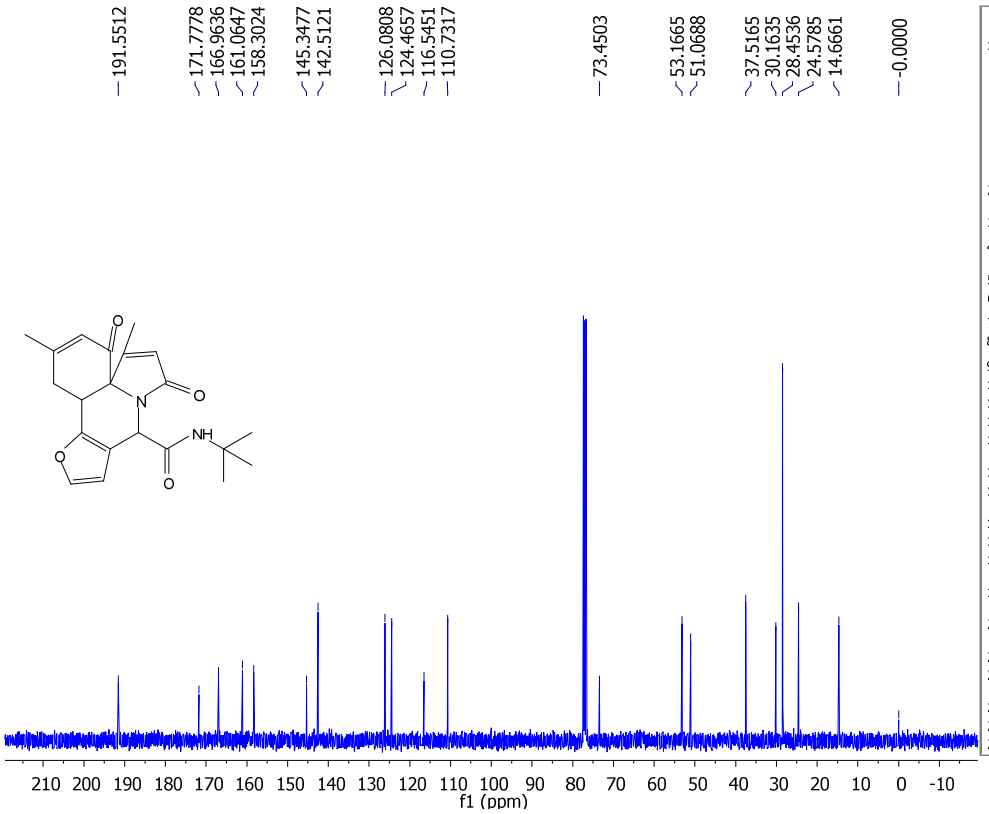
2	Title	EVDE-YH-002R98
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-30T08:18:00
19	Modification Date	2018-05-30T08:18:59
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2533.2
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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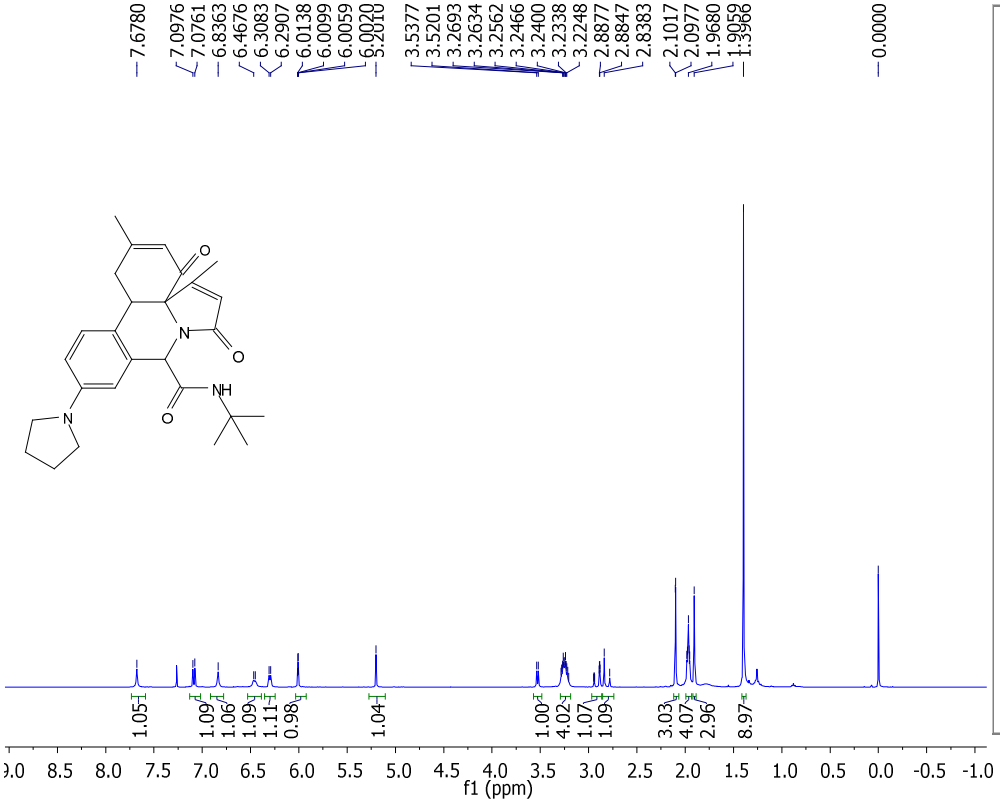
1	Data File Name	C:/ Users/ moke/ Desktop/ PROJECT 3 AND 5 COMBINE/ SCOPE/ NMR of Scope/ 002 series/ Post Ugi/ EVDE-YH-002R98 ok/ 12/ fid
2	Title	EVDE-YH-002R98
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	102
14	Receiver Gain	201
15	Relaxation Delay	1.5000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-05-30T09:44:00
19	Modification Date	2018-05-30T09:47:03
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.6
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **2be**



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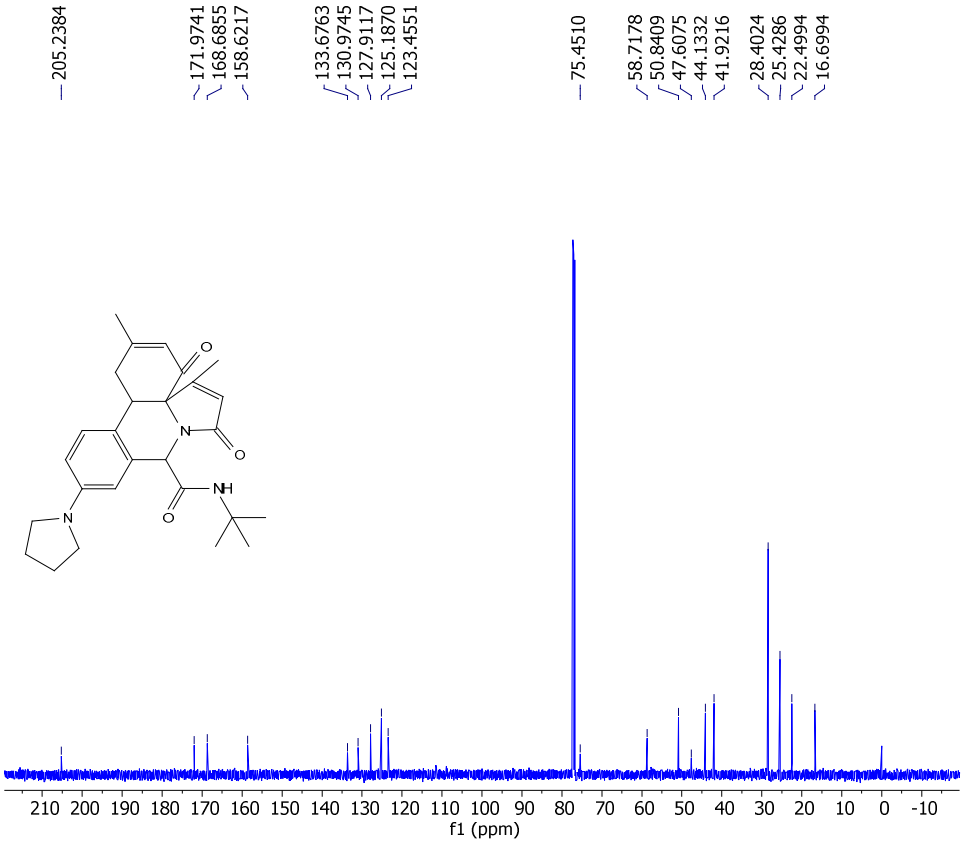
2	Title	EVDE-YH-002R84B
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-11T09:07:00
19	Modification Date	2018-05-11T09:07:21
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2536.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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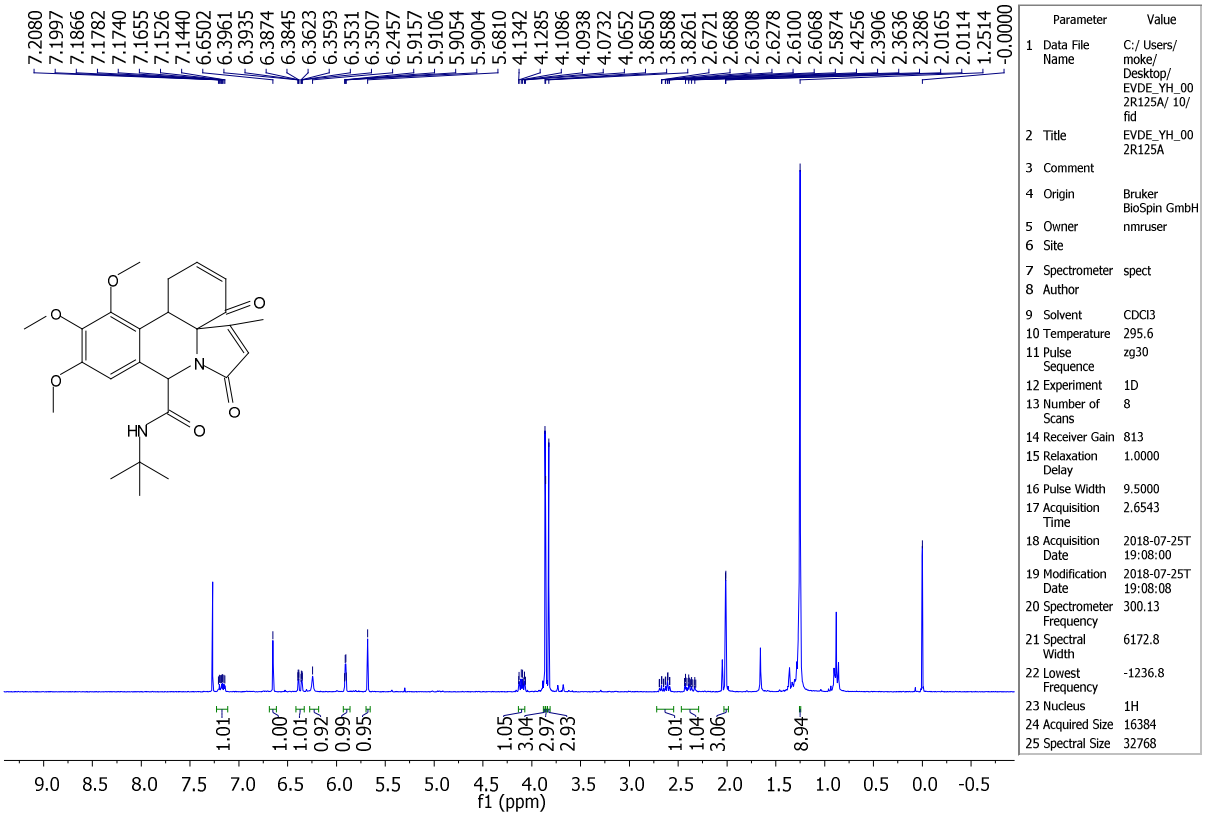
2	Title	EVDE-YH002-R84B-1H-13C-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	299.4
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	192
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-11T13:52:27
19	Modification Date	2018-05-11T14:52:26
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2938.8
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2bf**



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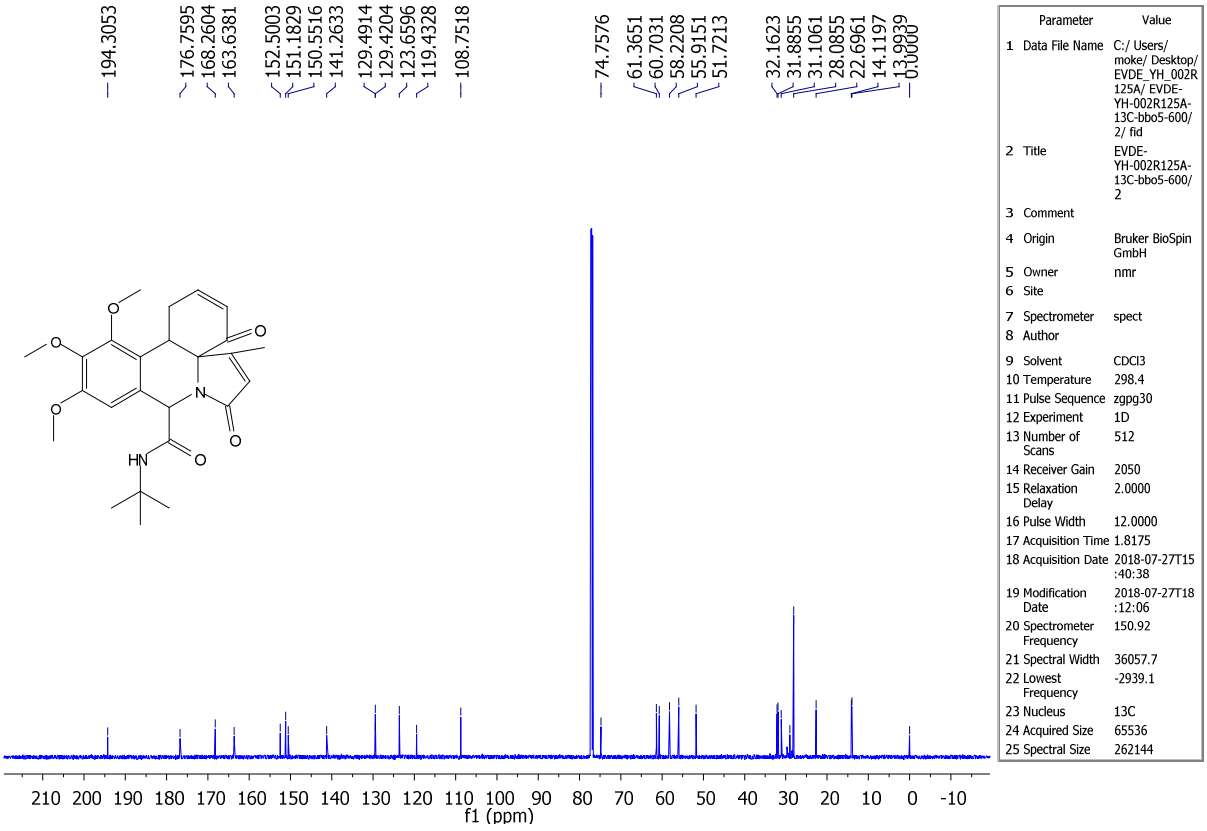
5	Owner	nmruser
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	295.6
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	8
14	Receiver Gain	813
15	Relaxation Delay	1.0000
16	Pulse Width	9.5000
17	Acquisition Time	2.6543
18	Acquisition Date	2018-07-25T 19:08:00
19	Modification Date	2018-07-25T 19:08:08
20	Spectrometer Frequency	300.13
21	Spectral Width	6172.8
22	Lowest Frequency	-1236.8
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	32768



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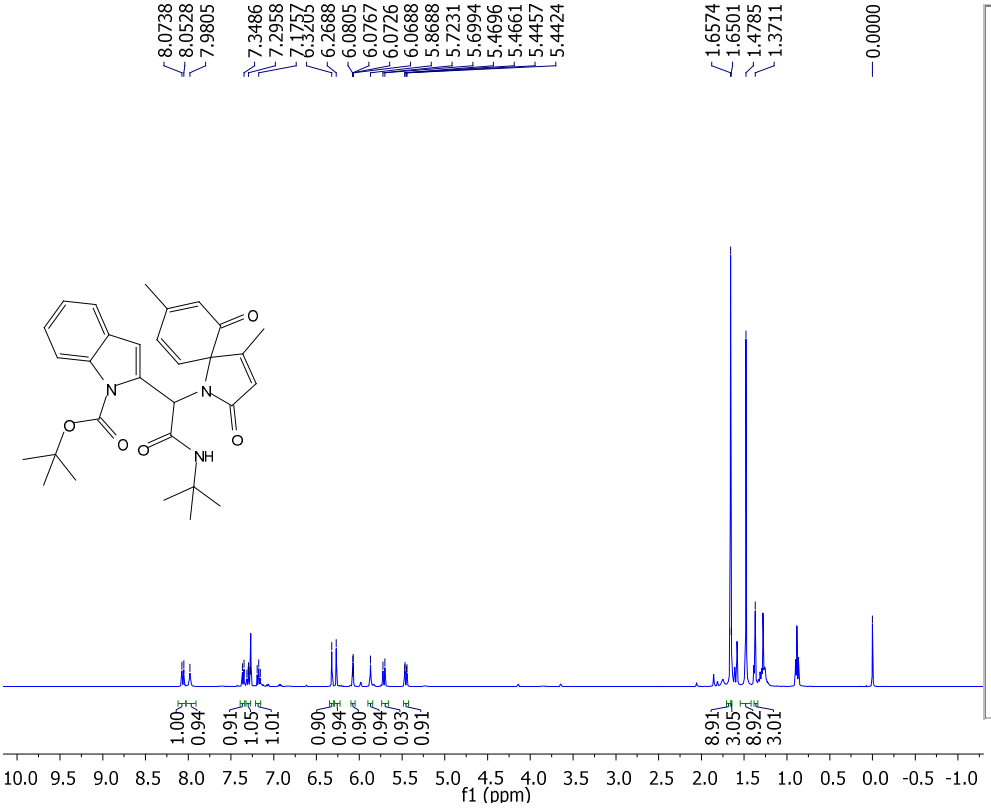
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.4
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	512
14	Receiver Gain	2050
15	Relaxation Delay	2.0000
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-07-27T15 :40:38
19	Modification Date	2018-07-27T18 :12:06
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.1
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	262144

^{1}H and ^{13}C NMR spectra of compound **2y'**



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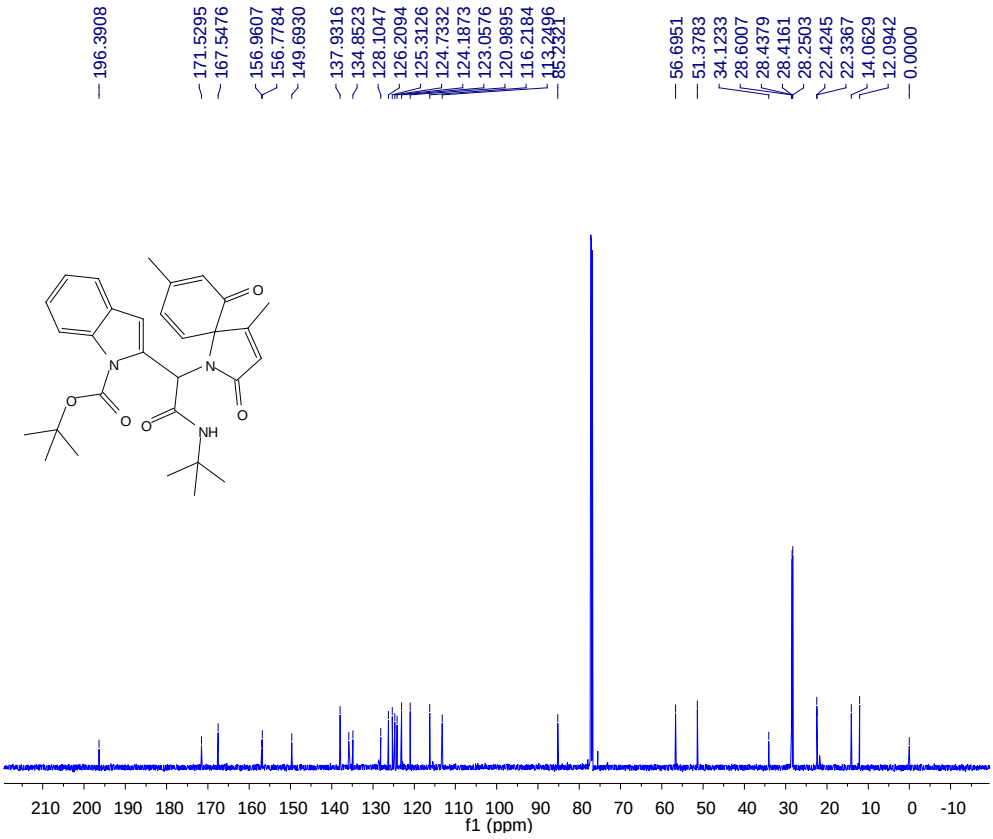
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-07-25T08:53:00
19	Modification Date	2018-07-25T08:53:55
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2535.1
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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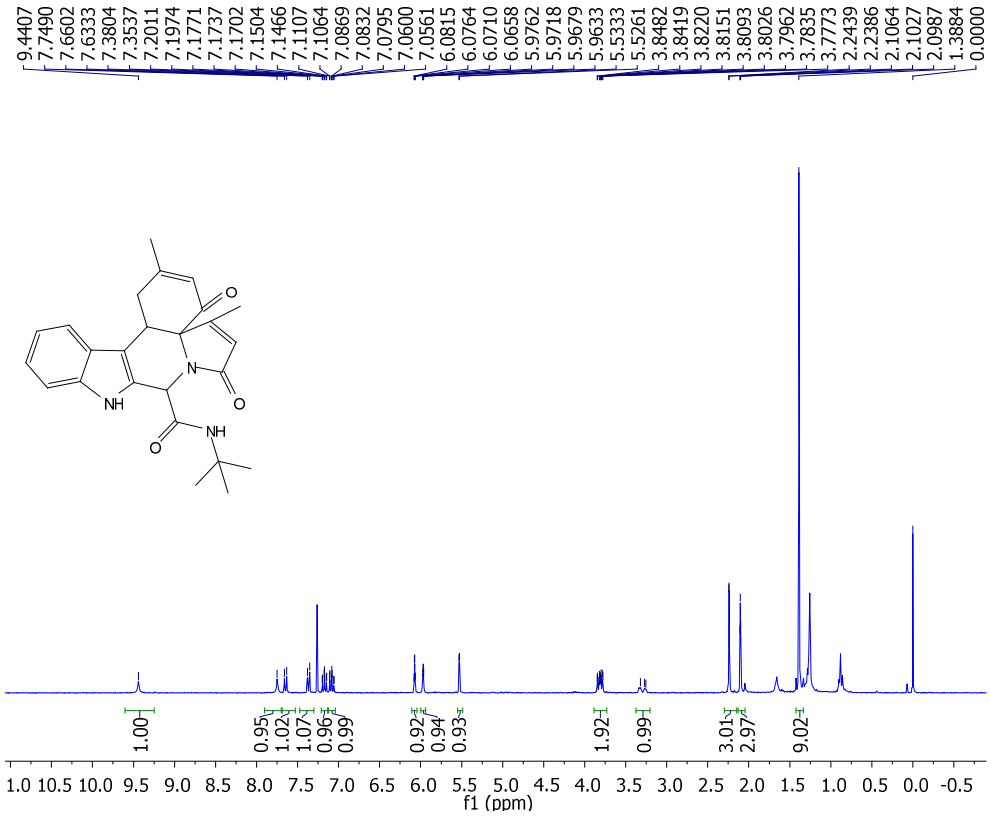
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	234
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-07-25T11:43:04
19	Modification Date	2018-07-25T13:44:30
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.1
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **2y**



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3	Comment	
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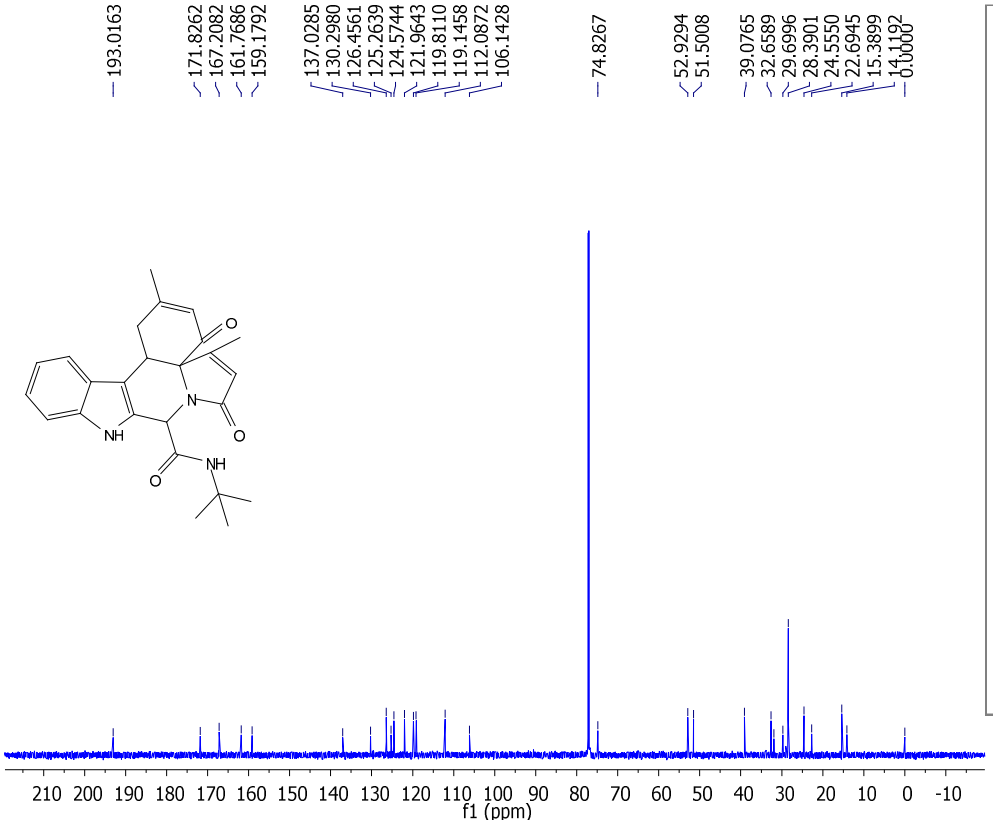
5	Owner	nmruser
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	295.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	8
14	Receiver Gain	1024
15	Relaxation Delay	1.0000
16	Pulse Width	9.5000
17	Acquisition Time	2.6543
18	Acquisition Date	2018-07-27T11 :23:00
19	Modification Date	2018-07-27T11 :23:41
20	Spectrometer Frequency	300.13
21	Spectral Width	6172.8
22	Lowest Frequency	-1239.2
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	32768



	Parameter	Value
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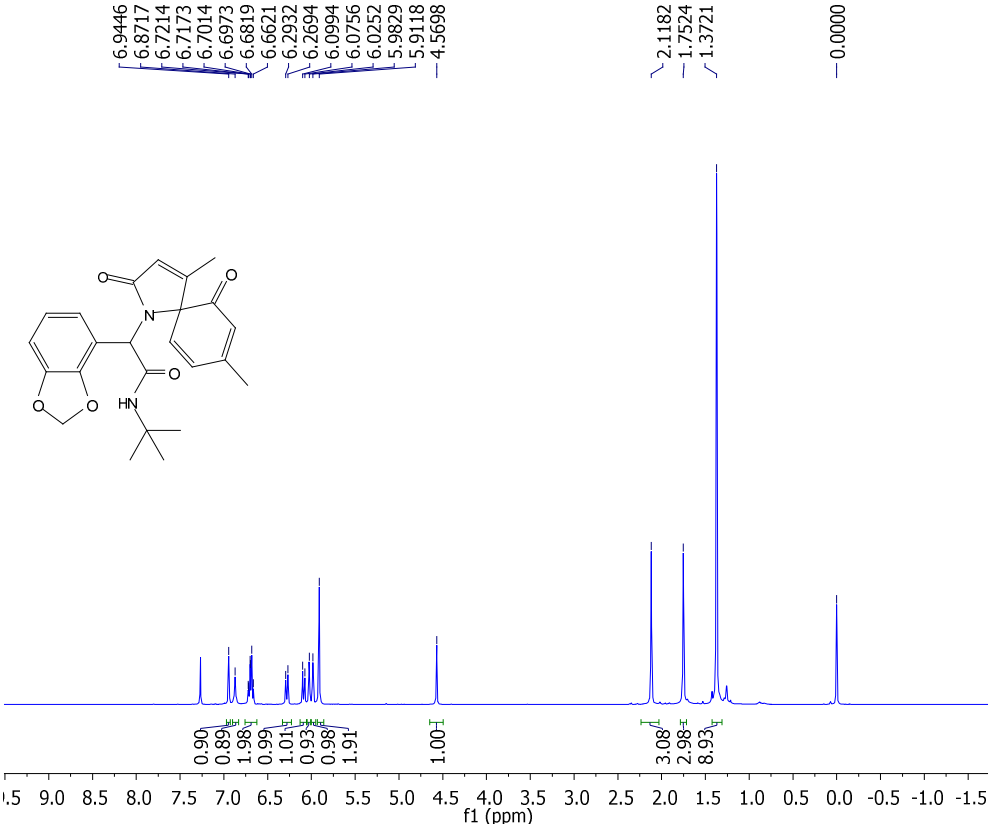
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.1
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	132
14	Receiver Gain	2050
15	Relaxation Delay	2.0000
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-07-27T17: 07:57
19	Modification Date	2018-07-27T19: 11:54
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2940.4
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	262144

^{1}H and ^{13}C NMR spectra of compound **s2b**



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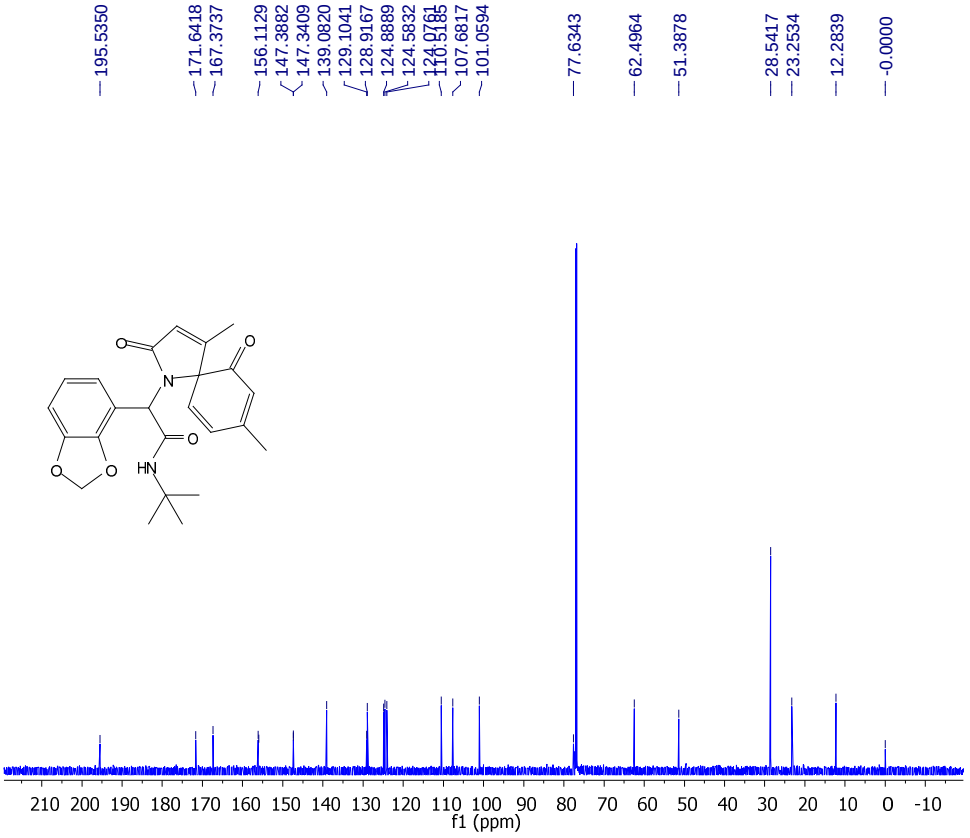
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	112
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-18T16:32:00
19	Modification Date	2018-05-18T16:32:52
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2535.4
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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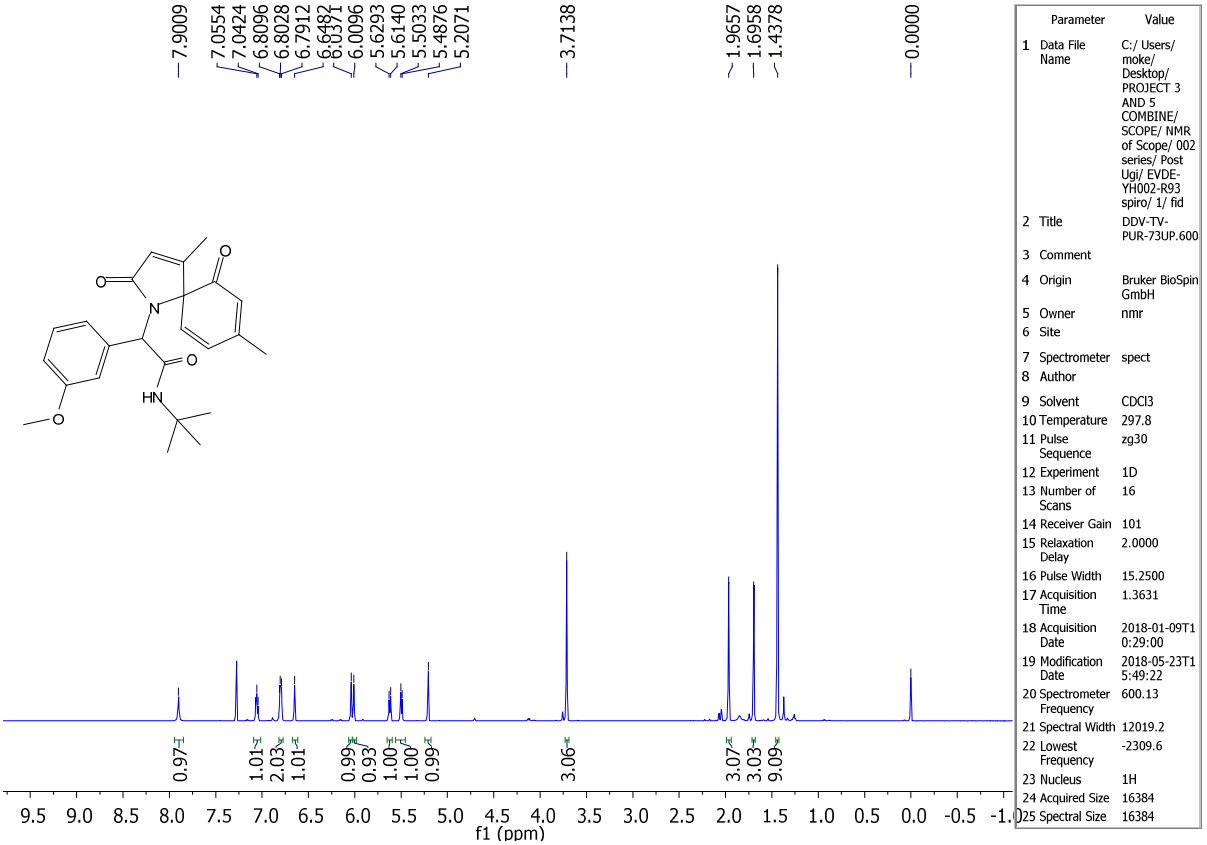
2	Title	EVDE-YH002-R91A-13C-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.5
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	82
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-20T17:26:43
19	Modification Date	2018-05-20T18:29:38
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **s2c**



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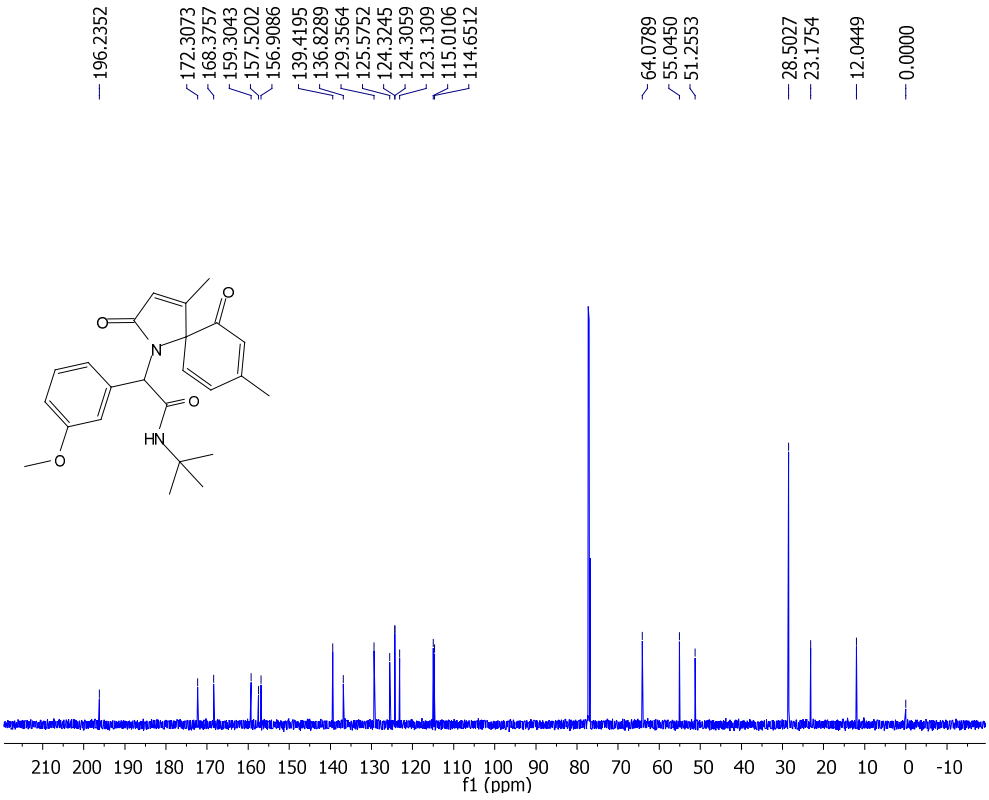
2	Title	DDV-TV-PUR-73UP.600
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.8
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	101
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-23T15:49:22
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2309.6
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	16384



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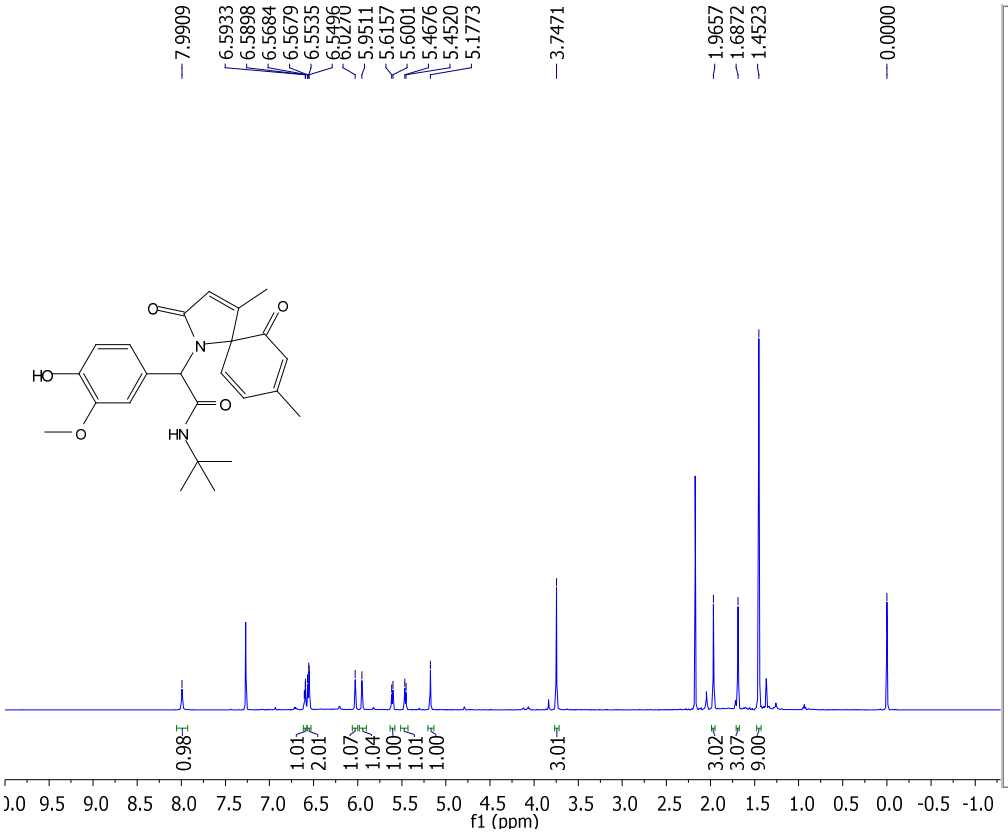
1	Data File Name	C:/ Users/ moke/ Desktop/ PROJECT 3 AND 5 COMBINE/ SCOPE/ NMR of Scope/ 002 series/ Post Ugi/ EVDE-YH002-R93 spiro/ 2/ fid
2	Title	EVDE-YH002-R93 spiro/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.5
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	68
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-23T14:51:18
19	Modification Date	2018-05-23T15:53:44
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.3
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **s2d**



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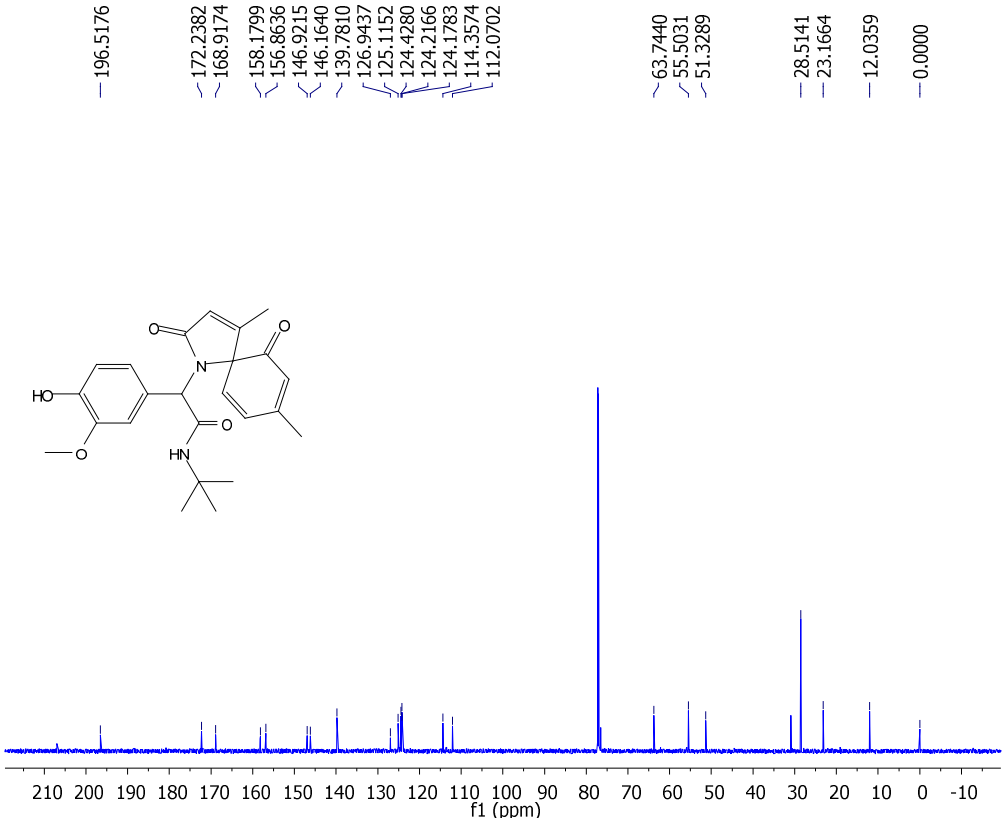
2	Title	DDV-TV-PUR-73UP.600
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	8
14	Receiver Gain	128
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-23T09:46:38
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2313.8
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	131072



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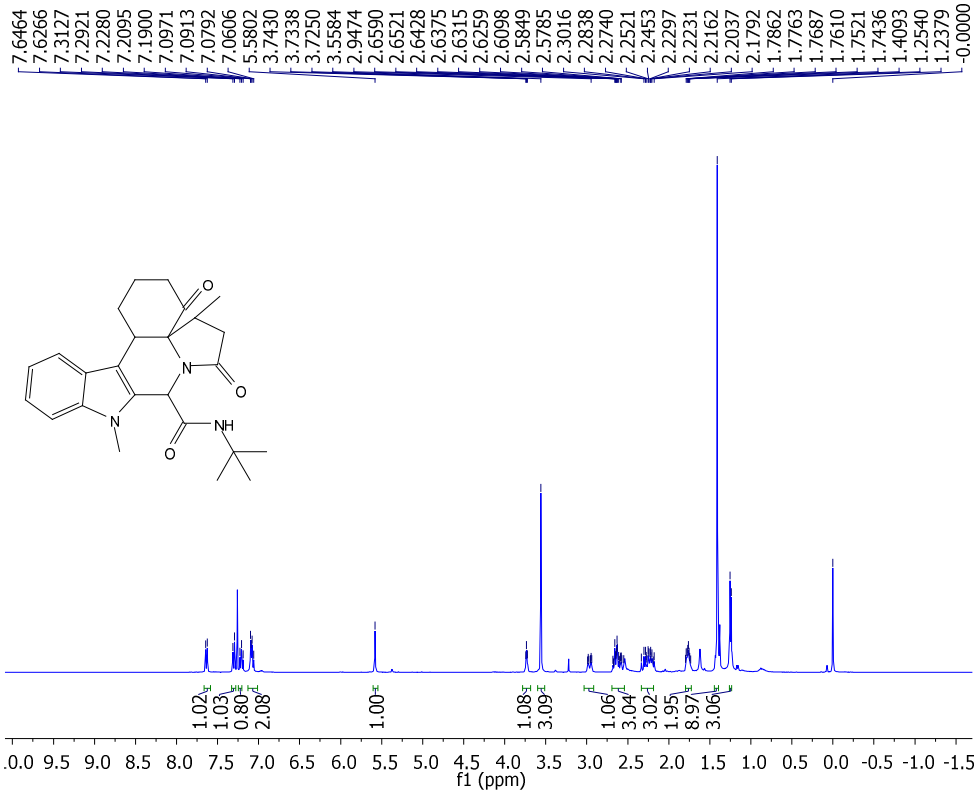
2	Title	EVDE-YH-002-R92-spiro (check again)/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.4
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	569
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-23T08:49:24
19	Modification Date	2018-05-23T10:14:12
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.1
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

Copies of NMR spectra (transformation products of 2a)

^{1}H and ^{13}C NMR spectra of compound **3**



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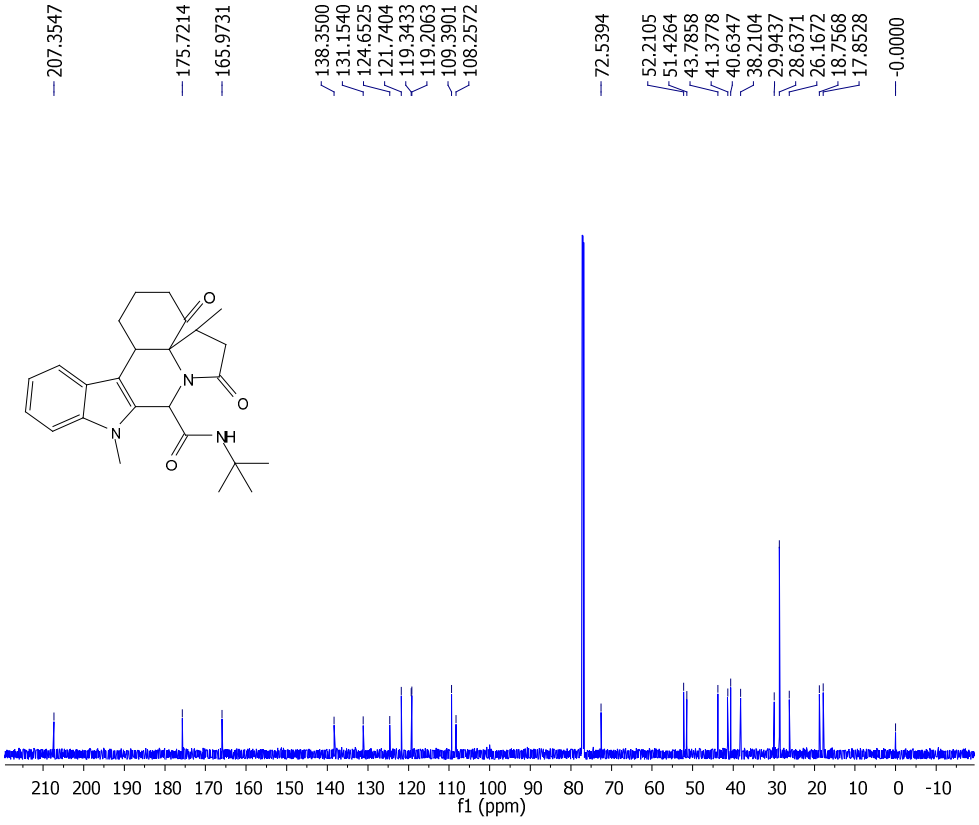
1	Data File Name	C:/ Users/ moke/ Desktop/ EVDE-YH-002R110/ 10/ fid
2	Title	EVDE-YH-002R110
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-06-06T16:56:00
19	Modification Date	2018-06-06T16:56:45
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2538.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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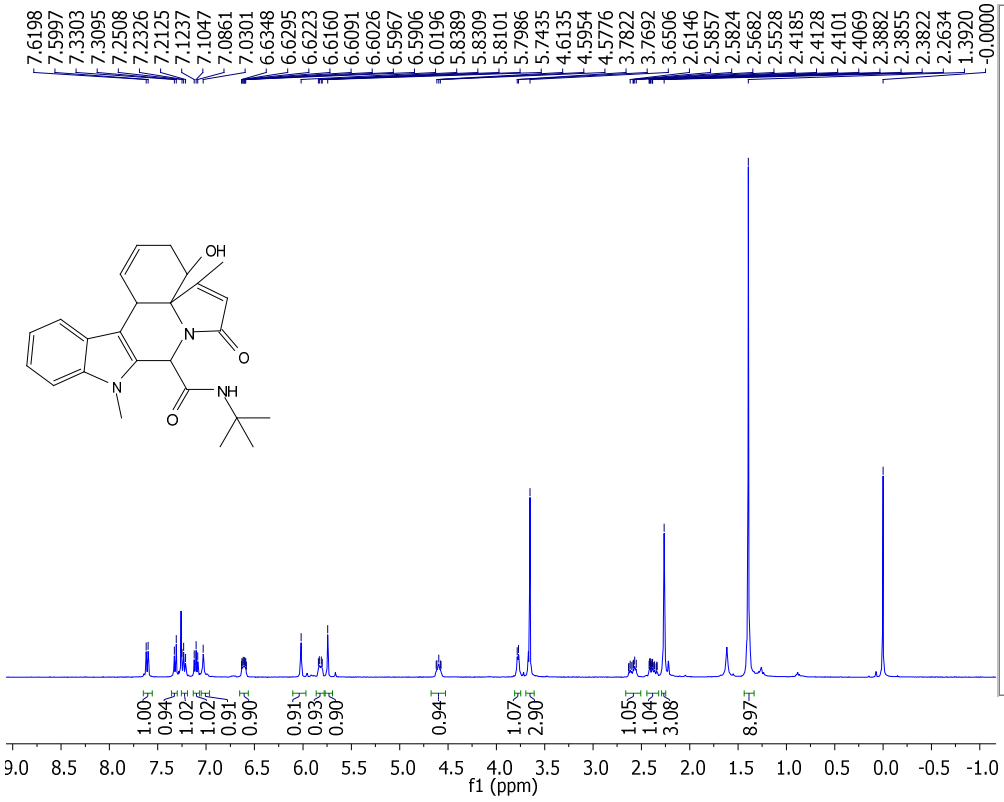
2	Title	EVDE-YH002-R110-13C-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.2
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	80
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-06-07T09:22:36
19	Modification Date	2018-06-07T10:23:20
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2940.8
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **s1a**



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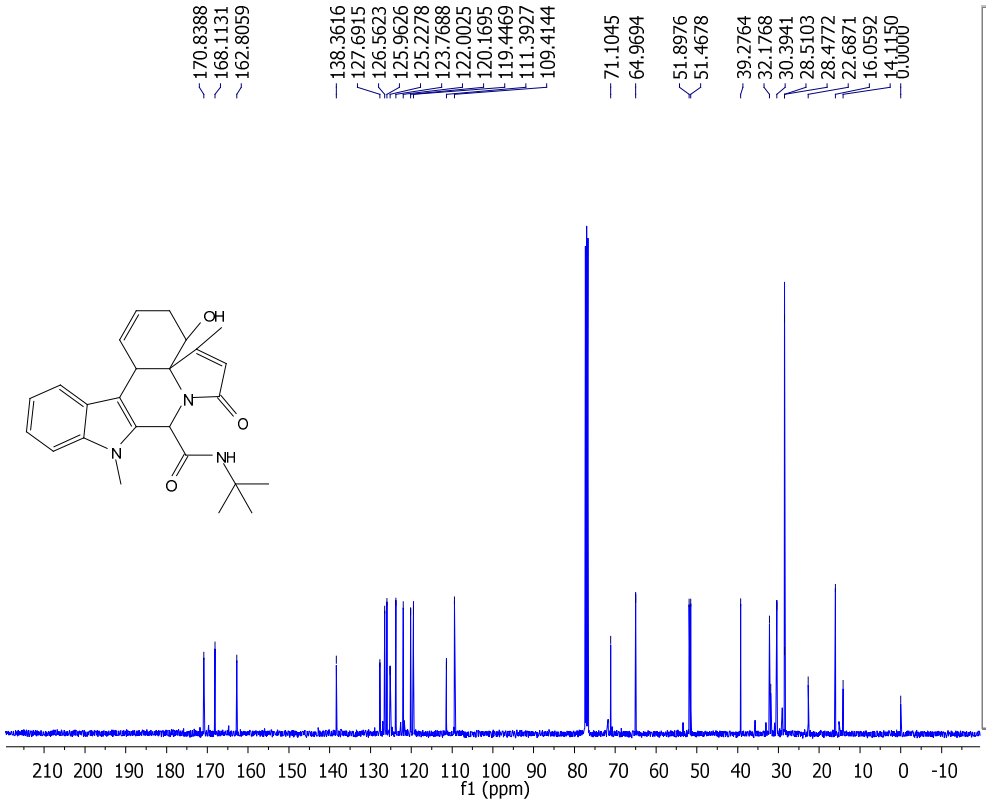
2	Title	EVDE-YH-002R101B H
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	127
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-29T11 :22:00
19	Modification Date	2018-05-29T11 :22:27
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2538.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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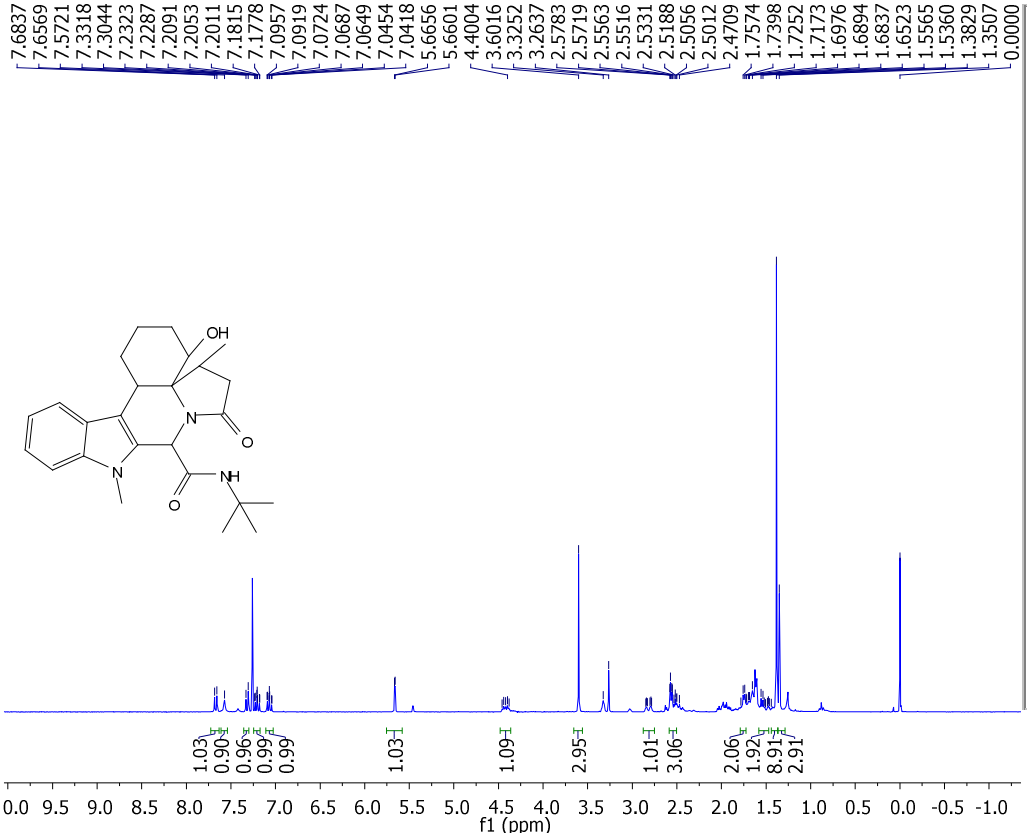
2	Title	EVDE-YH-002R101B
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-05-30T08: 13:00
19	Modification Date	2018-05-30T08: 13:37
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1959.3
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **4**



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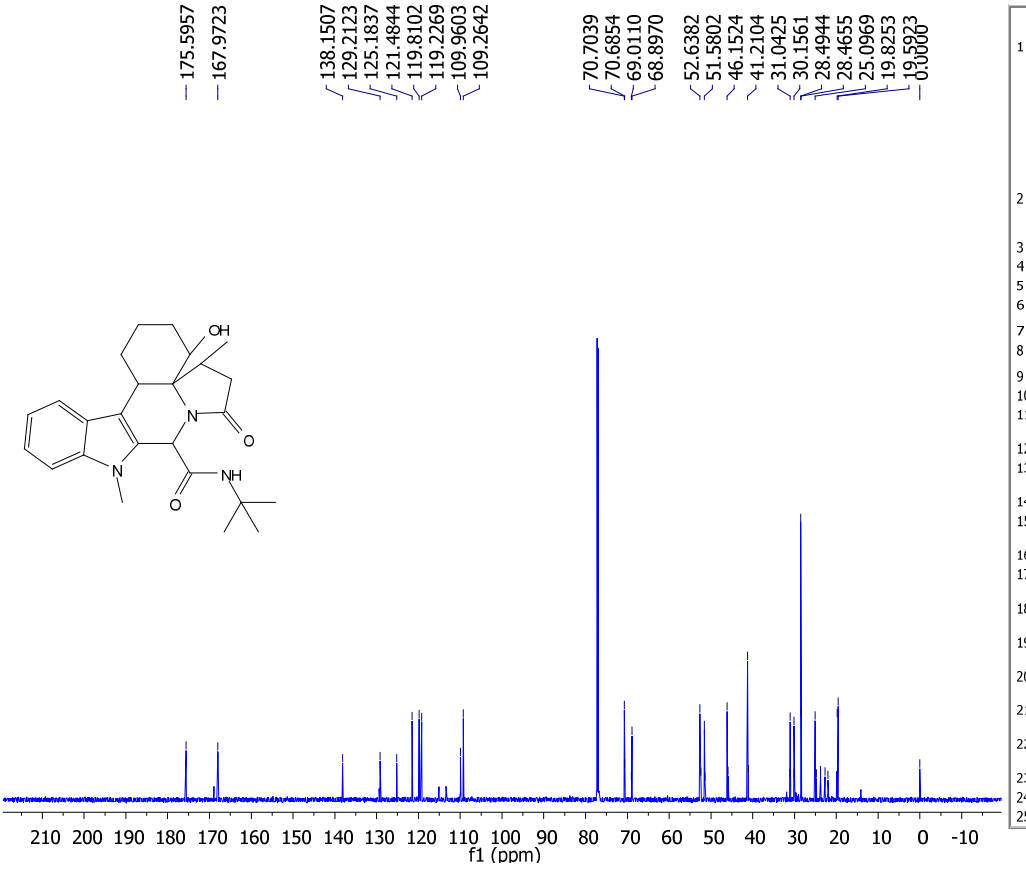
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmruser
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	296.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	36
14	Receiver Gain	813
15	Relaxation Delay	1.0000
16	Pulse Width	9.5000
17	Acquisition Time	2.6543
18	Acquisition Date	2018-06-01T19 :10:00
19	Modification Date	2018-06-01T19 :11:02
20	Spectrometer Frequency	300.13
21	Spectral Width	6172.8
22	Lowest Frequency	-1239.4
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	32768



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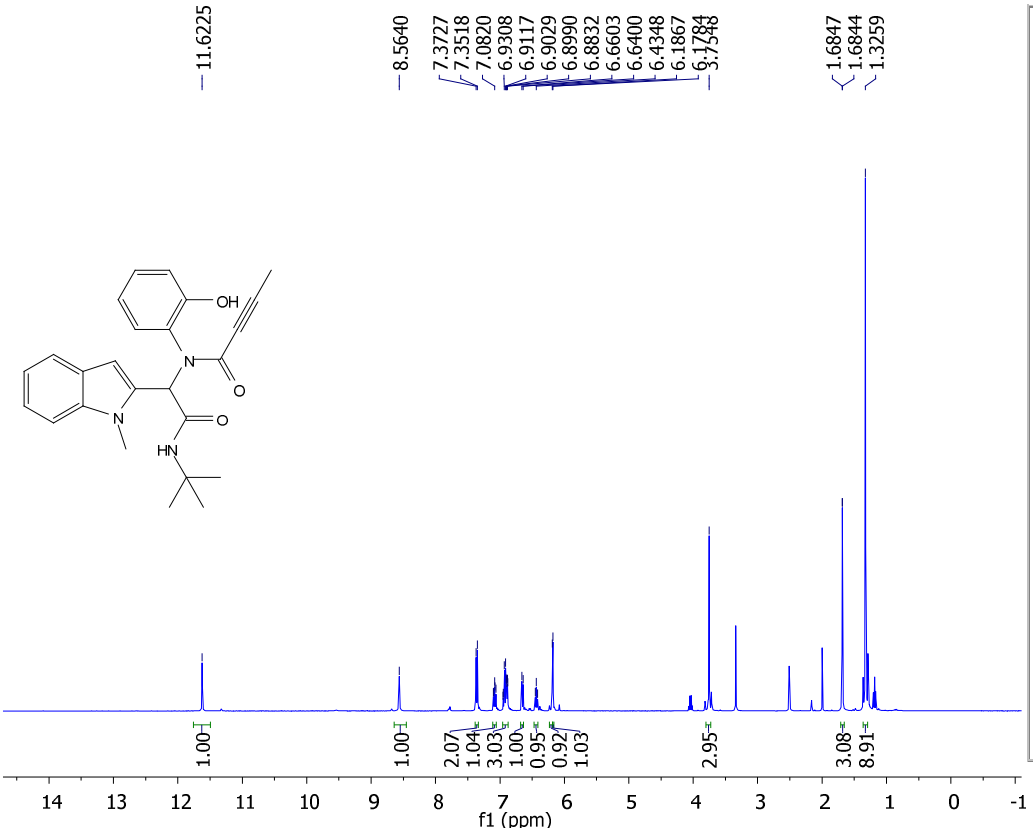
2	Title	EVDE-YH002-R108-13C-bbo5-600/ 10
3	Comment	filtered sample
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	782
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	0.9088
18	Acquisition Date	2018-06-01T10:14:04
19	Modification Date	2018-06-01T11:16:38
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2940.5
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	131072

Copies of NMR spectra (Ugi products)

^{1}H and ^{13}C NMR spectra of compound **1a**



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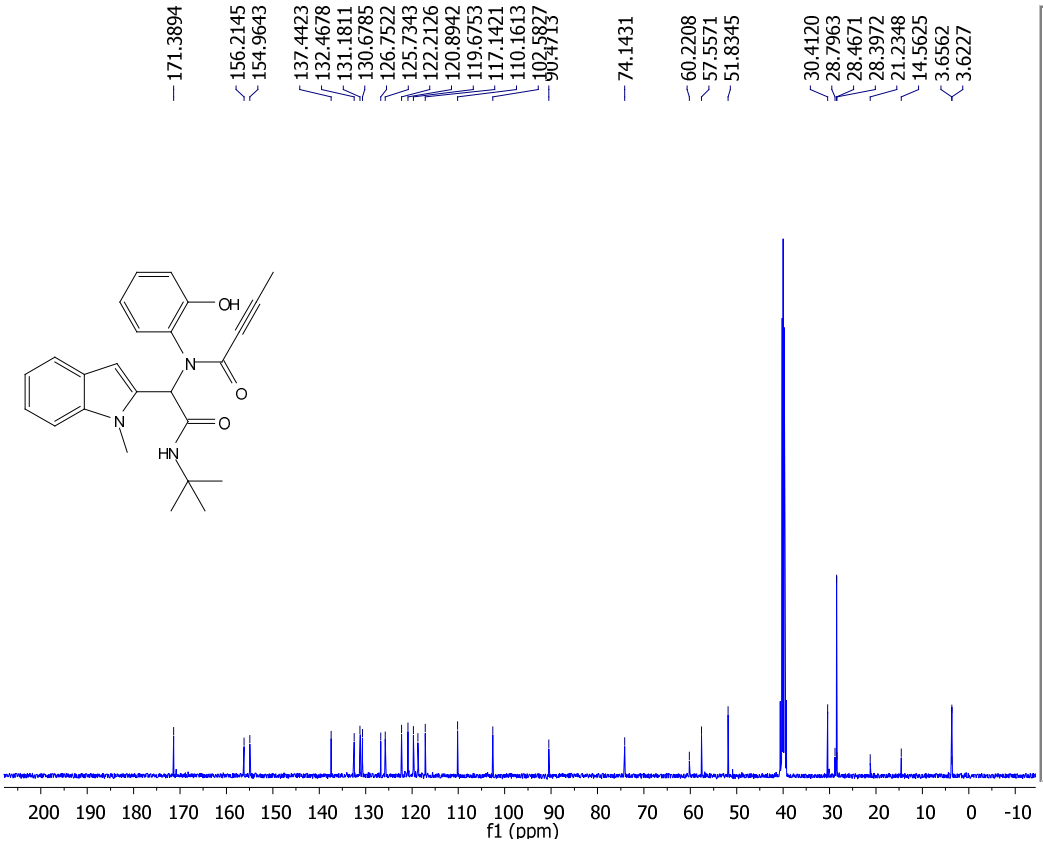
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-07-03T14:10:00
19	Modification Date	2018-07-03T14:10:28
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2528.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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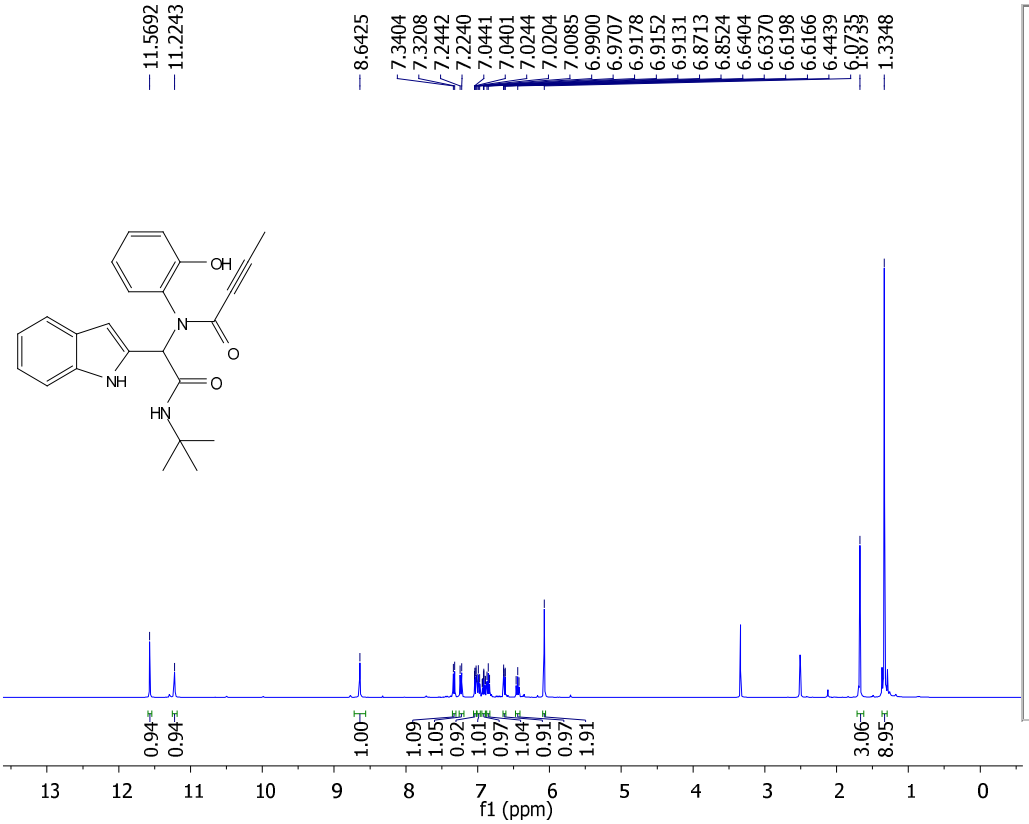
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	512
14	Receiver Gain	201
15	Relaxation Delay	1.5000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-07-03T17:01:00
19	Modification Date	2018-07-03T17:01:39
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1b**



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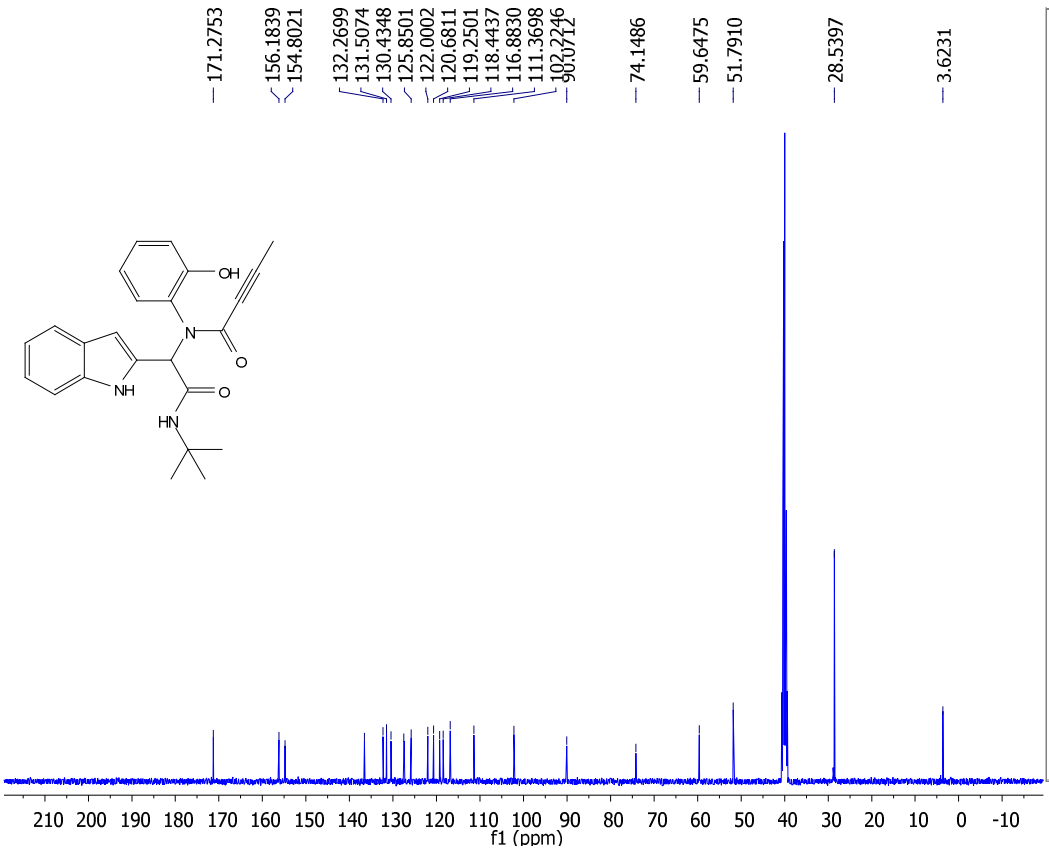
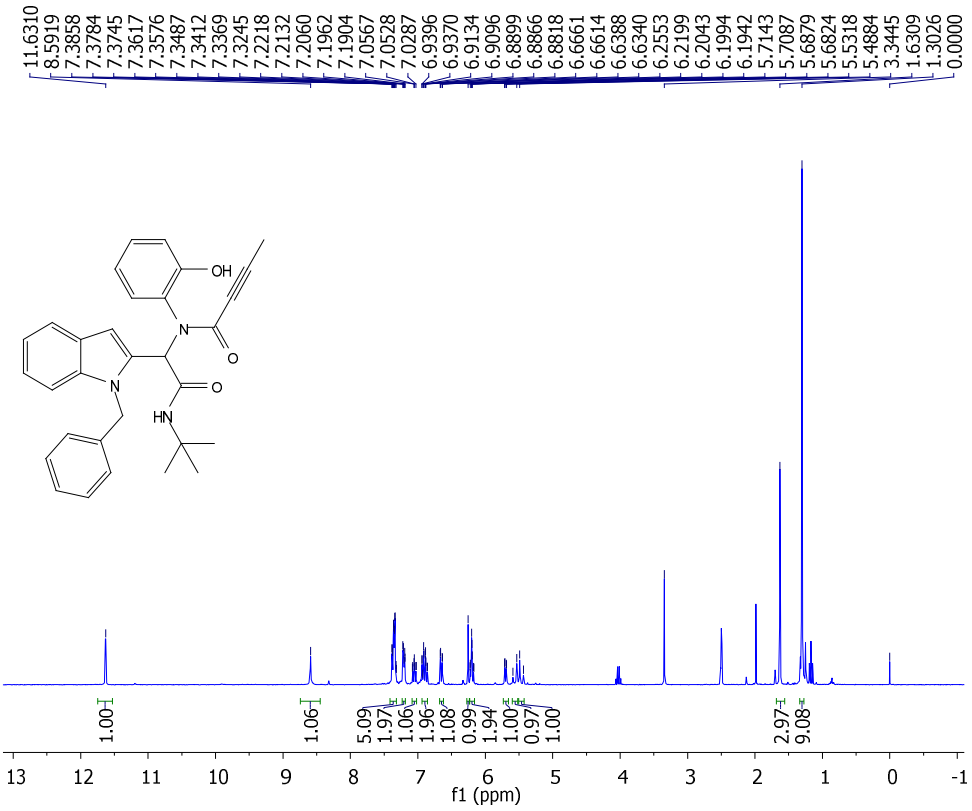
2	Title	EVDE-YH-002R7
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-07-03T14:06:00
19	Modification Date	2018-07-03T14:06:34
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2528.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



	Parameter	Value
1	Data File Name	C:/ Users/ moke/ Desktop/ EVDE-YH-002R7 ok/ 12/ fid
2	Title	EVDE-YH-002R7
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	512
14	Receiver Gain	201
15	Relaxation Delay	1.5000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-07-04T16:25:00
19	Modification Date	2018-07-04T16:25:05
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1c**



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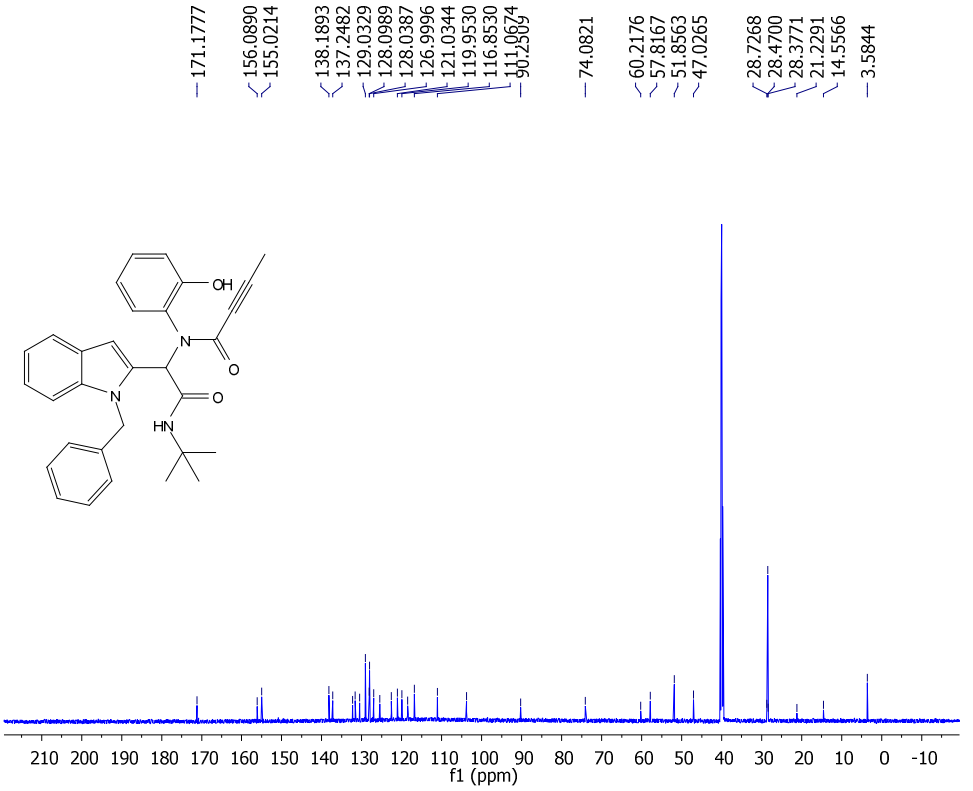
2	Title	EVDE_YH_002R 43
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmruser
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	295.7
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	8
14	Receiver Gain	512
15	Relaxation Delay	1.0000
16	Pulse Width	9.5000
17	Acquisition Time	2.6543
18	Acquisition Date	2017-11-30T16 :57:00
19	Modification Date	2017-11-30T16 :57:58
20	Spectrometer Frequency	300.13
21	Spectral Width	6172.8
22	Lowest Frequency	-1235.5
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	32768



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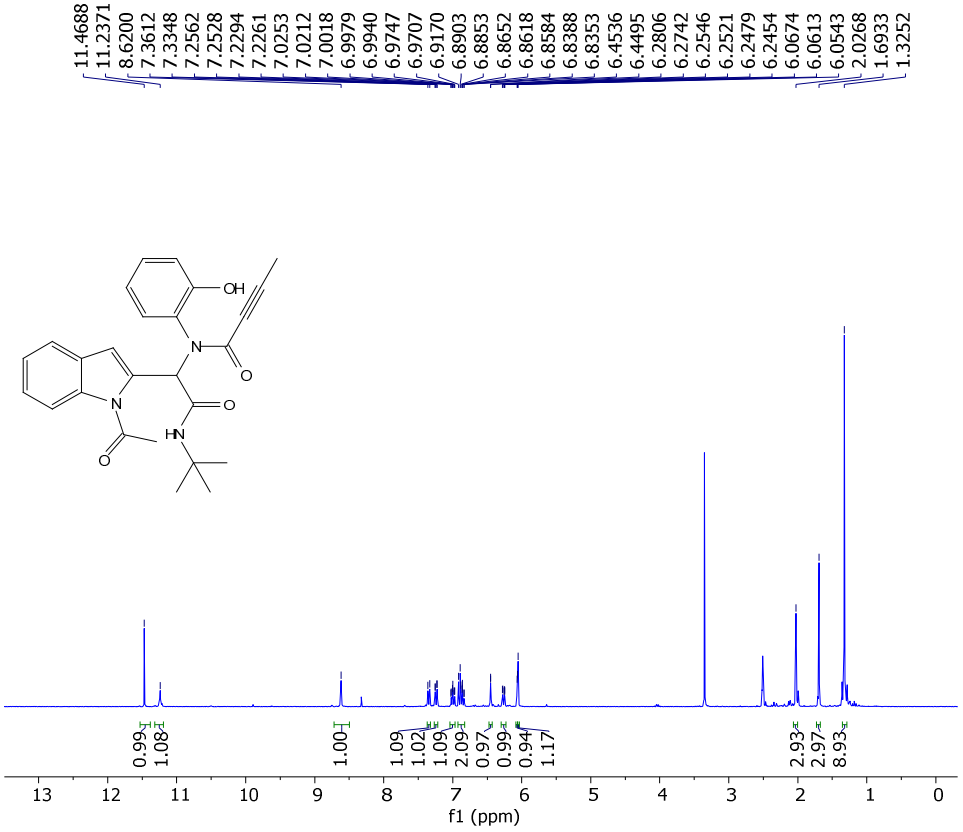
1	Data File Name	C:/ Users/ moke/ Desktop/ PROJECT 3 AND 5 COMBINE/ SCOPE/ NMR of Scope/ 002 series/ Ugi/ EVDE_YH_002R43/ EVDE-YH002R43-13C-6dec2017-txi5.600/ 2/ fid
2	Title	EVDE-YH002R43-13C-6dec2017-txi5.600/ 2
3	Comment	Calibration TXI
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	477
14	Receiver Gain	575
15	Relaxation Delay	2.0000
16	Pulse Width	12.6300
17	Acquisition Time	0.9088
18	Acquisition Date	2017-12-06T12: 02:37
19	Modification Date	2017-12-06T13: 17:02
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2938.6
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1d**



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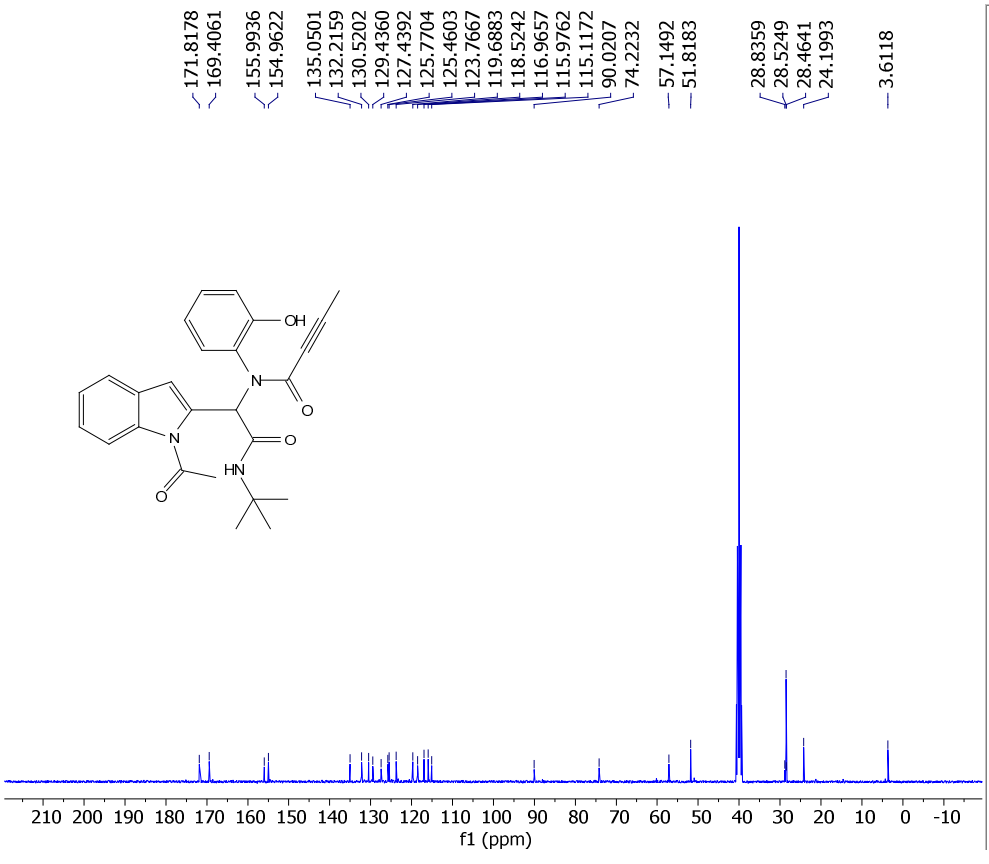
2	Title	EVDE_YH_002R132.10.fid
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmruser
6	Site	
7	Instrument	spect
8	Author	
9	Solvent	DMSO
10	Temperature	296.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Probe	5 mm BBO BB-1H Z-GRD Z8284015/ 1
14	Number of Scans	8
15	Receiver Gain	812.7
16	Relaxation Delay	1.0000
17	Pulse Width	9.5000
18	Presaturation Frequency	
19	Acquisition Time	2.6543
20	Acquisition Date	2018-08-09T16:27:00
21	Modification Date	2018-08-09T16:27:26
22	Class	
23	Spectrometer Frequency	300.13
24	Spectral Width	6172.8
25	Lowest Frequency	-1233.0
26	Nucleus	1H
27	Acquired Size	16384
28	Spectral Size	65536



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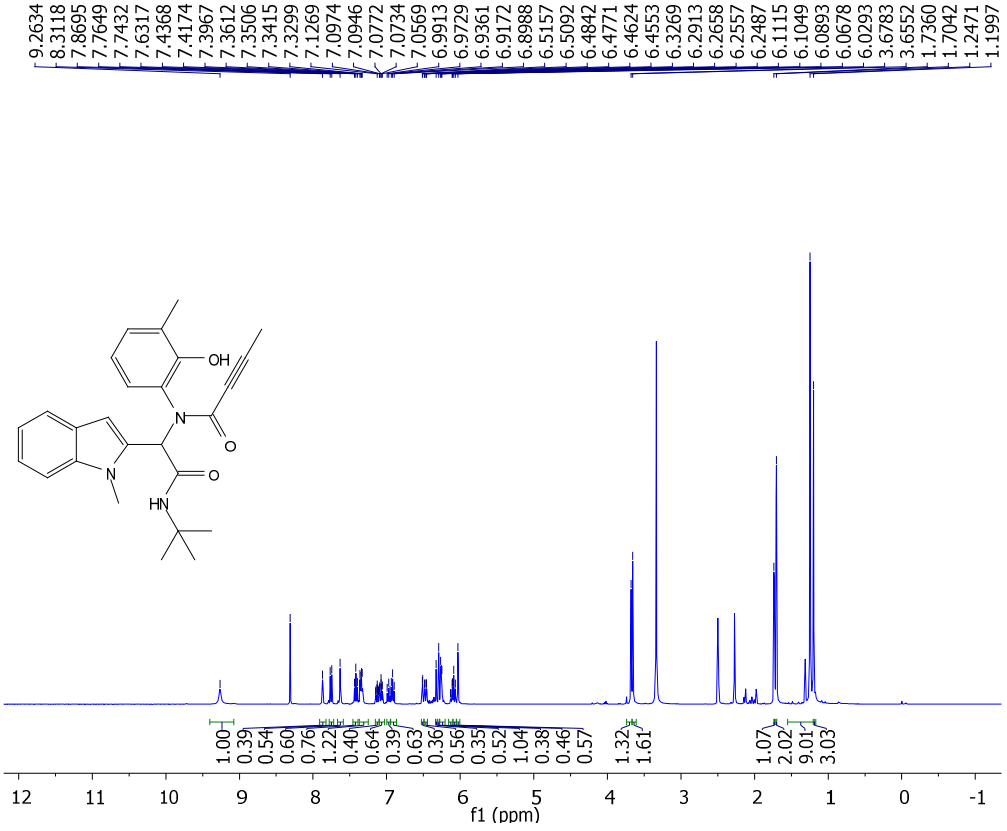
2	Title	EVDE-YH-002R132.10.fid
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Instrument	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Probe	5 mm PABBO BB/ 19F-1H/ D Z-GRD Z116098/ 0435
14	Number of Scans	2048
15	Receiver Gain	201.3
16	Relaxation Delay	2.0000
17	Pulse Width	7.6500
18	Presaturation Frequency	
19	Acquisition Time	1.3631
20	Acquisition Date	2018-10-09T21:04:00
21	Modification Date	2018-10-09T21:04:53
22	Class	
23	Spectrometer Frequency	100.63
24	Spectral Width	24038.5
25	Lowest Frequency	-1957.4
26	Nucleus	13C
27	Acquired Size	32768
28	Spectral Size	65536

^{1}H and ^{13}C NMR spectra of compound **1e**



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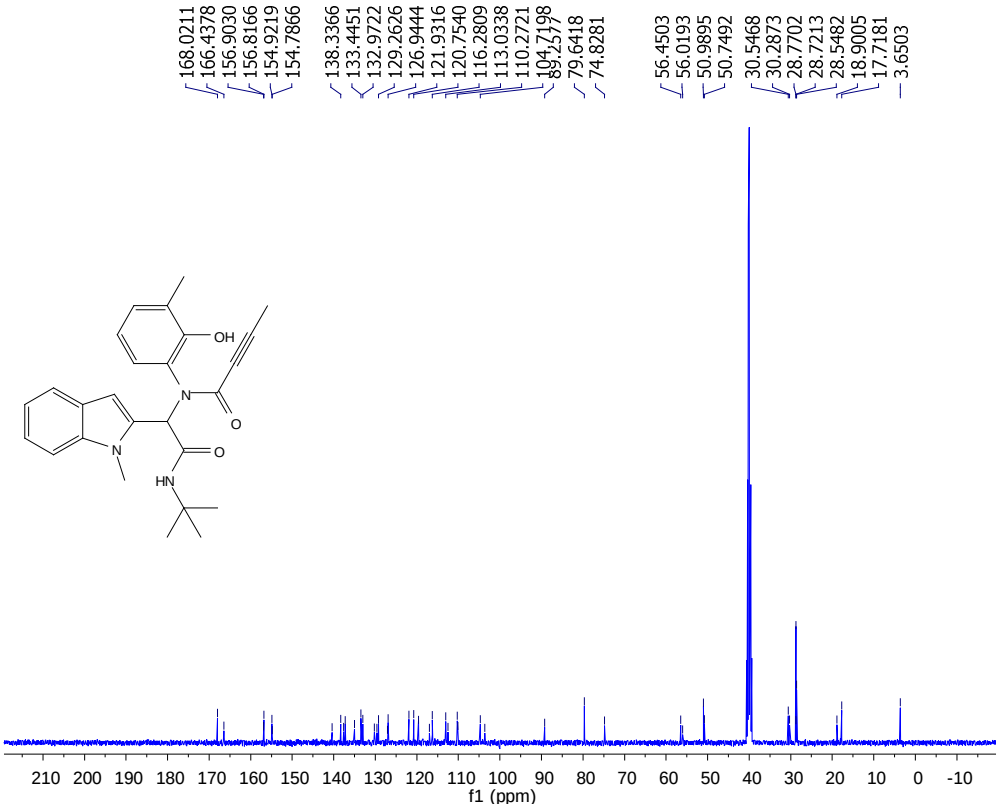
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-06-08T11:06:00
19	Modification Date	2018-06-08T11:06:16
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2532.9
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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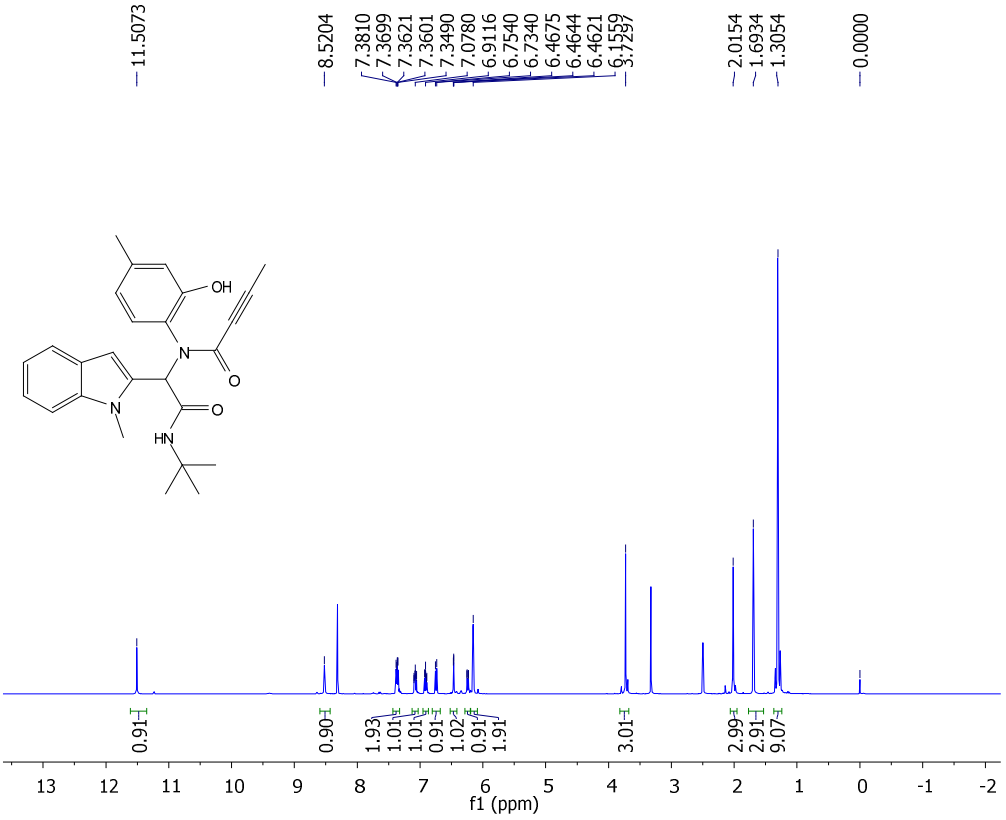
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	512
14	Receiver Gain	201
15	Relaxation Delay	1.5000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-06-08T15:31:00
19	Modification Date	2018-06-08T15:44:26
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1f**



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4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	297.2
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-06T17:50:00
19	Modification Date	2018-04-06T17:50:21
20	Spectrometer Frequency	400.17
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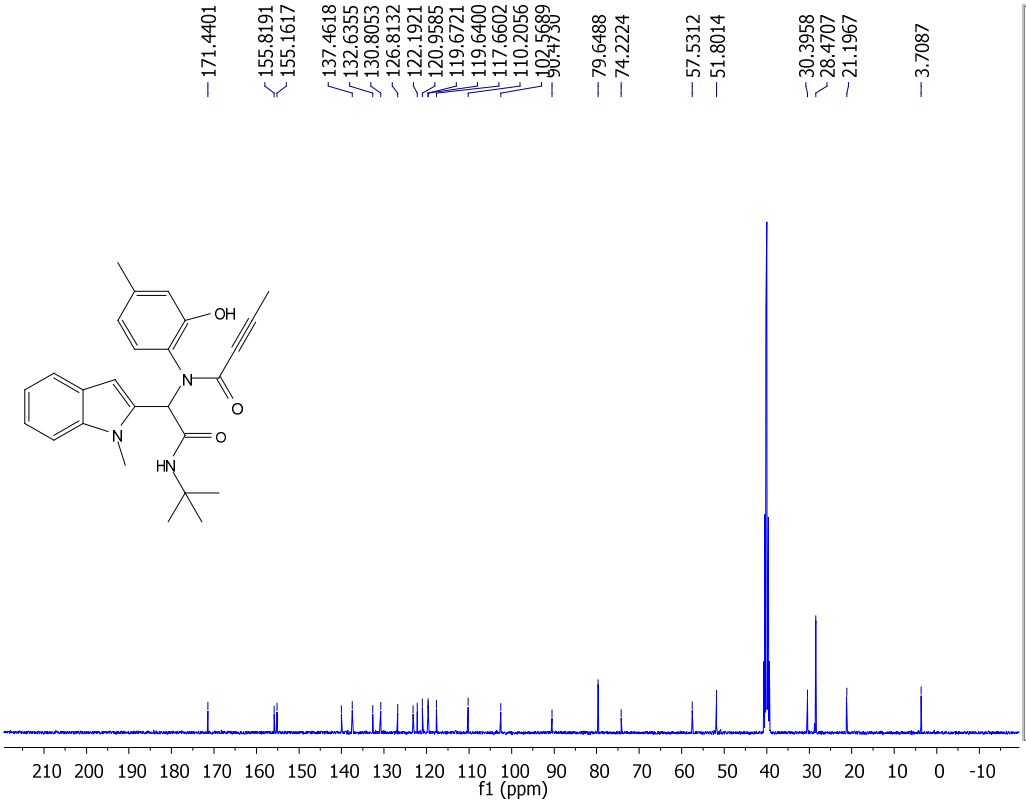
22	Lowest Frequency	-2533.2
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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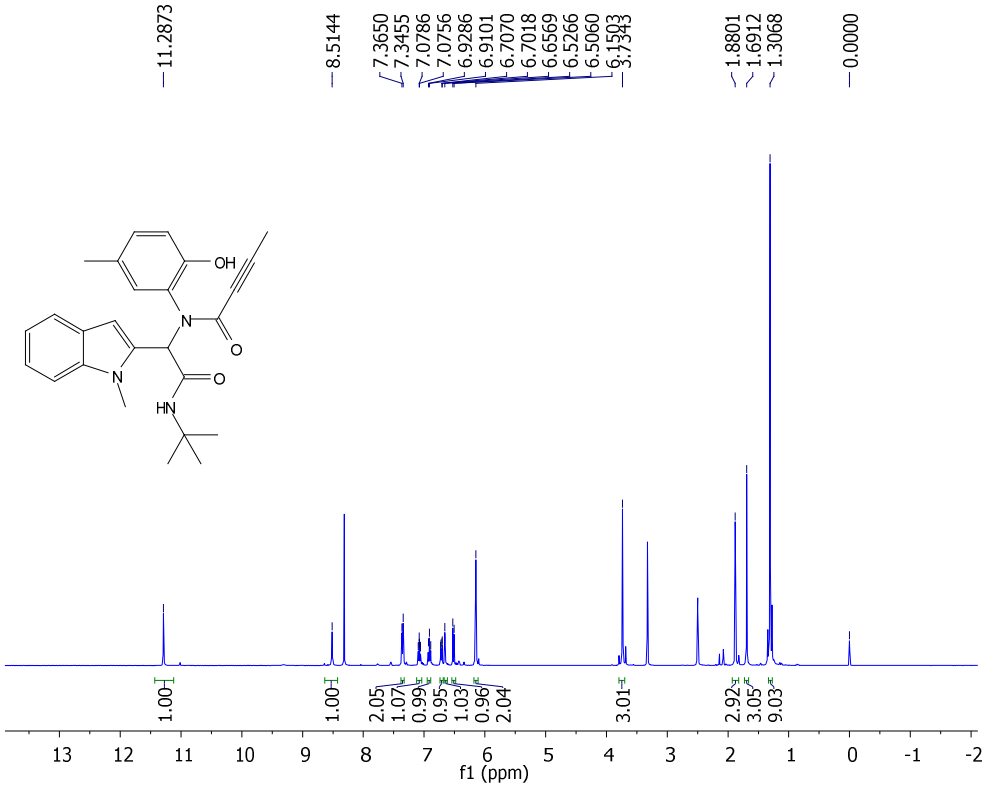
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	297.9
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-04-06T19:01:00
19	Modification Date	2018-04-06T19:01:51
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1g**



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3	Comment	
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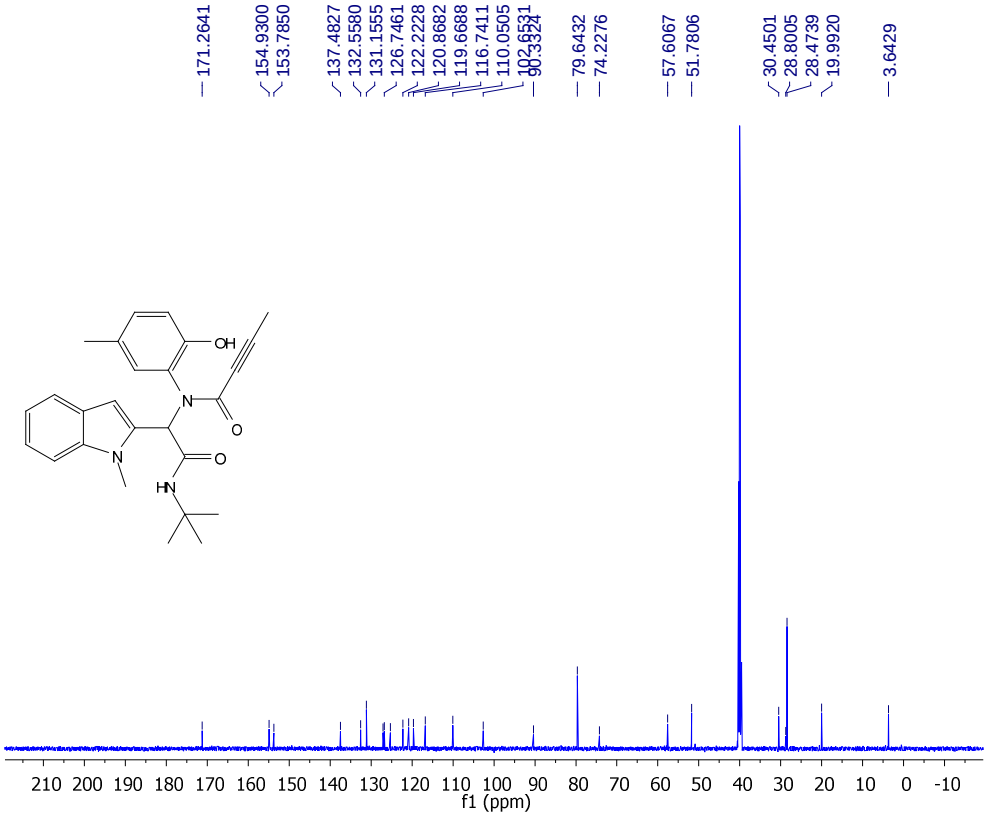
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	297.1
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-11T13:01:00
19	Modification Date	2018-04-11T13:01:07
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2532.9
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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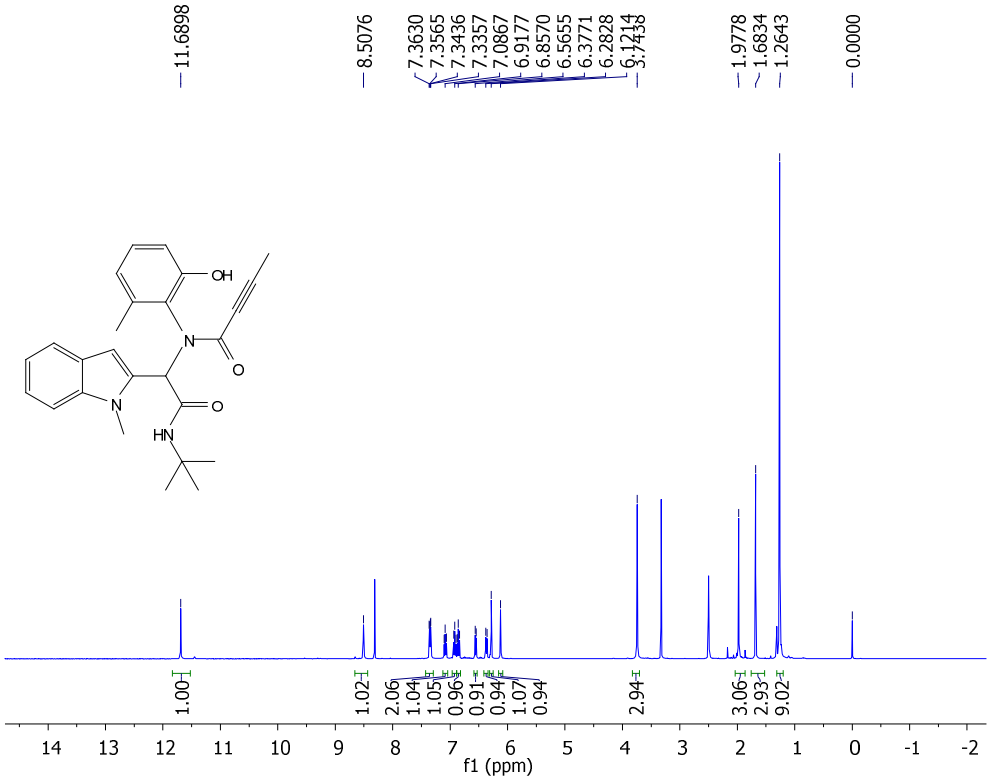
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.4
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	256
14	Receiver Gain	2050
15	Relaxation Delay	2.0000
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-13T09:19:25
19	Modification Date	2018-04-13T11:02:38
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1h**



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4 Origin	Bruker BioSpin GmbH
5 Owner	nmr
6 Site	
7 Spectrometer	spect
8 Author	
9 Solvent	DMSO
10 Temperature	297.1
11 Pulse Sequence	zg30
12 Experiment	1D
13 Number of Scans	16
14 Receiver Gain	112
15 Relaxation Delay	1.0000
16 Pulse Width	9.7500
17 Acquisition Time	3.2768
18 Acquisition Date	2018-04-11T13:04:00
19 Modification Date	2018-04-11T13:04:45
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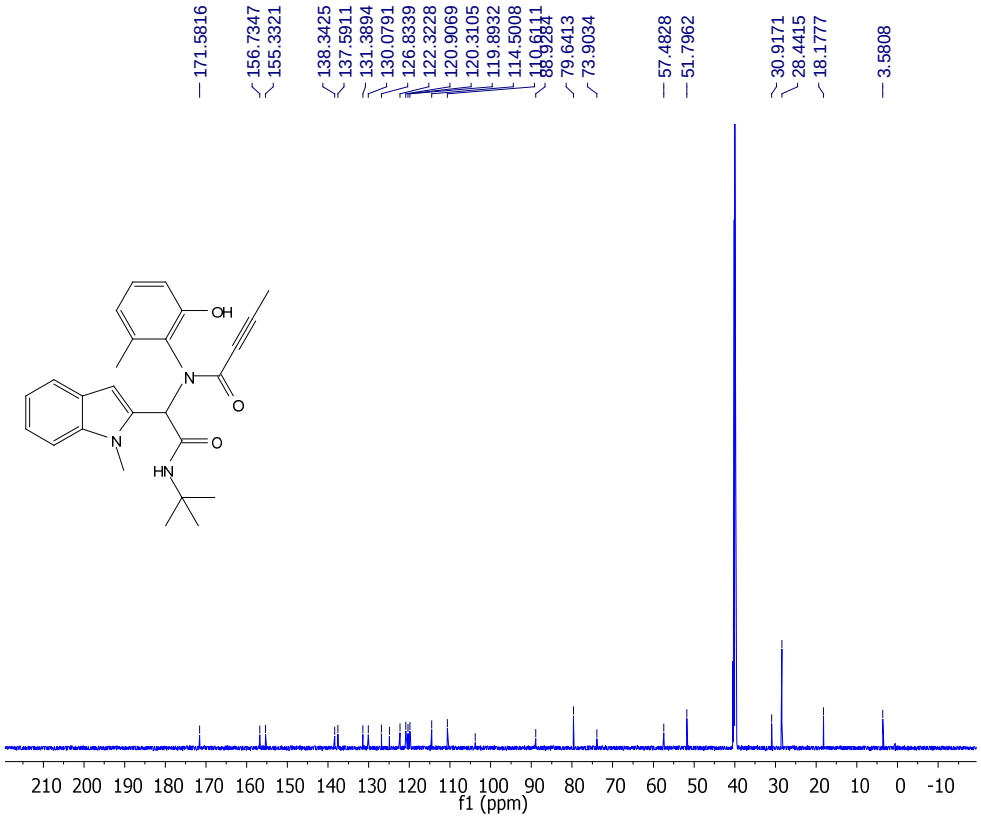
21 Spectral Width	10000.0
22 Lowest Frequency	-2532.3
23 Nucleus	1H
24 Acquired Size	32768
25 Spectral Size	65536



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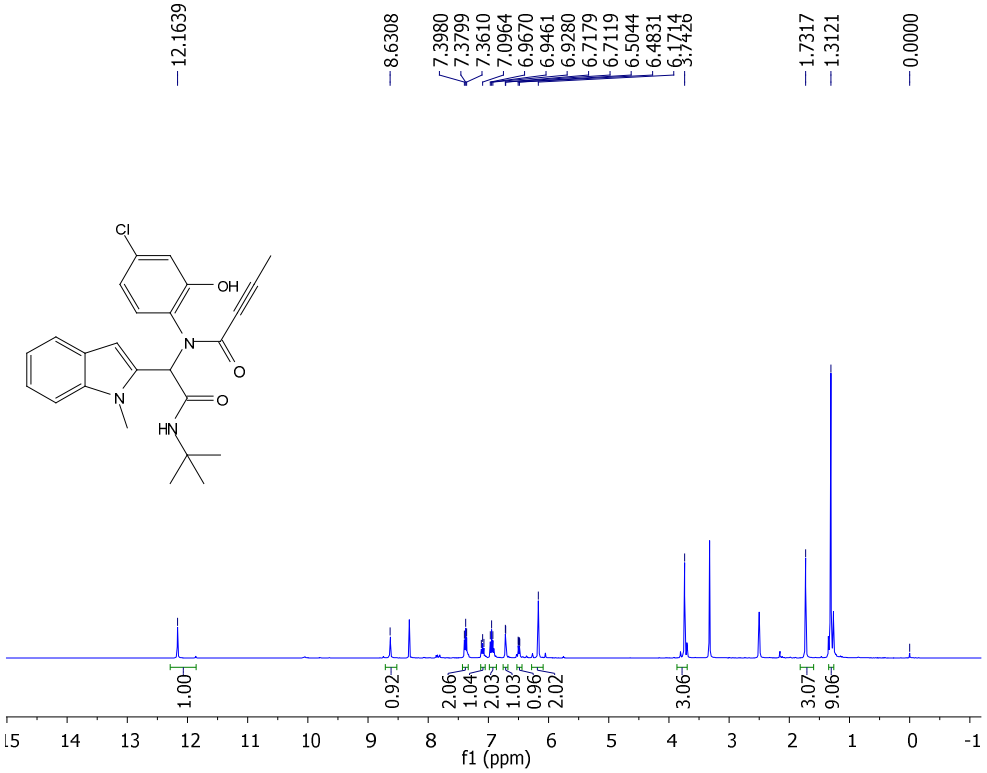
3 Comment	
4 Origin	Bruker BioSpin GmbH
5 Owner	nmr
6 Site	
7 Spectrometer	spect
8 Author	
9 Solvent	DMSO
10 Temperature	298.0
11 Pulse Sequence	zgpg30
12 Experiment	1D
13 Number of Scans	256
14 Receiver Gain	2050
15 Relaxation Delay	2.0000
16 Pulse Width	12.0000
17 Acquisition Time	1.8175
18 Acquisition Date	2018-04-12T17:24:19
19 Modification Date	2018-04-12T18:24:18
20 Spectrometer Frequency	150.92
21 Spectral Width	36057.7
22 Lowest Frequency	-2939.8
23 Nucleus	13C
24 Acquired Size	65536
25 Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1i**



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5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	89
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-31T13:21:00
19	Modification Date	2018-05-31T13:21:18
20	Spectrometer Frequency	400.17
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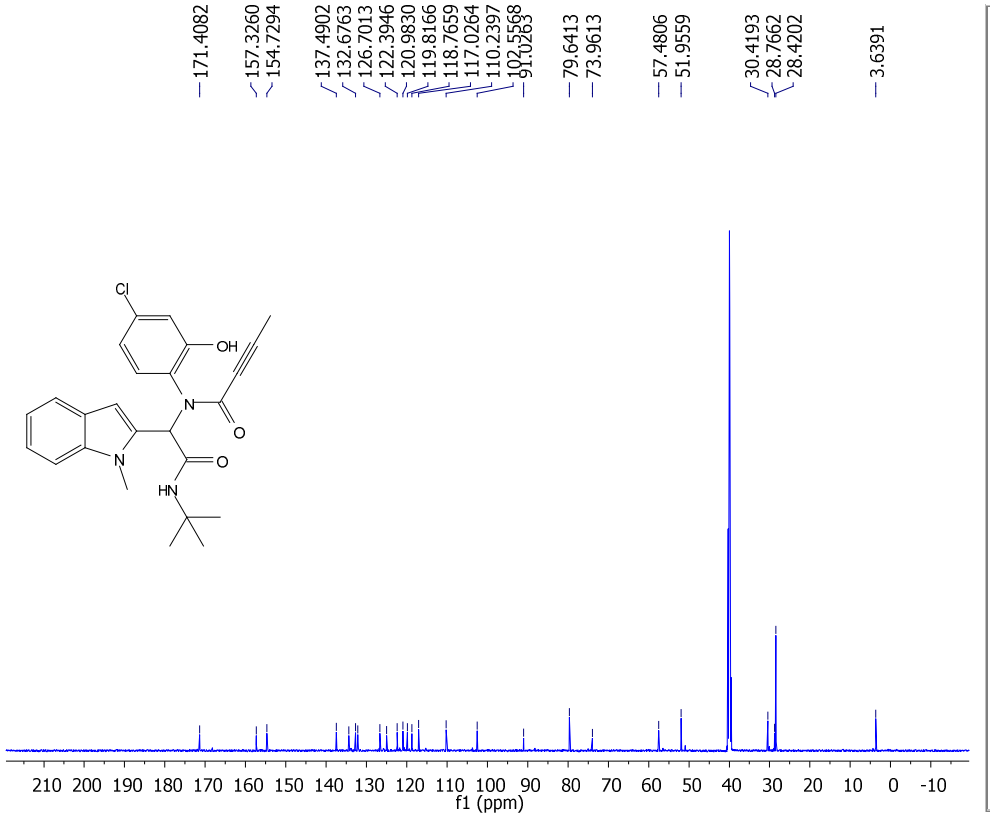
22	Lowest Frequency	-2532.1
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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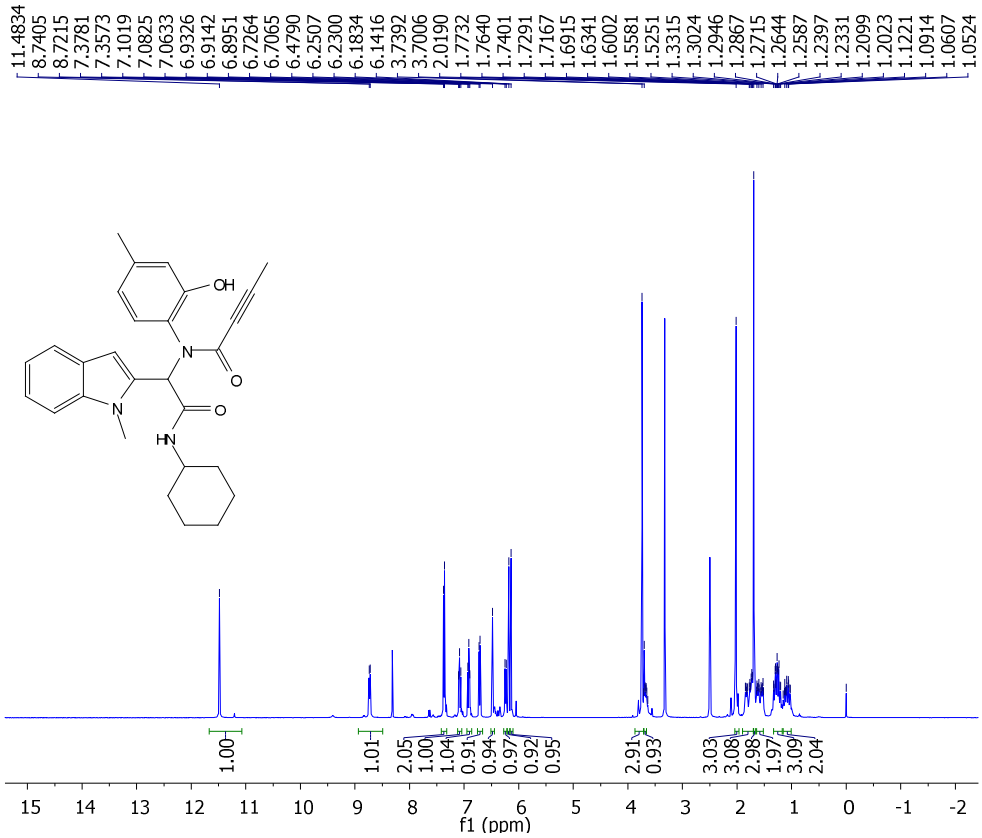
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1331
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	0.9088
18	Acquisition Date	2018-05-31T15:49:10
19	Modification Date	2018-05-31T16:49:56
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1j**



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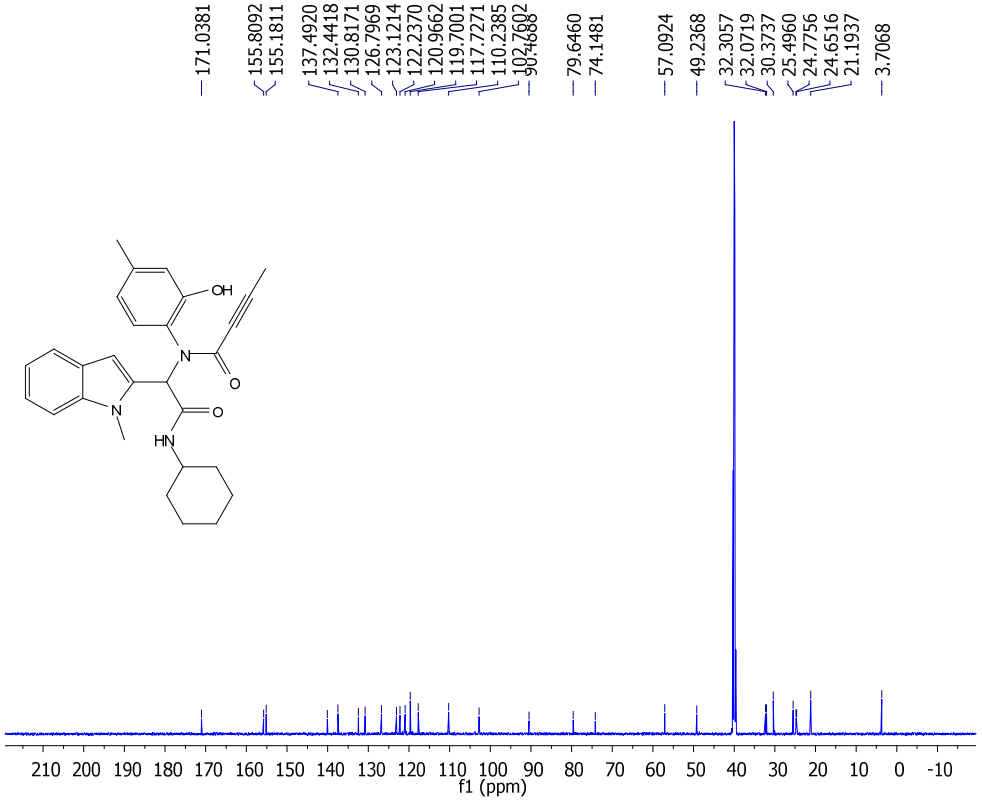
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-26T11:39:00
19	Modification Date	2018-04-26T11:39:35
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2532.9
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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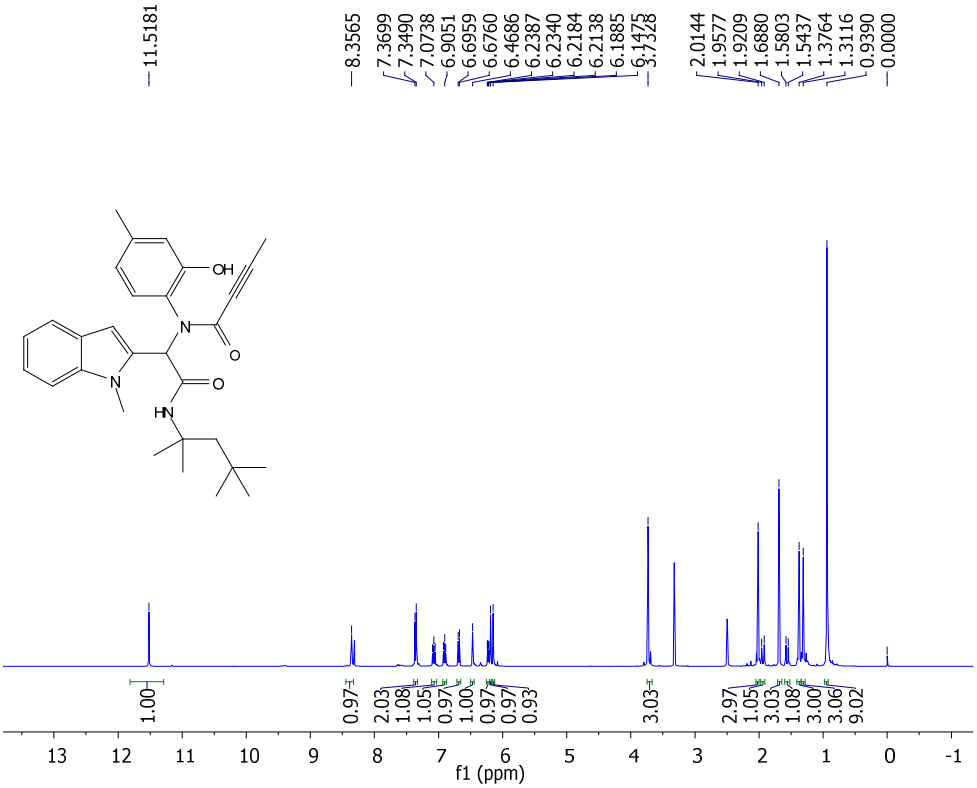
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	648
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-27T09:40:57
19	Modification Date	2018-04-27T11:20:02
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1k**



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5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-26T11:43:00
19	Modification Date	2018-04-26T11:43:14
20	Spectrometer Frequency	400.17
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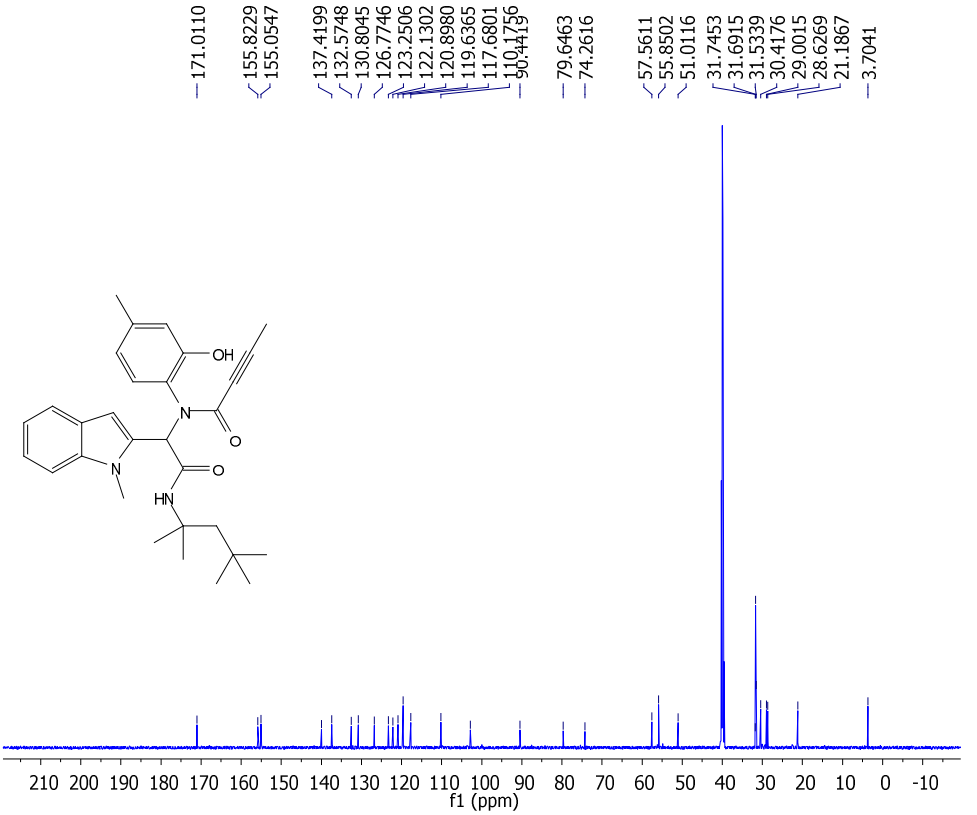
22	Lowest Frequency	-2533.3
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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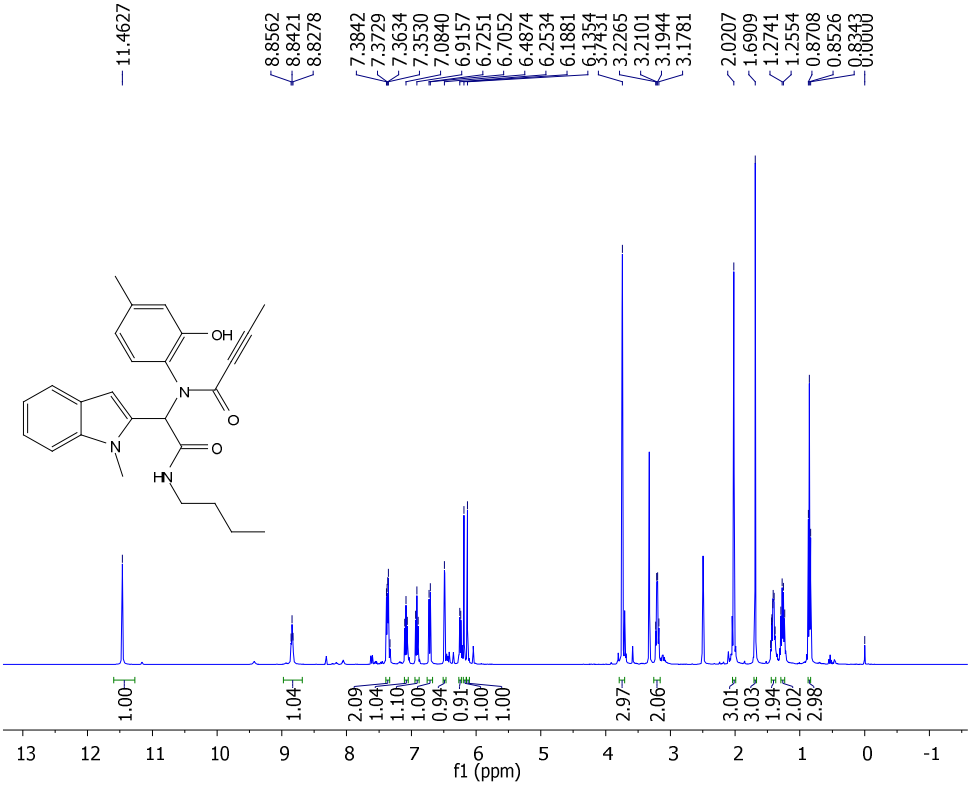
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.4
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	572
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-27T10:22:56
19	Modification Date	2018-04-27T11:57:00
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1l**



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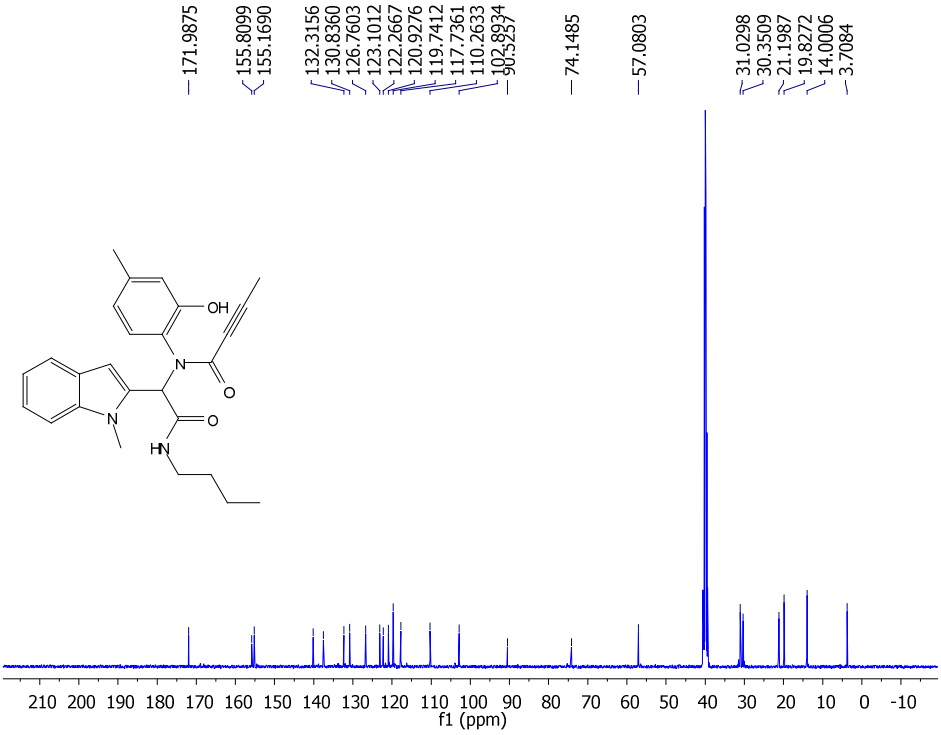
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-30T17:55:00
19	Modification Date	2018-04-30T17:55:10
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2533.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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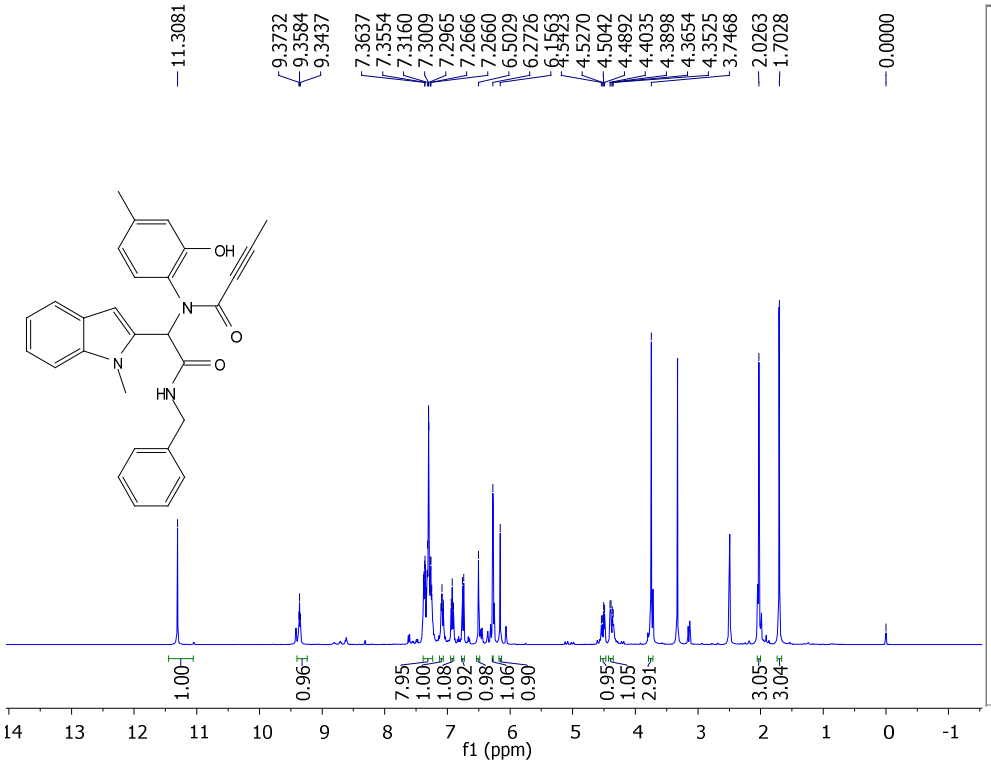
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-05-01T01:27:00
19	Modification Date	2018-05-01T01:27:58
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1m**



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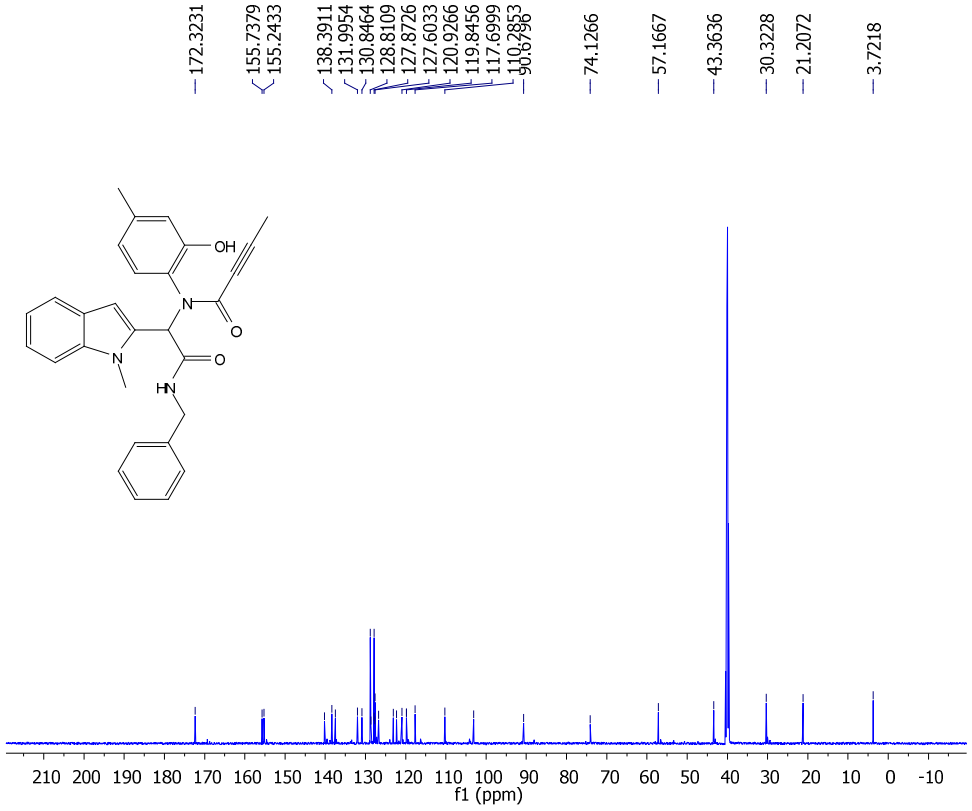
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-31T08:12:00
19	Modification Date	2018-05-31T08:12:10
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2534.5
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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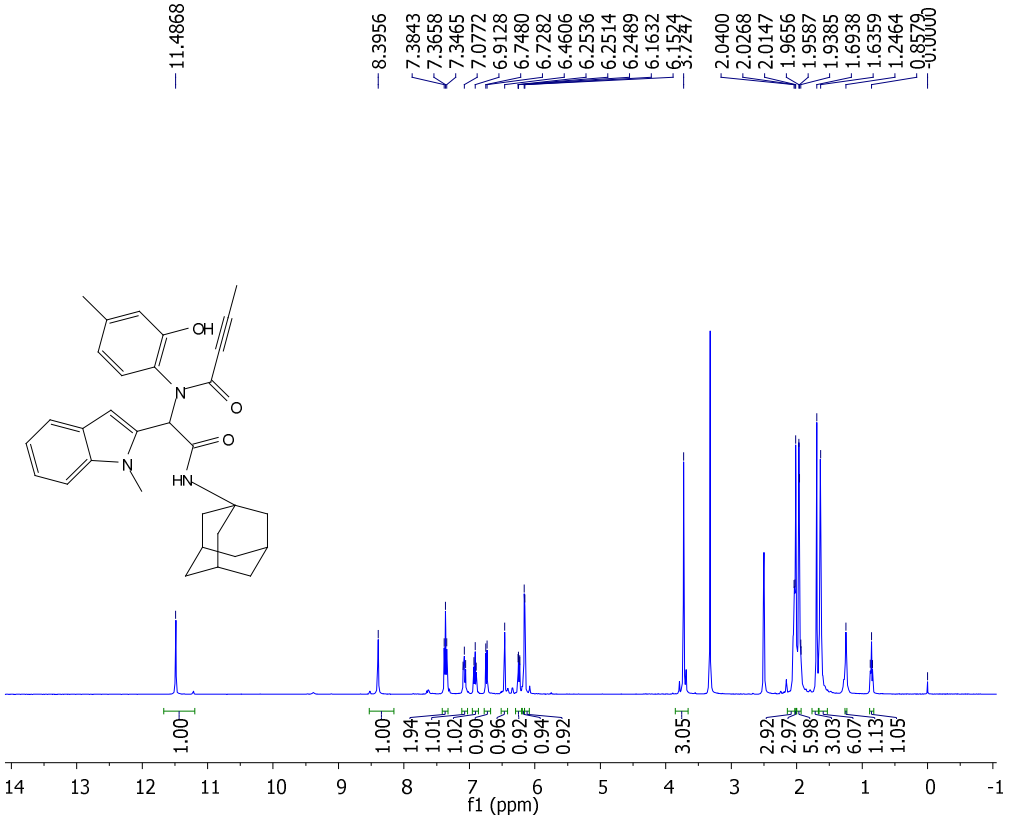
2	Title	EVDE-YH002-R103-13C-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.1
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1178
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	0.9088
18	Acquisition Date	2018-05-31T13:26:42
19	Modification Date	2018-05-31T15:15:00
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	32768

^{1}H and ^{13}C NMR spectra of compound **1n**



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3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-31T08:08:00
19	Modification Date	2018-05-31T08:08:24
20	Spectrometer Frequency	400.17
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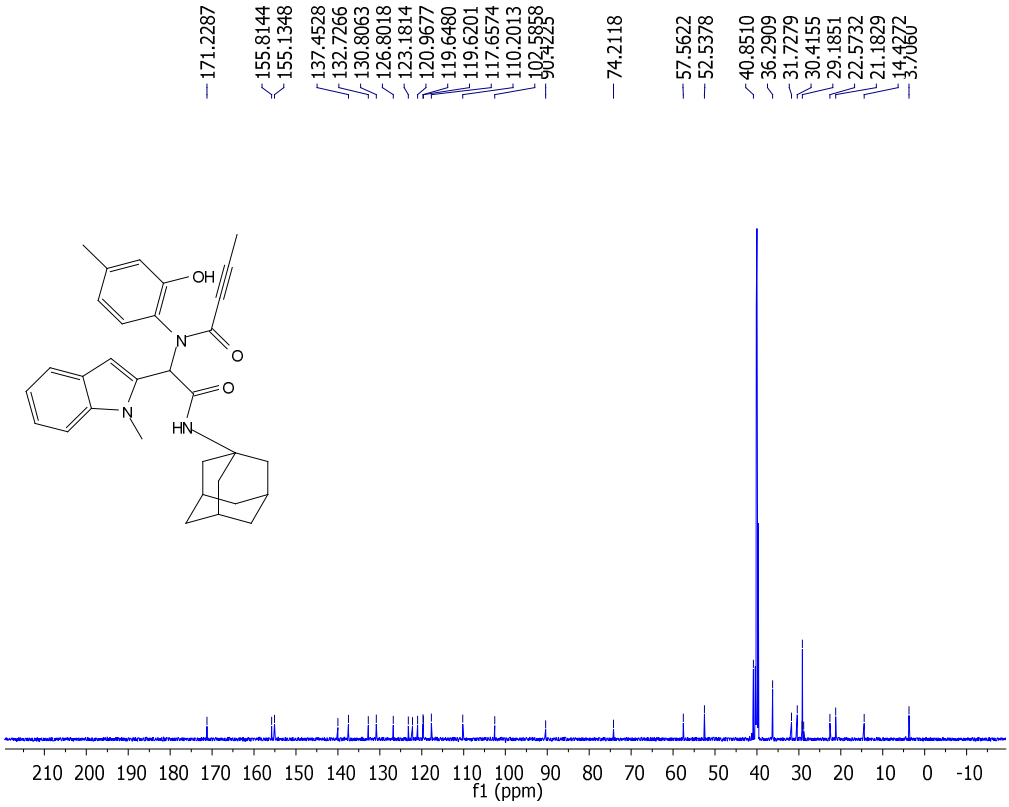
22	Lowest Frequency	-2532.5
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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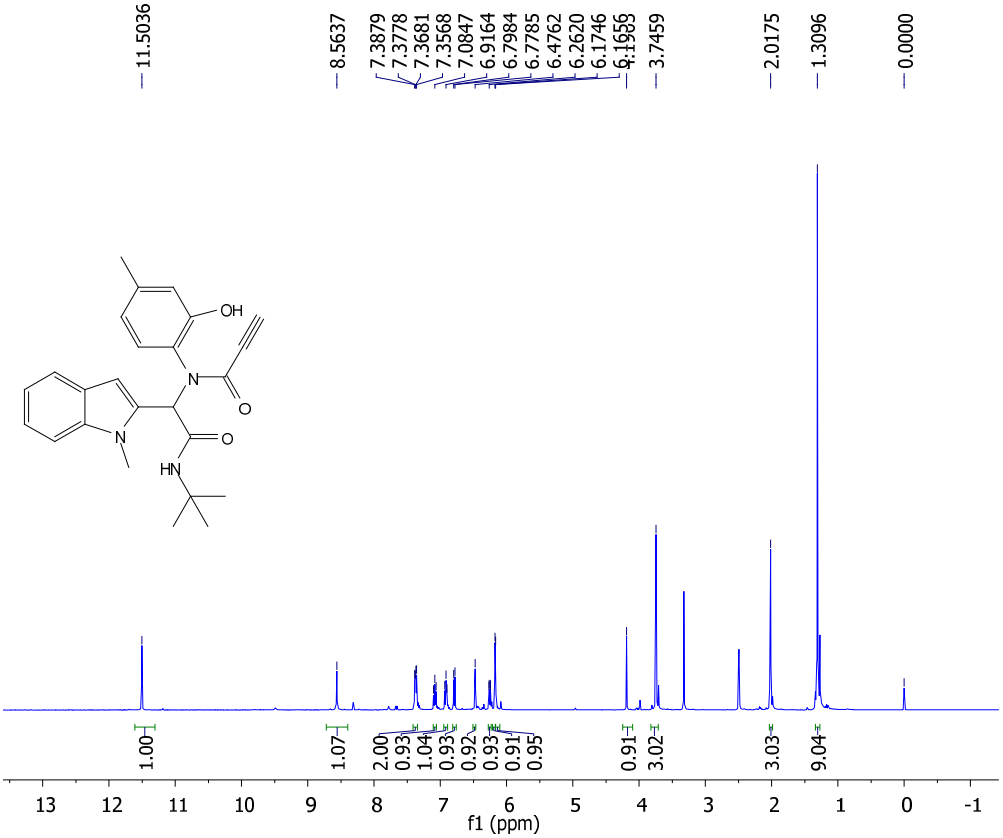
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	431
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	0.9088
18	Acquisition Date	2018-05-31T13:05:46
19	Modification Date	2018-05-31T14:23:24
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1o**



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2	Title	EVDE-YH-002R55
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4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-19T11:13:00
19	Modification Date	2018-04-19T11:13:21
20	Spectrometer Frequency	400.17
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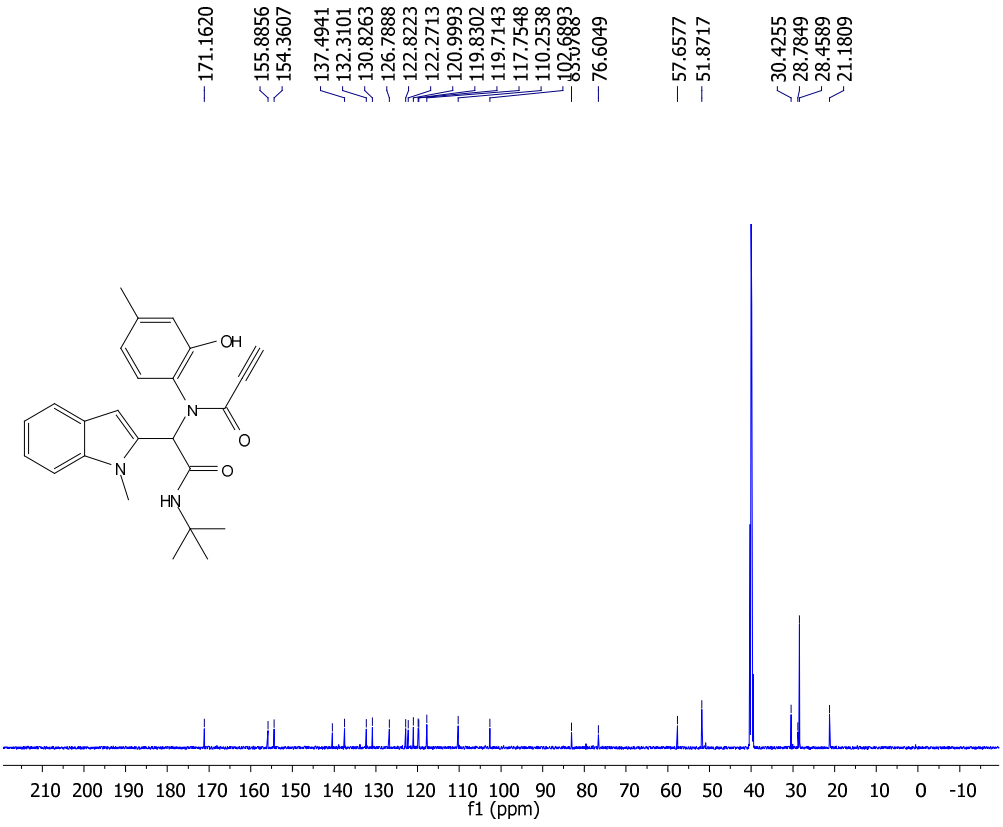
22	Lowest Frequency	-2533.7
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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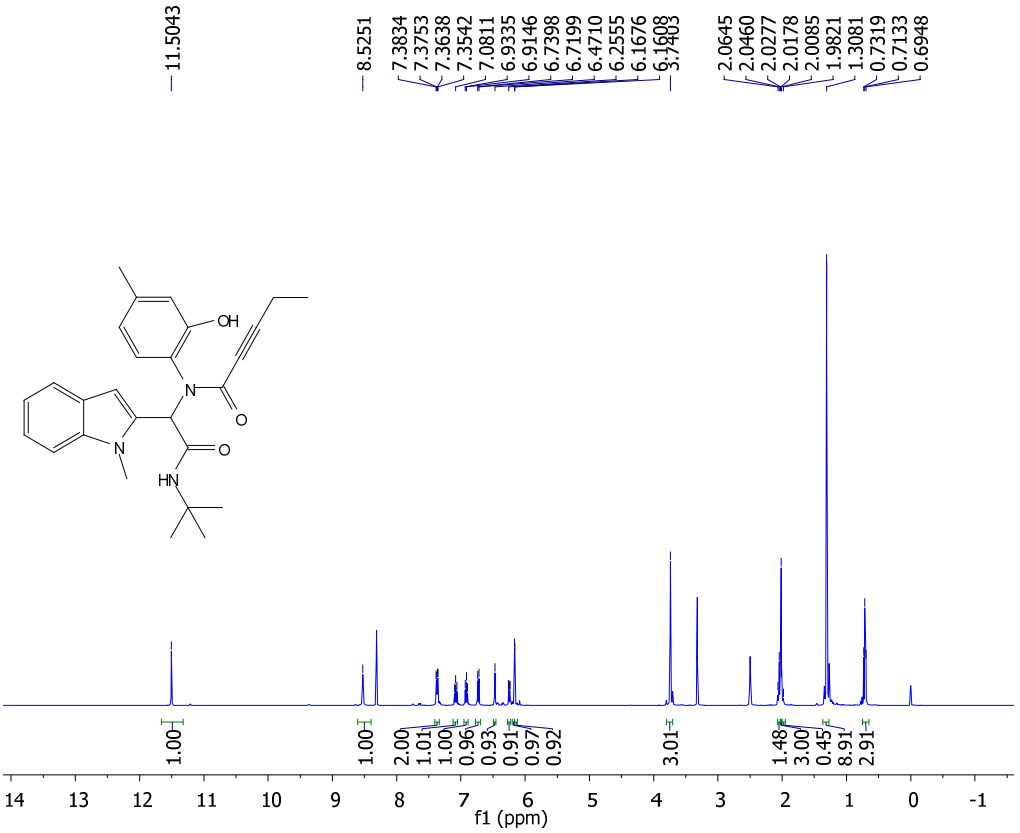
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	366
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-19T17:08:15
19	Modification Date	2018-04-19T18:08:16
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1p**



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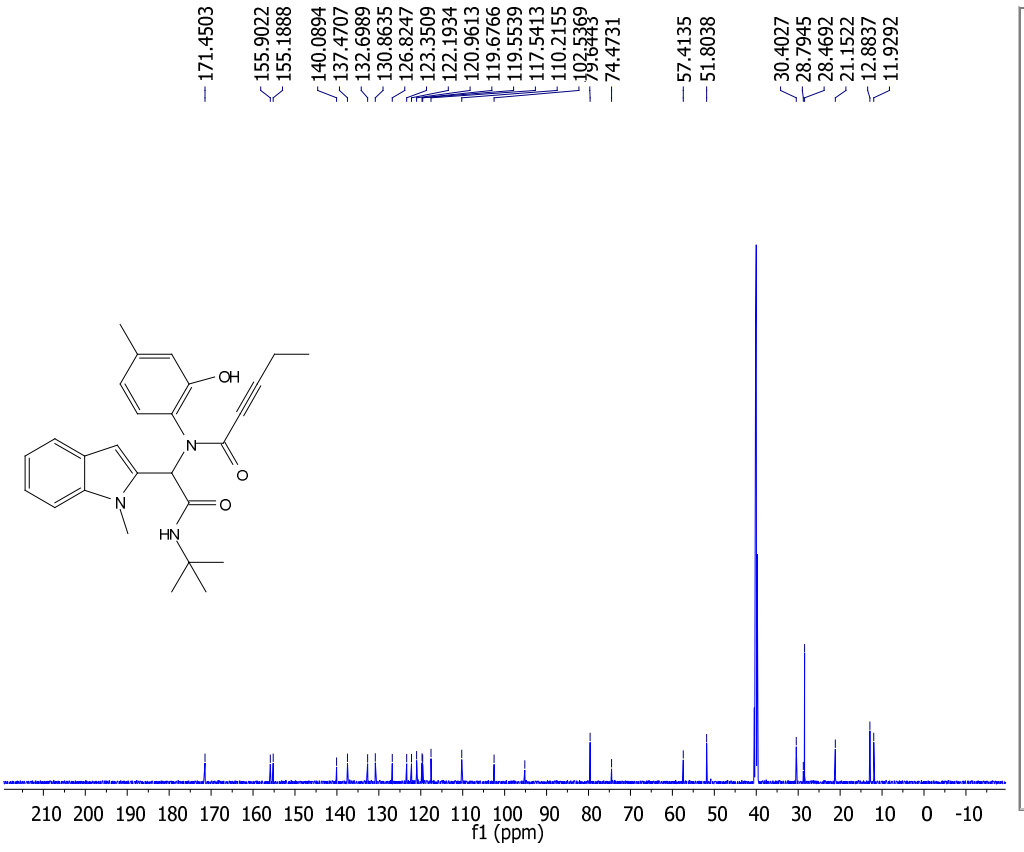
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-19T11:16:00
19	Modification Date	2018-04-19T11:16:57
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2533.1
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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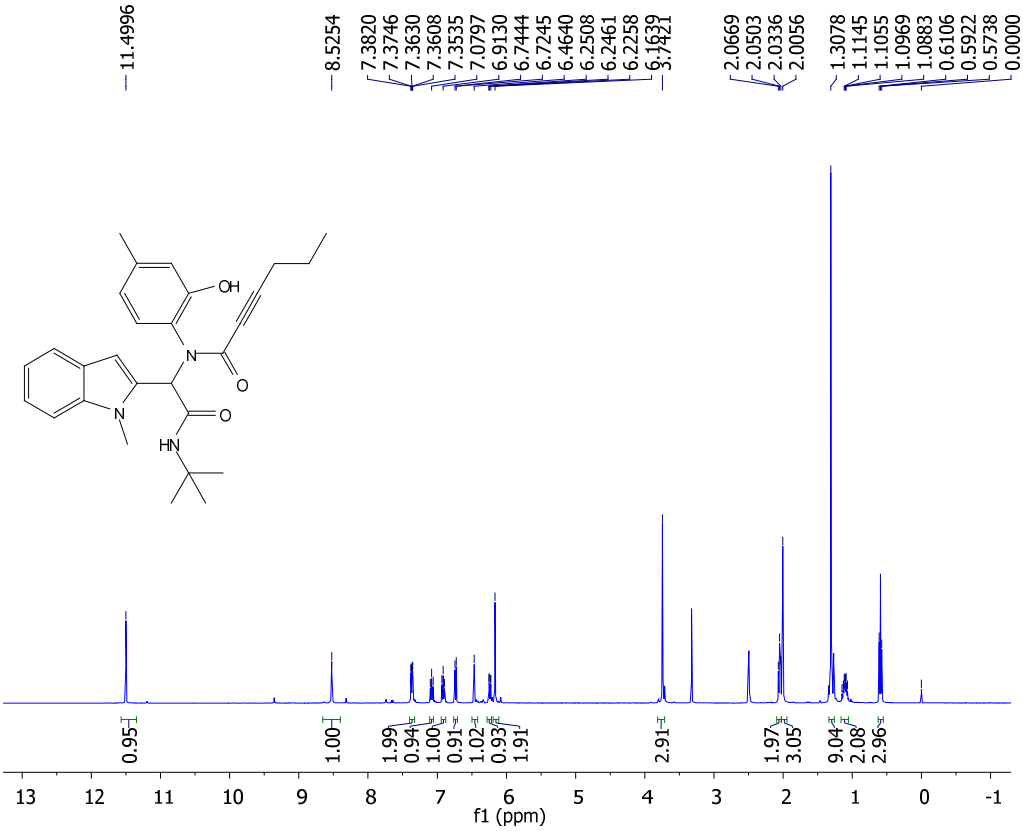
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.2
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	194
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-19T17:22:25
19	Modification Date	2018-04-19T18:22:26
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1q**



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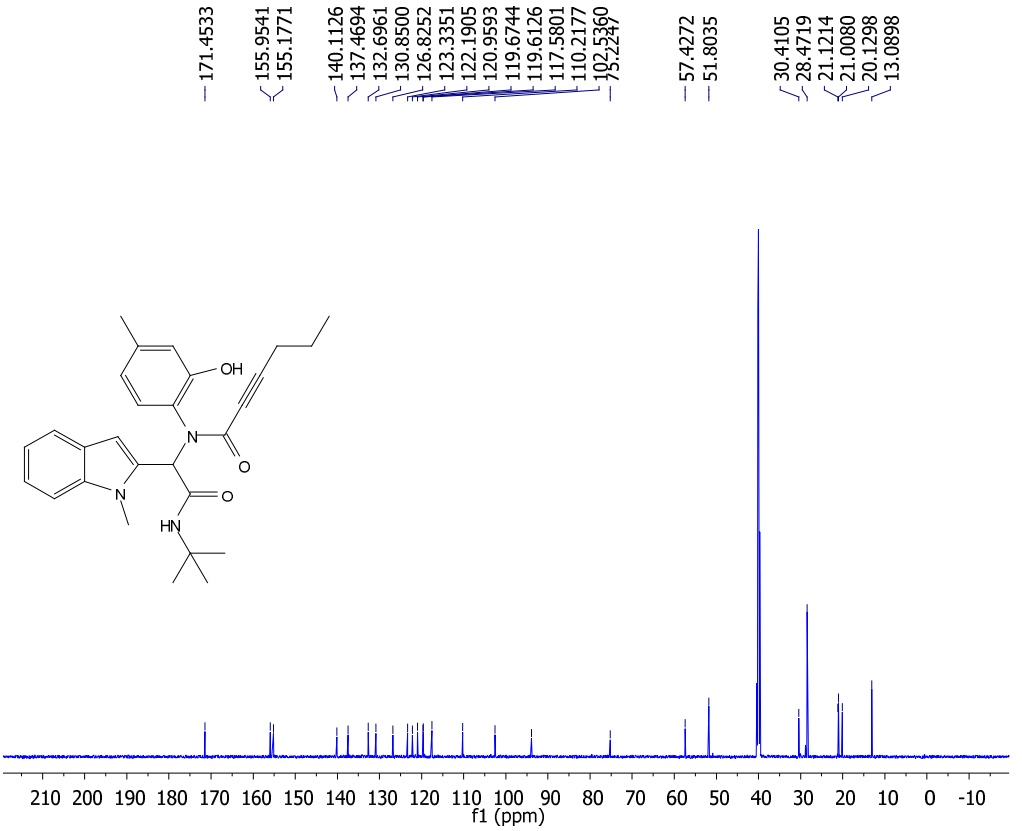
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-19T11:20:00
19	Modification Date	2018-04-19T11:20:33
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2533.5
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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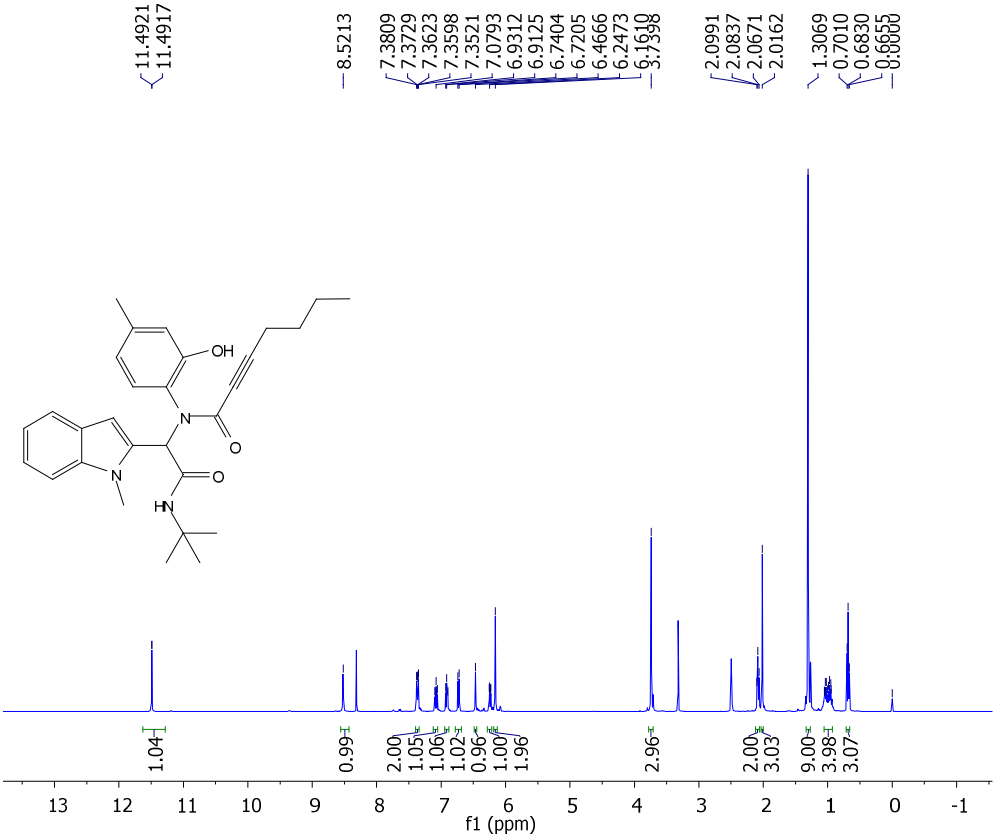
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	404
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-04-19T17:49:33
19	Modification Date	2018-04-19T18:49:34
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1r**



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3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-04-26T11:35:00
19	Modification Date	2018-04-26T11:35:53
20	Spectrometer Frequency	400.17
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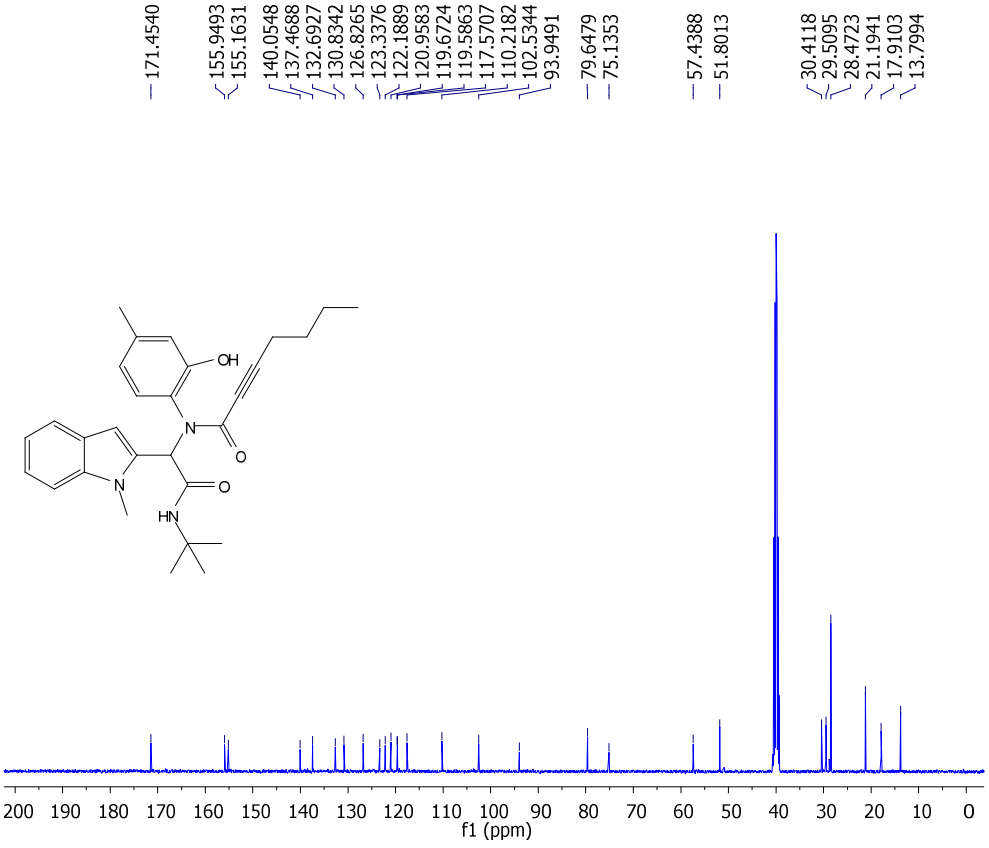
22	Lowest Frequency	-2533.3
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-04-28T12:19:00
19	Modification Date	2018-04-28T12:19:59
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
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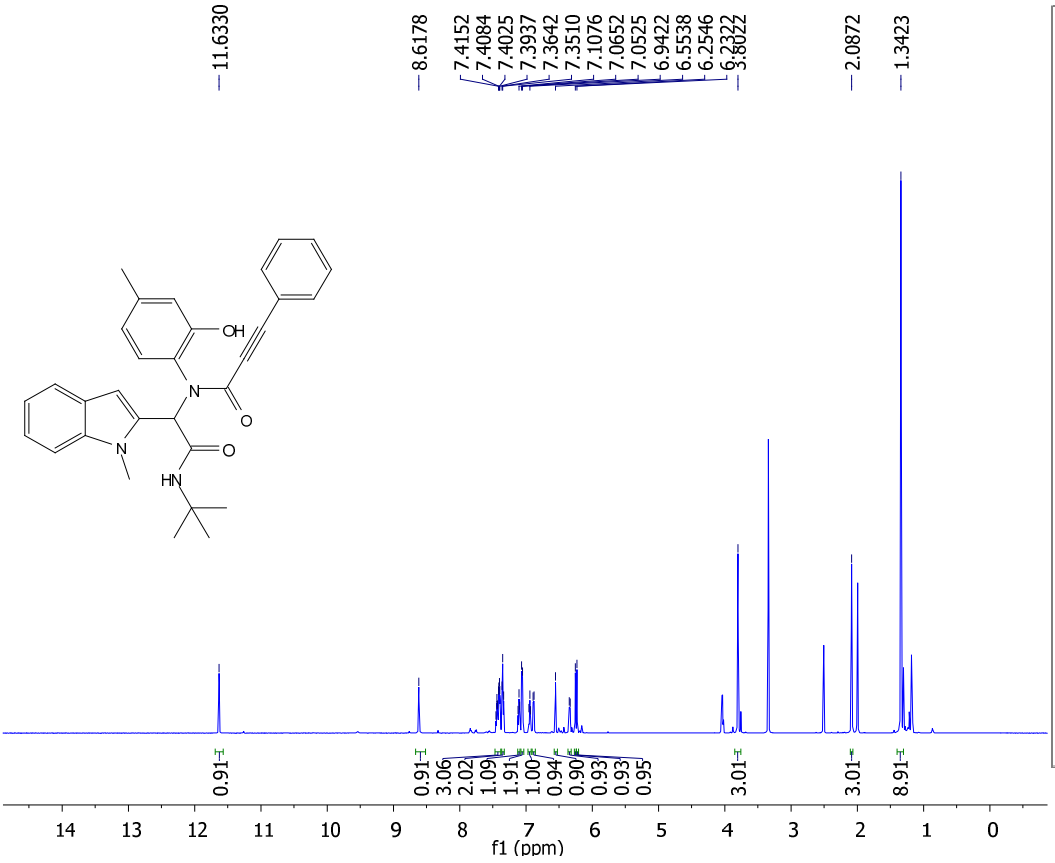
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1s**



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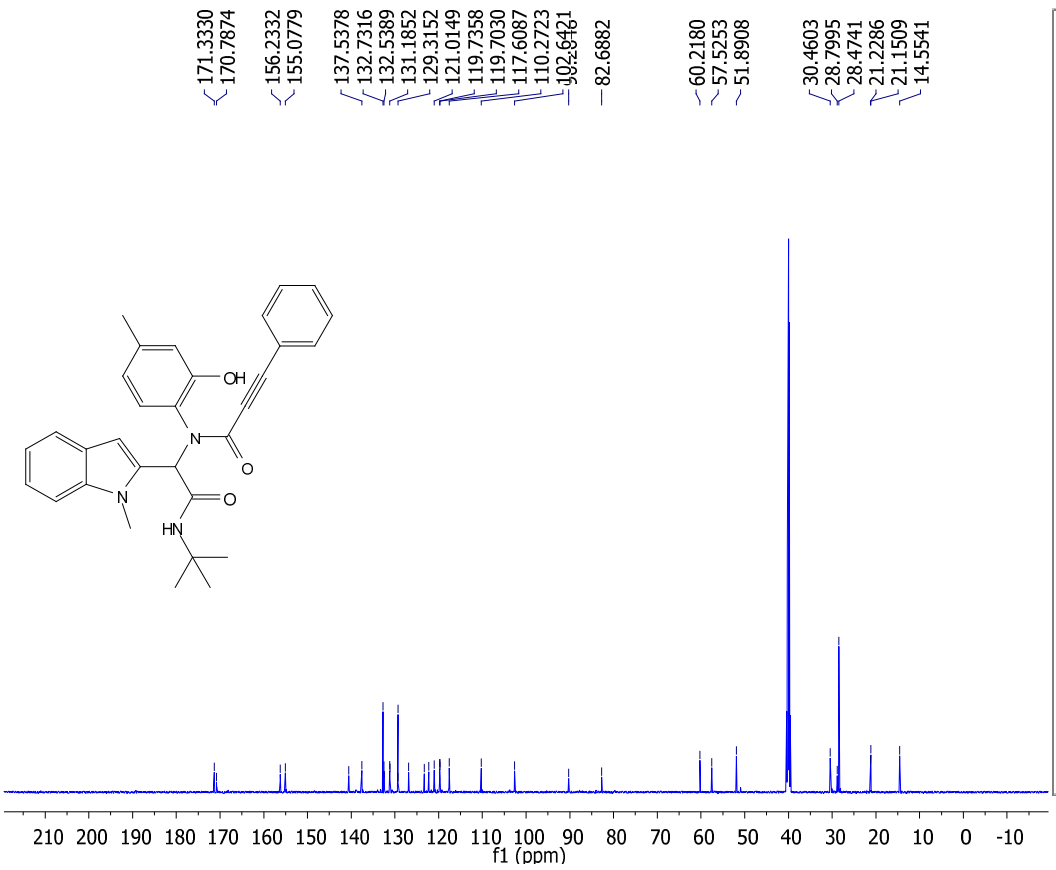
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	101
15	Relaxation Delay	1.5000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-07-12T15:56:54
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2408.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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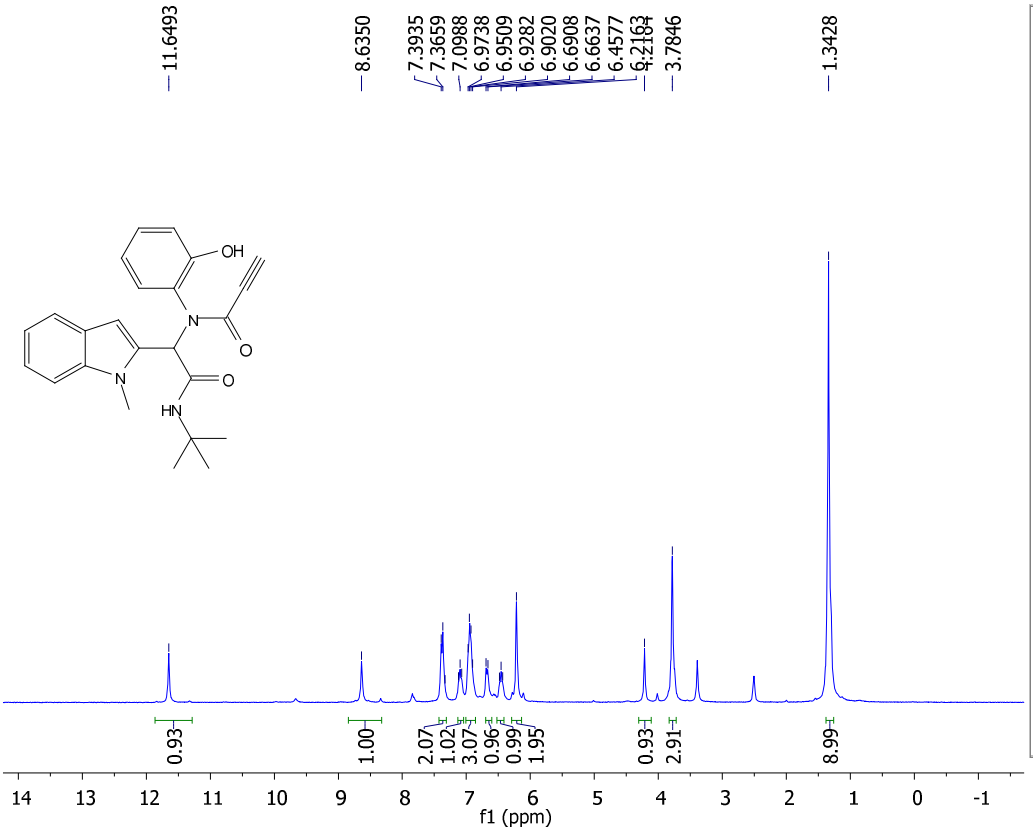
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.1
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1455
14	Receiver Gain	2050
15	Relaxation Delay	1.7500
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-07-12T13:58:26
19	Modification Date	2018-07-12T17:09:50
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	262144

^{1}H and ^{13}C NMR spectra of compound **1t**



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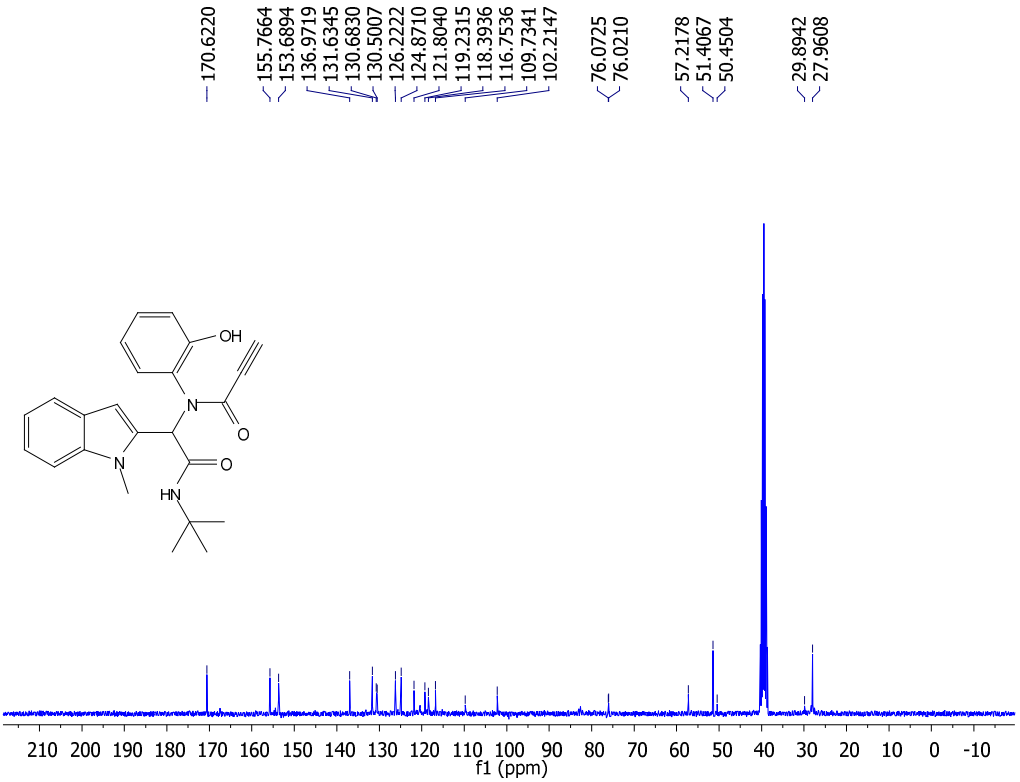
4	Origin	Bruker BioSpin GmbH
5	Owner	nmruser
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	295.8
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	8
14	Receiver Gain	256
15	Relaxation Delay	1.0000
16	Pulse Width	9.5000
17	Acquisition Time	2.6543
18	Acquisition Date	2017-11-30T16:47:00
19	Modification Date	2017-11-30T16:47:45
20	Spectrometer Frequency	300.13
21	Spectral Width	6172.8
22	Lowest Frequency	-1233.0
23	Nucleus	1H
24	Acquired Size	16384
25	Spectral Size	32768



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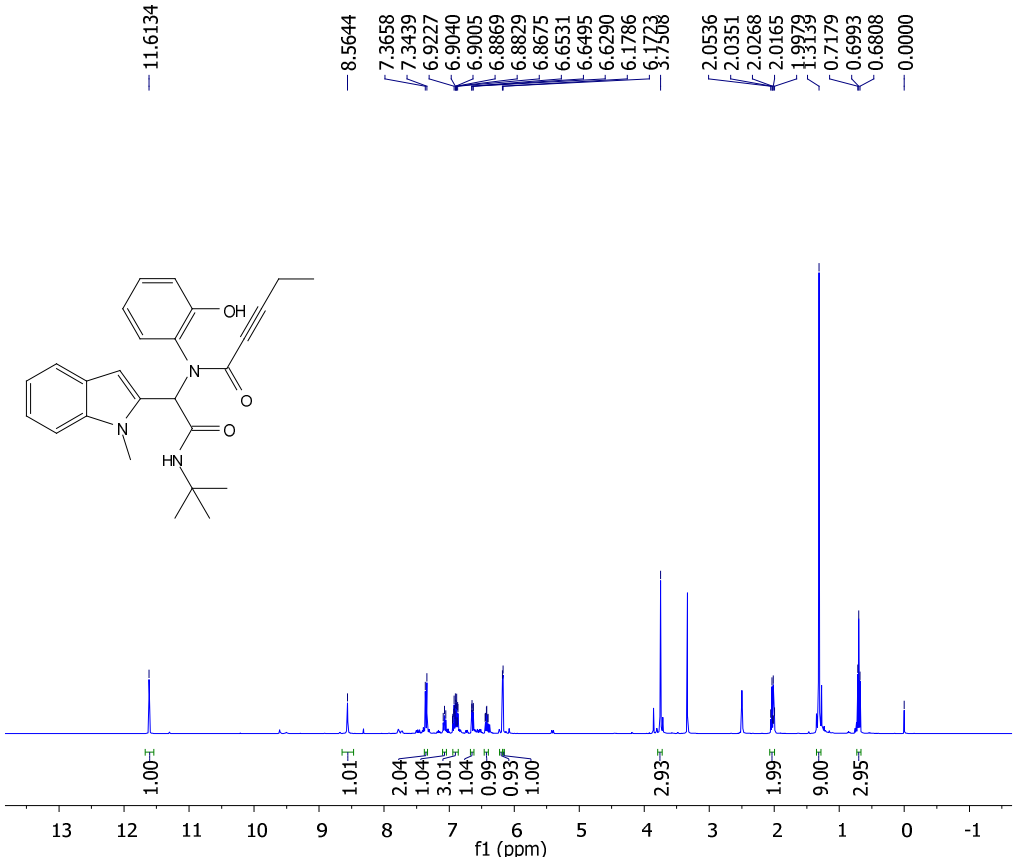
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmruser
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	295.9
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	3000
14	Receiver Gain	16384
15	Relaxation Delay	1.7500
16	Pulse Width	8.2500
17	Acquisition Time	1.8220
18	Acquisition Date	2017-12-02T00:57:00
19	Modification Date	2017-12-02T00:57:18
20	Spectrometer Frequency	75.48
21	Spectral Width	17985.6
22	Lowest Frequency	-1484.2
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	65536

^{1}H and ^{13}C NMR spectra of compound **1u**



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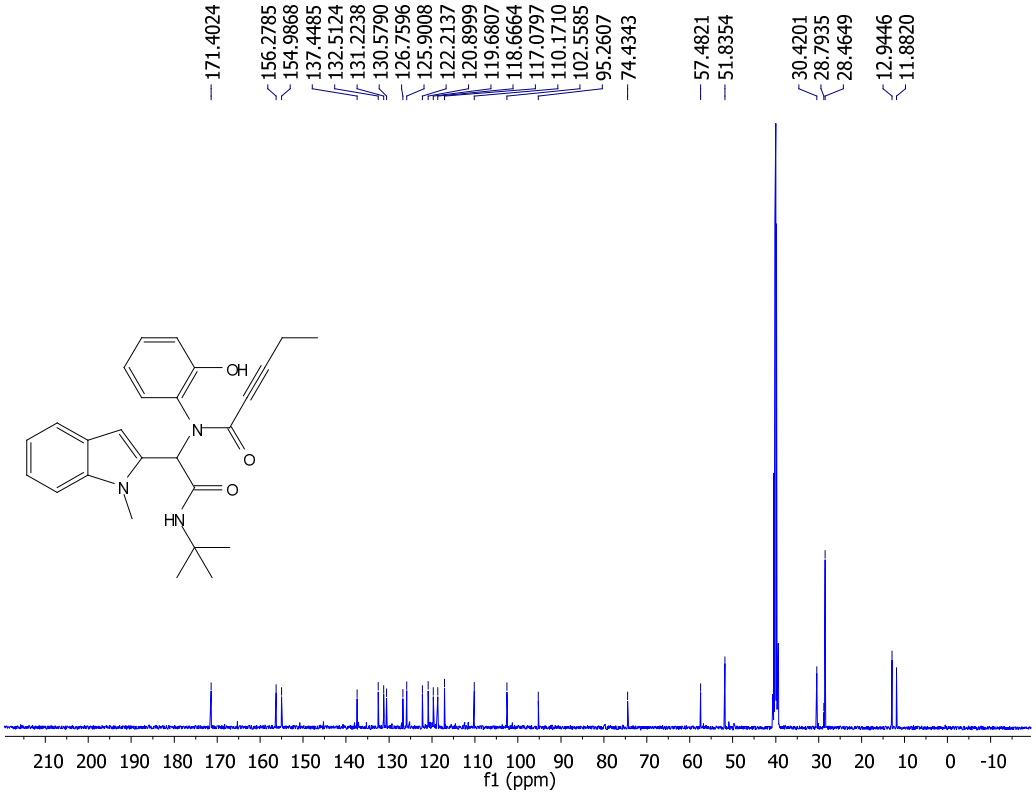
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	296.1
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2017-10-25T13:23:00
19	Modification Date	2017-10-25T13:23:29
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2532.7
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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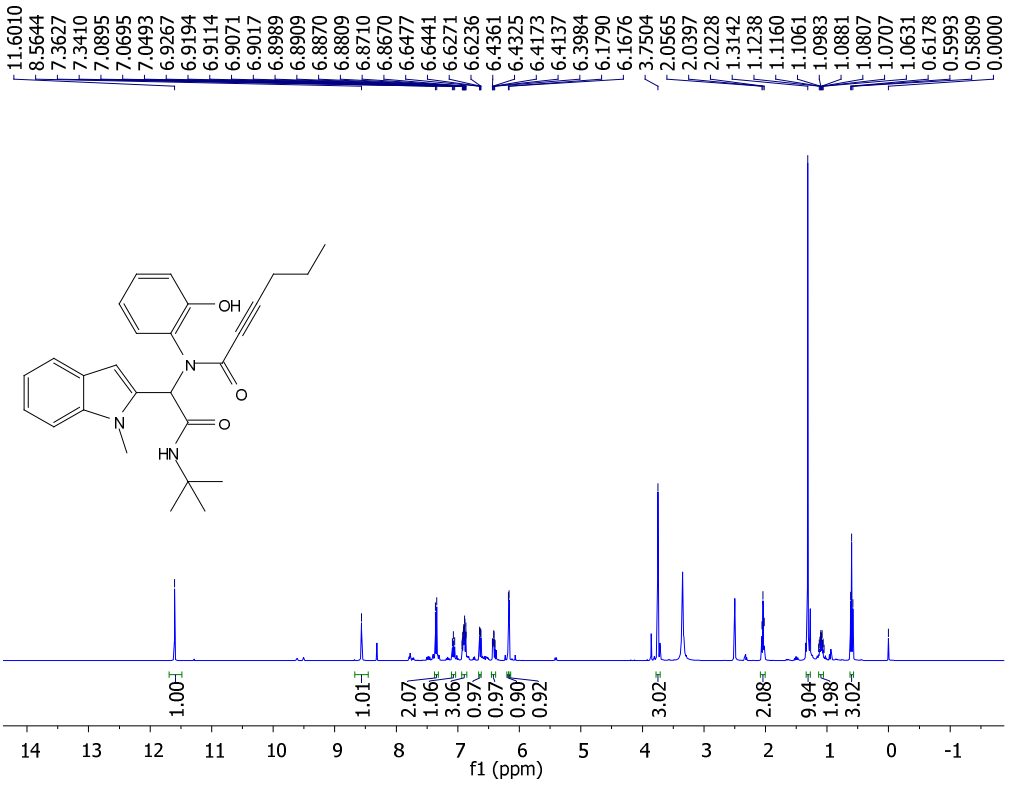
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	296.9
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2017-10-27T22:13:00
19	Modification Date	2017-10-27T22:13:16
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1v**



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4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	296.2
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2017-10-25T13:27:00
19	Modification Date	2017-10-25T13:27:20
20	Spectrometer Frequency	400.17
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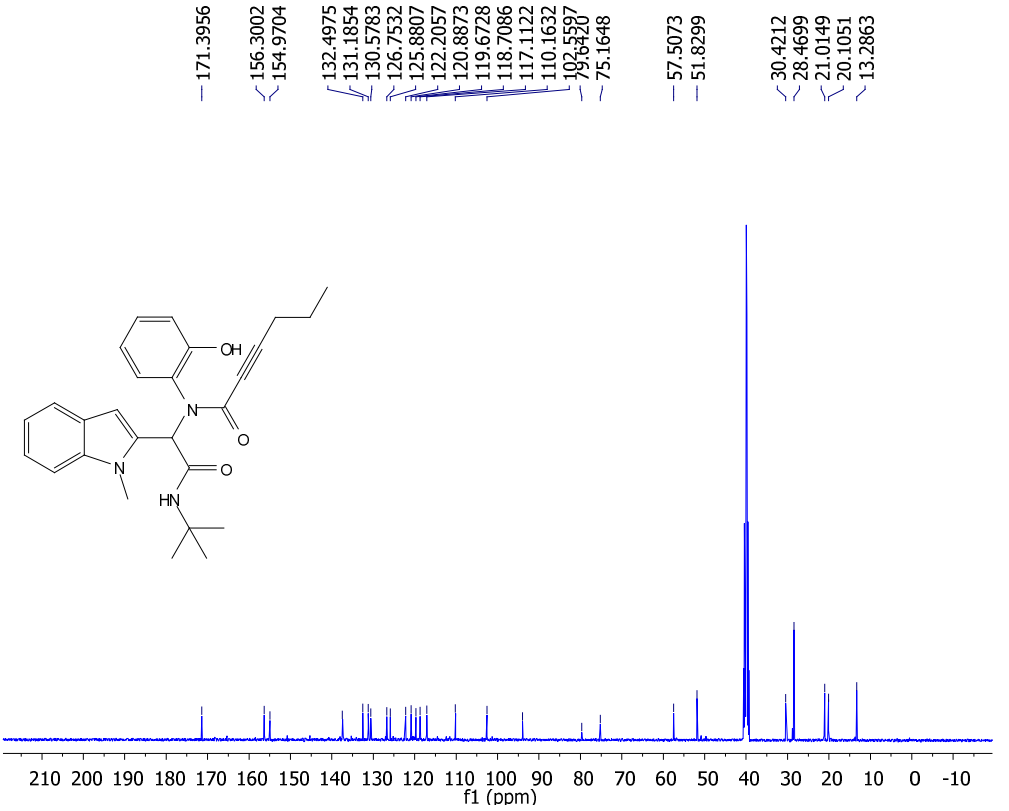
22	Lowest Frequency	-2532.0
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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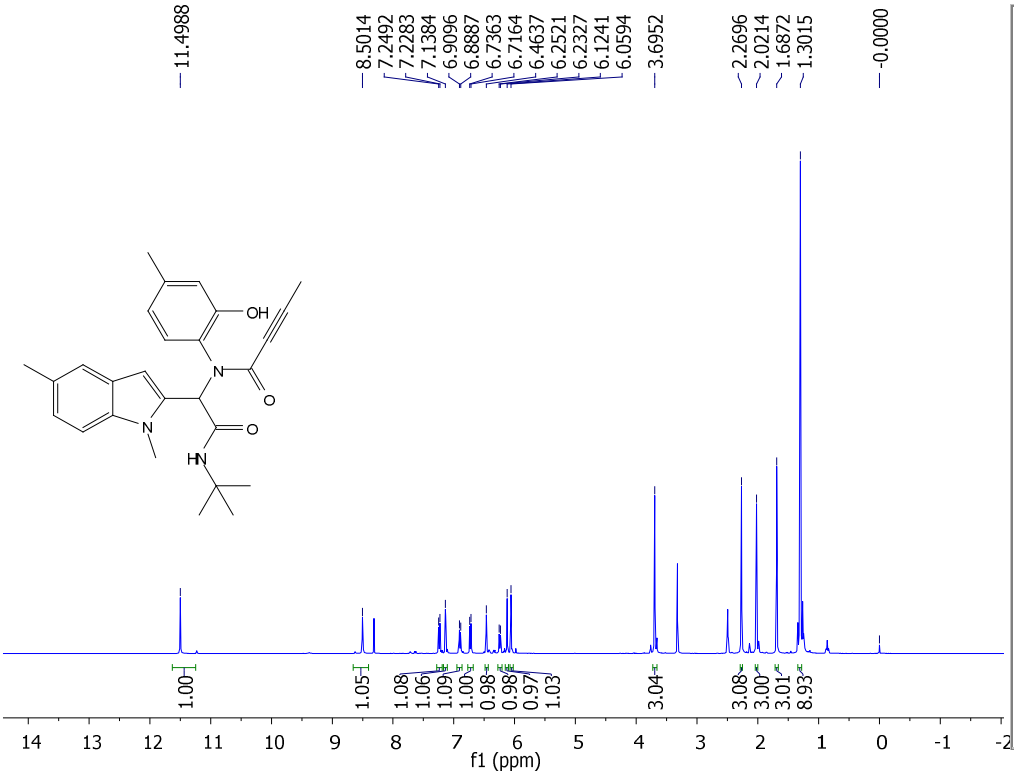
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	296.8
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2017-10-27T23:14:00
19	Modification Date	2017-10-27T23:14:35
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1w**



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3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-02T17:52:00
19	Modification Date	2018-05-02T17:52:18
20	Spectrometer Frequency	400.17
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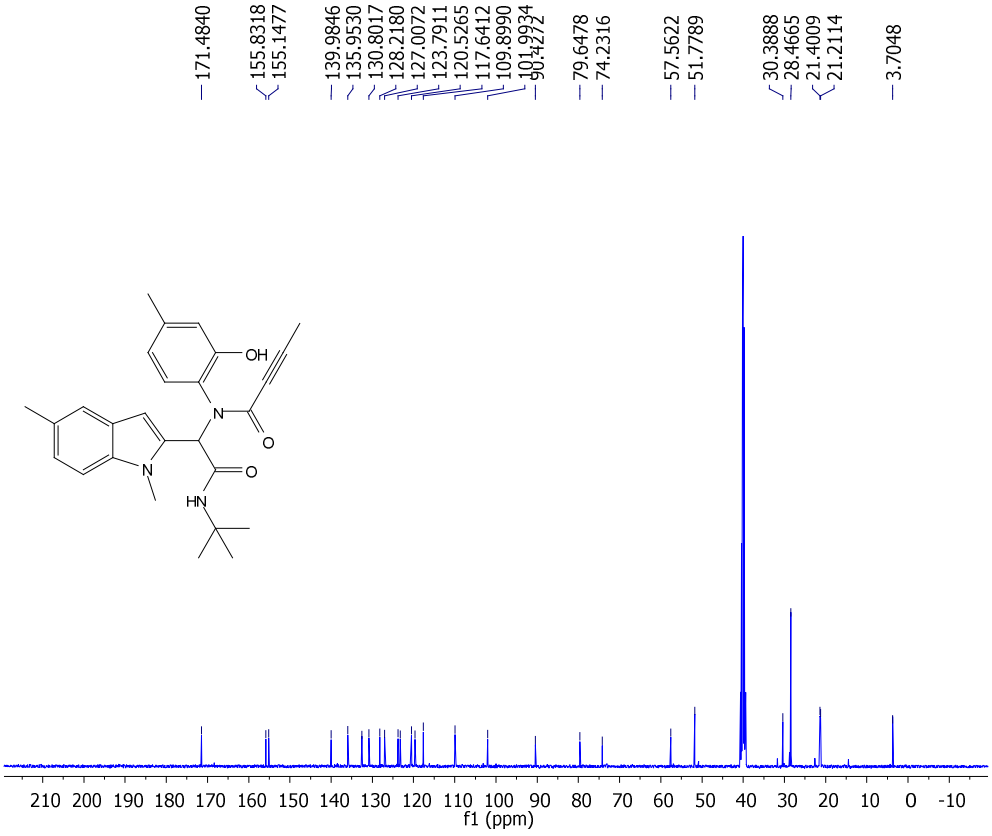
22	Lowest Frequency	-2533.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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3	Comment	
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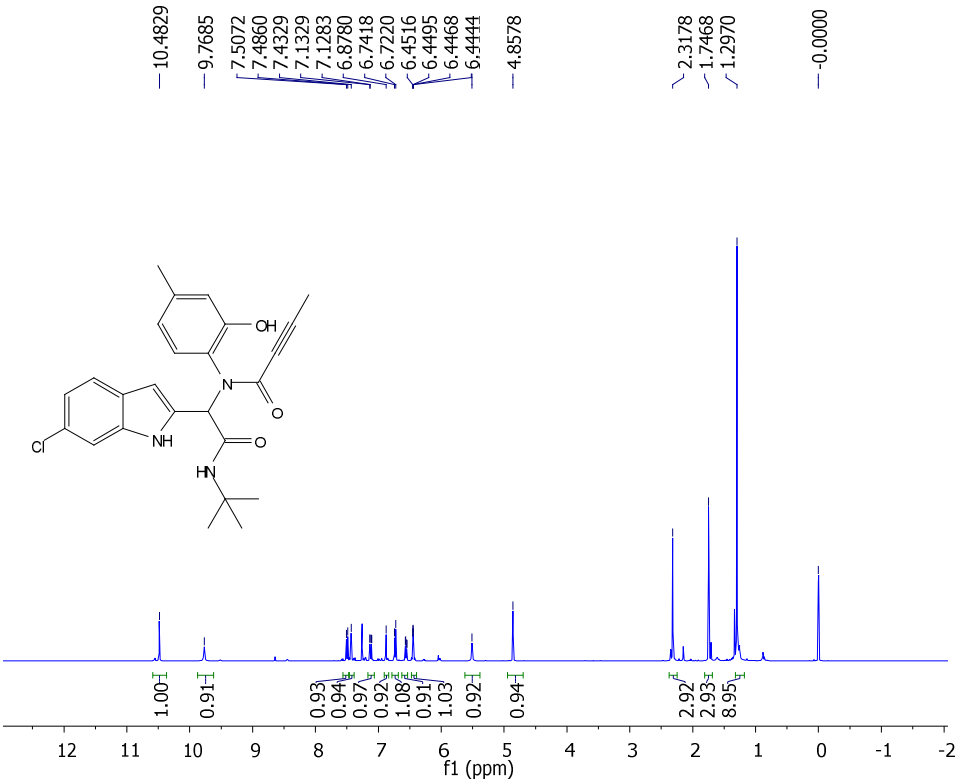
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	1024
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-05-04T06:29:00
19	Modification Date	2018-05-04T06:29:57
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1x**



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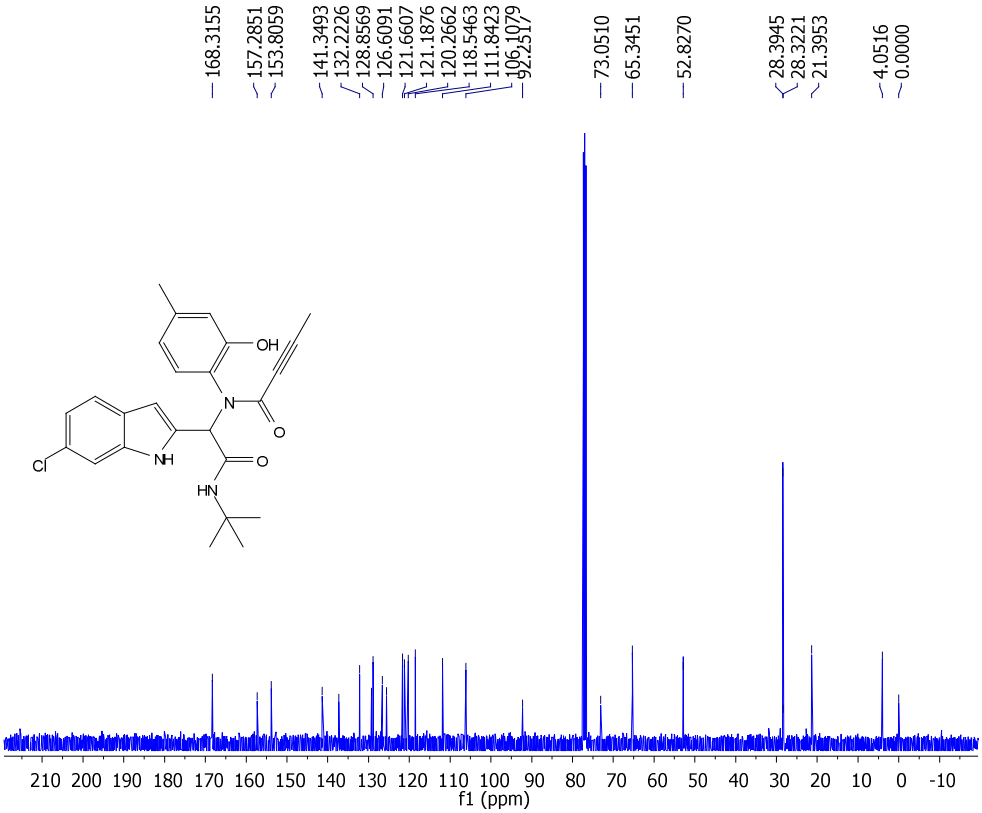
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	54
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-02T17:48:00
19	Modification Date	2018-05-02T17:48:29
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2539.0
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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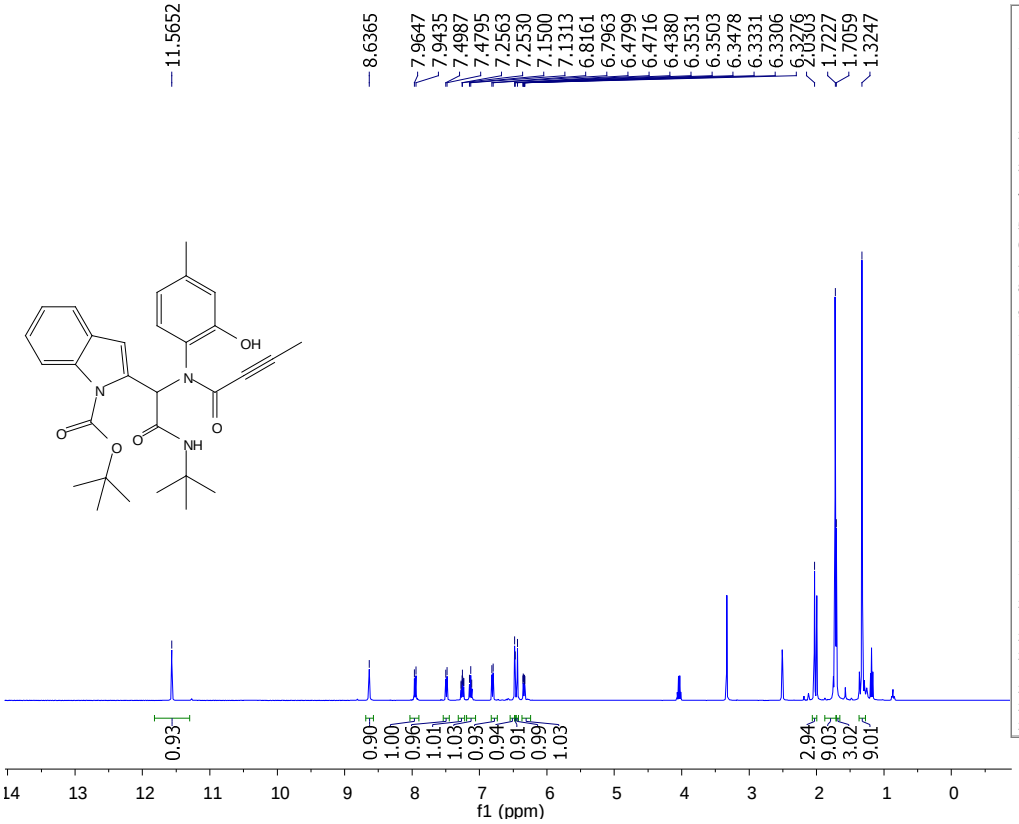
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	81
14	Receiver Gain	201
15	Relaxation Delay	2.0000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-05-02T18:09:00
19	Modification Date	2018-05-02T18:09:31
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1958.7
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1y**



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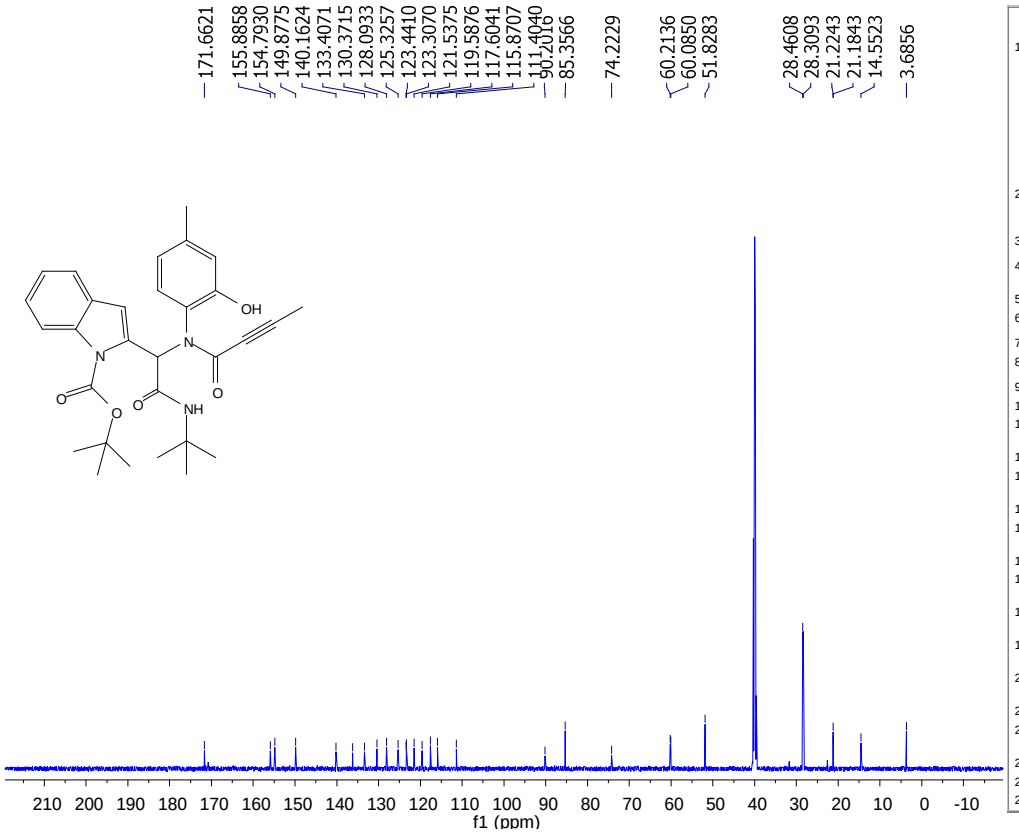
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-07-23T12:57:00
19	Modification Date	2018-07-23T12:57:06
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2528.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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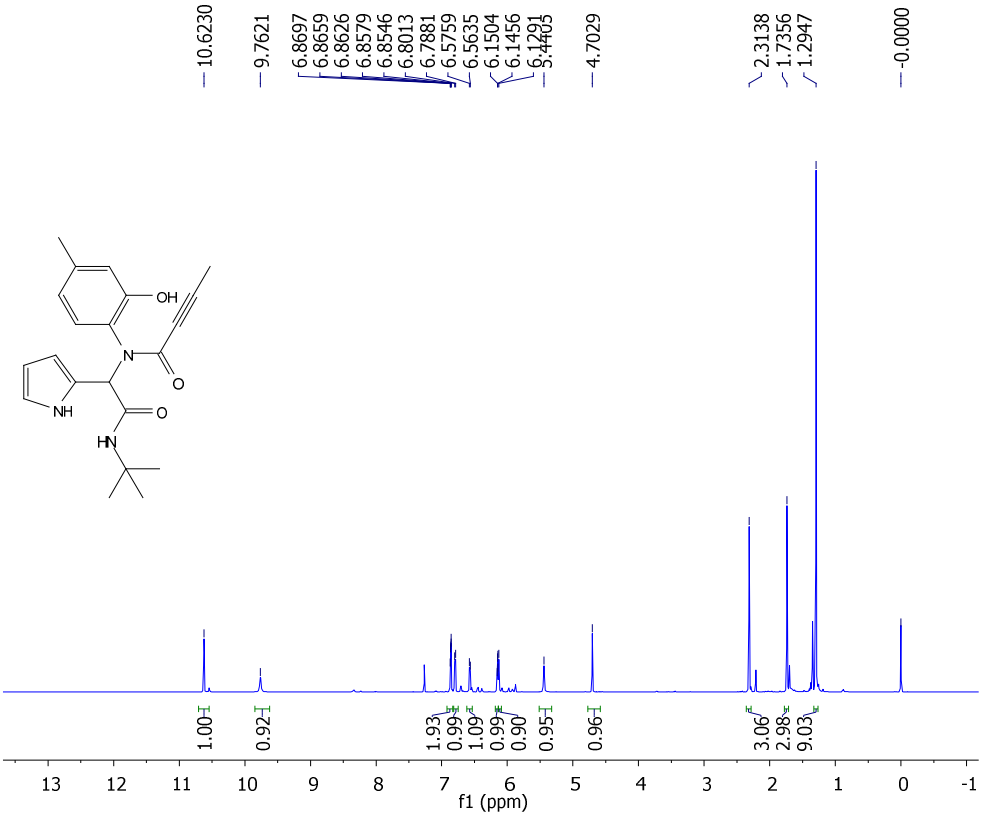
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	299.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	161
14	Receiver Gain	2050
15	Relaxation Delay	2.0000
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-07-24T09:55:30
19	Modification Date	2018-07-24T12:04:44
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	262144

^{1}H and ^{13}C NMR spectra of compound **1ba**



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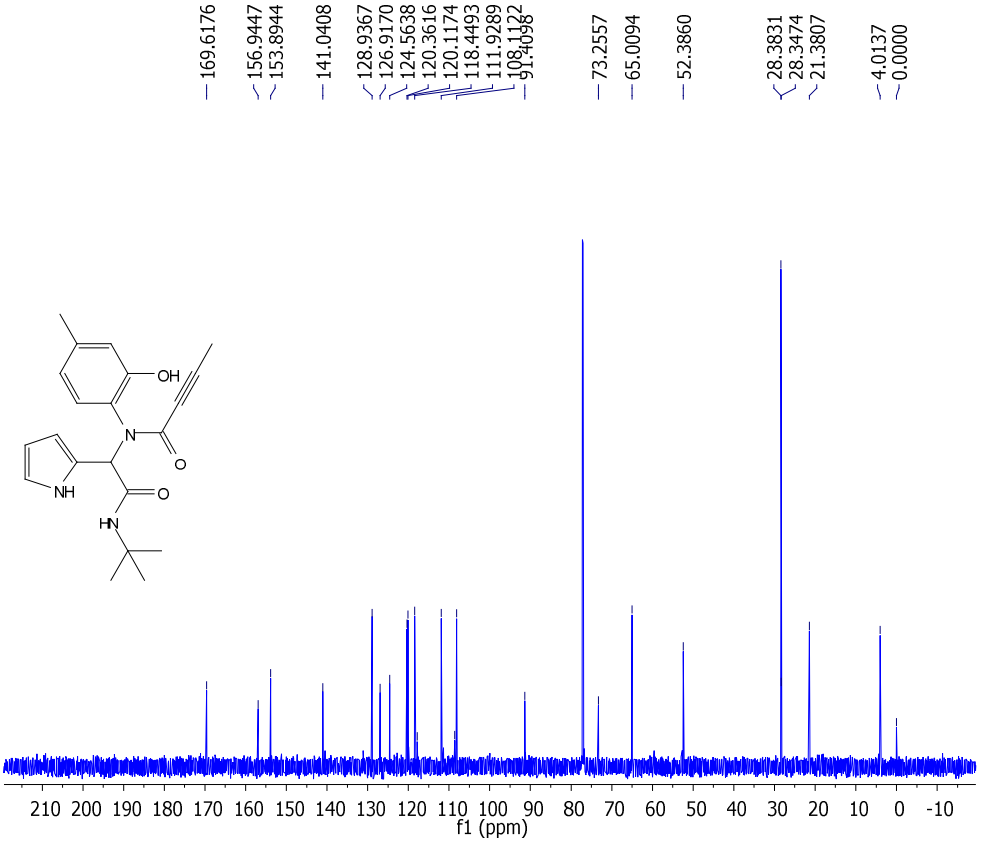
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.6
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	81
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-11T11:56:42
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2316.2
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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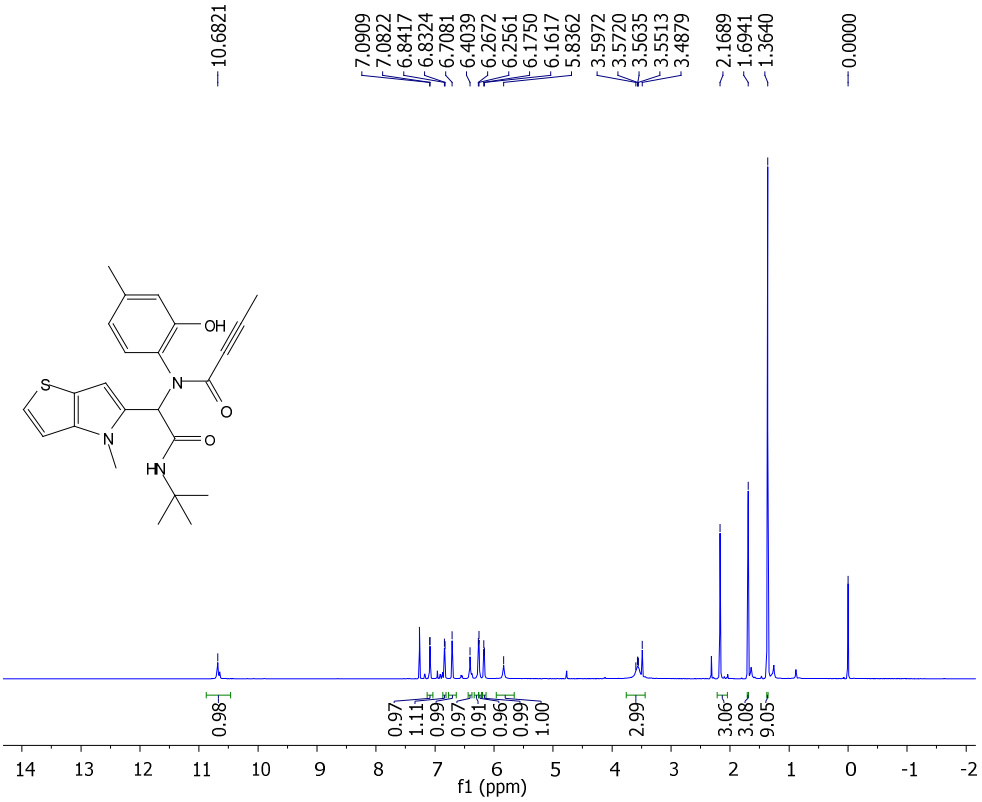
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	299.2
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	64
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-11T11:30:07
19	Modification Date	2018-05-11T12:32:12
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.4
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1bb**



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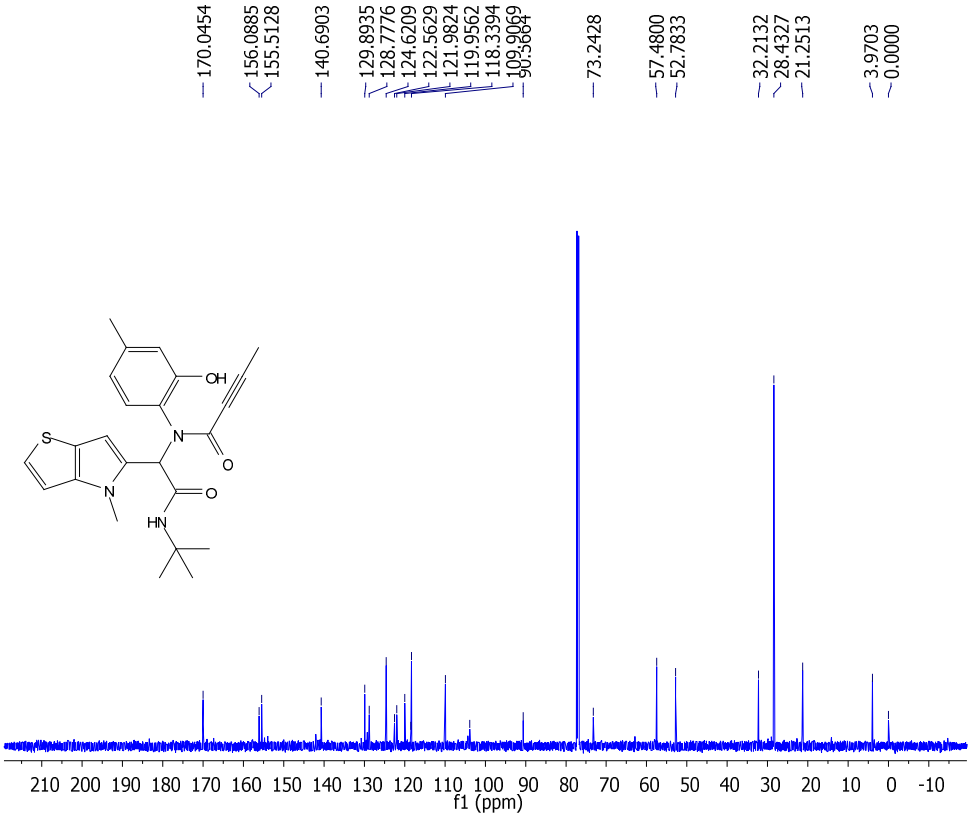
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	297.6
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	81
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-11T12:36:38
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2303.6
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	CDCl3
10	Temperature	298.7
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	192
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-11T11:51:31
19	Modification Date	2018-05-11T12:55:30
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2940.5
23	Nucleus	13C
24	Acquired Size	40960
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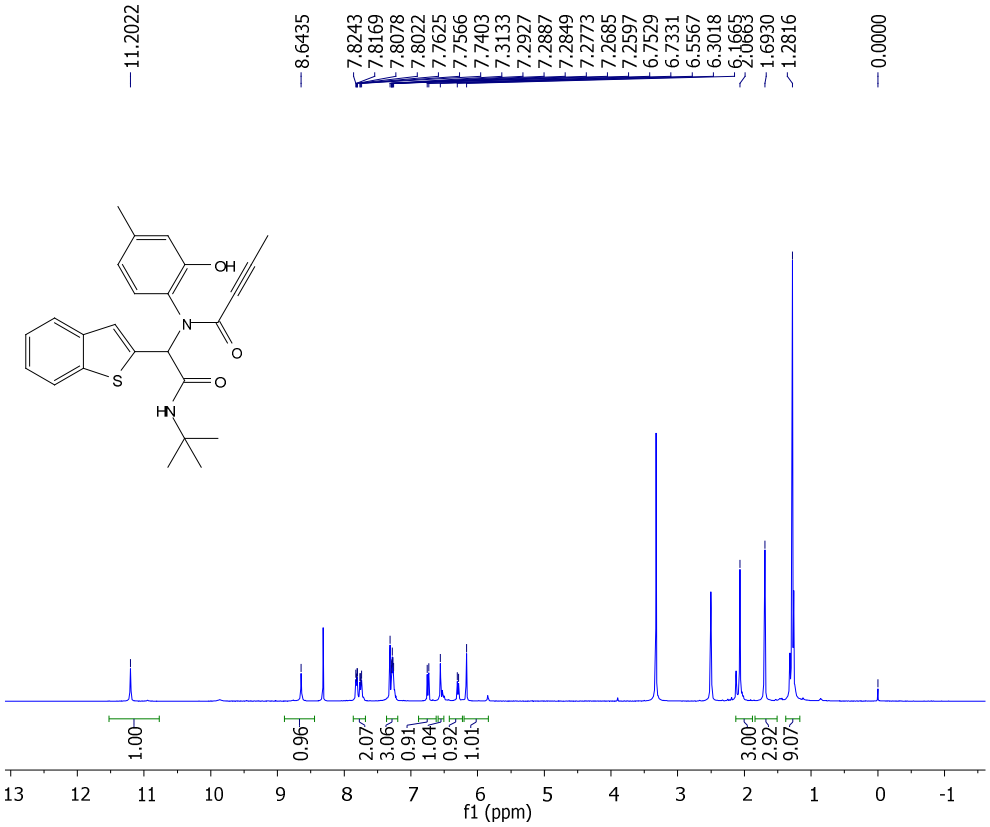
^{1}H and ^{13}C NMR spectra of compound **1bc**



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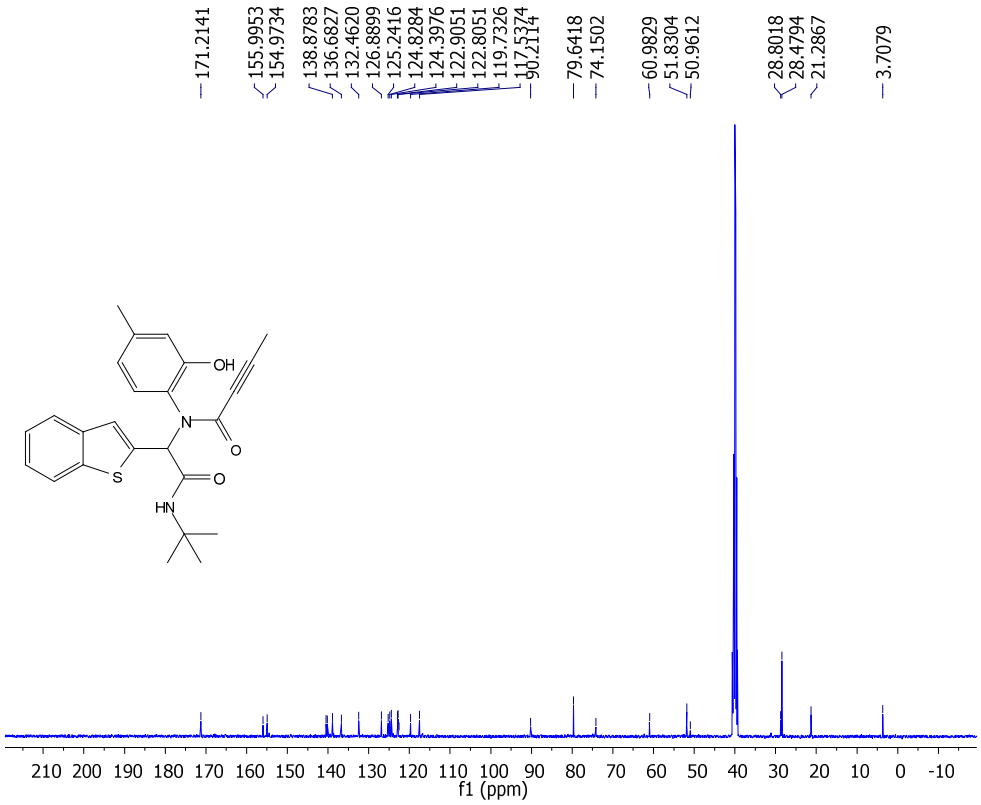
5 Owner	nmr
6 Site	
7 Spectrometer	spect
8 Author	
9 Solvent	DMSO
10 Temperature	298.0
11 Pulse Sequence	zg30
12 Experiment	1D
13 Number of Scans	16
14 Receiver Gain	127
15 Relaxation Delay	1.0000
16 Pulse Width	9.7500
17 Acquisition Time	3.2768
18 Acquisition Date	2018-05-25T14:25:00
19 Modification Date	2018-05-25T14:25:24
20 Spectrometer Frequency	400.17
21 Spectral Width	10000.0
22 Lowest Frequency	-2531.6
23 Nucleus	1H
24 Acquired Size	32768
25 Spectral Size	65536



Parameter	Value
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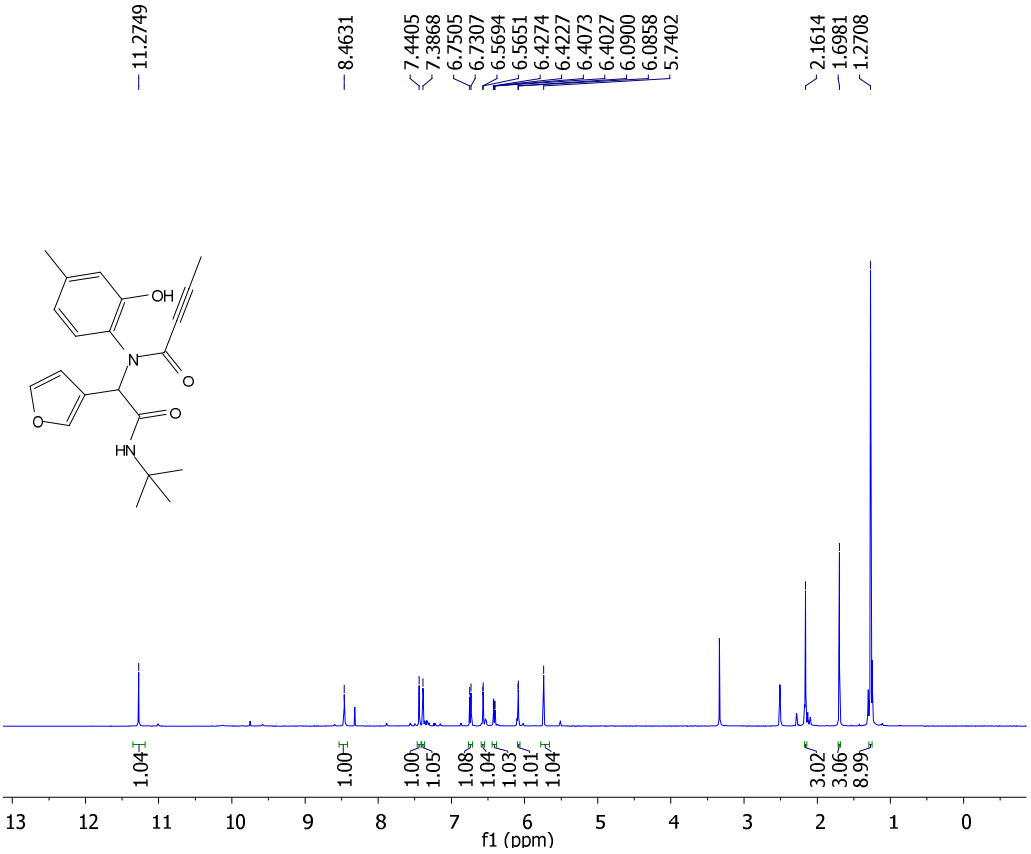
4 Origin	Bruker BioSpin GmbH
5 Owner	nmr
6 Site	
7 Spectrometer	spect
8 Author	
9 Solvent	DMSO
10 Temperature	298.0
11 Pulse Sequence	zgpg30
12 Experiment	1D
13 Number of Scans	2048
14 Receiver Gain	201
15 Relaxation Delay	2.0000
16 Pulse Width	7.6500
17 Acquisition Time	1.3631
18 Acquisition Date	2018-05-27T18:52:00
19 Modification Date	2018-05-27T20:40:39
20 Spectrometer Frequency	100.63
21 Spectral Width	24038.5
22 Lowest Frequency	-1957.4
23 Nucleus	13C
24 Acquired Size	32768
25 Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1bd**



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5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
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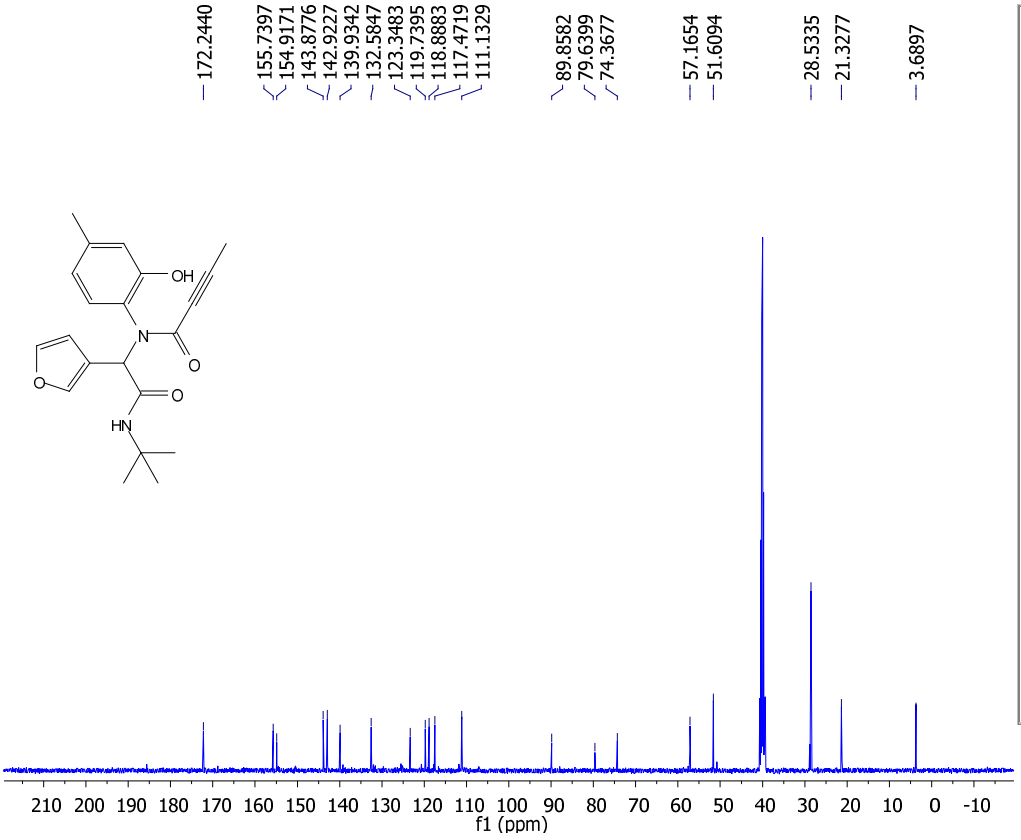
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	42
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-07-03T 14:02:00
19	Modification Date	2018-07-03T 14:02:42
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2528.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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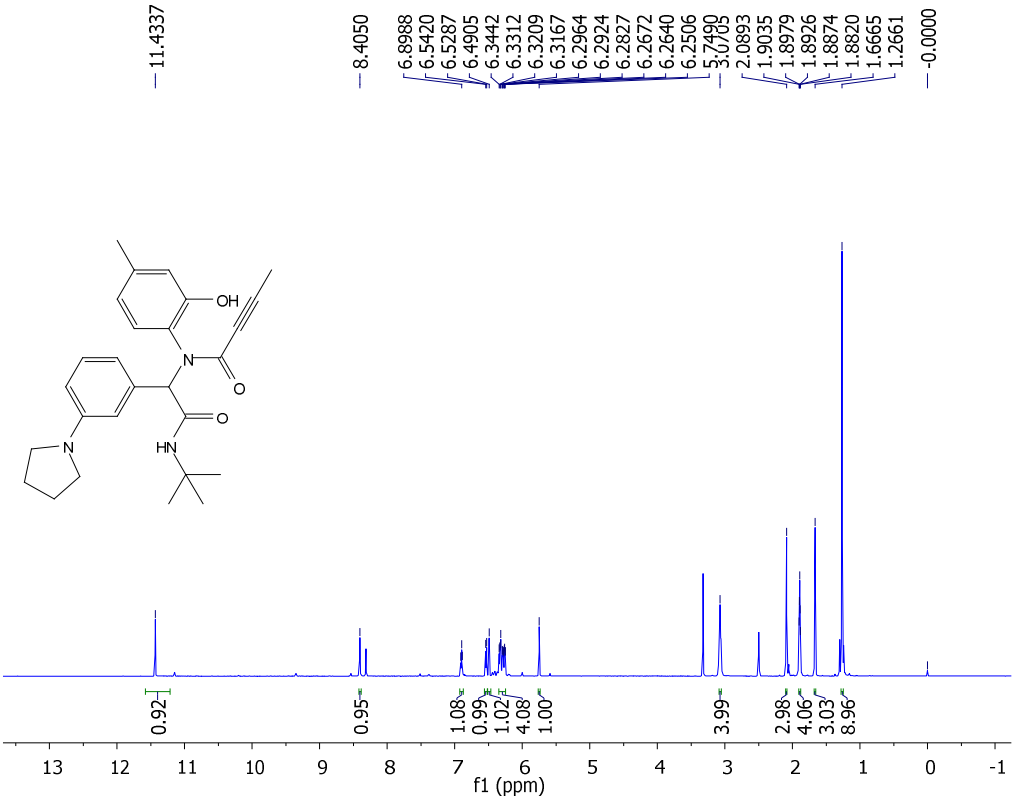
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	512
14	Receiver Gain	201
15	Relaxation Delay	1.5000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-07-04T15: 45:00
19	Modification Date	2018-07-04T15: 53:05
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **1be**



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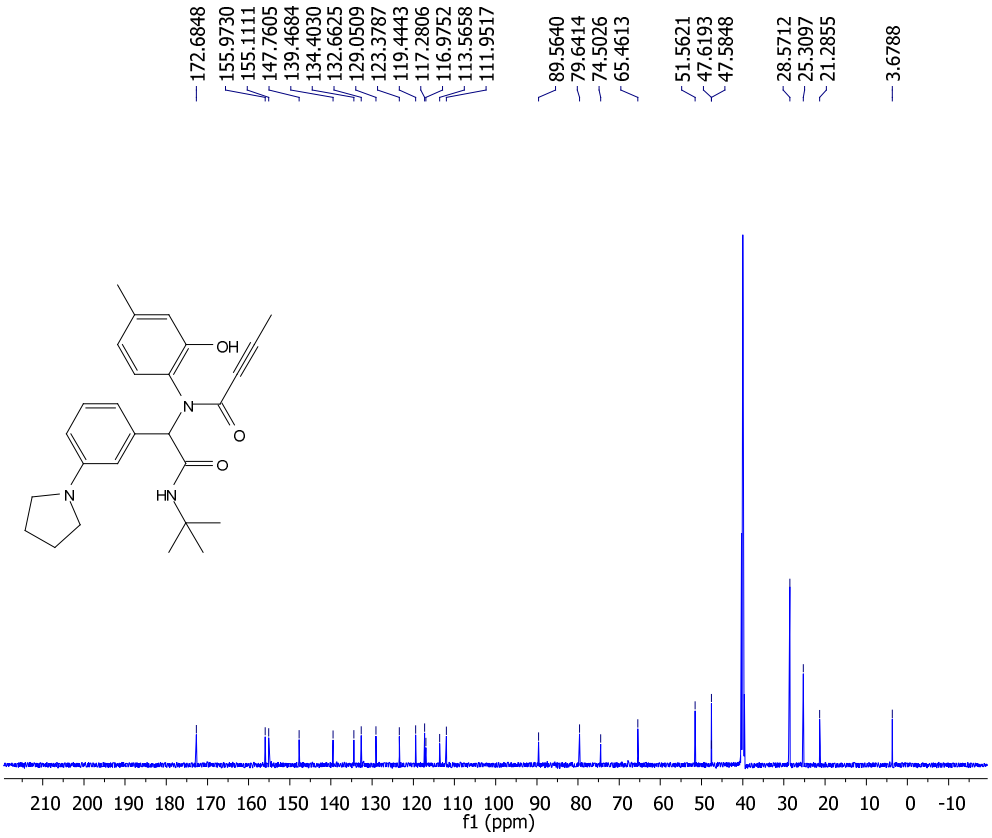
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	297.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	90
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-11T17:29:04
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2309.0
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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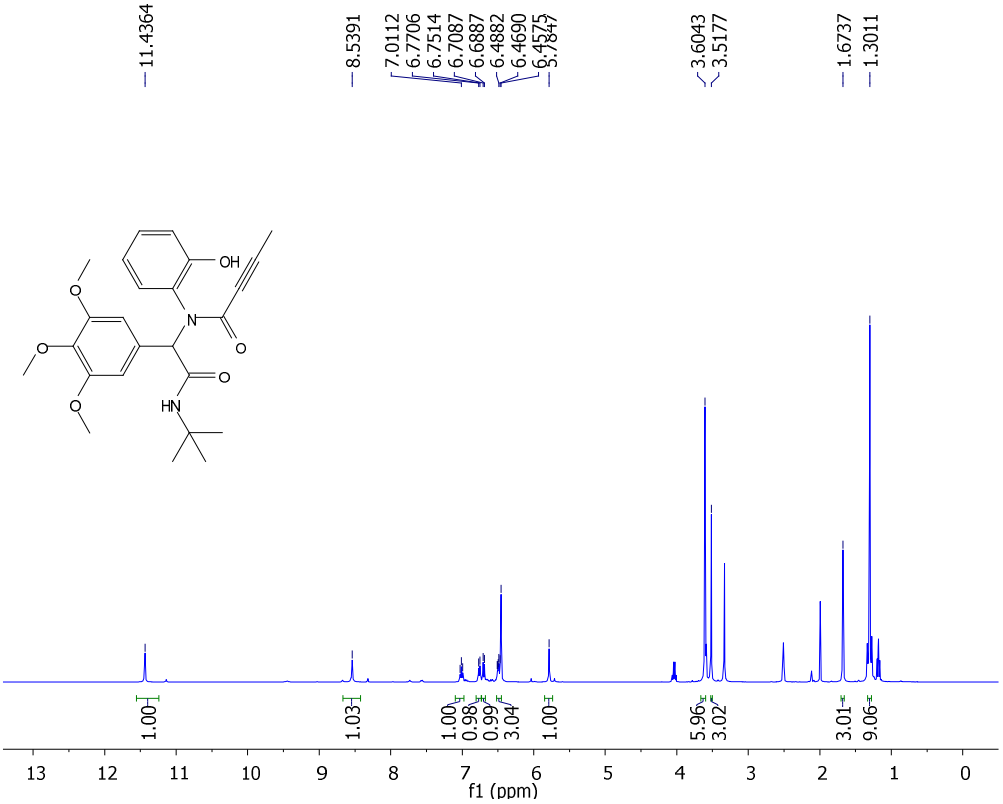
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.5
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	256
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-11T16:30:52
19	Modification Date	2018-05-11T17:41:52
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **1bf**



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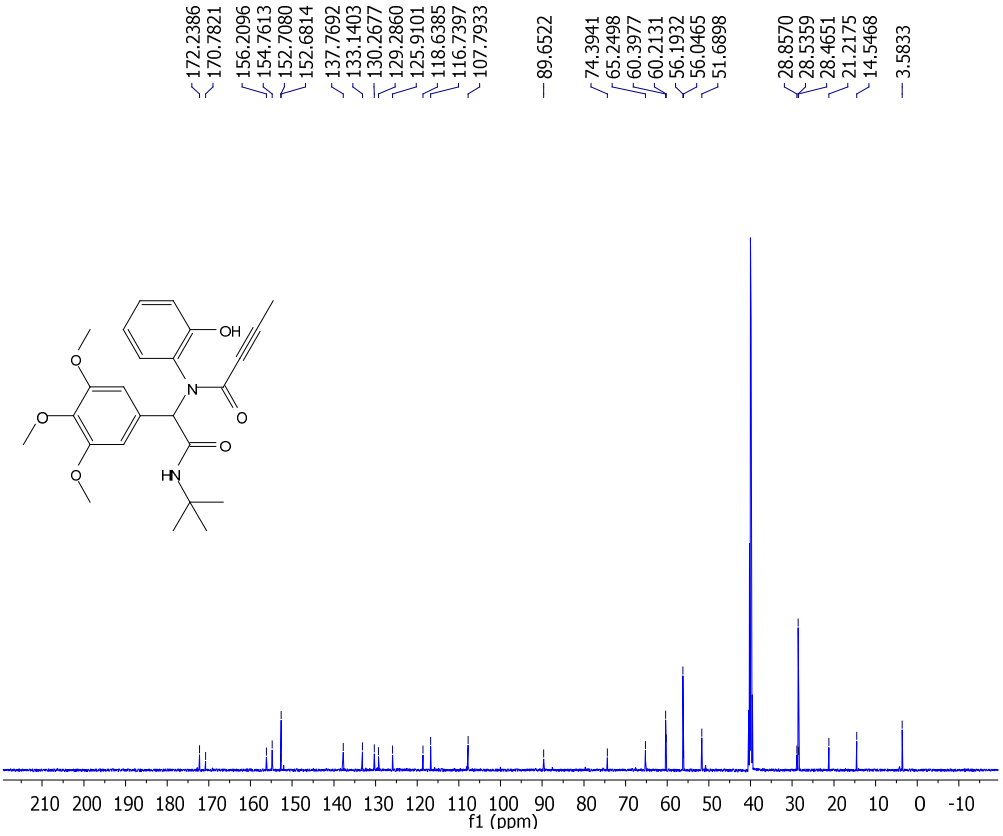
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	39
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-07-24T07:59:00
19	Modification Date	2018-07-24T07:59:18
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2528.8
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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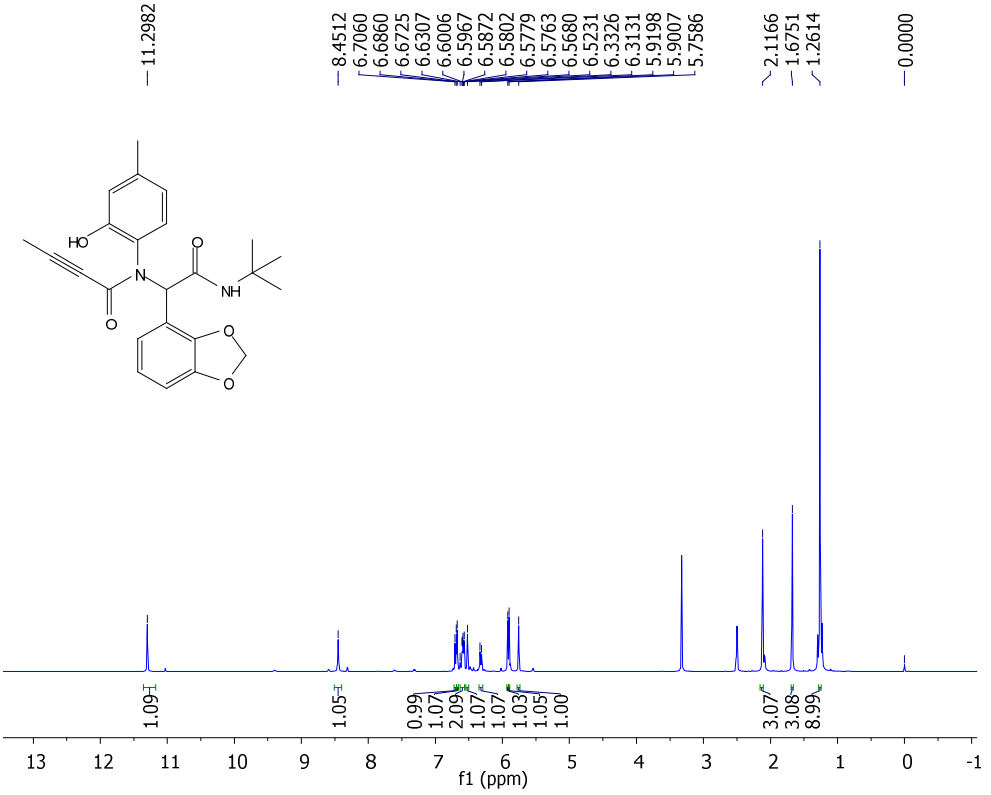
2	Title	EVDE-YH002-R120-13C-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.3
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	458
14	Receiver Gain	2050
15	Relaxation Delay	2.0000
16	Pulse Width	12.0000
17	Acquisition Time	1.8175
18	Acquisition Date	2018-07-24T09:36:25
19	Modification Date	2018-07-24T11:37:22
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	65536
25	Spectral Size	262144

^{1}H and ^{13}C NMR spectra of compound **s1b**



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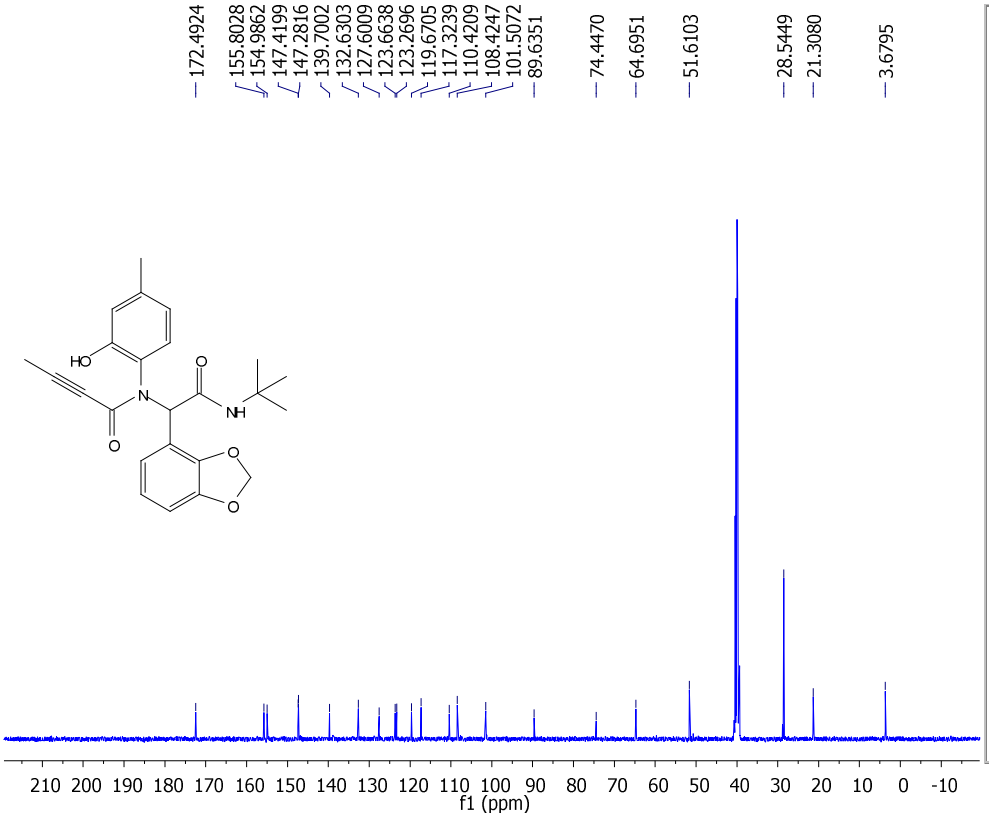
1	Data File Name	C:/ Users/ moke/ Desktop/ EVDE-YH-002R88B/ 10/ fid
2	Title	EVDE-YH-002R88B
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	48
15	Relaxation Delay	1.0000
16	Pulse Width	9.7500
17	Acquisition Time	3.2768
18	Acquisition Date	2018-05-16T11:32:00
19	Modification Date	2018-05-16T11:32:08
20	Spectrometer Frequency	400.17
21	Spectral Width	10000.0
22	Lowest Frequency	-2532.0
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	65536



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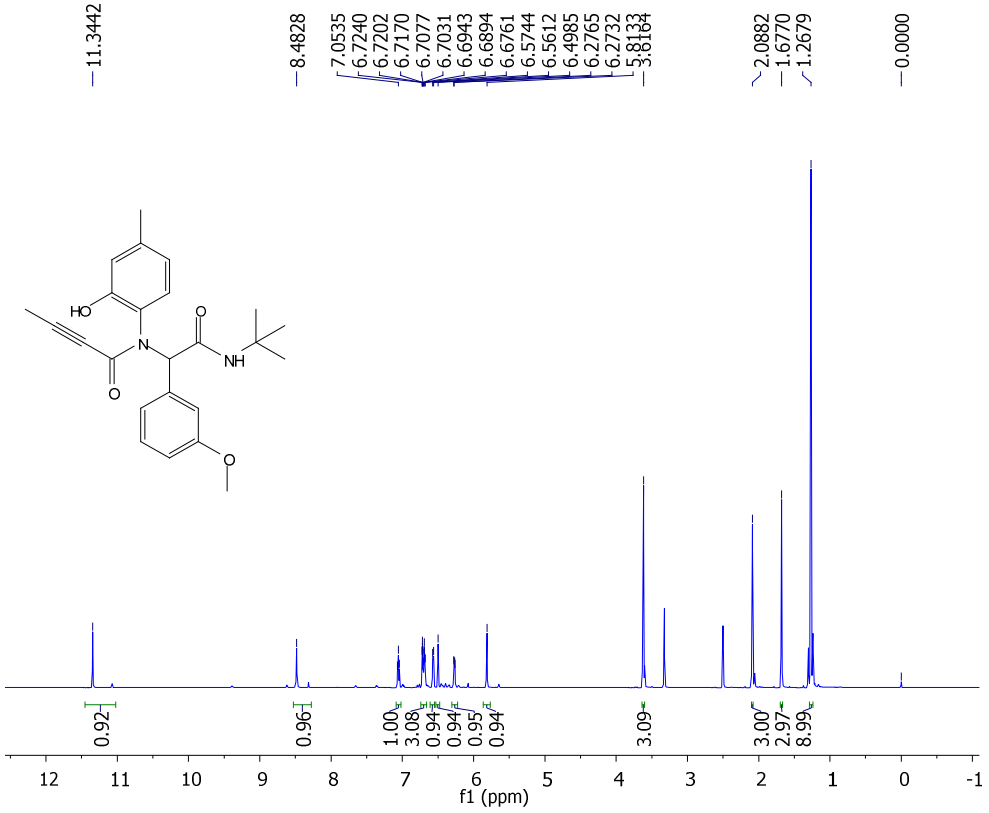
2	Title	EVDE-YH-002R88B
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	512
14	Receiver Gain	201
15	Relaxation Delay	1.5000
16	Pulse Width	7.6500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-05-16T17:35:00
19	Modification Date	2018-05-16T17:35:47
20	Spectrometer Frequency	100.63
21	Spectral Width	24038.5
22	Lowest Frequency	-1957.4
23	Nucleus	13C
24	Acquired Size	32768
25	Spectral Size	32768

^{1}H and ^{13}C NMR spectra of compound **s1c**



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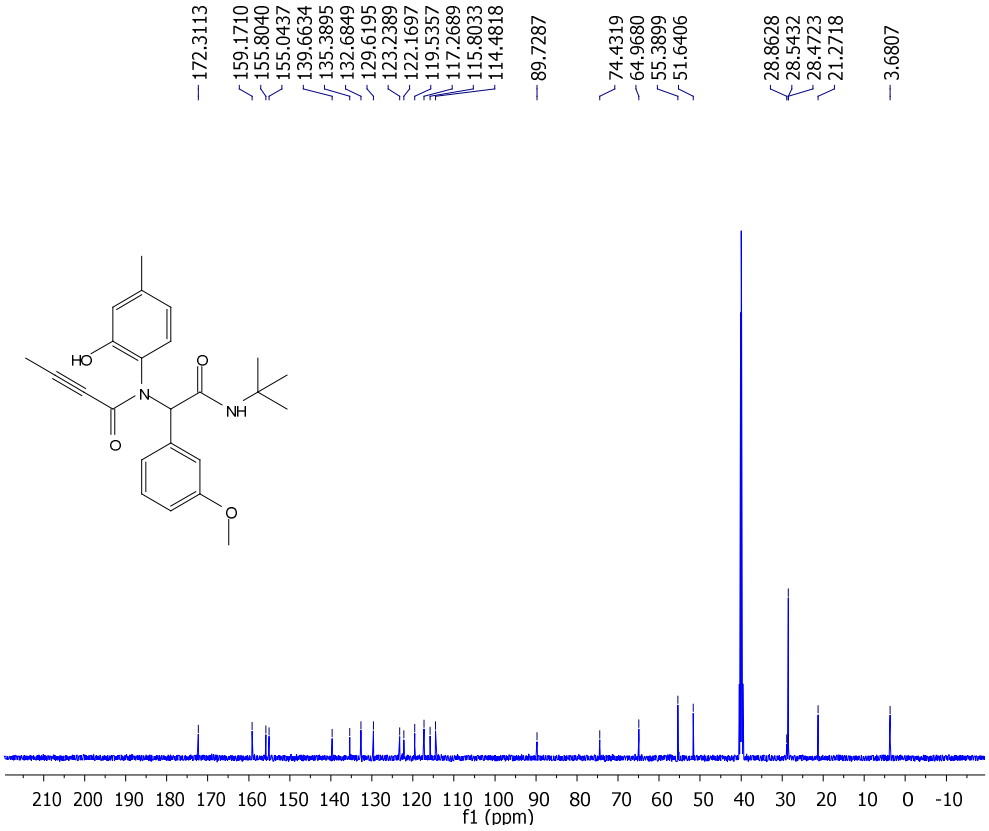
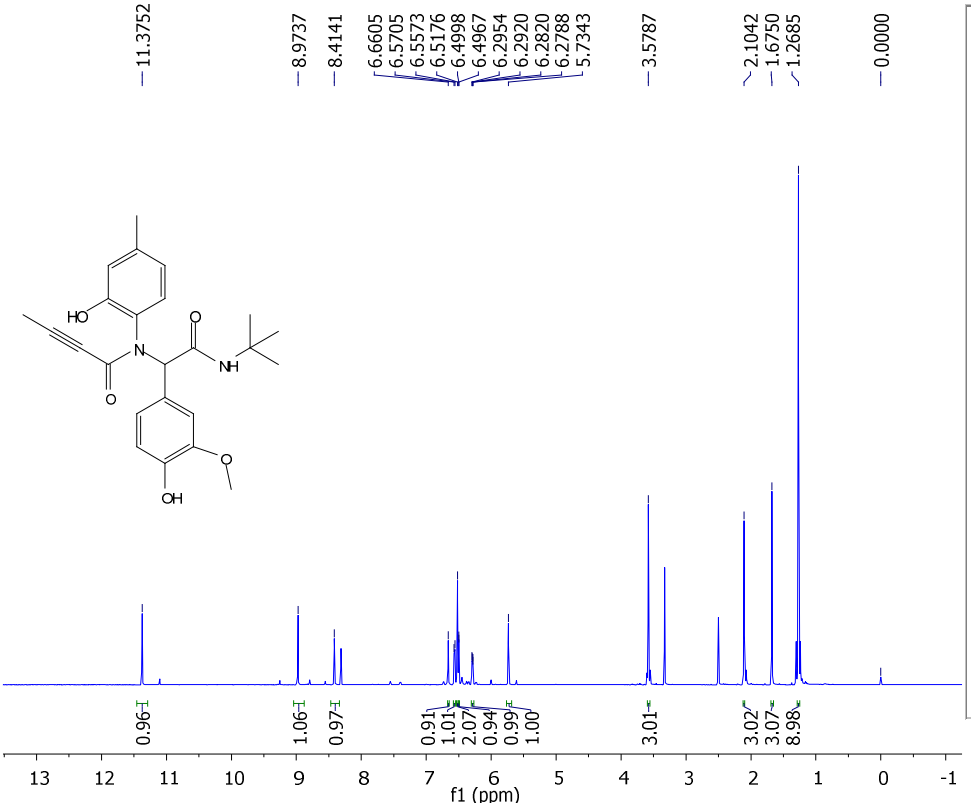
2	Title	DDV-TV-PUR-73UP.600
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	297.9
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	90
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-18T15:11:54
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2308.4
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072

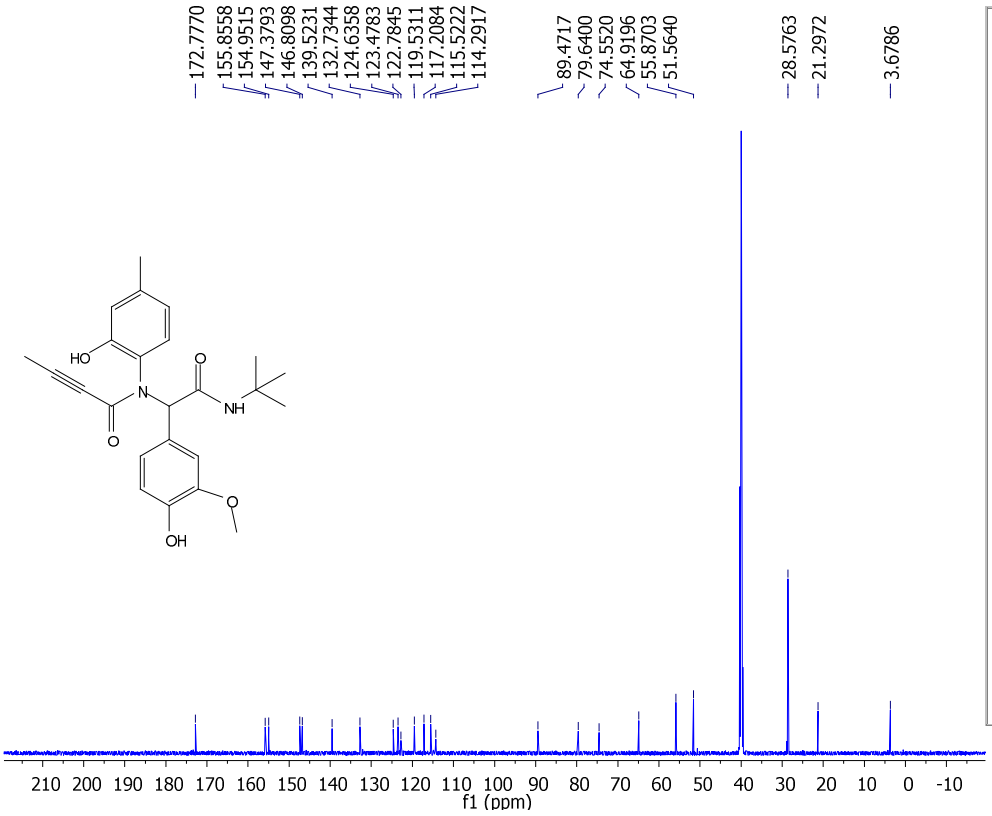


	Parameter	Value
1	Data File Name	C:/ Users/ moke/ Desktop/ PROJECT 3 AND 5 COMBINE/ SCOPE/ NMR of Scope/ 002 series/ Ugi/ EVDE-YH002-R90-1H-13C-bbo5-600/ 2/ fid
2	Title	EVDE-YH002-R90-1H-13C-bbo5-600/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.5
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	145
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-18T14:13:41
19	Modification Date	2018-05-18T15:19:42
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072

^{1}H and ^{13}C NMR spectra of compound **s1d**



	Parameter	Value
1	Data File Name	C:/ Users/ moke/ Desktop/ PROJECT 3 AND 5 COMBINE/ SCOPE/ NMR of Scope/ 002 series/ Ugi/ EVDE-YH002-R89-spiro/ 1/ fid
2	Title	DDV-TV-PUR-73UP.600
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zg30
12	Experiment	1D
13	Number of Scans	16
14	Receiver Gain	90
15	Relaxation Delay	2.0000
16	Pulse Width	15.2500
17	Acquisition Time	1.3631
18	Acquisition Date	2018-01-09T10:29:00
19	Modification Date	2018-05-18T14:48:20
20	Spectrometer Frequency	600.13
21	Spectral Width	12019.2
22	Lowest Frequency	-2308.4
23	Nucleus	1H
24	Acquired Size	32768
25	Spectral Size	131072



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2	Title	EVDE-YH002-R89-spiro/ 2
3	Comment	
4	Origin	Bruker BioSpin GmbH
5	Owner	nmr
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	DMSO
10	Temperature	298.0
11	Pulse Sequence	zgpg30
12	Experiment	1D
13	Number of Scans	388
14	Receiver Gain	2050
15	Relaxation Delay	1.5000
16	Pulse Width	12.0000
17	Acquisition Time	1.1360
18	Acquisition Date	2018-05-18T14:07:20
19	Modification Date	2018-05-18T15:07:32
20	Spectrometer Frequency	150.92
21	Spectral Width	36057.7
22	Lowest Frequency	-2939.8
23	Nucleus	13C
24	Acquired Size	40960
25	Spectral Size	131072