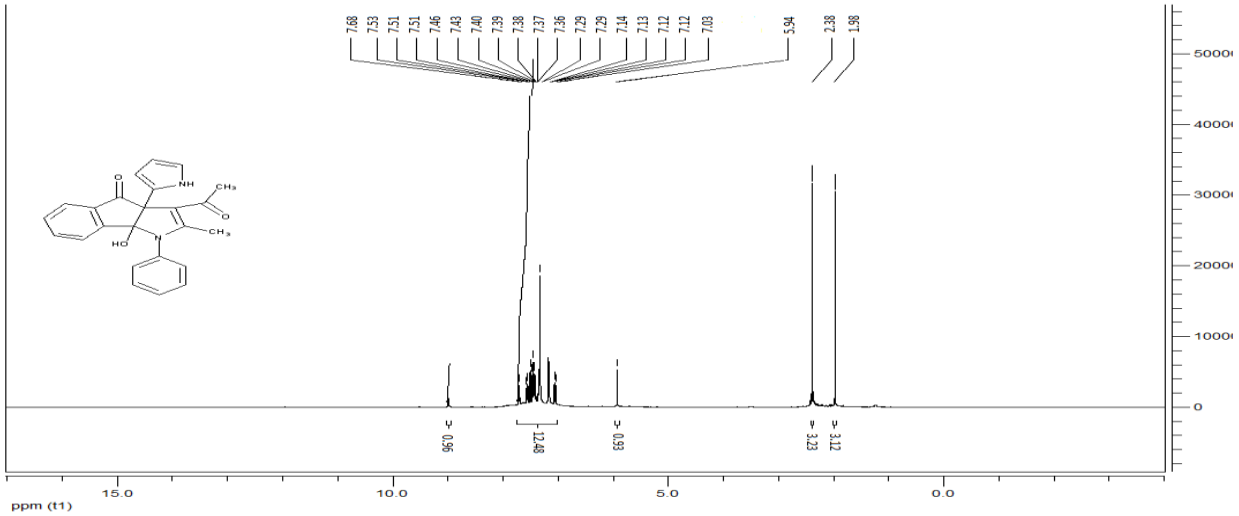
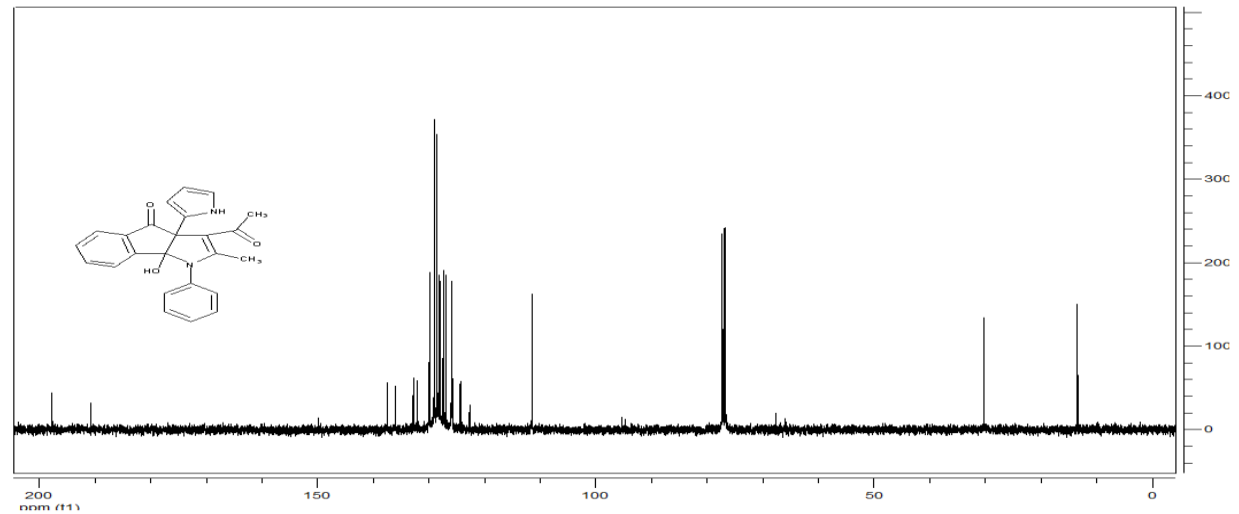
Supplemental material for "AN UNPRECEDENTED SYNTHESIS OF 8b-HYDROXY-3a-(1*H*-PYRROL-2-YL)/(1*H*-INDOL-3-YL)-3a,8b-DIHYDROINDENO[1,2-*b*]PYRROL-4(1*H*)-ONE DERIVATIVES FROM PYRROLE/INDOLE WITH NINHYDRIN AND ß-ENAMINOCARBONYLS" by Mozhgan Masoudi in HETEROCYCLES.

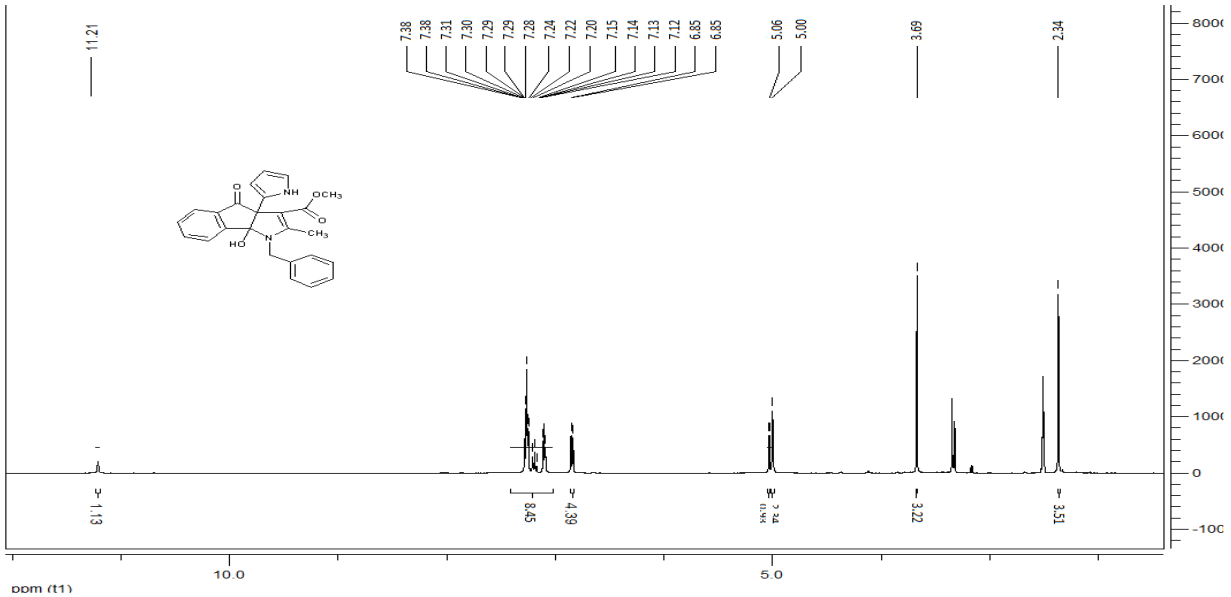


^{1}H NMR ($CDCl_3$, 400 MH_Z) for compound **(4a)**: δ = 1.98 (3H, s, CH_3), 2.38 (3 H, s, CH_3), 5.94 (1H, s, OH), 7.03 - 7.68 (12H, m, aromatic hydrogens), 8.97 (1H, s, NH) ppm.

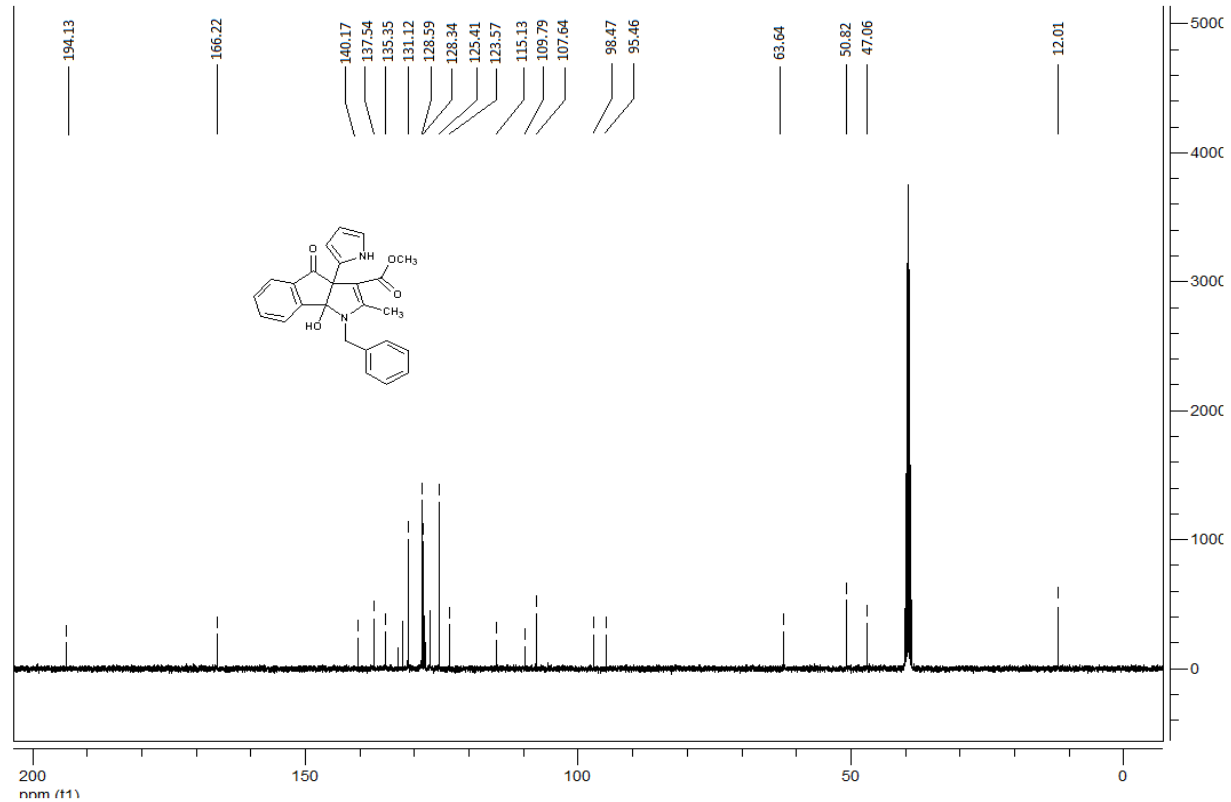


^{13}C NMR ($CDCl_3$, 100 MHz) for compound **(4a)**: δ = 14.01 (CH_3), 31.35 (CH_3), 67.98, 94.66(C-8b and C-3a), 94.01, 149.16 (C=C), 112.50, 122.06, 123.14, 125.88, 127.37, 128.05, 128.23, 128.61, 129.87, 132.14, 132.78, 132.93, 136.14, 137.53 (aromatic carbons), 190.01, 197.72 (2 C=O)

ppm.

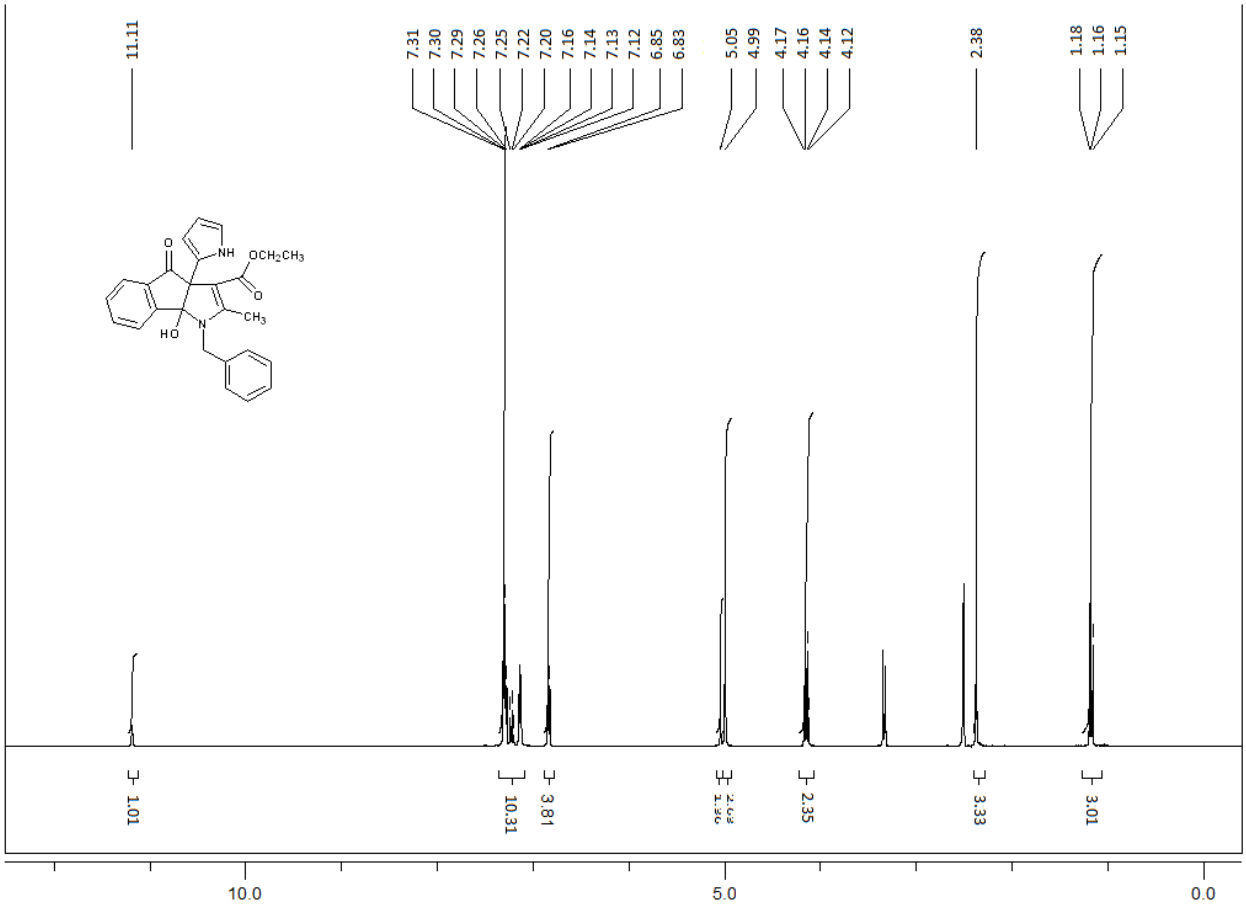


^{1}H NMR (d_6-DMSO, 400 MHZ) for compound **(4b)**: δ = 2.34 (3 H, s, CH_3), 3.69 (3 H, s, OCH_3), 5.00 (2H, s, NCH_2), 5.06 (1H, s, OH), 6.85 - 7.38 (12H, m, aromatic hydrogens), 11.21 (1H, s, NH) ppm.

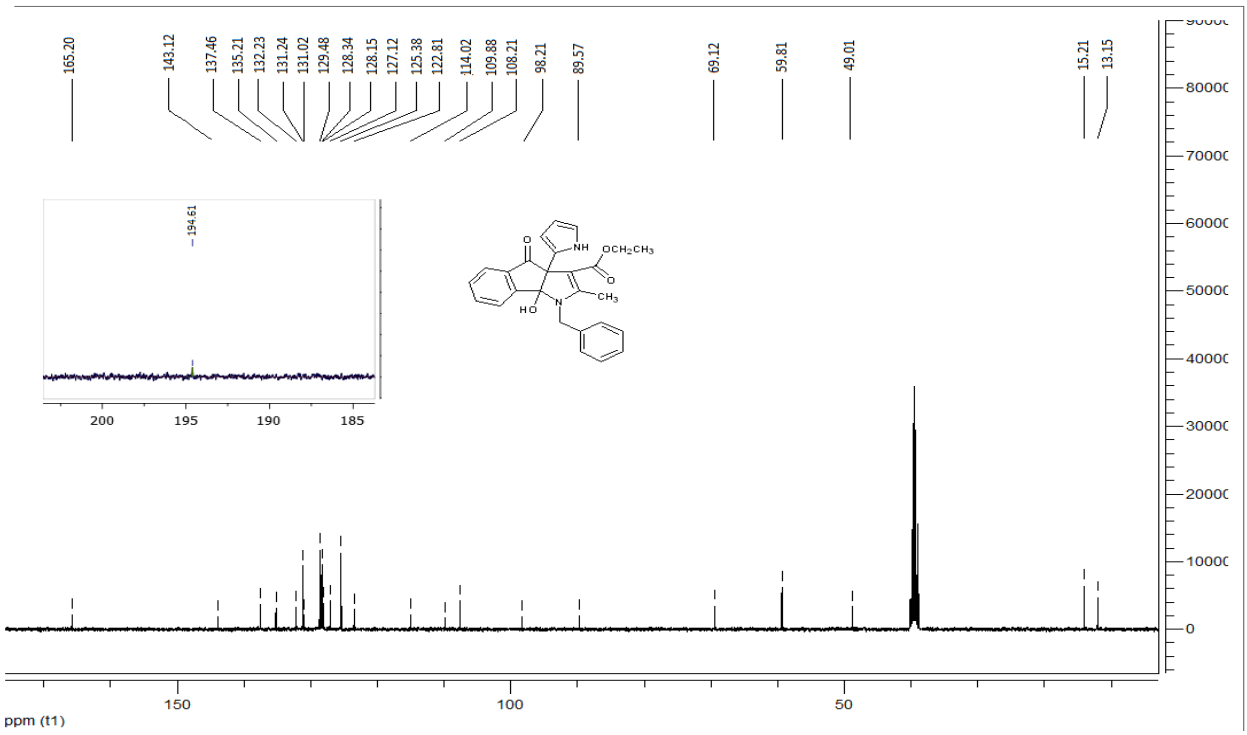


^{13}CNMR (d_6-DMSO, 100 MHZ) for compound **(4b)**: δ = 12.01 (CH_3), 47.06 (NCH_2), 50.82 (OCH_3), 63.64, 95.46 (C-8b and C-3a), 98.47, 140.17 (C=C), 107.64, 109.79, 115.13, 123.57, 125.41, 127.11, 128.15, 128.34, 128.59, 131.12, 131.23, 132.22, 135.35, 137.54 (aromatic carbons),

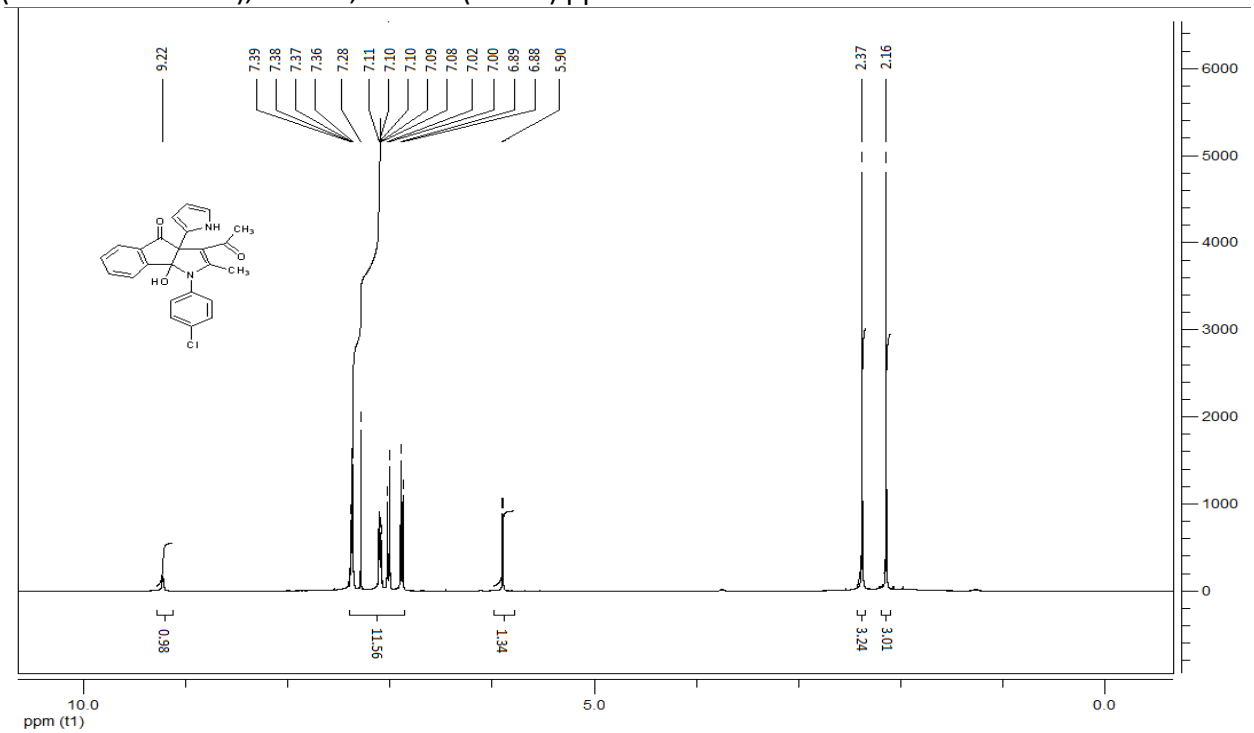
166.22, 194.13 (2 C=O) ppm.



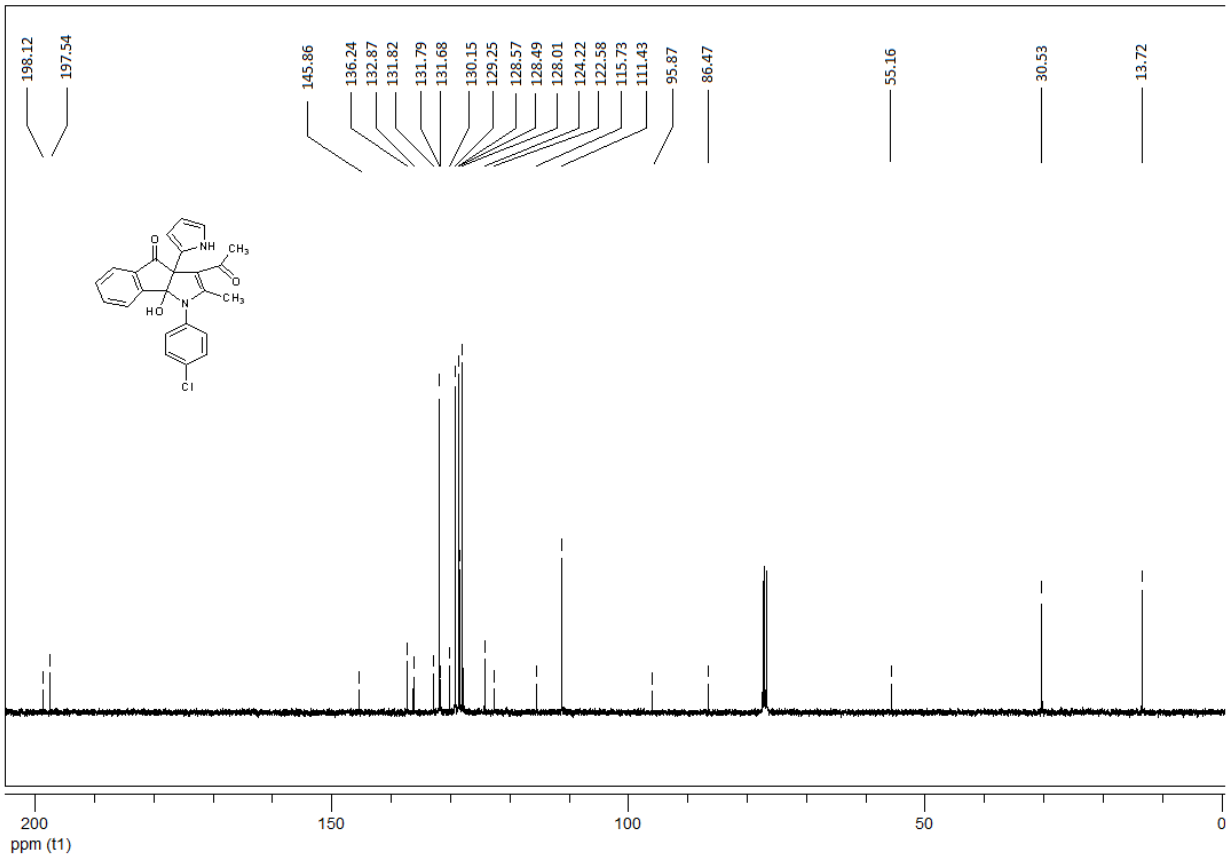
^{1}H NMR (d_6-DMSO, 400 MHZ) for compound **(4c)**: δ = 1.16 ((3H, t, CH_3, J = 7.4 Hz), 2.38 (3 H, s, CH_3), 4.16 (2H, q, OCH_2, J = 7.4 Hz), 4.99 (2H, s, NCH_2), 5.05 (1H, s, OH), 6.83 - 7.31 (12H, m, aromatic hydrogens), 11.11 (1H, s, NH) ppm.



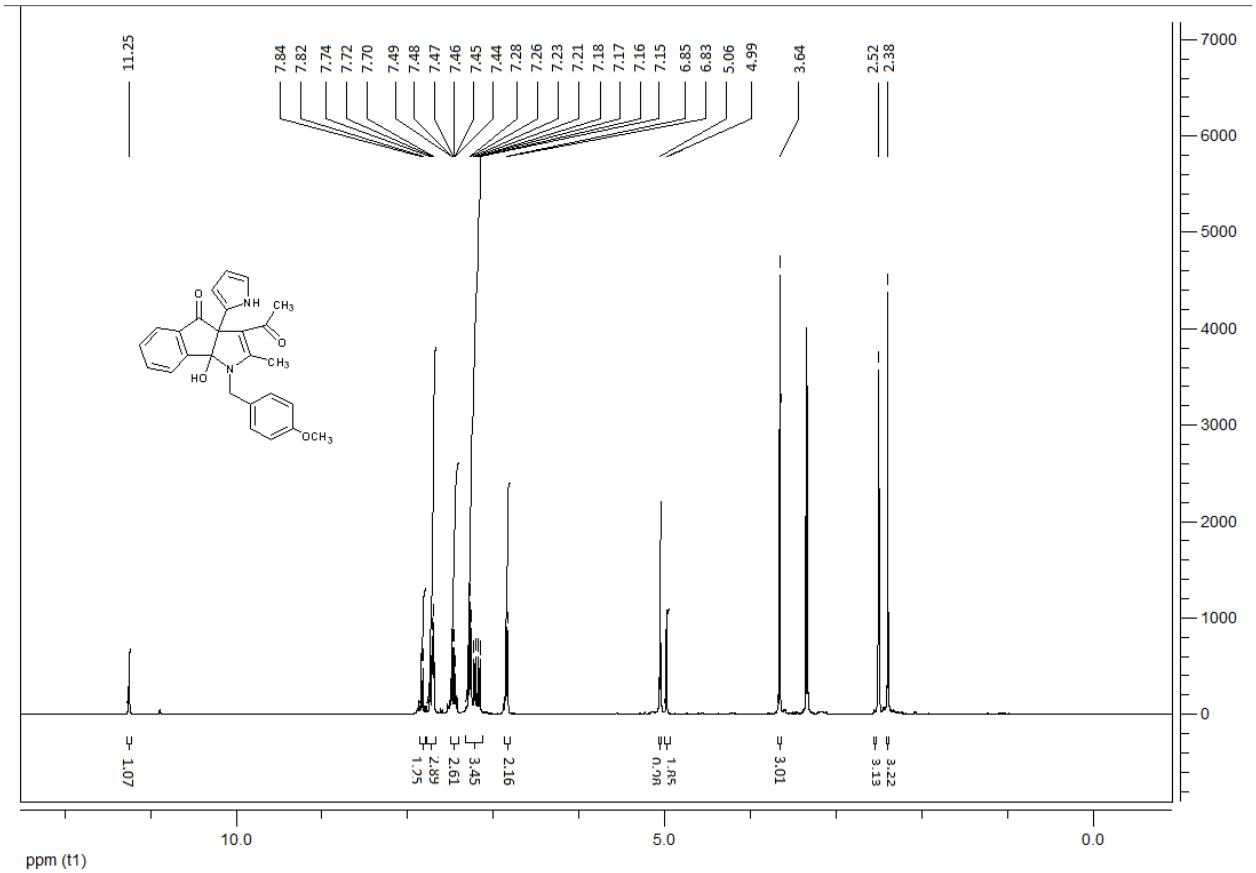
^{13}C NMR (d_6-DMSO, 100 MHZ) for compound **(4c)**: δ = 13.15 (CH_3), 15.21 (CH_3), 49.01 (NCH_2), 59.81 (OCH_2), 69.12, 89.57 (C-8b and C-3a), 98.21, 143.12 (C=C), 108.21, 109.88, 114.02, 122.81, 125.38, 127.12, 128.15, 128.34, 129.48, 131.02, 131.24, 132.23, 135.21, 137.46 (aromatic carbons), 165.20, 194.61 (2 C=O) ppm.



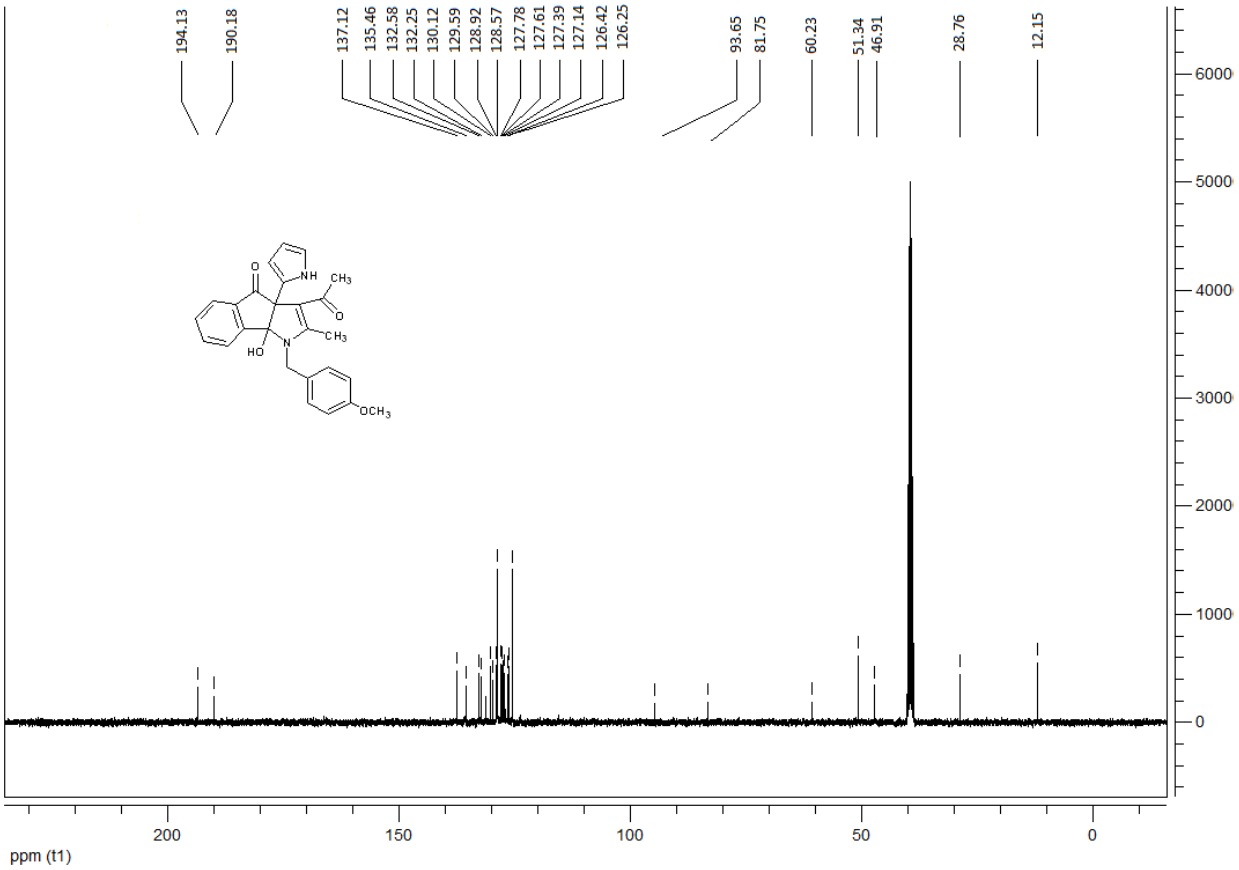
^{1}H NMR ($CDCl_3$, 400 MH_Z) for compound **(4d)**: δ = 2.16 (3H, s, CH_3), 2.37 (3 H, s, CH_3), 5.90 (1H, s, OH), 6.88 - 7.39 (11H, m, aromatic hydrogens), 9.22 (1H, s, NH) ppm.



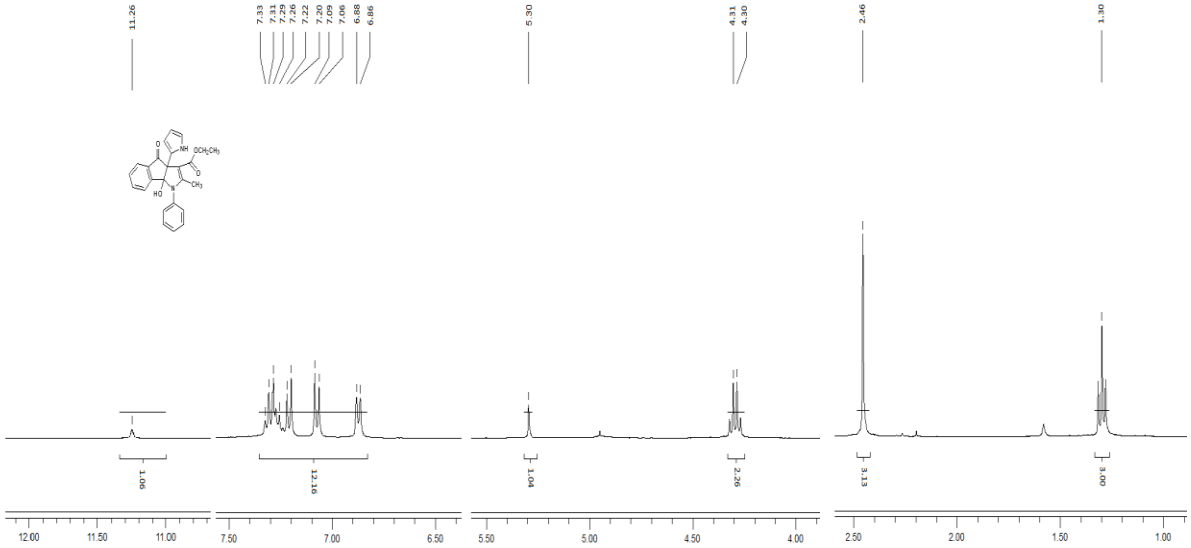
^{13}C NMR ($CDCl_3$, 100 MHz) for compound **(4d)**: δ = 13.72 (CH_3), 30.53 (CH_3), 55.16, 86.47 (C-8b and C-3a), 95.87, 145.86 (C=C), 111.43, 115.73, 122.58, 124.22, 128.01, 128.49, 128.57, 129.25, 130.15, 131.68, 131.79, 131.82, 132.87, 136.24 (aromatic carbons), 197.54, 198.12 (2 C=O) ppm.



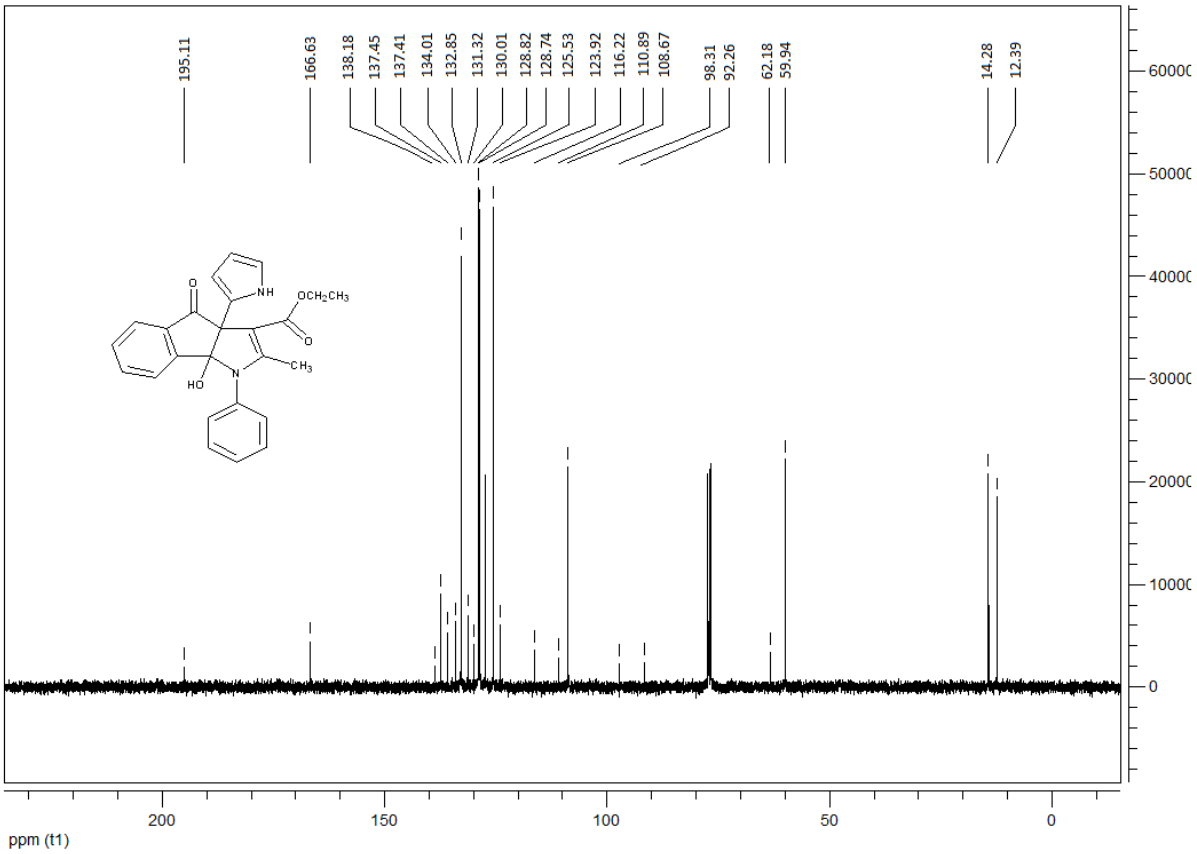
^{1}H NMR (d_6-DMSO, 400 MHZ) for compound **(4e)**: δ = 2.38 (3 H, s, CH_3), 2.52 (3 H, s, CH_3), 3.64 (3 H, s, OCH_3), 4.99 (2H, s, NCH_2), 5.06 (1H, s, OH), 6.83 - 7.84 (12H, m, aromatic hydrogens), 11.25 (1H, s, NH) ppm.



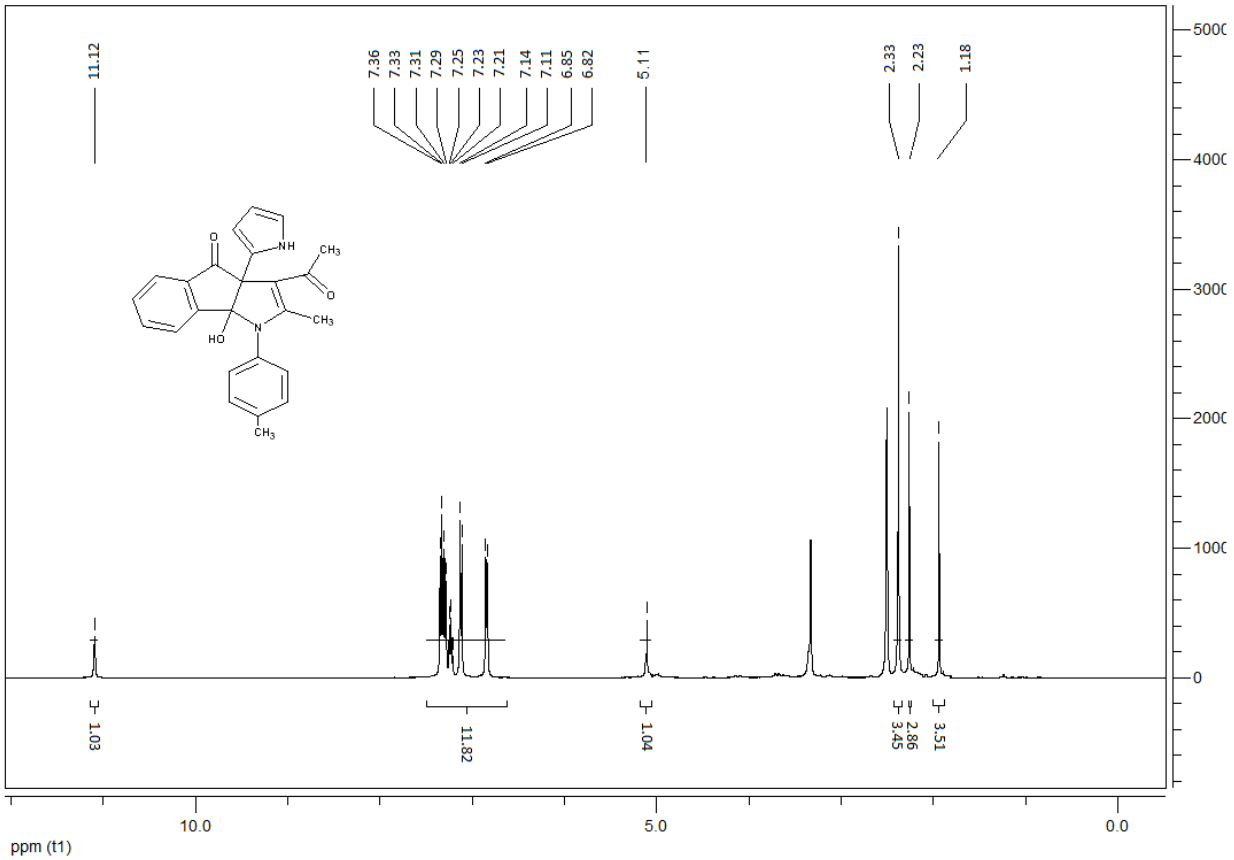
^{13}CNMR (d_6-DMSO, 100 MHZ) for compound **(4e)**: δ = 12.15 (CH_3), 28.76 (CH_3), 46.91 (NCH_2), 51.34 (OCH_3), 60.23, 81.75 (C-8b and C-3a), 93.65, 137.12 (C=C), 126.25, 126.42, 127.14, 127.17, 127.39, 127.61, 127.78, 128.57, 128.92, 129.59, 130.12, 132.25, 132.58, 135.46 (aromatic carbons), 190.18, 194.13 (2 C=O) ppm.



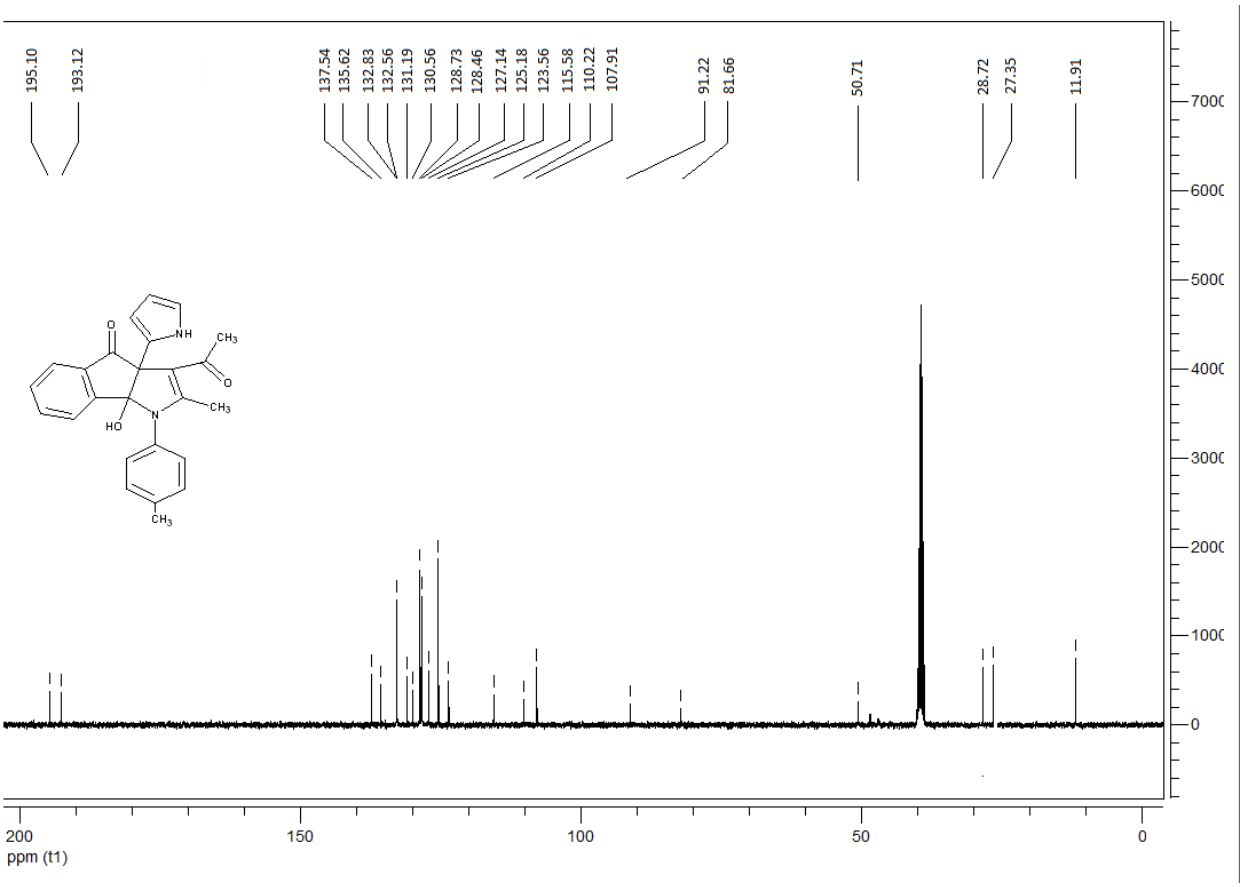
^{1}H NMR ($CDCl_3$, 400 MH_Z) for compound **(4f)**: δ = 1.30 ((3H, t, CH_3, J = 7.4 Hz), 2.46 (3 H, s, CH_3), 4.30 (2H, q, OCH_2, J = 7.4 Hz), 5.30 (1H, s, OH), 6.86 - 7.33 (12H, m, aromatic hydrogens), 11.26 (1H, s, NH) ppm.



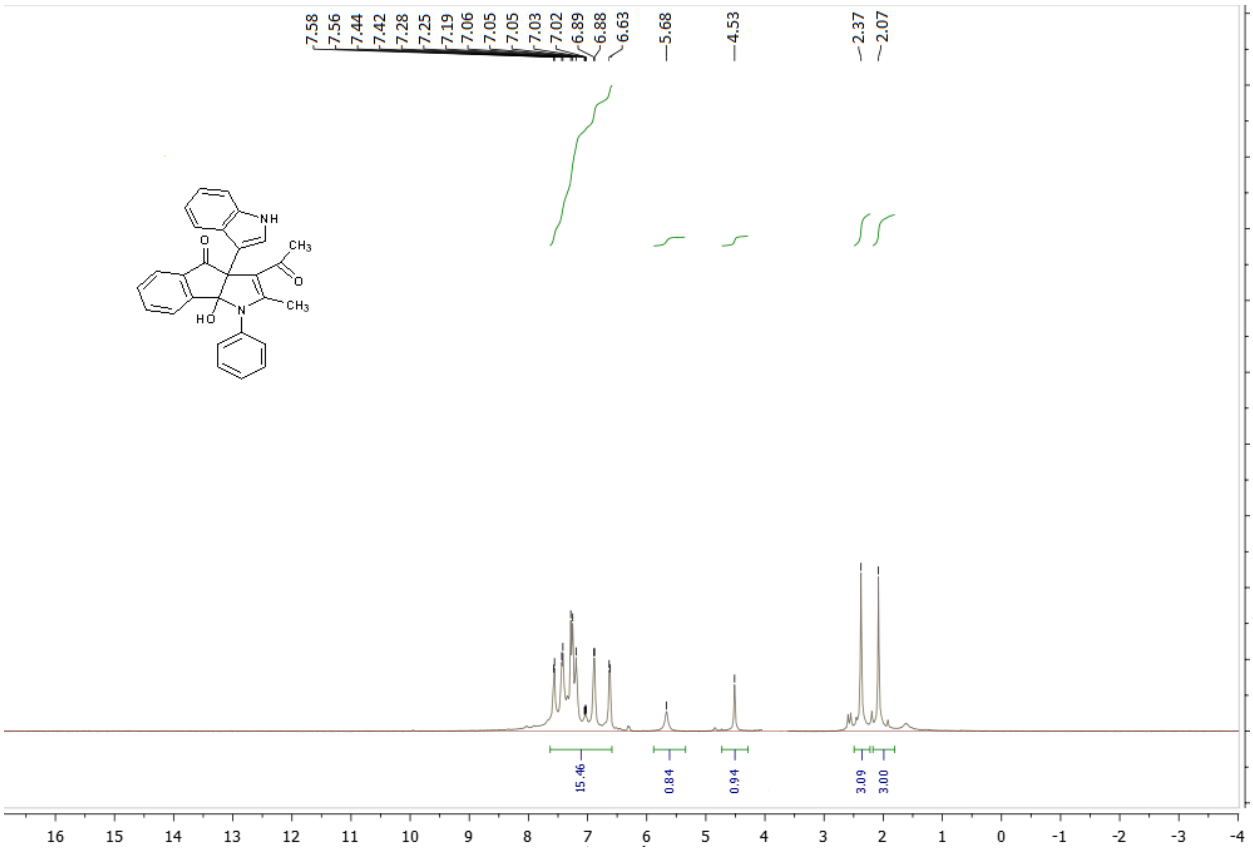
^{13}C NMR ($CDCl_3$, 100 MHz) for compound **(4f)**: δ = 12.39 (CH_3), 14.28 (CH_3), 59.94 (OCH_2), 62.18, 92.26 (C-8b and C-3a), 98.31, 138.18 (C=C), 108.67, 110.89, 116.22, 123.92, 125.53, 128.74, 128.82, 130.01, 131.32, 132.85, 134.01, 135.92, 137.41, 137.45 (aromatic carbons), 166.63, 195.11 (2 C=O) ppm.



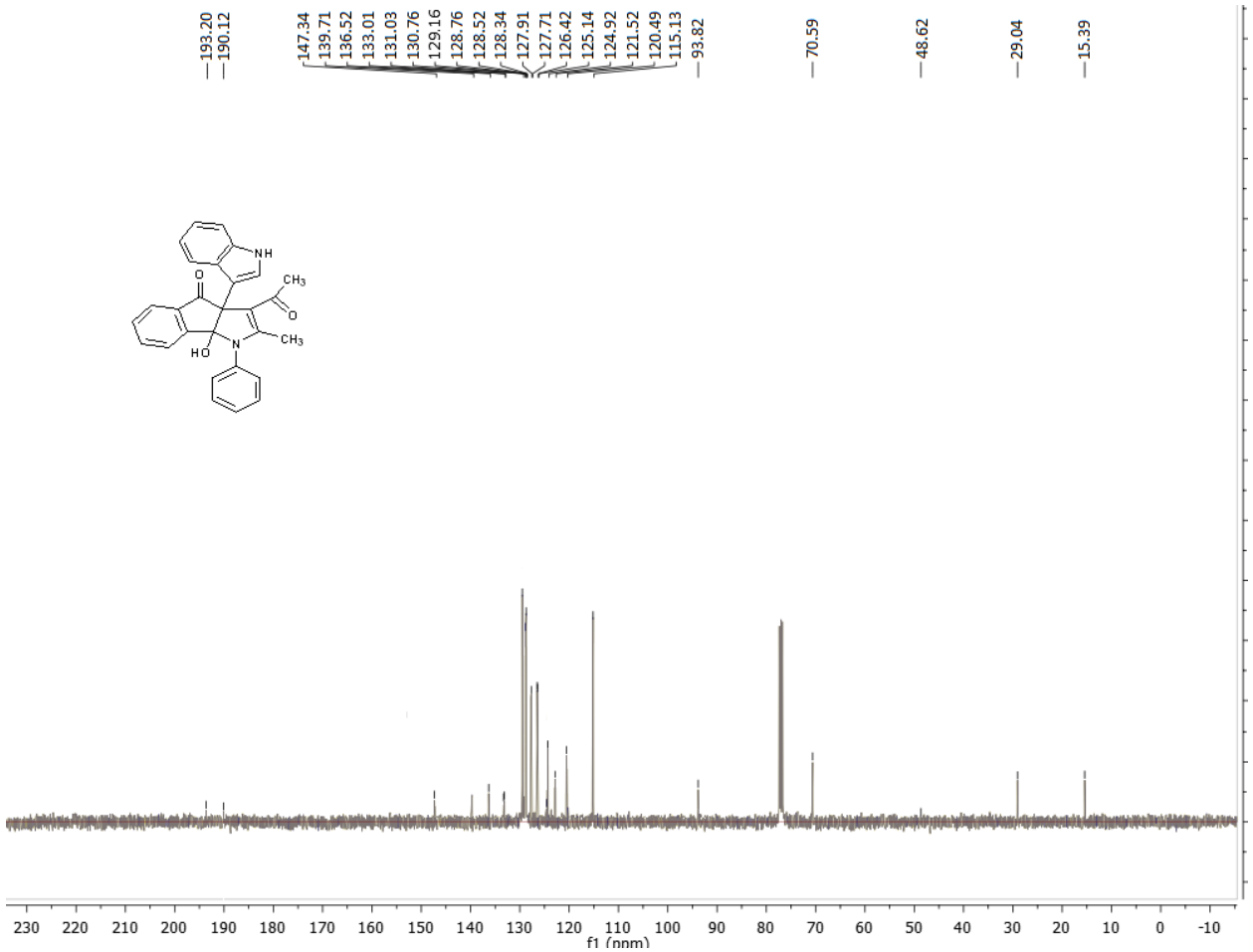
^{1}H NMR (d_6-DMSO, 400 MH_Z) for compound **(4g)**: δ = 1.18 (3H, s, CH_3), 2.23 (3 H, s, CH_3), 2.33 (3 H, s, CH_3), 5.11 (1H, s, OH), 6.82 - 7.36 (11H, m, aromatic hydrogens), 11.12 (1H, s, NH) ppm.



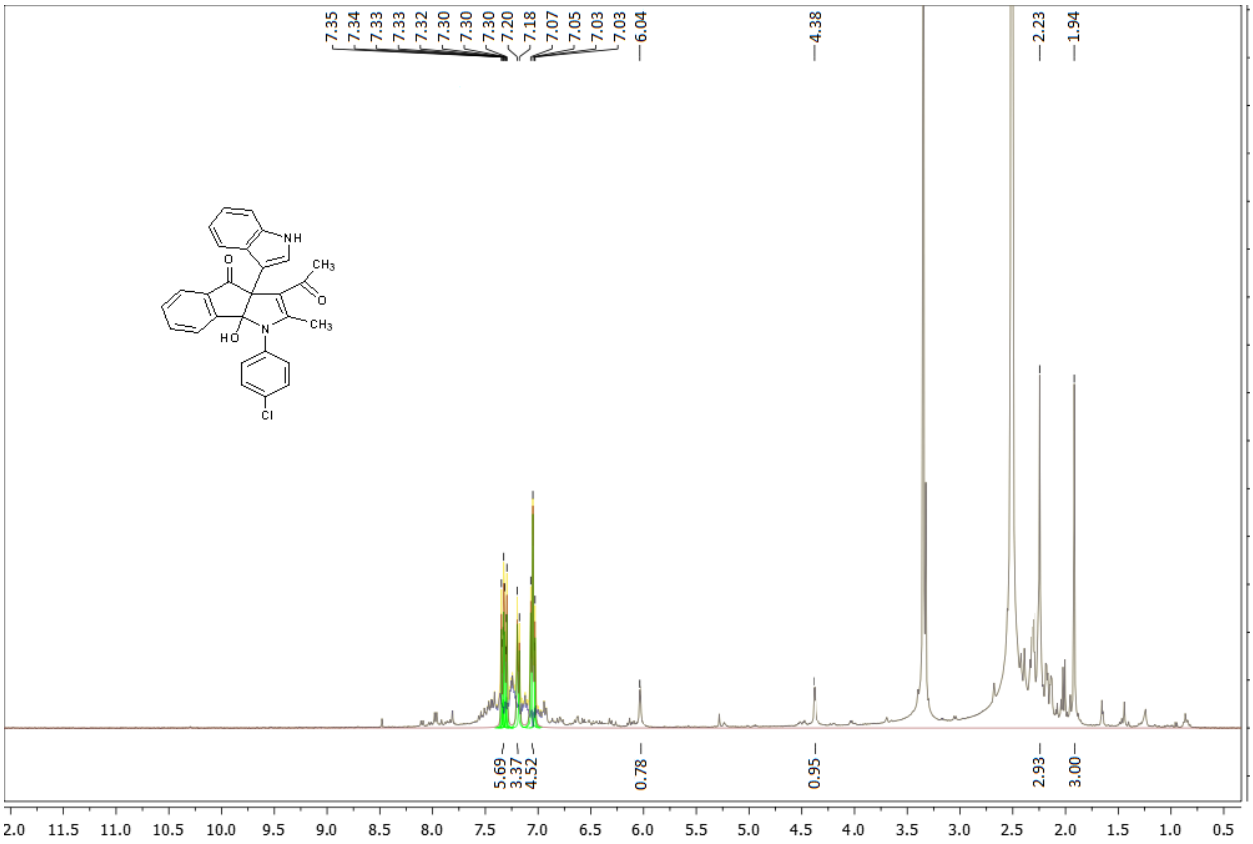
^{13}C NMR (d_6-DMSO, 100 MHZ) for compound **(4g)**: δ = 11.91 (CH_3), 27.35 (CH_3), 28.72 (CH_3), 50.71, 81.66 (C-8b and C-3a), 91.22, 137.54 (C=C), 107.91, 110.22, 115.58, 123.56, 125.18, 127.14, 128.46, 128.73, 130.56, 131.19, 132.56, 132.83, 135.62, 137.54 (aromatic carbons), 193.12, 195.10 (2 C=O) ppm.



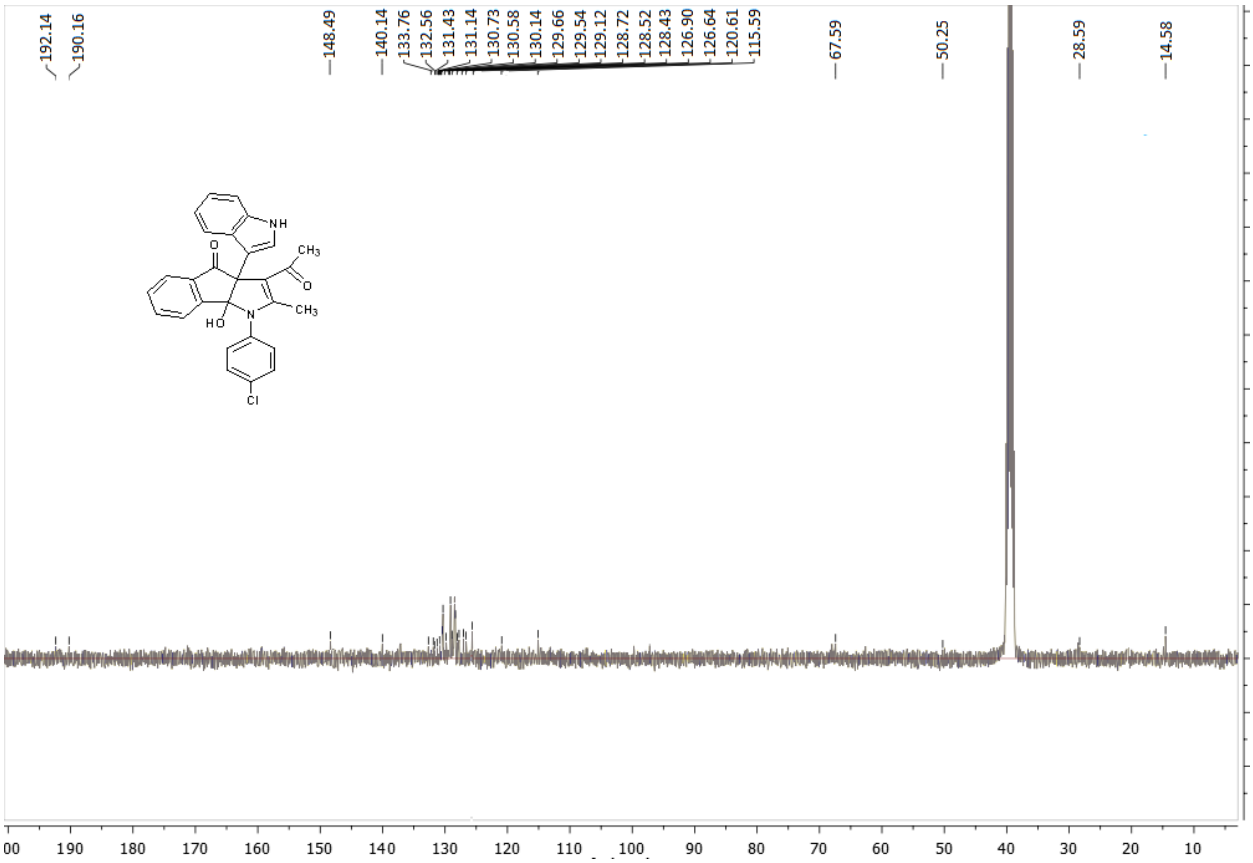
^{1}H NMR ($CDCl_3$, 400 MH_Z) for compound **(6a)**: δ = 2.07 (3H, s, CH_3), 2.37 (3 H, s, CH_3), 4.53 (1H, s, NH), 5.68 (1H, s, OH), 6.63 - 7.58 (14H, m, aromatic hydrogens) ppm.



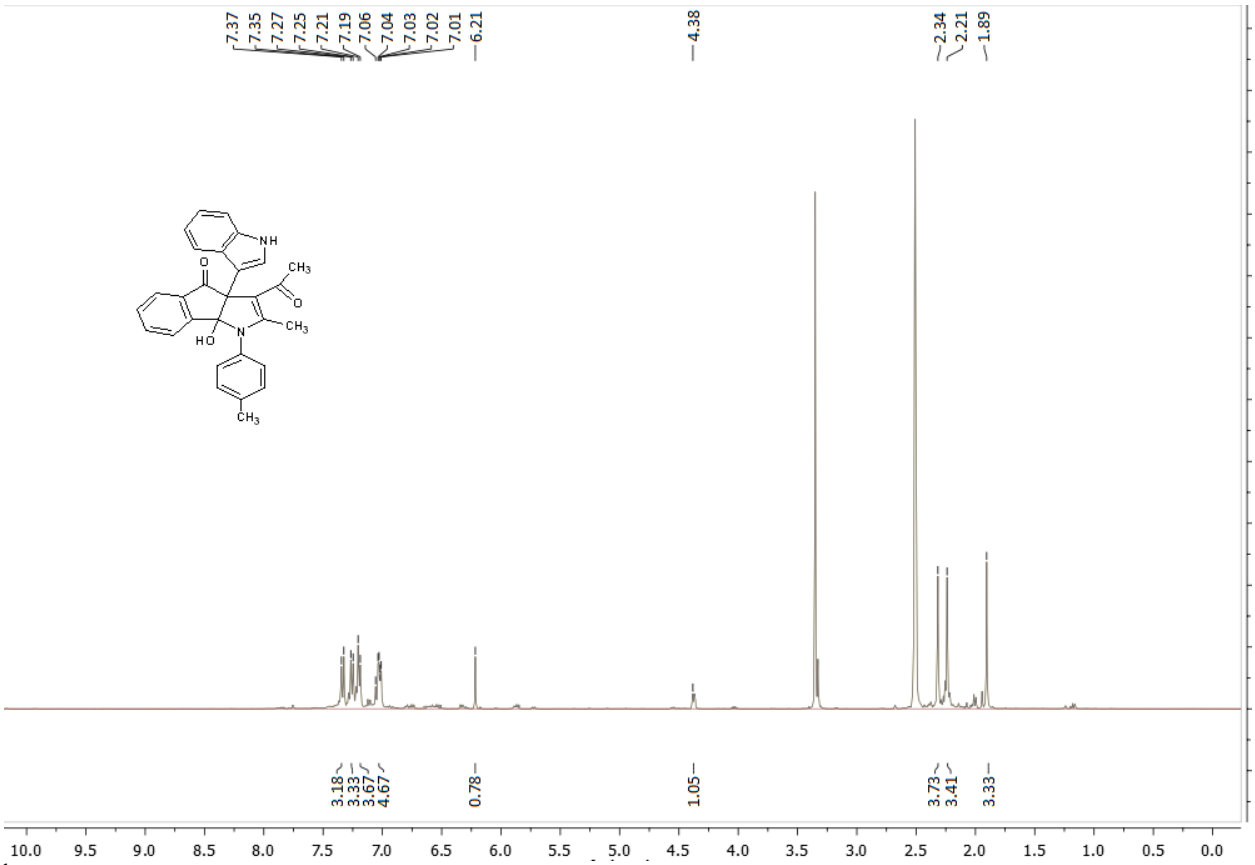
^{13}C NMR ($CDCl_3$, 100 MHz) for compound **(6a)**: δ = 15.39 (CH_3), 29.04 (CH_3), 48.62, 70.59 (C-8b and C-3a), 93.82, 147.34 (C=C), 115.13, 120.49, 121.52, 124.92, 125.14, 126.42, 127.71, 127.91, 128.34, 128.52, 128.76, 129.16, 130.23, 130.76, 131.03, 133.01, 136.52, 139.71 (aromatic carbons), 190.12, 193.20 (2 C=O) ppm.



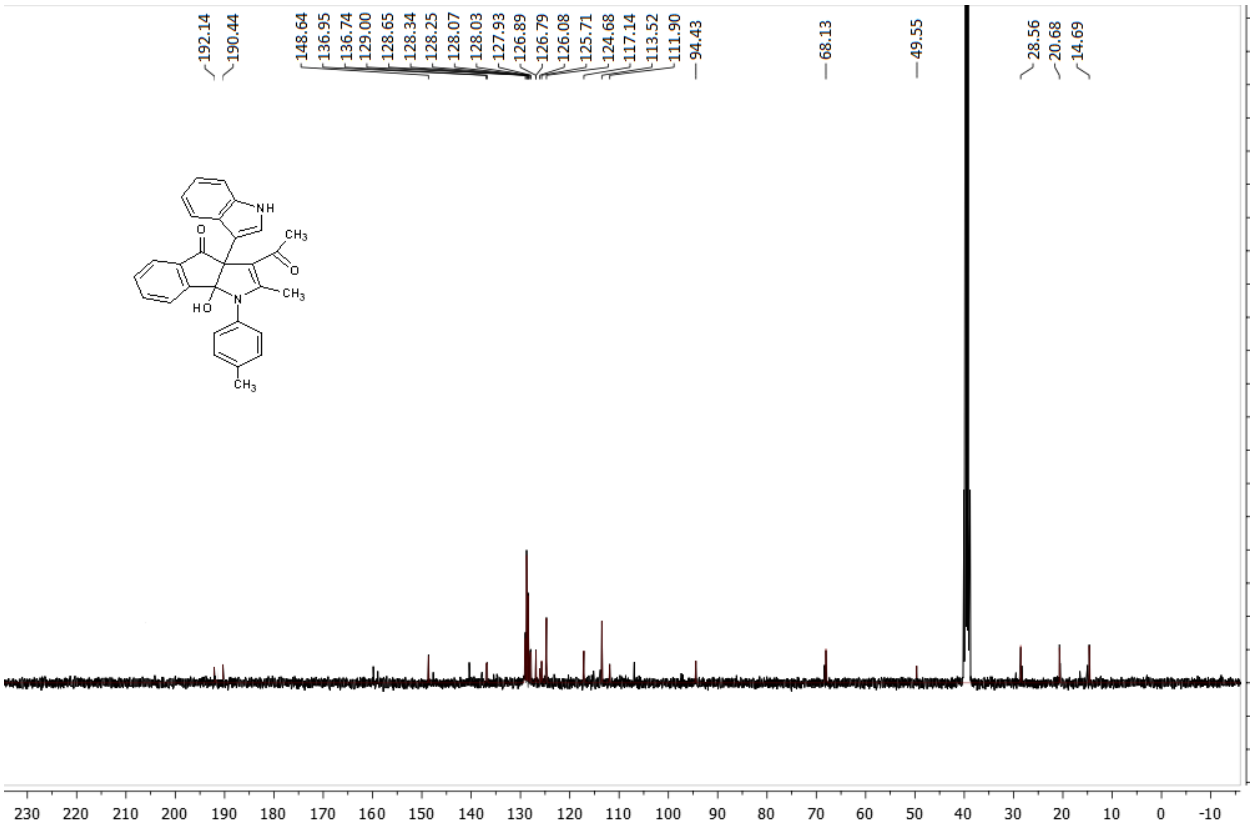
^{1}H NMR (d_6-DMSO, 400 MHZ) for compound **(6b)**: δ = 1.94 (3H, s, CH_3), 2.23 (3 H, s, CH_3), 4.38 (1H, s, NH), 6.04 (1H, s, OH), 7.03 - 7.35 (13H, m, aromatic hydrogens) ppm.



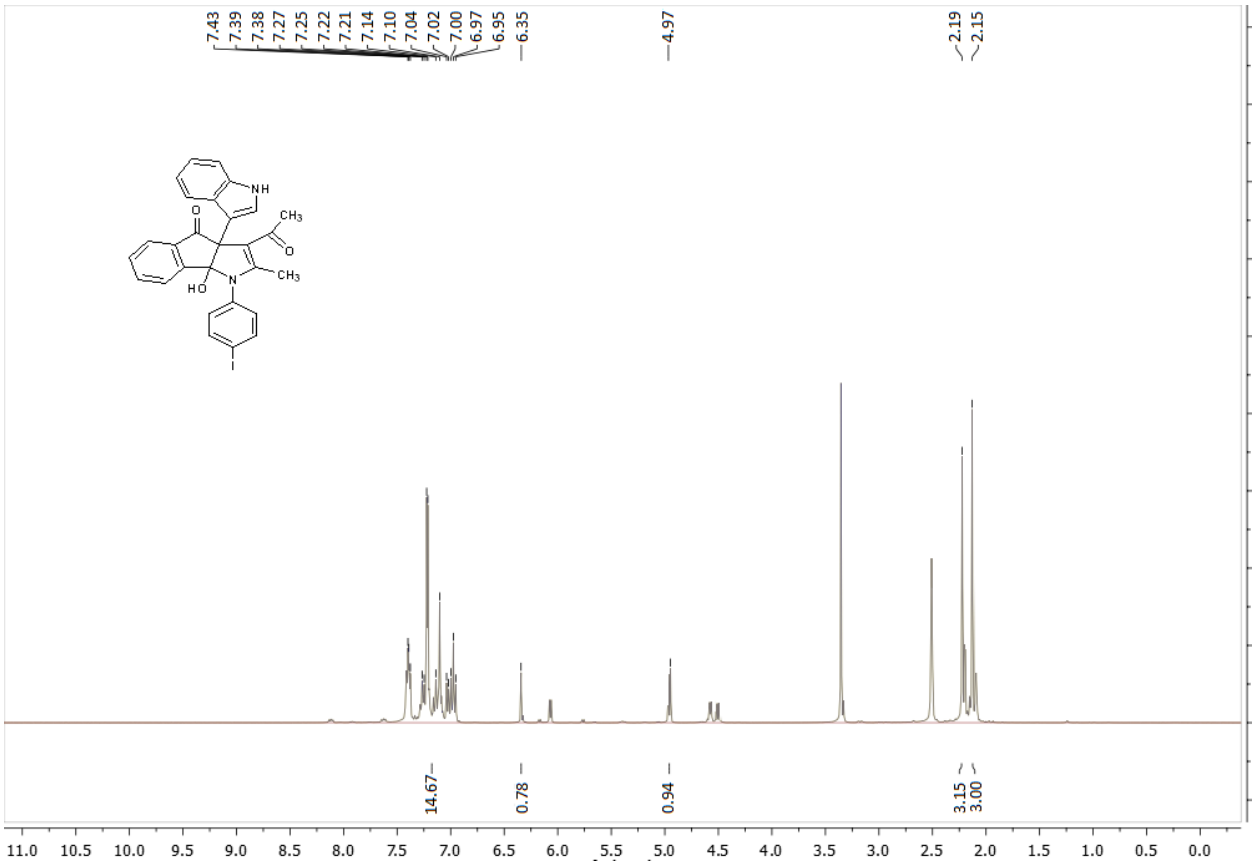
^{13}C NMR (d_6-DMSO, 100 MHZ) for compound **(6b)**: δ = 14.58 (CH_3), 28.59 (CH_3), 50.25, 67.59 (C-8b and C-3a), 97.25, 148.49 (C=C), 115.59, 120.61, 126.64, 126.90, 128.43, 128.52, 128.72, 129.12, 129.54, 129.66, 130.14, 130.58, 130.73, 131.14, 131.43, 132.56, 133.76, 140.14 (aromatic carbons), 190.16, 192.14 (2 C=O) ppm.



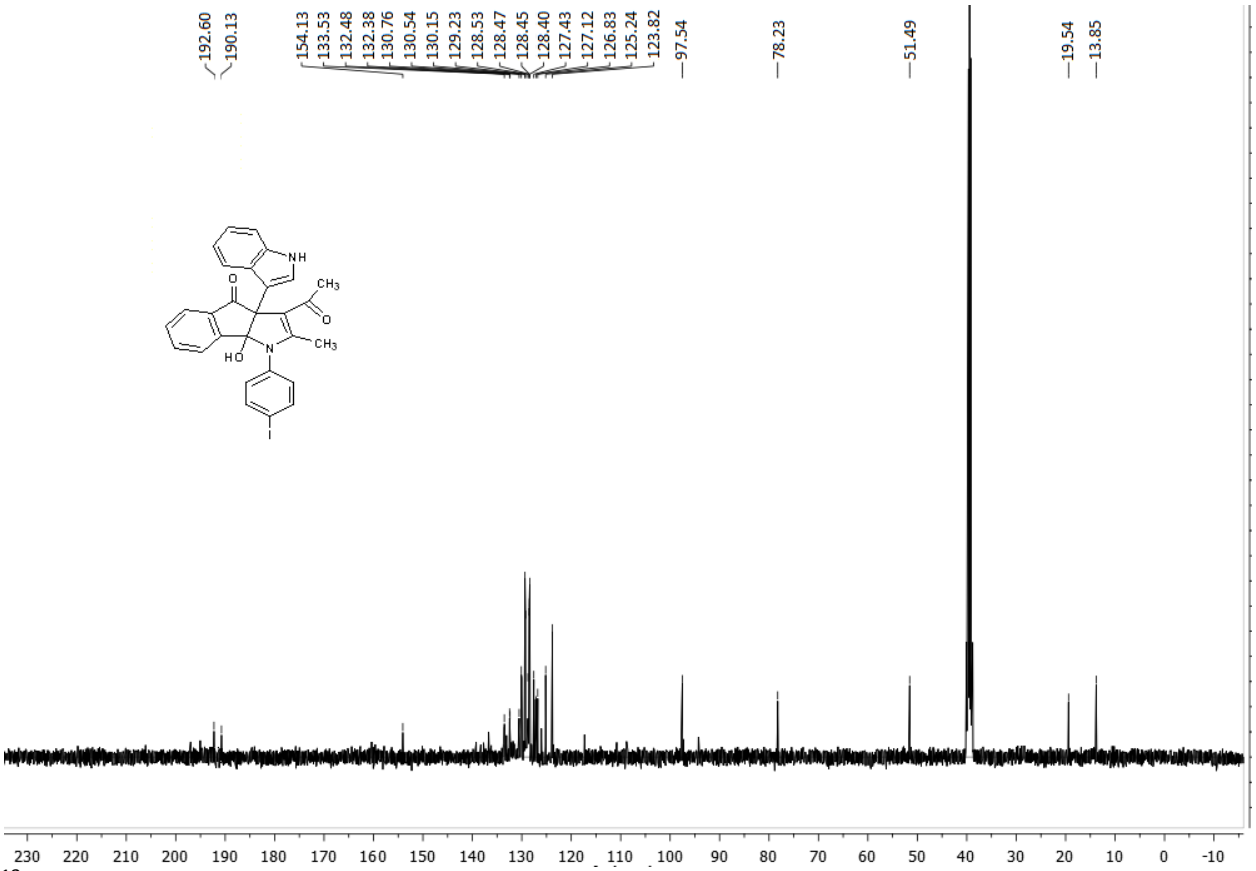
^{1}H NMR (d_6-DMSO, 400 MH_Z) for compound **(6c)**: δ = 1.89 (3H, s, CH_3), 2.21 (3 H, s, CH_3), 2.34 (3H, s, CH_3), 4.38 (1H, s, NH), 6.21 (1H, s, OH), 7.01 - 7.37 (13H, m, aromatic hydrogens) ppm.



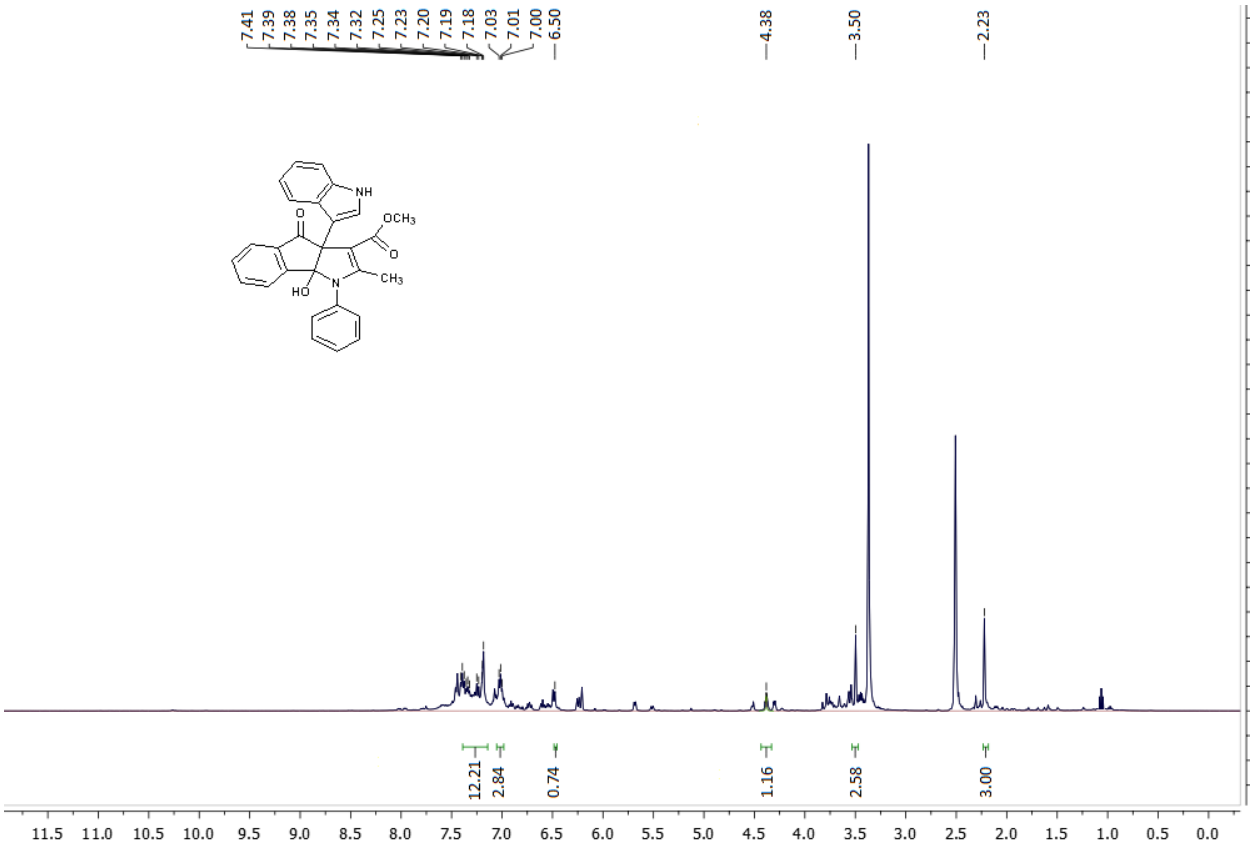
^{13}C NMR (d_6-DMSO, 100 MHZ) for compound **(6c)**: δ = 14.69 (CH3), 20.68 (CH_3), 28.56 (CH_3), 49.55, 68.13 (C-8b and C-3a), 94.43, 148.64 (C=C), 111.90, 113.52, 117.14, 124.68, 125.71, 126.08, 126.79, 126.89, 127.90, 127.93, 128.03, 128.07, 128.25, 128.34, 128.65, 129.00, 136.74, 136.95 (aromatic carbons), 190.44, 192.14 (2 C=O) ppm.



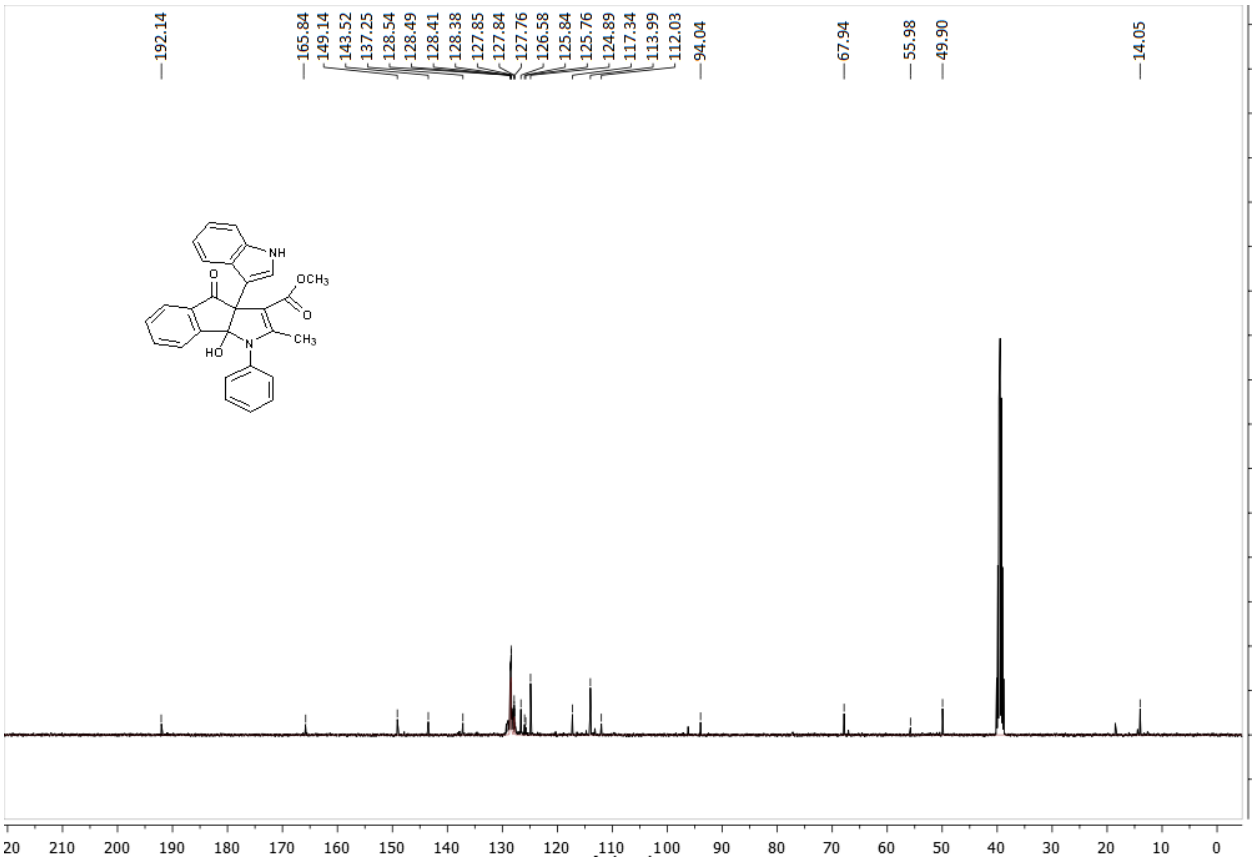
^{1}H NMR (d_6-DMSO, 400 MH_Z) for compound **(6d)**: δ = 2.15 (3H, s, CH_3), 2.19 (3 H, s, CH_3), 4.97 (1H, s, NH), 6.35 (1H, s, OH), 6.93 – 7.43 (13H, m, aromatic hydrogens) ppm.



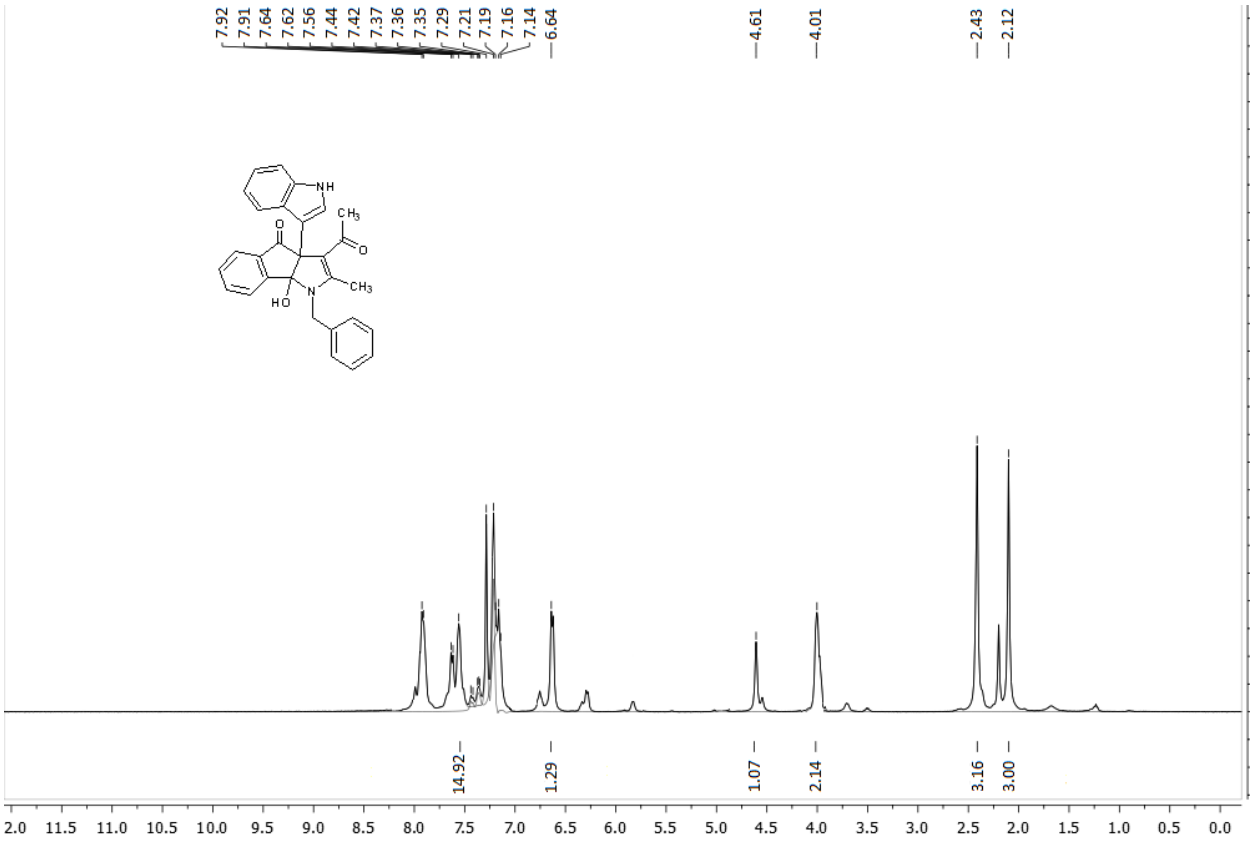
^{13}C NMR (d6-DMSO, 100 MHZ) for compound **(6d)**: δ = 13.85 (CH3), 19.54 (CH3), 51.49, 78.23 (C-8b and C-3a), 97.54, 154.13 (C=C), 123.82, 125.24, 126.83, 127.12, 127.43, 128.13, 128.40, 128.45, 128.47, 128.53, 129.23, 129.53, 130.15, 130.54, 130.76, 132.38, 132.48, 133.53 (aromatic carbons), 190.13, 192.60 (2 C=O) ppm.



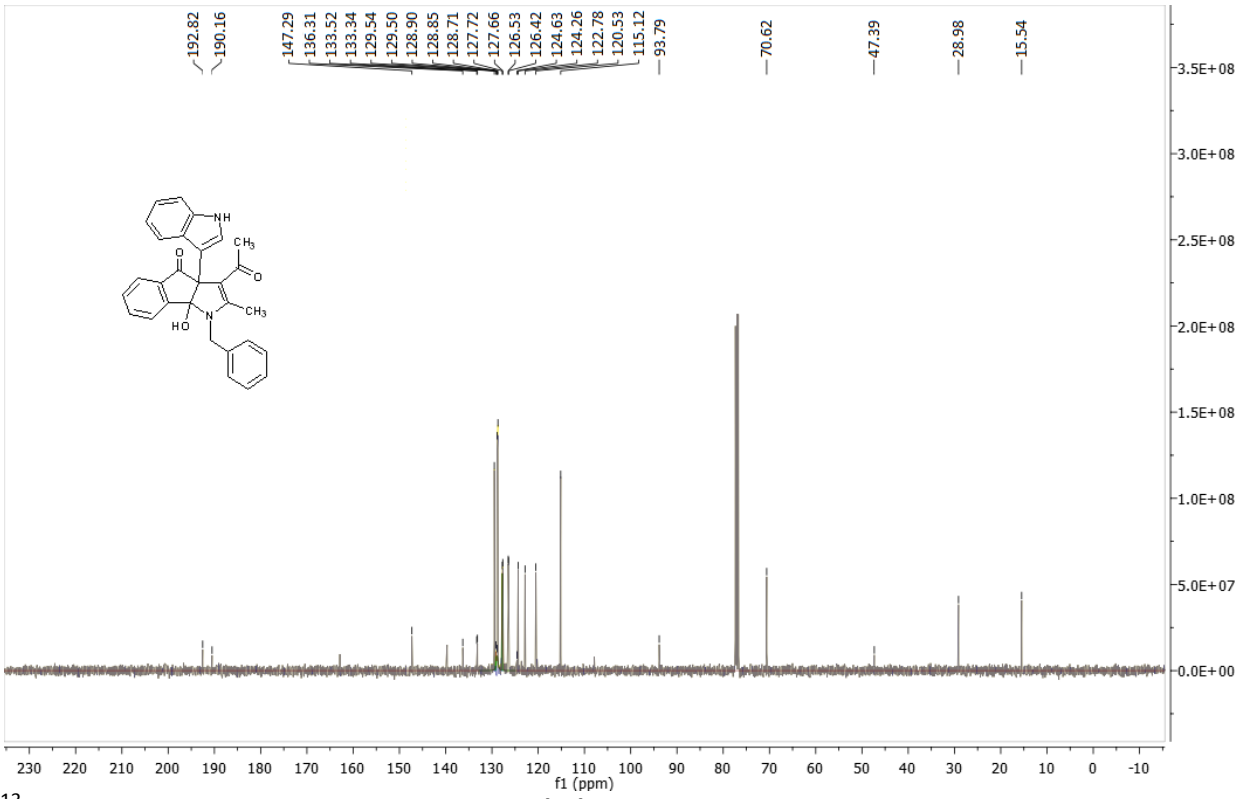
^{1}H NMR (d_6-DMSO, 400 MH_Z) for compound **(6e)**: δ = 2.23 (3H, s, CH_3), 3.50 (3 H, s, OCH_3), 4.38 (1H, s, NH), 6.50 (1H, s, OH), 7.00 - 7.41 (13H, m, aromatic hydrogens) ppm.



^{13}C NMR (d_6-DMSO, 100 MHZ) for compound **(6e)**: δ = 14.05 (CH_3), 49.90, 67.94 (C-8b and C-3a), 55.98 (OCH_3), 94.04, 149.14 (C=C), 112.03, 113.99, 117.34, 123.16, 124.89, 125.76, 125.84, 126.12, 126.58, 127.76, 127.84, 127.85, 128.38, 128.41, 128.49, 128.54, 137.25, 143.52 (aromatic carbons), 165.84, 192.14 (2 C=O) ppm.



^{1}H NMR ($CDCl_3$, 400 MH_Z) for compound **(6f)**: δ = 2.12 (3H, s, CH_3), 2.43 (3 H, s, CH_3), 4.01 (2H, s, NCH_2), 4.61 (1H, s, NH), 6.64 (1H, s, OH), 7.14 - 7.92 (14H, m, aromatic hydrogens) ppm.



^{13}C NMR ($CDCl_3$, 100 MHz) for compound **(6f)**: δ = 15.54 (CH_3), 28.98 (CH_3), 47.39, 70.62 (C-8b and C-3a), 93.79, 147.29 (C=C), 115.12, 120.53, 122.78, 124.26, 124.63, 126.42, 126.53, 127.66, 127.72, 128.71, 128.85, 128.90, 129.50, 129.54, 132.01, 133.34, 133.52, 136.31 (aromatic carbons), 190.16, 192.82 (2 C=O) ppm.