2.5.1 Preparation of 1-[4-(2,6-dimethylpiperidin-1-yl)but-2-yn-1-yl]-2-methyl-2,3-dihydro-1H-indole (AZ-2)

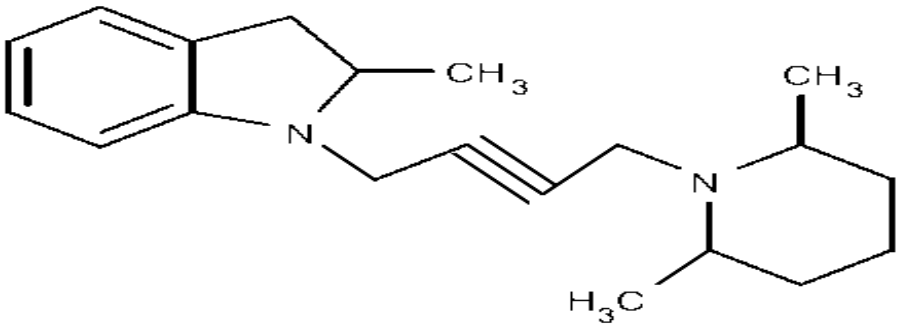

Figure 23: 1-[4-(2,6-dimethylpiperidin-1-yl)but-2-yn-1-yl]-2-methyl-2,3-dihydro-1H-indole.

The titled compound was prepared following the general procedure for synthesis of 2-methyl-1-[4-(amino-1-yl)but-2-yn-1-yl]-2,3-dihydro-1H-indole, AZ2-AZ7, yielded 2.72 gm 91.7 %. **IR (NaCl, Cm^{-1}):** 3048, 2964, 2926 (ArH, stretch), 1672, 1607, 1481, 1460 (Ar, C=C, stretch), 1091, 1057 (Ar,C=C, bending), 849, 749 (ArH, bending). **^{1}H-NMR (DMSO-d_6):** δ, 1.16, 1.22, 1.34, 1.50, 1.66 (m, various protons of cyclicamine), 1.22 (d,3H, CH-C$\underline{H}_3$), 1.23-1.27 (q, 6H, *J* = 4.4 Hz, N-C-CH_3) H splitting each one into doublet , 3.05 (m, 2H, N-C$\underline{H}$, CH_3), 3.06 (d, 1H, C$\underline{H}$-CH-N), 3.11, 3.51 (t, 2H, *J* = 2.4 Hz, C-CH_2-N) due to long range coupling, 3.46, 3.85 (t, 2H, *J* = 2.4 Hz, CH_2-C) due to long range coupling, 3.83 (m, 1H, *J* = 6.15 Hz), 6.81-7.28 (m, 4H, ArH). **^{13}C-NMR (DMSO-d_6):** δ**,** 19 ($C^{28, 39}$), 21 ($C^{17, 31}$), 24 (C^{21}), 35 (C^{7}), 37 ($C^{26, 27, 39}$), 41 ($C^{29,30}$), 53 (C^{14}), 77 (C^{24}), 80 (C^{25}), 109 (C^{3}), 118 (C^{4}), 124 ($C^{1, 5}$), 127 (C^{6}), 151 (C^{2}). DSC: melting point = 109 C° .