

### 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)

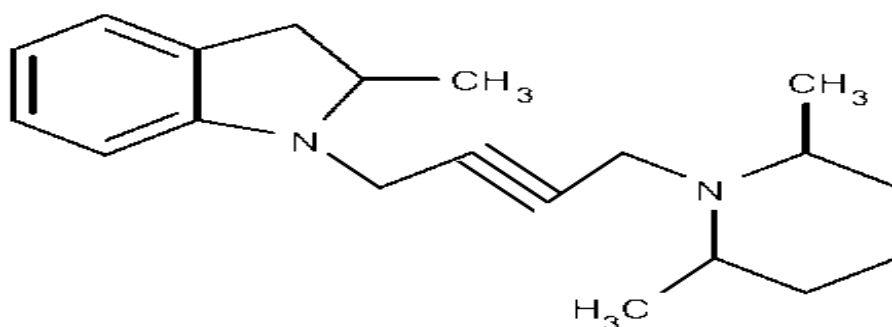


Figure 23: 1-[4-(2,6-dimethylpiperidin-1-yl)but-2-yn-1-yl]-2-methyl-2,3-dihydro-1H-indole.

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,  $\text{Cm}^{-1}$ ):** 3048, 2964, 2926 (ArH, stretch), 1672, 1607, 1481, 1460 (Ar, C=C, stretch), 1091, 1057 (Ar,C=C, bending), 849, 749 (ArH, bending).  **$^1\text{H-NMR}$  (DMSO- $d_6$ ):**  $\delta$ , 1.16, 1.22, 1.34, 1.50, 1.66 (m, various protons of cyclicamine), 1.22 (d,3H, CH- $\text{CH}_3$ ), 1.23-1.27 (q, 6H,  $J = 4.4$  Hz, N-C- $\text{CH}_3$ ) H splitting each one into doublet, 3.05 (m, 2H, N- $\text{CH}_2$ ,  $\text{CH}_3$ ), 3.06 (d, 1H,  $\text{CH}_2$ -CH-N), 3.11, 3.51 (t, 2H,  $J = 2.4$  Hz, C- $\text{CH}_2$ -N) due to long range coupling, 3.46, 3.85 (t, 2H,  $J = 2.4$  Hz,  $\text{CH}_2$ -C) due to long range coupling, 3.83 (m, 1H,  $J = 6.15$  Hz), 6.81-7.28 (m, 4H, ArH).  **$^{13}\text{C-NMR}$  (DMSO- $d_6$ ):**  $\delta$ , 19 ( $\text{C}^{28, 39}$ ), 21 ( $\text{C}^{17, 31}$ ), 24 ( $\text{C}^{21}$ ), 35 ( $\text{C}^7$ ), 37 ( $\text{C}^{26, 27, 39}$ ), 41 ( $\text{C}^{29,30}$ ), 53 ( $\text{C}^{14}$ ), 77 ( $\text{C}^{24}$ ), 80 ( $\text{C}^{25}$ ), 109 ( $\text{C}^3$ ), 118 ( $\text{C}^4$ ), 124 ( $\text{C}^{1, 5}$ ), 127 ( $\text{C}^6$ ), 151 ( $\text{C}^2$ ). DSC: melting point = 109  $^\circ\text{C}$  .