

# Microwave Induced Efficient Synthesis of 2-(1H-benzimidazol-2-ylthio)-4-methylquinoline

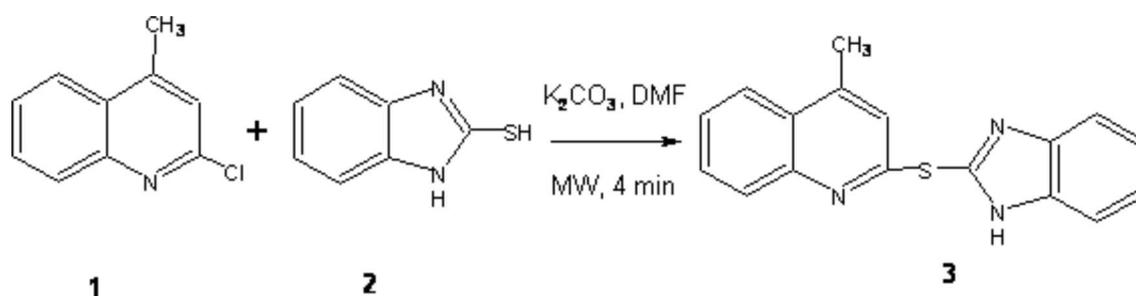
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Quinoline derivatives possess a wide class of biological activities [1-5]. Microwave heating has emerged as a powerful technique to promote a variety of chemical reactions due to the short reaction time and the operational simplicity. So, a number of research papers have appeared proving the synthetic utility of MORE (Microwave-induced Organic Reaction Enhancement) chemistry in routine organic synthesis [6].

2-Chloro-4-methylquinoline 1 (708 mg, 0.004 mol) and 2-mercaptobenzimidazole 2 (600 mg, 0.004 mol) were dissolved in a minimum amount of anhydrous DMF. To this (552 mg, 0.004 mol)  $K_2CO_3$  added, then the whole contents were irradiated under a microwave oven for about 4 minutes at an interval of 1 min at 160 W. After the completion of reaction (monitored by TLC, ethyl acetate, pet ether 20:80), the reaction mixture was poured into ice-cold water. The obtained greenish yellow colored solid was filtered, washed with water, then recrystallized from aqueous DMF, giving 2-(1H-benzimidazol-2-ylthio)-4-methylquinoline 90% yield.

Melting Point: 130-132 °C

MS (m/z, %): 292 ( $[M+H]^+$ , 100%).

$^1H$  NMR (400 MHz, DMSO- $d_6$ )  $\delta$  (ppm): 2.45 (3H, s, Ar- $CH_3$ ), 7.22 (bs, 1H, NH), 6.90-7.92 (m, 9H, Ar-H), IR (KBr)  $\nu$  ( $cm^{-1}$ ): 3150 (N-H), 1250 (C-S-C), 1650 (C=N).

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