2.2 Synthesis of 2-(prop-2-yn-1-yl)-2,3,3a,4,7,7a-hexahydro-1H-isoindole-1,3-dione (AM).

A mixture of *cis*-1,2,3,6-Tetrahydrophthalimide (2g), potassium carbonate K_2CO_3 (2.18gm), in 20ml acetonirtile, added to it mixture of propargyl bromide and 10ml acetonirtile then refluxed and stirred for 80 minutes. After 80 minute the mixture cooled and filtered. The solvent was removed under reduced pressure then add 30 ml chloroform and 20 ml water and separate the chloroform layer in separatory fennel and removed the chloroform under reduced pressure to afford the desired white powder (Fig 2.1). The structure was confirmed through:

^{1}H- NMR (DMSO- d6): δ, 3.15(s, 1H), 4.05(s, 1H, CH_2-C), 5.90 (s, 2H, CH=CH).

IR: 3300, (acetylenic C-H stretch), 2150, (C, C triple bond stretch), 1700, (C=O stretch), 1600, (Ar C=C stretch), 1200, (N-C stretch).

Elemental analysis ($C_{11}H_{11}N_1O_2$):Calc: C (69.83%), H (5.86%), N (7.4%).

Found: C (66.2%), H (5.8%), N (8.3%).

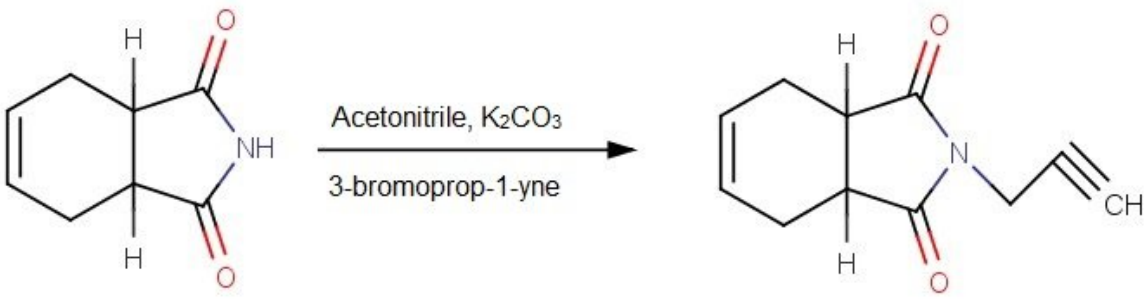

Figure 2.1: Synthesis of 2-(prop-2-yn-1-yl)-2,3,3a,4,7,7a-hexahydro-1H-isoindole-1,3-dione (AM).