

MULTI-COMPONENT REACTION SYNTHESIS OF 1,6-DIAMINO-2-OXO-1,2,3,4-TETRAHYDROPYRIDINE-3,5-DICARBONITRILES USING ULTRASONICATION AND DMAP AS CATALYST

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Abstract. 4-(Dimethylamino)pyridine was found to be an efficient homogenous catalyst for one-pot multi-component reactions between hydrazine monohydrate, ethyl cyanoacetate, ketone, and malononitrile for the synthesis of 1,6-diamino-2-oxo-1,2,3,4-tetrahydropyridine-3,5-dicarbonitrile derivatives using ultrasonication at room temperature in ethanol solution within 35-50 min with yields of over 90%. This procedure offers various remarkable features such as short reaction times, clean reaction condition, excellent yields, and easy work-up methods.

Keywords: one-pot reaction, multi-component reaction, pyridine-2(1*H*)-one derivative, ultrasonication, 4-(dimethylamino)pyridine.

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