

Synthesis of 4-Phenyl-3,4-Dihydro-Indeno[2',1']Pyrimidine-2-One on Different Amount of Catalysts

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ABSTRACT

Dihydropyrimidine is a heterocyclic compound which has important pharmacologic and therapeutic activities. This compound can be synthesised by using Biginelli reaction which involve three type of starting materials and also have been developed into different method of reaction condition and starting material. LR-1 (4-phenyl-3,4-dihydro-indeno[2',1']pyrimidine-2-one) is a derivative of dihydropyrimidine. This research was aimed to study the effect of catalyst amount in the synthesis of LR-1 in order to reach the optimal yield.

LR-1 can be synthesised from benzaldehyde, urea and 2-indanone in ethanol and concentrated chloric acid as catalyst for five hours under reflux. The product mixture was then extracted and isolated by column chromatography preparative. The melting point was checked to determine the purity of the product. The structure elucidation was carried out by using spectroscopic method (uv-vis, IR, ¹H-NMR and MS). The result showed that the highest yield of LR-1 was obtained around 15 % when 0.25 % of chloric acid used as catalyst. The higher the condition of acid in the reaction, the lower the yield of LR-1 obtained.

Keywords: LR-1, catalyst, HCl