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Research Article

Synthesis and structural evaluation of some novel tetra hydro pyrimidines from Mannich condensation of three components

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ABSTRACT

In this paper we discuss about the synthesis of three new series of N-(2-chloro-4-(trifluoromethyl) phenyl)-4-(sub-phenyl)-1, 2, 3, 4-tetrahydro-6-methyl-2-oxopyrimidine-5-carboxamide **(PY-1 to 12)** are synthesized. The synthesis of **(PY-1 to 12)** was achieved by an acid catalyzed cyclocondensation of N-(2-chloro-4-(trifluoromethyl) phenyl)-oxobutanamide, substituted urea/thiourea and Benzaldehydes. The desired substituted compounds are show potent biological activity. The compounds were characterized by IR, NMR, Mass and elemental analysis. This includes the condensation of substituted Benzaldehyde (2) with either urea or thiourea or N-methyl urea (3 or 3a) to form hemiaminal with some similarities to the Mannich condensation. Hemiaminal undergoes dehydration in presence of acid catalyst to produce iminium cation as an intermediate. The examine (iminium cation) generated acts as an electrophile for the nucleophilic addition of keto enroll of N-(2-chloro-4-(trifluoromethyl)phenyl)-3-oxobutanamide(1) with removal of proton to produce an intermediate, undergoes intramolecular condensation in presence of acid between oxygen of ketone and amino group of urea or thiourea or N-methyl urea to give the cyclized targeted product(4) (PY-1 to 12) (Scheme-1&2) (Table-1).

Keywords: Pyrimidine, urea, thiourea and benzaldehyde.

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