Some Important Reactions of 4-Aminoantipyrine (4-AAP)

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(Received 15/10/2009; Accepted 15/2/2010)

ABSTRACT

The new heterocyclic compounds 1,5-Dimethyl-2-phenyl-4-(5-aryl-4,5-dihydro-1H-pyrazol-3-ylamino)-1,2-dihydropyrazol-3-ones (iiia-b) and 1,5-dimethyl-2-phenyl-4-(5-aryl-4,5-dihydroisoxazol-3-ylamino)-1,2-dihydropyrazol-3-ones (iva-b) were synthesized in the first route in this work by refluxing ethanolic solution of hydrazine hydrate with N-(1,5-dimethyl-3-oxo-2-phenyl-2,3-dihydro-1H-pyrazol-4-yl)cinnamamid (iia) or (E)-3-(4-chlorophenyl)-N-(1,5-dimethyl-3-oxo-2-phenyl-2,3-dihydro-1H-pyrazol-4-yl) acrylamide (iib) respectively. These unsaturated amides were prepared by the reaction of benzaldehyde or 4-chlorobenzaldehyde with N-(1,5-dimethyl-3-oxo-2-phenyl-2,3-dihydro-1H-pyrazol-4-yl)acetamide (i) in refluxing methanol. This acetamide was prepared by reaction of 4-AAP with acetyl chloride or with acetic anhydride.

In the second route 1,7-dimethyl-2-phenyl-hexahydro-6H-pyrazolo[4,3-e][1,2,4]triazine-3,5-dione (vii) was synthesized by refluxing ethanolic solution of hydrazine hydrate (in presence of pyridine) with ethyl 1,5-dimethyl-3-oxo-2-phenyl-2,3-dihydro-1H-pyrazol-4-ylcarbamate (vi). This carbamate was synthesized by the reaction of 4-AAP with pyridine or anhydrous sodium carbonate.

Finally, the reaction of 4-AAP with benzaldehyde or its 4-chloro derivative afforded the corresponding Schiff bases (va-b).

The structure of these compounds was confirmed by IR & UV Spectra, in addition to the CHN elemental analysis.

Keywords: 4-Aminoantipyrine, pyrazole, oxazole, triazine

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.(vi) -4- -1- -2·3- -2- -3-

-4 (va-b)