Synthesis of new pyrazolo[3,4-d]pyrimidine derivatives as potential antibacterial agents

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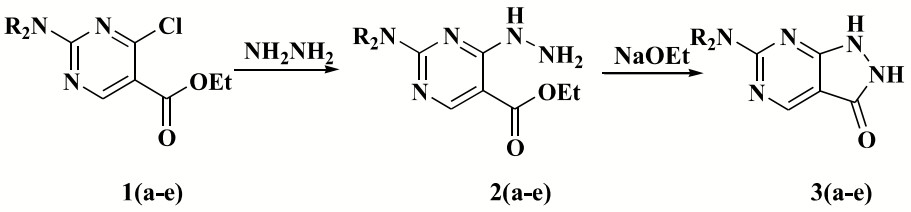
In recent years, pyrazolo[3,4-d]pyrimidines and related fused heterocyclic compounds have attracted the attention of numerous researchers due to their important biological activities and their structure similarity to purines. Wide arrays of biological activities such as antibacterial, antifungal and antitumor activities have been reported for these compounds. Pyrazolopyrimidines are useful as CNS depressant, cox-2 and kinase inhibitors and also have applications in curing metabolic diseases.[1-3]

Herein, ethyl-2-amino-4-chloropyrimidine-5-carboxylate 1(a-e) were prepared according to the previous procedure and treated with hydrazine hydrate to obtain ethyl-2-amino-4-hydrazino-5-pyrimidinecarboxylate 2(a-e). Compounds 2(a-e) were further cyclized with sodium ethoxide in ethanol to give the corresponding pyrazolo[3,4-d]pyrimidine 3(a-e) derivatives in good to excellent yields (Scheme 1). All of these compounds were characterized by FT-IR, ^{1}H NMR, ^{13}C NMR and mass spectrometry.



1(a-e) **2(a-e)** **3(a-e)**

Scheme 1.

References:

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