P-55

Application of Acidochromal Condensation for 4,5-Dihydro-3*H*-thieno[2,3,4-*ij*]isoquinoline System Construction

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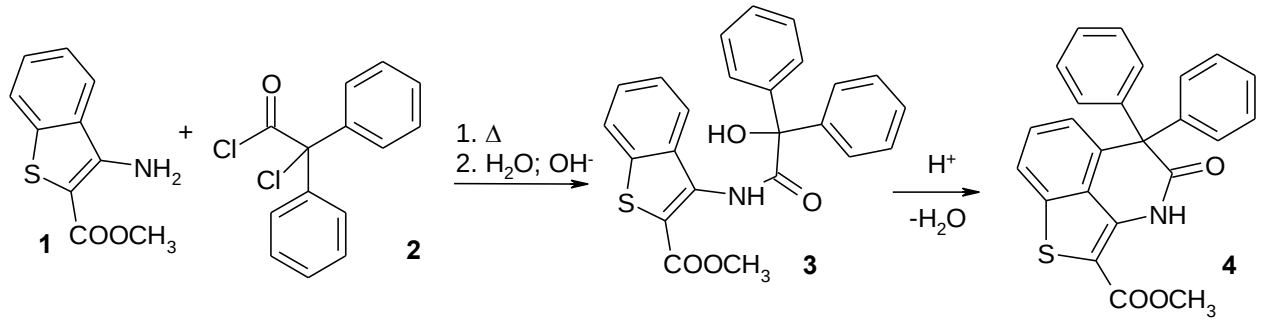
Design of new synthetic methods for polycondensed heterocycles construction is a promising route for creating of new drugs. Researches in this area have been attracting a considerable attention of synthetic community for a long time [1]. Despite, such systems are poorly studied. This was the reason for us to obtain a polyfused ring system using acidochromal condensation. It was shown that N-heterylamides of benzilic acid are the precursors for fused heterocycles, such as 1*H*,3*H*-thieno[3,4-*b*]pyrrol-2-one; 5-oxo-5,6-dihydro-4*H*-benzo[*d*]thieno[3,4-*b*]azepine; 5,7-dihydro-1*H*-pyrrolo[2,3-*d*]pyrimidin-2,4,6-triones [2,3].

Here, we report the interaction of 3-aminobenzothiophene (**1**) with chloroanhydride of 2,2-diphenyl-2-chloroacetic acid (**2**) which led to the 4-oxo-5,5-diphenyl-4,5-dihydro-3*H*-thieno[2,3,4-*ij*]isoquinoline-2-carboxylate (**4**) through the formation of intermediate amide (**3**). To obtain the target polyfused derivative (**4**), amide (**3**) was heated in the presence of acid. An interesting feature of this interaction is the red coloration of reaction mixture. The disappearance of red color is the evidence that the transformation is complete. The structure of the synthesized compounds was proved by the ^{1}H NMR-, ^{13}C NMR-, IR-spectroscopy and mass-spectrometry.



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