SYNTHESIS OF NEW 3-[(4-PHENYL-5-OXO-1,2,4-TRIAZOLIN-1-YL) METHYL]-4-SUBSTITUTED-1,2,4-TRIAZOLIN-5-ONE DERIVATIVES

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Depending on the nature of substituents of 1,2,4-triazolin-5-one derivatives show different biological activities, such as antidepressant, antitumor, antibacterial, and they can also be used as herbicides or fungicides. One of the methods of preparing of these compounds is the cyclization reaction of acyl derivatives of semicarbazide in alkaline media. In this paper ethyl (4-phenyl-5-oxo-1,2,4-triazolin-1-yl)acetate was used for preparation of hydrazide of (4-phenyl-5-oxo-1,2,4-triazolin-1-yl)acetic acid. This compound was converted to the respective semicarbazide derivatives and after the cyclization reaction in alkaline media a number of new derivatives composed of two 1,2,4-triazolin-5-one systems linked through the methylene group were obtained. The cyclization of 4-ethoxycarbonylmethyl-1-[(4-phenyl-5-oxo-1,2,4-triazolin-1-yl)acetyl]semicarbazide led to obtain (4-phenyl-5-oxo-1,2,4-triazolin-1-yl)acetic acid.

The reactions were performed according to the Scheme 1.

The structure of the new products was confirmed by elemental analyses as well as by IR, $^1$H NMR and $^{13}$C NMR spectra.