SYNTHESIS, PROPERTIES AND BIOLOGICAL ACTIVITY OF THE AMIDES OF 2-(BENZOYLAMINO)(2-OXOINDOLIN-3- YLIDENE) ACETIC ACID

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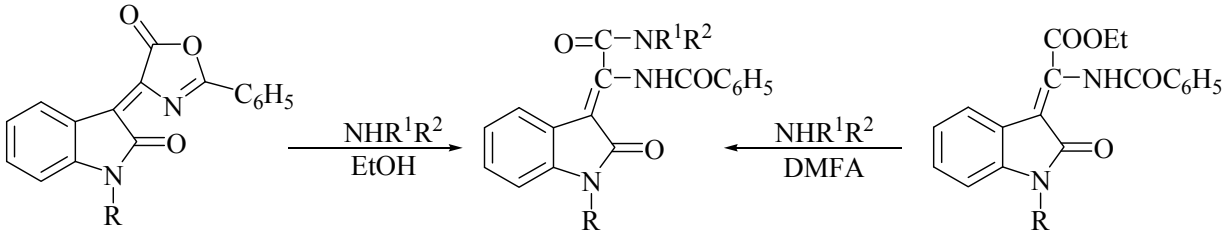
It is well known that derivatives of the 2-(2-oxondolin-3-ylidene)acetic acid have a wide range of biological activity and low toxicity. Among them compounds with high diuretic, antiviral, antihypoxant, nootropic action etc. were found.

The aim of this work was to develop methods of synthesis of new derivatives of 2-(benzoylamino)(2-oxondolin-3-ylidene)acetic acid and to study the nootropic and antihypoxant activity of compounds produced.

In this work we propose two approaches for synthesis of amides 2-(benzoylamino)(2-oxondolin-3-ylidene)acetic acid (**3a-h**). According to the first one (Method A) the target products were prepared by interaction of ethyl ester 2-(benzoylamino)(2-oxondolin-3-ylidene)acetic acid (**1**) with amines in DMFA. The second approach (Method B) was based on acylation of amines by 2-phenyl-4-(2-oxondolin-3-ylidene)-5-oxazolone (**2**) in ethanol. The advantages of this method are the high yields (up to 80-85%) and the short reaction time.



2 **3a-h** **1**

3a. R^1=H, R^2=$(CH_2)_2OH$; **3b**. R^1=R^2=$(CH_2)_2OH$; **3c**. R^1=Et, R^2=Et; **3d**. NR^1R^2=piperidin-1-yl; **3e**. NR^1R^2=4-methylpiperazin-1-yl; **3f.** NR^1R^2=4-(2-hydroxyethyl)piperazin-1-yl; **3g**. NR^1R^2=4-benzylpiperazin-1-yl; **3h.** NR^1R^2=morpholyl.

The structure of the synthesized substances has been proven by elemental analysis and NMR spectra data.

Antihypoxic and nootropic activity together with their acute toxicity were studied using standard screening models. It was found that the compounds of given series are low-toxic or non-toxic with moderate antihypoxic activity and significant antiamnesic effect.