

**THE REACTIVITY OF METHYL ESTERS  
OF 4,5-DIMETHOXY-N-PHENYLANTHRANILIC ACIDS  
IN THE BINARY DIOXAN-WATER SOLVENT**

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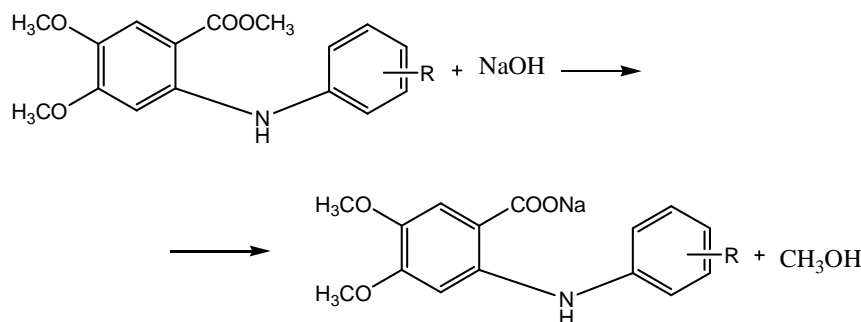
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Data of scientific research of domestic and overseas scientists indicates that derivatives of N-phenylanthranilic acids (N-PAA) have a wide synthetic and pharmacological potential. Therefore, the study of the reactivity of derivatives has undoubted scientific and practical interest. Reaction choice of alkaline hydrolysis as a model, further reinforces this interest for possible drug metabolism in the body of this series - their alkaline hydrolysis.

We have researched the kinetics of the reaction of alkaline hydrolysis of biologically active methyl esters of 4,5-dimethoxy-N-PAA in binary solvent dioxane-water (60 vol.% Dioxane), which runs from the equation under the scheme determined the rate constant of this reaction at temperatures of 55, 75 and 85<sup>0</sup>C.



Where: R = H (1), 2'-CH<sub>3</sub> (2), 4'-CH<sub>3</sub> (3), 3',4'-(CH<sub>3</sub>)<sub>2</sub> (4), 4'-OCH<sub>3</sub> (5), 4'-OC<sub>2</sub>H<sub>5</sub> (6), 4'-OC<sub>3</sub>H<sub>7</sub> (7), 4'-Cl (8), 4'-Br (9)

The values of the energy of activation ( $E_A$ ) and logarithm of the over dexponential factor ( $\ln A$ ), that have been calculated according to the equation (4). These data shows that addition of the electro-donor substitutes into molecule of ester naturally leads to increasing of the energetic barrier and the value  $E_A$  respectively. The acceptor substitutes cause the opposite effect. Correlation of  $E_A$  and  $\ln A$  with  $\sigma$ -constants of Hammett statistically uncertain.

Analysis of obtained results proves that at all experimental temperatures influence of the nature and position of substitutes in a non-anthranilic fragment of the molecule is similar: acceptor of substituents speed up the reaction by delocalization of the charge in relation to anion, and donor substitutes causes converse effect, that let to assume running of the reaction of alkali hydrolysis of methyl esters of 4,5-dimethoxy-N-phenylanthranilic acids according to the B<sub>AC</sub>2 mechanism.