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Actual Problems of the Chemistry of Natural Compounds

ABSTRACTS

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SYNTHESIS OF NEW UREA DERIVATIVES BASED ON 2-AMINOTHIOPHENE ESTERS (AMIDE) AND *p*-TOLYLISOCYANATE

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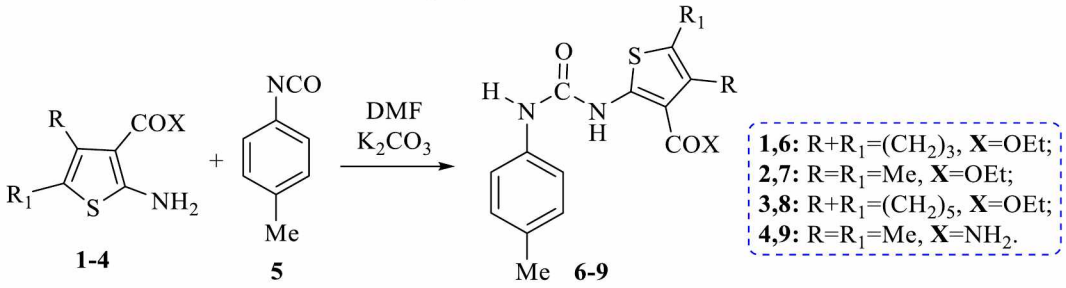
Currently, the creation of synthetic drugs effective against various viral diseases is one of the important problems in modern medicine. Medicines prepared on the basis of urea derivatives are used effectively in the field of agrochemistry, against tuberculosis, microbes and various diseases [1-3].

In our work, we aimed to synthesize 4,5-disubstituted-2-aminothiophene derivatives with various functional groups based on the Gevald reaction, and synthesize substituted ureas based on the reaction of nucleophilic addition of the obtained products with *p*-tolylisocyanate, 2-amino-4,5-trimethylenethiophene-3-carboxylic acid ester (**1**), 2-amino-4,5-diethylthiophene carboxylic acid ethyl ester (**2**), 2-amino-4,5-pentamethylenethiophene-3-carboxylic acid ethyl ether (**3**) and 2-amino-4,5-dimethyl thiophene carboxylic acid amide (**4**) were synthesized and nucleophilic addition of them with *p*-tolyl isocyanate (**5**) was carried out. As a result, N,N'-disubstituted urea derivatives (**6-9**) were isolated in high yields:



The reaction was carried out by mixing of 1:1 ratio of 2-aminothiophene derivatives and isocyanate in a solvent medium. The reaction was carried out at room temperature in the presence of potash in DMF solution, and the products (**6-9**) were extracted and isolated in high yields (**6**-76%, **7**-74%, **8**-81%, **9**-78%). The structure of the synthesized urea derivatives confirmed by IR, ^{1}H and ^{13}C NMR spectra.

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