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SYNTHESIS OF NEW BIOACTIVE COMPOUNDS BASED ON ANIONARYLATION PRODUCTS

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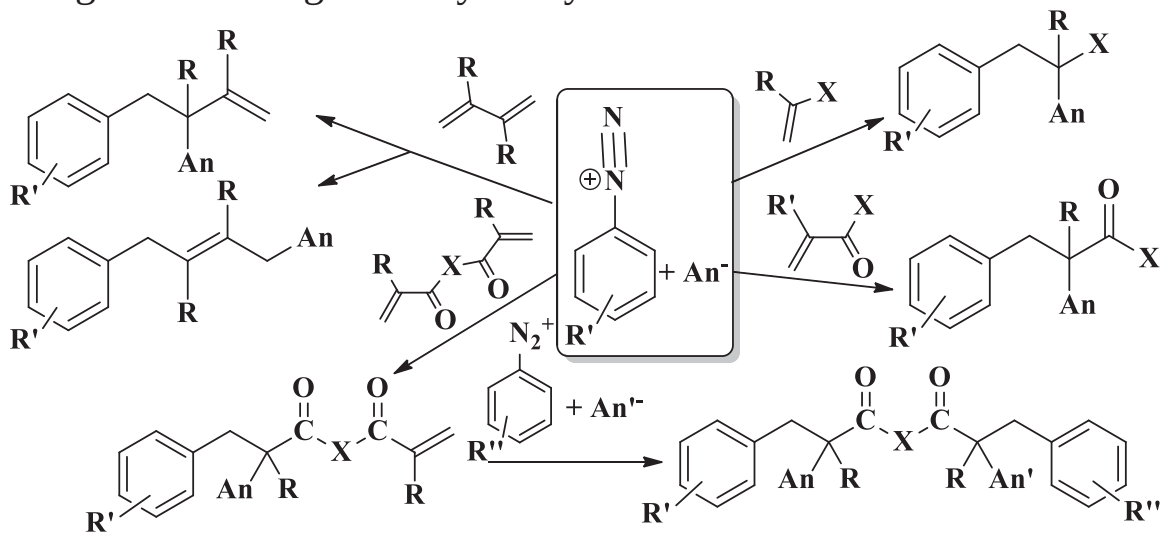
The anionarylation reaction is widely used in organic synthesis for chemo- and regioselective functionalization of multiple bonds of unsaturated compounds. The multicomponent and one-step nature of this reaction make it possible for obtaining a new hard-to-reach arylalkyl derivatives containing various pharmacophore fragments with sufficiently high yields under mild conditions.

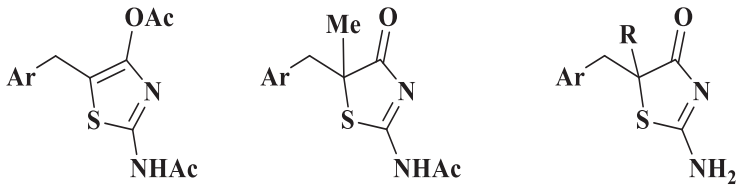
We have significantly expanded the range of arylating reagents, neutral and anionic nucleophiles, studied the basic patterns of reactions of catalytic and noncatalytic anionarylation of different types of unsaturated compounds (vinyl and allyl derivatives, conjugated alkadienes, functionalized acrylates, biunsaturated compounds with isolated multiple bonds).

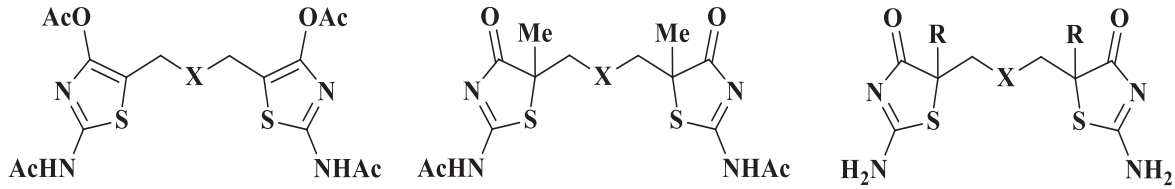
The results of researches allowed to propose the preparative

methods for the synthesis of arylalkyl halides, thio- and isothiocyanates, N,N-dialkyldithiocarbamates, O-alkyldithiocarbonates, O, O-dialkyl(diaryl)dithiophosphates, alcohols, ethers and esters, which are interesting as biologically active substances and synthons for the construction of bioactive sulfur and nitrogen-containing heterocyclic systems.



5-Arylsubstituted derivatives of 2-aminothiazol-4(5H)-one were obtained by cyclization of thiocyanatoarylation products of unsaturated acid amides and their antimicrobial, antituberculosis and antitumor activity were studied.





It was found that some 2-amino-5-benzyl-(5-methyl)thiazol-4(5H)-ones are characterized by effective antimicrobial properties, so they are promising for the creation of new bactericidal drugs based on them. 2-Acetamido-5-benzylthiazole-4-yl-acetates has antifungal activity by inhibiting the yeast culture in concentrations 3,9-7,8μg/ml.

Some of synthesized thiazole derivatives have significant antimicrobial effect against Mycobacterium tuberculosis museums and clinical strains at the level of the known isoniazide drug.

The results of research conducted within the framework of the international scientific program of the National Institutes of Health of the United States indicate the effective antimitotic properties of certain 2-aminothiazole-4(5*H*)-ones.

UDC 57.053[577.115.7+561.263]

ADVANTAGES AND PROSPECTS OF USING MICROALGAE TO OBTAIN BIOLOGICALLY ACTIVE SUBSTANCES FOR THERAPEUTIC PURPOSES

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Unicellular green algae *Chlorella vulgaris* is well-known as a traditional model object for studying the biochemistry and classic object for biotechnologically obtained useful products: proteins, lipids, carotenoids, vitamins, etc. [2, 4, 5].

Currently, the proven effectiveness and prospects of lipid microalgae use in the process of biofuel synthesis and in development of bioactive medications. In algal biofuel industry now, there are two main trends [3]:

1) increase the gross (total) content of lipids in cells through technological manipulation and usage of biosynthesis regulators and lipids accumulation;

2) directed regulation of certain lipid classes biosynthesis – as main components of biofuel and biologically active substances.

Among the biologically active additives (BAA) that are commonly used for the prevention of metabolic disorders are native dried microalgae and substances based on them in complexes with essential micronutrients [1, 2, 5]. We already know about the high saturation of algae cells by lipids of different classes that formed the idea of possible removal of separate lipid fractions and their usage in the biotechnology of production of some products with nutritional, pharmaceutical and cosmetic purposes. Algae cells are able to adapt to metal ions using different mechanisms: membrane and intracellular binding by subcellular structures, binding by exo- and endometabolites. We used the ability of chlorella cells to absorb and