SYNTHESIS OF 4-ARYL-1,4-DIHYDROPYRIDINES BY HANTZSCH REACTION BASED ON SO_2-CONTAINING HETEROCYCLES

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Introduction. Hantzsch reaction is used to construct 1,4-dihydropyridine core. It involves three-component interaction of active methylene ketones with aldehydes and ammonia (or its donors). It gives rise to symmetrical 1,4-dihydropyridines. Latter other methods have been discovered allowing to obtain non-symmetrical 1,4-dihydropyridines. Mentioned 1,4-dihydropyridines are particularly well known in pharmacology as calcium channel blockers, used in the treatment of hypertension. Until now 1,2-benzoxathiin-4(3*H*)-one 2,2-dioxide and 2,1-benzothiazin-4(3*H*)-one 2,2-dioxide were not explored in Hantzsch reaction.

Aim. To synthesize 4-aryl-1,4-dihydropyridines based on 1,2-benzoxathiin-4(3*H*)-one 2,2-dioxide and 2,1-benzothiazin-4(3*H*)-one 2,2-dioxide.

Materials and methods. A set of chemicals either synthesized by known procedures or obtained from commercial sources were used. During research standard methods of organic synthesis were also applied.

Results and discussion. Reaction of both 1,2-benzoxathiin-4(3*H*)-one 2,2-dioxide (1a) and 2,1-benzothiazin-4(3*H*)-one 2,2-dioxide (1b) with aromatic aldehydes (2) and ammonium acetate under reflux in acetic acid for 1 hour resulted into symmetrical derivatives 3. It should be mentioned that the interaction proceeded smoothly and with average to high yields irrespective of benzaldehyde used in the reaction.

Aiming to obtain unsymmetrical 1,4-dihydropyridines we examined three-component interaction of both 1,2-benzoxathiin-4(3*H*)-one 2,2-dioxide (1a) and 2,1-benzothiazin-4(3*H*)-one 2,2-dioxide (1b) with aromatic aldehydes (2) and ethyl 3-aminocrotonate (4). The reactions were carried out in acetic acid under reflux for 4 hours and resulted into desirable derivatives 5.

Conductions. Possibility to obtain both symmetrically and asymmetrically substituted 1,4-dihydropyridines based on 1,2-benzoxathiin-4(3*H*)-one 2,2-dioxide and 2,1-benzothiazin-4(3*H*)-one 2,2-dioxide was confirmed and wide range of these derivatives was synthesized.

SYNTHESIS, PHYSICOCHEMICAL AND PHARMACOLOGICAL PROPERTIES OF POTASSIUM AND D-GLUCOSAMINIC SALTS OF 5-BROMO-3-SULFAMOYL-2-R-PHENYLAMINOBENZOIC ACIDS

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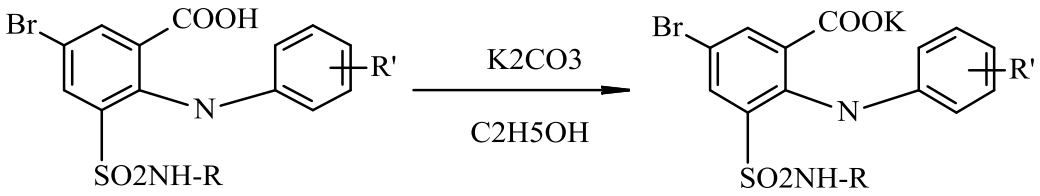
Introduction. In recent years in the literature are increasingly began to appear on the synthesis of various heterocyclic structures which contain in their molecule residues of the active molecule– derivatives of 2-aminobenzoic acids, or their cyclic derivatives, which have high antitumor activity. Studies carried out earlier show, that increasing the solubility of substances of derivatives of 2-aminobenzoic acids leads to an increase in the effective concentration of active substances in the body, and to expand the arsenal of dosage forms and routes of administration.

Aim. The aim of our work has been resynthesis, and studied of pharmacological activity of potassium and D-(+)-glucosaminic salts of 5-bromo-3-sulfamoyl-2-R-phenylaminobenzoic acids

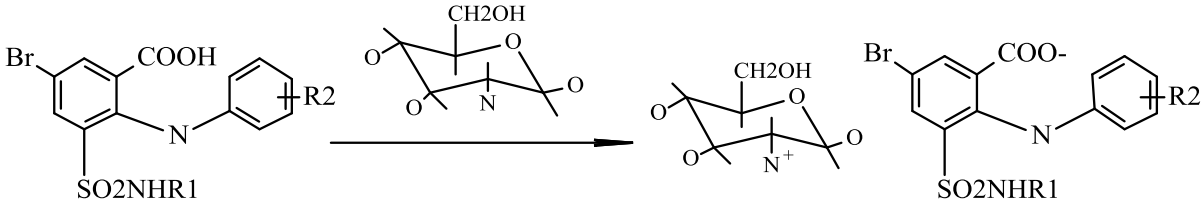
Materials and methods. Synthesis of potassium salts of 5-bromo-3-sulfamoyl-2-R-phenylaminobenzoic acid was carried out by the interaction of the corresponding acids with potassium carbonate in ethanol medium under heating (scheme 1).

Scheme 1



D-(+)-glucosylammonium salts of 5-bromo-3-sulfamoyl-N-phenylaminobenzoic acids were synthesized by the interaction of the equimolar amounts of acid with D-(+)-glucosamine (scheme 2).

Scheme 2



The structure of compounds has been confirmed by qualitative reactions, data of elemental, IR-spectral analysis, and purity – by thin-layer chromatography

Results and discussion. The resulting potassium and D-(+)-glucosylammonium salts of 5-bromo-3-sulfamoyl-N-phenyaminobenzoic acids are crystalline substances, well soluble in water, worse in alcohol, insoluble in hexane, with melting point > 300° C.

The synthesized compounds were tested for antibacterial activity. Their acute toxicity has also been studied.

Conclusion. According to the results of pharmacological studies, it has established that these compounds have high anti-inflammatory, analgesic and antibacterial activities.

SYNTHESIS OF BIOLOGICALLY ACTIVE COMPOUNDS IN THE RANGE OF (2-(4-OXO-2-THIOXO-1,4-DIHYDRO-2H-QUINAZOLIN-3-YL)-ACETAMIDE DERIVATIVES

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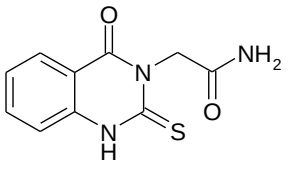
Introduction. People with a various types of seizures have a number of symptoms and complications that need to be controlled with treatment in order to live a normal or more comfortable life.

The problem of the creation of chemical substances, which are potential medicines, is currently relevant throughout the world, despite the fact that synthetic chemists are doing everything possible and sometimes impossible at the same time with pharmacists and doctors by this direction. Although there are many medicines in the modern pharmacy, it helps to prevent illness and helps to improve its quality for patients, as well as the emergence of severe organ and systemic disorders.

Aim. The elaboration of synthesis of biologically active derivatives in a range 2-(4-Oxo-2-thioxo-1,4-dihydro-2H-quinazolin-3-yl)-acetamide, which can exhibit anticonvulsant activity and may serve as the basis for the development of new anticonvulsants with the following general formula:



Materials and methods. In a mixture of water and triethylamine glycine was dissolved. The resulting solution was added with stirring to a warm solution of methyl ester of 2-isothiocyanato-benzoic