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BIOLOGICAL PROPERTIES OF 1H- 1,2,3- TRIAZOLE DERIVATIVES

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Abstract:
Currently, the production of 70-80% of the medicinal preparations used in the world by means of heterocyclic compounds. Studying how to make the compound it contains, getting properties, creating effective biologically active substances for them. 1,2,3-triazole derivatives, which belong to the class of only five-membered, three-nitrogen-containing heterocyclic compounds, show a wide range of useful properties.

Keywords: 1,2,3-triazole, tazobactam, 4-(4-(R-carboxymethyl)-1H-1,2,3-triazol-1-yl) benzoic acid, potassium, copper (I) halides.

Introduction

Worldwide, the synthesis of five-membered heterocyclic compounds containing three nitrogen atoms is developing rapidly, which is why they are now part of many drugs used in agriculture and medicine. Such compounds include synthetic 1,2,3-triazole derivatives. For this reason, the increasing number of pharmacologically active drugs among 1,2,3-triazoles synthesized as a result of scientific research in the field of organic chemistry is of particular importance.

One of the important issues facing chemists and pharmacologists today is the synthesis and implementation of less toxic potentially active drugs. In solving this problem, heterocyclic compounds with 1,2,3-triazole ring in their molecule show promise. That is why scientific researches are being carried out on purposeful synthesis of 1,2,3-triazole derivatives, determination of their structure, creation of effective biologically active drugs based on them. As a result, competitive drugs with anti-inflammatory, anti-tuberculosis, cancer and diabetes, antipyretic, analgesic, bactericidal, fungicidal, insecticidal [1-2] and other useful properties are being identified.

As a result, extensive measures are being taken to organize scientific research at a high level in the direction of development of drug creation and supply the pharmaceutical market with quality drugs. As a result, important results are being achieved in the creation of competitive preparations based on synthetic organic chemical products. In this regard, scientific and practical research aimed at finding optimal synthesis

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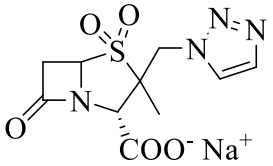
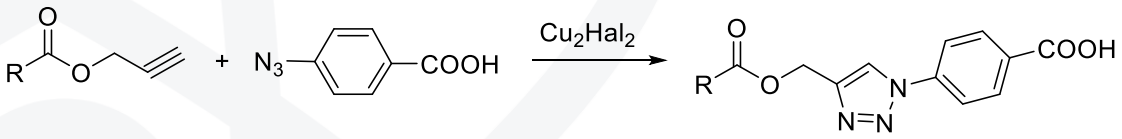
methods of new derivatives of triazoles, determining the specific aspects of their structure and reactivity, and creating effective biologically active substances is of great practical importance. Information about active substances created on the basis of 1,2,3-triazole derivatives and currently being produced is presented. Today, tazobactam is produced as a medicine. Tazobactam is registered in the US and is a local antibiotic; used together with antibiotics such as penicillin, sulbactam, ampicillin, amoxacillin [3].



Тазобактам

In this study, the main goal of the synthesis of 1H-1,2,3-triazole derivatives is to study the biological properties of the newly synthesized 1H-1,2,3-triazole derivatives. We carried out these cycloaddition reactions in the presence of a catalyst - copper (I) halides. The reaction was found to produce only one 1,4 isomer of 1,2,3-triazoles. The reaction was carried out by heating a 1:1 (equimolar mole) mixture of propargyl esters of monobasic saturated carboxylic acids and para-azidobenzoic acid in a toluene solution in the presence of a small amount of copper (I) halides. The progress of the reaction was monitored by thin layer chromatography. The (5:1 benzene:methanol) system was used as an eluent. As a result, 1,2,3-triazole derivatives in the 1,4-isomeric state were isolated with high yields [4-7].

Saturated monobasic carboxylic acids were carried out for 6 hours in the presence of copper(I) halide catalysts based on propargyl ethers and para-azidobenzoic acid. The reaction equation is:



The above synthesized 1H-1,2,3-triazole derivatives were analyzed using various modern physical research methods (IK, PMR, Mass spectrometry). In order to study the biological activities of synthesized 4-(4-(R-carboxymethyl)-1H-1,2,3-triazol-1-yl) benzoic acid derivatives, their water-soluble salts were synthesized. As a result, an opportunity was created to study their biological properties. The newly synthesized 4-(4-(R-carboxymethyl)-1H-1,2,3-triazol-1-yl)benzoic acid potassium and sodium salts have been experimentally proven to have high anti-diabetic and anti-inflammatory activity.

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