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## «ЛІКИ – ЛЮДИНІ»

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науково-практичної конференції

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«Ліки – людині»: матеріали VII Міжнар. наук.-практ. конф. (21-22 березня 2024 року) – Х. : НФаУ, 2024. – 324 с.

Збірник містить тези доповідей VII Міжнародної науково-практичної конференції «Ліки – людині», де розглядаються проблеми фармакотерапії захворювань людини, наводяться результати експериментальних та клінічних досліджень, аспекти вивчення й упровадження нових лікарських засобів, доклінічні фармакологічні дослідження біологічно активних речовин природного і синтетичного походження. Наведено також праці, присвячені особливостям викладання медико-біологічних і клінічних дисциплін у закладах вищої освіти.

Видання розраховано на широке коло наукових і практичних працівників медицини і фармації.

Відповідальність за зміст наведених матеріалів несуть автори.

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«Medicines for humans. Modern issues of pharmacotherapy and drugs prescription»: materials VII International. scientific-practical conf. (March 21-22, 2024) - Kh. : NUPh, 2024. - 324 p.

The collection contains abstracts of the VII International Scientific and Practical Conference «Medicines for humans. Modern issues of pharmacotherapy and drugs prescription», which deals with the problems of pharmacotherapy of human diseases, presents the results of experimental and clinical studies, aspects of study and implementation of new drugs, preclinical pharmacological studies of biologically active substances of natural and synthetic origin. There are also works devoted to the peculiarities of teaching medical-biological and clinical disciplines in higher education institutions.

The publication is designed for a wide range of scientific and practical workers in medicine and pharmacy.

The authors are responsible for the content of these materials.

In this regard, the goal of qualification work was a statistical study of the problem of obesity and overweight among different populations. During the study period, 117 people took part in the questionnaire: 82 women and 35 men of different age groups. During the study, it was found that the majority (63.7%) of respondents do not play sports and lead a sedentary lifestyle. Among the questionnaire participants, only 17.5% devote sufficient time (more than 150 minutes per week) to intensive physical activity, as recommended by WHO. It is known that traditional Ukrainian cuisine in Ukraine is very high-calorie and that Ukrainians like to "taste" and eat a lot. This fact is confirmed by the survey: out of 117 respondents, 85 do not limit themselves in nutrition. Meanwhile, most are not happy with their physical form. Counting BMI in survey participants showed that 15.91% are obese, 46.4% are overweight. Analysis of waist circumference results demonstrated that 36.4% showed abdominal obesity, of which 5.8% had a normal BMI. These people are at high risk of developing health problems, especially from the cardiovascular system. This fact was confirmed by the presence of elevated blood pressure above 140/90.

Also, the questionnaire made it possible to conclude that in Ukraine people are not sufficiently aware of the existing problem of obesity and overweight. There is no culture of proper nutrition and healthy physical health in Ukraine.

**SYNTHESIS AND PHYSICO-CHEMICAL PROPERTIES OF  
CARBONYL DERIVATIVES OF 4-((2,6-  
DICHLOROBENZYLYDENE)AMINO)-5-(3-METHYLPYRAZOL-5-YL)-  
1,2,4-TRIAZOLE-3-THIOL**

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Optimizing synthesis conditions and studying the properties of new compounds are always of great importance to the field of chemistry. The presence of a triazolothiadiazine framework in the structure of the biologically active substance contributes to the manifestation of a number of properties, including antibacterial, antiviral, antitumor and antifungal. In addition, the additional introduction of a pyrazole component into the structure increases the likelihood of creating a new substance with anti-inflammatory properties.

Thus, the combination of the two specified heterocyclic fragments in one molecule can lead to the creation of new drugs with pronounced activity and improved pharmacological properties. The carbonyl group is present in the structure of many molecules that play an important role in many biological processes. Among

them are carboxylic acids, esters, ketones and others. For example, carboxylic acids take an active part in metabolic processes and promote interaction with membrane and intracellular receptors, playing an active role in regulation and signal transmission, creating a basis for a number of important biological processes.

In this context, 6-(2,6-dichlorophenyl)-3-(3-methylpyrazol-5-yl)-6,7-dihydro[1,2,4]triazolo[3,4-b][1,3,4]thiadiazine-7-carboxylic acid and its derivatives in the form of esters have a significant potential for creating a biologically active substance.

The aim of the work was the synthesis and investigation of the properties of 6-(2,6-dichlorophenyl)-3-(3-methylpyrazol-5-yl)-6,7-dihydro[1,2,4]triazolo[3,4-b][1,3,4]-thiadiazine-7-carboxylic acid and its carbonyl derivatives.

At the first stage, the conditions for the synthesis of 6-(2,6-dichlorophenyl)-3-(3-methylpyrazol-5-yl)-6,7-dihydro[1,2,4]triazolo[3,4-b][1,3,4]thiadiazine-7-carboxylic acid.

For this purpose, the optimal reaction conditions for the nucleophilic addition of 2,6-dichlorobenzaldehyde to the original 4-amino-5-(3-methylpyrazol-5-yl)-1,2,4-triazole-3-thiol were first established, which involved the use of reaction medium of glacial ethanoic acid.

Subsequently, the obtained Schiff's base was involved in the reaction with chloroethanoic acid in a tetrahydrofuran environment with the addition of a double amount of sodium hydride. Further, stirring was carried out for 10 hours with subsequent removal of the solvent, which allowed to obtain 6-(2,6-dichlorophenyl)-3-(3-methylpyrazol-5-yl)-6,7-dihydro[1,2,4]triazolo[3,4-b][1,3,4]thiadiazine-7-carboxylic acid.

The structure of the synthesized acid was confirmed by physicochemical methods:  $^1\text{H}$  NMR spectroscopy and elemental analysis.

The purity of the product of the chemical reaction and its identity were confirmed by chromat-mass spectra.

Subsequently, the synthesis of esters of this acid and arylethanones was implemented.

The presence of a keto group in the structure of the target compounds can additionally contribute to the improvement of the biological profile of the synthesized compounds, which increases the level of interest in this direction of chemical transformation. The synthesis of the target ketones was carried out in a tetrahydrofuran environment by the interaction of the Schiff base with the corresponding phenacyl bromide. The reaction was carried out with the participation of sodium hydride in a tetrahydrofuran environment with constant stirring at room temperature for 8 hours.

According to the results of the study, Schiff bases were obtained, with the participation of 4-((2,6-dichlorobenzylidene)amino)-5-(3-methylpyrazol-5-yl)-1,2,4-triazole-3-thiol, which are convenient intermediates for the synthesis of [1,2,4]triazolo[3,4-b][1,3,4]thiadiazoles and [1,2,4]triazolo[3,4-b]-[1,3,4]thiadiazines systems that have a significant potential for bioactivity. It has been established that conducting a condensation reaction using 4-((2,6-dichlorobenzylidene)amino)-5-(3-methylpyrazol-5-yl)-1,2,4-triazole-3-thiol and chloroethanoic acid is an effective chemical transformation to obtain 6-(2,6-dichlorophenyl)-3-(3-methylpyrazol-5-yl)-6,7-dihydro[1,2,4]triazolo[3,4-b][1,3, 4]thiadiazine-7-carboxylic acid, which is a convenient structure for further transformations.

The use of previously obtained esters of chloroethanoic acid allowed in the reaction with 4-((2,6-dichlorobenzylidene)amino)-5-(3-methylpyrazol-5-yl)-1,2,4-triazole-3-thiol with predominant yields in compared with the esterification of 6-(2,6-dichlorophenyl)-3-(3-methylpyrazol-5-yl)-6,7-dihydro[1,2,4]-triazolo[3,4-b][1,3,4]-thiadiazine-7-carboxylic acid to obtain the corresponding esters. The possibility of synthesis of (6-(2,6-dichlorophenyl)-3-(3-methylpyrazol-5-yl)-6,7-dihydro[1,2,4]-triazolo[3,4-b][1,3 ,4]thiadiazin-7-yl)-(R)-methanones in the process of involving bromoacetophenones in the reaction with 6-((2,6-dichlorobenzylidene)amino)-5-(3-methylpyrazol-5-yl)-1,2 ,4-triazole-3-thiol.

## **EXPLANATION OF THE PROBLEMS OF POLYPHARMACY WHEN TEACHING ISSUES OF PHARMACOTHERAPY**

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The intense dynamics of the growth of the pharmaceutical market necessitates the coverage of a sufficiently large volume of information when teaching pharmacotherapy issues in institutions of higher medical and pharmaceutical education. Educational programs and materials are supplemented with the characteristics of drugs that have replenished the pharmaceutical segments, with known and new mechanisms of pharmacological correction, and are currently actively used for prevention and treatment. Undoubtedly, the increase in the volume of educational disciplines involves the formation of the ability to navigate in a wide range of medicines, understanding the principles of combined treatment that meet the purpose of the competence approach. At the same time, the scientifically and practically substantiated effectiveness of representatives of the same class of drugs, different in terms of pharmacological action, makes it difficult to choose the optimal