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THE RESEARCH ON PROSPECTIVE PHARMACORRECTION MEDICATIONS FOR THE FIRST-DEGREE OBESITY TREATMENT AMONG NEW NONNATURAL SUBSTANCES CONTAINING CHALCOGENAMIDO GROUPS

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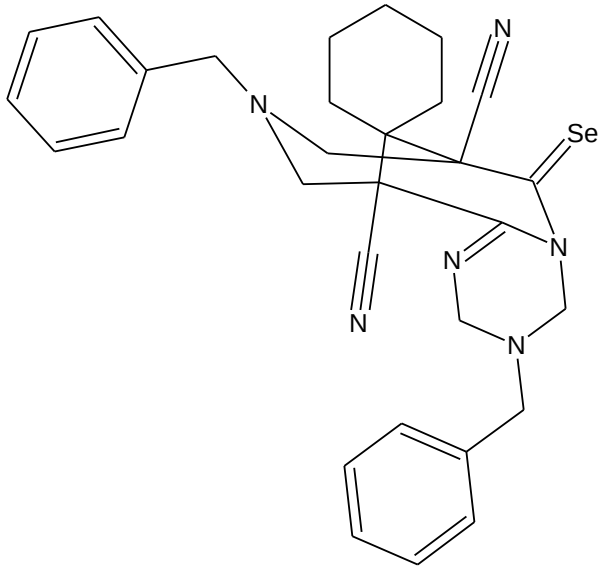
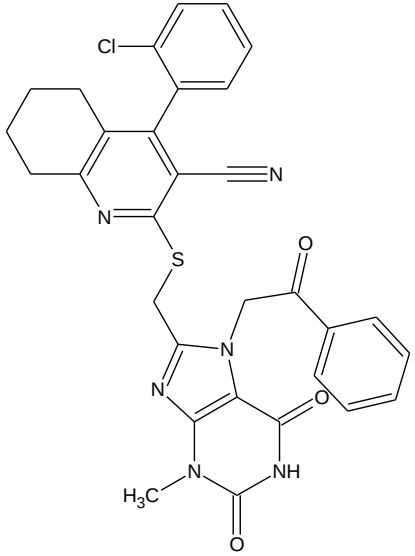


3',9'-dibenzyl-6'-selenoxo-3',4',9',10'-tetrahydro-2'*H*-spiro[cyclohexane-1,12'-[1,3,5,9]tetraaza[7,11]-methano[1,3,5]triazino[1,2-*a*][1,5]diazocine]-7',11'(6'*H*,8'*H*)-dicarbonitrile



4-(2-chlorophenyl)-2-({[3-methyl-2,6-dioxo-7-(2-oxo-2-phenylethyl)-2,3,6,7-tetrahydro-1*H*-purin-8-yl]methyl}thio)-5,6,7,8-tetrahydroquinoline-3-carbonitrile

Abstract. Alimentary obesity is an important social problem for all developed countries. A variety of factors affects gain of body weight. among which hypodynamia, which is caused by widespread automation. To date, the human diet increases the palm oil content due to its low cost and long shelf life. Detailed research of the effect of excessive amount of palm oil on the body state is very relevant. In the modern world, it is important to search for highly effective and safe medicines for weight loss treatment of metabolic syndrome consequences.

This work is dedicated to a search for effective and safe pharmacorrection medications for the first-degree obesity treatment, as the result of excessive consumption of palm oil during a long period of time.

Our studies have shown that two new compounds containing chalcogenamide groups have the property of reducing weight. The experiment was performed on 24 white non-linear sexually mature rats of both sexes, which weighed 120-180g. The animals were divided into 4 groups.

The performed studies have shown that substances **1** {3',9'-dibenzyl-6'-selenoxo-3',4',9',10'-tetrahydro-2'H-spiro[cyclohexane-1,12'-[1,3,5,9] tetraaza[7,11]-methano[1,3,5]triazino[1,2-a] [1,5]diazocine]-7',11'(6'H,8'H)-dicarbonitrile} and **2** {4-(2-chlorophenyl)-2-({[3-methyl-2,6-dioxo-7-(2-oxo- 2-phenylethyl)-2,3,6,7-tetrahydro-1H-purin-8-yl]methyl} thio)-5,6,7,8-tetrahydroquinoline-3-carbonitrile} possessed the properties of prospective pharmacorrection medications for alimentary obesity treatment.

Keywords: alimentary obesity; palm oil; chalcogenamido groups; synthetic substances; experiment

Introduction

Alimentary obesity is a big social problem for all developed countries. Variety of factors affect the gaining of body weight of a person. For example, hypodynamia, which is caused by widespread automation. To date, the human diet increases the palm oil content, due to its low cost and long shelf life. Detailed research of the effect of excessive amount of palm oil on the body state is very relevant. In the modern world, it is important to search for highly effective and safe medicines for weight loss treatment of metabolic syndrome consequences.

The task is to search for effective and safe pharmacorrection medications for the first-degree obesity treatment, as the result of excessive consumption of palm oil during a long period of time.

The experiment was performed on 24 white non-linear sexually mature rats of both sexes, which weighed 120-180g. The animals were divided into 4 groups. The animals of the intact group were kept on a standard diet of the vivarium of the State Institution «Lugansk State Medical University». The second group, the control group, has been receiving palm oil at a dose of 30 g/kg to a daily ration for a period of 6 weeks.

Introduction

The rats of the third and fourth groups have been receiving samples of new organic compounds with the numbers 1 and 2. The substances were synthesized on the basis of the "Himex" SRL. HVS "Vladimir Dahl Lugansk National University". Composite authors: Krivokolysko Sergey Gennadiyevich Doctor of Chemical Sciences, senior research associate, Department Chairmen of Pharmaceutical Chemistry and Pharmacognosy Department of the State Institution «Lugansk State Medical University», senior researcher "Himex" SRL of "Vladimir Dahl Lugansk National University"; Frolov Konstantin Aleksandrovich Candidate of Chemical Sciences, Associate Professor of the Department of Pharmaceutical Chemistry and Pharmacognosy Department of the State Institution «Lugansk State Medical University», Chief Engeneering Officer "Himex" SRL; Dotsenko Viktor Viktorovich Doctor of Chemical Sciences, Associate Professor of Kuban State University, leading research associate of "Himex" SRL. The compounds were administered intragastrically at a dose of 2.5 mg/kg for 2 weeks after a six-week high-fat diet. Once every 7 days the rats were weighed to assess the dynamics of changes in their weight. Statistical processing of data was carried out in the software environment «Statistica» 10.0.

Results and discussion

The body weight of animals has increased by 121% after a six-week high-fat diet. The given results are consistent with the data obtained by us in the earlier studies on animals of different periods of ontogenesis [1, p.37 Bybyk E.Yu., Shipilova N.V. Changes in the morphometric parameters of the spleen after prolonged excessive consumption of palm oil and pharmacorrection with melatonin. // Medical Almanac.2016.-No.4 (15). - P.35-46]. After the first week of pharmacorrection, the group under the number 3 showed a decrease in weight by 12.17%, and in the second week the animals lost another 10.75%. During the two-week period of administration of the substance the weight of the rats decreased by a factor of 1,27 and approached the values of the body weight of animals of the intact group. There were no animal deaths in this group, the behavioral reactions of rats were adequate. In the latter days of research the flabbiness of the hair-coat was noted. In the experimental group under the number 4, period the mass decreased by 8.02% during the two-week. The death of animals was absent, behavioral reactions were adequate.

Conclusions

The performed studies have shown that the substances numbered 1 (3',9'-dibenzyl-6'-selenoxo-3',4',9',10'- tetrahydro-2'H-spiro[cyclohexane-1,12'-[1,3,5,9] tetraaza[7,11]-methano[1,3,5]triazino[1,2-a] [1,5]diazocine]-7',11'(6'H,8'H)-dicarbonitrile) and 2 (4-(2-chlorophenyl)-2-({[3-methyl-2,6-dioxo-7-(2-oxo- 2-phenylethyl)-2,3,6,7-tetrahydro-1H-purin-8-yl]methyl} thio)-5,6,7,8-tetrahydroquinoline-3-carbonitrile) possess the properties of prospective pharmacorrection medications the alimentary obesity treatment.