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SEARCH OF COMPOUNDS WITH HYPOGLYCEMIC ACTIVITY IN THE SERIES OF 1-(2-(1H-TETRAZOL-5-YL)PHENYL)-3-R-PHENYLUREAS AND 1-R-PHENYL-3-(2-(3-PHENYL-1H-1,2,4-TRIAZOL-5-YL)PHENYL)UREAS

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Introduction. It is known that oral hypoglycemic agents are classified as following: sulfonylureas, meglitinides, biguanides, thiazolidinediones, α -glucosidase inhibitors and inkretinomimetiks. Each group has disadvantages with side effects. In particular, inability of complete glycohemoglobin (HbA1c) level control. Therefore it is necessary to create products, which provide the long antihyperglycemic effect and will influence not only the symptoms but also their causes.

Aim: to find antidiabetic agents among series of substituted 1-(2-(1H-tetrazol-5-yl)phenyl)-3-R-phenylureas and 1-R-phenyl-3-(2-(3-phenyl-1H-1,2,4-triazol-5-yl)phenyl)ureas.

Objectives:

1 To synthesize substances, that combine two different structural fragments of antidiabetic drugs (sulfonylureas and biguanides).

2 To prove their structure and investigate their hypoglycemic effect of produced substances.

Material and methods. Hypoglycemic activity was performed on Wistar albino rats. The suspension stabilized with Tween-80 was administered by intragastric injection at dose of 10 mg/kg to the groups consisting of 6 male rats (weight 260-280 g, age 3.5 months). Intact and control groups received the equivalent volumes of water in the same way. Substances' activity was assessed by the change of glucose concentration in the blood before and after a single administration after 2, 4, 6 and 8 hours. The measurements were carried out using strips of express analyzer «OneTouch Select».

Results and discussion. Among 46 tested compounds, eight showed significant reduction of glucose. After 2 h. of substances administration glucose concentration decreased to 9.07-38.95%, after 4 h. - to 22.37-43.05%, after 6 h. - to 20.38-45.38% and after 8 h. - to 10.03-43.58%. Substances containing *p*-(trifluoromethyl)phenyl, 2-chlorophenyl and ethyl substituents at the carbamide moiety were the more active.

Conclusion:

1 New hypoglycemic agents containing structural fragments of sulfonylurea and biguanide drugs are found.

2 It is planned to further study substances in animal models of 2 type diabetes.