zantherin A 0,021–0,024, shizandrin A 0,017–0,019, shizandrin B 0,074–0,095. Total content of shizandrins calculated in shizandrol A equivalents was about 0.3 %. Relations between individual lignans were about 1:1:0,2:0,2:1. This is optimal for adaptogenic properties of Shizandra drugs (2). Thus, fatty oils are effective for shizandra lignans extraction. The method was proposed for extract standardization and validated according to the ICH guidelines on the validation of analytical methods and (3).

References: (1) Shikov A. N., Pharm.Chem. J., 2006, 29: 385–388. (2) Panossian A., Wikman G. J., Ethnopharmacol., 2008, 118: 183–212. (3) USP 32/NF 27. Validation of compendial procedures, 2009: 733–735.

ANTIDIABETIC EFFECT OF UBIDECARENONE IN RATS

© *Kovaleva M. A., Kokareva M. N., Makarova M. N., Makarov V. G.*

Saint-Petersburg Institute of Pharmacy, Russia

Diabetes mellitus is characterized by hyperglycemia, altered metabolism of lipids, carbohydrates and protein and an increased risk of complication of vascular diseases. Type 2 diabetes mellitus is characterized by derangement of insulin secretion and an inability of the peripheral tissues to respond to insulin. Antioxidant often been used for the treatment of diabetes and its complications. The purpose of the study was evaluation of antidiabetic activity of ubidecarenone, in the model of neonatal streptozotocin-induced diabetes on rats. Experiment was performed on rats-males and rats-female Wistar line. Diabetes was induced by a single dose intraperitoneally injection of streptozotocin (60 mg/kg) at 3 days postnatal. After 4 weeks the rats were orally administrated with ubidecarinon in starch slime at dose of 5.2 mg/kg (UC group); or starch slime (control group). Levels of glucose, body weight, total cholesterol, triglycerides were evaluated during the experiment. The ubidecarinone showed steady antidiabetic effect after 4 weeks of administration. Decrease level of blood glucose in 50 % (rats-males) and 41 % (rats- female) was obserwed. Results are present in the table:

Group	Blood glucose, mmol/l	
	Base line	After 4 weeks
rats-males		
Control (n=6)	12,8±1,1	13,2±0,9
UC (n=6)	11,6±1,3	6,6±0,2*
rats- female		
Control (n=6)	9,4±0,7	11,4±0,8
UC (n=6)	10,7±0,9	6,7±0,3*
*— significantly different from control group ($p<0.05$)		

Ubidecarinone effectively normalized metabolism in animals that was conformed by increased of glucose recycling by peripheral fabrics and displayed cytoprotective effect. Experiment data allow us to recommend ubidecarinone for further study, including clinical.

THE APPROACH TO AN ANALYSIS OF TRACE ELEMENT STRUCTURE OF PLANTS

© *Kruglov D. S.*

Novosibirsk State Medical University, Russia

Nowadays a lot researches are devoted to studying of herbs as sources of the essential trace elements. The number of elements defined by means of modern methods of masspectrometry, reaches 70. There are two methods, which are used more often in the analysis of the amount of microelements. The first method is comparing of the elements which are contained in objects in extreme quantities. The second method is the establishment of the pair correlations between the separate elements. Both of these methods do not appear informative enough. The means of a data clustering have been applied which allow to analyze the set of all experimental data simultaneously. One of the most widely-used classes of methods involves hierarchical agglomerative clustering, in which two groups, chosen to optimize some criterion, are merged at each stage of the algorithm. The Ward's method was taken as a rule for association or communication of two groups into one cluster. The sum of root-mean-square deviations for any two (hypothetical) clusters which can be generated on each step must be minimized by this method. The distance between different clusters must be not less than a limit of variability of amount of the trace element the value of which was taken as 10 %. The aim of this work is the making of method which can be used for analysis of a lot data about con-