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The mechanisms of *Curcuma Longa* action on Carbohydrate metabolism In Rats with Alloxan - Induced Diabetes Mellitus

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The aim of this work was to study the effects of plant rhizome *Curcuma longa* as food additive on different processes of carbohydrate metabolism: glucose concentration in whole blood, concentration of hormones - insulin and C-peptide in plasma, content of glycogen in the liver, structural and functional organization of the islet apparatus of the pancreas in rats with alloxan-induced diabetes mellitus. The concentration of glucose in blood and perfused solution was determined with picric acid method by intensity of colour reaction on spectrophotometer. Concentration of hormones (insulin, C-peptide) was defined by immunoenzyme method with standard sets on tablet spectrophotometer. The morphological structure of a pancreas was studied by a method of light microscopy. Content of glycogen in a liver was measured by means of SHICK-reaction on the Mac-Manus method with measurement of colouring intensity on spectrophotometer. The intake of the turmeric rhizomes in rats with diabetes, as compared with the same animals on a standard diet, resulted in the lower increasing of the glucose concentration in blood, the decrease of glucose absorption in the gut, higher concentration of the insulin and C-peptide in plasma and significant increase of glycogen level in the liver. The microstructure of pancreatic tissue samples of experimental animals using turmeric was characterized by the better preservation of the islet apparatus in comparison with a group of animals on a standard diet. The results indicate the positive effect of the *Curcuma longa* rhizomes on the homeostatic mechanisms of the carbohydrate metabolism regulation in the alloxan-induced diabetic rats.

Biography

Aizman Roman, Head of the Dept. of Human Anatomy, Physiology and Safety of Life, Doctor of Biological Sciences, Professor, the honorary worker of science of the Russian Federation. Scientific director of 8 doctor's and 40 candidate's dissertations, the author and co-author of about 500 scientific and methodical works, the head of Ph.D. programs on physiology & safety of life. He has been serving as an editorial board member of 3 reputed journals and 3 dissertation councils. He has diplomas of the Ministry of Education of the Russian Federation, the Ministry on Extreme situations, the Medals «Property of Siberia».

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