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ABSTRACT BOOK

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ACCUMULATION OF CADMIUM IN SOME TISSUES OF RATS AFTER CHRONIC TREATMENT WITH CdCl2

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Cadmium is the important environmental pollutant and major routes of Cd intake are oral exposure and inhalation. From the total amount of food Cd intake, only about 6% is absorbed in the gastrointestinal tract of animals. The aim of our experiment was to determine the rate of Cd accumulation in liver, kidneys, skeletal muscle (musculus gastrocnemius) and testes of two months old Wistar albino male rats. Animals were divided into 2 experimental groups consisting 7 animals and treated in 30 days courses. The first group of animals functioned as controls (C) and the second group was treated with 200 mg $CdCl_2$ x $5H_2O$ in drinking water during 30 days (Cd). The average intake of 17 mg Cd/mg b.m. was calculated from the water consumed. Cadmium concentration was determined by atomic absorption spectrophotometry in the mixture of nitric and perchloric acid at the wavelength of 228.8 nm, slit 0.1 nm and lamp current 4 mA in the mixture of air and acetylene. The obtained results show a significant accumulation of Cd in all examined tissues of rats ($p<0.005$) in respect to controls. These results are in accordance with the findings of other authors and show that Cd mainly accumulated in the tissues of high metabolic rate, such as liver and kidneys. In these organs Cd accumulates mainly in the hepatocytes and cells of the proximal and distal renal tubules. In the cells Cd mainly deposits in the cytoplasm, nuclei and nucleoli where disturbs the cell metabolism, protein synthesis and sulfhydryl homeostasis.