E115

Effects of 6-Aminonicotinamide on Levels of Enzymes and Soluble Proteins in Various Tissues of Quail

Jae Young Kim, Sook Shin* and In Kook Park
*Department of Biology, Korean Sahmyook University
Department of Applied Biology, Dongguk University

The effect of 6-aminonicotinamide(6-AN) on levels of enzymes and soluble proteins in various tissues of quail has been studied. The concentration of soluble proteins in muscle was significantly reduced. The SDS-PAGE analysis showed that some soluble proteins were missing or present in lower concentrations: in brain, 160.4 kDa and 52.5 kDa; in liver, 200 kDa, 120 kDa and 70.5 kDa; in pectoral muscle, 92.3 kDa, 43.5 kDa and 27.5 kDa. Furthermore, the synthesis of some new proteins were also observed in liver, muscle and heart. Malic enzyme activity in kidney and muscle was increased and 6-phosphogluconate dehydrogenase activity was reduced. In muscle NAD-glycohydrolase and acetylcholinesterase activities were reduced. Glyceraldehyde-3-phosphate dehydrogenase activity was increased in heart and muscle. The concentration of total RNAs in muscle was markedly reduced.

E116

Effect of $K_2Cr_2O_7$ on lipid peroxidation and inhibitory effect of antioxidants

Seok Ho Cha*, Chang Bo Ko, Sang Gi Paik
Department of Biology, Chungnam National University

The effect of $K_2Cr_2O_7$ on the generation of thiobarbituric acid reactive substance (TBARS) was examined in rat liver and renal microsomal fraction. The amount of TBARS increased according to the concentration of $K_2Cr_2O_7$, and increased even more when the reaction was performed in a oxygen atmosphere. Potassium dichromate-induced TBARS production was two folds vs. control under the following condition (temperature; 37℃, atmosphere;air, incubation time; 60 min, protein content; 1 mg/ml). The generation of TBARS in the reaction mixture was suppressed in the presence of NADPH or under the nitrogen atmosphere. Isoflavone derivatives (OH-1049 P, Q and R) isolated from culture broth of *Streptomyces* and tocopherol suppressed the generation of TBARS in the microsomal fraction. In *in vivo* experiment, $K_2Cr_2O_7$ (20 mg/kg, i.p.) significantly increased TBARS in liver homogenate after 12, 24 hr. Tocopherol, ascorbic acid and isoflavone derivatives suppressed the generation of TBARS induced by $K_2Cr_2O_7$ in the liver. These findings suggested that one mechanism of Cr toxicity to liver or kidney *in vivo* or in *vitro* was peroxidation of membraneous lipid and this model system in *in vitro* and in *in vivo* will be a useful tool to elucidate the activities of newly discovered substances.