## Haptoglobin and Lipid Peroxidation Induced by Electromagnetic Radiation

M.T.Abbasova, A.M.Gadzhiev

A.I.Karayev Institute of Physiology of Azerbaijan National Academy of Sciences Baku, Azerbaijan Republic biokimya\_65@mail.ru

**Abstract** - The participation of free radical oxidation processes is suggested to occur in the mechanism of biological effects of electromagnetic radiation (EMR) that finds more evidence in experimental facts. For inhibition of free radical reactions, including process of lipid peroxidation, there is an antioxidant system in tissues and organs. Haptoglobin as an antioxidant involved in the regulation of hormonal processes and lipid peroxidation. The aim of present work was to study the effect of whole body irradiation with decimeter electromagnetic radiation (460 MHz) on blood haptoglobin level. Results show that prolonged exposure of animals up to 3 weeks at power density of 30 mkW/cm<sup>2</sup> leads to increased serum haptoglobin level (34.72±1.87 mg%), whereas control animals' level of haptoglobin was at 24,05  $\pm$  0.73 mg % (p<0,05). In our experiments, we also have shown that EMR 460 MHz for a prolonged irradiation under the same conditions leads to increased concentrations of lipid peroxidation products in blood of rats. Increasing of haptoglobin concentration in blood is probably a compensatory effect to prevent oxidative damage of the cellular elements.

*Keywords* - *electromagnetic radiation, haptoglobin, lipid peroxidation, plasma, erythrocytes*