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A34.

### EFFECTS OF ACUTE HYPOXIA AND HYPEROXIA ON ANTIOXIDANT DEFENSE SYSTEM IN GILLS OF CARPS (*Cyprinus carpio* L.)

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In our experiments common carps (*Cyprinus carpio* L.) were acclimated to an oxygen concentration of 7.31mg/L water (100%) - control (C) group. Two experimental groups (H1, H2) were exposed to acute hypoxia. One of them was exposed to a progressive reduction of O<sub>2</sub> to 4.10mg/L (55%) for 1¼ hours and another 1.95mg/L (25%) for 2 hours, respectively. The fourth experimental group (HP) was exposed to a progressive increase of oxygen concentration O<sub>2</sub> to 10mg/L (150%) for 15 minutes, respectively. In our experiment was determined antioxidant defense system enzymes activity (superoxide-dismutase (SOD), catalase (CAT) glutathione-peroxidase (GSH-Px), and glutathione-reductase (GR) and glutathione-S-transferase (GST) activity (Misra, H.P. and Fridovich, I. (1972), Beutler (1982), Tamure et al. (1982), Habig et al. (1974), Glatzle et al. (1974).

Our results show that stress caused by acute hypoxia and hyperoxia significantly changes the activities of antioxidant defense system enzymes, superoxide-dismutase (SOD), glutathione-peroxidase (GSH-Px), and glutathione-reductase (GR) in carps gills. Acute prolonged hypoxia (H2) caused a certain degree of adaptation in respect to catalase (CAT) and glutathione-S-transferase (GST) activity.

A35.

### FUNCTIONAL EXAMINATION OF M1 MUSCARINIC RECEPTORS IN ISOLATED RAT UTERUS

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Muscarinic receptors subtypes of uterine smooth muscle was examined in many previously researches. In some references we found that there is M2 muscarinic receptors (Pennefather, 1994), in some other M4, or simultaneously both M2 and M3 receptors (Eglen, 1989; 1991), other authors believe that there are new population of muscarinic receptors indefinitely till now (Boxall et al. 1998).

**Aim:** According to presence of significantly functional differences in reacting of myometrium in various species, our investigation in this text will be refer to research to M1 subtype of muscarinic receptors in rat myometrium.

**Materials and methods:** Experiment was accomplished on isolated rat uterus. Experimental investigation is comprised 18 female rats Wistar race, average weight of 150-180 gramme divided in 3 groups. Female rats were pretreated with 1mg/kg oestradiol intramuscularly, 24 hours before experiment. In an organ bath with De Jalon's solution for isolated organ we added: 1. in control experimental series (6rats) acetylcholine (acetylcholine hydrochloride) in increasing log concentrations 1.3x10<sup>-9</sup>M - 4x10<sup>-6</sup>M; 2. in second experimental series (6rats) 5 min. before acetylcholine we added pirenzepine, an M1 muscarinic receptor antagonist (pirenzepine dihydrochloride mononitrate) in concentration of 9x10<sup>-8</sup>M; 3. in third experimental series (6rats) 5 min. before acetylcholine we added pirenzepine in concentration of 2.7x10<sup>-7</sup>M;

**Results:** In control experimental series, acetylcholine in increasing log concentrations provokes concentration dependent uterus contraction (r= 0.87; P<0.05). ED50 value for acetylcholine is 4.9x10<sup>-8</sup>M. In second experimental series acetylcholine in presence of pirenzepine in concentration of 9x10<sup>-8</sup>M provokes concentration depending uterus contraction (r=0.86; P, 0.05). ED50 value in this case is 2.3 x10<sup>-8</sup>M. In third experimental series acetylcholine in presence of pirenzepine in concentration of 2.7x10<sup>-7</sup>M is stronger and more over concentration depending provokes uterus contraction (r=0.91; P<0.01). ED50 value in this case is 9.3x10<sup>-9</sup>M.

**Conclusion:** Our results of experiment showed that the effect of acetylcholine in presence of pirenzepine was potentiated. It means that the effect of acetylcholine in presence of pirenzepine in concentration of 9x10<sup>-8</sup>M is twice, and in presence of 2.7x10<sup>-7</sup>M pirenzepine concentration is quintuple strongly than this in control series. The data suggest that population of M1 subtypes of muscarinic receptors exist in the rat uterus, and they are involved in regulation of miometrial contractility.

A36.

### IMMUNE BLOOD KILLER CELLS. THEIR ORIGIN AND SIGNIFICANCE

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Killer cells (K cells) play a very important role in immune defense, especially in mechanisms of non-specific antitumor immunity, which emphasize their therapeutic implications. They represent probably the most enigmatic feature of the non-specific antitumor immunity. The exact origin of this cell population is still under extensive investigation.