ANTIOXIDATIVE PROPERTIES OF EXTRACTS OF AERIAL PART OF BUPLEURUM AUREUM, HILL-GROWING SALTWORT HERB, FUMARIA SCHLEICHERI AND CYNARA SCOLYMUS IN VITRO

Khouari Samer, Naboka O.I., Glushchenko A.V.
National University of Pharmacy, Kharkov, Ukraine

In this work an oxidative state of blood serum and cytosol of rats liver has been studied in vitro through tetrachlormetane injection, and also influence of addition of herbal extracts of erial part of Bupleurum Aureum, Hill-Growing Saltwort Herb, Fumaria Schleicheri and Cynara scolymus on its rates. The data which have been obtained reveal that on condition of an oxidative stress development the herbal extracts injection in advance improves substantially oxidative state of examined objects. It was recorded, that all explored herbal extracts in vitro show antioxidative properties.

Materials and Methods. Antioxidizing properties of extracts in vitro have been studied on samples of spontaneous and ascorbate-induced Lipid peroxidation in rat liver homogenate. Numbers of extracts added to the incubative environment, have been calculated on basis of dose, that were more effective in prior researches (0,1 mg/g of liver). As comparative preparation α-tocopherol were used in dosage of 50 мg/kg, because it is a vigorous lipophilic antioxidant.

Results. According to research results in incubation of liver's homogenate in buffered solution at temperature 37^{o}C sizable accumulation of thiobarbituric acid-reactants was shown, that indicates intensive progress of the lipid peroxidation processes. Storage of thiobarbituric acid-reactants was more evidential after ascorbate addition in incubative environment as high-powered inductor of nonenzymatic lipid peroxidation. Thus, velocity of thiobarbituric acid-reactants storage in spontaneous LP during first 20 minutes of incubation equals 0,45 nM/l per 1 minute, in ascorbate-inductive LP – 0,55 nM/l per a minute. The obtained data indicate capacity of experimental herbal extracts to block lipid peroxidation processes already for the first minutes after beginning of incubation. Evidently, it's connects with presence of polyphenoles which are part of composition of experimental herbal extracts. It is known that polyphenoles exactly are capable to couple active oxid metabolites, that are lipid peroxidation inductors at an early stages. Capacity of experimental extracts to inhibited ascorbate-inductive lipid peroxidation may be connected with coupling of Ferrum ions by poliphenoles, needed for induction of lipid peroxidation by ascorbate. On addition of extracts of Bupleurum Aureum and hill-growing Saltwort herb to incubative environment we have registered less expressed TBB-reactants comparing to trials, to which extracts of Fumaria Schleicheri and Cynara Scolymus have been added.

Conclusions. Herbal extracts of Bupleurum Aureum, hill-growing Saltwort herb, Fumaria Schleicheri and Cynara Scolymus may effectively block both, spontaneous and ascorbate-inductive activation of processes of lipid peroxidation in vitro, that is proved by their antioxidizing activity. There was founded that extracts of Bupleurum Aureum and hill-growing Saltwort herb have the most expressed activity.