

## THE STUDY OF THE ANTIOXIDANT ACTIVITY OF ARBUTIN

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**Introduction.** Arbutin is a phenolic like glycoside belonging to the group of aryl-beta-glycosides a hydroquinone derivatives. Plants and preparations containing arbutin are used in medicine for diseases of the bladder as an antiseptic. Arbutin is found in bearberry leaves, pears fruits and in blueberries leaves. In cosmetology, arbutin is used to lighten the skin, since it has the ability to block tyrosinase involved in the synthesis of melanin. In addition to the bleaching effect, arbutin can also protect the skin from harmful ultraviolet radiation, increases the level of local immunity, has an anti-inflammatory effect and reduces the intensity of painful sensations. However, the properties of this compound are not well understood.

**Aim.** The purpose of this study was to investigate the antioxidant activity arbutin.

**Materials and methods.** The studies were conducted on female rats weighing  $190 \pm 15$  g, kept under standard conditions in the vivarium NUPh. The animals were decapitated under chloralose-urethane anesthesia. The liver was perfused with cold physiological solution and homogenized in Tris-HCl buffer solution, pH 7.4. Arbutin was added to homogenate in doses 50  $\mu$ mol and 100  $\mu$ mol and incubated at 37°C during 30 min. Quercetin in dose 50  $\mu$ mol was used as comparison drug. Lipid peroxidation intensity was evaluated by TBARS and conjugated dienes (CD) levels. GSH level was determined with Ellman's reagent. The data obtained were processed statistically.

**Results and discussion.** Liver homogenate inhibition in the presence of arbutin was accompanied by a decrease in the content of peroxidation products TBARS and CD

**Conclusions.** Thus, the results obtained indicate that Arbutin exhibits antioxidant properties. The maximum effect was observed at a dose of 100  $\mu$ mol. The antioxidant effect of arbutin was dose-dependent.

## EFFECTS OF FLAVONOID INFLUENCE ON HUMAN ORGANISM

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**Introduction.** Flavonoids (Fl) are known to be plant pigments that stipulate leaf colouration, especially in autumn, and are responsible for shades of yellow, orange, red. There are many of them in plant seeds, citrus, olive oil, tea and red wine. More than 4000 specific Fl have already been identified. They are low-molecular weight compounds – phenylbenzopyrones (phenylchromones), which consist of 3 rings with different substitutes. Fl are classified on basis of such substitutes into: flavanols, anthocyanidins and flavones, flavanones, halkons. It was shown that humans consume more quercetin, and most important sources of Fl are tea (48% of total), onion, apple.

**Aim.** The aim of our report is further investigation of directions of influence of different Fl on the human organism for possible pharmaco-correction of abnormalities in metabolic processes. An issue of Fl interaction mechanisms with cells and tissues of the organism is of great importance too.

**Results and discussion.** It has been shown that Fl concentration in biological fluids of the organism is tightly bound with a diet that humans stick to. So, the Mediterranean diet is very rich in vegetables, olive oil, citrus, which supplies pharmacologically significant quantities of Fl to the organism. Evolutionally long influence of Fl on humans and animals has led to the development of a row of their biochemical and pharmacological activities. It is known that in plant physiology and biochemistry Fl act as antioxidants, inhibitors of certain enzymes, precursors of some toxins, photochemical process and energy transformation participants and so on. In many works with human and animal samples it has been ascertained that Fl reveal anti-inflammatory, antioxidant, anti-allergic, hepatoprotective, antithrombotic,