

## INVESTIGATION OF MEMBRANE-STABILIZING ACTION OF EXTRACTS FROM *PRUNUS DOMESTICA* FRUITS

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**Introduction.** *Prunus domestica* is a horticultural crop widely distributed in Ukraine. The determination of the qualitative and quantitative composition of the *P. domestica* showed the presence of unique chemical compounds with probably laxative and hepatoprotective effects. According to literature data, fruits of *P. domestica* are quite popular in folk medicine for the treatment of gastrointestinal tract and liver diseases. Therefore, the investigation and confirmation of the hepatoprotective properties of extracts from *Prunus domestica* fruits are very actually.

**The aim of the research.** Therefore, the aim of this study was to investigate membrane-stabilizing activity of two out of four extracts from *Prunus domestica* fruits having an evident hepatoprotective effect proved in the previous experiments.

**Materials and methods.** Membrane-stabilizing activity of extracts from *Prunus domestica* fruits was studied *in vitro* using the F.C. Jager method based on the determination of ectoglobular hemoglobin entering the blood due to spontaneous lysis of red blood cells membrane caused by lipid peroxidation.

**Results.** Administration of investigated extracts to animals lead to decreasing in the degree of spontaneous RBCs hemolysis by 56.1% and 26.8% compared with the control group. The extract with fibers was more active in stabilizing of RBCs membranes exceeded the activity of the extract with polysaccharides, and somewhat inferior to the activity of the reference drug (Silibor).

**Conclusions.** Between the two presented extracts from *Prunus domestica* fruits the most active extract was extract containing fibers. This extract at a dose of 200 mg/kg reduced significantly the degree of spontaneous hemolysis because of inhibition of RBCs membranes degradation induced by lipid peroxidation and slightly inferior to the membrane-stabilizing effect of the reference drug Silibor. The obtained results related to the presence of polyphenolic compounds in the chemical composition of the extract (hydroxycinnamic acids).

## INFLUENCE OF EXTRACT FROM *PRUNUS DOMESTICA* FRUITS ON THE FUNCTIONAL STATE OF THE INTESTINE IN RATS WITH ALCOHOL LIVER DAMAGE

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**Introduction.** Ever since ancient Greece, it was known about the liver, as one of the most important organs of the human body. The liver is the most massive organ in our body, the largest gland. Everything that we absorb through the respiratory system, the skin or the digestive tract, the liver, as a «chemical factory», processes into necessary substances. In addition, the toxins that have come along with the bloodstream, the liver neutralizes and removes from the body. This unique organ is involved in more than 500 biochemical reactions of the organism. The most common causes of liver damage are viruses and alcohol.

Therefore, the search for the most effective hepatoprotective agents is relevant. As a rule, herbal raw material is promising object for studying therapeutic properties. Based on the literature data, we are interested in horticultural crop *Prunus domestica*, family *Rosaceae*, which is sufficiently cultivated and attracts with its pharmacoeconomic component.

**The aim of the research.** In previous studies, laxative, hepatoprotective, and probiotic effects have been found in *Prunus Domestica* extract containing fibers. The above presented the opportunity to

research an activity of the *Prunus Domestica* extract in the comorbidities of several relevant pathologies and experimentally substantiate the perspectives of its use to treat constipation in patients with digestive system pathologies as a choice remedy.

**Materials and methods.** Dry extract from *Prunus Domestica* fruits containing fiber selected as the object of research. The experiment was carried out in incremental steps. At the first stage, experimental subacute alcoholic liver damage was induced in animals. In the second stage of the experiment, functional constipation was modeled in animals. During the period of subacute hepatitis and during the second phase of the experiment, the investigated extract at a dose of 200 mg/kg and the reference drug hepatoprotector Silibor at a dose of 25 mg/kg were administered. In the second phase of the study, the drug Senadexin was administered at a dose of 14 mg/kg. The experimental animals received all substances *per os*.

The method of Sagar et al. modified by Choi et al. was used to assess the intestinal motor activity.

The motor activity of the small intestine was determined by the appropriate calculation formula.

The functional state of the liver was assessed by biochemical parameters in the serum: the content of total protein, urea and ALT activity.

**Results.** Analysis of the experimental data showed that the investigated extract exhibits a moderate laxative effect.

In the animals of the intact group, the corresponding symptoms (a pronounced laxative effect) indicate the development of diarrhea, which is not an adequate solution to the treatment of constipation.

Administration of the extract from *Prunus Domestica* fruits throughout the entire period of the experiment leads to normalization of all indicators that characterize intestinal motility.

Analysis of the experimental data showed that the investigated phyto-object has a soft laxative effect mainly through the improvement of intestinal motility.

Study of the liver functional state at the introduction of the investigated extract from *Prunus Domestica* showed positive changes in the content of liver damage markers (decrease in urea concentration and decrease in ALT activity in the blood serum of animals) in comparison with the control group animals.

**Conclusions.** The obtained experimental data on the study of the correlation mechanisms of hepatoprotective and laxative activities of the extract from *Prunus Domestica* fruits, containing fibers, indicate the presence of a soft laxative effect, which realized by enhancing intestinal motility, as well as the presence of pronounced hepatoprotective action. These effects of the investigated extract were detected when it was used in the treatment of constipation in experimental subacute liver damage, while not yielding to the studied effects with the complex use of hepatoprotective and laxative reference drugs.

The key conclusion is the fact that laxative effect of the investigated extract, unlike the reference drug Senodexin, did not cause signs of diarrhea, which can be a distinctive, positive feature in further clinical studies.

This plant object can be promising and rational in use with single-stage complex therapy, as a hepatoprotective and laxative agent in the treatment of comorbidities in gastroenterology associated with liver diseases and intestinal congestion.

## SEARCH NEW SUBSTANCES OF HERBAL ORIGIN FOR THE TREATMENT OF PSORIASIS

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**Introduction.** Psoriasis is a chronic inflammatory disease, dermatosis, which is characterized by scaly papules on the skin. In the pathogenesis of which, a distinct role is played by heredity and various precipitating factors. Psoriasis is characterized by violation of reproduction and maturation of basic skin cells – keratinocytes, as well as diverse biochemical, immunological and vascular changes in the skin and a certain connection with the functional state of the nervous system. Recently, great importance is attached to a compromised immune system in the pathogenesis of psoriasis. The therapy for psoriasis should be integrated and it should combine the use of drugs for local (outer), and systemic therapy.