



## The study of the gastroprotective properties of biologically active complex, dihydroquercetin and betulin

Kuznetsova S.A.<sup>1</sup>, Veselova O.F.<sup>2</sup>, Kuznetsov B.N.<sup>1</sup>, Pulikov A.S.<sup>2</sup>

<sup>1</sup>*Institute of Chemistry and Chemical Technology SB RAS,*  
<sup>2</sup>*Krasnoyarsk Medical Academy, Krasnoyarsk, Russia*

Widespread gastritis and peptic ulcer in various age groups of the population make the problem of finding substances that have the ability to protect the gastric mucosa from the effects of aggressive factors. The solution of this problem can make adjustments to treatment and prevention of stomach diseases. Based on the importance of this problems, we conducted a comparative study of the effect of betulin, biologically active complex and DHQ on the gastric mucosa on the model indomethacin ulcer

Birch bark serves as a source of various extractive substances extracted by organic solvents and alkalis. Total drugs birches were included in the first Russian pharmacopoeias. However, at present time for therapeutic purposes only tar is obtained from birch and kidneys are used birch.

The main component of almost all birch bark extracts is betulin. Betulin is a natural pentacyclic triterpenoid of the series lupan and has the following chemical formula: C<sub>30</sub> H<sub>50</sub> O<sub>2</sub>. The

purpose of this work was to study the gastroprotective properties of betulin and biologically active complex (BAC) isolated from birch bark in compared with dihydroquercetin (DHQ) obtained from larch wood.

To study the gastroprotective properties of the biologically active complex on model of indomethacin ulcer in a chronic experiment, 4 groups were taken mice weighing 10-12g, 10 individuals each. The preparations were administered as a 1.5% starch suspension intragastrically, once in the morning for 7 consecutive days, dihydroquercetin at a dose of 300 mg/kg, and betulin and a biological complex at a dose of 600 mg/kg. The control group was injected with water at 0.2 ml/100 g of weight. Last introduction the drug was produced 1 hour before the reproduction of the ulcer. ulceration was induced by intragastric administration of indomethacin at a dose of 20 mg/kg. A day later, the animals were euthanized under ether anesthesia. counted the number of ulcerative lesions in all groups, the Pauls index was calculated by formula:  $PI = \frac{A}{B} \times 100$ , where A is the average number of ulcers per animal, B is the number of animals with ulcers in the group. Antiulcer activity (PA) was defined as the ratio of PI control group to SP experienced.

100, where A is the average number of ulcers per animal, B is the number of animals with ulcers in the group. Antiulcer activity (PA) was defined as the ratio of PI control group to SP experienced.



Table 1

*Gastroprotective properties of the biologically active complex, betulin and dihydroquercetin on the model of indomethacin gastric ulcer in chronic experiment*

Groups	Dose, mg/kg	Number of all defeats	Number of ulcers for 1 animal	IP	PA
The control		28	3.5	0.28	–
TANK	600	ten	..	0.04	7
Betulin 600		6	0.75*	0.03	9.3
DKW	300	12	1.5*	0.09	3.1

\*p<0.05 in relation to control

As the obtained data show, betulin, biologically active the complex and DHQ show a high gastroprotective effect. the greatest betulin has a protective effect on the gastric mucosa.