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**SCIENTIFIC PROGRESS:  
INNOVATIONS, ACHIEVEMENTS  
AND PROSPECTS**



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# PHARMACEUTICAL SCIENCES

## PROSTATE PROTECTIVE EFFECT OF THICK EXTRACT OF TRIBULUS TERRESTRIS ON THE MODEL OF CRYOTRAUMA OF THE PROSTATE GLAND IN RATS

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**Introductions.** The search for modern prostate protectors based on native medicinal plant raw materials remains an urgent task of modern pharmacognosy and pharmacology. At the Department of Chemistry of Natural Compounds of the National Academy of Sciences of Ukraine (Head Prof. V.S. Kyslychenko) in scientific cooperation with the Department of Pharmacology and Pharmacognosy of

the Odesa National Medical University, the “Thick extract of the threshed from the fruits of *Tribulus terrestris*” (TETT) was obtained and standardized, which, thanks to a unique combination of natural compounds (a complex of phenolic compounds, flavonoids, saponins), could have potential prostatoprotective activity and have a positive effect on the reproductive function of animals.

**Aim:** to establish the possibility of correcting violations of the structural and functional state of the prostate gland in rats with experimental prostatitis using TETT.

**Materials and methods.** Experiments were conducted on 96 purebred white rats weighing 220-240 g. Simulation of cryotraumatic prostatitis was carried out by local irrigation of the front surface of the prostate gland (PG) for 5 seconds with an applicator for removing warts with the Wartner pharmaceutical product (Pharmaspray, the Netherlands). Phytoremedies (TETT – 150 mg/kg, comparison drugs tribestan - 60 mg/kg and peponene – 106 mg/kg) were administered daily, orally three days before and 11 days after reproduction of cryotrauma. Animals of intact control and control pathology groups received an equivalent volume of distilled water. To assess the anti-inflammatory effect of phytoremedies, hematological indicators were studied, and the content of C-reactive protein was determined in the blood serum of rats. Activity of the processes of free radical oxidation and antioxidant protection were evaluated by the content of malondialdehyde, diene conjugates, the activity of superoxide dismutase, catalase, glutathione reductase, the content of reduced glutathione and tocopherol. The degree of oxidative modification of proteins was determined by the content of aldehyde phenylhydrazones and ketone phenylhydrazones. The level of nitric oxide in blood serum was determined by photometry. The content of fructose was determined in the seminal vesicles, and the activity of acid and alkaline phosphatase was determined spectrophotometrically in the prostate homogenate and blood serum. Testosterone content was determined by the immunoenzymatic method.

**Results and discussion.** It was established that all phytoremedies that were studied on the cryotrauma model of the prostate gland in rats have prostatoprotective and antioxidant effects. The most significant therapeutic effect was found in the thick

extract of *Tribulus terrestris*, which was comparable to its foreign counterpart tribestan.

**Conclusions.** In the conditions of experimental cryo-traumatic prostatitis in rats, the herbal remedy TETT has the most effective anti-inflammatory effect, corrects the imbalance of the oxidant and antioxidant system of the body, restores the mass coefficients of prostate glandule and seminal vesicles, and contributes to the preservation of indicators of the androgenic status of the body at a level close to the physiological level under pathological conditions.