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The Use of Ferula Tenuisectae (ферула тонкороссиченний) in medicine

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Abstract: *In this scientific article the drug "Ferulen", which has acute toxicity, cumulative effect and chronic toxicity, were studied. As medical experiments on getting injections to white mice and rats, it was found that the drug ferulen by the parameters of acute toxicity belongs to the category of practically non-toxic substances. In pathomorphological and histological studies a significant decrease in the mass of androgen-dependent organs and destructive changes were found.*

Keywords: ferula tenuisecta, phytoestrogens, incentivizing blood pressure, prostate glands, seminal vesicles.

1. Introduction

Ferula tenuisecta, Eug. Korov (Apiaceae), is the source of raw material for commercial production of the preparations ferulen, tefestrol, and panoferol. Tefestrol, known drug, is a natural mixture of esters of sesquiteipene alcohols, the principal components of which are ferutinin and tenuferidin, obtained from F. tenuisecta roots.

Tefestrol is used in treatments for ovarian hypofunction, amenorrhea (primary, secondary), oligomenorrhea, Shershevsky—Turner syndrome, and uterine blood flow dysfunction; for hemostasis and infertility due to anovulation; after excision of intrauterine adhesions in patients with uterine amenorrhea; for climatic syndrome during pre-menopause or menopause; and for gonadal dysgenesis and delayed sexual development. Roots of F. tenuisecta contain esters such as ferutin, teferin, and fertidin, which have comparable estrogen activity, in addition to ferutinin and tenuferidin. The preparation of Ferulen containing all these esters increases the yield of final product with pharmacological activity equivalent to that of tefestrol.

The types of Ferula plants come in Central Asia, where the maximum variety of species of This plant is found [1-3]. Under the systematic examination of chemical compounds of different types of violent plants Uzbekistan, colleagues of the Institute for Chemistry of Substances Academic Plants Ruz, for the first time via the globe, it has identified that several ferulation systems consist of no only the terpenoid Cumarinas and the lactonas sesquiterpenoide, but they also consist of a new set of Natural compounds: aliphatic and aromatic acids of alcohol esters terpenoids [4,5]. Have the texture and stereochemical properties of more than 150 new varieties of terpenoids was established. In the Department of Pharmacology and Toxicology of the Institute for Chemicals The estrogen activity of several types of violent has been identified for the first time. As a result of these studies, new phytoestrogens were developed and Introduced into practical medicine: TEFRIL is used in gynecological practices that use medication Panoferol is used in poultry and veterinary practices to increase egg production of Chickens and prevent sterility in sheep and won [6,7]. The fierce drug is a natural mixture of esters of Sesquiterpen alcohols, the components thereof are ferutinin (main), tenueferodin, ferritin and fertisine, which were obtained from the root parts of a thin section of Fierce (Ferulation Tonuisekta Korov of Citizen FamilyPE Citizen). The results of the pharmacological studies found previously showed that the Ferula A has pronounced estrogens and antiprostatic effects in the experiment [8.9]. In this sense, the purpose of this research was to study the degree of waters of fierce in a preclinical toxicological experiment. Research Methods Animals were held animals in accordance with the policies adopted by European Ascount Conventions on the protection of vertebrates used for experimental purposes and other scientific purposes (European convection to protect vertebrates, by experimentally their purposes. Scientists (ETS123) Strasburg, 1986).

2. Methods

Fern Standula Acibite parameters deleted from 18-20g using 18- 20G weight using a used method using a circular metal converter. Low lower average is determined by the Litchfield Wilcoxon Way. Studies about the joint impact of the Ferrule was held in the Caucasian mouse test. The drug was sprayed 21 days with a 2000 mg / kg capacity (1/3 LD 50) from 7 to 7 per week. Data statistics use Windows XP and 6.0 Microsoft Excel Excel Excel program listed various conversion, ARithMetic (M) and error (M). This T - Traveria page is used to confirm the trust of price differences. Both values are considered trusted P <0.05. The social shoe test is made of 80 white quantities of 150 to 170g in the first weight. This drug was carried out using 10 to 50 to 50 to 100 mg / kg of dose (7 times a week) (7 times a week) per three months every three months. Each capacity of the tree is tested for 20 mice. Mimicking moral animals receive the same increase in water. Test doses are 10 mg / kg 10 mg / kg treatment, and the highest demand for up to 100 mg / kg management. Middle 50 mg / kg energy. At the time of testing, you can see known situations, ethics, external encouragement, skin condition, haired hair, MWCASA daily. Weighed weekly. BC-2300 Hemaviligical Aystst (China) blood hematology studies have been analyzed for 10-30-60 days after the study was started. Sessions of serum biochemical systems have been performed in the Semecam biological analyst (France). Fatal minerals and blood testosterone are determined by plasma. We also enroll in electronic products in Russia and full of water and open areas in this field. After the period of poisoning ended, 10 animals of each group were shot into the room 2. Inner parts and stable brain

within 10% of neutral and hematoxylin shelves, partially history and colored Show by using God. Results of Adynamia, comfortable after the day after the drug (3000 mg / kg capacity). Additional capabilities of substances derived from the rise of other test animals within 1-2 days after increasing the symptoms described above and in 1-2 days after rolling. The main mouse dose is 7000 mg / kg about 8000 mg / kg of mice. The results being maintained (Table 1) show that the ship is not a different Cincker step of the mouth vaccine. Depending on the gender of mobile and animals, the difference between species of Purperta is not a significant number.

3. Results and Discussions

Table 1. Biochemical data for absorbing water to water test (after test termination of data)

Parameters	10mg/kg	50mg/kg	100mg/kg	Control
AIAt mmol/HL	1.34±0.14	1.4±0.12	1.5±0.19	1.46±0.08
ASAT mmol/HL	3.17±0.14	3.6±0.18	3.2±0.16	3.16±0.09
Glucose mmol/I	5.18±0.82	5.16±0.63	5.14±0.76	5.15±0.57
Total protein g/l	77.0±2.4	76.0±1.9	79.0±1.7	78.0±1.8
Urea mmol/l	5.3±0.63	4.7±0.61*	4.1±0.54*	5.9±0.61
Lipoproteins, g/l	0.52±0.03*	0.56±0.02*	0.55±0.02*	0.67±0.03
Cholesterol mg%	62.5±4.9	57.9±4.1*	54.4±4.6*	69.4±4.6
Lipids g/l	1.77±0.23	1.42±0.23*	1.11±0.2*	2.08±0.16

**P <0.05, compared to the controls*

The overall result shows that long-term use is incentivizing blood pressure, depending on the ability of the comparable simulator. The size of the 10 mg / kg of Peruvia, flammable hormone content falling 1.5 times and testosterone is 1.7 times. When the dose of up to 50 mg / kg is increased and 1.8 and testosterone 100 mg / kg LG triple 3.1 times (Table 3).

Surveys in the mouse's heart transfer system (research test) do not induce ocalype of Seam Trial during drug use. Fall 3. After a permanent drinking (90 days) a hard hormone and plasma testosterone).

Table 2. Coefficient of the mass of internal organs of rats receiving ferule in a chronic experiment.

Organs	10 mg/kg	50 mg/kg	100 mg/kg	Control
Brain	6.54±0.39	6.22±0.28	6.75±0.25	6.14±0.38
Heart	3.22±0.2	3.81±0.22	3.15±0.25	3.40±0.3
Lungs	5.52±0.34	5.42±0.28	5.9±0.22	5.66±0.26
Liver	30.9±1.9	33.2±2.2	31.6±1.7	30.4±2.4
The kidneys	6.8±0.32	7.1±0.29	7.42±0.3	7.7±0.23
Spleen	4.0±0.45	3.65±0.4	3.82±0.4	3.9±0.31
Adrenals	0.17±0.002	0.15±0.002	0.16±0.0018	0.14±0.0026
Ventral prostate	30±7*	24±3*	21±2*	127±9
Coagulating gland	19±2*	15±2*	11±1*	55±3
Seminal vesicles	54±4*	44±4*	32±8*	96±6
Testes	805±40	722±32	680±28	1292±52

** P <0.05 compared to controls.*

Close anatomical examination of the internal organs of the receiving experimental animals The ferrule showed dissociative changes mainly in androgen-dependent organs (prostate, Testes and seminal vesicles).

The prostate gland - lobular structure is observed in the controlled prostate gland rats. At the same time, distinct sections of connective tissue exit the organ Capsule, divide it into slices. The last sections of the mucous glands of the prostate are on The incisions have a variety of shapes and uneven fold lines and consist of a spike Prismatic epithelium. There are thick bundles of directed smooth muscle cells Longitudinally and circularly around the final sections (Picture1).

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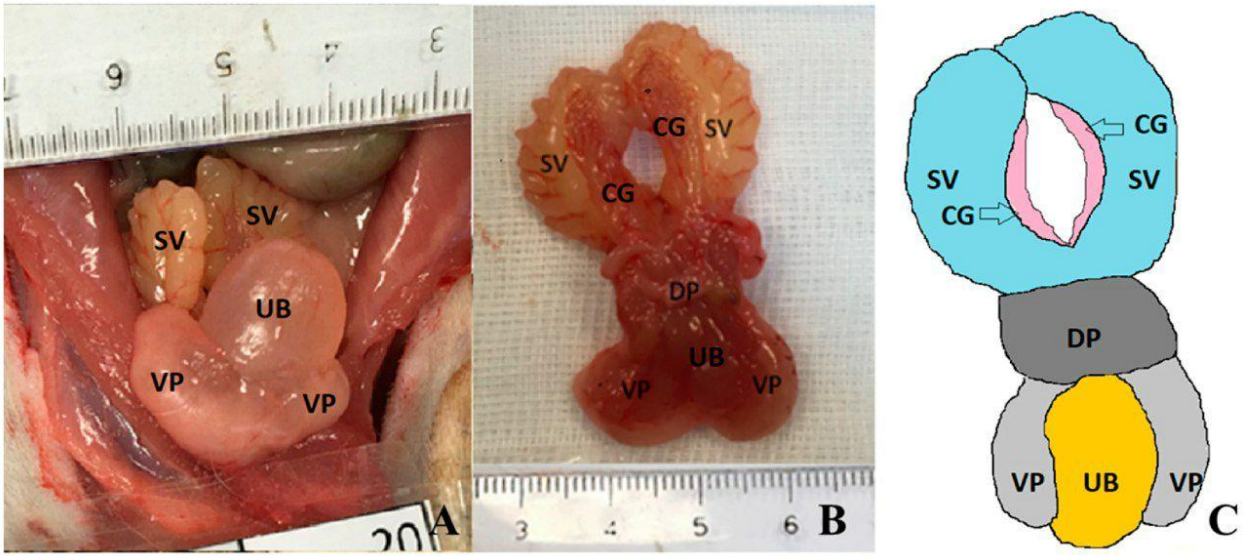
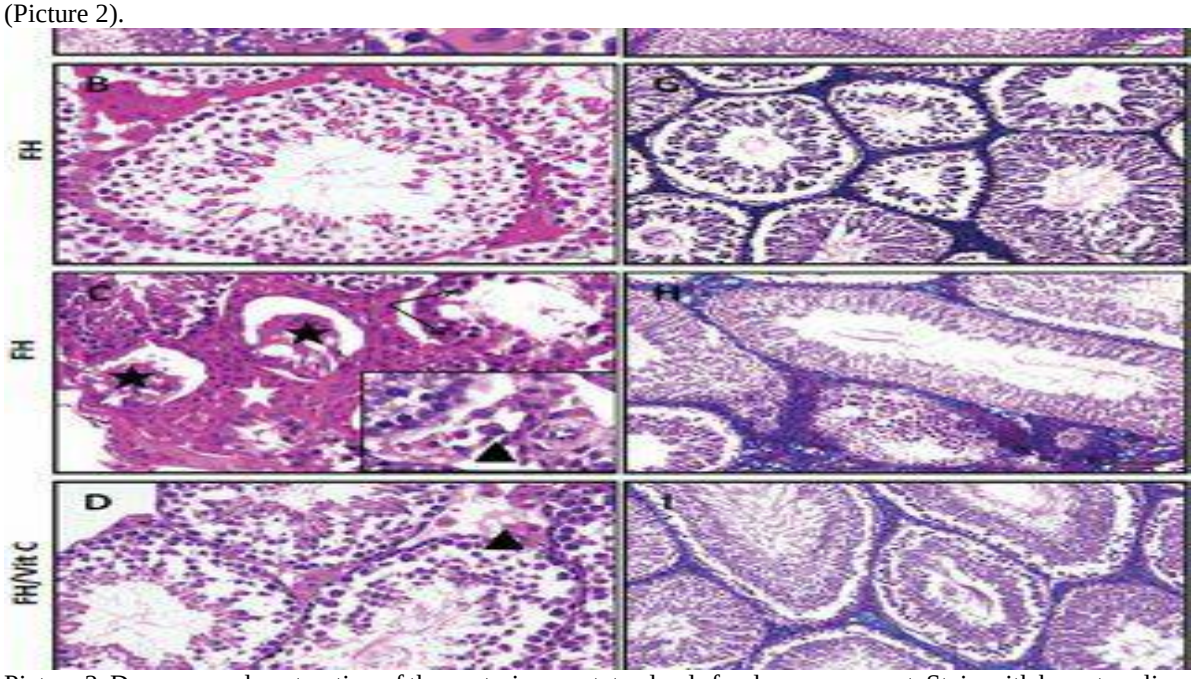


Picture 1. The prostate is controlled by the rats. Update the last door of the excrement. Accumulation and many places Hamatokillin and Millmark. OBJ. In the injection room, the prostate tissue injection can be reduced, and the soft silos can be reduced, and classes cannot discriminate rights. The last part introduces the non-generated, low or many things placed in the cube. They are destroying the change in mucous membranes. The end of the inner part of the prostate is mainly discharged (Picture 2).



Picture 2. Decrease and contraction of the posterior prostate glands ferule management. Stain with hematoxylin and eosin. Target. 8, eyes 10.

Testes are studies of a control group of rats showed they were surrounded by a protein shell composed of tissues that binds quite a few blood vessels. The parenchyma of an organ is indicated by a set of rounded, oval, or trunk sections The vas deferens elongate, with interstitial connective tissue between them. In Usually the second type, groups of some cells of Leydig cells or endocrine cells are ordered. The outer part of each testicle is surrounded by connective tissue membranes that are essentially contiguous. The inner part of the tubes is the spermatogenesis epithelium called the spermatogenesis epithelium which is composed of spermatocytes at different stages of The differentiation depends on the spermatogenesis cycle and assisted spermatogenesis. cells between them. In the lumen of the tubules, there are flocks of mature spermatozoa. were found, the number of which was not the same in the tubules located on different levels of the spermatogenic cycle (Picture. 3).

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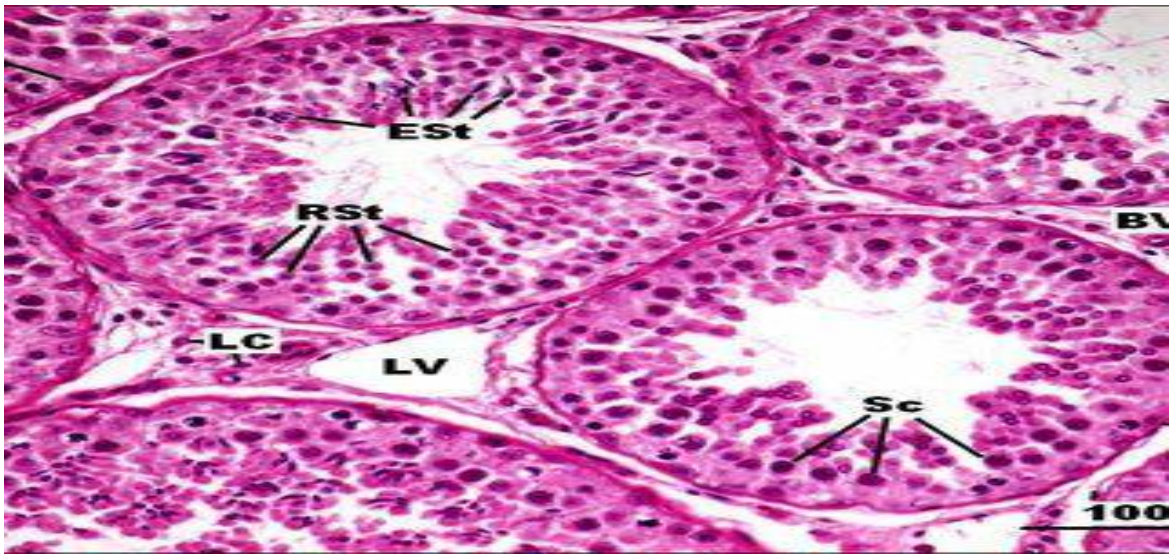
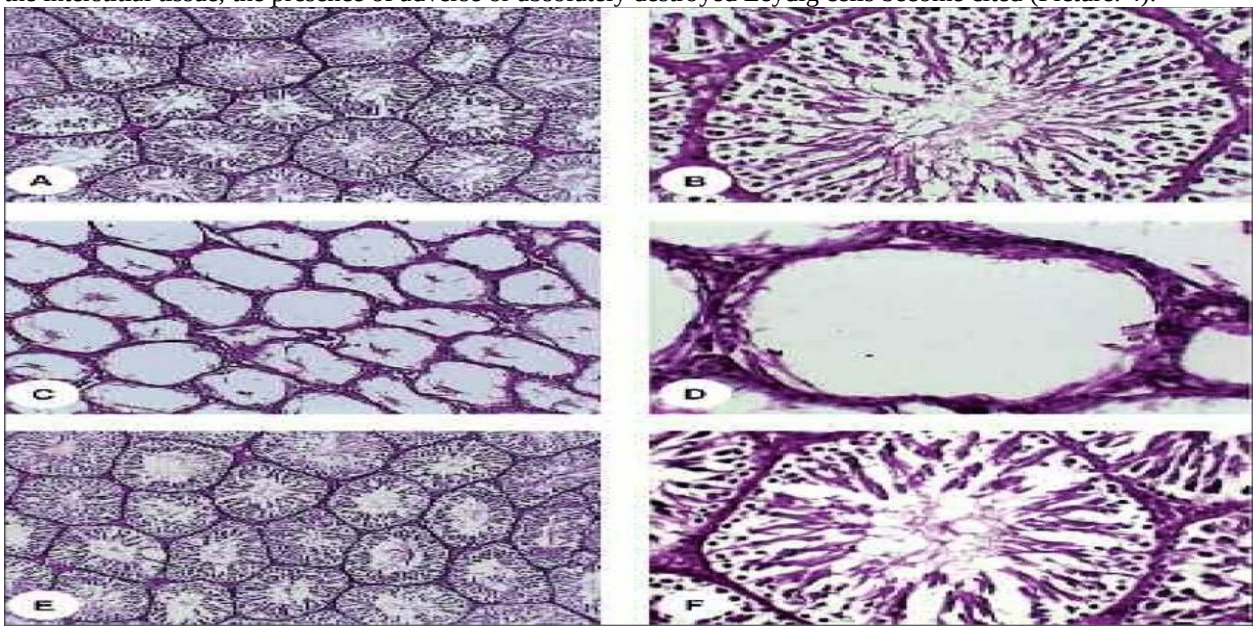


Pic. 3. Testing of controlling rats. Spermatogenic epithelium consisting of spermatogenesis cells at diverse degrees of differentiation. There are clusters of Mature spermatozoa with inside the lumen of the tubules. Stained with hematoxylin and eosin. Obj. 20, ocular 10.

Experimental animals confirmed morphological shifts whilst ferule changed into injected in comparison to the manipulate animals. At the identical time, on the heritage of enormously intact seminal tubules, tubules with destruction and extrusion of spermatogenic cells have been identified. There become mentioned edema, loosening, and fullness of interstitial tissue. The shape of cells of the spermatogenic layer in person tubules became abnormal – there became a dislocation of spermatocytes and spermatids due to intercellular edema. At the history of edema, a lower with inside the range of spermatogenic cells called interest in a few tubules, specially spermatocytes and spermatids. The range of spermatozoa with inside the lumen of the tubules notably decreased. Meanwhile, in tubules lines, they have been absolutely absent. Along with edema with inside the interstitial tissue, the presence of adverse or absolutely destroyed Leydig cells become cited (Picture. 4).



Picture 4. Results after getting injection of ferule. Edema and loosening of interstitial tissue. Decrease in the number of spermatogenic cells in the cell-wall and spermatozoa in the lumen of the tubules. Stained with hematoxylin and eosin. Obj. 20, ocular 10.

Seminal vesicles - in the seminal vesicles of control rats, the mucous membrane is collected in numerous branched folds. The single-layer epithelium has a cylindrical shape. Other advantages of the pavilion were found in the cracks of the tissue. Membrane consisting of machine is displayed. Internal layers are displayed. The shell creates a pair of buildings.

4. Conclusions

The Drug ferule according to the parameters of acute toxicity in the per os method of use belongs to the category of practically non-toxic substances of the V-class. When re-used, it does not cumulate in the body of experimental animals. 3. Long-term injection of ferulen was well experienced by experimental animals. Biochemical parameters indicated that under the influence of ferulen, depending on the doze of injection, the content of urea, B-lipoproteins, cholestrol, and lipids are decreased.

The weight and the destructive changes of androgen-dependent organs significantly reduced. Moreover, ferule was successfully tested on a clinical trial on 150 patients diagnosed with various stages of prostate cancer. Currently, the drug under the brand name “простаник” ("prostanic») is at the stage of registration.

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