

**THE EFFECT OF THE TOTAL SUM OF TERPENOID ALCOHOL ESTERS
FROM *Ferula tenuisecta* IN COMBINATION WITH DYDROGESTERONE ON
THE EXPERIMENTAL ENDOMETRIOSIS IN RATS**

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The prevention and treatment of endometriosis in women is one of the pressing issues in modern gynaecology. The synthetic oral hormonal preparations currently used for this purpose are associated with a number of side effects and complications (neoplasms of the genital and mammary glands, increased blood pressure, and adverse effects on the haemostatic system). Consequently, the development of highly active, low-toxicity, and minimally side-effect-prone domestic combination preparations for the treatment of endometriosis is one of the pressing tasks in practical healthcare.

The aim of this study is to develop a new drug for the prevention and treatment of endometriosis in women based on the phytoestrogen combination with one of the most widely used progestogens – dydrogesterone.

The study was conducted on sexually mature female rats weighing 200–220 g. Endometriosis was experimentally modelled according to the method of M.W. Vernon and E.A. Wilson, with modifications. Females with a regular 4–5-day oestrous cycle were selected for the surgical modelling of endometriosis. All operations were performed during the oestrus phase, standardising the conditions for the transplantation of uterine fragments at the same stage of the oestrous cycle. Following the induction of acute endometriosis, which developed 30 days after the operation, the rats were divided into three groups of six animals each. Group 1 (the control group with endometriosis) received distilled water orally once daily for 21 days; Group 2 – endometriosis + medication (Investigate sum 5 + dydrogesterone 10 mg/kg); Group 3: endometriosis + a drug comparable to that used in clinical practice – Lindinet 20 mg/kg administered orally once daily for 21 days. Following the final administration of the test drug, the rats were euthanised by instantaneous decapitation under light ether anaesthesia. Following necropsy, a visual assessment was carried out to evaluate the formation of endometrioid heterotopias at the implantation sites. The implanted tissues were measured in two planes, excised from the surrounding tissues and fixed in neutral 10% formalin for subsequent histological examination.

The experiments revealed that, under the influence of the drug and Lindinet 20, the volume of endometriotic implants decreased significantly by a factor of 1.8 and 1.4, respectively, compared with the control group. The volume of endometriotic implants in the control group increased 1.2-fold after 30 days compared with the initial value.

Histological examination showed that administration of the test drug virtually eliminated inflammatory processes, limited the spread of inflammation beyond the mucous membrane, prevented the development of destructive-necrotic processes and contributed to a reduction in the number of endometrioid glands. Under the influence of the reference drug, the inflammatory process persists, but a reduction in the number of endometrioid glands is observed.

Thus, the results of the study demonstrated that the test drug exhibits high anti-inflammatory efficacy in experimental endometriosis in rats. In terms of these parameters, it outperforms the reference drug, Lindinet.