

# EFFECT OF PREPARATIONS OF *Clematis Fusca* ON TARGET ORGANS FOR ANDROGENS

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During the action of preparations of *Clematis fusca* Turcz. on the prostate gland and seminal vesicles of castrated rats increased functional activity of these organs was observed, similar to that found under the influence of methyltestosterone. Substances with androgenic action are evidently present in this plant.

KEY WORDS: androgens; *Clematis fusca* Turcz.

Preparations from *Clematis fusca* Turcz. are known to protect against involution of the reproductive system of male rats produced by the action of estrogens [1].

The presence of androgenic properties in these preparations was verified in this investigation.

## EXPERIMENTAL METHOD

Experiments were carried out on 130 male albino rats. The castrated animals received a powder of the clematis leaves in a dose of 1 g/kg body weight daily for 1 month with their food. Functional activity of the target organs for androgens (the prostate gland and seminal vesicles) [2] was assessed from the results of morphometric, cytophotometric, biochemical, and cytochemical investigations [3].

## EXPERIMENTAL RESULTS

In castrated rats receiving the *C. fusca* preparation the weight of the prostate gland and seminal vesicles, the volume of the secretory portions, and the dimensions of the cells and nuclei of the secretory epithelium were greater than in animals not receiving the preparation (Table 1). Microscopic investigation showed the development of focal hyperplasia, swelling of the epithelial cells, and increased secretion from them. The RNA concentration in the cytoplasm of the secretory epithelial cells and the succinate dehydrogenase activity in the tissue were increased. The action of *C. fusca* was very similar to that of methyltestosterone. This suggests that this plant contains substances with androgenic action.

TABLE 1. State of Target Organs for Androgens in Rats of Different Groups ( $M \pm m$ )

Rats	Weight of prostate gland (in mg/100 g of body weight)	Volume of secretory portion	Volume of cells	Volume of nuclei	Succinate dehydrogenase activity (in $\mu$ moles/min)	RNA concentration
		$\mu^3$				
Intact	284,1 $\pm$ 12,9	1 789 452,5 $\pm$ 64 910,0	321,4 $\pm$ 30,6	65,4 $\pm$ 2,8	0,0214 $\pm$ 0,0007	35,3 $\pm$ 0,6
Castrated	33,5 $\pm$ 1,2	32 422,2 $\pm$ 264,3	55,8 $\pm$ 3,3	8,3 $\pm$ 0,42	0,0083 $\pm$ 0,0001	14,2 $\pm$ 0,4
Castrated + <i>C. fusca</i>	67,9 $\pm$ 3,8	1 198 213,1 $\pm$ 94 500,5	310,1 $\pm$ 11,0	66,8 $\pm$ 2,5	0,0177 $\pm$ 0,0007	29,8 $\pm$ 0,5
Castrated + methyltestosterone (0.5 mg/kg)	53,2 $\pm$ 3,3	222 330,8 $\pm$ 9 240,1	176,5 $\pm$ 7,5	31,4 $\pm$ 1,4		26,1 $\pm$ 0,5

Legend. All changes statistically significant ( $P < 0.001$ ) compared with castrated rats.

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