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**TITLE:** Proliferation histomorphometric and immunohistochemical markers on the ovariectomized rat vagina after estrogen and/or isoflavones treatments

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## ABSTRACT

**Objective:** To evaluate the morphology, morphometric (thickness of epithelium and collagen quantification) and immunohistochemical (VEGF-A) on the ovariectomized rat vagina after treatments with isoflavones and/or estrogen. **Design:** 35 ovariectomized adults rats, adults were divided into five groups: GI = control (propyleneglycol); GII (iso 46) received isoflavones (46 mg/Kg/day); GIII (iso 120) received isoflavones (120mg/Kg/day); GIV (ECE 50) received conjugated equine estrogens (50 mcg/Kg/day); GV (ECE 50 + iso 46) received conjugated equine estrogens (50 mcg/Kg/day) and isoflavones (46 mg/Kg/day). The length of treatment was 30 days. At the end of treatment, all animals were sacrificed under anesthesia and the vaginal tissue was removed and processed through histological routine than sections were stained by H.E and picrosirius red. Also, we performed VEGF-A immunohistochemical reaction on the histological sections. The thickness of vagina were calculated through the Axiovison Rel 4.6 (Carl Zeiss) program and collagen quantification by the Imagelab program. **Results:** The vaginal epithelial thickness, collagen quantification and VEGF-A expression of GIII, GIV and GV were higher than ones of GI and GII ($p > 0.001$). The epithelial thickness of GV was superior to GIV ($p>0.001$), but the collagen concentration and VEGF-A expression were similar between GIV and GV. **Conclusion**: Our data suggested that isoflavones may be not block the estrogen action on the vagina tissue. Also, isoflavone may be a proliferative effect on the ovariectomized rat vagina in high doses (120mg/Kg/day).

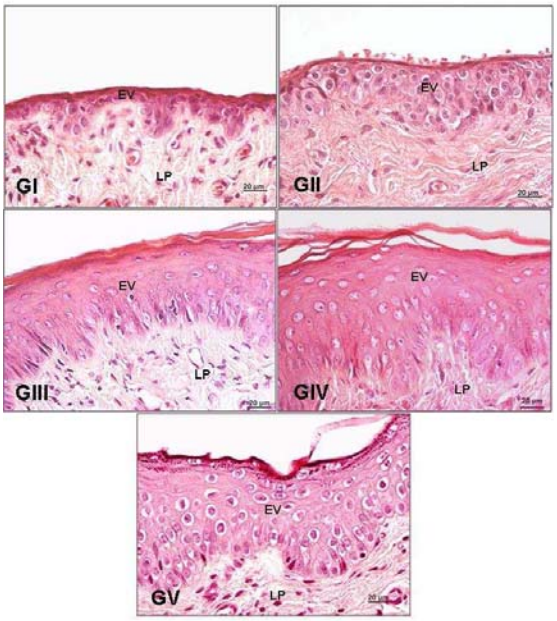


Fig. 1 - Histological sections of vaginal epithelium from rats treated with isoflavones, conjugated equine estrogens, or both (see legend to Fig. 1). Notice the vaginal epithelium (VE) and lamina propria (LP) zones. Hematoxylin-eosin staining. Scale bar = 20μm

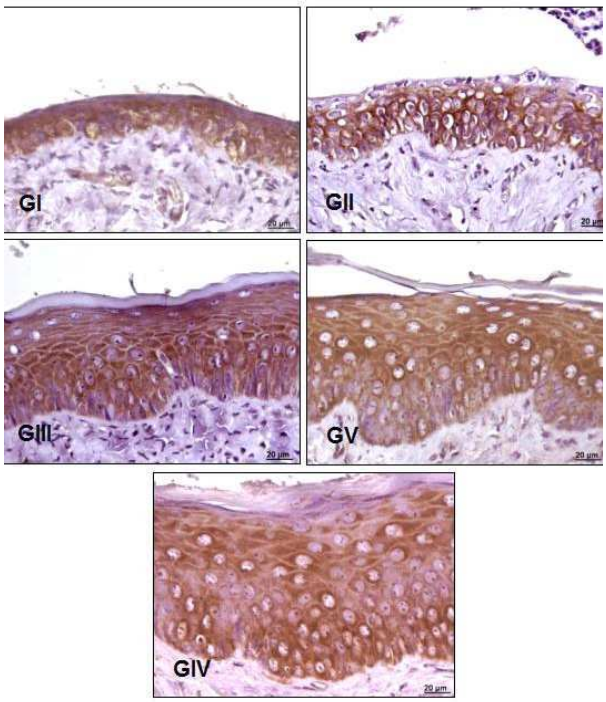


Fig. 2 - Vascular endothelial growth factor (VEGF-A) analysis of the vaginal epithelium of castrated rats.

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