

## Supplementary health benefits of linoleic acid by improvement of vaginal cornification of ovariectomized rats.

### ABSTRACT

**Purpose:** This study aimed to evaluate the possible estrogenic activity of some ingredients of *Nigella sativa* including Linoleic acid and Gama-Linolenic acid by vaginal cornification assay. **Methods:** Forty ovariectomized (OVX) rats, aged 16 weeks were allotted randomly to five groups: negative control (taking 1 ml olive oil/ day); positive control (taking 0.2 mg/kg/day Conjugated Equine Estrogen-CEE); experimental group (taking 50 mg/kg/day Linoleic acid or 10 mg/kg/day Gamma Linolenic acid or 15mg/kg/day Thymoquinone ). All of supplements administered via intragastric gavage for 21 consecutive days. To assess estrogen like activity, vaginal smear was examined daily and serum estradiol was measured at baseline, after 10 days and at the end of experiment. **Results:** The significant occurrence of vaginal cornification cell ( $p < 0.05$ ) after Linoleic acid supplementation indicated estrogenic activity of Linoleic acid which was in consistency with serum estradiol level, but this effect was not as much as CEE. Gama-Linolenic acid also exist a few cornified cell in smear which was not significantly differ from those control group. **Conclusion:** Linoleic acid showed the beneficial effects on OVX rats' reproductive performance, thereby indicating its beneficial role in the treatment of the postmenopausal symptoms.

**Keyword:** Linoleic acid; Gama-linolenic acid; Estrogenic effects; Vaginal cornification assay; Ovariectomized rats.