Provision of soy milk from four weeks of age can suppress Beta-estradiol and follicle development, but increase expression of estrogen-Beta receptors in female rats

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This study aims to investigate the provision of soy milk to 17Beta-estradiol levels, the number of ovarian follicles- the expression of estrogen-Beta receptors on epithelial cells and the diameter of the lumen ductus mammal of female rats. A total of twenty four female rats (n = 6 each) was divided into four groups, including the control group and the group receiving various doses of soy milk (2.5; 5; and 10 mg/kg body weight/day). Provision of soy milk was performed from the age of four weeks to eight weeks. The 17Beta-estradiol analysis was performed by enzyme linked immunosorbent assay technique. Analysis of the number of follicles and ductus mammal was done by hematoxylin-eosin staining. Analysis expression of estrogen-Beta receptors was performed by immunohistochemical techniques. The levels of 17Beta-estradiol was significantly decreased in the groups received soy milk at the two highest doses compared to the control group (p < 0.05). The number of primary, secondary, and tertiary follicles was significantly lower in the group given 5 and 10 mg/kg body weight/day of soybean sugars than the control group (p < 0.05). The number of atresia follicles and ductus mammal was higher significantly in all groups received soy milk compared with the control (p < 0.05). Expression of Beta-estrogen receptors was significantly higher in the group treated with the soy milk at dose 5 and 10 mg/kg body weight/day than the control group (p < 0.05). It was concluded that soy milk feeding from the fourth week of age can suppress Beta-estradiol and primary, secondary, and tertiary follicles, but it upregulated the estrogen-Beta receptors.