

EFFECTS OF TIBOLONE ON THE DEVELOPMENT OF OSTEOPENIA INDUCED BY OVARIECTOMY IN RATS

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Experimental osteopenia caused by ovariectomy in rats may reflect postmenopausal bone changes, which are the effect of osteogen deficiency. The aim of the present study was to investigate the effects of tibolone (0.25 mg/kg/day and 2.5 mg/kg *po*) administered for 4 weeks on the development of osteopenia caused by bilateral ovariectomy in 3-month-old female Wistar rats.

The experiments were carried out on six groups of animals: I (C) – control sham operated rats, II (OVX) – ovariectomized rats, III (OVX+T-0.25) – ovariectomized rats which were administered tibolone at a dose of 0.25 mg/kg, IV (OVX+T-2.5) – ovariectomized rats which were administered tibolone at a dose of 2.5 mg/kg, V (T-0.25) – sham operated rats which were administered tibolone at a dose of 0.25 mg/kg, VI (T-2.5) – sham operated rats which were administered tibolone at a dose of 2.5 mg/kg. The following parameters were examined in all the groups: body weight gain, bone mass, length and diameter, mineral and calcium contents in the tibia and femur, endosteal and periosteal transverse growth, endosteal and periosteal osteoid width, transverse cross-section area of the cortical diaphysis and that of the marrow cavity in the tibia, epiphyseal cartilage width, trabeculae width in the epiphysis and metaphysis of the femur. Mechanical properties of the femur were also studied. Bilateral ovariectomy induced osteopenic skeletal changes in mature female rats. Tibolone (0.25 mg/kg/day and 2.5 mg/kg/day *po*) administered to ovariectomized rats for 28 days decreased the development of osteopenic skeletal changes induced by bilateral ovariectomy.

Key words: *tibolone, osteopenia, ovariectomy, bones, rats*
