



P481 KALSIS, A FOOD SUPPLEMENT, DECREASES THE OVARIECTOMY – INDUCED OSTEOPENIA IN RATS

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There are evidences about the fact that the administration of Kalsis (Catalysis Labs, Spain), a food supplement that contains selenium, to postmenopausal-osteoporosis women, produces an increase in bone mass. According to manufacturer, the different compounds of supplement are activated through molecular-activation principles which increase strongly their biological activity without any modification in their structure. The aim of this work was to study the ability of Kalsis to prevent the effects of ovariectomy on bone loss. Thirty-six, 6-month-old Wistar female rats were SHAM-operated or ovariectomized. Groups: SHAM: sham-operated rats and OVX: ovariectomized rats treated with vehicle (water, 0.3mL/rat/day); OVX+Kalsis: ovariectomized rats treated with Kalsis (25mg/Kg/day). Treatment was administered for 3 months by oral gavage, beginning one day after surgery. Animals were killed and bone mineral density (BMD) was determined by DXA in the lumbar spine and in the whole left femur. Computerized microtomography (microCT) in femur by Skyscan 1172 (Trabeculae®, Empresa de Base Tecnológica S.L.), and serum osteocalcin (BGP), aminoterminal propeptide of procollagen I (PINP), beta-isomer of carboxiterminal telopeptide of collagen I (beta-CTX) and 5b isoenzyme of tartrate-resistant acid-phosphatase (TRAP) were performed.

OVX group presented values of lumbar and femoral BMD lower than SHAM group. Treatment with Kalsis prevented the loss of BMD due to ovariectomy. Results from microCT showed a decrease in BV/TV, and trabecular number, and an increase in trabecular separation without changes in trabecular thickness in OVX rats. Kalsis treatment avoided partially this decrease in BV/TV and the increase in trabecular separation showing an increase in trabecular thickness with respect to SHAM and OVX groups. Ovariectomy increased levels of biochemical markers of bone formation (BGP and PINP) and the resorption index (CTX/TRAP). Treatment with Kalsis maintained this increase with respect to SHAM group.

The above results suggest that Kalsis administration avoided partially the development of osteopenia due to estrogen lack. The mechanism of action of this supplement is not produced through a decrease in bone remodelling rate because levels of bone formation and resorption are increased in the treated animals. The antioxidant action of selenium as a cause of this beneficial effect is suggested. (This work was supported by a grant from Catalysis Laboratories).