

## Poster 9

**Effect of glycomacropeptide on body weight, visceral fat and bone mineral content in ovariectomized rats**

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**Introduction:** Numerous bioactive peptides have been isolated from milk with potential beneficial health effects. Glycomacropeptide (GMP), a fragment of kappa-casein, had been shown to stimulate zinc absorption, an element that is involved in bone mineralization. Furthermore, GMP was found to be associated with satiety, indicating that GMP may be involved in energy metabolism. We postulated that GMP supplemented to a diet would prevent ovariectomy-induced bone loss in rats and could reduce weight gain and visceral fat content in this animal model for postmenopause.

**Methods:** Aged Fisher rats (n=80) were allocated to four groups. Animals of groups 1 and 2 were either sham operated (Sham) or ovariectomized (OVX). All animals got a semisynthetic diet with 160 g/kg diet protein from egg white and 7 g/kg calcium and 5 g/kg phosphorous for 16 weeks. Groups 3 and 4 (GMP-W and GMP-H) were supplemented with 10 g/kg of two different types of GMP. Calcium absorption and retention were assessed in repeated metabolic balances. Bone specimen, organs and tissue were taken at the end of the experiment. Calcium content in bones was analysed by AAS after ashing.

**Results:** OVX significantly reduced uterus weight, and ash and calcium content in femora, tibiae and lumbar vertebrae indicating that the animal model was appropriate. OVX increased body weight and tended to increase visceral fat mass after 16 weeks. Neither GMP-W nor GMP-H did significantly affect visceral fat mass, liver weight, or mineral content of bone.

The specific two GMPs tested here in this concentration did not beneficially affect bone mineral content (ash or calcium). Both GMPs did not affect energy metabolism in this regimen of pair-feeding.