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## Protective effects of Tualang honey on bone structure in experimental postmenopausal rats.

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### Abstract

**OBJECTIVE:** The objective of this study was to evaluate the effects of **Tualang honey** on trabecular structure and compare these effects with those of calcium supplementation in ovariectomized rats.

**METHODS:** Forty female, Sprague-Dawley rats were randomly divided into five groups (n =8): four controls and one test arm. The control arm comprised a baseline control, sham-operated control, ovariectomized control, and ovariectomized calcium-treated rats (receiving 1% calcium in drinking water ad libitum). The test arm was composed of ovariectomized, **Tualang honey**-treated rats (received 0.2 g/kg body weight of **Tualang honey**). Both the sham-operated control and ovariectomized control groups received vehicle treatment (deionized water), and the baseline control group was sacrificed without treatment.

**RESULTS:** All rats were orally gavaged daily for six weeks after day one post-surgery. The bone structural analysis of rats in the test arm group showed a significant increase in the bone volume per tissue volume (BV/TV), trabecular thickness (Tb.Th) and trabecular number (Tb.N) and a significant decrease in inter-trabecular space (Tb.Sp) compared with the ovariectomized control group. The trabecular thickness (Tb.Th) in the test arm group was significantly higher compared with the ovariectomized-calcium treated group, and the inter-trabecular space (Tb.Sp) in the test arm group was significantly narrower compared with the ovariectomized-calcium treated group.

**CONCLUSION:** In conclusion, ovariectomized rats that received **Tualang honey** showed more improvements in trabecular bone structure than the rats that received calcium.

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