

Effect of *Eurycoma longifolia* on testosterone negative feedback loop regulation**Ashril Yusof, Chan KQ, Claire ES, Neil C and Sareena HH**

University of Malaya, Malaysia

Eurycoma longifolia is an herbal supplement used as an alternative medicine to up-regulate testosterone levels for hypogonadism as well as sport performance. Using an animal model, EL is postulated to boost testosterone by interfering with its negative feedback loop. This study aimed to assess the effect of EL on-testosterone regulation in young healthy men.

Following ethical approval and informed consent, in a double blind matched-paired study, sixteen males (24.4 ± 4.7 years; 1.74 ± 0.07 m; 73.7 ± 8.4 kg) ($n = 8/\text{group}$), received 600 mg/day EL or placebo for 2 weeks. Blood samples were collected on days (D) 1 and 14 for analysis of androgens and liver functions.

EL resulted in a significant increase (0.97 ng/ml) in testosterone ($p=0.043$) at D14 vs D1. Significant differences from D1 vs D14 ($p < 0.05$) in EL vs placebo were observed in free testosterone (24.7%), oestrogen (17.0%) and luteinising-hormone (LH; -7.81%). Changes in follicular-

stimulating-hormone (FSH; 7.6%), sex-hormone-binding-globulin (1.3%), aspartate-aminotransferase (3.1%) and alanine-aminotransferase (3.3%) were not different between groups. Supplementation of EL in young healthy men significantly increased testosterone levels, however, the secretion of LH and FSH, did not decrease.

These preliminary data, therefore, suggest an interference of the testosterone negative feedback loop in the presence of EL. Importantly, the increase in testosterone is within the normal healthy range for humans and the liver function tests suggest the dosage is safe for human consumptions. In conclusion, consuming 600 mg/day EL for 14 days, would have positive outcomes on testosterone and other anabolic hormone levels. In turn, the findings could be extended into studies involving; sports and exercise performance, rate of injury recovery and decreasing testosterone with age.

e: ashril@um.edu.my

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