SWACSM Abstract

Influence of Acute Turkesterone Dosing on Resting Metabolic Rate and Substrate Utilization in Recreationally-active Males

NICOLLE LEON[1], DILLON R. HARRIS[2], STEVEN B. MACHEK[1], TRACEY N SULAK[3], JEFFREY S. FORSSE[2], & LESLEE K. FUNDERBURK[2,4]

[1] Kinesiology Department; California State University, Monterey Bay; Seaside, CA
[2] Integrated Laboratory of Exercise, Nutrition, and Renal Vascular Research; Department of Health, Human Performance, and Recreation; Baylor University; Waco, TX
[3] Educational Psychology Department; Baylor University; Waco, TX
[4] Human Sciences and Design; Baylor University; Waco, TX

Category: Undergraduate

Advisor / Mentor: Machek, Steven (smachek@csumb.edu)

ABSTRACT

Turkesterone is a relatively novel phytoecdysteroid compound that has become increasingly popular amongst recreationally active adults seeking to improve body composition. Although many of the these hypothetical benefits arose from prior rodent data demonstrating enhanced substrate utilization, no data presently exist amongst humans in this regard. **PURPOSE:** to determine the effect of multiple turkesterone doses on both resting metabolic rate (RMR) and substrate utilization in a healthy human population. **METHODS:** Eleven recreationally active males (23.3±2.2y) visited the laboratory on three occasions separated by at least seven days and were randomized in single-blind, placebo-controlled, and counter-balanced crossover fashion to either 2000mg cellulose placebo (PLA), 1000mg turkesterone + 1000mg placebo, (1000T) or 2000mg (2000T) turkesterone. RMR and respiratory exchange ratio were assessed using a metabolic cart for 20 minutes prior to supplement provision (i.e. baseline [PRE]), as well as 60-minutes (POST60M), 120-minutes (POST120M), and 180-minutes (POST180M) post-acute supplementation timepoints at each visit. RMR, as well as both carbohydrate (CHO) and Fat (FAT) oxidation were analyzed using a two-way (condition [PLA, 1000T, 2000T] x time [PRE, POST60M, POST120M, POST180M) ANOVA with repeated measures at a significance level of $p<0.05$. **RESULTS:** Analyses failed to reveal any significant condition, time, nor interaction effects for RMR, nor CHO or FAT oxidation ($p>0.05$). Nonetheless, both 1000T (2.7%, 5.6%, and 7.8%) and 2000T (0.7%, 4.2%, and 3.6%) increased mean RMR above baseline at POST60M, POST120M, and POST180M timepoints, respectively. Conversely, PLA decreased mean RMR by 0.9% and 0.7% at POST60M and POST120M, respectively. Incidentally, the 1000T condition displayed increased mean FAT oxidation by 1.85, 5.34, and 7.96% at the POST60M, POST120M, and POST180M timepoints, respectively, and when compared to the consistent decreases observed with both PLA and 2000T. **CONCLUSION:** Although these data fail to display a significant turkesterone-mediated enhancement in the investigated metabolic parameters, there were interesting mean differences that should be further explored to determine any longitudinal and/or exercise-dependent permissive impacts on RMR and substrate utilization.