

POSTER PRESENTATION

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The effects of Teacrine™, a nature-identical purine alkaloid, on subjective measures of cognitive function, psychometric and hemodynamic indices in healthy humans: a randomized, double-blinded crossover pilot trial

SM Habowski, JE Sandrock, AW Kedia, Tim N Ziegenfuss*

From The Eleventh International Society of Sports Nutrition (ISSN) Conference and Expo
Clearwater Beach, FL, USA. 20-21 June 2014

Background

Aside from caffeine, there is a relative dearth of evidence regarding natural ingredients that enhance subjective “energy” levels. We have studied a unique, naturally occurring purine alkaloid, present in *Camellia assamica* variety kucha tea (amongst other botanical sources) that acts on both adenosinergic and dopaminergic pathways that appears to influence multiple neurochemical pathways. As a first step in a series of experiments, we examined the effects of TeaCrine™, a nature-identical, chemically equivalent bioactive compound known as theacrine (1,3,7,9-tetramethyluric acid), in humans.

Methods

Using a randomized, double-blinded, within-subject (crossover) design, 15 healthy subjects (mean ± SD age, height, wgt, BMI: 28.3 ± 6.1 y, 175.7 ± 11.5 cm, 89.8 ± 21.7 kg, 29.1 ± 4.7) volunteered to ingest 200 mg of TeaCrine™ (Compound Solutions, Inc., Carlsbad, CA) (TC) or Placebo (PLA). Anchored VAS questionnaires were used to detect changes in various aspects of physical and mental energy and performance; side effect profiles, hemodynamics and biochemical markers of safety were also collected over a 3-hr post-dosing period. A subset of 6 subjects underwent a separate 7-day, open-label, repeated dose study comparing 100 mg, 200 mg and 400 mg of TC. Consent to publish the results was obtained from all participants.

Results

The 200 mg dose of TC caused significant improvements in energy (TC: +8.6% vs. PLA: -5.7%, P=0.049) and reductions in fatigue (TC: -6.7% vs. PLA: +5.8%, P=0.04). A trend for improved concentration was also noted (TC: +2.4% vs. PLA: -1.3%, P=0.07). No changes in systemic hemodynamics or side effect profiles were noted. The N=6 cohort study demonstrated moderate to large effect sizes (0.50 to 0.71) with the 200 mg dose of TC over a 7-day period of assessment for the following subjective measures: energy, fatigue, concentration, anxiety, motivation to exercise and libido.

Conclusion

These preliminary data support the benefits of acute TeaCrine™ supplementation on subjective “energy” levels and some indices of mental performance. Future studies are underway to confirm these neurotropic effects and also explore potential benefits of TeaCrine™ on objective measures of cognitive and physical performance, inflammation, pain perception, and functional capacity.

Acknowledgement

Partial funding for this study was provided by Compound Solutions, Inc (Carlsbad, CA)

* Correspondence: tz@appliedhealthsciences.org
The Center for Applied Health Sciences, Stow, Ohio, USA

Published: 1 December 2014

doi:10.1186/1550-2783-11-S1-P49

Cite this article as: Habowski *et al.*: The effects of Teacrine™, a nature-identical purine alkaloid, on subjective measures of cognitive function, psychometric and hemodynamic indices in healthy humans: a randomized, double-blinded crossover pilot trial. *Journal of the International Society of Sports Nutrition* 2014 **11**(Suppl 1):P49.

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