

# Effect of *Eurycoma longifolia* Extract on Stress Hormones & Psychological Mood State in Moderately Stressed Subjects



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# BACKGROUND

- *Eurycoma longifolia*, commonly known as “Tongkat Ali” is touted as a testosterone “booster” and marketed to athletes as a training aid & performance enhancer



- Rodent studies have shown oral delivery of *Eurycoma* extract to improve sexual performance and increase serum testosterone levels

Ang HH, Lee KL, Kiyoshi M. J Basic Clin Physiol Pharmacol. 2004;15(3-4):303-9.

Ang HH, Ngai TH, Tan TH. Phytomedicine. 2003;10(6-7):590-3.

Ang HH, Lee KL. Fundam Clin Pharmacol. 2002 Dec;16(6):479-83.

Ang HH, Ikeda S, Gan EK. Phytother Res. 2001 Aug;15(5):435-6.

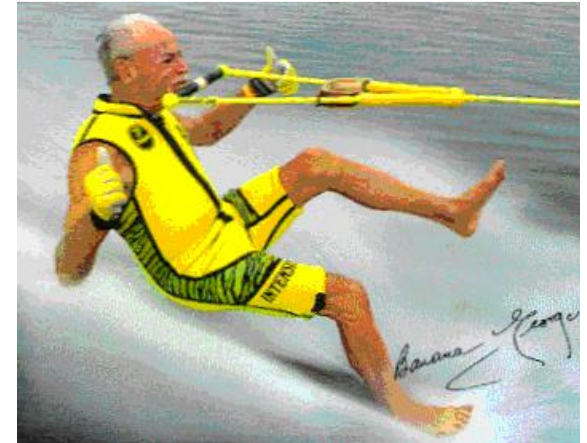
Ang HH, Sim MK. Arch Pharm Res. 1998 Dec;21(6):779-81.

Ang HH, Sim MK. Exp Anim. 1997 Oct;46(4):287-90.



# BACKGROUND

- Open-label human trials have suggested that *Eurycoma* extract may help prevent age-associated androgen deficiency, improve sexual function, and increase psychological parameters such as mood, energy, and sense of well-being.



1. Cyranoski D. Nat Med. 2005 Sep;11(9):912.
2. Lee MH. The Aging Male, 2003 - Taylor & Francis
3. Phillipson JD. Phytotherapy Research, Volume 13, Issue 1 , Pages 2 - 8, 15 Feb 1999
4. Tharakan B. and Manyam BV. Phytotherapy Research, Volume 19, Issue 6 , Pages 457-463, 22 Aug 2005

# PURPOSE

We evaluated the effects of *Eurycoma longifolia* extract on:

- Levels of Testosterone and Cortisol (saliva)
  - Morning / Afternoon / Evening = Total
- Psychological Mood State (POMS)



# METHODS

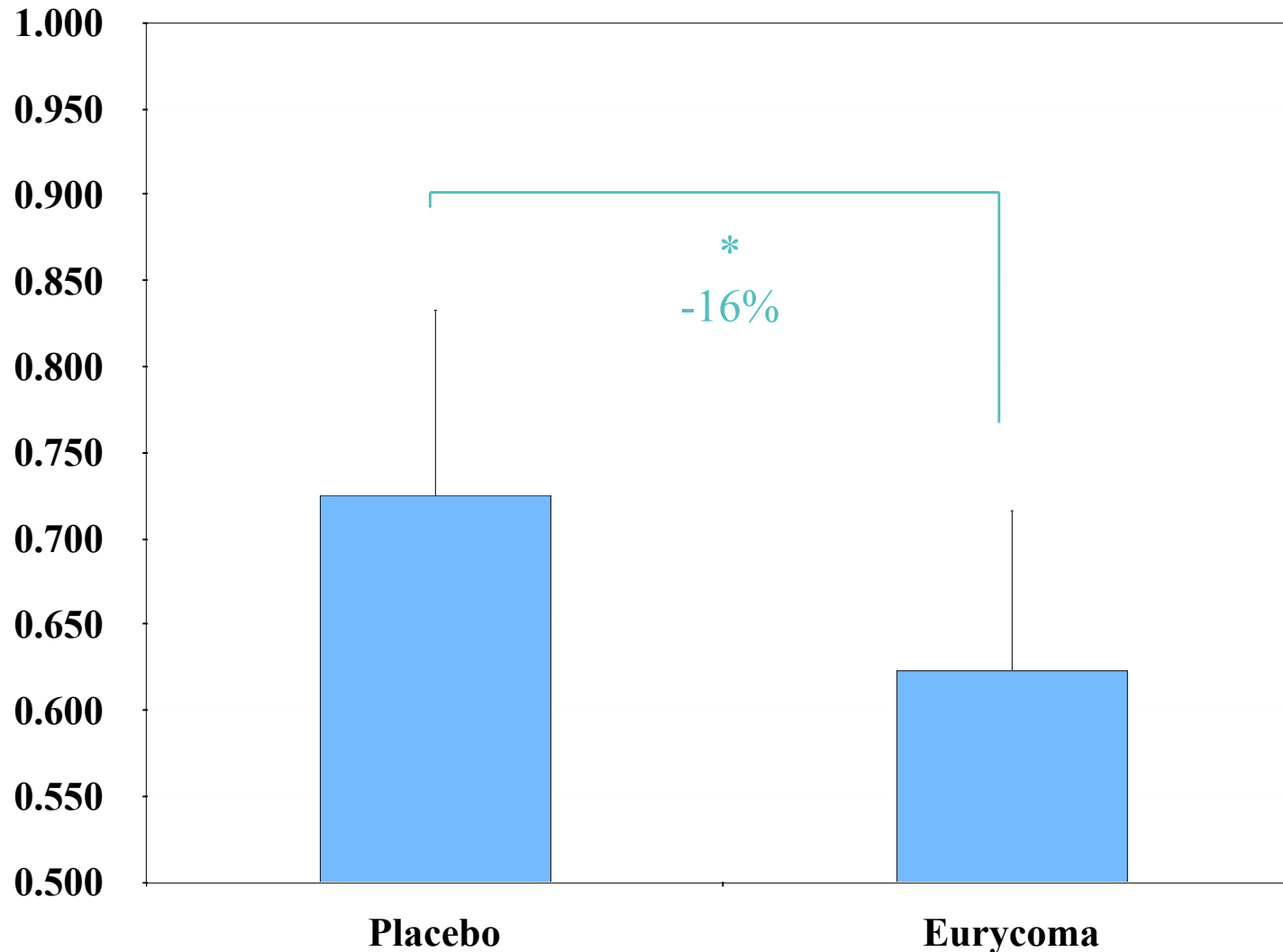
- We used a hot-water extract of *Eurycoma longifolia*, standardized to 22% eurypeptides and 40% glycosaponins
  - (Physta, Biotropics Malaysia)
- Subjects (30 M / 30 F) consumed 200mg of *Eurycoma* extract (N=30) or look-alike placebo (N=30) daily with breakfast for 4 weeks
- Paired Student's *t*-tests were used to assess differences between between groups.





# RESULTS

## Salivary Cortisol (ug/dL)

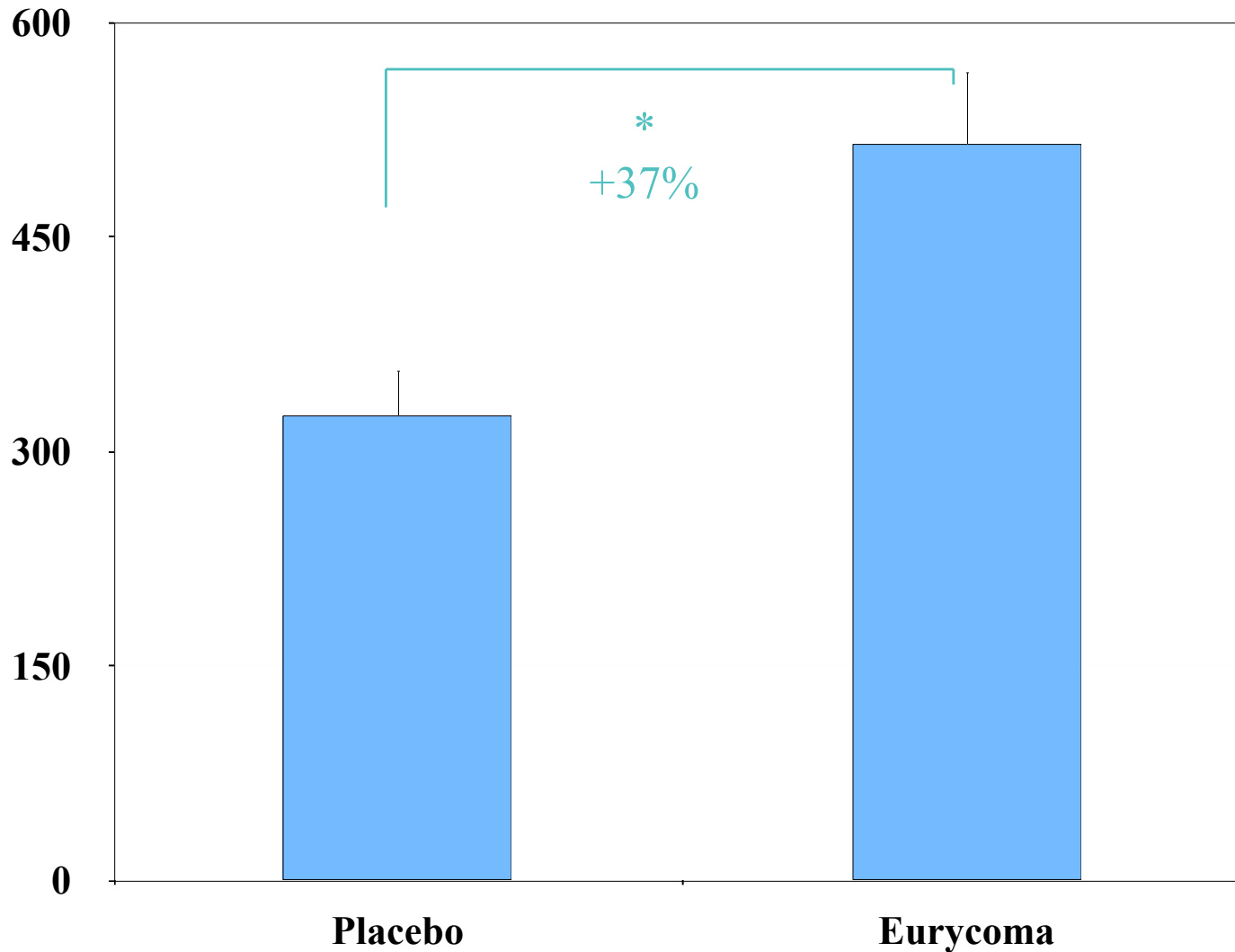


Week 4 values – Percent Difference from Placebo

\* $p \leq 0.05$  compared to Placebo

# RESULTS

## Salivary Testosterone (pg/dL)

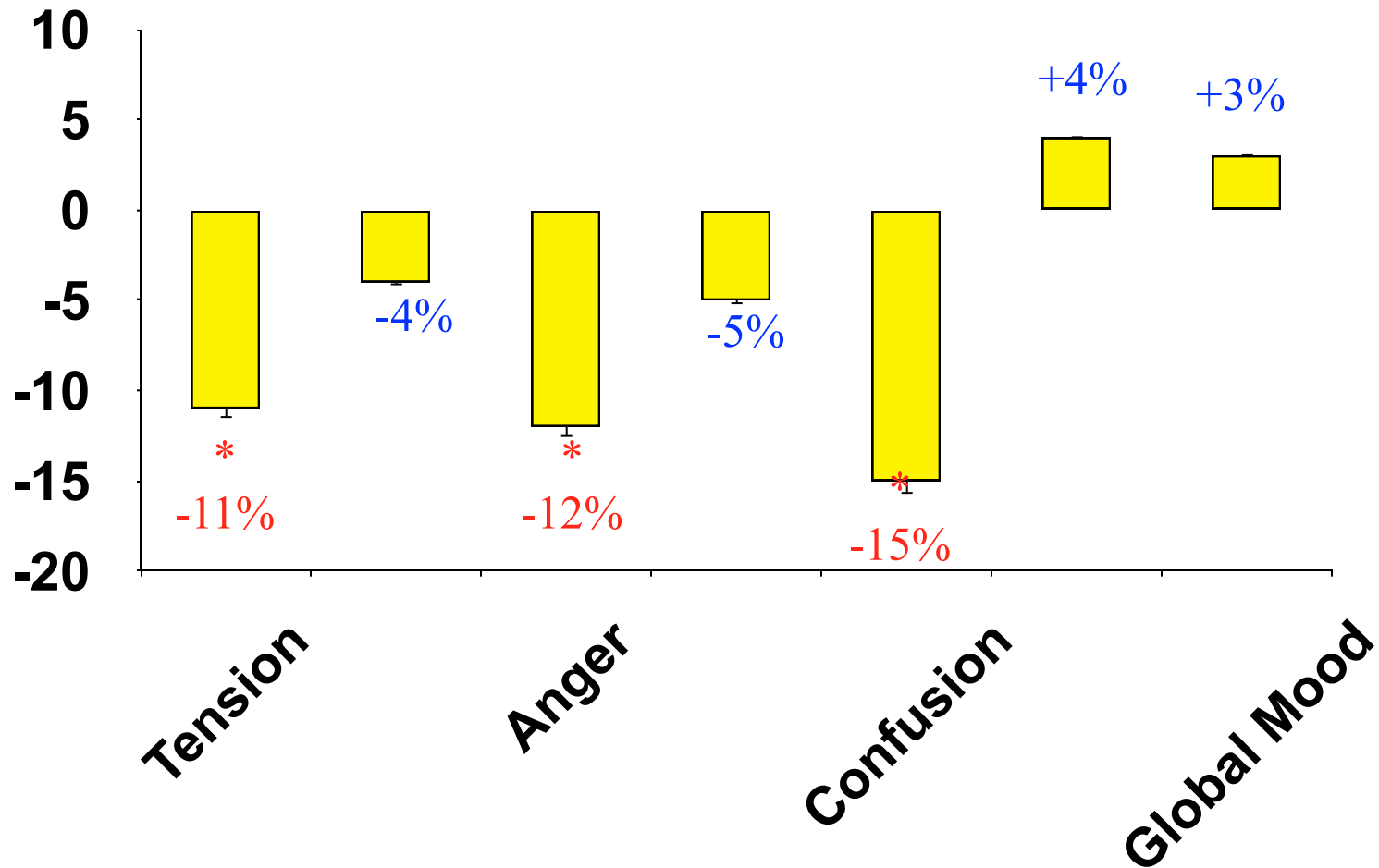


Week 4 values – Percent Difference from Placebo

\* $p \leq 0.05$  compared to Placebo

# RESULTS

## Profile of Mood States (POMS)



Week 4 values – Percent Difference from Placebo

\* $p \leq 0.05$  compared to Placebo



# CONCLUSIONS

- *Eurycoma longifolia* extract may help to maintain normal levels of free cortisol (low) and free testosterone (high).
- *Eurycoma longifolia* extract was associated with superior mood state parameters (Tension, Anger, Confusion).
- These results suggest a potential benefit for *Eurycoma longifolia* extract in reducing some of the detrimental biochemical and psychological effects of stress.
- Future studies will address the potential effects of *Eurycoma longifolia* extract on post-exercise recovery.
  - Possible maintenance of an overall “anabolic” hormonal state - versus a “catabolic” state characterized by elevated cortisol and suppressed testosterone