

CERTIFIED



The MOST Clinically Researched Tongkat Ali Extract

All-Round Ingredient for Men's Health and Healthy Ageing



- **Patented**
- **Standardized**
- **100% pure water-soluble extract**
- **Authentic Malaysian Source**

Patented Standardized Tongkat Ali Extract



Introduction

Tongkat Ali (*Eurycoma longifolia*) is Malaysia's wonder plant for vitality and general energy. The practice of consuming Tongkat Ali tonic is deeply embedded in tradition and has been consumed by the 'Orang Asli' aboriginal people of Malaysia to increase overall energy, virility and improve fertility.

Physta® Health Benefits:

- Improves physical functioning
- Sports performance
- Strength and muscle size

• Reduces stress and improves mood

• Fights fatigue

• Anti-viral properties

• Improves immunity

• Increase energy and vitality

• Supports libido and fertility



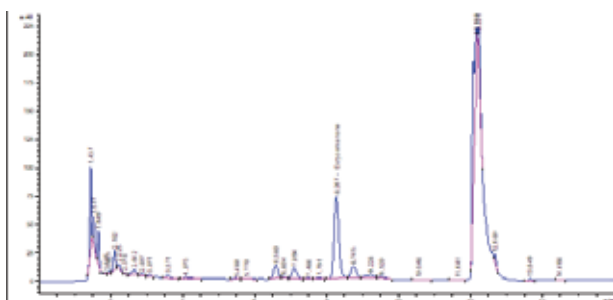
About Physta® Extract

Physta® uses authenticated Tongkat Ali Roots extracted through patented extraction technology developed by the Government of Malaysia and Massachusetts Institute of Technology, MIT (US Patent: US Patent 7132117, EU Patent: 1313491). Physta® was also used in the development of the Tongkat Ali MS Standard by the Standard and Industrial Research Institute of Malaysia (SIRIM).

Standardization

Standardization is a process where the beneficial compounds in the extract are quantified and controlled for consistency. Tongkat Ali contains numerous phenolic components, tannins, high molecular weight polysaccharides, glycoprotein and mucopolysaccharides.

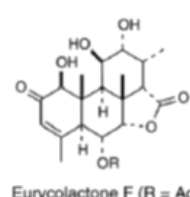
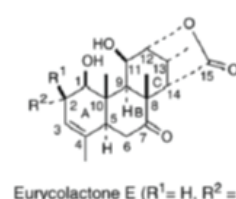
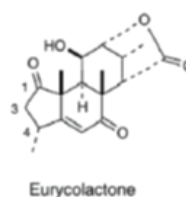
Physta® is standardized to four main markers which adheres to the Malaysian Standard (MS2409:2011) for Tongkat Ali extract specification:



HPLC Chromatogram of *Eurycoma longifolia* Aqueous Extract @ Physta®

“Physta® is ready to market as an ingredient for all-natural dietary supplements, ingredients for nutraceutical, functional food or beverage and cosmeceutical applications.”

Markers in Tongkat Ali	Physta®	Other Brands
Eurycomanone	0.8-1.5%	≤ 0.8
Total Protein	≥ 22	Not controlled
Total polysaccharides	≥ 30	Not controlled
Glycosaponin	≥ 40	Not controlled



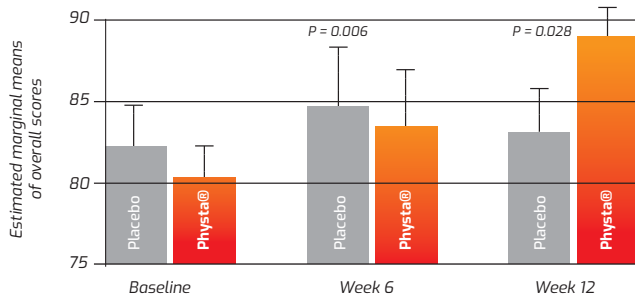
The major bioactive quassinoids (eurycomanone) in Tongkat Ali Root Extract (adapted from Bhat & Karim, 2010).

Scientifically Validated Physta® Tongkat Ali Root Extract Benefits With Clinical Evidence

Energy and Vitality

Vitality | Fatigue | Physical Function

- Total of four clinical studies [8,9,10,11]

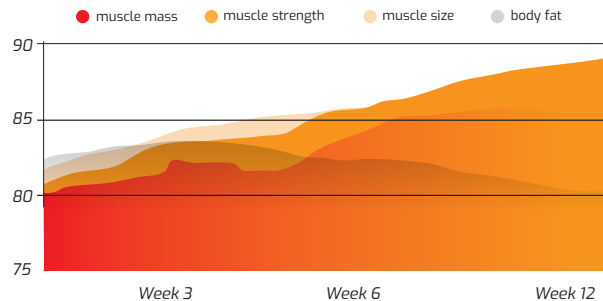


Bar Chart shows significant changes in Physta® for Physical Functioning from baseline to week 12 compared to placebo (P = 0.006) and in between group at week 12 (P = 0.028).

Ergogenic effects

Strength | Muscle Size | Sports Performance

- Total of seven clinical studies [1,2,7,9,10,12,13]

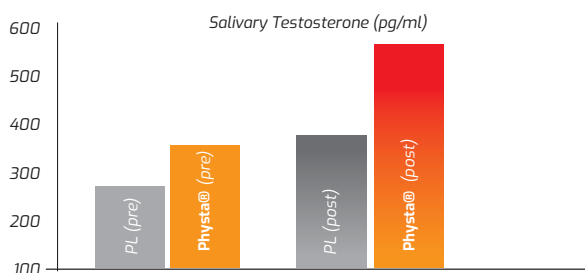


Increase muscle mass, muscle strength and muscle size & reduction in body fat.

Men's Health

Libido | Fertility | Sperm Quality

- Total of nine extensive clinical studies [3,4,5,6,8,9,10,11,12]

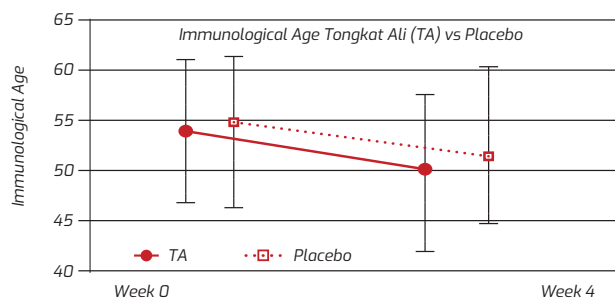


Salivary testosterone levels were significantly higher (+37% compared to placebo, PL) following tongkat ali (TA) supplementation (200mg/day for 4 weeks) * = p < 0.05 by ANOVA

All-round anti ageing ingredient

Immunity | Mood & Stress | Anti-viral

- Total of three clinical trials [8,9,10]

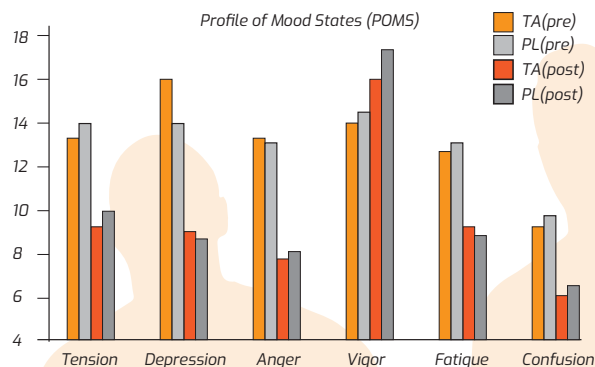


Why choose Physta® Tongkat Ali Root Extract?

- World Class Commercial Extraction



- Market Leader in Tongkat Ali Development and Innovation



Daily supplementation (200mg/day for 4 weeks) with tongkat ali (TA) resulted in significant improvements compared to placebo (PL) for indices of Tension (-11%), Anger (-12%) and Confusion (-15%) in moderately stressed adults (N=63), * = p < 0.05 by ANOVA.

References:

1. Sareena, H.H. and Ashril, Y (2002) | 2. Hamzah, S and Yusuf, A (2003) | 3. Tambi, M.I (2005) | 4. Talbott, S, et. al. (2006) | 5. Tambi, M.I (2009) | 6. Tambi, M.I. & Imran, K (2010) | 7. Sarina, M.Y. (2009) | 8. Tambi, M.I, Imran, M.K, Henkel, R.R (2011) | 9. Udani, J., et. al. (2014) | 10. Shaiful Bahari Ismail, et. al. (2012) | 11. Talbott, S.M, Talbott, J.A, George, A, Pugh, M (2013) | 12. Henkel, R.R, Wang, R, Bassett, S, Chen, T, Liu, N, Zhu, Y, Tambi, M.I (2013) | 13. George, A, Liske, E, Chen, C.H and Ismail, S.B (2013)



Groves of mature size *Eurycoma longifolia* ready for harvest

THE MALAYSIAN TONGKAT ALI

While many sources of Tongkat Ali can be obtained from other South East Asian regions, the majority of the documented traditional use, extensive clinical trials conducted on the herb have always been Malaysian sourced Tongkat Ali.

Within our supply chain, a collaboration with local Aborigines (called 'Orang Asli') allows them to earn a better living by collecting wild herbs from the jungle. In the case of Tongkat Ali, the root once processed, can fetch a higher price compared to raw unprocessed root on the market. Biotropics also exercise sustainability measures through their collection practices such as replantation of Tongkat Ali seedlings.

This arrangement is a mutually beneficial eco-system as the Orang Asli will be able to supply the raw material at a higher value and benefit from a secure and steady demand while Biotropics will be able to obtain sustainable raw materials with consistent standards.



ABOUT BIOTROPICS MALAYSIA

Blessed with an abundance of bio-resources, Malaysia has one of the world's oldest rainforests. Over generations, her people have acquired intimate knowledge of plants and their uses for health and beauty.

At Biotropics Malaysia Berhad, we are driven by our philosophy to produce superior natural health products for local and international markets. We achieve this by turning yesterday's traditional approach to health and well-being, into tomorrow's innovative health solutions and verifying the time honoured traditions through state-of-the-art science.

OFFICE ADDRESS

Biotropics Malaysia Berhad 762243-p
Lot 21, Jalan U1/19, Section U1,
Hicom-Glenmarie Industrial Park,
40150 Shah Alam, Selangor Darul Ehsan.

Tel: +(60)3 5565 5600

Fax: +(60)3 5565 5601

Email: info@biotropicsmalaysia.com

Website: www.biotropicsmalaysia.com

EXTRACT DESCRIPTION

Botanical name	<i>Eurycoma longifolia</i>
Class	Magnoliopsida
Order	Sapindales
Family	Simaroubceae
Common Name(s)	English: Long Jack, Tongkat Ali, Pasakbumi
Country Origin	Malaysia
Shelf Life	2 years
Part used	Roots
Extraction Method	Water

EXTRACT SPECIFICATION

Test Parameter	Method/Reference	Specification
ORGANOLEPTIC		
Color		Light Brown
Odour		Characteristics
Flavour		Bitter
Form/texture		Fine powder
Extraneous Material	<i>In house</i>	Free from foreign matter
PHYSICAL CHARACTERISTICS		
Mesh Size	<i>In house</i>	90% is smaller than 120 mesh
Lost on drying	<i>In house</i>	≤ 8.0%
BIOACTIVE CONTENT		
Eurycomanone	<i>HPLC</i>	0.8-1.5%
Total Protein	<i>Lowry's Method</i>	≥ 22%
Total Polysaccharide	<i>Anthrone Reagent</i>	≥ 30%
Glycosaponin	<i>Gravimetric Meter</i>	≥ 40%
HEAVY METAL		
Lead (Pb)	<i>Atomic Absorption</i>	≤ 3.0 ppm
Mercury (Hg)	<i>Spectroscopy</i>	≤ 0.2 ppm
Arsenic (As)		≤ 3.0 ppm
Cadmium (Cd)		≤ 0.3 ppm
MICROBIAL LIMIT TEST		
Total Bacteria Count		≤ 10,000 cfu/g
Yeast & Mould		≤ 100 cfu/g
Salmonella		Absent in 10g
Escherichia coli	<i>Latest version of BP</i>	Absent in 1g
Staphylococcus aureus		Absent in 1 g
Enterobacteria and certain other gram negative bacteria		≤ 100 MPN/g