



TRANSFORMING LIVES WITH  
**PERFORMANCE  
INGREDIENTS**

Natural. Scientifically Proven.

# The world of ageing population comes with new challenges

The world is going through an inevitable change. According to World Population Prospects, one in six people in the world will be over the age of 65 by 2050.

Population ageing is poised to become one of the most significant social transformations of the twenty-first century, where virtually every country in the world is experiencing growth in the number and proportion of older persons in their population.

The situation presents new challenges to cope with healthy ageing and dietary requirements. And more significant demand for healthy nutrition food and beverages with natural ingredients are increasingly vital for both men and women.

According to MJH Life Sciences™ and Nutritional Outlook, approximately 38 million male Baby Boomers today are currently facing andropause, a phenomenon often known as “male menopause” due to decreasing level of testosterone in the body as you age. Andropause comes with symptoms such as reduced muscle strength, diminished energy and lagging physical function. As the ageing continues, men of a particular age experience reduced sexual performance, slower cognitive functioning and depression.



**With the population of those aged 80 and older are expected to triple to 450 million by 2050, ageing men and women are often exposed to the risk of lower testosterone and poor prostate health.”**





# Discover healthy ageing and well-being with us.

Healthy ageing works around disease and injury prevention. The good news is that today's health-conscious consumers are taking their wellbeing into their own hands.

Ingredients such as Tongkat Ali, fenugreek, ginger, vitamin D, magnesium and zinc have proven effects on boosting testosterone. That said, many consumers are seeking for long-lasting versatile natural ingredients that can benefit health in many ways.

Research studies showed that consumers are proactively seeking food and beverages that will improve their health and well-being. Eating foods and drinks with functional nutrition ingredients, and topping it off with, health supplements are becoming a mainstream way of life.

According to Euromonitor, the combined market for functional food and beverages is currently worth at \$253 billion globally and expected to grow steadily by an average of 2.6% a year between 2018 and 2022.

We aim to revolutionise the health well-being industry with natural performance ingredients that can facilitate the demand for functional food and beverages and dietary supplements.

## About Us

Biotropics Malaysia is an established nutraceutical company that specialises in premium natural performance ingredients for brands and companies specialising in natural health and wellness supplements. We transform yesterday's traditional approaches to health and well-being into tomorrow's innovative health solutions. With a range of proprietary performance ingredients and infusion of modern science and research in hand, we help businesses grow and meet the increasing demand for natural health and well-being.



Scientific Name	Eurycoma
Common Name	Tongkat
Extract Description	Physta® standard water extract Ali/Longifolia





# The Tongkat Ali Story

Tongkat Ali (*Eurycoma longifolia*) is one of the most established natural ingredients used as functional foods, performance ingredient and dietary supplements in the market today.

Touted as the next natural Viagra by ABC News and media around the world, this herb is globally popular amongst consumers seeking proven benefits from natural ingredients today.

Traditionally, Tongkat Ali is excellent for treating diseases, and also works as a natural aphrodisiac for centuries.

The plant has multiple applications and a wide range of benefits. For instance, its fruits are great for curing dysentery, while its bark works as a vermifuge. Its taproots, meanwhile, are used to treat high blood pressure, and the root bark, for the treatment of diarrhoea and fever. Its other benefits include the mitigation of anti-ageing, malaria, cancer, diabetes, anxiety, aches, constipation, leukaemia, osteoporosis, stress, syphilis, glandular swelling; as well as the improvement of exercise recovery, energy and strength.

Initiated via a breakthrough research project between the Malaysian Government and MIT in the early 2000s, Biotropics Malaysia's investments in the areas of research and development have yielded proven health benefits that can be enjoyed by consumers from all walks of life.

The Tongkat Ali root extract is scientifically proven to improve libido, sexual dysfunction, muscle strength and growth, and improve mood by reducing anxiety and tension.

This patented discovery of Physta® Tongkat Ali using freeze-dried water-soluble technology was made available and licensed for further scientific studies and commercialisation on our part.

Over time, the extract is gradually standardised according to proprietary methods and international standards. It has also undergone more than 17 clinical studies, which has provided us with international partnerships across functional food, dietary and performance supplement products around the globe.

# Fulfilling the high demand for natural products backed by science

The adulteration of Tongkat Ali with other stimulants and the widespread of the non-standardised extraction process is rampant. We aim to change that. At Biotropics, we deliver authentic herbal extracts and scientifically proven natural products via our proprietary ingredients to ensure your customers gain the most from Tongkat Ali.

# About Physta®

Physta®, is a patented proprietary water-soluble extract derived from Malaysian *Eurycoma longifolia*, or known as Tongkat Ali root. It is a standardised extract compliant to Malaysian Standard (MS 2409:2011) for 'Phytopharmaceutical Aspect of Freeze-Dried water extract from Tongkat Ali Roots- Specifications'.

Touted as the premium Tongkat Ali, Physta® is a hallmark of excellence in modernising a natural heritage from centuries of tradition and beliefs.

Physta® Tongkat Ali has materialised from the collaboration between the Malaysian Government and the renowned Massachusetts Institute of Technology (MIT) that had utilised patented extraction technology. (US Patent: 7132117, EU Patent: 1313491)

Physta® is a trademark of Biotropics Malaysia Berhad® and is also known as LJ100™ in the United States.

A Patented Tongkat Ali Extraction With Scientific Validation



Functional Ingredients



Performance Ingredients



Dietary Supplement

**Physta® works as a functional or performance ingredients for dietary supplements; nutraceutical or functional foods or beverages; and cosmeceutical applications.**



**35**

countries sold worldwide and counting



**17**

clinical studies and counting

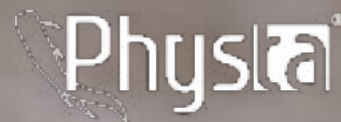


**160**

million doses of extract produced since 2011

# Physta<sup>®</sup> Health Benefits

Biotropics' flagship performance ingredient Physta<sup>®</sup> delivers proven results in many areas. Its health benefits are scientifically sound, proven through years of research and development.



Improved Libido and Men's Health



Improved Immune System



Increase Sports Performance



Improve Muscle Recovery & Growth



Improved Energy & Vitality



Improved Mood & Reduce Stress



# Harvesting Your Success With Physta®



With an increased global demand for natural herbs, Physta® has helped brands and companies to expand market share in health and well-being to fulfil the growing consumer demand.

At Biotropics, we harvest business successes through strategic partnerships to exceed our customer expectations for premium and authentic Tongkat Ali.

We lead you every step of the way, from ingredient formulation and product design and development to regulatory approvals and marketing strategies.



Physta®

35

countries sold  
worldwide and counting

# Customer Success

We have a passion for growing your successes.



With more than ten years in the market and honoured with Guardian's Best Supplement For Men, Nu-Prep® Lelaki is a leading success story here at Biotropics Malaysia.

With over 13 million capsules sold since 2015, Nu-Prep® Lelaki continues to be the choice of Malaysian men looking to enhance their overall health and vitality, increase their energy levels, overcome fatigue, strengthen the body and improve their blood circulation.

Nu-Prep® Lelaki & Wanita contains Physta® Standardized Tongkat Ali Extract and available in over 1,800 pharmacies nationwide and more than ten (10) countries worldwide.

These achievements are a testament to the ingredient's reliability, uniqueness, and trustworthiness.



Nestlé made a strategic move into functional food in 2010 to capitalise on the growing market demand for beverages in healthy, active and balanced lifestyles.

Biotropics' Physta® Standardized Tongkat Ali Extract is used in Nescafé Tongkat Ali premix coffee that appeals to health-conscious consumers.

Aligning our philosophy and proprietary product Physta® Standardized Tongkat Ali Extract with Nestlé's strategy to shift into the functional food segment has increased the global medical nutrition category to 5% CAGR between 2018 and 2023.



Our work with Japan's FANCL Corporation has built the Japanese nation's trust and confidence in Malaysian traditional health ingredients. With revenue of USD1.15 billion and a workforce of over 1,000 employees in 2019, FANCL has operations in Singapore, Taiwan, USA, and China.

Biotropics' involvement in 17 clinical studies, compliance standards and certifications have helped popularised Physta® Standardized Tongkat Ali Extract in Japan; in particular, through brands such as Kounen and E-Days. The products are certified safe and in compliance with strict Japanese food safety regulations.

Biotropics is also proud to file patents for the Japanese market protection, namely in Tongkat Ali (Immunity) and Tongkat Ali bioactive fraction.

Our Physta® Standardized Tongkat Ali Extract has enabled FANCL to explore new target markets in men's health in Japan and all over the world.









# Build Trust & Confidence With Physta®

## Physta® Clinical Trials

Physta® has undergone one of the highest numbers of clinical trials to prove Tongkat Ali's efficacy and health benefits in key areas since its first commercialisation in early 2000.

Biotropics' continuous commitment to collaborative research and development with top scientists have gained more recognition and trust over the years compared to other manufacturers and nutraceutical companies.

Below are the areas of potential health benefits based on research and scientific studies using Physta® Tongkat Ali. Details of the journal papers are available on the Internet and are requestable from Biotropics representatives.

 Testosterone	 Strength/Recovery	 Men	 Women	 Stress	 Fertility	 Non-doping effect	 Immunity
✓ 2005	✓ 2002	✓ 2005	✓ 2009	✓ 2013	✓ 2010	✓ 2013	✓ 2016
✓ 2007	✓ 2003	✓ 2009	✓ 2013	✓ 2018	✓ 2012	✓ 2014	
✓ 2009	✓ 2007	✓ 2012					
✓ 2011	✓ 2009	✓ 2014					
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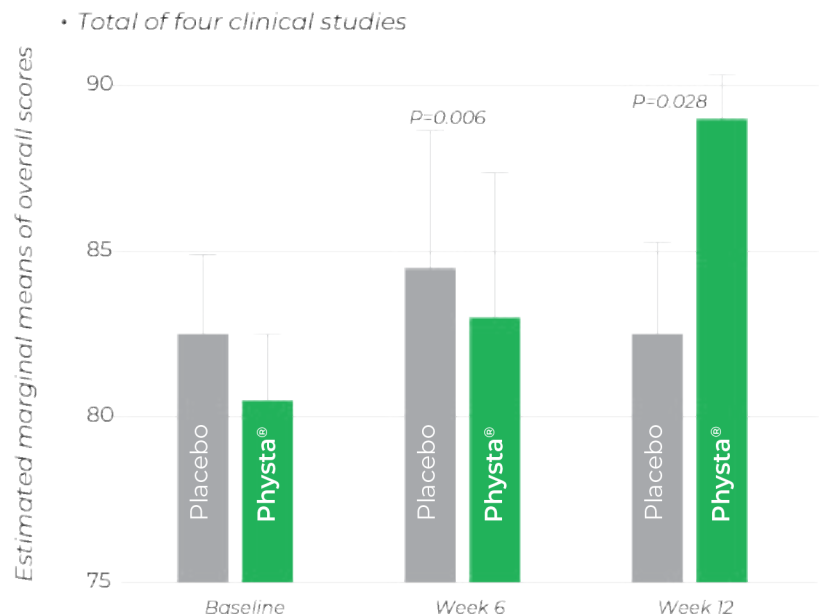


# Energy & Vitality

Research published in the Journal of Andrology on the standardised water-soluble extract of Tongkat Ali has proven it to be a suitable herbal supplement for overcoming symptoms of LOH and managing hypogonadism. Similarly, men with other causes of hypogonadism may also benefit from the herbal extract complementing their testosterone replacement therapy. Doing so helps enhance their Dehydroepiandrosterone (DHEA).

DHEA (dehydroepiandrosterone) is a hormone produced by your body's adrenal glands, and it peaks in your early 20s before declines gradually with age.

Vitality | Fatigue | Physical Function



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 On Sports Performance



A study published on the British Journal Sports of Medicine in 2003, showed an improvement in muscle strength and size. The change, which was facilitated by a daily intake of Tongkat Ali, proved an over and above significant improvement in athletic performance.



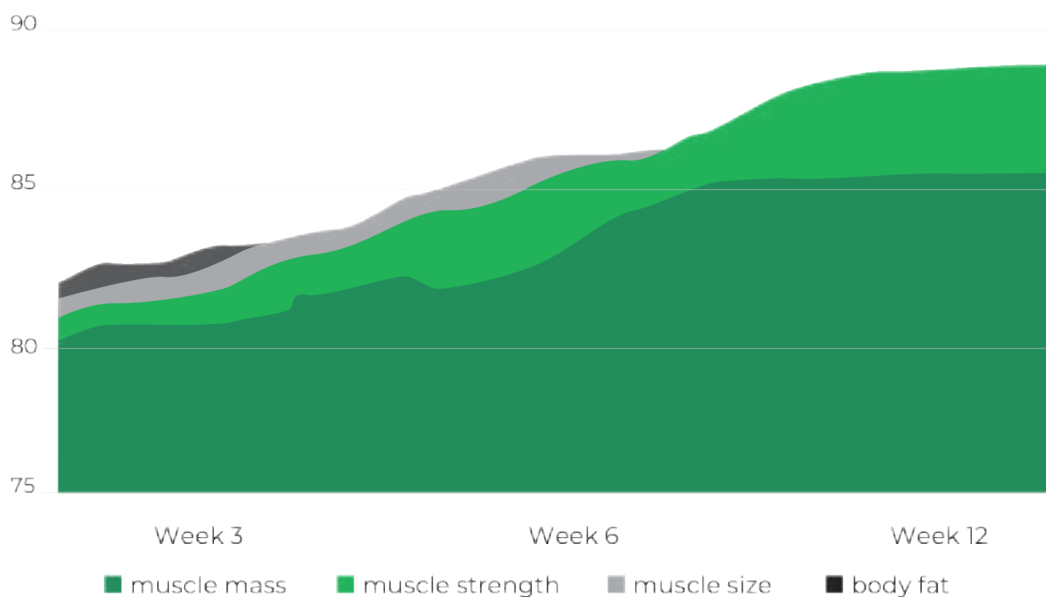
A study published in the Journal of Strength & Conditioning Research revealed that in a duration of 12 weeks, a 200mg dose of Tongkat Ali daily resulted in 67% improvement on the bench press, 21% improvement on upper body power and significant improvement in handgrip strength.



Another study published by the National Library of Medicine showed that in comparison with the placebo test subjects, the consumption of Tongkat Ali exhibited a decrease in hip size, fat mass, and waist circumference.

## Strength | Muscle Size | Sports Performance

• Total of seven clinical studies



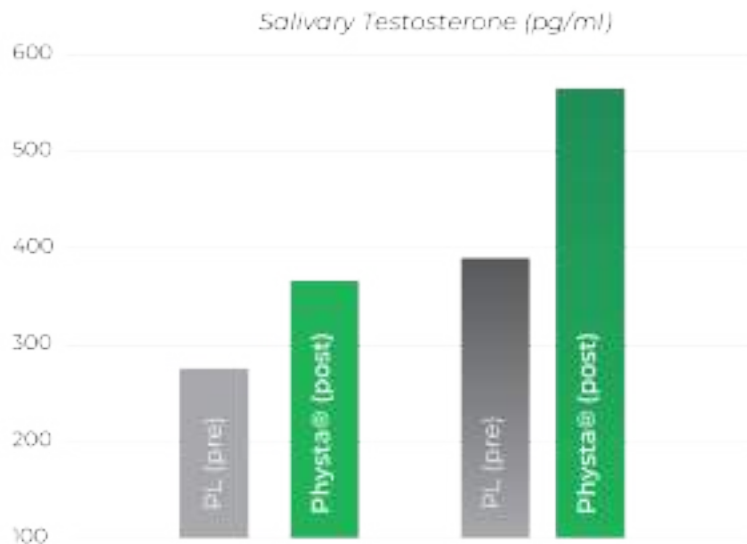
Increase muscle mass, muscle strength and muscle size & reduction in body fat.



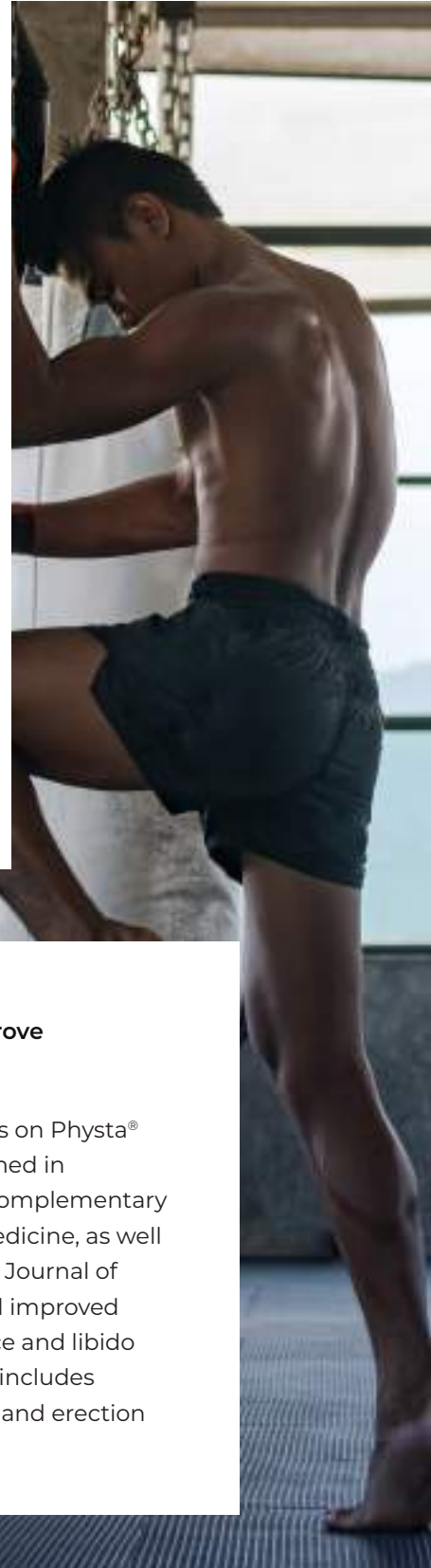
# Men's Health

Libido | Fertility | Sperm Quality

• Total of nine extensive clinical studies



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



## 1. Increase Fertility Rate

Three clinical studies on Physta® Tongkat Ali published in the Asian Journal of Andrology, Evidence-Based Complementary and Alternative Medicine and Andrologia showed increases in sperm motility, semen volume, enhanced libido and improved erectile function.



## 2. Improve Libido

Two clinical studies on Physta® Tongkat Ali published in Evidence-Based Complementary and Alternative Medicine, as well as a study in Asian Journal of Andrology showed improved sexual performance and libido scores, which also includes increased harness and erection time.



# Improve Immunity

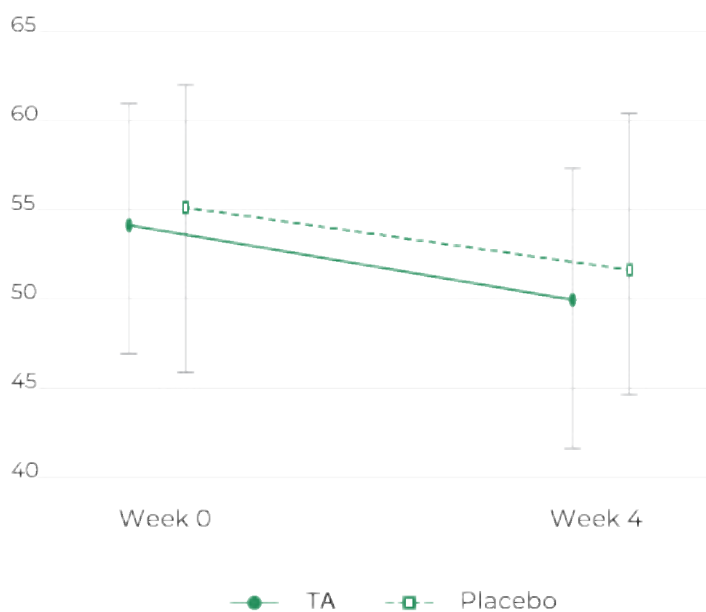


A study published by Phytotherapy Research Journal 2016 showed Immunological parameters including SIV, Immunological Grade and numbers of Lymphocyte, T-cell, Naïve T-cell and CD4+ T-cell significantly increased after four weeks ingestion of Physta®.

Based on the data, the Physta® formulation of Tongkat Ali is proven to induce immunostimulating effects and thereby, improve immunity in humans.

Immunity | Mood & Stress | Anti-viral

• Total of three clinical trials (8,9,10)



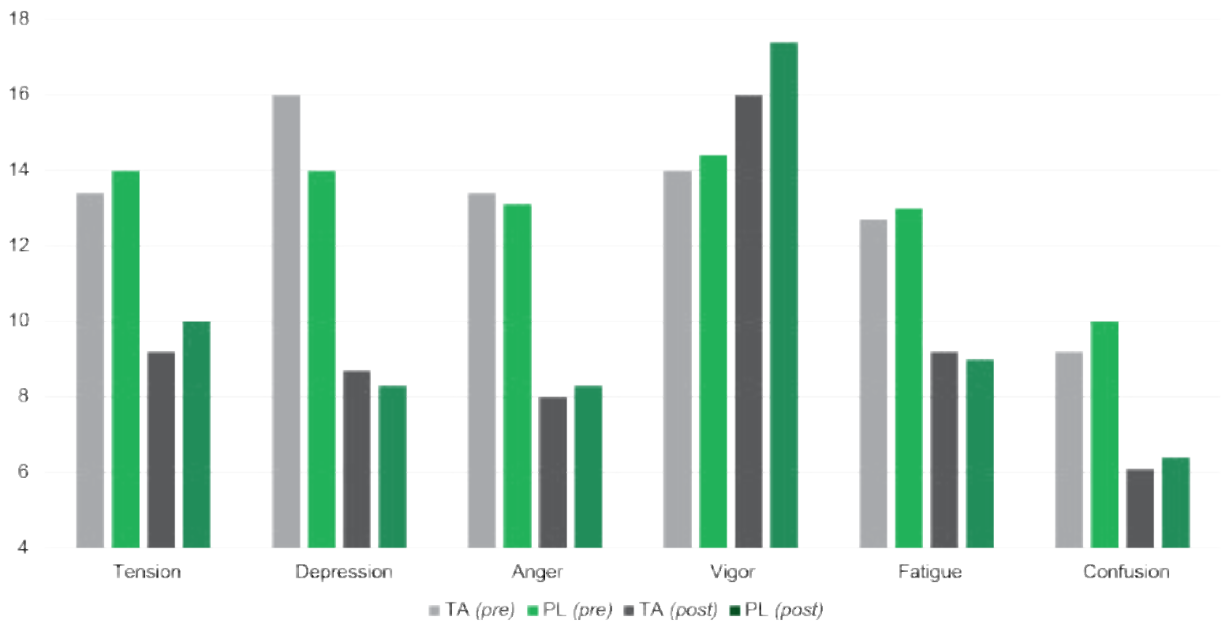
# Improve Mood



A study conducted published at The Journal of International Society of Sports Nutrition showed significant improvement in mood profile after consumption of Physta® Tongkat Ali. Mood profile improvement showed a reduction in tension by 11%, reduced anger by 12%, a decrease in confusion by 15% and reduced cortisol exposure by 16%.



Profile of Mood States (POMS)



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.

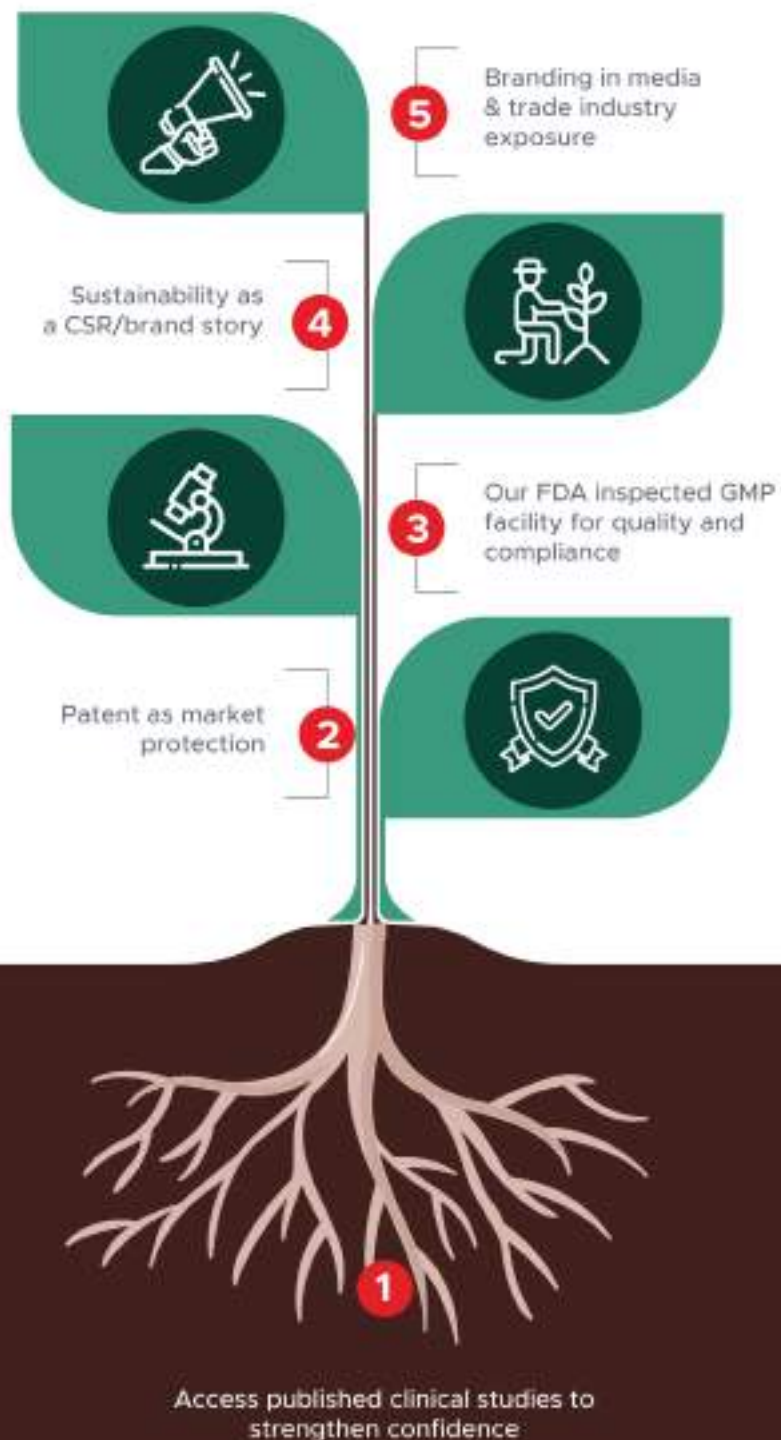
# We Drive Value To Business Is The Reason Why They Keep Coming Back To Us



At Biotropics, we help businesses grow new products using natural-sourced ingredients such as Physta®. There are reasons why our partners keep coming back to us.



# How Does Biotropics Help Businesses To Grow



# Transforming the Industry

## Case Study 1

### Standardisation of Tongkat Ali To Achieve Highest Potency & Efficacy

#### Market Challenge

Standardisation involves the characterization of specific compounds or biomarkers (unique to plants) to ensure consistent delivery of strength and potency of a particular extract.

With Tongkat Ali, standardisation involves the quantification of compounds specific to plants (i.e. Eurycomanone, unique to *E. longifolia* and additional compounds like proteins, polyphenols, glycosaponins should be at amounts complying with regulatory and pharmacopeal standards.

Unchecked claims are dangerous, as is the incorporation of adulterated plants or plant materials, which can cause inefficacy and adverse side effects.

Most of the products out in the market today have a misleading herb to extract ratio. The situation is rooted in the lack of standards for extraction, as well as the measurement of potency or consistency of unique bio-active markers that can maximise health benefits.

#### Our Solution

Biotropics undertake a standardised approach by using an ID marker (i.e. Eurycomanone) that helps quantifies the level of unique bioactive compound that benefits health from Tongkat Ali.

Our standardised freeze-dried extraction often yield one of the highest and consistent eurycomanone levels between 1.0 – 1.5%

Our technical surveys showed that there are Tongkat Ali brands that use:

- “Herb extract ratios” as ingredient descriptor, often tested with no eurycomanone found;
- High amounts of non-characterized ingredients;
- No detectable eurycomanone content.

## Case Study 2

### Sexual Stimulants in Tongkat Ali: Pharmaceutical Adulterants

#### Market Challenge

While pursuing new markets in a particular country, Biotropics Malaysia has encountered several products with pharmaceutical adulterants. Stimulants such as sildenafil and other substances are often present with Tongkat Ali, and they are often illegal and detrimental to health.

Our investigation also revealed that the source and the quality of Tongkat Ali are highly questionable (e.g., non-authenticated raw materials, and non-extracted or non-standardised ingredients). Such practice may have inadvertently necessitated the need among manufacturers to spike the product with pharmaceutical sexual stimulants to boost efficacy.

These practices can happen with you realising and can significantly affects Tongkat Ali's reputation in certain markets.

#### Our Solution

Our performance ingredient Physta® Tongkat Ali contains pure standardised and authentic Tongkat Ali root using proprietary freeze-dried technology that enables a consistent result to those seeking to improve libido and fertility for men.

In fact, Physta® Tongkat Ali is fit for consumption without the need for additional stimulants or substances to increase its efficacy.

Biotropics Malaysia performed joint-collaboration research work with scientists and experts around the world using human test subjects to validate our findings such as:

- Improved erection time and hardness;
- Increase sperm motility and concentration;
- Improved overall sexual satisfaction.



## Dedication To Innovation & Science

We develop bespoke health solutions from organic and herbal traditions through years of research and innovation. Our team of scientists and researchers are continually discovering new breakthroughs to improve better health solutions from natural resources.



## State of The Art Extraction & Manufacturing Facility

Our extraction and production facility has been US FDA-inspected and recognized as one the best in Malaysia. With a freeze-drying facility and production capacity of more than **60,000** capsules per minute, we can fulfill the demand for the small to large scale commercialization of your product.



## End-To-End Support

We can assist you in the designs and developments of a new product. From the formulation of new ingredients to laboratory tests to product registrations, we help you save a lot of time and resources. Work efficiently with our experts today.



**Biotropics Malaysia Berhad**

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