LIFTMODE

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CERTIFICATE OF ANALYSIS

Beta Phenylethylamine HCL

(β-PEA HCl)

Material Lot #: 170408
Country of Origin: China

Manufacture 04/08/2017
Expiration Date: 04/07/2020

Analysis	Claim	Result
β-Phenylethylamine HCL	≥99.0%	99.27%

Test	Specification	Result
Appearance	White Crystalline Powder	Complies
Melting Point	220°-222°C	220.6°-220.5°C
Loss on Drying	≤0.5%	0.23%
HPLC Assay %	≤99%	99.27%

Conforms to Standard

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Product Name	Phenylethylamine HCL	Client Lot Number	170408
Report Date	6/15/17	Laboratory #	8812

Test	Method	Result
Identification	H-NMR	Conforms
Purity	CA-094(HPLC-UV)	99.9%
Lead	ICP-MS USP <730>	0.031 ppm
Arsenic	ICP-MS USP <730>	<0.001 ppm
Cadmium	ICP-MS USP <730>	0.009 ppm
Mercury	ICP-MS USP <730>	<0.001 ppm

Collin Thomas
Laboratory Manager

06/15/2017 6/15/17
Date

Phenylethylamine HCL

- **Increased energy**
- **Mood-lift**
- **Increased focus**

- **Phenylethylamine is a trace monoamine found in all animals and plants that acts as a modulator of catecholamine emissions**
- **The benefits of phenylethylamine supplements include mood-lift and increased energy, general feelings of well-being, increased learning capacity and is responsible for the 'runner's high'**
- **Dosage of phenyethylamine is recommended at around 100-500mg in the morning or 30-40mins before exercise**
- **Side effects are dose dependant and may include headaches and upset stomach. If used in combination with other stimulants, side effects may be more pronounced.**

Background

Phenylethylamine (PEA) is a naturally occurring trace monoamine, and a derivative of the amino acid phenylalanine. It is found naturally in all mammals in low levels and acts in various functions – most prominently as a modulator of catecholamine emissions (ie dopamine, norepinephrine and epinephrine) in the brain. It acts to release dopamine and norepinephrine and thereby to act as a stimulant and mood-enhancer as well as an appetite suppressor.[1] Online published personal reviews on the effects have found interesting other mood enhancements from PEA use including a feeling of general well-being, creativity, awareness, attention and sexual desire. Phenylethylamine is commonly known as the 'love drug' and is found in high levels in especially dark chocolate (ie pure cocoa). The chemical is rapidly degraded by MAO enzymes when taken orally and has a short half-life in the body. If required, LiftMode recommends taking phenylethylamine in addition to Hordenine to allow a longer lasting effect (up to 2 hours).

Phenylethylamine HCL effects / benefits

By acting to release dopamine (the 'feel-good' chemical) and norepinephrine, phenylethylamine acts predominantly as a stimulant and mood-enhancer producing energy, mood lift and euphoric sensations. As with most stimulants, the effects also include appetite suppression. Phenylethylamine is found naturally in all animals tested to date, and in very low concentrations (trace) and is highly potent. Like most amphetamine class molecules, PEA boosts neurotransmitter signals to enhance cognitive function.

"It boosts the signal strength of neurotransmitters by increasing their signal-to-noise ratio. This means that PEA more efficiently couples the release of neurotransmitters to the electrical impulse that triggers their release. The end result is that PEA cranks up the volume of neurotransmitter activity for higher performance throughout the body, and it does not matter how old you are to experience a noticeable performance improvement in daily activities."(Boultan and Jourio, 1990)[2]

PEA is also useful in anti-aging due to its activity on catecholamines in the brain. As we get older, our catecholamine release system begins to degrade, resulting in lower energy and mood. PEA is able to rectify this by causing the release of catecholamines.

Due to the release of the 'feel-good' hormone dopamine, PEA is associated with mood-lift and euphoria, even in stressful situations. Phenyethylamine benefits also include increased learning capacity:

"PEA releases acetylcholine, a neurotransmitter that plays an integral role in learning and memory. Brain receptors respond to acetylcholine by facilitating memory and higher cognitive functions. In addition, PEA increases noradrenalin, the brain's version of adrenaline, which is required for alertness, concentration, and "get up and go." An increase in glutamate from PEA can throw switches to the "on" position in memory-forming circuits, making it easier to form memories."(Kaufman, 2017)[3]

There have been numerous reports of the use of PEA as a treatment for acute anxiety disorders and panic attacks and it appears to be highly effective in this regard.[4]

The effects of PEA have been linked to what is commonly known as the 'runner's high'. A recent study found that healthy men who had undergone an intense 60 minute exercise programme had increased levels of PEA. PEA is thought to be what causes the common post-workout euphoria.[5]

Phenylethylamine HCL recommended use

Phenylethylamine doses range from around 100-500mg daily. Lower doses will exhibit the base cognitive effects, while higher doses will bring on a more intense experience and the euphoric effects. Due to its stimulant effects, PEA is most often taken in the morning or around 30-40mins before exercise. It is not recommended to take PEA at night as it may interrupt sleeping patterns.

Phenylethylamine HCL side effects and warnings

As with all stimulants there are side effects to phenylethylamine use. These are generally dose dependant and are usually quite low risk. Side effects can include headache and upset stomach. Since PEA is a naturally occurring molecule, the body has a unique, fast and effective method of breaking it down so toxic overdose is unlikely.

According to a research article about teens using PEA in conjunction with other 'research chemicals' at music festivals, acute overdosing resulted in a negative mental state. It is important to remember that these negative effects are short-lived due to the rapid metabolism of PEA, and only caused by over-dosing and using PEA in conjunction with other chemicals.

It is important to stick to recommended doses and not overdo it, especially after taking it for a while because of the tolerance that builds up. It is also not recommended to take phenylethylamine while using prescribed MAOIs, because these will inhibit the breakdown of the drug in the body. However, LiftMode does recommend using Hordenine to prolong the effects, should it be required.

Another research article has found that phenylethylamine will increase the effects of amphetamines and users are not recommended to combine the two.

Most amphetamines have a similar effect to PEA, by releasing neurochemicals like dopamine or serotonin, and inhibiting their uptake. It is quite common to see psychotic episodes from overdose of amphetamines. Once again, it is important to remember that PEA has an extremely low half-life in the body and, unless used in conjunction with an MAOI, the overdose effects would most likely be short-lived. [6]

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[1] **"Phenylethylamine"** Nootrinext.com retrieved 08-12-2014

[2] **"2-Phenylethylamine: A Modulator of Catecholamine Transmission in the Mammalian Central Nervous System?"** I. A. Paterson, A. V. Juorio and A. A. Boulton, Journal of Neurochemistry, Volume 55, Issue 6, pages 1827–1837, December 1990

[3] **"The Science of PEA: The Brain's Natural Stimulant for Higher Performance and Longevity"** Richard Clark Kaufman, PhD. online article. naturodoc.com accessed 11-13-2014

[4] **"Does phenylethylamine act as an endogenous amphetamine in some patients?"** Paul A. J. Janssen, Josée E. Leysen, Anton A. H. P. Megens, Frans H. L. Awouters, International Journal of Neuropsychopharmacology, 1999

[5] **"Phenylethylamine, a possible link to the antidepressant effects of exercise?"** A Szabo, E Billett, J Turner, Br J Sports Med 2001;35:342-343 doi:10.1136/bjsm.35.5.342

[6] **"Comparative effects of amphetamine, phenylethylamine and related drugs on dopamine efflux, dopamine uptake and mazindol binding."** E M Parker and L X Cubeddu, Journal of pharmacology, April 1988 vol. 245 no. 1 199-210