



LIFTMODE
47 W. Polk St. STE 100-241
Chicago, IL 60605

liftmode@liftmode.com
www.liftmode.com

CERTIFICATE OF ANALYSIS

L-Theanine (L-γ-glutamylethylamide)

Material Lot #: 20160520 Manufacture Date: 08/20/2016
Country of Origin: China Expiration Date: 08/19/2019

Analysis	Claim	Result
L-Theanine	≥99.0%	99.39%

Test	Specification	Result
Appearance	White Powder	Complies
Specific Rotation	(+7.5°)-(+8.5°)	+8.1°
Solution Color (1.0g/20ml)	Clear, Colorless	Complies
Chloride	<0.02%	Complies
Loss on Drying	<1.0%	0.40%
Residue on Ignition	<0.2%	Complies
PH	5.0-6.0	5.20
Heavy Metals	≤10 ppm	0.03 ppm
Arsenic	≤1 ppm	0.009 ppm
Assay	98.0%-102.0%	99.39%

L-Theanine should be stored at or below room temperature in a lightly sealed durable container.
L-Theanine should be protected from excess heat, direct sunlight, excess humidity and moisture.
L-Theanine has a stable shelf life of 3 years from the date of manufacture when properly stored.



LIFTMODE
47 W. Polk St. STE 100-241
Chicago, IL 60605

liftmode@liftmode.com
www.liftmode.com

CERTIFICATE OF ANALYSIS

Caffeine + L-Theanine Capsules (100 mg caffeine anhydrous + 150 mg L-γ-glutamylethylamide)

Material Lot #: 1703260 Manufacture Date: 06/22/2017
Country of Origin: China Retesting Date: 06/21/2020

Test	Specification	Result
Active Ingredients (HPLC)		
Caffeine Anhydrous	100.0 mg ± 10%	101.1 mg
L-Theanine	150.0 mg ± 10%	163.3 mg
Disintegration Time	≤15 minutes	9 minutes
Microbial Test		
Total Bacterial Count	≤100,000 cfu/gm	<10 cfu/gm
Total Mold & Yeast Count	≤1,000 cfu/gm	60 cfu/gm
Salmonella	Negative	Complies
E.coli	Negative	Complies
ICP-MS Heavy Metals Test		
Lead (Pb)	≤2.75 mcg/MDD	0.001 mcg
Mercury (Hg)	≤10 mcg/MDD	0.000 mcg
Arsenic (As)	≤10 mcg/MDD	0.000 mcg
Cadmium (Cd)	≤4.1 mcg/MDD	0.000 mcg

Conforms to Standard

These capsules should be stored at or below room temperature in a lightly sealed durable container. These capsules should be protected from excess heat, direct sunlight, excess humidity and moisture. These capsules have a stable shelf life of 3 years from the date of manufacture when properly stored.



LIFTMODE
47 W. Polk St. STE 100-241
Chicago, IL 60605

liftmode@liftmode.com
www.liftmode.com

CERTIFICATE OF ANALYSIS

Caffeine Anhydrous (1,3,7-Trimethylpurine-2,6-dione)

Material Lot #: 16081412 Manufacture Date: 08/09/2016
Country of Origin: China Retesting Date: 08/08/2020

Analysis	Claim	Result
Caffeine	≥99.0%	99.9%

Test	Specification	Result
Appearance	White Crystalline Powder	Complies
Appearance of Solution	Clear and Colorless	Complies
Melting Point	234°-239°C	236.6°C
Single Impurity	≤0.10%	0.03%
Total Impurity	≤0.10%	0.04%
Sulfate	≤500 ppm	<500 ppm
Heavy Metals (µg/g)	≤10 ppm	<10 ppm
Lead	≤1 mg/kg	≤ 1 mg/kg
Loss on drying	≤0.5%	0.11%
Residue on Ignition	≤0.1%	0.02%
Assay %	98.5-101.0%	99.9%

Conforms to Standard



LIFTMODE
47 W. Polk St. STE 100-241
Chicago, IL 60605

liftmode@liftmode.com
www.liftmode.com

CERTIFICATE OF ANALYSIS

Product Name	L-Theanine	Client Lot Number	20160820
Report Date	03/29/17	Laboratory #	8410

Test	Method	Result
L-Theanine	CA-028 (HPLC-UV)	99.0 %
Arsenic	ICP-MS USP <730>	<0.001 ppm
Cadmium	ICP-MS USP <730>	<0.001 ppm
Lead	ICP-MS USP <730>	<0.001 ppm
Mercury	ICP-MS USP <730>	<0.001 ppm
Total Plate Count	Biolumix	<100 CFU/G
Yeast & Mold	Biolumix	<100 CFU/G
Salmonella	Biolumix	Negative
E.Coli	Biolumix	<10 CFU/G
Coliform	Biolumix	<10 CFU/G

Collin Thomas *CT*
Laboratory Manager

03/29/2017 3/29/17
Date

Caffeine + L-Theanine

What is Caffeine?

Caffeine is a purine alkaloid found in many plants but predominantly in *Coffea Arabica*, the 'coffee tree' - a dark green shrub with white flower clusters that is indigenous to Ethiopia and cultivated in Brazil, Colombia, Indonesia, Ivory Coast, Mexico and Kenya. Caffeine is classified as a stimulant with slightly dangerous properties. It acts as a **vasoconstrictor** and **Increases focus and energy**. Caffeine has been used in England since 1601 (introduced as "kahveh") and there have been very few negative reports from coffee use. However, pure caffeine is a lot stronger and needs to be used with more caution.

What is L-Theanine?

L-theanine is a relatively rare phytochemical **found in a few species of tea and mushrooms**. It is especially associated with green tea, where it plays a part in some of the tea's flavor. It is an **uncommon amino acid** (protein part) and does not take part in forming proteins. Green tea has been used throughout the world, especially in the East, for thousands of years and has long been known to have positive effects on human health. In 600 AD a Chinese writer, Lu Yu wrote a book called the Cha Jing (the Tea Classic), documenting some of the known history of green tea and how the perfect cup should be created. It wasn't until much more recently that we discovered the chemical makeup of tea!

L-theanine effects / benefits

One of the most important effects of an L-theanine supplement is its ability to **lower the effects of stress**. In a study dated from 2004, the effects of L-theanine were compared to those of a commonly prescribed anxiolytic (anti-anxiety) medication in 16 volunteers. L-theanine was found to reduce baseline stress levels by creating a more calm and relaxed feeling in those who took it while the common anti-anxiety pill had no effect on baseline stress levels. Stress is often related to depression and so it follows that **L-theanine has also been shown to have potential antidepressant effects**.

L-theanine has been directly shown in a number of studies to **Increase the activity of alpha brainwaves**. An increase in alpha brainwaves are associated with a relaxed mental state without drowsiness. Alpha brainwaves are also related to a positive influence in attention and arousal, and L-theanine has been shown to directly increase the activity of alpha brainwaves.

The structure of L-theanine is highly similar to glutamate - a molecule known for its function in memory. **It is able to penetrate through the blood-brain barrier and has been shown to protect neurons (brain cells) from damage and decay**. Other studies have shown that **L-theanine effectively increases brain serotonin, dopamine and GABA levels**. Increases in these chemicals are associated with **increases in mood, attention and relaxation**. In both the East and the West, it has been known for a long time that drinking tea helps with managing stress. At least one scientific study has backed up this claim and shown that **L-theanine is able to reduce the effects of both psychological and physical stress**.

There has been a lot of research into the effects of L-theanine when combined with caffeine, and they have all shown that the combination boosts both mood and brain power. One double-blind placebo study (the most acknowledged type in science) on 44 young adults and

Caffeine benefits / effects

Caffeine acts as a **stimulant** of the central nervous system, promoting **wakefulness and energy**. Caffeine inhibits cAMP phosphodiesterase activity and acts as an antagonist of adenosine receptors and therefore causes more dopamine to be released and activation of different 'brain zones' (causing **enhanced mental activity**).

Increased mental activity

Caffeine is has been known to act as a **central nervous system (CNS) stimulant for a long time**, and its positive effects on mental activity have been noted since its first use.

In 1978, a double-blind placebo study was conducted on a group of nine healthy non-caffeine drinkers to elucidate its effects on the CNS and brain function. Doses of 250mg (the equivalent of around 2 cups of coffee) caffeine or placebo were administered to the group and the results were recorded.

Increased physical energy

Another recent study on 10 lean and 10 obese women found that caffeine was able to significantly **increase thermogenesis** (heat-production) in both groups. This signifies an increase in metabolism and therefore a possible use in weight-loss. The net energy expenditure was also showed to increase for both groups after consumption of 150mg caffeine.

"Single-dose oral administration of 100 mg caffeine increased the resting metabolic rate of both lean and postobese human volunteers by 3-4% (p less than 0.02) over 150 min and improved the defective diet-induced thermogenesis observed in the postobese subjects." (Collins et al, 1989)

their response to a difficult cognitive task showed that L-theanine, in combination with caffeine, was able to increase alertness and boost brain power.

There is evidence that L-theanine supplementation can significantly improve sleep quality. In a 2011 study on male children with attention-deficit/hyperactivity (ADHD) disorder, it was found that daily supplementation of 400mg L-theanine significantly improved sleep quality over a six-week period. 98 boys aged 8-12 years old and previously diagnosed with ADHD were given L-theanine or placebo over 6 weeks. Their sleep quality was monitored for five nights at the start and end of the period using wrist actigraphy and a Sleep Questionnaire completed by parents. A second test, also in Japan, on 22 healthy young men over a 6 day period, found that L-theanine was a safe and effective supplement for the **improvement of sleep and also for reducing nightmares**. Sleep quality was assessed using wrist actigraphy and questionnaires.

L-theanine has been shown to decrease the negative effects of alcohol on the liver. In an animal study it was shown that all ethanol metabolising enzymes in the liver are regulated by L-theanine. Basically, alcohol was found to be metabolised faster and that negative effects from long-term alcohol consumption could be decreased by using L-theanine supplements.

Caffeine + L-Theanine recommended usage

Roasted coffee tree seeds "coffee beans" have approximately 1-2% caffeine content so an average cup of coffee is around **150mg caffeine**.

Toxic effects can occur at very high doses. The LD₅₀ (the lethal dose for 50% of the population) for humans is said to be around 150-200mg/kg. For a 75kg person this is around 11g. However, the lower limit for fatal overdose is known to be at around 5g.