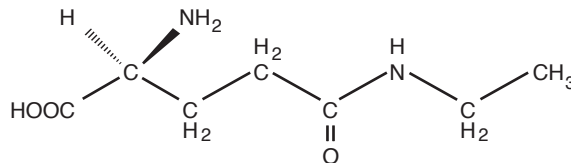


Suntheanine®

The award-winning, patented dietary ingredient for stress and well being.

First introduced centuries ago, tea has become the most widely consumed beverage in the world, second only to water. Extensive research has been conducted on tea, specifically green tea, for its many functional properties.

It has been estimated that nearly 65 percent of the adult population experiences some form of stress and these numbers are on a continual rise. Since ancient times, it has been said that drinking green tea induces relaxation. A pioneer in the science of green tea, Taiyo found this relaxation effect to be due to the presence of the amino acid L-theanine. Suntheanine® is the trade name for Taiyo's pure form L-theanine produced via a patented fermentation process.



Biologically Active

Human clinical trials have shown Suntheanine to promote an alert state of relaxation without drowsiness, as indicated by an increase in Alpha brain waves, and a decrease in Beta brain waves.

The brain emits weak electrical impulses that can be measured on the surface of the head, which are classified based on their frequency:

Brain Wave	Frequency (Hz)	Mental Effect
Delta (δ)	0.5-3.0	Sound Sleep
Theta (θ)	4.0-7.0	Dozing/Sleeping
Alpha (α)	8.0-13.0	Relaxed, Alert State
Beta (β)	> 14.0	Awake, Excited State

Suntheanine has been found to be most effective in the range of 50 - 200 mg and its effects are exhibited within 30 - 40 minutes of consumption.

Additional human clinical research suggests that Suntheanine may have application in improving the quality of sleep, diminishing normal symptoms of premenstrual syndrome (PMS), improving learning performance, heightening mental acuity, promoting concentration, reducing negative side effects of caffeine and supporting the immune system.

Documented Safety

Suntheanine has been shown to be safe based on favorable numerous toxicology studies. Unlike other stress reducing supplements, Suntheanine does not cause drowsiness. Suntheanine has been consumed in foods and supplements since 1994 with no indication of adverse reactions or contraindications. Suntheanine received confirmation on its GRAS Affirmation from the FDA in 2007 for use in foods and beverages.

Structure / Function Claims

Backed by peer reviewed studies, several claims have been deemed acceptable for Suntheanine:

- Reduces stress and promotes relaxation without drowsiness
- Improves focus, attention, learning performance and mental clarity
- Improves quality of sleep
- Diminishes normal symptoms of PMS
- Reduces negative side effects of caffeine

Award Winning, Patented Technology

Suntheanine was awarded the "Food Ingredient Research Award" at the 1998 Food Ingredients Europe and "Best New Product of 2000" at Nutracon. Suntheanine is protected by over 40 U.S. and international patents for its various physiological efficacies and L-isomer specific enzymatic fermentation production process.

Manufactured by:



What is Suntheanine?

Suntheanine is the trade name for Taiyo's isomerically pure L-theanine (L-glutamic acid- γ -monoethylamide) produced via a patented fermentation process. L-theanine, a unique amino acid found in green tea (*Camellia sinensis*), constitutes between 1 to 2% of the dry weight of tea leaves, is the predominant amino acid component in tea and exists in the free (non-protein) form.

What is the mechanism of Suntheanine

- Suntheanine is absorbed in the small intestine via a sodium-coupled active transport process and crosses the blood-brain barrier where it is absorbed into the brain in a dose-dependent manner.
- Suntheanine may compete for absorption in the intestinal tract and brain with amino acids found in the methionine group, including isoleucine, leucine and valine. Concentrations of other amino acids are unchanged by Suntheanine.
- Suntheanine directly stimulates production of alpha brain waves (a state often achieved by meditation, one of deep relaxation and mental alertness).
- Suntheanine plays a role in the formation of the inhibitory neurotransmitter GABA and increases dopamine release through modulation of glycine and AMPA receptors. Suntheanine promotes a relaxation and excitatory inhibition effect without leading to drowsiness.

What is the regulatory status of Suntheanine?

L-theanine was approved in Japan in 1964 for unlimited use in foods. In 2000, Suntheanine was introduced in the U.S. for use in dietary supplements. Suntheanine, as produced via a patented enzymatic fermentation method, resulting in an enantiomerically pure L-theanine, was GRAS affirmed in the U.S. in 2005 for use in foods and beverages up to 250 mg/serving, with no limitation on the number of servings. In 2007 the U.S. FDA confirmed the GRAS Affirmation in its Letter of No Objection (GRN 000209).

What safety studies are available for Suntheanine?

Suntheanine has been shown to be safe for use as directed based on the following positive toxicology studies: 28 Day Subacute Toxicity Study, 78 Week Evaluation of Toxicity and Carcinogenicity, Acute Toxicity/LD-50 Determination and Ames Salmonella/Microsome Plate Test for Mutagenicity.

How often should Suntheanine be taken?

There is not a set schedule for taking Suntheanine, and should be taken when levels of stress are noticed. The effects of Suntheanine are generally felt within 30 minutes, and have been shown to last up to 8 - 12 hours. Consumption of Suntheanine is not affected (positively or negatively) by the consumption of food. Suntheanine may be taken at any time.

What is the recommended use of Suntheanine?

The intended use for Suntheanine is that of a relaxant to produce mental and physical relaxation without inducing drowsiness. Based on the results of clinical studies, it has been established that Suntheanine is effective in the range of 50 - 200 mg. It is suggested that subjects with higher levels of stress consume a minimum of 100 mg for best effects. Please note that if a person is already calm and relaxed, little to no effect will be noticed at any level of consumption.

How should products containing Suntheanine be labeled?

Suntheanine[®] (L-Theanine)

What claims can be made on Dietary Supplements containing Suntheanine?

The following is list of several recommended structure/function claims for dietary supplements containing Suntheanine:

- Reduces stress, promotes relaxation without drowsiness
- Improves quality of sleep
- Diminishes normal symptoms of PMS
- Improves mental focus, learning performance and concentration
- Reduces negative side effects of caffeine



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