Doctor's BEST® Science-Based Nutrition™

# Best L-Tryptophan featuring TryptoPure™

## Best L-Tryptophan featuring TryptoPure™

90 Vegetable Capsules

Ingredients per 1 vegetarian capsule:
**Ajinomoto L-Tryptophan (TryptoPure™):** . . .500 mg

Excipients: Vegetable capsule, cellulose, magnesium stearate (vegetable source), silicon dioxide.

Suggested Adult Use: Take 1 or 2 capsules daily. For optimum absorption, take separately from protein-containing foods and dietary supplements containing protein or amino acids.

Suitable for Vegetarians.

## Best L-Tryptophan Enhanced featuring TryptoPure™

90 Vegetable Capsules

Ingredients per 1 vegetarian capsule:
**Ajinomoto L-Tryptophan (TryptoPure™):** . . .500 mg
Niacin (as niacinamide): . . . . . .20 mg
Vitamine B6: . . . . . .10 mg
(from 17.6 mg pyridoxal 5-phosphate)

Excipients: Vegetable capsule, cellulose, magnesium stearate (vegetable source), silicon dioxide.

Suggested Adult Use: Take 1 or 2 capsules daily. For optimum absorption, take separately from protein-containing foods and dietary supplements containing protein or amino acids.

Suitable for Vegetarians.

## Best L-Tryptophan Powder featuring TryptoPure™

50 grams

Ingredients per 1 scoop:
**Ajinomoto L-Tryptophan (TryptoPure™):** . . .500 mg

Excipients: None.

Suggested Adult Use: Take 1 or 2 capsules daily. For optimum absorption, take separately from protein-containing foods and dietary supplements containing protein or amino acids. Take with water or juice.

Suitable for Vegetarians.

## Ingredients

Best L-Tryptophan products contain Ajinomoto TryptoPure™. Tryptophan is an essential amino acid readily converted by the body to the neurotransmitter serotonin. Able to cross the blood-brain barrier, L-tryptophan is altered by enzymes to first form the intermediate amino acid 5-HTP and then serotonin. It is also the metabolic precursor to melatonin and to the B vitamin niacin. Supplementing the diet with pure L-tryptophan like TryptoPure™, found in Doctor's Best L-Tryptophan products, can improve sleep and enhance mood, and may also be beneficial in reducing carbohydrate cravings.*

## What is Ajinomoto TryptoPure™?

TryptoPure™ is pure, pharmaceutical-grade L-tryptophan produced by the world's leading maker of amino acids—Ajinomoto. The global leader in the research, production, and sales of amino acids, Ajinomoto was one of the first to make pharmaceutical-grade amino acids; they literally invented the process.

Ajinomoto TryptoPure™ is considered the purest, most trusted L-tryptophan available. It is manufactured via fermentation strictly from vegetable sources, not animal, and it is between 99% and 100% pure. The level of impurities in tryptophan from other makers can be much higher.

In fact, from 1989 to 2006 the FDA was so concerned about the quality of tryptophan coming into the U.S. that it instituted an import ban with one exception: Ajinomoto's TryptoPure™. In 1989, the importation of L-tryptophan was banned in the United States after cases of an autoimmune illness called eosinophilia-myalgia syndrome were traced to an improperly prepared batch of tryptophan. The FDA limited L-tryptophan availability to prescription drugs, infant formulas, and enteral feeding products. Because the FDA recognized the unsurpassed quality of Ajinomoto's TryptoPure™, it was excepted from the ban, but its use was limited to those few products. Today, it is available over-the-counter in Doctor's Best L-Tryptophan products.

## Doctor's Best L-Tryptophan Enhanced featuring TryptoPure™

Doctor's Best L-Tryptophan Enhanced additionally includes the active form of vitamin B6 and the B-vitamin niacin (as niacinamide) as cofactors for the enhanced utilization of L-tryptophan. Vitamin B6 is an essential cofactor in the conversion of tryptophan, while niacinamide plays an important role in allowing our body to properly utilize this essential amino acid. Clinical observation suggests that supplementing with Vitamin B6 and niacinamide in conjunction with L-tryptophan enhances the ability of tryptophan to support healthy sleep.

## Benefits

### Promotes Normal, Healthy, Restful Sleep*

Adequate sleep is a necessity for maintaining proper health. Sleeping well enhances our ability to function during the day. The body requires sleep as downtime to regenerate and repair essential bodily functions and allow us to feel refreshed. L-Tryptophan is a potent nutrient that has been found to enhance restful, peaceful sleep via a number of mechanisms. L-tryptophan is best known for its ability to decrease the amount of time it takes to fall asleep (George et al. 1989; Hartmann 1982). It has also been shown in studies to enhance




Continued on reverse side

total sleep time, decrease intermittent wakening, and decrease early morning wakefulness (Schneider-Helmert 1981; Wyatt et al. 1970), allowing the body to feel rejuvenated.

The clinical efficacy of L-tryptophan is due to its ability to support normal production of serotonin in the brain (Demisch et al. 1987b; Hartmann 1982) (Demisch et al. 1987a). Serotonin has been implicated in the regulation of sleep, mood, appetite, and temperature, among other roles that it plays in the body (Birdsall 1998). In a review article summarizing findings from over fifty studies conducted between 1970 and 1985, researchers concluded that L-tryptophan enhances overall sleep quality and also effectively provides a remedy for occasional sleeplessness.* It does this without dangerous side effects and without any feelings of next-day drowsiness. (Leiberman 1985) (Schneider-helmert 1986).

## Enhances Mood and Sensations of Well-Being*

Clinical studies show that L-tryptophan supplementation can positively affect mood and emotional well-being. A randomized, double-blind, placebo-controlled trial of 115 individuals found that the administration of L-tryptophan was significantly more effective than placebo for enhancing mood and affect (Thomson J et al. 1982). The subjects took 1 gram of L-tryptophan or an identical placebo capsule three times per day for 12 weeks. Mood and affect were assessed using a standardized, clinically recognized rating scale. Scores in the group supplementing with L-tryptophan were significantly better than placebo at the end of the trial period, indicating L-tryptophan's success at supporting healthy mood.

Further studies suggest that in healthy individuals, L-tryptophan has positive effects on mood, behavior, and emotional processing. For example, in a recent study of healthy females with normal moods and no history of depression, L-tryptophan supplementation alters the processing and perception of emotional stimuli towards a more positive bias. Supplementation with one gram three times per day caused an increase in happy facial expressions, a decrease in negative and disgusted facial expressions, and a decrease in the attention paid to negative words (Murphy et al. 2006). A second study conducted in 2006 with a double-blind crossover design indicated that the same dose of L-tryptophan (1 gram three times per day) significantly decreased quarrelsome and aggressive behaviors while enhancing agreeable behaviors in everyday social interactions. In this study, participants reported more positive and less negative emotions and rated their interactions as more pleasant (aan het Rot et al. 2006).

A number of other studies point to the ability of L-tryptophan supplementation to balance mood. A study published in 1990 suggested that individuals with seasonal variations in mood responded well to supplementation with L-tryptophan (McGrath et al. 1990). Furthermore, compared to standard light therapy, the mood enhancement associated with L-tryptophan supplementation lasts longer after discontinuation than the effects seen after stopping light therapy (Ghadirian et al. 1998).

An additional double blind placebo-controlled study found that two grams of L-tryptophan administered three times a day, from the day of ovulation to the third day of menstruation (the luteal phase) in healthy women, significantly relieved the most prominent mood symptoms associated with PMS. After three months of use, women taking L-tryptophan experienced statistically significant control of extreme mood swings, sadness, irritability, and tension. It also improved their perceived quality of life (Steinberg et al. 1999).

## Decreased Carbohydrate Cravings to Support Weight Management Efforts*

L-tryptophan may play a supportive role in helping individuals who are currently involved in weight management programs and diets by helping to reduce carbohydrate cravings. During dieting, serotonin levels drop dramatically. Serotonin plays a role in controlling appetite, and eating carbohydrate-rich foods increases serotonin levels in the brain. This may explain carbohydrate cravings and resultant binge eating in some dieters. While no human trials have examined L-tryptophan supplementation directly, a number of clinical trials have used supplemental 5-HTP, the amino acid produced in the body from L-tryptophan. Results of these trials have shown decreases in overall food intake and a subsequent reduction in weight in individuals taking 5-HTP. (Birdsall, 1998). The majority (75%) of the decreased food intake was from carbohydrates, suggesting decreased cravings for carbohydrates in individuals on 5-HTP (Cangiano et al. 1991). It is likely that L-tryptophan supplementation would have similar effects.

# Safety

Uncontaminated L-tryptophan has a thirty-year history of safety and absence of adverse effects at levels commonly consumed by humans. When administered in abnormally high dosages of 7 grams (for a 150 pound human) per day, potential side effects include gastric irritation, vomiting, and head twitching (2006). Use during pregnancy or lactation has not been studied as of yet and is, therefore, not recommended. L-tryptophan should not be used by individuals taking antidepressant drugs without close medical supervision.

* This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

# References

2006. L-Tryptophan. Monograph. Altern Med Rev 11: 52-6.

aan het Rot, M., Moskowitz, D. S., Pinard, G. and Young, S. N. 2006. Social behaviour and mood in everyday life: the effects of tryptophan in quarrelsome individuals. J Psychiatry Neurosci 31: 253-62.

Birdsall, T. C. 1998. 5-Hydroxytryptophan: a clinically-effective serotonin precursor. Alternative Medicine Review 3: 271-280.

Cangiano, C., Ceci, F., Cairella, M., Cascino, A., Del Ben, M., Laviano, A., Muscaritoli, M. and Rossi-Fanelli, F. 1991. Effects of 5-hydroxytryptophan on eating behavior and adherence to dietary prescriptions in obese adult subjects. Adv Exp Biol Med 294 ("Kynurenine and Serotonin Pathways"): 591-593.

Demisch, K., Bauer, J. and Georgi, K. 1987a. Treatment of severe chronic insomnia with L-tryptophan and varying sleeping times. Pharmacopsychiatry 20: 245-248.

Demisch, K., Bauer, J., Georgi, K. and Demisch, L. 1987b. Treatment of severe chronic insomnia with L-tryptophan: results of a double-blind cross-over study. Pharmacopsychiatry 20: 242-244.

George, C. F., Millar, T. W., Hanly, P. J. and Kryger, M. H. 1989. The effect of L-tryptophan on daytime sleep latency in normals: correlation with blood levels. Sleep 12: 345-53.

Ghadirian, A. M., Murphy, B. E. and Gendron, M. J. 1998. Efficacy of light versus tryptophan therapy in seasonal affective disorder. J Affect Disord 50: 23-7.

Hartmann, E. 1982. Effects of L-tryptophan on sleepiness and on sleep. J Psychiatr Res 17: 107-13.

McGrath, R. E., Buckwald, B. and Resnick, E. V. 1990. The effect of L-tryptophan on seasonal affective disorder. J Clin Psychiatry 51: 162-3.

Murphy, S. E., Longhitano, C., Ayres, R. E., Cowen, P. J. and Harmer, C. J. 2006. Tryptophan supplementation induces a positive bias in the processing of emotional material in healthy female volunteers. Psychopharmacology (Berl) 187: 121-30.

Schneider-Helmert, D. 1981. Interval therapy with L-tryptophan in severe chronic insomniacs. A predictive laboratory study. International Pharmacopsychiatry 16: 162-173.

Steinberg, S., Annable, L., Young, S. N. and Liyanage, N. 1999. A placebo-controlled clinical trial of L-tryptophan in premenstrual dysphoria. Biol Psychiatry 45: 313-20.

Wyatt, R. J., Engelman, K., Kupfer, D. J., Fram, D. H., Sjoerdsma, A. and Snyder, F. 1970. Effects of L-tryptophan (a natural sedative) on human sleep. Lancet 2: 842-846.

DRB • 1120 Calle Cordillera • Suite 101, San Clemente, CA 92673
phone: 800-333-6977 • fax: 949-498-3952
website: www.drbvitamins.com ©Doctor's Best, Inc., Revised 1/08

L-tryptophan is an essential amino acid (protein building block) in human nutrition. Essential amino acids are not synthesized by the body and must be obtained in the diet. The L-tryptophan in this product is manufactured and tested for purity according to the Japanese Pharmacopeia (JP) and the United States Pharmacopeia (USP) standards.

***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**


Distributed by: **Doctor's Best, Inc.**
1120 Calle Cordillera, Suite 101, San Clemente, CA 92673
**(800) 777-2474**
**www.drbvitamins.com**


7 53950 00126 8

Doctor's BEST®

*Science-Based Nutrition™*

*Dietary Supplement*

# Best L-Tryptophan

*USP Pharmaceutical Grade*

*Featuring Ajinomoto's TryptoPure™*

*500mg / 90 Veggie Caps*

## Supplement Facts

Serving Size 1 capsule
Servings per container 90 servings

| | Amount per serving | % Daily Value |
|---|---|---|
| Ajinomoto L-Tryptophan | 500 mg | † |

† Daily Value not established.

**Other ingredients:** Vegetable capsule, cellulose, magnesium stearate (vegetable source), silicon dioxide.

**Suggested Use:** Take 1 or 2 capsules daily, or as directed by a health practitioner. For optimum absorption, take separately from protein-containing foods and dietary supplements containing protein or amino acids.

**Suitable for vegetarians**

**CONTAINS NOTHING OTHER THAN LISTED INGREDIENTS**

AJIPURE™ AMINO ACIDS


AjiPure™ and TryptoPure™ are trademarks of Ajinomoto Co. Inc.