Ingredients

5-HTP (5-hydroxytryptophan) is a naturally-occurring metabolite of the essential amino acid tryptophan. 5-HTP for use in dietary supplements is derived from the seeds of the Griffonia simplicifolia plant.

Benefits

Metabolism and Absorption of 5-HTP

5-HTP (5-hydroxytryptophan) is formed by the addition of a hydroxyl group (-OH) to the 5 carbons of the indole ring of tryptophan. Conversion of tryptophan to 5-hydroxytryptophan is catalyzed by the enzyme tryptophan hydroxylase. 5-HTP functions as the precursor for serotonin, and is converted to serotonin in a pyridoxal phosphate (vitamin B6) dependent reaction catalyzed by the enzyme L-amino acid decarboxylase.

Synthesis of serotonin in the brain requires an adequate supply of either tryptophan or 5-HTP as precursors. The supply of tryptophan available for conversion to 5-HTP depends on a number of factors, including nutritional status and competition between tryptophan and other amino acids for transport across the blood brain barrier.

Disturbances in the serotonin metabolic pathway may disrupt central nervous system functions which utilize serotonin as a neurotransmitter. Administration of 5-HTP bypasses the conversion of tryptophan to 5-HTP. 5-HTP readily crosses the blood brain barrier and becomes available for serotonin synthesis.

Serotonergic neurons (nerve cells) stimulated by serotonin regulate sleep, appetite, nociception (the perception of pain), and aggressive behavior. Serotonin is metabolized to 5-HIAA (5-hydroxyindolacetic acid) which is its primary breakdown product. The concentration of 5-HIAA in cerebrospinal fluid is used as an indicator of serotonin turnover in the CNS serotonin level. Psychiatric patients have been found to have low levels of 5-HIAA in the CNS fluid, suggesting serotonin deficiency. 5-HTP is readily absorbed by the mucosal cells of the gastrointestinal tract. The delivery of 5-HTP into general circulation is enhanced by the concomitant administration of an L-amino acid decarboxylase inhibitor such as carbidopa, which reduces the conversion of 5-HTP to serotonin in the gut and in the liver. In one study using five subjects, systemic absorption of 5-HTP in combination with carbidopa averaged 69.2 percent. Another absorption study found that carbidopa enhanced the increase in serum 5-HTP concentration 5 to 15 fold. In this study, a single dose of 5-HTP increased the plasma level of 5-HTP only slightly, whereas 5-HIAA increased 9-20 fold. This suggests that the gut mucosa has a storage capacity for 5-HTP, and that plasma increases occur after maximum capacity is reached.
Observed Effects of 5-HTP Administration

• Improves Well-Being in Depressed Persons

Serotonin in the central nervous system is recognized as a causative factor in some depressed persons. A comprehensive review of seven open and seven controlled clinical studies found that oral consumption of 5-HTP improved mental and emotional status in 60 to 70 percent of depressed people. The results varied from “modest” to “marked.” Dosages ranged from 50 to 300 mg daily. The accumulated evidence is inconclusive as to whether 5-HTP is more effective combined with decarboxylase inhibitors than when taken alone. Many of the early trials used the combination, and this has been a frequently used therapeutic strategy for reducing conversion of 5-HTP to serotonin outside the CNS. It is generally accepted that a large portion of absorbed 5-HTP is metabolized to serotonin in peripheral tissues before it can enter the brain.

Peripheral conversion of 5-HTP to serotonin would theoretically limit the usefulness of oral 5-HTP for improving CNS functions and mental health. However, trials in which 5-HTP was given alone do show benefits. A small open trial in which 25 people were given 5-HTP either alone or with a decarboxylase inhibitor found no difference in effectiveness. Thirteen of the patients had “very good” or “good” improvement, 8 had “moderate,” and in 4 out of the twenty-five the results were judged to be “poor.”

A more recent randomized double-blind study compared the efficacy of oral 5-HTP (100 mg T.I.D., without a decarboxylase inhibitor) to that of fluvoxamine, a selective serotonin reuptake inhibitor. (SSRIs block the reabsorption of serotonin by postsynaptic receptors, thus increasing the available supply of serotonin in the synaptic cleft.) The two were found to be equally effective, and 5-HTP was better tolerated. It should be noted that 5-HTP was given in the form of enteric-coated, pH-sensitive capsules which dissolve in the small intestine, thus preventing conversion of 5-HTP to serotonin in the stomach.

In contrast to MAO inhibitors and SSRIs, medications which act by blocking normal physiologic functions, 5-HTP supports normal function in its role as a serotonin precursor. Correcting serotonin deficiency has been called a “functional-dimensional approach” in the treatment of depression.

• Improves Sleep Quality

Studies have shown that 5-HTP influences the quality of sleep by increasing REM (rapid eye movement) sleep. Administration of 5-HTP in the evening prior to bedtime has been shown to increase the duration of REM sleep and decrease the amount of non-REM sleep.

• 5-HTP–A Free-radical Scavenger

The OH group which is added to tryptophan in the formation of 5-HTP gives 5-HTP antioxidant properties. Compounds such as vitamin E and flavonoids derive their free-radical quenching ability from OH groups, which donate electrons to oxidants.) 5-HTP quenches a variety of free-radicals. This is in contrast to tryptophan, which is sensitive to oxidation.

• Adverse effects of 5-HTP

Oral administration of 5-HTP in clinical studies has resulted in gastrointestinal disturbances such as nausea, vomiting and diarrhea. According to a review by Byerley, et. al. these effects are tolerated by most patients and tend to lessen over time. Side effects are more marked with higher doses.

Scientific References

5-HTP (5-hydroxy L-tryptophan) is a naturally occurring metabolite of the amino acid tryptophan. 5-HTP is converted in the brain to serotonin, a neurotransmitter substance found at the junctions (synapses) between neurons. 5-HTP helps maintain mental and emotional well-being and promotes healthy sleep. Doctor’s Best 5-HTP is extracted from the seeds of the Griffonia simplicifolia plant.*

*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

Label size: 2.25 x 6.25
Bottle size: TC-54

Supplement Facts

<table>
<thead>
<tr>
<th>Amount per serving</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-hydroxy L-tryptophan</td>
<td>100 mg</td>
</tr>
</tbody>
</table>

† Daily value not established.

Other ingredients: Modified cellulose (veggie cap), rice powder, magnesium stearate (vegetable source).

Suggested adult use: As a dietary supplement, take 1 capsule two or three times daily, with or without food.

CAUTION: Not to be used when taking MAO inhibitors, selective serotonin reuptake inhibitors (SSRIs), or other anti-depressant medications. It should also not be used by individuals taking any of the category of medications known as “triptans.”

KEEP OUT OF REACH OF CHILDREN

Suitable for Vegetarians
CONTAINS NOTHING OTHER THAN LISTED INGREDIENTS

For more information, visit: www.drbvitamins.com