Creative Enzymes®

Melatonin (synthesized)

Cat. No. CEFX-190

Lot. No. (See product label)

Introduction

Description Melatonin, a natural hormone secreted by the pineal gland, primarily regulates the body's circadian rhythm and sleep cycle. Its secretion increases in the dark and decreases during the day, helping the body to recognize circadian changes and thus regulate sleep. Due to work pressure, use of electronic devices and irregular work and rest in modern life, many people do not secrete enough melatonin in their bodies, resulting in decreased sleep quality. Therefore, melatonin is often widely used in the form of supplements to improve sleep health. Melatonin is synthesized primarily by pineal cells from the amino acid tryptophan, which is hydroxylated (by tryptophan-5-hydroxylase) to form 5-hydroxytryptophan and then decarboxylated (by 5-hydroxytryptophan decarboxylase) to form serotonin. Two enzymes, mainly found in the pineal gland, convert serotonin to melatonin: serotonin is first converted to melatonin by arylalkylamine-N-acetyltransferase (AA-NAT, also known as “timezyme”, the limiting enzyme for rate-melatonin synthesis), and then N-acetylserotonin is converted to melatonin by acetylserotonin-O-methyltransferase (ASMT, also known as hydroxyindole-O-methyltransferase or HIOMT) to methylate melatonin.

Applications Sleep health products: Melatonin is widely used in supplements, capsules, gummies, and beverages to help improve sleep quality. Time-Lag Adjustment: Melatonin products are often used by cross-country travelers or shift workers to help regulate sleep schedules. Anti-aging and immune support: Melatonin is also used in health products and functional foods for its antioxidant and immune-enhancing effects.

Synonyms Melatonin; Melatonine; N-Acetyl-5-methoxytryptamine; 3-N-Acetyl-5-methoxyl tryptamine; Melatonin N-Acetyl-5-methoxytryptamine; N-(2-(5-methoxyindol-3-yl)ethyl)acetamide

Product Information

Appearance Off-white crystalline powder

CAS No. 73-31-4

Molecular Formula C13H16N2O2

Purity 99.5%

Function 1 Regulation of circadian rhythms 2 Melatonin may also be involved in early fetal development. 3 Melatonin is involved in blood pressure and autonomic cardiovascular regulation, and immune system regulation. 4 Physiological effects on reproduction and sexual maturation in mammals.

Usage and Packaging

Package 1KG/bag

Storage and Shipping Information

Storage 2 years under well storage situation and stored away from direct sun light