Melatonin
Item No. 14427

CAS Registry No.: 73-31-4
Formal Name: N-[2-(5-methoxy-1H-indol-3-yl)ethyl]-acetamide
Synonyms: NSC 56423, NSC 113928, Regulin
MF: C_{13}H_{16}N_{2}O_{2}
FW: 232.3
Purity: ≥98%
UV/Vis.: λ_{max}: 224, 279 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly

Laboratory Procedures

Melatonin is supplied as a crystalline solid. A stock solution may be made by dissolving the melatonin in the solvent of choice. Melatonin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of melatonin in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Melatonin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, melatonin should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Melatonin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Melatonin is an indoleamine neurohormone whose levels vary in a daily cycle, thereby allowing the entrainment of the circadian rhythms of several biological functions in animals, plants, and microbes. Many biological effects of melatonin are transduced through melatonin receptors, including the MT_{1}, MT_{2}, and MT_{3} subtypes. Melatonin also acts as a powerful antioxidant that protects lipids, proteins, and DNA against oxidative damage. Glutathione peroxidase, superoxide dismutases, and catalase are upregulated by melatonin, and melatonin scavenges free radicals as a terminal antioxidant.

References