
Product Data Sheet

Product Name: Melatonin D5

Cat. No.: GC60241

Chemical Properties

Cas. No. 66521-38-8

SMILES CC(NC([2H])([2H])C([2H])([2H])C1=CNC2=C1C=C(OC)C=C2)=OFormula $C_{13}H_{12}D_4N_2O_2$ M.Wt 236.3Solubility DMF: 30 mg/ml, DMSO: 30 mg/ml, DMSO:PBS (pH 7.2) (1:1):
0.5 mg/ml, Ethanol: 20 mg/ml Storage

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available sizes: ship with RT, or blue ice upon request.

Structure

Background

Melatonin-d₄ is intended for use as an internal standard for the quantification of melatonin by GC- or LC-MS. 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.¹ Many biological effects of melatonin are transduced through melatonin receptors, including the MT₁, MT₂, and MT₃ subtypes.¹ Melatonin also acts as a powerful antioxidant that protects lipids, proteins, and DNA against oxidative damage.^{2,3} Glutathione peroxidase, superoxide dismutases, and catalase are upregulated by melatonin, and melatonin scavenges free radicals as a terminal antioxidant.^{2,3}

1. Boutin, J.A., Audinot, V., Ferry, G., et al. Molecular tools to study melatonin pathways and actions *Trends Pharmacol. Sci.* 26(8)412-419(2005)
 2. Reiter, R.J., Tan, D.X., Manchester, L.C., et al. Biochemical reactivity of melatonin with reactive oxygen and nitrogen species *Cell Biochem. Biophys.* 34(2)237-256(2001)
 3. Reiter, R.J., Tang, L.,

Caution: Product has not been fully validated for medical applications. For research use only.

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Garcia, J.J., et al. Pharmacological actions of melatonin in oxygen radical pathophysiology *Life Sci.* 60(25)2255-2271(1997)

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