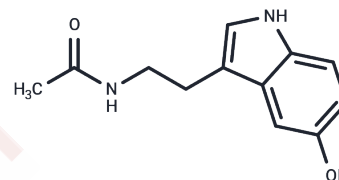


N-Acetyl-5-hydroxytryptamine

Chemical Properties

CAS No. :	1210-83-9
Formula:	C ₁₂ H ₁₄ N ₂ O ₂
Molecular Weight:	218.25
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	N-Acetyl-5-hydroxytryptamine (O-Demethylmelatonin), also known as Normelatonin, is the immediate precursor of melatonin. It is produced from serotonin by the enzyme aralkylamine N-acetyltransferase and is converted to melatonin by acetylserotonin O-methyltransferase. It can potently activate TrkB receptor.
Targets(IC50)	Endogenous Metabolite, Trk receptor
In vitro	N-acetylserotonin activates TrkB receptor in a circadian rhythm. N-Acetyl-5-hydroxytryptamine swiftly activates TrkB in a circadian manner and exhibits antidepressant effect in a TrkB-dependent manner. N-Acetyl-5-hydroxytryptamine rapidly activates TrkB, but not TrkA or TrkC, in a neurotrophin- and MT3 receptor-independent manner[1].
In vivo	To investigate the potential of N-Acetyl-5-hydroxytryptamine (NAS) to activate TrkB in vivo, researchers utilized TrkB F616A knockin mice, which have been demonstrated to exhibit selective inhibition of TrkB F616A activation by 1NMPP1, a derivative of the kinase inhibitor PP1, resulting in TrkB-null phenotypes. The study aimed to determine if NAS could replicate the effects of BDNF. Cortical neurons from TrkB F616A knockin mice were prepared for this purpose. Supporting previous findings, the study showed that NAS and BDNF-induced TrkB phosphorylation were specifically diminished by 1NMPP1, unlike by K252a, while serotonin or melatonin had no impact. These results suggest that NAS significantly induces tyrosine phosphorylation and activation of both wild-type TrkB and TrkB F616A[1].

Solubility Information

Solubility	DMSO: 131.25 mg/mL (601.37 mM), Sonication is recommended. Ethanol: 10 mg/mL (45.82 mM), Sonication is recommended. H ₂ O: 2 mg/mL (9.16 mM), Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (9.16 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.5819 mL	22.9095 mL	45.819 mL
5 mM	0.9164 mL	4.5819 mL	9.1638 mL
10 mM	0.4582 mL	2.291 mL	4.5819 mL
50 mM	0.0916 mL	0.4582 mL	0.9164 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Jang SW, et al. N-acetylserotonin activates TrkB receptor in a circadian rhythm. Proc Natl Acad Sci U S A. 2010 Feb 23;107(8):3876-81.

Chattoraj A, et al. Melatonin formation in mammals: in vivo perspectives. Rev Endocr Metab Disord. 2009 Dec;10(4):237-43.

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