

Biotin

Chemical Properties

CAS No. : 58-85-5

Formula: C₁₀H₁₆N₂O₃S

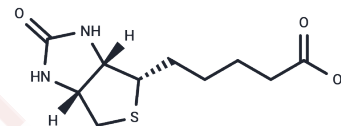
Molecular Weight: 244.31

Keep away from direct sunlight, Store at low temperature

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	Biotin (Vitamin H) is a water-soluble B-vitamin and is necessary for cell growth, the production of fatty acids, and the metabolism of fats and amino acids.
Targets(IC50)	Endogenous Metabolite, Vitamin
In vitro	<p>METHODS: To induce significant biotinylation of neighboring proteins, supplementation with Biotin is required at concentrations typically between 10-50 μM, with optimal incubation times between 15-18 h, after which total biotinylation plateaus.</p> <p>RESULTS: Due to the formation of covalent bonds between biotin and lysine residues on proteins, biotinylation appears to remain constant throughout the life cycle of the protein and can withstand stringent cleavage and washing conditions, thus maximizing the purity of isolated proteins identified by MS. The identified proteins can then be investigated as candidate interactors with POIs. [1]</p> <p>METHODS: Mouse oligodendrocytes 158N were treated with Biotin (1-1000 nM) for 2 h, followed by the addition of 7β-OHC (50 μM) for a further 24 h. Cell viability was measured by MTT Assay.</p> <p>RESULTS: 7β-OHC-induced cytotoxicity was only prevented by Biotin at a concentration of 10-1000 nM. [2]</p>
In vivo	Biotin serves as a coenzyme for carboxylases, involved in the synthesis of fatty acids, isoleucine, and valine, as well as in gluconeogenesis. In biological research, it is primarily used to label proteins for biochemical studies.

Solubility Information

Solubility	Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 130 mg/mL (532.11 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4.6 mg/mL (18.83 mM), Solution. <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	4.0932 mL	20.4658 mL	40.9316 mL
5 mM	0.8186 mL	4.0932 mL	8.1863 mL
10 mM	0.4093 mL	2.0466 mL	4.0932 mL
50 mM	0.0819 mL	0.4093 mL	0.8186 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

Sears RM, et al. BioID as a Tool for Protein-Proximity Labeling in Living Cells. *Methods Mol Biol.* 2019;2012:299-313.

Lv L, Chen P, Cao L, et al. Discovery of a molecular glue promoting CDK12-DDB1 interaction to trigger Cyclin K degradation. *Elife.* 2020, 9: e59994

Sghaier R, et al. Biotin attenuation of oxidative stress, mitochondrial dysfunction, lipid metabolism alteration and 7 β -hydroxycholesterol-induced cell death in 158N murine oligodendrocytes. *Free Radic Res.* 2019 May;53(5):535-561.

Song J, Liu Y, Yin Y, et al. PTIR1 acts as an isoform of DDX58 and promotes tumor immune resistance through activation of UCHL5. *Cell Reports.* 2023, 42(11).

Shiozawa K, et al. Biotin Enhances Testosterone Production in Mice and Their Testis-Derived Cells. *Nutrients.* 2022 Nov 10;14(22):4761.

Selective degradation of multimeric proteins by TRIM21-based molecular glue and PROTAC degraders

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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