

Ciliobrevin D

Chemical Properties

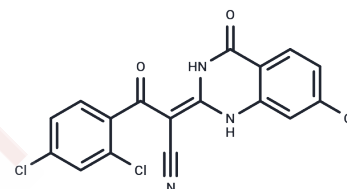
CAS No. : 1370554-01-0

Formula: C₁₇H₈Cl₃N₃O₂

Molecular Weight: 392.62

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	Ciliobrevin D is a AAA+ ATPase motor cytoplasmic dynein inhibitor. Ciliobrevin D inhibits Hedgehog (Hh) signaling and primary cilia formation and it also inhibits dynein-dependent microtubule gliding and ATPase activity in vitro.
Targets(IC50)	ATPase,Hedgehog/Smoothened
In vitro	Ciliobrevin D reversibly inhibits melanosome aggregation, however, the non-cilia-disrupting derivative had no discernible effect at comparable doses. Cells treated with Ciliobrevin D exhibits abnormal (unfocused, multipolar, or collapsed) spindles with disrupted γ -tubulin localization in NIH-3T3 cells. Ciliobrevin D addition also reversibly disrupts the pre-formed spindles of metaphase-arrested cells and reduces overall microtubule levels and it similarly abrogates the movement of peroxisomes in <i>Drosophila</i> S2 cells[1].
In vivo	In the testis in vivo, Knockdown of <i>Dync1h1</i> or inactivation of dynein 1 by Ciliobrevin D perturbs spermatogenesis. The use of Ciliobrevin D to inactivate dynein 1 in the testis in vivo perturbs MT organization through changes in the spatial expression of EB1, perturbs F-actin organization, and perturbs distribution of adhesion protein complexes at the BTB, leading to a loss of BTB integrity[3].

Solubility Information

Solubility	DMSO: 9.23 mg/mL (23.51 mM),Sonication and heating to 80°C are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.547 mL	12.735 mL	25.4699 mL
5 mM	0.5094 mL	2.547 mL	5.094 mL
10 mM	0.2547 mL	1.2735 mL	2.547 mL
50 mM	0.0509 mL	0.2547 mL	0.5094 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

Firestone AJ, et al. Small-molecule inhibitors of the AAA+ ATPase motor cytoplasmic dynein. *Nature*. 2012 Mar 18; 484(7392):125-9.

Zhang L, Wan M, Tohti R, et al. Requirement of Zebrafish Adcy3a and Adcy5 in Melanosome Dispersion and Melanocyte Stripe Formation. *International Journal of Molecular Sciences*. 2022, 23(22): 14182.

Miao Y, et al. Dynein promotes porcine oocyte meiotic progression by maintaining cytoskeletal structures and cortical granule arrangement. *Cell Cycle*. 2017;16(21):2139-2145.

Wen Q, et al. Dynein 1 supports spermatid transport and spermiation during spermatogenesis in the rat testis. *Am J Physiol Endocrinol Metab*. 2018 Nov 1;315(5):E924-E948.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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