

Conduritol B epoxide

Chemical Properties

CAS No. : 6090-95-5

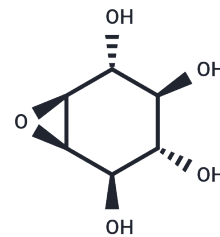
Formula: C₆H₁₀O₅

Molecular Weight: 162.14

Storage: Store under nitrogen, Store at low temperature, Keep away from direct sunlight

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	Conduritol B epoxide is an irreversible inhibitor of β -glucosidase (GCase).
Targets(IC ₅₀)	Glucosidase, glycosidase
In vitro	Treating N2a and Conduritol B epoxide-N2a cells with G6 reduced GC to 7% and 26% of untreated levels, respectively. G6-treated Conduritol B epoxide-N2a also exhibited significantly decreased GS. Conduritol B epoxide-N2a cells demonstrated higher baseline calcium levels than N2a cells without caffeine and showed a significant increase in cytosolic calcium levels compared to N2a cells. Additionally, Conduritol B epoxide-N2a cells exhibited a significant reduction in OCR, with approximately 50% reductions in ATP production rate, basal respiration, and maximal respiration compared to N2a cells. In dantrolene-treated Conduritol B epoxide-N2a cells, Ryr3 levels increased to 76% of the WT level [1].
In vivo	Treatment with Conduritol B epoxide (100 mg/kg/day, i.p.) administered to 4L, 9H, 9V, and WT mice from postnatal days 5 to 11 does not result in the formation of α -synuclein aggregates. However, prolonged daily administration of this compound to 4L mice (at the same dosage starting from postnatal day 15 for either 24 or 36 doses) causes hind limb paralysis and leads to minimal α -synuclein accumulation in specific areas of the brain, including the olfactory bulb, brainstem, and periventricular region near the dorsal third ventricle (D3V) [2].
Kinase Assay	Cells are homogenized in 1% sodium taurocholate/1% Triton X-100. GCase activity is determined fluorometrically using 4MU-Glucose as the substrate in 0.25% sodium taurocholate, 0.25% Triton X-100 and 0.1M citric-phosphate buffer (pH 5.6). Brain tissues are homogenized in 1X PBS and incubated in 5 μ M brain phosphatidylserine and 0.1M citric-phosphate buffer (pH 5.6) for GCase activity assay using 4MU-Glucose as substrate. Protein concentrations are determined by BCA assay using BSA as standard [1].
Animal Research	Gba1 point mutated 4L, 9H and 9V mice or WT mice are intraperitoneally injected with 100 mg/kg/day of Conduritol B epoxide. In short-term experiments, daily injections are initiated at postnatal day 5 and continued for 6 daily doses. The mice are sacrificed on day 12 or 2 months after the last injection. In long-term experiments, 4L mice are

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Animal Research	injected daily beginning at postnatal day 15 for 24 or 36 daily doses and sacrificed the day after the last injection. Mice are perfused with PBS and organs are harvested for enzyme activity, lipid, and histological analyses [2].
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Solubility Information

Solubility	DMSO: 122.5 mg/mL (755.52 mM),Sonication is recommended. H2O: \geq 20 mg/mL (123.35 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 mg/mL (24.67 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	6.1675 mL	30.8375 mL	61.6751 mL
5 mM	1.2335 mL	6.1675 mL	12.335 mL
10 mM	0.6168 mL	3.0838 mL	6.1675 mL
50 mM	0.1234 mL	0.6168 mL	1.2335 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

Liou B, et al. Modulating ryanodine receptors with dantrolene attenuates neuronopathic phenotype in Gaucher disease mice. Hum Mol Genet. 2016 Sep 20. pii: ddw322. [Epub ahead of print]

YH Xu, et al. Accumulation and distribution of α -synuclein and ubiquitin in the CNS of Gaucher disease mouse models. Mol Genet Metab. Author manuscript; available in PMC 2012 Apr 1

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