

P053

Chemical Properties

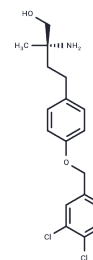
CAS No. : 2748196-63-4

Formula: C₁₈H₂₁Cl₂NO₂

Molecular Weight: 354.27

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	P053 is a potent, non-competitive, and selective ceramide synthase 1 (CerS1) inhibitor with an IC ₅₀ of 0.5µM. It acts as an endogenous inhibitor of mitochondrial fatty acid oxidation in muscle and regulates whole-body adiposity[1].
Targets(IC50)	Others,Acyltransferase
In vitro	P053 represents the inaugural isoform-specific ceramide synthase inhibitor exhibiting nanomolar efficacy. It selectively targets various human (h) and murine (m) CerS isoforms -- namely hCerS1, mCerS1, hCerS2, mCerS2, hCerS4, mCerS5, and hCerS6 -- displaying IC ₅₀ values of 0.54±0.06, 0.46±0.08, 28.6±0.15, 18.5±0.12, 17.2±0.09, 7.2±0.10, and 11.4±0.17 µM, respectively [1].
In vivo	Administered orally at a dosage of 5 mg/kg daily for a week to male C57BL6/J mice, P053 significantly reduces C18 ceramide levels in skeletal muscle (SkM) [1]. Additionally, when given to mice consuming a high-fat diet (HFD), P053 enhances fatty acid oxidation in SkM, prevents increases in muscle triglycerides and adiposity, but does not prevent HFD-induced insulin resistance [1]. This effect is specific to the 5 mg/kg dosage, as a lower dosage of 1 mg/kg per day does not yield the same reduction in C18 ceramide levels in SkM.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8227 mL	14.1135 mL	28.2271 mL
5 mM	0.5645 mL	2.8227 mL	5.6454 mL
10 mM	0.2823 mL	1.4114 mL	2.8227 mL
50 mM	0.0565 mL	0.2823 mL	0.5645 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

Turner N, et al. A selective inhibitor of ceramide synthase 1 reveals a novel role in fat metabolism. Nat Commun. 2018 Aug 21;9(1):3165.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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