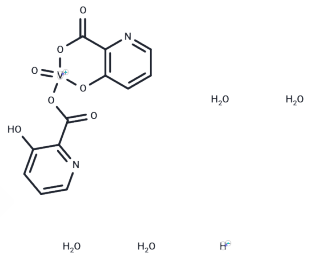
Data Sheet (Cat.No.T7012)

TargetMol

VO-Ohpic trihydrate

Chemical Properties



CAS No. : 476310-60-8

Formula: C12H9N2O8V·3H2O·H

Molecular Weight: 415.2

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	VO-Ohpic trihydrate (VO-Ohpic) is a potent inhibitor of PTEN (phosphatase and tensin homolog) with IC50 of 35 nM.
Targets(IC50)	PTEN,Autophagy
In vitro	VO-OHpic is a potent small-molecule compound that specifically inhibits PTEN's cellular enzymatic activity, which in turn activates downstream targets such as Akt and FoxO3a. Glucose uptake into adipocytes is dramatically enhanced upon PTEN inhibition with VO-OHpic. PTEN inhibitor accelerates wound healing in fibroblasts[1]. VO-OHpic inhibits cell viability, cell proliferation and colony formation, and induces senescence-associated β-galactosidase activity in Hep3B (low PTEN expression) and to a lesser extent in PLC/PRF/5 (high PTEN expression) cells, but not in PTEN-negative SNU475 cells[2].
In vivo	VO-Ohpic significantly inhibits tumor growth in nude mice bearing xenografts of Hep3B cells[2]. VO-Ohpic administered to C57BL6 mice 30 minutes prior to Kcl-induced asystolic cardiac arrest significantly increases survival, LVPmax and dP/dt max with continued benefit. VO-OHpic also significantly increases lactate clearance and decreases plasma glucose level[3].
Kinase Assay	VO-OHpic is dissolved in DMSO (100 μM) and diluted further to the required concentration with 1% DMSO. For inhibition studies, PTEN is preincubated with VO-OHpic at RT for 10 min before substrate is added to initialise the reaction. Background absorbance (malachite green assay) and fluorescence (OMFP assay) are determined with VO-OHpic in assay buffer and corrected in the data analysis[1].
Cell Research	Cell proliferation is determined by estimating the amount of bromodeoxyuridine (BrdU) incorporation into DNA by a colorimetric immunoassay. 3×103 cells are cultured in 96-well plates with varying concentrations of VO-OHpic for 72 hours. BrdU is added 24 hours before the end of the treatments. Results are expressed as the percentage inhibition of BrdU incorporation over the control.(Only for Reference)

Solubility Information

Solubility	DMSO: 16.67 mg/mL (40.15 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: < 1 mg/mL (insoluble or slightly soluble),

Solubility	(< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 1 mg/mL (2.41 mM),Sonication is recommended. 10% DMSO+90% Saline: 1.67 mg/mL (4.02 mM),Solution. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4085 mL	12.0424 mL	24.0848 mL
5 mM	0.4817 mL	2.4085 mL	4.817 mL
10 mM	0.2408 mL	1.2042 mL	2.4085 mL
50 mM	0.0482 mL	0.2408 mL	0.4817 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

Rosivatz E, et al. ACS Chem Biol. 2006,1(12):780-90.
Qin X, Fu L, Li C, et al.Optimized inner ear organoids for efficient hair cell generation and ototoxicity response modeling.Science China Life Sciences.2025: 1-15.
Augello G, et al. Cell Cycle. 2016, 15(4):573-83.
Jing Li, et al. American Heart Association Scientific Sessions. 2013.