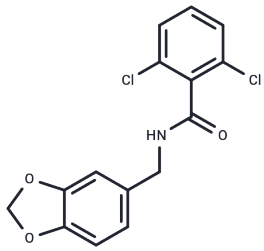
Data Sheet (Cat.No.T2662)

TargetMol

Alda-1

Chemical Properties



CAS No. : 349438-38-6

Formula: C15H11Cl2NO3

Molecular Weight: 324.16

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	Alda-1 is an ALDH2 agonist, a cell-permeable activator of both the wild-type ALDH2*1 and the Asian E487K mutant ALDH2*2 forms of mitochondrial aldehyde dehydrogenase 2 (mtALDH2).
Targets(IC50)	Apoptosis,Dehydrogenase
Kinase Assay	Lipid kinase activity : IC50 values are measured using a standard lipid kinase activity with PI as a substrate. (i)100 μM cold ATP is used instead of 10 μM, (ii) the DMSO concentration is 1%, and (iii) [γ-33P]ATP is used instead of [γ-32P]ATP. The TLC plates are quantified using a phosphorimager screen. The reported IC50 values are determined by non-linear regression analysis on the basis of at least three independent experiments repeated across multiple preparations of recombinant protein.
Cell Research	Spleen cells (4×106 cells/mL) are stimulated by optimal concentrations of concanavalin A (Con A; 2.5 μg/mL and 0.6 μg/mL) and lipopolysaccharide (LPS, 5 μg/mL) and are incubated in 96-well plates at final volume of 0.2 mL for 72 h. Cell proliferation is determined by adding 0.5 μCi of [3H]-thymidine per well at 16 h before the end of the incubation. The cultures are harvested with an automatic cell harvester, and [3H] thymidine incorporation is assessed using a liquid scintillation counter.

Solubility Information

Solubility	DMSO: 250 mg/mL (771.22 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: < 10 mg/mL (30.85 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+90% (20% SBE-β-CD in Saline): < 10 mg/mL (30.85 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+90% Corn Oil: 2.5 mg/mL (7.71 mM),Sonication is recommended. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: < 10 mg/mL (30.85 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+90% Corn oil: < 10 mg/mL (30.85 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *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*

In vivo Formulation	*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	3.0849 mL	15.4245 mL	30.849 mL
5 mM	0.617 mL	3.0849 mL	6.1698 mL
10 mM	0.3085 mL	1.5424 mL	3.0849 mL
50 mM	0.0617 mL	0.3085 mL	0.617 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

Stachowicz A, et al. Proteomic Analysis of Mitochondria-Enriched Fraction Isolated from the Frontal Cortex and Hippocampus of Apolipoprotein E Knockout Mice Treated with Alda-1, an Activator of Mitochondrial Aldehyde Dehydrogenase (ALDH2). Int J Mol Sci.

Stachowicz A, et al. The impact of mitochondrial aldehyde dehydrogenase (ALDH2) activation by Alda-1 on the behavioral and biochemical disturbances in animal model of depression. Brain Behav Immun. 2016 Jan;51:144-53.

Ikeda T, et al. Effects of Alda-1, an Aldehyde Dehydrogenase-2 Agonist, on Hypoglycemic Neuronal Death. PLoS One. 2015 Jun 17;10(6):e20128844.

Gomes KM, et al. Aldehydic load and aldehyde dehydrogenase 2 profile during the progression of post-myocardial infarction cardiomyopathy: benefits of Alda-1. Int J Cardiol. 2015 Jan 20;179:129-138.