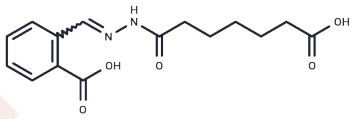
Data Sheet (Cat.No.T3162)

TargetMol

IDE1

Chemical Properties



CAS No. : 1160927-48-9

Formula: C15H18N2O5

Molecular Weight: 306.31

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	IDE1 can induce definitive endoderm from embryonic stem cells. It has been shown to induce the differentiation of Sox17+/FoxA2+-expressing pancreatic progenitors from human and mouse embryonic stems cells (EC50: 125.5 nM in vitro) by activating the TGF-β signaling pathway. IDE1-derived endodermal cells injected into E8.75 mouse embryos ex vivo have been shown to incorporate into the developing gut tube, contributing to its formation.
Targets(IC50)	Others
In vitro	IDE1 enhances the definitive endoderm (DE) differentiation of human-induced pluripotent stem cells (hiPSCs) with Activin A/Wnt3a being significantly more potent in both 2D and 3D cultures than IDE1. IDE1 could efficiently induces DE differentiation through various protocols in vitro. Treatment of the hiPSCs-derived EBs with IDE-1 shows minor increase ($p<0.01$) of DE-markers cells compared to Activin A/Wnt3a treatment. IDE1 possess several advantages over other inducing factors including high permeability, influence, diversity, low cost, and easy to use and for the first time, Melton' s team showed that Activin A can be substituted by two cell-permeable small molecules, IDE1 and IDE2. IDE1 could induce phosphorylation of Smad2 after incubation for 24 h or more at levels comparable to those induced by Activin A treatment. Treatment of hiPSCs with IDE1 (2 mM) also leads to endodermal differentiation but with a significantly lower efficiency than Activin A/Wnt3a[1].
Kinase Assay	LSD1 enzyme assay: LSD1 activity was measured using a horseradish peroxidase (HRP) coupled assay with amplex red as an electron donor. The formation of product over time is measured using fluorescence intensity, Ex 531 nm and Em 595 nm, in a PerkinElmer EnVision plate reader. Final assay conditions are: 5 nM LSD1, 2.5 μM H3K4me2 peptide, 50 mM HEPES pH 7, 1 U/ml of HRP, 1 mM CHAPS, 0.03% dBSA and 10 μM amplex red.

Solubility Information

Solubility	DMSO: 50 mg/mL (163.23 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: 2 mg/mL (6.53 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*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	3.2647 mL	16.3233 mL	32.6467 mL
5 mM	0.6529 mL	3.2647 mL	6.5293 mL
10 mM	0.3265 mL	1.6323 mL	3.2647 mL
50 mM	0.0653 mL	0.3265 mL	0.6529 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

Hoveizi E, et al. Definitive endoderm differentiation of human-induced pluripotent stem cells using signaling molecules and IDE1 in three-dimensional polymer scaffold. J Biomed Mater Res A. 2014 Nov;102(11):4027-36.