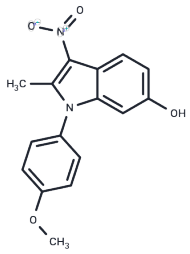
Data Sheet (Cat.No.T2431)

TargetMol

ID-8

Chemical Properties



CAS No. : 147591-46-6

Formula: C16H14N2O4

Molecular Weight: 298.29

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	ID-8, a DYRK inhibitor, sustains embryonic stem cell self-renewal in long-term culture.
Targets(IC50)	DYRK
In vivo	ID-8 maintains the expression of the Nanog gene through the activation of Sox2-Oct3/4, enabling the reversible maintenance of ESC (Embryonic Stem Cells) cultures for prolonged periods. In the presence of Wnt, ID-8 modulates the Wnt/β-catenin signaling pathway, enhancing CBP/β-catenin levels to preserve the undifferentiated state of hESCs (human Embryonic Stem Cells), thereby supporting cell proliferation and survival.
Kinase Assay	In Vitro Enzymatic Assay for Histone Deacetylases: In vitro activities of the 11 recombinant human zinc-dependent HDAC enzymes are detected by ?uorigenic release of 7-amino-4-methylcoumarin from substrate upon deacetylase enzymatic activity. A series of dilutions of the unique HDAC6 compound, tubacin, and SAHA are prepared with 10% DMSO in HDAC assay buffer, and 5 μL of the dilution was added to a 50-μL reaction so that the ?nal concentration of DMSO is 1% in all of the reactions. The enzymatic reactions are conducted in duplicate at 37 °C for 30 min in a 50-μL mixture containing HDAC assay buffer, 5 μg BSA, an HDAC substrate, an HDAC enzyme, and a test compound. After enzymatic reactions, 50 μL of 2× HDAC developer is added to each well, and the plate is incubated at room temperature for an additional 15 min. Fluorescence intensity is measured at an excitation of 360 nm and an emission of 460 nm using a Synergy microplate reader. Negative (no enzyme, no inhibitor, a drug with no HDAC inhibition activity) and positive controls (known HDAC inhibitor SAHA) are included in the assays. IC50 is determined at the drug concentration that results in 50% reduction of HDAC activity compared with the control.
Cell Research	Briefly, the hESCs in feeder-free culture are dissociated completely with 0.05% trypsin-EDTA and seeded at 104 cells per well in Matrigel-coated 6-well culture plates and cultured in MEF-CM. Various concentrations of Wnt3, IQ-1, ID-8, and/or ICG-001 are supplemented into the culture media at the onset of seeding and then continuously until the end of culturing. For all assays, the cell and colony morphology are examined under a microscope, and the replating efficiency is examined by counting the number of colonies after 7 days of culture. (Only for Reference)

Solubility Information

Solubility	DMSO: 29.8 mg/mL (99.9 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3524 mL	16.7622 mL	33.5244 mL
5 mM	0.6705 mL	3.3524 mL	6.7049 mL
10 mM	0.3352 mL	1.6762 mL	3.3524 mL
50 mM	0.067 mL	0.3352 mL	0.6705 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.

Reference

Miyabayashi T, et al. Biosci Biotechnol Biochem. 2008 , 72(5), 1242-1248.
Hasegawa K, et al. Stem Cells Transl Med. 2012, 1(1), 18-28.