Data Sheet (Cat.No.T1939)

TargetMol

DMOG

Chemical Properties

CAS No. :	89464-63-1
Formula:	C6H9NO5
Molecular Weight:	175.139
Storage:	Store at low temperature,The compound is unstable in solution. Please use soon 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	DMOG (Dimethyloxalylglycine), an antagonist of the α-ketoglutarate cofactor, is an inhibitor for HIF prolyl hydroxylase.
Targets(IC50)	HIF/HIF Prolyl-Hydroxylase,HIF,Autophagy
In vitro	DMOG shows only weakly active in the microsomal system, but efficiently suppresses hydroxyproline synthesis in intact cells. [1] DMOG reduces FGF-2-induced proliferation and cyclin A expression by inhibiting prolyl hydroxylase activity in HPASMC. [3]
In vivo	DMOG inhibits endogenous HIF inactivation and induces angiogenesis in the ischaemic skeletal muscles of mice. [2] Up-regulation of hypoxia-inducible factor-1α by DMOG may be the cardioprotective mechanism of ischemic postconditioning in hyperlipidemic rats [4].
Cell Research	To analyze DNA synthesis as an index of cellular proliferation, VSMC are plated in 48-well plates (5,000 per square centimeter) in growth medium, incubated overnight, and serum-deprived (1% FCS) for 24 h. Replicate wells are then stored at −70°C for baseline (day 0) cell counts, and fresh medium with or without growth factors is added to the remaining wells, which are incubated 72-96 h in 20 or 5% O2. Days 0 and 3 or 4 cell counts are determined by lysing cells in a buffer containing a fluorescent dye, which has minimal fluorescence by itself but fluoresces when bound to DNA or RNA. Absolute cell numbers are calculated by comparing the fluorescence of specimens with that of a standard curve similarly prepared using a known number of cells. (Only for Reference)

Solubility Information

Solubility	H2O: 17.54 mg/mL (100.15 mM),Sonication is recommended. The compound is unstable in aqueous solution. Please use soon. DMSO: 60.00 mg/mL (342.59 mM),Sonication is recommended. The compound is unstable in solution, please use soon. Ethanol: 35.00 mg/mL (199.84 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	PBS: 30.00 mg/mL (171.29 mM),Sonication is recommended. *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	5.7097 mL	28.5486 mL	57.0972 mL
5 mM	1.1419 mL	5.7097 mL	11.4194 mL
10 mM	0.571 mL	2.8549 mL	5.7097 mL
50 mM	0.1142 mL	0.571 mL	1.1419 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

Singh A, et al. Hypoxia-inducible factor (HIF) prolyl hydroxylase inhibitors induce autophagy and have a protective effect in an in-vitro ischaemia model. Sci Rep. 2020 Jan 31;10(1):1597.
Zheng B X, Long W, Zheng W, et al.Mitochondria-Selective Dicationic Small-Molecule Ligand Targeting G-Quadruplex Structures for Human Colorectal Cancer Therapy.Journal of Medicinal Chemistry.2024
Ma X, Li M, Wang X, et al.Dihydromyricetin ameliorates experimental ulcerative colitis by inhibiting neutrophil extracellular traps formation via the HIF-1α/VEGFA signaling pathway.International Immunopharmacology.2024, 138: 112572.
Menon A, et al. Chemical Activation of the Hypoxia-Inducible Factor Reversibly Reduces Tendon Stem Cell Proliferation, Inhibits Their Differentiation, and Maintains Cell Undifferentiation. Stem Cells Int. 2018 Mar 11;2018: 9468085.
Hams E, et al. The hydroxylase inhibitor dimethyloxallyl glycine attenuates endotoxic shock via alternative activation of macrophages and IL-10 production by B1 cells. Shock. 2011 Sep;36(3):295-302.
Li X, et al. Acta Biochim Biophys Sin (Shanghai). 2014, 46(2), 112-118.