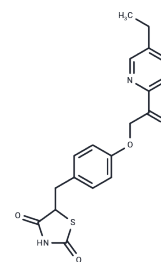


MSDC 0160

Chemical Properties

CAS No. : 146062-49-9
 Formula: C₁₉H₁₈N₂O₄S
 Molecular Weight: 370.42
 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	MSDC 0160 (CAY10415) is a prototype mTOT-modulating insulin sensitizer being used in trials studying the treatment of Type 2 Diabetes and Alzheimer's Disease.
Targets(IC50)	Mitochondrial Metabolism,IGF-1R
In vitro	In the KKAY mouse model of diabetes, MSDC-0160 (100 mg/kg, p.o.) significantly enhanced insulin sensitivity by substantially reducing the levels of insulin and glucose in the circulatory system.
In vivo	Within the insulin and IGF-1 signaling pathways, MSDC-0160 reduces resistance and restores IGF-1-induced phosphorylation of AKt and GSK-3. When used in conjunction with IGF-1 and 8 mM glucose, MSDC-0160 boosts the expression of specific genes within β -cells, including insulin, pdx1, nkx6.1, and nkx2.2, while maintaining insulin content without affecting glucose-induced insulin secretion. Additionally, MSDC-0160 promotes the differentiation of human β -cells and decreases the expression of apoptosis markers.
Kinase Assay	Measurement of activities of autophosphorylated/non-autophosphorylate CaMKII: CaMKII activity is measured utilizing syntidell as a substrate. Purified CaMKII is pre-incubated in the assay mixture (35 mM Hepes-Na (pH 8.0), 10 mM MgCl ₂ , 0.5 μ M CaM, 5 μ M ATP, 1 mM CaCl ₂ or 1 mM EGTA, total 25 μ L) at 30 °C for 2 minutes. After this pre-incubation, the protein substrate/radioactive ATP mixture is added to the same test tube and the preparation is further incubated at 30 °C, for 5 minutes (final assay condition; 35 mM Hepes-Na (pH 8.0), 10 mM MgCl ₂ , 0.125 μ M CaCl ₂ , 20 μ M syntidell, 11.25 μ M [γ - ³² P] ATP, 10 % DMSO and indicated concentrations of KN-93, supplemented with 0.25 mM CaCl ₂ and 2 mM EGTA (for autophosphorylated samples) or 0.25 mM EGTA and 2 mM CaCl ₂ (for nonautophosphorylated samples), total 100 μ L). The reaction is terminated by adding of 25 μ L of 100 % (w/v) ice-cold TCA. After centrifugation, 80 μ L of the supernatant is applied to phosphocellulose paper. The filters are then washed with 75 mM H ₃ P ₀₄ for 15 min with continuous agitation. After 4-cycles of washing, the radioactivity retains on the filter paper is quantified in a liquid scintillation counter.

Solubility Information

Solubility DMSO: 37 mg/mL (99.89 mM),Sonication is recommended.
 (< 1 mg/ml refers to the product slightly soluble or insoluble)

A DRUG SCREENING EXPERT

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (5.4 mM), Sonication is recommended. <i>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.</i>
---------------------	--

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6996 mL	13.4982 mL	26.9964 mL
5 mM	0.5399 mL	2.6996 mL	5.3993 mL
10 mM	0.270 mL	1.3498 mL	2.6996 mL
50 mM	0.054 mL	0.270 mL	0.5399 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

Rohatgi N, et al. PLoS One. 2013, 8(5), e62012.

Qi Y, Hu M, Qiu Y, et al. Mitoglitazone ameliorates renal ischemia/reperfusion injury by inhibiting ferroptosis via targeting mitoNEET. Toxicology and Applied Pharmacology. 2023: 116440.

Bolten CW, et al. Gene Regul Syst Bio. 2007, 1, 73-82.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel: 781-999-4286 E_mail: info@targetmol.com Address: 34 Washington Street, Wellesley Hills, MA 02481