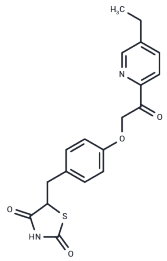
Data Sheet (Cat.No.T2607)

TargetMol

MSDC 0160

Chemical Properties



CAS No. : 146062-49-9

Formula: C19H18N2O4S

Molecular Weight: 370.42

Appearance: no data available

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

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 syntideII as a substrate. Purified CaMKII is pre-incubated in the assay mixture (35 mM Hepes-Na (pH 8.0), 10 mM MgC12, 0.5 μM CaM, 5 μM ATP, 1 mM CaCl2 or 1 mM EGTA, total 25 μL) 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 MgCl2, 0.125 μM CaCl2, 20 μM syntideII, 11.25 μM [γ-32P] ATP, 10 % DMSO and indicated concentrations of KN-93, supplemented with 0.25 mM CaCl2 and 2 mM EGTA (for autophosphorylated samples) or 0.25 mM EGTA and 2 mM CaCl2 (for nonautophosphorylated samples), total 100 μL). The reaction is terminated by adding of 25 μL of 100 % (w/v) ice-cold TCA. After centrifugation, 80 μL of the supernatant is applied to phosphocellulose paper. The filters are then washed with 75 mM H3P04 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)

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.

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.