CMX-2043

Cat. No.: HY-119152

CAS No.: 910627-26-8

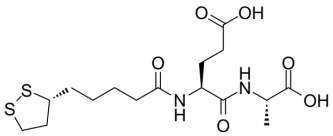
Molecular Formula: $C_{16}H_{26}N_2O_6S_2$

Molecular Weight: 406.52

Target: Insulin Receptor; Tyrosinase; Akt

Pathway: Protein Tyrosine Kinase/RTK; Metabolic Enzyme/Protease; PI3K/Akt/mTOR

Storage: Sealed storage, away from moisture
Powder -80°C 2 years
-20°C 1 year
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 20.83 mg/mL (51.24 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4599 mL	12.2995 mL	24.5990 mL
	5 mM	0.4920 mL	2.4599 mL	4.9198 mL
	10 mM	0.2460 mL	1.2300 mL	2.4599 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.12 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (5.12 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CMX-2043 is a novel analogue of α-Lipoic Acid (HY-N0492). CMX-2043 is effective in antioxidant effect, activation of insulin receptor kinase, soluble tyrosine kinase, and Akt phosphorylation. CMX-2043 shows protection against ischemia-reperfusion injury (IRI) in rat model[1][2].

IC_{50} & Target

EC50: 35 μM (IRK), tyrosine kinase, Akt[1]

In Vitro

CMX-2043 (15-250 mM; 10 min) has great peroxyl radical absorbance capacity[1].

CMX-2043 (1.5 μM) weakly inhibits spleen tyrosine kinase (Syk) and tunica interna endothelial cell kinase (Tie2)[1].
CMX-2043 (50 μM; 45 min) activates Akt phosporylation via PI3K pathway in A549 cells[1].
CMX-2043 (2.5 mM; 30 min) diminishes the rise in cytosolic calcium in a concentration-dependent manner in CHO-M1-WT3 cells[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Immunofluorescence[1]

Cell Line:	H9c2 (rat cardiac myocyte) cells
Concentration:	50 μM
Incubation Time:	3 hours
Result:	Showed brighter luorescence intensity in cells compared with control, indicating a stronger Akt phosphorylation effect.

In Vivo

CMX-2043 (50-200 mg/kg, 5 mL; p.o.; single dose) reduces myocardial ischemia-reperfusion injury (IRI) as measured by the myocardial infarct to area at risk (MI-AR) ratio and the incidence of arrhythmia[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Ischemia-reperfusion injury (IRI) model in Sprague Dawley rats[2]
Dosage:	50, 100, and 200 mg/kg; 5 mL of normal saline solution containing 2% vanilla extract as flavoring
Administration:	Oral gavage; single dose; induced IRI 30-60 min after treatment
Result:	Induced arrhythmia and mortality of rats with reducing the ratio of myocardial infarct to area at risk.

REFERENCES

[1]. Alan S Lader, et al. CMX-2043 Mechanisms of Action In Vitro. J Cardiovasc Pharmacol. 2016 Sept;68:241-247.

[2]. Baguisi A, et al. CMX-2043 Efficacy in a Rat Model of Cardiac Ischemia-Reperfusion Injury. J Cardiovasc Pharmacol Ther. 2016 Nov;21(6):563-569.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA