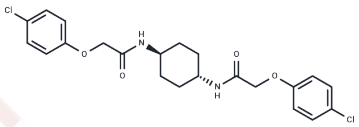
Data Sheet (Cat.No.T6183)

TargetMol

ISRIB (trans-isomer)

Chemical Properties



CAS No. : 1597403-47-8

Formula: C22H24Cl2N2O4

Molecular Weight: 451.34

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	ISRIB (trans-isomer) is a potent inhibitor of PERK (IC50=5 nM) that restores protein translation and prevents SG formation in the presence of P-eIF2α.
Targets(IC50)	Apoptosis,Autophagy,PERK
In vitro	**METHODS**: HEK293T cells were treated with clindamycin (2 μg/mL) to induce ER stress and with ISRIB (trans-isomer) or ISRIB (cis-isomer) (0-1 μM) for 7 h. The ATF4 fluorokinase reporter gene was detected. **RESULTS**: ISRIB (trans-isomer) was 100-fold more potent (IC50=5 nM) than ISRIB (cis-isomer) (IC50=600 nM), suggesting that the compound interacts stereospecifically with its cellular target. [1] **METHODS**: HEK293T cells were treated with Tm (1 μg/mL) and ISRIB (200 nM) for 1 h. Translation and mRNA changes were detected. **RESULTS**: ISRIB completely blocked the translational changes that occurred under ER stress. A large number of genes with significant changes in expression upon stress collapsed to the center of the graph under ISRIB and Tm co-treatment. [2]
In vivo	**METHODS**: To investigate the effects on memory, ISRIB (0.25-2.5 mg/kg) was administered intraperitoneally to CD-1 mice. **RESULTS**: ISRIB-treated mice showed significant enhancement in spatial and fear-related learning. [1]
Cell Research	U2OS cells are plated on 96-well plates and left to recover overnight. Cells are treated with either with 2 μg/ml tunicamycin or 100 nM thapsigargin in the presence or absence of 100 nM ISRIB or with ISRIB alone for the indicated and the level of eIF2α phosphorylation is determined[1].

Solubility Information

Solubility	DMSO: 1.11 mg/mL (2.46 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 0.11 mg/mL (0.24 mM),Solution. *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	2.2156 mL	11.0781 mL	22.1562 mL
5 mM	0.4431 mL	2.2156 mL	4.4312 mL
10 mM	0.2216 mL	1.1078 mL	2.2156 mL
50 mM	0.0443 mL	0.2216 mL	0.4431 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

Sidrauski C, et al. Pharmacological brake-release of mRNA translation enhances cognitive memory. Elife. 2013 May 28;2:e00498.

Sidrauski C, et al. The small molecule ISRIB reverses the effects of eIF2α phosphorylation on translation and stress granule assembly. Elife. 2015 Feb 26;4:e05033.