SZABO SCANDIC

Part of Europa Biosite

# Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!

## Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


**SZABO-SCANDIC HandelsgmbH**

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

# ISRIB (trans-isomer)

**Cat. No.:** HY-12495

**CAS No.:** 1597403-47-8

**Molecular Formula:** $C_{22}H_{24}Cl_2N_2O_4$

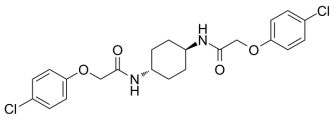
**Molecular Weight:** 451.34

**Target:** PERK; Autophagy; Apoptosis

**Pathway:** Cell Cycle/DNA Damage; Autophagy; Apoptosis

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 1 year |
| | -20°C | 6 months |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 4.55 mg/mL (10.08 mM; ultrasonic and warming and heat to 60°C)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 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 |

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

**In Vivo**

1. Add each solvent one by one: 50% PEG300 >> 50% saline
   Solubility: 0.83 mg/mL (1.84 mM); Suspended solution; Need ultrasonic and warming and heat to 60°C

## BIOLOGICAL ACTIVITY

**Description**

ISRIB (trans-isomer) is a potent inhibitor of PERK with an $IC_{50}$ of 5 nM. ISRIB potently reverses the effects of eIF2α phosphorylation ($IC_{50}$=5 nM).

**$IC_{50}$ & Target**

PERK
5 nM ($IC_{50}$)

**In Vitro**

Trans-ISRIB is 100-fold more potent ($IC_{50}$=5 nM) than cis-ISRIB ($IC_{50}$= 600 nM), indicating that the compound's interaction with its cellular target is stereospecific. ISRIB reduces the viability of cells subjected to PERK-activation by chronic endoplasmic reticulum stress[1]. ISRIB substantially reverses the translational effects elicited by phosphorylation of eIF2α and induces no major changes in translation or mRNA levels in unstressed cells. eIF2α phosphorylation-induced stress granule (SG) formation is blocked by ISRIB[2].

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

| | |
|---|---|
| **In Vivo** | ISRIB increases long-term memory in rodents. ISRIB-treated mice display significant enhancement in spatial and fear-associated learning. ISRIB displays a half-life in plasma of 8 hr and readily crossed the blood-brain barrier, quickly equilibrating with the central nervous system[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## PROTOCOL

| | |
|---|---|
| **Cell Assay** [1] | 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 eIF2 α phosphorylation is determined[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **Animal Administration** [1] | Mice: Intra-peritoneal (ip) route of administration is performed on 6-7 wk old female CD-1 mice. Animals receives a single, 5 mg/kg dose in groups of three mice/compound/route of administration. ISRIB is dissolved in DMSO then diluted 1:1 in Super-Refined PEG 400. Blood (80 μL) is collected from the saphenous vein at intervals post-dosing (20 min, 1 hr, 3 hr, 8 hr, 24 hr) in EDTA containing collection tubes and plasma is prepared for analysis. Compounds are detected by time-of-flight mass spectroscopy[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Cell. 2022 Sep 1;185(18):3356-3374.e22.
- Nat Commun. 2022 Nov 10;13(1):6796.
- Adv Sci (Weinh). 2023 May 11;e2205949.
- Biomaterials. 2021, 120757.
- Pharmacol Res. 2022 Aug;182:106285.

See more customer validations on www.MedChemExpress.com

## REFERENCES

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

[2]. Sidrauski C, et al. The small molecule ISRIB reverses the effects of eIF2α phosphorylation on translation and stressgranule assembly. Elife. 2015 Feb 26;4. doi: 10.7554/eLife.05033.



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