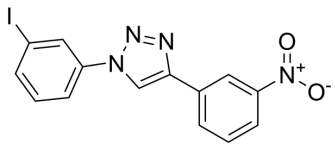
P62-mediated mitophagy inducer

Cat. No.:	HY-115576
CAS No.:	1809031-84-2
Molecular Formula:	$C_{14}H_9IN_4O_2$
Molecular Weight:	392.15
Target:	Mitophagy; Autophagy; p62
Pathway:	Autophagy
Storage:	Powder -20°C 3 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 8.33 mg/mL (21.24 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5500 mL	12.7502 mL	25.5004 mL
	5 mM	0.5100 mL	2.5500 mL	5.1001 mL
	10 mM	0.2550 mL	1.2750 mL	2.5500 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: ≥ 1.25 mg/mL (3.19 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (3.19 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

P62-mediated mitophagy inducer (PMI) is a P62-mediated mitophagy activator. P62-mediated mitophagy inducer activates mitochondrial autophagy without recruitment of Parkin or collapse of the mitochondrial membrane potential and remains active in cells lacking a fully functional PINK1/Parkin pathway. P62-mediated mitophagy inducer serves as a pharmacological tool to study the molecular mechanisms of mitosis, avoiding toxicity and some of the non-specific effects associated with the sudden dissipation of mitochondria lacking membrane potential[1].

IC_{50} & Target

mitophagy[1].

In Vitro

P62-mediated mitophagy inducer (10 μM; 0, 1, 3, 6, 24 h) stabilizes Nrf2 and (10 μM; 9 h) upregulates P62 expression activating mitophagy[1].
?P62-mediated mitophagy (10 μM; 24 h) acts downstream of the PINK1/Parkin signaling pathway in MEFs[1].

?P62-mediated mitophagy inducer positively affects mitochondrial poly-ubiquitination and coupling[1].

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

RT-PCR[1]

Cell Line:	MEFs
Concentration:	10 μM
Incubation Time:	9 h
Result:	Significantly increased p62 mRNA levels.

Immunofluorescence[1]

Cell Line:	MEFs
Concentration:	10 μM
Incubation Time:	24 h
Result:	Demonstrated Parkin-independent induction of mitochondrial recruitment of P62.

Western Blot Analysis[1]

Cell Line:	MEFs
Concentration:	10 μM
Incubation Time:	0, 1, 3, 6, 24 h
Result:	Exhibited maximum Nrf2 levels after 6 h and remained elevated at 24 h.

CUSTOMER VALIDATION

- Genes Dis. 2023 Sep 2.
- Radiother Oncol. 2023 Nov 23:110028.
- Cancer Research Communications. 2023 Feb.

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REFERENCES

[1]. East DA, et al. PMI: a ΔΨm independent pharmacological regulator of mitophagy. Chem Biol. 2014 Nov 20;21(11):1585-96.

Caution: Product has not been fully validated for medical applications. For research use only.

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