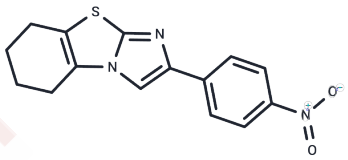
Data Sheet (Cat.No.T12472)

TargetMol

Pifithrin-α, p-Nitro, Cyclic

Chemical Properties



CAS No. : 60477-38-5

Formula: C15H13N3O2S

Molecular Weight: 299.35

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	Pifithrin-α, p-Nitro, Cyclic (PFN-α) is a cell-permeable, active-form inhibitor of p53.
Targets(IC50)	p53,MDM-2/p53
In vitro	Pifithrin-α, p-Nitro, Cyclic (PFN-α) significantly inhibits p53-induced cell death and p21/WAF1 expression in cortical neurons exposed to etoposide, requiring concentrations an order of magnitude lower than PFT-α[1].
In vivo	Intraocular administration of pifithrin-α at a concentration of 6 μM modestly enhances the survival of retinal ganglion cells (RGC), while it remains ineffective at 0.06 μM. Despite the observed in vitro benefits, pifithrin-α, p-Nitro, Cyclic (PFN-α) demonstrates no in vivo efficacy, even at the 6 μM concentration. Furthermore, pifithrin-α, p-Nitro, Cyclic exhibits a half-life (t1/2) of 6 hours under biological conditions[1].

Solubility Information

Solubility	DMSO: 5 mg/mL (16.7 mM),Sonication is recommended. DMF: 12.5 mg/mL (41.76 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3406 mL	16.7029 mL	33.4057 mL
5 mM	0.6681 mL	3.3406 mL	6.6811 mL
10 mM	0.3341 mL	1.6703 mL	3.3406 mL
50 mM	0.0668 mL	0.3341 mL	0.6681 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

Pietrancosta N, et al. Imino-tetrahydro-benzothiazole derivatives as p53 inhibitors: discovery of a highly potent in vivo inhibitor and its action mechanism. J Med Chem. 2006 Jun 15;49(12):3645-52.
Mao C, Gong L, Kang W.Effect and mechanism of resveratrol on ferroptosis mediated by p53/SLC7A11 in oral squamous cell carcinoma.BMC Oral Health.2024, 24(1): 773.
Dinca EB, et al. p53 Small-molecule inhibitor enhances temozolomide cytotoxic activity against intracranial glioblastoma xenografts. Cancer Res. 2008 Dec 15;68(24):10034-9.
Tang J, Liu W, Li Z, et al.Inhibition of ASIC1a reduces ferroptosis in rheumatoid arthritis articular chondrocytes via the p53/NRF2/SLC7A11 pathway.The FASEB Journal.2025, 39(1): e70298.

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