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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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MTK458

Cat. No.: HY-152943

CAS No.: 2499962-58-0

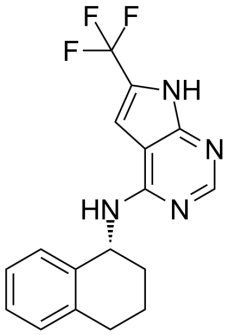
Molecular Formula: $C_{17}H_{15}F_3N_4$

Molecular Weight: 332.32

Target: Mitophagy; Mitochondrial Metabolism; PINK1/Parkin

Pathway: Autophagy; Metabolic Enzyme/Protease; Neuronal Signaling

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (300.91 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0091 mL	15.0457 mL	30.0915 mL
	5 mM	0.6018 mL	3.0091 mL	6.0183 mL
	10 mM	0.3009 mL	1.5046 mL	3.0091 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.52 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.38 mg/mL (7.16 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MTK458 is an orally active brain penetrant PINK1 activator. MTK458 binds to PINK1 and stabilizes an active heterocomplex, thereby increasing mitophagy. MTK458 can be used for research on Parkinson's disease[1].

In Vitro

MTK458 (25 μM) increases PINK1-mediated mitophagy to enhance clearance of intramitochondrial aggregates in Hela cells induced ΔOTC and YFP-Parkin[1].
MTK458 (0.1-25 μM) clears pS129 α-synuclein aggregates (12-250 kDa) in a dose-dependent manner in DIV9 and DIV12[1].
MTK458 (0-13 μM, 10 days) reduces α-synuclein pathology and the mitochondrial stress marker pUb in iPSC neurons[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

MTK458 (50 mg/kg, p.o., daily, 6 months) drives clearance of pathologic α-synuclein in a dose-dependent manner in the stratum of mice injected with α-synuclein preformed fibrils (PFFs)[1].

MTK458 (50 mg/kg, p.o., 6 doses, 5 days) decreases plasma pS65-Ubiquitin (pUb) in wild-type Sprague-Dawley rats[1].

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

Animal Model:	Stratum of mice injected with α-synuclein preformed fibrils (PFFs)[1]
Dosage:	50 mg/kg
Administration:	Oral gavage (p.o.), daily, 6 months
Result:	Rescued an activity deficit in freely moving PFF mice. Reduced the levels of inflammatory markers (TREM2, IL-6, and CXCL1).

Animal Model:	C57BL6J wildtype mice injected with PFF [1]
Dosage:	50 mg/kg
Administration:	Oral gavage (p.o.); 7 days, 3 weeks
Result:	Decreased pUb in the brain and plasma of PFF seeded mice.

REFERENCES

[1]. Chin RM, et al. Pharmacological PINK1 activation ameliorates Pathology in Parkinson's Disease models. bioRxiv [Preprint]. 2023 Feb 15:2023.02.14.528378.

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