

MTK458

## Chemical Properties

CAS No. : 2499962-58-0

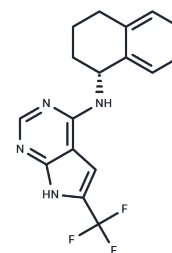
Formula: C17H15F3N4

Molecular Weight: 332.32

Keep away from moisture

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	MTK458 (EP-0035985) is an orally active and brain-permeable PINK1 activator that promotes pathological clearance of alpha-synuclein and reduces pUb in a PFF inoculation model. MTK458 induces pathological alpha-synuclein clearance by stimulating dimerization and stabilization of the PINK1/TOM complex. MTK458 may be used in Parkinson's disease research.
Targets(IC50)	PTEN, Mitophagy, Mitochondrial Metabolism
In vitro	Mitophagy activator 1 (0.1-25 μM), as a brain-penetrant small molecule, binds to PINK1 and stabilizes the active heterocomplex, thereby enhancing mitochondrial autophagy. It clears pS129 α-synuclein aggregates in a dose-dependent manner at DIV9 and DIV12[1].
In vivo	In the striatum of mice injected with α-synuclein preformed fibrils (PFFs), Mitophagy activator 1 (50 mg/kg; oral gavage (p.o.), daily, for 6 months) rescued activity deficits in freely moving PFF mice and reduced the levels of inflammatory markers (TREM2, IL-6, and CXCL1)[1].

## Solubility Information

Solubility	DMSO: 80 mg/mL (240.73 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 3.3 mg/mL (9.93 mM), Sonication is recommended. <i>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.</i>

### Preparing Stock Solutions

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	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
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
50 mM	0.0602 mL	0.3009 mL	0.6018 mL

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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

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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