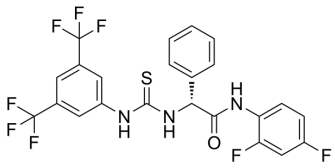
BL-918

Cat. No.:	HY-124729
CAS No.:	2101517-69-3
Molecular Formula:	$C_{23}H_{15}F_8N_3OS$
Molecular Weight:	533.44
Target:	ULK; Autophagy
Pathway:	Autophagy
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 250 mg/mL (468.66 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.8746 mL	9.3731 mL	18.7463 mL
5 mM	0.3749 mL	1.8746 mL	3.7492 mL
10 mM	0.1875 mL	0.9373 mL	1.8746 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: ≥ 2.08 mg/mL (3.90 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

BL-918 is an orally active UNC-51-like kinase 1 (ULK1) activator with an EC_{50} of 24.14 nM. BL-918 exerts its cytoprotective autophagic effect by targeting ULK complex. BL-918 has the potential for Parkinson's disease (PD) treatment[1].

IC_{50} & Target

ULK1 24.14 nM (EC50)	ULK1 0.719 μM (Kd)

In Vitro

BL-918 (compound 33i) binds to ULK1 with a high binding affinity (K_D=0.719 μM)[1].

BL-918 (5 μM; for 24 hours) induces autophagy in Neuron-Like SH-SY5Y cells[1].

BL-918 (0.5-50 μM; for 24 hours) can partially reverse MPP^+-induced cell death, which is determined by enhancing cell viability[1].

BL-918 (5 μM; for 6-36 hours) time-dependently elevates the expression levels of LC3-II, Beclin-1, and its phosphorylation

status, whereas reduces the level of the selective autophagy substrate SQSTM1/p62. BL-918 elevates Ser317 and Ser555 phosphorylation of ULK1, as well as decreases Ser757 phosphorylation of ULK1[1].

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

Cell Autophagy Assay[1]

Cell Line:	SH-SY5Y cells
Concentration:	5 μM
Incubation Time:	For 24 hours
Result:	Induced Autophagy.

Cell Viability Assay[1]

Cell Line:	SH-SY5Y cells
Concentration:	0.5, 5, 50 μM
Incubation Time:	For 24 hours
Result:	Could partially reverse MPP^+-induced cell death, which was determined by enhancing cell viability.

Western Blot Analysis[1]

Cell Line:	SH-SY5Y cells
Concentration:	5 μM
Incubation Time:	6, 12, 24, 36 hours
Result:	Time-dependently elevated the expression levels of LC3-II (a key marker of autophagy), Beclin-1, and its phosphorylation status, whereas reduced the level of the selective autophagy substrate SQSTM1/p62.

In Vivo

BL-918 (compound 33i; 20, 40, or 80 mg/kg/day; oral gavage; began 2 days before the first injection of saline/MPTP and continuously maintained for 5 days after the last injection of saline/MPTP) attenuates the loss of DA and its metabolites. BL-918 obviously decreases the levels of dopamine (DA), 3,4-dihydroxyphenylacetic acid (DOPAC), and homovanillic acid (HVA)[1].

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

Animal Model:	Male C57BL/6 mice (eight-week old) weighing between 20 and 25 g[1]
Dosage:	20, 40, or 80 mg/kg
Administration:	Oral gavage; daily; began 2 days before the first injection of saline/MPTP and continuously maintained for 5 days after the last injection of saline/MPTP
Result:	Attenuated the loss of DA and its metabolites.

REFERENCES

[1]. Ouyang L, et al. Small-Molecule Activator of UNC-51-Like Kinase 1 (ULK1) That Induces Cytoprotective Autophagy for Parkinson's Disease Treatment. J Med Chem. 2018 Apr 12;61(7):2776-2792.

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

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