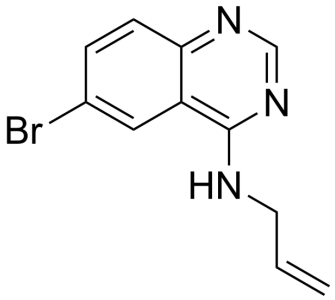
SMER28

Cat. No.:	HY-100200		
CAS No.:	307538-42-7		
Molecular Formula:	$C_{11}H_{10}BrN_3$		
Molecular Weight:	264.12		
Target:	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 : ≥ 32 mg/mL (121.16 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.7862 mL	18.9308 mL	37.8616 mL
	5 mM	0.7572 mL	3.7862 mL	7.5723 mL
	10 mM	0.3786 mL	1.8931 mL	3.7862 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: ≥ 2.5 mg/mL (9.47 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.47 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SMER28 is a positive regulator of autophagy acting via an mTOR-independent mechanism. SMER28 prevents the accumulation of amyloid beta peptide.

In Vitro

SMER28 (5-200 μM; 24 hours) shows a dose dependent decline of cell viability[4].

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

Cell Viability Assay[4]

Cell Line:	MMS1 cells

Concentration:	5, 25, 50, 75, 100, 150, 200 μM
Incubation Time:	24 hours
Result:	Showed a dose dependent decline of cell viability.

In Vivo

SMER28 (15-65 mg/kg; i.h.; daily, two days before irradiation and during the three days of irradiation) significantly protects against post-irradiation weight loss and enhances survival of mice at 65 mg/kg[5].

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

Animal Model:	14 to 16 weeks male mice (Balb/c)[5]
Dosage:	15, 65 mg/kg
Administration:	Subcutaneous injection; two days before irradiation and during the three days of irradiation (total 5 days)
Result:	Significantly protected against post-irradiation weight loss and enhanced survival of mice at 65 mg/kg.

CUSTOMER VALIDATION

- Neuropsych Dis Treat. 2021 Feb 3;17:297-304.
- bioRxiv. 2025 January 13.

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REFERENCES

[1]. Renna M et al. Chemical inducers of autophagy that enhance the clearance of mutant proteins in neurodegenerative diseases. J Biol Chem. 2010 Apr 9;285(15):11061-7.

[2]. Shen D et al. Novel cell- and tissue-based assays for detecting misfolded and aggregated protein accumulation within aggresomes and inclusion bodies. Cell Biochem Biophys. 2011 Jul;60(3):173-85.

[3]. Tian Y et al. A small-molecule enhancer of autophagy decreases levels of Abeta and APP-CTF via Atg5-dependent autophagy pathway. FASEB J. 2011 Jun;25(6):1934-42.

[4]. Nekova TS, et al. Small molecule enhancers of rapamycin induce apoptosis in myeloma cells via GSK3A/Bpreferentially within a protective bone marrow microenvironment. Br J Haematol. 2014 Oct;167(2):272-4.

[5]. Koukourakis MI, et al. SMER28 is a mTOR-independent small molecule enhancer of autophagy that protects mouse bone marrow and liver against radiotherapy. Invest New Drugs. 2018 Oct;36(5):773-781.

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