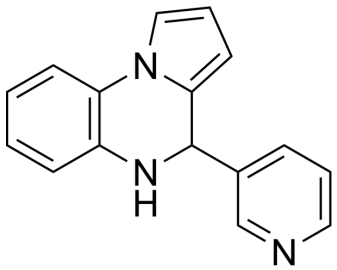
UBCS039

Cat. No.:	HY-115453
CAS No.:	358721-70-7
Molecular Formula:	$C_{16}H_{13}N_3$
Molecular Weight:	247.29
Target:	Sirtuin; Autophagy
Pathway:	Cell Cycle/DNA Damage; Epigenetics; 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 : 100 mg/mL (404.38 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.0438 mL	20.2192 mL	40.4384 mL
	5 mM	0.8088 mL	4.0438 mL	8.0877 mL
	10 mM	0.4044 mL	2.0219 mL	4.0438 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: ≥ 2.08 mg/mL (8.41 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (8.41 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (8.41 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

UBCS039 is the first synthetic, specific Sirtuin 6 (SIRT6) activator, inducing autophagy in human tumor cells, with an EC_{50} of 38 μM[1].

IC_{50} & Target

SIRT6
38 μM (EC50)

In Vitro

UBCS039 (75 μM, 48 or 72 hours) induces deacetylation of SIRT6-targeted histone H3 sites in human cancer cells[2].

UBCS039 leads to autophagosome accumulation in human cancer cells[2].
UBCS039 induces autophagy via AMP-activated protein kinase (AMPK) signaling pathway activation[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2]

Cell Line:	Human H1299 cells.
Concentration:	75 μM.
Incubation Time:	48 and 72 hours.
Result:	Induced deacetylation of SIRT6-targeted histone H3 sites in human H1299 cells.

Western Blot Analysis[2]

Cell Line:	Human H1299 cells.
Concentration:	75 μM.
Incubation Time:	48 and 72 hours.
Result:	Induced deacetylation of SIRT6-targeted histone H3 sites in human H1299 cells.

Cell Proliferation Assay[2]

Cell Line:	Human H1299 cells.
Concentration:	100 μM.
Incubation Time:	48 and 72 hours.
Result:	Led to a strong decrease of cell proliferation in a dose-dependent manner when compared with control or DMSO-treated cells, starting from day 3 of growth (48 h after treatment) in both H1299 and HeLa cell lines.

CUSTOMER VALIDATION

- Cell Biosci. 2021 Dec 14;11(1):210.
- J Med Chem. 2020 Sep 24;63(18):10474-10495.
- PLoS Pathog. 2023 Apr 6;19(4):e1011324.
- Mol Neurobiol. 2021 Oct 27.
- Cytotherapy. 2022 Feb;24(2):149-160.

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REFERENCES

[1]. Weijie You, et al. Structural Basis of Sirtuin 6 Activation by Synthetic Small Molecules. Angew. Chem. Int. Ed. 2017, 56, 1007-1011.

[2]. Sara Iachettini, et al. Pharmacological activation of SIRT6 triggers lethal autophagy in human cancer cells. Cell Death and Disease (2018) 9:996.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA