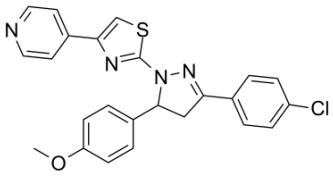
mTOR inhibitor-8

Cat. No.:	HY-131344
CAS No.:	2489196-70-3
Molecular Formula:	$C_{24}H_{19}ClN_4OS$
Molecular Weight:	446.95
Target:	mTOR; Autophagy
Pathway:	PI3K/Akt/mTOR; Autophagy
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (55.93 mM; Need ultrasonic)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	2.2374 mL	11.1869 mL	22.3739 mL
5 mM	0.4475 mL	2.2374 mL	4.4748 mL
10 mM	0.2237 mL	1.1187 mL	2.2374 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 (4.65 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.65 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

mTOR inhibitor-8 is an mTOR inhibitor and autophagy inducer. mTOR inhibitor-8 inhibits the activity of mTOR via FKBP12 and induces autophagy of A549 human lung cancer cells[1].

IC_{50} & Target	mTOR	Autophagy

In Vitro

mTOR inhibitor-8 (Compound 5e; 0.1-10 μM; 24 and 48 hours) suppresses the growth of A549 cells in a dose-dependent manner[1].

mTOR inhibitor-8 induces autophagy in an mTOR-dependent manner. mTOR inhibitor-8 (10 μM; 3-24 hours) induces autophagy in a time-dependent manner. The levels of LC3B-II are enhanced[1].

mTOR inhibitor-8 (10 μM; 3-24 hours) reduces the phosphorylation of RPS6KB1 (ribosomal protein S6 kinase) and EIF4EBP1

(eukaryotic translation initiation factor 4E-binding protein 1), two essential substrates of mTOR[1]

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

Cell Viability Assay[1]

Cell Line:	A549 cells
Concentration:	0.1, 1, 5, 10 μM
Incubation Time:	24 and 48 hours
Result:	Suppressed the growth of A549 cells with an IC_{50} of 2.6±0.11 μM.

Western Blot Analysis[1]

Cell Line:	A549 cells
Concentration:	10 μM
Incubation Time:	3, 6, 12 and 24 hours
Result:	The levels of phosphorylation of RPS6KB1 and EIF4EBP1 were significantly decreased after treatment.

In Vivo

mTOR inhibitor-8 (25 and 50 μM; 6 days) effectively inhibits tumor growth in vivo without adverse effect on normal chick chorioallantoic membrane angiogenesis[1].

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

Animal Model:	Fertile chicken eggs (7-9 days old)[1]
Dosage:	25 and 50 μM
Administration:	6 days
Result:	Significant xenograft tumor remission was observed in eggs compared with the DMSO-treated eggs.

REFERENCES

[1]. ZhaoMin Lin, et al. Discovery of new fluorescent thiazole-pyrazoline derivatives as autophagy inducers by inhibiting mTOR activity in A549 human lung cancer cells. Cell Death Dis. 2020 Jul 20;11(7):551.

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