# mTOR inhibitor-8

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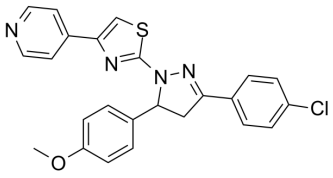
|---|---|
| **Cat. No.:** | HY-131344 |
| **CAS No.:** | 2489196-70-3 |
| **Molecular Formula:** | $C_{24}H_{19}ClN_4OS$ |
| **Molecular Weight:** | 446.95 |
| **Target:** | mTOR; Autophagy |
| **Pathway:** | PI3K/Akt/mTOR; Autophagy |
| **Storage:** | Powder -20°C 3 years<br>4°C 2 years<br>In solvent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



## SOLVENT & SOLUBILITY

**In Vitro**

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

| Preparing Stock Solutions | Mass / Solvent / Concentration | 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]

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|---|---|
| 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]

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|---|---|
| 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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