# T56-LIMKi

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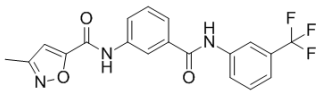
| **Cat. No.:** | HY-19352 |
| **CAS No.:** | 924473-59-6 |
| **Molecular Formula:** | $C_{19}H_{14}F_3N_3O_3$ |
| **Molecular Weight:** | 389.33 |
| **Target:** | LIM Kinase (LIMK) |
| **Pathway:** | Cell Cycle/DNA Damage |
| **Storage:** | Powder -20°C 3 years<br>4°C 2 years<br>In solvent -80°C 6 months<br>-20°C 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 36 mg/mL (92.47 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
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| 1 mM | 2.5685 mL | 12.8426 mL | 25.6852 mL |
| 5 mM | 0.5137 mL | 2.5685 mL | 5.1370 mL |
| 10 mM | 0.2569 mL | 1.2843 mL | 2.5685 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: ≥ 2.5 mg/mL (6.42 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

T56-LIMKi is a selective inhibitor of LIMK2; inhibits the growth of Panc-1 cells with an $IC_{50}$ of 35.2 μM.

**$IC_{50}$ & Target**

LIMK2

**In Vitro**

T56-LIMKi efficiently inhibits the growth of ST88-14, U87, Panc-1 cells, A549 lung cancer cells with $IC_{50}$ values of 18.3, 7.4, 35.2 and 90 μM, respectively. T56-LIMKi decreases phosphorylated cofilin (p-cofilin) levels and thus inhibits growth of several cancerous cell lines, including those of pancreatic cancer, glioma and schwannoma[1]. It blocks the phosphorylation of cofilin which leads to actin severance and inhibition of tumor cell migration, tumor cell growth, and anchorage-independent colony formation in soft agar. T56-LIMKi (10-50 μM) reduces p-cofilin in a dose-dependent manner in $NF1^{-/-}$ MEFs with an $IC_{50}$ of 30 μM. Notably, the inhibitor does not affect the amounts of total cofil. 50μM T56-LIMKi causes a statistically significant reduction in the number of cells exhibiting stress fibers[2].

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| | MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | T56-LIMKi can induce inhibition of cofilin phosphorylation and Panc-1 tumor shrinkage in vivo. Mice treated with T56-LIMKi (60 mg/kg) shows a significant decrease in tumor volume compared to control[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## PROTOCOL

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| **Cell Assay** | T56-LIMKi can induce inhibition of cofilin phosphorylation and Panc-1 tumor shrinkage in vivo. Mice treated with T56-LIMKi (60 mg/kg) shows a significant decrease in tumor volume compared to control[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **Animal Administration** [1] | Mice: T56-LIMKi is dissolved in 0.5% carboxymethylcellulose solution. Mice are implanted with xenografted Panc-1 cells. Treatment is started 7 days later. Mice in the two experimental groups are each treated with a daily oral non-toxic dose of T56-LIMKi (30 or 60 mg/kg in gavage) and mice in the control group receives only the vehicle (0.5% CMC) in the gavage[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## REFERENCES

[1]. Rak R, et al. Novel LIMK2 Inhibitor Blocks Panc-1 Tumor Growth in a mouse xenograft model. Oncoscience. 2014 Jan 1;1(1):39-48. eCollection 2014.

[2]. Mashiach-Farkash E, et al. Computer-based identification of a novel LIMK1/2 inhibitor that synergizes with salirasib to destabilize the actin cytoskeleton. Oncotarget. 2012 Jun;3(6):629-39.



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