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- Gefahrgutzuschlag
- Expressversand

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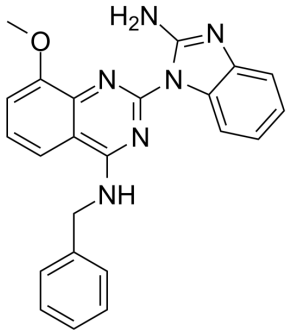
ML240

Cat. No.:	HY-19795
CAS No.:	1346527-98-7
Molecular Formula:	$C_{23}H_{20}N_6O$
Molecular Weight:	396.44
Target:	p97
Pathway:	Cell Cycle/DNA Damage
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 : 12.5 mg/mL (31.53 mM; Need ultrasonic)
Ethanol : < 1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.5224 mL	12.6122 mL	25.2245 mL
5 mM	0.5045 mL	2.5224 mL	5.0449 mL
10 mM	0.2522 mL	1.2612 mL	2.5224 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 (6.31 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (6.31 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.31 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ML240 is a potent p97 inhibitor, inhibiting p97 ATPase with IC_{50} value of 100 nM.

IC_{50} & Target

IC50: 100 nM (p97)[1]

In Vitro

ML240 is a potent p97 inhibitor, with an IC_{50} of 100 nM. ML240 is active in the UbG76V-GFP stabilization assay (IC_{50}, 0.9 μM). ML240 inhibits p97 competitively with respect to ATP with a K_i values of 0.22 μM. ML240 also inhibits labeling of only three

protein kinase domains by >50% when tested at 20 μM: PIP5 K3 (belongs to phosphoinositide-3 kinase family), JAK1 JH2 (N-terminal pseudokinase domain of JAK1), and DNAPK (DNA-dependent protein kinase). ML240 (1.1, 3.3, 10, or 20 μM) induces executioner caspases 3 and 7 and triggers cell death independently of apical caspases 8 and 9[1]. ML240 is cytotoxic to HCT15 and SW403 cells, with GI_{50}s of 0.76 and 0.5 μM after treatment for 24 h, and 0.54 and 0.5 μM after treatment for 72 h, respectively[2].

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

PROTOCOL

Cell Assay [2]

HeLa cells stably expressing ODD-luciferase are seeded onto a 96-well white solid bottom plate (5000 cells/well) and cells are grown for 16 h. Cells are treated with DMEM containing MG132 (4 μM) for 1h and washed with 100 μL PBS twice. DMEM containing 2.5% FBS, cycloheximide (50 μg/mL) and ML240 are added into the well. Four 96-well plates are prepared and one of the plates is taken out from incubator at each time point (70, 90, 120, or 150 min). Luciferin (50 μL of 1 mg/mL in PBS) is added into each well containing 50 μL of medium and incubated at room temperature with shaking at 500 rpm for 5 min. Luminescence intensity is determined with 0.1 ms integration time on the Synergy HT Microplate Reader[2].

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

CUSTOMER VALIDATION

- PLoS One. 2021 Nov 3;16(11):e0251957.
- Vet Microbiol. 2022 Jul 12;272:109511.

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REFERENCES

[1]. Chou TF et al. Structure-activity relationship study reveals ML240 and ML241 as potent and selective inhibitors of p97 ATPase. ChemMedChem, 2013 Feb, 8(2):297-312.

[2]. Chou TF, et al. Selective, reversible inhibitors of the AAA ATPase p97. Probe Reports from the NIH Molecular Libraries Program. April 14, 2011.

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