MLN0905

Cat. No.: HY-15155

CAS No.: 1228960-69-7

Molecular Formula: $C_{24}H_{25}F_3N_6S$

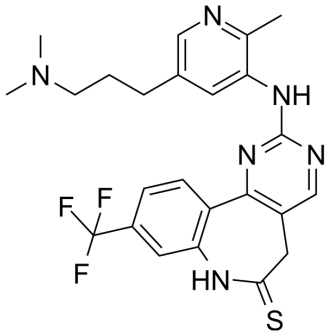
Molecular Weight: 486.56

Target: Polo-like Kinase (PLK)

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 : ≥ 30 mg/mL (61.66 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.0552 mL	10.2762 mL	20.5525 mL
5 mM	0.4110 mL	2.0552 mL	4.1105 mL
10 mM	0.2055 mL	1.0276 mL	2.0552 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 (5.14 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.14 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.14 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MLN0905 is a potent, orally active Polo-like kinase 1 (PLK1) inhibitor. MLN0905 has inhibitory potency against PLK1 with an IC_{50} value of 2 nM. MLN0905 can be used for the research of cancer[1][2].

IC_{50} & Target

PLK1

2 nM (IC_{50})

In Vitro	MLN0905 (compound 12c) has inhibitory potency against PLK1 with an IC_{50} value of 2 nM[1]. MLN0905 exhibits potent activities for Cdc25C with an EC_{50} value of 33 nM[1]. MLN0905 shows inhibitory effects on HT29, HCT116, H460, and A375 cell lines with LD_{50} values of 22 nM, 56 nM, 89 nM and 34 nM, respectively[1]. MLN0905 (125 nM) shows strong mitotic arrest and monopolar spindle formation in HT-29 cells[1]. MLN0905 suppresses the growth of lymphoma cell lines with IC_{50} values ranging from 3 - 24 nM[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	MLN0905 (p.o.; 50 mg/kg) shows a high sustained PD response in nude mice HT29 xenograft tumors[1]. MLN0905 (p.o.; 6.25, 12.5, 25, 50 mg/kg) exhibits significant antitumor activities in mice HT29 xenograft tumors[1]. MLN0905 (p.o.; 0-14.5 mg/kg; daily, QD×3/week) has marked antitumor effects in kinds of lymphoma xenograft model[1][2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Tumor (HT29) xenograft model[1]
Dosage:	0-50 mg/kg
Administration:	P.O; daily, QD×3/week
Result:	Observed antitumor activity, tumor stasis or regression and well-tolerated oral doses.

CUSTOMER VALIDATION

- Theranostics. 2022; 12(8): 3911-3927.
- Cell Death Dis. 2023 Oct 23;14(10):695.
- PLoS Negl Trop Dis. 2016 Jan 11;10(1):e0004356.
- Department of Pathology. University of California. 2016.

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REFERENCES

[1]. Duffey MO, et al. Discovery of a potent and orally bioavailable benzolactam-derived inhibitor of Polo-like kinase 1 (MLN0905). J Med Chem. 2012 Jan 12;55(1):197-208.

[2]. Shi JQ, et al. MLN0905, a small-molecule plk1 inhibitor, induces antitumor responses in human models of diffuse large B-cell lymphoma. Mol Cancer Ther. 2012 Sep;11(9):2045-53.

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