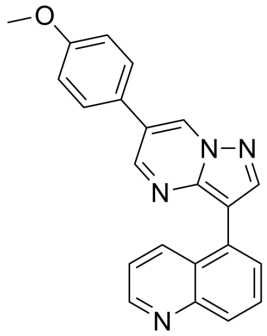
ML347

Cat. No.:	HY-12274
CAS No.:	1062368-49-3
Molecular Formula:	$C_{22}H_{16}N_4O$
Molecular Weight:	352.39
Target:	TGF-β Receptor
Pathway:	TGF-beta/Smad

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 : 10 mg/mL (28.38 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8378 mL	14.1888 mL	28.3776 mL
5 mM	0.5676 mL	2.8378 mL	5.6755 mL
10 mM	0.2838 mL	1.4189 mL	2.8378 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

ML347 (LDN193719) is a highly selective ALK1/ALK2 inhibitor. ML347 has IC_{50} values of 46 and 32 nM against ALK1 and ALK2, respectively, >300-fold selective over ALK3. ML347 block the phosphorylation of Smad1/5 by TGF-β1[1][2].

IC_{50} & Target

ALK1	ACVR1	BMPR1A
46 nM (IC_{50})	32 nM (IC_{50})	10800 nM (IC_{50})

In Vitro

ML347 can inhibit ALK1/ALK2 to block TGF?β signal transduction[2].

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

Immunofluorescence[2]

Cell Line:	Primary dental epithelial cells were cultured in Dulbecco's Modifed Eagle Medium (DMEM)/ F12 supplemented with 20% fetal bovine serum and 1% penicillin/streptomycin.
Concentration:	25 μM

Incubation Time:	2 hours
Result:	Inhibited ALK1/ALK2 then blocking Smad1/5 by TGF-β1.

CUSTOMER VALIDATION

- J Leukoc Biol. 2023 Aug 9;qiad090.
- J Mol Histol. 2021 Feb;52(1):77-86.
- J Bioma Ter Tiss Eng. 2020 Jun.
- Patent. US20220002732A1.
- Patent. US20170369886A1.

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REFERENCES

[1]. Engers DW, et al. Synthesis and structure-activity relationships of a novel and selective bone morphogenetic protein receptor (BMP) inhibitor derived from the pyrazolo[1.5-a]pyrimidine scaffold of dorsomorphin: the discovery of ML347 as an ALK2 versus ALK3 selective MLPCN probe. Bioorg Med Chem Lett. 2013 Jun 1;23(11):3248-52.

[2]. Zhang H, et al. Dual roles of TGF-β signaling in the regulation of dental epithelial cell proliferation. J Mol Histol. 2021 Feb;52(1):77-86.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA