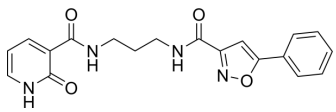
ML327

Cat. No.:	HY-103038
CAS No.:	1883510-31-3
Molecular Formula:	$C_{19}H_{18}N_4O_4$
Molecular Weight:	366.37
Target:	c-Myc; Autophagy
Pathway:	Apoptosis; Autophagy
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 : 32 mg/mL (87.34 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7295 mL	13.6474 mL	27.2948 mL
	5 mM	0.5459 mL	2.7295 mL	5.4590 mL
	10 mM	0.2729 mL	1.3647 mL	2.7295 mL

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

BIOLOGICAL ACTIVITY

Description

ML327 is a blocker of MYC which can also de-repress E-cadherin transcription and reverse Epithelial-to-Mesenchymal Transition (EMT).

IC_{50} & Target

MYC[1]

In Vitro

Treatment with ML327 induces an elongated morphology in neuroblastoma cells. BE(2)-C cells treated with ML327 demonstrates G1 cell cycle arrest with a concordant decrease in S phase population, and a significant increase in the sub G0 population. ML327 induces the expression of CDH1 in all seven of the neuroblastoma cell lines with a 50 to 1,400-fold induction of CDH1 mRNA expression. ML327 blocks the expression of MYC family of oncogenic transcription factors in all tested neuroblastoma cell lines. Immunoblotting time course demonstrates early repression of N-MYC expression within 2 h of treatment with ML327 (10 μM).? p53 levels are also suppressed by treatment with ML327. ML327-pretreated cells demonstrates reduced proliferative potential in both tetrazolium-based ($p<0.0001$) and adherent 2D colony formation (41 vs. 400; $p<0.0001$)[1]. ML327 reduces SW620inv cell invasion through Matrigel by ~60% and reduces H520 cell invasion by ~30% in these in vitro assays.? ML327 partially restores E-cadherin expression at the plasma membrane in NMuMG cells induced to undergo Epithelial-to-Mesenchymal Transition (EMT) by TGF-β1 treatment[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	ML327 treatment significantly reduces tumor volume by three-fold over the two-week treatment period (p=0.02). Tumor explant weights are approximately three-fold smaller in the ML327-treated mice (p=0.01). Mice treated with ML327 lost 12% more body weight than vehicle treated mice. ML327 treatment results in a two-fold decrease in MYCN expression, confirming that ML327 inhibits xenograft MYCN expression (p=0.0035)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	Cells are seeded onto 96-well plates at equivalent density (3,000 to 10,000 depending upon cell line), permitted to attach overnight, and treated with either ML327 (10 μM) or vehicle. Daily absorbance measurements (450 nm) using the cell counting kit are obtained. For estimation of IC_{50} values, cells are plated at equal density, permitted to attach, and baseline absorbance is obtained using cell counting kit. Cells are then treated with varying doses of ML327 (0.1 to 30 μM) and cell viability is measured 72 h after treatment[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Male athymic nude mice (4 to 6 weeks old) are maintained as described. BE(2)-C cells xenografts are established as previously described. Briefly, 1×10^6 cells/100 μL of HBSS are injected subcutaneously into flanks using a 26-gauge needle (n=10 per group). Mice are monitored daily for xenograft formation and assessed by measuring the two greatest perpendicular tumor diameter with venier calipers. Xenograft volumes are estimated using the following formula [(length×width^2)/2]. Once tumors reach 75 to 100 mm^3, mice are randomized to receive either 50 mg/kg of ML327 or control vehicle (70% polyethylene glycol) via intraperitoneal injection twice daily for 14d. Weight and tumor volume are recorded daily. After completion of two weeks of treatment, mice are euthanized and tumors are excised, weighed, and RNA is isolated[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Mol Immunol. 2022 Sep;19(9):1030-1041.
- Inflamm Bowel Dis. 2020 Aug 20;26(9):1340-1352.
- Acta Bioch Bioph Sin. 2020 Apr 20;52(4):411-420.
- Technol Cancer Res Treat. Jan-Dec 2021;20:15330338211033077.

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REFERENCES

[1]. Rellinger EJ, et al. Isoxazole compound ML327 blocks MYC expression and tumor formation in neuroblastoma. Oncotarget. 2017 Jul 20;8(53):91040-91051.

[2]. An H, et al. Small molecule/ML327 mediated transcriptional de-repression of E-cadherin and inhibition of epithelial-to-mesenchymal transition.Oncotarget. 2015 Sep 8;6(26):22934-48.

Caution: Product has not been fully validated for medical applications. For research use only.

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