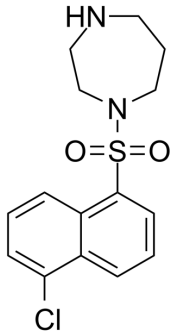
ML-9 Free Base

Cat. No.:	HY-100932A
CAS No.:	110448-31-2
Molecular Formula:	$C_{15}H_{17}ClN_2O_2S$
Molecular Weight:	324.83
Target:	Myosin
Pathway:	Cytoskeleton
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

ML-9 (Free Base) is a selective and potent inhibitor of Akt kinase, inhibits myosin light-chain kinase (MLCK) and stromal interaction molecule 1 (STIM1) activity[3]. ML-9 (Free Base) inhibits inhibits MLCK, PKA and PKC activity with K_i values of 4, 32 and 54 μM, respectively[1]. ML-9 (Free Base) induces autophagy by stimulating autophagosome formation and inhibiting their degradation[3].

In Vitro

ML9 (Free Base) (0-100 μM; 0-24 hours) has no reduction in cardiomyocyte viability, 50-100 μM significantly induces cell death [2].

ML9 (Free Base) (50 μM; 1-4 hours) significantly increases cleaved caspase-3 levels, decreased STIM1 protein levels by about 42%[2].

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

Cell Viability Assay[1]

Cell Line:	Neonatal rat ventricular myocytes (NRVM) cells
Concentration:	0, 10, 50 and 100 μM
Incubation Time:	0, 1, 4, 8 and 24 hours
Result:	Decreased cell viability at 50–100 μM concentration.

Apoptosis Analysis[1]

Cell Line:	Neonatal rat ventricular myocytes (NRVM) cells
Concentration:	50 μM
Incubation Time:	0, 1, 4, 8 hours
Result:	Induced cardiomyocyte death through necrosis and apoptosis.

REFERENCES

[1]. Ito S, et al. ML-9, a myosin light chain kinase inhibitor, reduces intracellular Ca2+ concentration in guinea pig trachealis.Eur J Pharmacol. 2004 Feb 23;486(3):325-33.

[2]. Shaikh S, et al. The STIM1 inhibitor ML9 disrupts basal autophagy in cardiomyocytes by decreasing lysosome content.Toxicol In Vitro. 2018 Apr;48:121-127.

[3]. Kondratskyi A1, et al.Identification of ML-9 as a lysosomotropic agent targeting autophagy and cell death.Cell Death Dis. 2014 Apr 24;5:e1193.

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