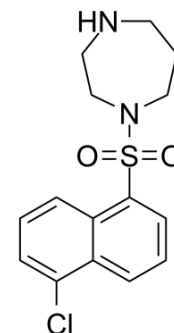


## ML-9 Free Base

Cat. No.:	HY-100932A
CAS No.:	110448-31-2
Molecular Formula:	C <sub>15</sub> H <sub>17</sub> ClN <sub>2</sub> O <sub>2</sub> S
Molecular Weight:	324.83
Target:	Myosin
Pathway:	Cytoskeleton
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



## BIOLOGICAL ACTIVITY

<b>Description</b>	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 <sup>[3]</sup> . ML-9 (Free Base) inhibits MLCK, PKA and PKC activity with K <sub>i</sub> values of 4, 32 and 54 μM, respectively <sup>[1]</sup> . ML-9 (Free Base) induces autophagy by stimulating autophagosome formation and inhibiting their degradation <sup>[3]</sup> .																
<b>In Vitro</b>	<p>ML9 (Free Base) (0-100 μM; 0-24 hours) has no reduction in cardiomyocyte viability, 50-100 μM significantly induces cell death<sup>[2]</sup>.</p> <p>ML9 (Free Base) (50 μM; 1-4 hours) significantly increases cleaved caspase-3 levels, decreased STIM1 protein levels by about 42%<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay<sup>[1]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>Neonatal rat ventricular myocytes (NRVM) cells</td> </tr> <tr> <td>Concentration:</td> <td>0, 10, 50 and 100 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>0, 1, 4, 8 and 24 hours</td> </tr> <tr> <td>Result:</td> <td>Decreased cell viability at 50–100 μM concentration.</td> </tr> </table> <p>Apoptosis Analysis<sup>[1]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>Neonatal rat ventricular myocytes (NRVM) cells</td> </tr> <tr> <td>Concentration:</td> <td>50 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>0, 1, 4, 8 hours</td> </tr> <tr> <td>Result:</td> <td>Induced cardiomyocyte death through necrosis and apoptosis.</td> </tr> </table>	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.	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.
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## REFERENCES

[1]. Ito S, et al. ML-9, a myosin light chain kinase inhibitor, reduces intracellular Ca<sup>2+</sup> concentration in guinea pig trachealis. *Eur J Pharmacol.* 2004 Feb 23;486(3):325-33.

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

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