

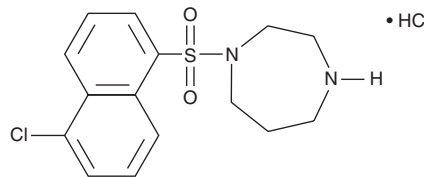
PRODUCT INFORMATION



ML-9

Item No. 10010236

CAS Registry No.: 105637-50-1
Formal Name: 1-[(5-chloro-1-naphthalenyl)sulfonyl]hexahydro-1H-1,4-diazepine, monohydrochloride
MF: C₁₅H₁₇ClN₂O₂S • HCl
FW: 361.3
Purity: ≥98%
UV/Vis.: λ_{max}: 229, 300 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

ML-9 is supplied as a crystalline solid. A stock solution may be made by dissolving the ML-9 in the solvent of choice, which should be purged with an inert gas. ML-9 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ML-9 in ethanol is approximately 0.5 mg/ml and approximately 30 mg/ml in DMSO and DMF.

ML-9 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ML-9 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. ML-9 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

ML-9 was originally identified as a selective Ca²⁺-calmodulin-dependent myosin light chain kinase inhibitor. Concentrations from 10-100 μM are effective at inhibiting vascular smooth muscle tension and reducing intracellular Ca²⁺ concentrations.¹ ML-9 also inhibits PKB/Akt activity with an IC₅₀ range of 10-50 μM in rat primary adipocytes. This results in a specific inhibition of insulin-stimulated glucose transport and GLUT4/IGF II receptor translocation to the plasma membrane yet does not interfere with the antilipolytic effect of insulin.² Additionally, ML-9 inhibits other serine/threonine kinases including PKA (IC₅₀ = ~20 μM), p90 S6 (IC₅₀ = ~50 μM), and MAP kinase (IC₅₀ = ~35 μM).²

References

1. Ito, S., Kume, H., Honjo, H., *et al.* ML-9, a myosin light chain kinase inhibitor, reduces intracellular Ca²⁺ concentration in guinea pig trachealis. *Eur. J. Pharmacol.* **486**, 325-333 (2004).
2. Smith, U., Carvalho, E., Mosialou, E., *et al.* PBK inhibition prevents the stimulatory effect of insulin on glucose transport and protein translocation but not the antilipolytic effect in rat adipocytes. *Biochem. Biophys. Res. Commun.* **268**, 315-320 (2000).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM