

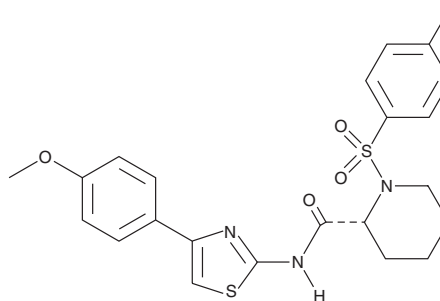
PRODUCT INFORMATION



ML-277

Item No. 15193

CAS Registry No.: 1401242-74-7
Formal Name: (2R)-N-[4-(4-methoxyphenyl)-2-thiazolyl]-1-[(4-methylphenyl)sulfonyl]-2-piperidinecarboxamide
Synonym: CID-53347902
MF: C₂₃H₂₅N₃O₄S₂
FW: 471.6
Purity: ≥95%
UV/Vis.: λ_{max}: 242, 270 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-277 is supplied as a crystalline solid. A stock solution may be made by dissolving the ML-277 in the solvent of choice, which should be purged with an inert gas. ML-277 is soluble in DMSO at a concentration of approximately 5 mg/ml.

Description

Potassium (K⁺) channels are categorized by their mode of activation and the number of transmembrane segments.¹ The voltage-gated six-transmembrane K⁺ channels include KCNQ1, first recognized for its role in cardiac function and subsequently in hearing, gastrointestinal chloride secretion, and other processes.^{1,2} ML-277 is a potent activator of KCNQ1 channels (EC₅₀ = 260 nM).³ The EC₅₀ value of this compound at the related channels KCNQ2, KCNQ4, and hERG exceeds 30 μM.³ ML-277 potentiates both homomultimeric KCNQ1 channels and unsaturated heteromultimeric (KCNQ1/KCNE1) channels in model cardiomyocytes and augments delayed rectifier K⁺ current in cultured human cardiomyocytes.⁴

References

1. Wulff, H., Castle, N.A., and Pardo, L.A. Voltage-gated potassium channels as therapeutic targets. *Nat. Rev. Drug Discov.* **8**(12), 982-1001 (2009).
2. Robbins, J. KCNQ potassium channels: Physiology, pathophysiology, and pharmacology. *Pharmacol. Ther.* **90**(1), 1-19 (2001).
3. Mattmann, M.E., Yu, H., Lin, Z., et al. Identification of (R)-N-(4-(4-methoxyphenyl)thiazol-2-yl)-1-tosylpiperidine-2-carboxamide, ML277, as a novel, potent and selective K_v7.1 (KCNQ1) potassium channel activator. *Bioorg. Med. Chem. Lett.* **22**(18), 5936-5941 (2012).
4. Yu, H., Lin, Z., Mattmann, M.E., et al. Dynamic subunit stoichiometry confers a progressive continuum of pharmacological sensitivity by KCNQ potassium channels. *Proc. Natl. Acad. Sci. USA* **110**(21), 8732-8737 (2013).

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.

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