



# SZABO SCANDIC

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## Produktinformation



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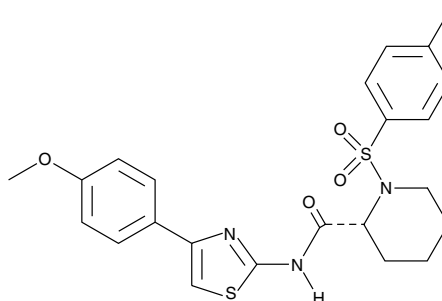
# Product Information



**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:** C<sub>23</sub>H<sub>25</sub>N<sub>3</sub>O<sub>4</sub>S<sub>2</sub>  
**FW:** 471.6  
**Purity:** ≥95%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid  
**UV/Vis.:** λ<sub>max</sub>: 242, 270 nm



## Laboratory Procedures

For long term storage, we suggest that ML-277 be stored as supplied at -20°C. It should be stable for at least two years. ML-277 is supplied as a crystalline solid. A stock solution may be made by dissolving the ML-277 in the solvent of choice. ML-277 is soluble in DMSO at a concentration of approximately 5 mg/ml.

Potassium (K<sup>+</sup>) channels are categorized by their mode of activation and the number of transmembrane segments.<sup>1</sup> The voltage-gated six-transmembrane K<sup>+</sup> channels include KCNQ1, first recognized for its role in cardiac function and subsequently in hearing, gastrointestinal chloride secretion, and other processes.<sup>1,2</sup> ML-277 is a potent activator of KCNQ1 channels (EC<sub>50</sub> = 260 nM).<sup>3</sup> The EC<sub>50</sub> value of this compound at the related channels KCNQ2, KCNQ4, and hERG exceeds 30 μM.<sup>3</sup> ML-277 potentiates both homomultimeric KCNQ1 channels and unsaturated heteromultimeric (KCNQ1/KCNE1) channels in model cardiomyocytes and augments delayed rectifier K<sup>+</sup> current in cultured human cardiomyocytes.<sup>4</sup>

## 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<sub>v</sub>7.1 (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).

## Related Products

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**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

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