

**Product Name:** ML 277

**Catalog No.:** 4777

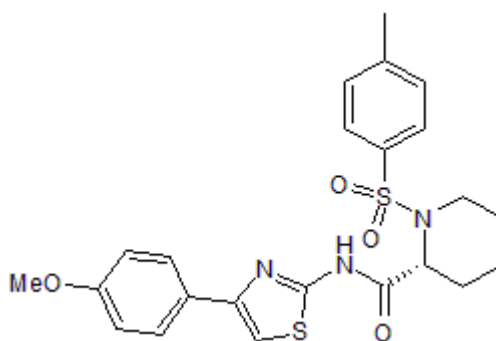
**Batch No.:** 1

**CAS Number:** 1401242-74-7

**IUPAC Name:** (2*R*)-*N*-[4-(4-Methoxyphenyl)-2-thiazolyl]-1-[(4-methylphenyl)sulfonyl]-2-piperidinecarboxamide

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>23</sub>H<sub>25</sub>N<sub>3</sub>O<sub>4</sub>S<sub>2</sub>·¼H<sub>2</sub>O  
**Batch Molecular Weight:** 476.09  
**Physical Appearance:** White solid  
**Solubility:** DMSO to 100 mM  
**Storage:** Store at -20°C  
**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**TLC:** R<sub>f</sub> = 0.59 (Ethyl acetate:Petroleum ether [1:1])  
**HPLC:** Shows 100% purity  
**Chiral HPLC:** Shows 100% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure  
**Optical Rotation:** [α]<sub>D</sub> = +67.5 (Concentration = 1, Solvent = Chloroform)  
**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	58.03	5.4	8.83
Found	58.1	5.31	8.74

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

Selective K<sub>v</sub>7.1 (KCNQ1) potassium channel activator (EC<sub>50</sub> =260 nM). Exhibits >100-fold selectivity versus KCNQ2, KCNQ4 and hERG potassium channels. Augments I<sub>Ks</sub> current of cultured human cardiomyocytes and shortens action potential duration.

**Physical and Chemical Properties:**

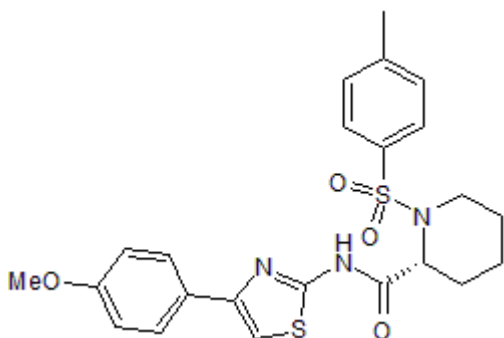
Batch Molecular Formula: C<sub>23</sub>H<sub>25</sub>N<sub>3</sub>O<sub>4</sub>S<sub>2</sub>·¼H<sub>2</sub>O

Batch Molecular Weight: 476.09

Physical Appearance: White solid

**Minimum Purity:** >98%

**Batch Molecular Structure:**



**Storage:** Store at -20°C

**Solubility & Usage Info:**

DMSO to 100 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Mattmann et al (2012)** 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** 5936. PMID: 22910039.

**Yu et al (2013)** Dynamic subunit stoichiometry confers a progressive continuum of pharmacological sensitivity by KCNQ potassium channels. *Proc.Natl.Acad.Sci.U.S.A.* **110** 8732. PMID: 23650380.

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