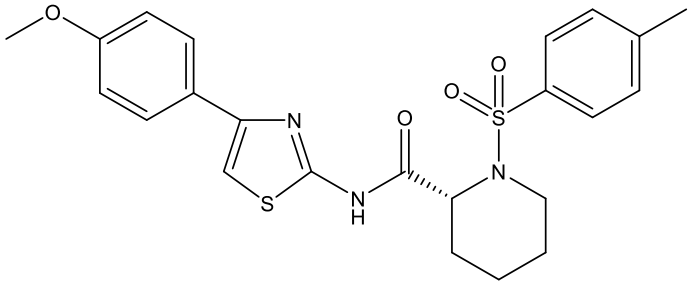
Catalog # 10-4074
ML277
CAS# 1401242-74-7

(2R)-N-[4-(4-Methoxyphenyl)-2-thiazolyl]-1-[(4-methylphenyl)(sulfonyl]-2-piperidinecarboxamide; (R)-N-(4-(4-Methoxyphenyl)thiazol-2-yl)-1-tosylpiperidine-2-carboxamide

Lot # FBS3079



ML277 is a potent (EC_{50} = 260 nM) activator of Kv7.1 with selectivity against Kv7.2, Kv7.4, and Kv11.1 (hERG).[1] ML277 enhances cardiac delayed rectifier K^+ currents (IKs) in human iPSC-derived cardiomyocytes from normal and long QT-interval syndrome afflicted patients suggesting potential therapeutic use in long QT-interval syndrome.[2,3] It displayed cardioprotective effects against ischemia in cellular and whole-heart models.[4]

1) Mattman *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(v)7.1(KCNQ1 potassium channel activator;* Bioorg. Med. Chem. Lett. **22** 5936
2) Yu *et al.* (2013*) Dynamic subunit stoichiometry confers a progressive continuum of pharmacological sensitivity by KCNQ potassium channels;* Proc. Nat. Acad. Sci. USA **110** 8732
3) Ma *et al.* (2015*) Characterization of a novel KCNQ1 mutation for type 1 long QT syndrome and assessment of the therapeutic potential of a novel IKs activator using patient-specific induced pluripotent stem cell-derived cardiomyocytes;* Stem Cell Res. Ther. **6** 39
4) Brennan *et al.* (2023*) Slowly activating voltage-gated potassium current potentiation by ML277 is a novel cardioprotective intervention;* PNAS Nexus **2** pgad156

PHYSICAL DATA

Molecular Weight:	471.59
Molecular Formula:	$C_{23}H_{25}N_3O_4S_2$
Purity:	>98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (20 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20ºC for up to 1 year from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 3 months.

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