ML133 hydrochloride

Cat. No.: HY-100230A

CAS No.: 1222781-70-5

Molecular Formula: $C_{19}H_{20}ClNO$

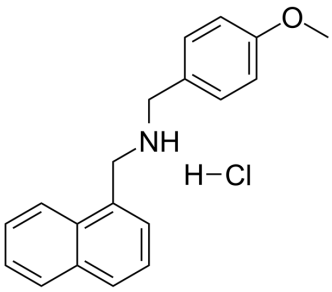
Molecular Weight: 313.82

Target: Potassium Channel

Pathway: Membrane Transporter/Ion Channel

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (318.65 mM; ultrasonic and warming and heat to 60°C)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.1865 mL	15.9327 mL	31.8654 mL
5 mM	0.6373 mL	3.1865 mL	6.3731 mL
10 mM	0.3187 mL	1.5933 mL	3.1865 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (6.63 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.63 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.63 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ML133 hydrochloride is a selective $K_{ir}2$ family channels inhibitor, with an IC_{50} of 1.8 μM at pH 7.4 and 290 nM at pH 8.5[1].

IC_{50} & Target

IC50: 1.8 μM ($K_{ir}2$ at pH 7.4), 290 nM ($K_{ir}2$ at pH 8.5)[1].

In Vitro

ML133, which inhibits $K_{ir}2.1$ with IC_{50} of 1.8 μM at pH 7.4 and 290 nM at pH 8.5, but exhibits little selectivity against other members of $K_{ir}2.x$ family channels[1].

ML133 has no effect on $K_{ir}1.1$ (IC_{50} > 300 μM), and displays weak activity for $K_{ir}4.1$ (76 μM) and $K_{ir}7.1$ (33 μM), making ML133 the most selective small molecule inhibitor of the Kir family reported to date[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Metab. 2022 Sep 7;S1550-4131(22)00359-X.
- Pharmacol Res. 2022 Feb 2;177:106112.

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REFERENCES

[1]. Wang HR, et al. Selective inhibition of the K(ir)2 family of inward rectifier potassium channels by a small molecule probe: the discovery, SAR, and pharmacological characterization of ML133. ACS Chem Biol. 2011 Aug 19;6(8):845-56.

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