ML365

Cat. No.: HY-12345

CAS No.: 947914-18-3

Molecular Formula: $C_{22}H_{20}N_2O_3$

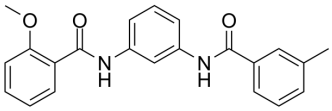
Molecular Weight: 360.41

Target: Potassium Channel

Pathway: Membrane Transporter/Ion Channel

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (277.46 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.7746 mL	13.8731 mL	27.7462 mL
5 mM	0.5549 mL	2.7746 mL	5.5492 mL
10 mM	0.2775 mL	1.3873 mL	2.7746 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: ≥ 3 mg/mL (8.32 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3 mg/mL (8.32 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ML365 is a selective two-pore domain potassium channel KCNK3/TASK1 inhibitor, with an IC_{50} of 4 nM. ML365 acts as a pharmacological tool that can be used to examine the specific roles of TASK1 channels[1].

IC_{50} & Target

IC50: 4 nM (TASK1/KCNK3), 390 nM (TASK3/KCNK9)[1]

In Vitro

ML365 blocks TASK1 channels in both the thallium influx fluorescent assay (IC_{50} = 4 nM) and an automated electrophysiology assay (IC_{50} = 16 nM)[1].
ML365 displays little or no inhibition at 30 μM of more distantly related potassium channels, Kir2.1, potassium voltage-gated channel, KQT-like subfamily, member 2 (KCNQ2), and human ether-a go-go-related gene (hERG)[1].

ML365 does not exhibit acute toxicity in cell-based assays at concentrations up to 30 μM[1].

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

CUSTOMER VALIDATION

- Acta Pharmacol Sin. 2021 Aug 2.
- J Am Heart Assoc. 2017 Sep 9;6(9). pii: e006465.
- Graduate School of Arts and Sciences. Columbia University. 2017 Jun.

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REFERENCES

[1]. Zou B, et al. ML365: Development of Bis-Amides as Selective Inhibitors of the KCNK3/TASK1 Two Pore Potassium Channel. Probe Reports from the NIH Molecular Libraries Program [Internet].

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