

Product Data Sheet

Product Name: TRPM4-IN-2

Cat. No.: GC68002

Chemical Properties

Cas. No. 667411-04-3

Formula $C_{19}H_{14}ClNO_4$

M.Wt 355.77

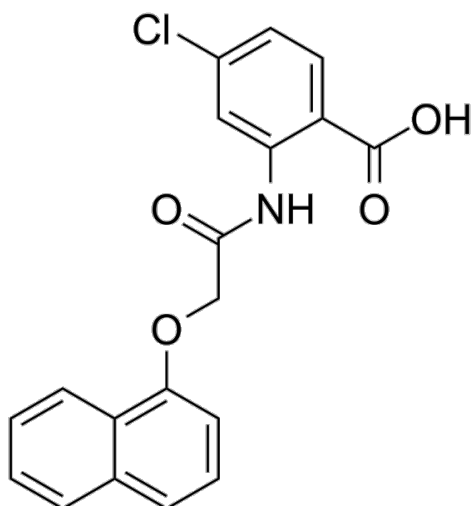
Solubility

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines MDA-MB-231 cells

Caution: Product has not been fully validated for medical applications. For research use only.

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MDA-MB-231 cells were cultivated in 96-well plate at a density of 5×10^3 cells/well in DMEM medium supplemented with 10% fetal bovine serum (FBS), and 1% penicillin/streptomycin. Cells were treated with different concentrations of the TRPM4-IN-2 (0, 0.1, 1, 10, 50, and 100 μ M) for 48h. The viability was determined.

Reaction Conditions 0, 0.1, 1, 10, 50, and 100 μ M; 48h

Applications TRPM4-IN-2 treatment reduced the viability of MDA-MB-231 cells in a dose-dependent manner.

References:

[1] Chang W, Gao W, Luo B, et al. Comprehensive insights into the role of TRPM4 in Pan-cancer progression and immune regulation[J]. ImmunoTargets and Therapy, 2025: 831-848.

Background

TRPM4-IN-2 is a potent transient receptor potential melastatin 4 (TRPM4) inhibitor with an IC₅₀ value of 0.16 μ M [1]. TRPM4-IN-2 binds in a pocket formed between the S3, S4, and TRP helices and the S4-S5 linker of TRPM4 to block the TRPM4 channel [2]. TRPM4-IN-2 has been widely used to decrease mouse TRPM4 currents and suppress arrhythmias [3].

In vitro, TRPM4-IN-2 treatment (100 μ M) for 48 hours significantly inhibited the proliferation of MDA-MB-231, A549 and KYSE30 cells [4]. Pre-treatment of HT22 cells with 10 μ M TRPM4-IN-2 for 2 hours significantly protected the cells from 5mM glutamate-induced cell death and disruption of cell integrity[5].

References:

[1] Stoklosa P, Borgström A, Hauert B, et al. Investigation of novel small molecular TRPM4 inhibitors in colorectal cancer cells[J]. Cancers, 2021, 13(21): 5400.

[2] Ekundayo B, Arullampalam P, Gerber C E, et al. Identification of a binding site for small molecule

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inhibitors targeting human TRPM4[J]. Nature communications, 2025, 16(1): 833.

[3] Hu Y, Cang J, Hiraishi K, et al. The role of TRPM4 in cardiac electrophysiology and arrhythmogenesis[J]. International Journal of Molecular Sciences, 2023, 24(14): 11798.

[4] Chang W, Gao W, Luo B, et al. Comprehensive insights into the role of TRPM4 in Pan-cancer progression and immune regulation[J]. ImmunoTargets and Therapy, 2025: 831-848.

[5] Bianchi B, Smith P A, Abriel H. The ion channel TRPM4 in murine experimental autoimmune encephalomyelitis and in a model of glutamate-induced neuronal degeneration[J]. Molecular brain, 2018, 11(1): 41.

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