NS1643

Cat. No.: HY-16916

CAS No.: 448895-37-2

Molecular Formula: $C_{15}H_{10}F_6N_2O_3$

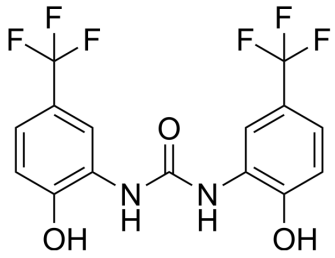
Molecular Weight: 380.24

Target: Potassium Channel; Autophagy

Pathway: Membrane Transporter/Ion Channel; Autophagy

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 (262.99 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.6299 mL	13.1496 mL	26.2992 mL
5 mM	0.5260 mL	2.6299 mL	5.2598 mL
10 mM	0.2630 mL	1.3150 mL	2.6299 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: ≥ 2.5 mg/mL (6.57 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.57 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.57 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NS1643 is a partial agonist of human ether-a-go-go-related gene (hERG) K^+ channels with an EC_{50} of 10.5 μM. NS1643 inhibits the growth of breast cancer tumors in TNBC mouse models. NS1643 inhibits cell migration and invasion of breast cancer cells[1][2].

IC_{50} & Target

EC50: 10.5 μM (hERG) K^+ channel[1]

In Vitro

NS1643 (0-100 μM) dose- and voltage-dependently increases hERG current in oocytes[1].
NS1643 (3, 10 and 30 μM) slows the rate of hERG inactivation throughout the testing voltage range and reduces the extent of hERG channel rectification[1].
NS1643 (10 and 50 μM) dose-dependently inhibits cell migration and invasion of MDA-MB-231 and SKBR3 cancer cells[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2]

Cell Line:	MDA-MB-231, SKBR3 and MCF7 breast cancer cell lines
Concentration:	50 μM
Incubation Time:	24 h
Result:	Decreased Vimentin, N-cadherin and CD44 levels, and increased E-cadherin in breast cancer cell lines.

In Vivo

NS1643 (6 mg/kg; i.p., twice per week) inhibits breast tumor metastasis[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	NSG mice with human-derived TNBC tumor xenografts[2]
Dosage:	6 mg/kg
Administration:	Intraperitoneal injection; 6 mg/kg; twice per week
Result:	Significantly reduceed tumor growth and the metastatic liver tumors were significantly smaller than those in the control group. Decreased levels of human nuclear antigen (HNA).

CUSTOMER VALIDATION

- Int J Mol Sci. 2023 Jul 28, 24(15), 12079.

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REFERENCES

[1]. Breuer EK, et al. Potassium channel activity controls breast cancer metastasis by affecting β-catenin signaling. Cell Death Dis. 2019 Feb 21;10(3):180.

[2]. Casis O, et al. Mechanism of action of a novel human ether-a-go-go-related gene channel activator. Mol Pharmacol. 2006 Feb;69(2):658-65. Epub 2005 Nov 11.

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