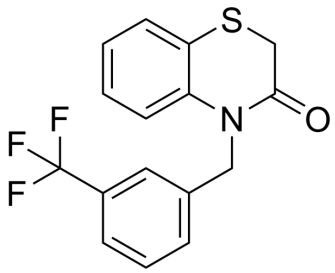
NS6180

Cat. No.:	HY-15707
CAS No.:	353262-04-1
Molecular Formula:	$C_{16}H_{12}F_3NOS$
Molecular Weight:	323.34
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 (309.27 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0927 mL	15.4636 mL	30.9273 mL
5 mM	0.6185 mL	3.0927 mL	6.1855 mL
10 mM	0.3093 mL	1.5464 mL	3.0927 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 (7.73 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.73 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NS6180 is a new orally active KCa3.1 channel inhibitor. NS6180 inhibits cloned human KCa3.1 channels with an IC_{50}value of 9 nM. NS6180 can be used for the research of inflammatory bowel disease (IBD) [1].

In Vitro

NS6180 (0.001-1 μM) shows inhibition of human KCa3.1 with an IC_{50} value of 9.4 nM and a K_{50} value of 11 1.7 nM, respectively [1].

NS6180 (30 nM, 10 μM) has inhibition that dependent on amino acid residues T250 and V275[1].

NS6180 (1, 10, 100 and 1000 nM; 1 min) shows CCCPreported hyperpolarizations of human erythrocytes[1].

NS6180 (1, 10, 100 and 1000 nM; 1 min) blocks the erythrocyte KCa3.1 channels with IC_{50} values of 14 nM (human KCa3.1 channels), 15 nM (mouse) and 9 nM (rats), respectively[1].NS6180 (0-5 μM, 48 h) suppresses rat and mouse splenocyte

proliferation at submicrolar concentrations and potently inhibited IL-2 and IFN-g production, while exerting smaller effects on IL-4 and TNF-α and no effect on IL-17 production[1].

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

In Vivo

NS6180 (i.v., i.p. and oral administration; 10 mg/kg; twice daily or once daily) has extremely low bioavailability and reduces DNBS-induced experimental colitis in rats[1].

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

Animal Model:	Rats[1]
Dosage:	10 mg/kg
Administration:	i.v., i.p. and oral administration; 10 mg/kg; twice daily or once daily
Result:	Had a plasma half-life of 3.8 h, oral or i.p. administration gave low plasma exposure (C_{max}: 186 nM and 33 nM, respectively, after administration of 10 mg/kg).

CUSTOMER VALIDATION

- Cell Mol Immunol. 2022 Aug;19(8):925-943.

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REFERENCES

[1]. Strobak D, et al. NS6180, a new K(Ca) 3.1 channel inhibitor prevents T-cell activation and inflammation in a rat model of inflammatory bowel disease. Br J Pharmacol. 2013 Jan;168(2):432-44.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA