Iptacopan hydrochloride

Cat. No.: HY-127105A

CAS No.: 1646321-63-2

Molecular Formula: $C_{25}H_{31}ClN_2O_4$

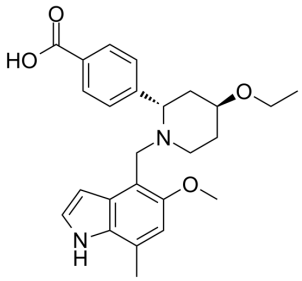
Molecular Weight: 458.98

Target: Complement System

Pathway: Immunology/Inflammation

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 : 250 mg/mL (544.69 mM; Need ultrasonic)

H_2O : 50 mg/mL (108.94 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	2.1787 mL	10.8937 mL	21.7874 mL
5 mM	0.4357 mL	2.1787 mL	4.3575 mL
10 mM	0.2179 mL	1.0894 mL	2.1787 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 (4.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.53 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

LNP023 hydrochloride is an orally bioavailable, highly potent and highly selective factor B inhibitor. LNP023 shows direct, reversible, and high-affinity binding to human factor B with a K_D of 7.9 nM. LNP023 inhibits factor B with an IC_{50} value of 10 nM[1][2].

IC_{50} & Target

KD: 7.9 nM (factor B)[2]

IC50: 10 nM (factor B)[2]

In Vitro

LNP023 demonstrates potent inhibition of alternative complement pathway (AP)-induced membrane attack complex (MAC)

formation in 50% human serum (IC_{50} value of 130 nM)[2].
LNP023 exhibits excellent selectivity over other proteases affording IC_{50} values of >30 μM across a panel of 41 human proteases, including the AP protein factor D (>100 μM)[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

LNP023 (20-180 mg/kg; oral administration) prevents KRN (150 μL)-induced arthritis in mice and is effective upon prophylactic and therapeutic dosing in an experimental model of membranous nephropathy in rats[2].
LNP023 exhibits moderate half-lives ($T_{1/2}$; Wistar Han rats 3.4 h, beagle dogs 5.5 h) and C_{max} (Wistar Han rats 410 nM, beagle dogs 2200 nM) following oral administration (rat 30 and, dog 10 mg/kg)[3].
LNP023 exhibits terminal elimination half-lives ($T_{1/2}$; Wistar Han rats 7 h, beagle dogs 5.6 h) due to high plasma clearance (8, and 2 mL/min/kg respectively combined with large volumes of distribution (2.3, and 0.6 L/kg respectively) following intravenous administration (rat 1.0 and, dog 0.1 mg/kg)[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 mice with KRN-induced arthritis[2]
Dosage:	20, 60, and 180 mg/kg
Administration:	Orally gavaged; twice a day (b.i.d.) for 14 days
Result:	Blocked KRN-induced arthritis.

CUSTOMER VALIDATION

- Cell Stem Cell. 2023 Oct 5;30(10):1315-1330.e10.
- Biomed Pharmacother. September 2022, 113433.
- Biomed Chromatogr. 2021 Mar;35(3):e5006.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Dimitrios C Mastellos, et al. Expanding Complement Therapeutics for the Treatment of Paroxysmal Nocturnal Hemoglobinuria. Semin Hematol. 2018 Jul;55(3):167-175.

[2]. Anna Schubart, et al. Small-molecule Factor B Inhibitor for the Treatment of Complement-Mediated Diseases. Proc Natl Acad Sci U S A. 2019 Apr 16;116(16):7926-7931.

[3]. Nello Mainolfi, et al. Discovery of 4-((2 S,4 S)-4-Ethoxy-1-((5-methoxy-7-methyl-1 H-indol-4-yl)methyl)piperidin-2-yl)benzoic Acid (LNP023), a Factor B Inhibitor Specifically Designed To Be Applicable to Treating a Diverse Array of Complement Mediated Diseases. J Med Chem. 2020 Jun 11;63(11):5697-5722.

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