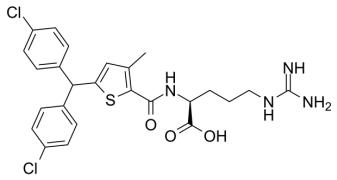
JR14a

Cat. No.:	HY-138161
CAS No.:	2411440-41-8
Molecular Formula:	$C_{25}H_{26}Cl_2N_4O_3S$
Molecular Weight:	533.47
Target:	Complement System
Pathway:	Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	JR14a is a potent thiophene antagonist of human complement C3a receptor. JR14a shows selectivity for the human C3a receptor over C5a receptor. JR14a can suppress C3aR-mediated inflammation[1].
IC_{50} & Target	human complement C3a receptor[1]
In Vitro	JR14a (0.1 nM-100 μM) inhibits C3a-induced intracellular Ca^{2+} release in human monocyte-derived macrophages, with an IC_{50} of 10 nM[1]. JR14a (0.1 nM-100 μM) is metabolically stable to exposure over 1 h to rat liver microsomes[1]. JR14a (0.1 nM-100 μM) inhibits C3a-induced β-hexosaminidase secretion in human LAD2 mast cells, with an IC_{50} of 8 nM[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	JR14a (10 mg/kg; p.o. 2 h prior) reduces paw swelling by 65% over control at 30 min after agonist injection in acute rat paw model of inflammation and edema[1]. JR14a (1 mg/kg; i.v.) exhibits elimination half-life (191 min), clearance (4.4 mL/min/kg) and AUC (3795 ng•h/mL) in rats[1]. JR14a (10 mg/kg; p.o.) exhibits C_{max} (88 ng/mL), T_{max} (300 min) and AUC (478 ng•h/mL) in rats[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wister rats (8 weeks, 250-300 g) were injected with BR103[1]
Dosage:	10 mg/kg
Administration:	P.o. 2 h prior to agonist challenge
Result:	Inhibited C3aR-mediated inflammation.

Animal Model:	Male Wister rats (8 weeks, 250-300 g)[1]
Dosage:	1 mg/kg for i.v.; 10 mg/kg for oral (Pharmacokinetic Analysis)
Administration:	Intravenous administration and oral administration
Result:	I.v.: $t_{1/2}$=191 min, clearance=4.4 mL/min/kg, AUC=3795 ng•h/mL. P.o.: C_{max}=88 ng/mL, T_{max}=300 min, AUC=478 ng•h/mL.

REFERENCES

[1]. Rowley JA, et, al. Potent Thiophene Antagonists of Human Complement C3a Receptor with Anti-Inflammatory Activity. J Med Chem. 2020 Jan 23;63(2):529-541.

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