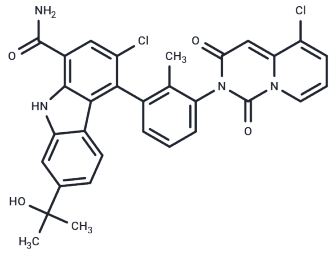
Data Sheet (Cat.No.T39129)

TargetMol
YOUR TARGET MOLECULES

BMS-986143

Chemical Properties



CAS No. : 1643372-95-5

Formula: C31H24Cl2N4O4

Molecular Weight: 587.45

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	BMS-986143, an orally active, reversible BTK inhibitor with an IC50 value of 0.26 nM, is designed for autoimmune disease research. Additionally, it targets TEC, BLK, BMX, TXK, FGR, YES1, and ITK, exhibiting IC50s of 3 nM, 5 nM, 7 nM, 10 nM, 15 nM, 19 nM, and 21 nM, respectively [1].
In vitro	BMS-986143 effectively inhibits Bruton's tyrosine kinase (BTK) activity, demonstrating potent inhibitory effects across a variety of assays. Notably, it shows IC50 values of 6.9±3.4 nM in Ramos cellular assays and 25±19 nM in human whole blood assays. Further, it significantly inhibits signaling related to IgG-containing immune complex activation via low-affinity Fcγ receptors in peripheral blood mononuclear cells (PBMC) with an IC50 of 2 nM. Additionally, BMS-986143 suppresses CD63 expression on basophils in response to FcεRI signaling in human whole blood (IC50=54 nM) and inhibits calcium flux, proliferation of human peripheral B Cells, CD86 surface expression in peripheral B Cells, and TNFα production in human PBMC Cells with IC50 values of 7±3, 1±0.4, 1±0.5, and 2 nM, respectively.
In vivo	BMS-986143 demonstrates effective treatment in mouse models of both collagen-induced arthritis (CIA) and anticollagen antibody-induced arthritis (CAIA), showcasing high oral bioavailability in mice (100%) and dogs (82%), and moderate peak plasma concentrations (Cmax) of 4.3 μM in mice and 1.2 μM in dogs when administered orally at doses of 6 mg/kg for mice and 2 mg/kg for dogs. It also has prolonged elimination half-lives of 3.6 hours in mice and 7.9 hours in dogs, attributable to its moderate plasma clearance rates (8.6 mL/min/kg for mice and 4.4 mL/min/kg for dogs) and low distribution volumes (1.8 L/kg for mice and 2.6 L/kg for dogs), after intravenous doses of 3.0 mg/kg for mice and 1.0 mg/kg for dogs. In trials with DBA/1 male mice aged 8-10 weeks exhibiting CIA, oral administration of BMS-986143 at 15 and 45 mg/kg twice daily resulted in dose-dependent reduction of clinical disease progression (63% and 80% inhibition, respectively), corresponding to 17 and 19 hours of effective coverage based on the mouse whole blood IC50 of 130 nM.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7023 mL	8.5114 mL	17.0227 mL
5 mM	0.3405 mL	1.7023 mL	3.4045 mL
10 mM	0.1702 mL	0.8511 mL	1.7023 mL
50 mM	0.034 mL	0.1702 mL	0.3405 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Anurag S Srivastava, et al. Driving Potency with Rotationally Stable Atropisomers: Discovery of Pyridopyrimidinedione-Carbazole Inhibitors of BTK. ACS Med Chem Lett. 2020 Sep 16;11(11):2195-2203.