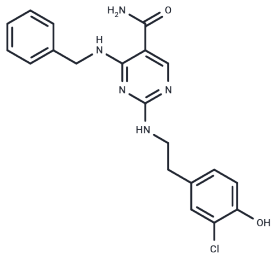
Data Sheet (Cat.No.T4476)

TargetMol

AS1517499

Chemical Properties



CAS No. : 919486-40-1

Formula: C20H20ClN5O2

Molecular Weight: 397.86

Appearance: no data available

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

Biological Description

Description	AS1517499 is a potent STAT6 inhibitor with IC50 of 21 nM
Targets(IC50)	STAT
In vitro	AS1517499 shows potent STAT6 inhibition with an IC50 value of 21 nM. AS1517499 also inhibits IL-4-induced Th2 differentiation of mouse spleen T cells with an IC50 value of 2.3 nM and without influencing T-helper cell 1 (Th1) differentiation induced by IL-12. AS1517499 selectively inhibits Th2 differentiation without affecting Th1 differentiation [1]. In cultured human BSM cells, IL-13 (100 ng/mL) causes a phosphorylation of STAT6 and an upregulation of RhoA, a monomeric GTPase responsible for Ca2+ sensitization of smooth muscle contraction: both events are inhibited by co-incubation with AS1517499 (100 nM)[2] .
In vivo	In BALB/c mice sensitized and repeatedly exposed to ovalbumin antigen, there is a notable increase in IL-13 levels in bronchoalveolar lavage fluids and phosphorylation of STAT6 in bronchial tissues following the final antigen challenge. These mice also exhibit enhanced bronchial smooth muscle (BSM) contractility in response to acetylcholine, accompanied by an upregulation of RhoA in bronchial tissues. Administering intraperitoneal injections of AS1517499 (10 mg/kg) one hour before each ovalbumin exposure significantly inhibits the antigen-induced RhoA upregulation and BSM hyperresponsiveness[2].
Cell Research	Normal human BSM cells (hBSMCs) are maintained in SmBM medium supplemented with 5% fetal bovine serum, 0.5 ng/mL human epidermal growth factor (hEGF), 5 μg/mL insulin, 2 ng/mL human fibroblast growth factor-basic (hFGFb), 50 μg/mL gentamicin, and 50 ng/mL amphotericin B. Cells are maintained at 37°C in a humidified atmosphere (5% CO2), fed every 48 to 72 hours, and passaged when cells reached 90 to 95% confluence. Then the hBSMCs (passages 7-9) are seeded in 6-well plates and 8-well chamber slides at a density of 3,500 cells/cm2 and, when 80 to 85% confluence observed, cells are cultured without serum for 24 hours before addition of recombin is ant human IL-13. AS1517499 (100 nM) or its vehicle (0.3% DMSO) is treated 30 minutes before the addition of IL-13 (100 ng/mL). In some experiments, AS1517499 is treated 0 (co-incubation), 3, or 12 hours after the addition of IL-13. In another series of experiments, a selective Rho-kinase inhibitor Y-27632 (1 μM) or its vehicle (0.3% DMSO) is also applied 15 minutes before the IL-13 application. At the indicated time after the IL-13 treatment, cells are washed with PBS, immediately collected, and disrupted with 1×

	SDS sample buffer (250 μL/well), and used for Western blot analyses[2] .
Animal Research	Mice[2]

Solubility Information

Solubility	DMSO: 35 mg/mL (87.97 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5134 mL	12.5672 mL	25.1345 mL
5 mM	0.5027 mL	2.5134 mL	5.0269 mL
10 mM	0.2513 mL	1.2567 mL	2.5134 mL
50 mM	0.0503 mL	0.2513 mL	0.5027 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

Nagashima S, et al. Synthesis and evaluation of 2-{[2-(4-hydroxyphenyl)-ethyl]amino}pyrimidine-5-carboxamide derivatives as novel STAT6 inhibitors. Bioorg Med Chem. 2007 Jan 15;15(2):1044-55.
Qin R, Wang T, He W, et al.Jak2/STAT6/c-Myc pathway is vital to the pathogenicity of Philadelphia-positive acute lymphoblastic leukemia caused by P190BCR-ABL.Cell Communication and Signaling.2023, 21(1): 27.
Am J Respir Cell Mol Biol. 2009 Nov;41(5):516-24.
Tao Y, Xu L, Liu X, et al.Chitosan-coated artesunate protects against ulcerative colitis via STAT6-mediated macrophage M2 polarization and intestinal barrier protection.International Journal of Biological Macromolecules. 2023: 127680.