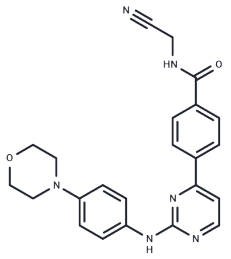
Data Sheet (Cat.No.T1849)

TargetMol

Momelotinib

Chemical Properties



CAS No. : 1056634-68-4

Formula: C23H22N6O2

Molecular Weight: 414.46

Storage: Store at low temperature,Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Momelotinib (LM-1149) is an orally bioavailable small-molecule inhibitor of Janus kinases 1 and 2 (JAK1/2) with IC50 of 11 nM/18 nM. JAK1/2 inhibitor CYT387 competes with JAK1/2 for ATP binding, which may result in inhibition of JAK1/2 activation, inhibition of the JAK-STAT signaling pathway, and so the induction of apoptosis and a reduction of tumor cell proliferation in JAK1/2-expressing tumor cells.
Targets(IC50)	Apoptosis,Autophagy,JAK
In vitro	In a murine MPN model, CYT387 normalized blood cell density, white blood cell count and spleen size and restored physiological levels of inflammatory cytokines.
In vivo	In vitro, CYT387 inhibited IL-3-stimulated proliferation of parental Ba/F3 cells (IC50: 1400 nM). In addition, CYT387 inhibited the growth of red lineage colonies in JAK2V617F-positive PV patients in vitro with similar effect (IC50: 2-4 μM).CYT387 inhibited IGF-1- and IL-6-induced Ras/MAPK and PI3K/AKT signaling. In primary multiple myeloma cells, CYT387 alone or in combination with the MM therapeutic agents bortezomib and melphalan induced apoptosis.CYT387 was 9-fold more selective for JAK1 and JAK2 (IC50: 11 nM and 18 nM) than the JAK3 kinase (IC50: 155 nM).CYT387 also acted on cell lines with constitutive activation of JAK2 or MPL signaling. or MPL signaling cell lines, including Ba/F3-MPLW515L cells (IC50: 200 nM), CHRF-288-11 cells (IC50: 1 nM) and Ba/F3-TEL-JAK2 cells (IC50: 700 nM), and also inhibited cell proliferation.
Kinase Assay	Cell-free kinase activity assays: Glutathione-S-transferase (GST)-tagged JAK kinase domains expressed in insect cells are purified before use in a peptide substrate phosphorylation assay. Assays are carried out in 384-well optiplates using an Alphascreen Protein Tyrosine Kinase P100 detection kit and a PerkinElmer Fusion Alpha instrument.
Cell Research	Ba/F3 cells expressing JAK2V617F (Ba/F3-JAK2V617F) and MPLW515L (Ba/F3-MPLW515L) mutants, as well as CHRF-288-11 (JAK2T875N) and CMK (JAK3A572V) cells are used. The TEL/JAK2 and TEL/JAK3 fusions are generated and introduced into Ba/F3 murine cells. The TEL/JAK2- or TEL/JAK3-transfected cells are cultured in Dulbecco's modified Eagle's medium (DMEM) containing 10% fetal calf serum (FCS). Ba/F3 wild-type cells are cultured in RPMI containing 10% FCS supplemented with 5 ng/mL murine IL-3. Proliferation is measured using the Alamar Blue assay after incubating for 72 hours at

Cell Research	37 °C with 5% CO2</sub(Only for Reference)

Solubility Information

Solubility	Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 62.5 mg/mL (150.8 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn oil: < 6.25 mg/mL (15.08 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+90% Saline: < 6.25 mg/mL (15.08 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+90% (20% SBE-β-CD in Saline): < 6.25 mg/mL (15.08 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: < 6.25 mg/mL (15.08 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4128 mL	12.0639 mL	24.1278 mL
5 mM	0.4826 mL	2.4128 mL	4.8256 mL
10 mM	0.2413 mL	1.2064 mL	2.4128 mL
50 mM	0.0483 mL	0.2413 mL	0.4826 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Pardanani A, et al. Leukemia, 2009, 23(8), 1441-1445.
Li M, Yu H. Identification of WP1066, an inhibitor of JAK2 and STAT3, as a Kv1. 3 potassium channel blocker. British Journal of Pharmacology. 2021 Jul;178(13):2617-2631. doi: 10.1111/bph.15441. Epub 2021 May 20.
Chen C, Lu M, Lin S, et al. The nuclear gene rpl18 regulates erythroid maturation via JAK2-STAT3 signaling in zebrafish model of Diamond-Blackfan anemia. Cell Death & Disease. 2020, 11(2): 1-11
Monaghan KA, et al. Leukemia, 2011, 25(12), 1891-1899.
Tyner JW, et al. Blood, 2010, 115(25), 5232-5240.
Chen C, Lu M, Lin S, et al. The nuclear gene rpl18 regulates erythroid maturation via JAK2-STAT3 signaling in zebrafish model of Diamond-Blackfan anemia[J]. Cell Death & Disease. 2020, 11(2): 1-11.
Li M, Yu H. Identification of WP1066, an inhibitor of JAK2 and STAT3, as a Kv1. 3 potassium channel blocker[J]. . British Journal of Pharmacology. 2021

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