JAK3-IN-6

Cat. No.: HY-101976

CAS No.: 1443235-95-7

Molecular Formula: $C_{19}H_{18}N_4O_3$

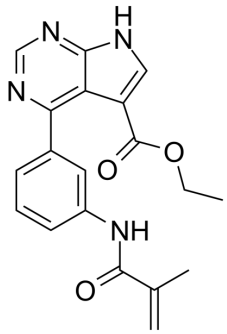
Molecular Weight: 350.37

Target: JAK

Pathway: Epigenetics; JAK/STAT Signaling; Protein Tyrosine Kinase/RTK; Stem Cell/Wnt

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (285.41 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8541 mL	14.2706 mL	28.5413 mL
5 mM	0.5708 mL	2.8541 mL	5.7083 mL
10 mM	0.2854 mL	1.4271 mL	2.8541 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: ≥ 2.17 mg/mL (6.19 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.17 mg/mL (6.19 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

JAK3-IN-6 is a potent, selective irreversible Janus Associated Kinase 3 (JAK3) inhibitor, with an IC_{50} of 0.15 nM.

IC_{50} & Target

JAK3
0.15 nM (IC_{50})

In Vitro

JAK3-IN-6 (compound 2), a potent inhibitor of JAK3 (0.15 nM) is 4300-fold selective for JAK3 over JAK1 in enzyme assays, 67-fold (IL-2 vs. IL-6) or 140-fold (IL-2 vs. EPO or GMCSF) selective in cellular reporter assays and >35-fold selective in human PBMC assays (IL-7 vs. IL-6 or GMCSF). Irreversible JAK3-IN-6 with a JAK1 selective inhibitor 3 (JAK1: 0.96 nM, JAK2: 14 nM, JAK3: >1500 nM, TYK2: 10 nM) are cross titrated to determine if there is an additive or synergistic effect of co-inhibiting JAK1 and JAK3 enzymes on IL-7 signaling in CD3+, CD4+ PBMCs. As shown, the predicted levels of pSTAT5 inhibition based on

addition of JAK1 and JAK3 inhibition are very close to the measured effects of cross titrating each compound, demonstrating that there is an additive effect but no synergistic effect of inhibiting JAK1 and JAK3 on blocking STAT5 phosphorylation. Furthermore inhibition of either JAK1 or JAK3 alone is sufficient to fully inhibit pSTAT5[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. ARYL SULFONOHYDRAZIDES. WO2017027400A1.

[2]. Elwood F, et al. Evaluation of JAK3 Biology in Autoimmune Disease Using a Highly Selective, Irreversible JAK3 Inhibitor. J Pharmacol Exp Ther. 2017 May;361(2):229-244.

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