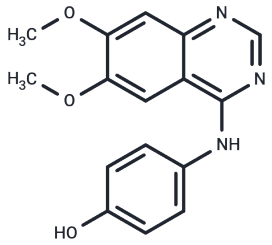
Data Sheet (Cat.No.T2045)

TargetMol

JANEX-1

Chemical Properties



CAS No. : 202475-60-3

Formula: C16H15N3O3

Molecular Weight: 297.31

Appearance: no data available

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

Biological Description

Description	JANEX-1 (Jak3 inhibitor I) is a cell-permeable, reversible, effective, ATP-competitive, and selective inhibitor of JAK3 (IC50: 78 μM); little inhibitory against JAK1/2, or Zap/Syk or SRC tyrosine kinases.
Targets(IC50)	JAK
In vitro	JANEX-1 (WHI-P131) exhibits strong inhibitory activity against JAK3 with an IC50 value of 78 μM, while showing no inhibitory effects on JAK1, JAK2, and various tyrosine kinases including SYK, BTK, LYN, and the insulin receptor kinase, even at concentrations up to 350 μM. It specifically induces apoptosis in human leukemia cell lines expressing JAK3 (NALM-6 and LC1;19) without affecting melanoma (M24-MET) or squamous carcinoma (SQ20B) cells. Furthermore, WHI-P131 effectively suppresses the clonogenic growth of several JAK3-positive leukemia cell lines (DAUDI, RAMOS, LC1;19, NALM-6, MOLT-3, and HL-60) in a concentration-dependent manner, with EC50 values of 24.4 μM and 18.8 μM for NALM-6 and DAUDI cells respectively, achieving more than 99% inhibition of colony formation at 100 μM. However, it does not impede the clonogenic proliferation of JAK3-negative cancer cell lines such as BT-20 breast cancer, M24-MET melanoma, or SQ20B squamous carcinoma.
In vivo	JANEX-1 is administered in doses from 5 to 100 mg/kg, showing a dose-response relationship with an ED50 of 7.44 mg/kg, significantly reducing CPK and LDH levels in mice. These mice also exhibit a notably smaller infarct size (30.16±2.79%) compared to I/R-operated mice (65.64±3.76%). JANEX-1, also known as WHI-P131, is quickly absorbed, reaching peak plasma concentration in roughly 24.7±1.7 minutes, and has a short elimination half-life of 45.6±5.5 minutes. Despite the maximum plasma concentration being only half of what is observed with intravenous (i.v.) administration at the same dose, intraperitoneal (i.p.) bioavailability stands at 94.6%, with systemic exposure levels (AUC) closely matching those seen after i.v. injection (17.1±2.2 μM·h versus 18.1±1.2 μM·h).
Cell Research	JANEX-1 (WHI-P131) is dissolved in DMSO and stored, and then diluted with appropriate media (DMSO 0.1%) before use[1]. The following cell lines are used in various biological assays: NALM-6 (pre-B-ALL), LC1;19 (pre-B-ALL), DAUDI (B-ALL), RAMOS (B-ALL), MOLT-3 (T-cell ALL), HL60 (acute myelogenous leukemia), BT-20 (breast cancer), M24-MET (melanoma), SQ20B (squamous cell carcinoma), and PC3 (prostate cancer). These cell lines are maintained in culture. Cells are seeded in six-well tissue culture plates at a density of 50×104 cells/well in a treatment medium containing various concentrations of

JANEX-1 (0.1, 0.2, 0.3, 0.4 and 0.5 nM) and incubated for 24-48 h at 37°C in a humidified 5% CO2 atmosphere. Cells are examined for apoptotic changes after treatment with JANEX-1 by the in situ TdT-mediated dUTP end-labeling assay using the ApopTag apoptosis detection kit[1].

Solubility Information

Solubility	DMSO: 55 mg/mL (184.99 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3635 mL	16.8175 mL	33.6349 mL
5 mM	0.6727 mL	3.3635 mL	6.727 mL
10 mM	0.3363 mL	1.6817 mL	3.3635 mL
50 mM	0.0673 mL	0.3363 mL	0.6727 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

Sudbeck EA, et al. Structure-based design of specific inhibitors of Janus kinase 3 as apoptosis-inducing antileukemic agents. Clin Cancer Res. 1999 Jun;5(6):1569-82.
Oh YB, et al. Inhibition of Janus activated kinase-3 protects against myocardial ischemia and reperfusion injury in mice. Exp Mol Med. 2013 May 17;45:e23.
Uckun FM, et al. In vivo toxicity and pharmacokinetic features of the janus kinase 3 inhibitor WHI-P131 [4-(4'hydroxyphenyl)-amino-6,7- dimethoxyquinazoline. Clin Cancer Res. 1999 Oct;5(10):2954-62.