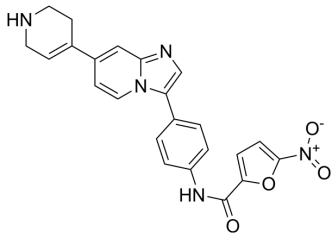
W1131

Cat. No.:	HY-153190
CAS No.:	2740522-79-4
Molecular Formula:	$C_{23}H_{19}N_5O_4$
Molecular Weight:	429.43
Target:	STAT; Ferroptosis; Oxidative Phosphorylation
Pathway:	JAK/STAT Signaling; Stem Cell/Wnt; Apoptosis
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (232.87 mM; ultrasonic and warming and heat to 160°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3287 mL	11.6433 mL	23.2867 mL
	5 mM	0.4657 mL	2.3287 mL	4.6573 mL
	10 mM	0.2329 mL	1.1643 mL	2.3287 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: 2.5 mg/mL (5.82 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (5.82 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

W1131 is a potent STAT3 inhibitor, triggering ferroptosis. W1131 suppresses cancer progression in gastric cancer cell subcutaneous xenograft model, organoids model, and PDX model. W1131 effectively alleviates chemical resistance of cancer cells to 5-FU (HY-90006). W1131 regulates cell cycle, DNA damage response, and oxidative phosphorylation, including IL6-JAK-STAT3 pathway and ferroptosis pathway[1].

In Vitro

W1131 (0-2 μM; 72 h) inhibits cell survival, migration, and invasion in gastric cancer AGS cell, and also inhibits colony formation for 3 days treatment[1].
W1131 (0.1-3 μM; 24 h) potently inhibits the phosphorylation of STAT3 in AGS cells[1].
W1131 (1 μM; 48 h) triggers ferroptosis and suppresses GPX4, SLC7A11, and FTH1 expression in gastric cancer[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	AGS cells
Concentration:	0.1 μM, 0.3 μM, 1 μM, and 3 μM
Incubation Time:	24 hours
Result:	Dose-dependently decreased the phosphorylated Y705-STAT3, but not STAT5, JAK2, and AKT.

Immunofluorescence[1]

Cell Line:	AGS cells
Concentration:	0.3 μM, 1 μM
Incubation Time:	12 hours
Result:	Significantly promoted lipid ROS formation, and induced Fe^{2+} accumulation.

In Vivo

W1131 (3 mg/kg, 10 mg/kg; i.p.; once daily for 2 weeks) inhibits tumor growth dose-dependently, and induces ferroptosis in MGC803 subcutaneous xenograft model in BALB/c-nu/nu mice[1].

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

Animal Model:	MGC803 subcutaneous xenografts in mouse[1]
Dosage:	3 mg/kg, 10 mg/kg
Administration:	Intraperitoneal injection; once daily for 2 weeks
Result:	Inhibited GPX4, SLC7A11, and FTH1 expression level, indicating the induction of ferroptosis. Caused insignificant change of body weight.

REFERENCES

[1]. Ouyang S, et al. Inhibition of STAT3-ferroptosis negative regulatory axis suppresses tumor growth and alleviates chemoresistance in gastric cancer. Redox Biol. 2022 Jun;52:102317.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA