Pinostrobin

Cat. No.: HY-N2127

CAS No.: 480-37-5

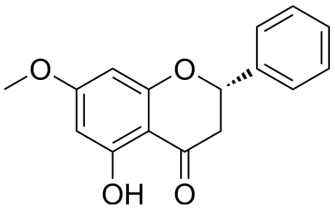
Molecular Formula: $C_{16}H_{14}O_4$

Molecular Weight: 270.28

Target: Ser/Thr Protease; Apoptosis; HSV; Interleukin Related; Amyloid-β

Pathway: Metabolic Enzyme/Protease; Apoptosis; Anti-infection; Immunology/Inflammation; Neuronal Signaling

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (369.99 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6999 mL	18.4993 mL	36.9987 mL
	5 mM	0.7400 mL	3.6999 mL	7.3997 mL
	10 mM	0.3700 mL	1.8499 mL	3.6999 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.25 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.25 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Pinostrobin is a flavonoid with anti-cancer, antioxidant, antiviral and neuroprotective activities. Pinostrobin has oral activity. Pinostrobin is a potent PCSK9 inhibitor that inhibits the catalytic activity of PCSK9. Pinostrobin can be used in the research of viral infections, cancer, leukemia, cardiovascular and cerebrovascular diseases, cirrhosis, inflammation and neurological diseases[1][2][3][4][5][6][7][8].

IC_{50} & Target	HSV-1	TNF-α	IL-1β	PCSK9

In Vitro

Pinostrobin (0-100 μg/mL, 72 h) inhibits HSV-1 virus, with the EC_{50} value of 22.71 μg/mL[2].
Pinostrobin (25-200 μM, 3 days) promotes melanin production in B16F10 cells by stimulating the expression of related melanin production regulatory factors in cAMP/PKA and p38 MAPK signaling pathways, and is non-toxic to cells[5].
Pinostrobin (130 and 150 μM, 48 h) induces acute leukemia cell NB4 and MOLT-4 apoptosis via the regulation of miR-410-5p

and SFRP5[6].
Pinostrobin (0-200 μM, 24-96 h) effectively induces apoptosis through ROS-mediated mitochondrial damage of cervical cancer cells (HeLa, Ca Ski, SiHa), and is not toxic to non-cancer cells HEK293 [7].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	Vero cells
Concentration:	0-100 μg/mL
Incubation Time:	72 h
Result:	The maximum noncytotoxic concentration (TD_0) of pinostrobin was calculated as 95.37 ± 7.14μg/mL.

Western Blot Analysis[5]

Cell Line:	B16F10 cell
Concentration:	25-200 μM
Incubation Time:	3 days
Result:	Promoted phosphorylation of related targets under the cascade reaction of cAMP/PKA and p38 MAPK signaling pathways, such as MITF, tyrosinase, trp1, creb, GSK-3β, β-catenin, ERK , p38, etc.

In Vivo

Pinostrobin (20 mg/kg , 50 mg/kg, i.g., daily for 7 days) delays the progression of lesions in a dose-dependent HSV-1 infected mouse model[2].
Pinostrobin (Single oral 10 and 20 mg/kg) has an anti-inflammatory effect by inhibiting TNF-α and IL-1β levels in rat models of LPS-induced inflammation [3].
Pinostrobin (daily oral 30 and 60 mg/kg for 2 months) has liver protective effect on liver cirrhosis induced by Thioacetamide (TAA) (HY-Y0698) in rats[4].

Relevant pharmacokinetic parameters of Pinostrobin in rats.[8]

Route	Dose (mg/kg)	AUC_{0-t} (ng·min/mL)	MRT (h)	C_{max} (ng/mL)	T_{max} (h)	$t_{1/2}$ (min)
i.g.	0.5	3817.80	6.26	615.35	4	4.34

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

Animal Model:	Female Sprague Dawley (SD) rats (200–250 g), LPS (5 mg/kg) was administered after 2 h of the final dose. [3]
Dosage:	Single oral 10 and 20 mg/kg
Administration:	p.o.
Result:	Did not cause any signs of abnormal behavior and toxicity in the rats. Dose-dependent resulted in significant reductions in the levels of two cytokines, TNF-α and IL-1β.

Animal Model:	healthy female male Sprague Dawley rats (6–7 weeks old, weighed between 180 and 210 g), Thioacetamide (HY-Y0698)-induced liver cirrhosis in rats[4]
Dosage:	daily oral 30 and 60 mg/kg for 2 months, single oral 500mg/kg
Administration:	p.o.
Result:	Significantly reduced liver index and hepatocyte proliferation in rats, and significantly reduce cell damage. Significantly down-regulated the expression levels of PCNA and α-SMA. The activities of antioxidant enzymes (SOD) and CAT in liver homogenate were increased, and the level of malondialdehyde (MDA) was decreased. The levels of serum bilirubin, total protein, albumin and liver enzymes (ALP, ALT and AST) recovered to normal. Decreased the levels of TNF-a and IL-6 and increased the levels of IL-10 in rats. Acute toxicity with a higher dose of 500 mg/kg Pinostrobin did not manifest any toxicological signs in rats.

CUSTOMER VALIDATION

- Phytomed Plus. 2023 Sep 1, 100483.

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REFERENCES

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