Idoxuridine

Cat. No.: HY-B0307

CAS No.: 54-42-2

Molecular Formula: $C_9H_{11}IN_2O_5$

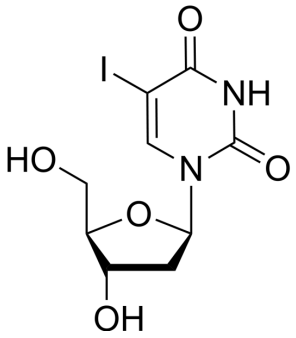
Molecular Weight: 354.1

Target: Phosphatase; Orthopoxvirus

Pathway: Metabolic Enzyme/Protease; Anti-infection

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 : 125 mg/mL (353.01 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8241 mL	14.1203 mL	28.2406 mL
5 mM	0.5648 mL	2.8241 mL	5.6481 mL
10 mM	0.2824 mL	1.4120 mL	2.8241 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: ≥ 2.08 mg/mL (5.87 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.87 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Idoxuridine (5-Iodo-2′-deoxyuridine, 5-IUdR, IdUrd) is an iodinated thymidine analogue that competitively inhibits phosphorylases. Idoxuridine can inhibit viral activity, particularly viral eye infections, including herpes simplex keratitis, by inhibiting DNA polymerase and affecting viral replication. Idoxuridine against feline herpesvirus has the IC_{50} value of 4.3 μM [1]. Idoxuridine shows anti-orthopoxvirus activity.

IC_{50} & Target

HSV-1

In Vitro

Idoxuridine (2-10 μM, 72 hours) has the IC_{50} value of 4.3 μM of antiviral[1].

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

Cell Proliferation Assay[1]

Cell Line:	Crandell-Reese feline kidney (CRFK) cells
Concentration:	2-10 μM
Incubation Time:	72 hours
Result:	Showed the IC_{50} value of 4.3 μM.

Cell Cytotoxicity Assay[1]

Cell Line:	Crandell-Reese feline kidney (CRFK) cells
Concentration:	5-50 μM
Incubation Time:	72 hours
Result:	Reduced by 10.8% relatively in CRFK cells.

In Vivo

Idoxuridine (intraperitoneal injection, 50-200 mg/kg, 3 times, 3 hours interval) can stimulate the production of hemolysin plaque-forming cells (HPFC) to sheep red blood cells (SRBC) in C3HeB/FeJ female and male mice and A/J male mice[2].

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

Animal Model:	C3HeB/FeJ female and male mice and A/J male mice, aged 2 to 4 months[2]
Dosage:	50-200 mg/kg
Administration:	Intraperitoneal injection, 3 times, 3 hours interval
Result:	Stimulated the production of hemolysin plaque-forming cells (HPFC) to sheep red blood cells (SRBC) in the dose range of 50-200 mg/kg.

CUSTOMER VALIDATION

- Emerg Microbes Infect. 2023 May 2;2208682.
- Cell Death Differ. 2023 Jun 15.
- Oncogene. 2020 Apr;39(14):2905-2920.

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REFERENCES

[1]. David J Maggs, et al. In vitro efficacy of ganciclovir, cidofovir, penciclovir, foscarnet, idoxuridine, and acyclovir against feline herpesvirus type-1. Am J Vet Res. 2004 Apr;65(4):399-403.

[2]. D E Griswold, et al. Stimulation of hemolysin plaque-forming cells by idoxuridine. Cancer Res. 1975 Jan;35(1):88-92.

[3]. Mark N Prichard, et al. Orthopoxvirus targets for the development of antiviral therapies. Curr Drug Targets Infect Disord

Caution: Product has not been fully validated for medical applications. For research use only.

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