Penciclovir

Cat. No.: HY-17424

CAS No.: 39809-25-1

Molecular Formula: $C_{10}H_{15}N_5O_3$

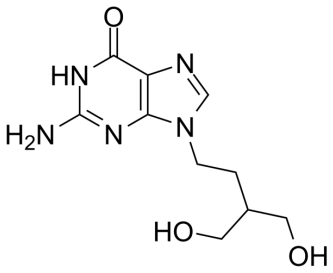
Molecular Weight: 253.26

Target: HSV

Pathway: Anti-infection

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 : 25 mg/mL (98.71 mM; Need ultrasonic)

H_2O : 2 mg/mL (7.90 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.9485 mL	19.7426 mL	39.4851 mL
5 mM	0.7897 mL	3.9485 mL	7.8970 mL
10 mM	0.3949 mL	1.9743 mL	3.9485 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 (9.87 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.87 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Penciclovir (VSA 671) is a potent and selective anti-herpesvirus agent with EC_{50} values of 0.5, 0.8 μg/ml for HSV-1 (HFEM), HSV-2 (MS), respectively. Penciclovir shows anti-herpesvirus activity with no-toxic. Penciclovir preventes mortality in mouse [1][2].

IC_{50} & Target

HSV-1	HSV-2
0.5 μg/mL (EC50)	0.8 μg/mL (EC50)

In Vitro

Penciclovir (0-100 μg/ml) shows anti-herpesvirus activity with EC_{50}s of 0.5, 0.8, 2.4, 52, 100, 1.2, 1.6, 0.9, >100 μg/ml for HSV-1 (HFEM), HSV-2 (MS), VZV (Ellen), CMV (AD-169), BHV-1 (Oxford 1964), BHV-2 (New York 1), EHV-1(Quai Hals), FHV-1 (B927), SVV, respectively[1].

Penciclovir (0-100 μg/ml) shows no-toxic to uninfected human cells[1].

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

Cell Cytotoxicity Assay[1]

Cell Line:	MRC-5,WISH, Flow 4000, Flow 12000, RPMI 2650, WI-38, WI-38 VA13, Hs68, HEp-2, RD, SCC-13,Primary cells
Concentration:	0-100 μg/ml
Incubation Time:	
Result:	Showed no-toxic with IC_{50}s of >100, >100, 100, >100, 60, >100, >100, >100, >100, >100, >100, >100 for MRC-5,WISH, Flow 4000, Flow 12000, RPMI 2650, WI-38, WI-38 VA13, Hs68, HEp-2, RD, SCC-13,Primary cells, respectively.

In Vivo

Penciclovir (100 mg/kg; s.c.; daily for 5 days) preventes mortality in mouse[2].

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

Animal Model:	Three-week-old female Balb/c mice[2]
Dosage:	100 mg/kg
Administration:	S.c.; daily for 5 days
Result:	Reduced virus titres in the respiratory organs of both w/t- and PR3-infected mice.

CUSTOMER VALIDATION

- Microchem J. 2021, 106587.

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REFERENCES

[1]. M.R. Boyd, et al. Penciclovir: a review of its spectrum of activity, selectivity, and cross-resistance pattern. Antiviral Chemistry and Chemotherapy, 1993, (1): 3-11.

[2]. de la Fuente R, et al. The acyclic nucleoside analogue penciclovir is a potent inhibitor of equine herpesvirus type 1 (EHV-1) in tissue culture and in a murine model. Antiviral Res. 1992 May;18(1):77-89.

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