上海源叶生物科技有限公司
Shanghai yuanye Bio-Technology Co., Ltd
电话：021-61312973　　传真：021-55068248
网址：www.shyuanye.com
邮箱：shyysw@sina.com

产品名称：Cidofovir dihydrate
CAS 号：149394-66-1
产品货号：S80383

生物活性：

Description

Cidofovir (GS 0504; HPMPC; (S)-HPMPC) dihydrate 是一种无环单磷酸核苷酸类似物，CMV 抑制剂，具有抗病毒活性。Cidofovir dihydrate 可通过选择性抑制病毒 DNA 聚合酶 (DNA polymerase) 来抑制巨细胞病毒 (CMV) 复制。Cidofovir dihydrate 可诱导细胞凋亡 (apoptosis)，用于巨细胞病毒性视网膜炎、疱疹、癌症研究。Cidofovir dihydrate 还具有抗正痘病毒 (orthopoxvirus) 和抗天花病毒活性.

In Vitro

Cidofovir (5-100 μM, 72 hours) dihydrate has antiviral activity against feline herpesvirus type-1 (FHV-1) with an IC50 of 11 μM, and can reduce Crandell-Reese feline kidney cells counts in a dose dependent manner[1].

Cidofovir (10-1000 μM, 24-120 hours) dihydrate can reduce cancer cell viability and induces apoptosis[3]。

Cell Cytotoxicity Assay[1]

Cell Line:	Crandell-Reese feline kidney(CRFK) cells
Concentration:	10-100 μM
Incubation Time:	72 hours
Result:	Reduced CRFK cells by 9.1%.

Cell Viability Assay[3]

Cell Line:	Caco-2, FTC-133, HeLa, Hep-G2, MDA-MB-231, NCI-H1975 and PC-3 cells
Concentration:	10-1000 μM
Incubation Time:	24, 48, 72, 96, 120 hours
Result:	Resulted in a gradual decrease in tumor cell viability with time and concentration increasing and inhibited the number of FTC-133 cell clones by about 55% at 100 μM comparing to the untreated group.

Apoptosis Analysis[3]

Cell Line:	FTC-133 cells
Concentration:	100 μM
Incubation Time:	96 hours
Result:	Showed a significant increase in the expression of pro-apoptotic proteins, such as cytochrome c, phospho-p53 (S15) and caspase-3 by 130%, 49%, and 46%, respectively while the anti-apoptotic protein Bcl-x decreased significantly by 57% comparing to the untreated cells.

In Vivo

Cidofovir (subcutaneous injection, 100 mg/kg, 3-6 days interval, 21 days) dihydrate is highly protective against death from cowpox virus (CPV) infection at high doses in female weanling BALB/c mice[2]。

Animal Model:	Female weanling BALB/c mice infected with cowpox virus (CI
Dosage:	100 mg/kg
Administration:	Subcutaneous injection; 3-6 days interval; 21 days

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	Result:	Prevented 80-100% of mouse deaths when administered on the before infection. Protected 35-50% of mice when administered on the fourth day infection, and 10-20% when administered on the sixth day.
参考文献	[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]. M Bray, et al. Cidofovir protects mice against lethal aerosol or intranasal cowpox virus challenge. J Infect Dis. 2000 Jan;181(1):10-9. [3]. Simona Catalani, et al. Reduced cell viability and apoptosis induction in human thyroid carcinoma and mesothelioma cells exposed to cidofovir. Toxicol In Vitro. 2017 Jun;41:49-55. [4]. Robert O Baker, et al. Potential antiviral therapeutics for smallpox, monkeypox and other orthopoxvirus infections. Antiviral Res. 2003 Jan;57(1-2):13-23.	