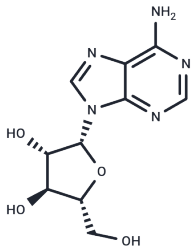
Data Sheet (Cat.No.T1506)

TargetMol

Vidarabine

Chemical Properties



CAS No. : 5536-17-4

Formula: C10H13N5O4

Molecular Weight: 267.24

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Vidarabine (Adenine Arabinoside) is a nucleoside antibiotic isolated from Streptomyces antibioticus. It has some antineoplastic properties and has broad spectrum activity against DNA viruses in cell cultures and significant antiviral activity against infections caused by a variety of viruses such as the herpes viruses, the VACCINIA VIRUS and varicella zoster virus.
Targets(IC50)	Nucleoside Antimetabolite/Analog,Antibiotic,HSV,DNA/RNA Synthesis,Tyrosine Kinases, Virus Protease
In vitro	Vidarabine and Acyclovir have a synergistic effect on wild type . Vidarabine is capable of inhibiting acyclovir-resistant/TK-deficient mutants of HSV and VZV, because it is phosphorylated to its active vidarabine-triphosphate form by cellular kinases and is not dependent for its activation on the viral TK. [1] Vidarabine and acyclovir (ACV) alone show a concentration-dependent inhibition of plaque formation of HSV-1 in Vero cells. Vidarabine combined with acidic protein bound polysaccharide (APBP) show synergistic effects on the plaque formation of HSV-1 in Vero cells. [2] Vidarabine acts directly on the DNA polymerase of varicella-zoster virus (VZV) and double-strand DNA viruses, including human adenoviruses. Vidarabine specifically inhibits adenovirus type 11 replication without obvious cytotoxicity in vitro. Vidarabine acts less on the synthesis of early proteins but rather on those after DNA replication. [3] Vidarabine is an antiviral drug with activity against herpes viruses, poxviruses, and certain rhabdoviruses, hepadnarviruses, and RNA tumor viruses. Vidarabine also is active against vaccinia virus both in vitro and in vivo. [4]
In vivo	Vidarabine is rapidly deaminated to 9-β-D-arabinofuranosyl hypoxanthine (Ara-Hx) as the principal metabolite. [3]

Solubility Information

Solubility	H2O: 3 mg/mL (11.23 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 125 mg/mL (467.74 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.48 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.742 mL	18.7098 mL	37.4195 mL
5 mM	0.7484 mL	3.742 mL	7.4839 mL
10 mM	0.3742 mL	1.871 mL	3.742 mL
50 mM	0.0748 mL	0.3742 mL	0.7484 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Suzuki M, et al. Antiviral Res, 2006, 72(2), 157-161.
Li L, Zhang Y, Chen Z, et al.SIRT1-dependent mitochondrial biogenesis supports therapeutic effects of vidarabine against rotenone-induced neural cell injury.Heliyon.2023
Oh KW, et al. J Ethnopharmacol, 2000, 72(1-2), 221-227.
Kurosaki K, et al. Antivir Chem Chemother, 2004, 15(5), 281-285.
Shen W, et al. Bioorg Med Chem Lett, 2009, 19(3), 792-796.