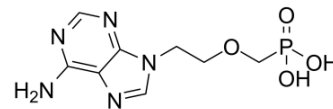


## Adefovir

Cat. No.:	HY-B1826		
CAS No.:	106941-25-7		
Molecular Formula:	C <sub>8</sub> H <sub>12</sub> N <sub>5</sub> O <sub>4</sub> P		
Molecular Weight:	273.19		
Target:	HBV; Reverse Transcriptase		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

0.1 M NaOH : 10 mg/mL (36.60 mM; ultrasonic and adjust pH to 10 with NaOH)  
 H<sub>2</sub>O : 1 mg/mL (3.66 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.6605 mL	18.3023 mL	36.6046 mL
	5 mM	0.7321 mL	3.6605 mL	7.3209 mL
	10 mM	0.3660 mL	1.8302 mL	3.6605 mL

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

### BIOLOGICAL ACTIVITY

#### Description

Adefovir (GS-0393) is an adenosine monophosphate analog antiviral agent that after intracellular conversion to Adefovir diphosphate inhibits **HBV DNA polymerase**. Adefovir has an IC<sub>50</sub> of 0.7 μM against HBV in the HepG2.2.15 cell line. Adefovir has good antiviral activity against several viruses, including HBV and herpesviruses<sup>[1][2][3]</sup>.

#### IC<sub>50</sub> & Target

HBV<sup>[1][2][3]</sup>;  
 DNA polymerase<sup>[1][2]</sup>

#### In Vitro

Studies to elucidate the mechanism of action of Adefovir against herpesvirus replication reveals that the phosphorylation of Adefovir occurred intracellularly and is carried out by host cellular enzymes. The diphosphorylated derivatives of Adefovir targeted the viral DNA polymerase and also acted as DNA chain terminators. Adenylate kinase is shown to be responsible for the first phosphorylation, which was followed by ADP kinase and creatine kinase, forming Adefovir diphosphate<sup>[1]</sup>.

#### In Vivo

Unaffected by food, Adefovir achieves 60% oral bioavailability. Its half-life is 12-30 hours and Adefovir undergoes

---

renal excretion without significant metabolites. Adefovir does not substantially affect the cytochrome P450 system<sup>[3]</sup>.

## REFERENCES

---

- [1]. X.-X.Zhou, et al. 7.11 - Deoxyribonucleic Acid Viruses: Antivirals for Herpesviruses and Hepatitis B Virus. Comprehensive Medicinal Chemistry II. Volume 7, 2007, Pages 295-327.
- [2]. Marcellin P, et al. Adefovir dipivoxil for the treatment of hepatitis B e antigen-positive chronic hepatitis B. N Engl J Med. 2003 Feb 27;348(9):808-16.
- [3]. Leah A.Burke, et al. 155 - Drugs to Treat Viral Hepatitis. Infectious Diseases. Volume 2, 2017, Pages 1327-1332.
- 

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA