

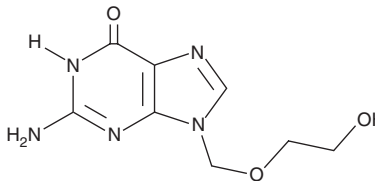
PRODUCT INFORMATION



Acyclovir

Item No. 14160

CAS Registry No.: 59277-89-3
Formal Name: 2-amino-1,9-dihydro-9-[(2-hydroxyethoxy)methyl]-6H-purin-6-one
Synonyms: ACV, BW 248U, NSC 645011
MF: C₈H₁₁N₅O₃
FW: 225.2
Purity: ≥98%
UV/Vis.: λ_{max}: 255 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Acyclovir is supplied as a crystalline solid. A stock solution may be made by dissolving the acyclovir in the solvent of choice. Acyclovir is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of acyclovir in these solvents is approximately 16 and 1 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of acyclovir can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of acyclovir in PBS, pH 7.2, is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Acyclovir is a guanosine analog that has antiviral activity *in vitro* against the herpes simplex viruses, varicella zoster virus, Epstein-Barr virus, cytomegalovirus, and human herpes virus 6 (ID₅₀s = 0.1-63.1 μM).¹ It diffuses freely into cells and is selectively converted into acyclo-guanosine monophosphate by a virus-specific thymidine kinase. During DNA replication, the phosphorylated form of acyclovir is preferentially incorporated into viral DNA, resulting in premature chain termination and inhibition of further DNA polymerase activity.² Acyclovir (5 mg/kg) reduces viral titers in mice infected with the herpes simplex virus-1 (HSV-1) strain SC16.³

References

1. Balfour, H.H., Jr. Management of cytomegalovirus disease with antiviral drugs. *Rev. Infect. Dis.* **12(Suppl. 7)**, S849-S860 (1990).
2. Bean, B. Antiviral therapy: Current concepts and practices. *Clin. Microbiol. Rev.* **5(2)**, 146-182 (1992).
3. Ashton, R.J., Abbott, K.H., Smith, G.M., *et al.* Antiviral activity of famciclovir and acyclovir in mice infected intraperitoneally with herpes simplex virus type 1 SC16. *J. Antimicrob. Chemother.* **34(2)**, 287-290 (1994).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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