

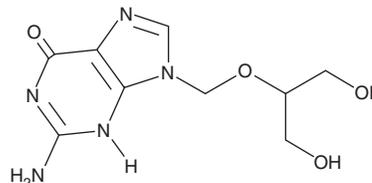
PRODUCT INFORMATION



Ganciclovir

Item No. 13853

CAS Registry No.: 82410-32-0
Formal Name: 2-amino-1,9-dihydro-9-[[2-hydroxy-1-(hydroxymethyl)ethoxy]methyl]-6H-purin-6-one
Synonyms: 2'-NDG, 2'-Nor-2'-deoxyguanosine, 9-(1,3-dihydroxy-2-propoxymethyl)Guanine, BW 759, DHPG, GCV, RS 21592
MF: C₉H₁₃N₅O₄
FW: 255.2
Purity: ≥95%
UV/Vis.: λ_{max}: 254 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

Ganciclovir is supplied as a crystalline solid. A stock solution may be made by dissolving the ganciclovir in the solvent of choice, which should be purged with an inert gas. Ganciclovir is soluble in the organic solvent DMSO at a concentration of approximately 0.33 mg/ml.

Description

Ganciclovir is an active metabolite of the prodrug valganciclovir (Item No. 13875) and an antiviral nucleoside derivative of 2'-deoxyguanosine (Item No. 9002864).^{1,2} It reduces human, monkey, mouse, and guinea pig CMV replication in plaque reduction assays (EC₅₀s = 1.3-70 μM).² Topical application of ganciclovir (0.15%) decreases disease severity and corneal leukocyte infiltration in a cat model of ocular feline herpesvirus-1 (FHV-1) epithelial infection.³ Ganciclovir (15 mg/kg) prevents allograft histologic injury and natural killer (NK) and myeloid cell infiltration in a mouse model of murine CMV infection with renal transplantation.⁴ It induces tumor regression in a K-BALB murine sarcoma model using a mixed population of cells, which are positive or negative for expression of the gene encoding herpes simplex virus (HSV) thymidine kinase (TK).⁵ Formulations containing ganciclovir have been used in the treatment and prevention of CMV infections.

References

1. Carmichael, R.J., Whitfield, C., and Maxwell, L.K. Pharmacokinetics of ganciclovir and valganciclovir in the adult horse. *J. Vet. Pharmacol. Ther.* **36(5)**, 441-449 (2013).
2. Freitas, V.R., Smees, D.F., Chernow, M., et al. Activity of 9-(1,3-dihydroxy-2-propoxymethyl)guanine compared with that of acyclovir against human, monkey, and rodent cytomegaloviruses. *Antimicrob. Agents Chemother.* **28(2)**, 240-245 (1985).
3. Ledbetter, E.C., Badanes, Z.I., Chan, R.X., et al. Comparative efficacy of topical ophthalmic ganciclovir and oral famciclovir in cats with experimental ocular feline herpesvirus-1 epithelial infection. *J. Ocul. Pharmacol. Ther.* **38(5)**, 339-347 (2022).
4. Shimamura, M., Seleme, M.C., Guo, L., et al. Ganciclovir prophylaxis improves late murine cytomegalovirus-induced renal allograft damage. *Transplantation* **95(1)**, 48-53 (2013).
5. Freeman, S.M., Abboud, C.N., Whartenby, K.A., et al. The "bystander effect": Tumor regression when a fraction of the tumor mass is genetically modified. *Cancer Res.* **53(21)**, 5274-5283 (1993).

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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