PRODUCT INFORMATION



Ganciclovir-d₅

Item No. 22565

CAS Registry No.:	1189966-73-1		
Formal Name:	2-amino-1,9-dihydro-9-[[2-hydroxy-1-		
	(hydroxymethyl-d ₂)ethoxy-1,2,2-d ₃]methyl]-6H-		
	purin-6-one		
Synonyms:	DHPG-d ₅ , GCV-d ₅ ,	N	
	9-(1,3-dihydroxy-2-propoxymethyl)Guanine-d ₅ ,	0,	
	2'-NDG-d ₅ , 2'-Nor-2'-deoxyguanosine-d ₅		0
MF:	$C_9H_8D_5N_5O_4$		
FW:	260.3		_
Chemical Purity:	≥95% (Ganciclovir)		D-
Deuterium		H ₂ N [′] H	[
Incorporation:	≥99% deuterated forms (d ₁ -d ₅); ≤1% d ₀		
UV/Vis.:	λ_{max} : 254 nm		
Supplied as:	A solid		
Storage:	2-8°C		
Stability:	≥4 years		
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Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ganciclovir- d_{s} is intended for use as an internal standard for the quantification of ganciclovir (Item Nos. 13853 | 37487) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Ganciclovir-d₅ is supplied as a solid. A stock solution may be made by dissolving the ganciclovir-d₅ in the solvent of choice, which should be purged with an inert gas. Ganciclovir-d₅ 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 μ M).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. J. Vet. Pharmacol. Ther. 36(5), 441-449 (2013).
- 2. Freitas, V.R., Smee, D.F., Chernow, M., et al. Antimicrob. Agents Chemother. 28(2), 240-245 (1985).
- 3. Ledbetter, E.C., Badanes, Z.I., Chan, R.X., et al. J. Ocul. Pharmacol. Ther. 38(5), 339-347 (2022).
- 4. Shimamura, M., Seleme, M.C., Guo, L., et al. Transplantation 95(1), 48-53 (2013).
- 5. Freeman, S.M., Abboud, C.N., Whartenby, K.A., et al. Cancer Res. 53(21), 5274-5283 (1993).

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

SAFFTY 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.

WARRANTY AND LIMITATION OF REMEDY

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