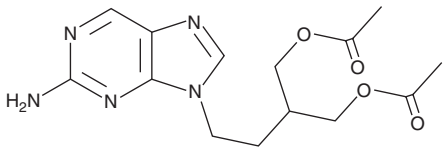
PRODUCT INFORMATION

Famciclovir

Item No. 23834

CAS Registry No.:	104227-87-4
Formal Name:	2-[2-(2-amino-9H-purin-9-yl)ethyl]-1,3-propanediol, 1,3-diacetate
Synonym:	BRL 42810
MF:	$C_{14}H_{19}N_5O_4$
FW:	321.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 223, 311 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

Famciclovir is supplied as a crystalline solid. A stock solution may be made by dissolving the famciclovir in the solvent of choice. Famciclovir is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of famciclovir in ethanol is approximately 10 mg/ml and approximately 20 mg/ml in DMSO and DMF.

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 famciclovir can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of famciclovir in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Famciclovir is an orally bioavailable prodrug form of the antiviral guanosine analog penciclovir (Item No. 22918).[1] Famciclovir is rapidly deacetylated and oxidized *in vivo* to form penciclovir, which is active against clinical isolates of herpes simplex virus 1 (HSV-1), HSV-2, and varicella-zoster virus (VZV) in a plaque reduction assay with IC_{50} values of 1.6, 6, and 12 µM, respectively. Both famciclovir and the product of its deacetylation, 6-deoxypenciclovir, are oxidized *in vitro* by human, guinea pig, and rat liver aldehyde oxidase, with 6-deoxypenciclovir being converted to penciclovir.[2] Peak plasma concentrations of penciclovir (mean 3.5 µg/ml) are reached 0.5 hours after oral administration of famciclovir (40 mg/kg) in rats.[3] Famciclovir (25 mg/kg) has a longer half-life in dogs, with peak concentrations of penciclovir (mean 4.4 µg/ml) in plasma occurring after 3 hours.

References

1. Hodge, R.A.V. Famciclovir and penciclovir. The mode of action of famciclovir including its conversion to penciclovir. *Antiviral Chemistry & Chemotherapy* **4(2)**, 67-84 (1993).
2. Rashidi, M.R., Smith, J.A., Clarke, S.E., *et al.* *In vitro* oxidation of famciclovir and 6-deoxypenciclovir by aldehyde oxidase from human, guinea pig, rabbit, and rat liver. *Drug Metab. Dispos.* **25(7)**, 805-813 (1997).
3. Filer, C.W., Ramji, J.V., Allen, G.D., *et al.* Metabolic and pharmacokinetic studies following oral administration of famciclovir to the rat and dog. *Xenobiotica.* **25(5)**, 477-490 (1995).

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