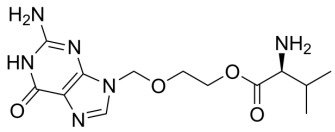
Valacyclovir

Cat. No.:	HY-17425
CAS No.:	124832-26-4
Molecular Formula:	$C_{13}H_{20}N_6O_4$
Molecular Weight:	324.34
Target:	HSV; Antibiotic; Bacterial
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Valacyclovir (Valaciclovir) is an orally active antiviral agent for herpes simplex, herpes zoster, and herpes B. Valacyclovir inhibits HSV-1 W ($_{50}$=2.9 μg/ml). Valacyclovir is a proagent of Aciclovir (HY-17422) [1][2][3][4][5].
IC_{50} & Target	HSV-1 2.9 μg/mL (IC_{50})
In Vitro	Valacyclovir (Valaciclovir; VACV) uptake was concentration dependent and saturable with a Michaelis-Menten constant and maximum velocity of 1.64 mM and 23.34 nmol/mg protein/5 min, respectively. A very similar Km value was obtained in hPEPT1/CHO cells and in rat and rabbit tissues and Caco-2 cells, suggesting that hPEPT1 dominates the intestinal transport properties of VACV in vitro[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	For treatment of a first episode of genital herpes, a large comparative trial has shown that Valacyclovir (1 g twice a day) is as effective as acyclovir (200 mg five times a day) when given for 10 days. For treating recurrences, two trials show that valacyclovir is as effective as acyclovir (200 mg five times a day) with a treatment period of 5 days. A daily dose of 1 g of valacyclovir is as effective as 2 g daily. Valacyclovir can be administered once a day[1]. The concentrations of acyclovir in serum and CSF were measured at steady state after 6 days of oral treatment with 1,000 mg of valacyclovir three times a day[2]. EC50 values of PE and AC in 3T3 cells were 0.02 and 0.01 ug/ml, while values in BHK cells were 0.2 and 0.03 ug/ml. Treatment of infected immunosuppressed mice and FA and VA (b.i.d., 5.5 days) reduced the proportion with erythema from 100% to 24% and 38%, and eliminated ear paralysis, ear lesions (vesicles, etc) and death. Virus was absent from ear and brainstem by day 6, but reappeared after discontinuation in mice treated with VA[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Front Pharmacol. 2020 Mar 11;11:248.

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REFERENCES

[1]. Valacyclovir. New indication: for genital herpes, simpler administration. Can Fam Physician. 1999 Jul;45:1698-700, 1703-5.

[2]. Lycke J, et al. Acyclovir levels in serum and cerebrospinal fluid after oral administration of valacyclovir. Antimicrob Agents Chemother. 2003 Aug;47(8):2438-41.

[3]. Comparison of efficacies of famciclovir and valaciclovir against herpes simplex virus type 1 in a murineimmunosuppression model. Antimicrob Agents Chemother. 1995 May;39(5):1114-9.

[4]. Dhaliwal DK, Romanowski EG, Yates KA, Valacyclovir inhibits recovery of ocular HSV-1 after experimental reactivation by excimer laser keratectomy. Cornea. 1999 Nov;18(6):693-9.

[5]. Guo A, Hu P, Balimane PV, Interactions of a nonpeptidic drug, valacyclovir, with the human intestinal peptide transporter (hPEPT1) expressed in a mammalian cell line.J Pharmacol Exp Ther. 1999 Apr;289(1):448-54.

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