Valacyclovir Tablets

Valacyclovir Hydrochloride Tablets

Valacyclovir Tablets contain valacyclovir hydrochloride equivalent to not less than 90.0 per cent and not more than 110.0 per cent of the stated amount of valacyclovir, $C_{13}H_{20}N_6O_4$.

Usual Strengths. 500 mg; 1000 mg.

Identification

A. In the Assay, the principal peak in the chromatogram obtained with the test solution corresponds to the peak in the chromatogram obtained with reference solution (a).

B. Disperse a quantity of powdered tablets containing 0.1 g of Valacyclovir Hydrochloride in 10 ml of water. It gives reaction (A) of chlorides (2.3.1).

Tests

Dissolution (2.5.2).
Apparatus No. 2 (Paddle),
Medium. 900 ml of *0.1M hydrochloric acid,*
Speed and time. 50 rpm and 45 minutes.

Withdraw a suitable volume of the medium and filter.

Determine by liquid chromatography (2.4.14).

Test solution. Dilute the filtrate, if necessary, with 0.1 per cent v/v of *orthophosphoric acid*.

Reference solution. Dissolve a quantity of *valacyclovir hydrochloride IPRS* in 0.1 per cent v/v of *orthophosphoric acid* and dilute with the same medium to obtain a solution of known concentration similar to the expected concentration of the test solution.

Chromatographic system
- a stainless steel column 5.0 cm x 4.6 mm, packed with octadecylsilane bonded to porous silica (5 µm),
- mobile phase: a mixture of 95 volumes of 0.1 per cent v/v *orthophosphoric acid* and 5 volumes of *acetonitrile*,
- flow rate: 2 ml per minute,
- spectrophotometer set at 254 nm,
- injection volume: 10 µl.

Inject the reference solution. The test is not valid unless the tailing factor is not more than 2.0 and the relative standard deviation for replicate injections is not more than 2.0 per cent.

Inject the reference solution and the test solution.

Calculate the content of $C_{13}H_{20}N_6O_4$ in the medium.

Q. Not less than 75 per cent of the stated amount of $C_{13}H_{20}N_6O_4$.

Related substances. Determine by liquid chromatography (2.4.14).

Solvent mixture. 0.1 per cent v/v of *orthophosphoric acid* in *water*.

Test solution. Disperse a quantity of powdered tablets containing 0.25 g of Valacyclovir Hydrochloride in 80 ml of *0.1 M hydrochloric acid,* with the aid of ultrasound with intermittent shaking and dilute to 100.0 ml with *0.1 M hydrochloric acid*. Dilute 1.0 ml of the solution to 25.0 ml with the solvent mixture, filter.

Reference solution (a). A 0.01 per cent w/v solution of *valacyclovir hydrochloride IPRS* in the solvent mixture.

NOTE-Valacyclovir hydrochloride IPRS contains a detectable amount of D-valacyclovir.
Reference solution (b). Dilute 1.0 ml of reference solution (a) to 100.0 ml with the solvent mixture.

Chromatographic system

– a stainless steel column 15 cm x 4.0 mm, a crown ether coated silica gel substrate. the active site is (S)-=18-crown-6-ether,(5µm) (Such as Crownpak CR(+)),
– column temperature: 10º,
– mobile phase: a mixture of 5 volumes of *methanol* and 95 volumes of the solvent mixture,
– flow rate: 0.75 ml per minute,
– spectrophotometer set at 254 nm,
– injection volume: 10 µl.

Name	Relative retention time	Correction factor
Acyclovir[1]	0.56	0.71
D-Valacyclovir[2*]	0.82	---
Valacyclovir	1.00	---

[*] Process impurity included for identification only. To be controlled in drug substance.
[1]2-Amino-9-[(2-hydroxyethoxy)methyl]-1,9-dihydro-6H-purin-6-one.
[2]D-Valine, 2-[(2-amino-1,6-dihydro-6-oxo-9H-purin-9-yl)methoxy] ethyl ester, monohydrochloride.

Inject reference solution (a) and (b). The test is not valid unless the resolution between the peak due to D-valacyclovir and valacyclovir is not less than 1.3, the tailing factor is not more than 2.0 for valacyclovir peak in the chromatogram obtained with reference solution (a), and the relative standard deviation for replicate injection is not more than 5.0 per cent in the chromatogram obtained with reference solution (b).

Inject reference solution (b) and the test solution. In the chromatogram obtained with the test solution, the area of any peak corresponding to acyclovir is not more than 2.5 times the area of the principal peak in the chromatogram obtained with reference solution (b) (2.5 per cent).

Other tests. Comply with the tests stated under Tablets.

Assay. Determine by liquid chromatography (2.4.14). as described under Related substances using following modifications.

Inject reference solution (a). The test is not valid unless the resolution between the peaks due to D-valacyclovir and valacyclovir is not less than 1.3, the tailing factor is not more than 2.0 for the valacyclovir peak and the relative standard deviation for replicate injection is not more than 2.0 per cent.

Inject reference solution (a) and the test solution.

Calculate the content of $C_{13}H_{20}N_6O_4$ in the tablets.

Storage. Store protected from moisture, at a temperature not exceeding 30°.

Labelling. The label states the strength in terms of the equivalent amount of valacyclovir.