Valganciclovir Tablets

Valganciclovir Hydrochloride Tablets

Valganciclovir Tablets contain not less than 93.0 per cent and not more than 105.0 per cent of the stated amount of valganciclovir, $C_{14}H_{22}N_6O_5$.

Usual strength. 450 mg

Identification

A. When examined in the range of 200 nm to 350 nm (2.4.7), a 0.001 per cent w/v solution in *0.001 M hydrochloric acid*, shows an absorption maximum as obtained with *valganciclovir hydrochloride IPRS* of the same concentration.

B. In the Assay, the diastereomeric peaks in the chromatogram obtained with the test solution corresponds to the peaks in the chromatogram obtained with reference solution (b).

Tests

Dissolution (2.5.2).
Apparatus No. 2 (Paddle),
Medium. 900 ml of *0.1 M hydrochloric acid,*
Speed and time. 50 rpm and 30 minutes.

Withdraw a suitable volume of the medium and filter through 10 µm polyethylene filter. Measure the absorbance of the filtrate, suitably diluted with the medium if necessary, at the maximum at about 254 nm (2.4.7) using 0.02 cm cuvette. Calculate the content of $C_{14}H_{22}N_6O_5$ in the medium from the absorbance obtained from a solution of known concentration of *valganciclovir hydrochloride IPRS* in dissolution medium.

Q. Not less than 80 per cent of the stated amount of $C_{14}H_{22}N_6O_5$.

Related substances. Determine by liquid chromatography (2.4.14).

Test solution. Disperse a quantity of the powdered tablets containing 450 mg of valganciclovir in 800 ml of *0.001 M hydrochloric acid,* with the aid of ultrasound and dilute to 1000.0 ml with *0.001 M hydrochloric acid.*

Reference solution (a). A solution containing 0.001 per cent w/v of *ganciclovir mono-N-methyl valinate IPRS (2-(RS)-[(Guanin-9-yl)methoxy]-3-hydroxypropyl N-methyl-L-valinate)* and 0.78 per cent w/v of *valganciclovir hydrochloride IPRS* in *0.001M hydrochloric acid.* Dilute 1.0 ml of the solution to 100.0 ml with *0.001 M hydrochloric acid.*
Reference solution (b). A 0.009 per cent w/v solution of *valganciclovir hydrochloride IPRS* in *0.001 M hydrochloric acid.*

Chromatographic system
- a stainless steel column 15 cm x 4.6 mm, phenyl groups bonded to porous silica (3.5 µm) (Such as Zorbax SB phenyl),
- mobile phase: a mixture of 93 volumes of 0.25 per cent v/v solution of *triethylamine* in *water,* adjusted to pH 3.0 with *trifluoroacetic acid* and 7 volumes of *methanol*,
- flow rate: 1 ml per minute,
- spectrophotometer set at 254 nm,
- injection volume: 50 µl.

Name	Relative retention time	Correction factor
Guanine	0.51	0.53
Ganciclovir	0.66	0.71
Valganciclovir 1	1.0	---
Valganciclovir 2	1.07	---
Ganciclovir mono-*N*-methyl valinate 1*	1.21	---
Ganciclovir mono-*N*-methyl valinate 2*	1.30	---
Methoxymethylguanine*	1.45	---
Isovalganciclovir 1*	1.55	---
Isovalganciclovir 2*	1.61	---

Ganciclovir divalinate*	2.13	---
Monoacetoxyganciclovir*	2.31	---
Isomonochloroganciclovir*	2.52	---
Homologue 1*	2.69	---
Homologue 2*	2.77	---

*Process impurity include for identification only and not included in the calculation of total degradation products,

Inject reference solution (a) and (b). The test is not valid unless the resolution between the peaks due second diastereomeric valganciclovir and first ganciclovir mono-N-methyl valinate is not less than 2.0 in the chromatogram obtained with reference solution (a), the column efficiency is not less than 3000 theoretical plates, the tailing factor is not more than 3.0 for the second diastereomeric valganciclovir peak and the relative standard deviation for replicate injections is not more than 2.0 per cent for the sum of the areas of two valganciclovir peaks 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 guanine is not more than 0.05 times the sum of the areas of valganciclovir diastereomers in the chromatogram obtained with reference solution (b) (1.0 per cent), the area of any peak corresponding to ganciclovir is not more than 0.1 times the sum of the areas of valganciclovir diastereomers in the chromatogram obtained with reference solution (b) (2.0 per cent). The area of any other secondary peak is not more than 0.2 per cent and the sum of areas of all other secondary peaks is not more than 0.5 per cent, calculated by area normalization.

The sum of all the impurities is not more than 3.5 per cent.

Other tests. Comply with the tests stated under Tablets.

Assay. Determine by liquid chromatography (2.4.14), as described under Related substances with the following modifications.
Test solution. Disperse 5 intact tablets in 300 ml of *0.001 M hydrochloric acid*, with the aid of mechanical shaker until the tablets are fully disintegrated and dilute to 500.0 ml with *0.001 M hydrochloric acid*. Dilute 2.0 ml of the solution to 100.0 ml with *0.001 M hydrochloric acid* and filter.

Reference solution (b). A 0.01 per cent w/v solution of *valganciclovir hydrochloride IPRS* in *0.001 M hydrochloric acid.*

Inject reference solution (a) and (b). The test is not valid unless the resolution between the peaks due second diastereomeric valganciclovir and first ganciclovir mono-N-methyl valinate is not less than 2.0 in the chromatogram obtained with reference solution (a), the column efficiency is not less than 3000 theoretical plates, the tailing factor is not more than 3.0 for the second diastereomeric valganciclovir peak and the relative standard deviation for replicate injections is not more than 2.0 per cent for the sum of the areas of two valganciclovir peaks in the chromatogram obtained with reference solution (b).

Inject reference solution (b) and the test solution.

Calculate the content of $C_{14}H_{22}N_6O_5$ in the tablets.

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