Edition: BP 2025 (Ph. Eur. 11.6 update)

Valsartan Capsules

General Notices

Action and use

Angiotensin II (AT_1) receptor antagonist.

DEFINITION

Valsartan Capsules contain Valsartan.

The capsules comply with the requirements stated under Capsules and with the following requirements.

Content of valsartan, $C_{24}H_{29}N_5O_3$

95.0 to 105.0% of the stated amount.

IDENTIFICATION

A. Shake a quantity of the contents of the capsules containing 50 mg of Valsartan with 20 mL of *dichloromethane* for 10 minutes, filter, evaporate the filtrate to dryness under a stream of nitrogen and dry the residue at 105° for 1 hour. The *infrared absorption spectrum* of the residue, Appendix II A, is concordant with the *reference spectrum* of Valsartan (*RS 473*). Disregard any bands occurring between 1250 and 1325 cm^{-1}.
B. In the Assay, the retention time of the principal peak in the chromatogram obtained with solution (1) is similar to that of the principal peak in the chromatogram obtained with solution (2).

TESTS

Dissolution

Comply with the *dissolution test for tablets and capsules*, Appendix XII B1.

TEST CONDITIONS

(a) Use Apparatus 2, rotating the paddle at 50 revolutions per minute.
(b) Use 900 mL of *phosphate buffer pH 6.8*, at a temperature of 37°, as the medium.

PROCEDURE

(1) After 30 minutes withdraw a 10 mL sample of the medium and measure the *absorbance* of the filtered sample, suitably diluted with the dissolution medium to give a solution expected to contain 0.004% w/v of Valsartan, at the maximum at 250 nm, Appendix II B, using *phosphate buffer pH 6.8* in the reference cell.
(2) Measure the *absorbance* of a 0.004% w/v solution of *valsartan BPCRS* in *phosphate buffer pH 6.8*, at the maximum at 250 nm, Appendix II B, using *phosphate buffer pH 6.8* in the reference cell.

DETERMINATION OF CONTENT

Calculate the total content of valsartan, $C_{24}H_{29}N_5O_3$, in the medium from the absorbances obtained and using the declared content of $C_{24}H_{29}N_5O_3$, in *valsartan BPCRS*.

LIMITS

The amount of valsartan released is not less than 80% (Q) of the stated amount.

Related substances

Carry out the method for *liquid chromatography*, Appendix III D, using the following solutions.

(1) Shake a quantity of the contents of the capsules containing 50 mg of Valsartan with 80 mL of the mobile phase with the aid of ultrasound, add sufficient mobile phase to produce 100 mL and filter.
(2) Dilute 1 volume of solution (1) to 100 volumes with the mobile phase. Dilute 1 volume of the resulting solution to 10 volumes with the mobile phase.
(3) Dissolve the contents of a vial of *valsartan for system suitability EPCRS* (containing impurity C) in 1.0 mL of the mobile phase.

CHROMATOGRAPHIC CONDITIONS

(a) Use a stainless steel column (12.5 cm × 3.0 mm) packed with *end-capped octadecylsilyl silica gel for chromatography* (5 µm) (Nucelosil-100 C18 is suitable).
(b) Use isocratic elution and the mobile phase described below.
(c) Use a flow rate of 0.4 mL per minute.
(d) Use an ambient column temperature.
(e) Use a detection wavelength of 225 nm.
(f) Inject 10 µL of each solution.
(g) Allow the chromatography to proceed for 6 times the retention time of valsartan.

MOBILE PHASE

1 volume of *glacial acetic acid*, 500 volumes of *acetonitrile R1* and 500 volumes of *water*.

When the chromatograms are recorded under the prescribed conditions, the relative retention with reference to valsartan (retention time = about 5 minutes) is: impurity C = about 0.8.

SYSTEM SUITABILITY

The test is not valid unless, in the chromatogram obtained with solution (3), the *resolution factor* between the peaks due to impurity C and valsartan is at least 3.0.

LIMITS

In the chromatogram obtained with solution (1):

the area of any peak corresponding to impurity C is not greater than twice the area of the principal peak in the chromatogram obtained with solution (2) (0.2%);

the area of any other *secondary peak* is not greater than twice the area of the principal peak in the chromatogram obtained with solution (2) (0.2%);

the sum of the areas of all *secondary peaks* is not greater than 7 times the area of principal peak in the chromatogram obtained with solution (2) (0.7%).

Disregard any peak with an area less than the area of the principal peak in the chromatogram obtained with solution (2) (0.1%).

ASSAY

Carry out the method for *liquid chromatography*, Appendix III D, using the following solutions.

(1) To a quantity of the mixed contents of 20 capsules containing 50 mg of Valsartan, add 80 mL of the mobile phase and mix with the aid of ultrasound. Add sufficient mobile phase to produce 100 mL and filter. Dilute 1 volume of this solution to 10 volumes with the mobile phase.
(2) 0.005% w/v of *valsartan BPCRS* in the mobile phase.
(3) Dissolve the contents of a vial of *valsartan for system suitability EPCRS* (containing impurity C) in 1.0 mL of the mobile phase.

CHROMATOGRAPHIC CONDITIONS

The chromatographic conditions described under Related substances may be used.

SYSTEM SUITABILITY

The test is not valid unless, in the chromatogram obtained with solution (3), the *resolution factor* between the peaks due to impurity C and valsartan is at least 3.0.

DETERMINATION OF CONTENT

Calculate the content of $C_{24}H_{29}N_5O_3$ in the capsules using the declared content of $C_{24}H_{29}N_5O_3$ in *valsartan BPCRS*.

IMPURITIES

The impurities limited by the requirements of this monograph include those listed under Valsartan.