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

Terbinafine Tablets

General Notices

Action and use

Antifungal.

DEFINITION

Terbinafine Tablets contain Terbinafine Hydrochloride.

The tablets comply with the requirements stated under Tablets and with the following requirements.

Content of terbinafine, $C_{21}H_{25}N$

95.0 to 105.0% of the stated amount.

IDENTIFICATION

Shake a quantity of the powdered tablets containing the equivalent of 0.1 g of terbinafine with 10 mL of *anhydrous ethanol* and centrifuge. Filter the supernatant liquid and evaporate the filtrate to dryness. The *infrared absorption spectrum* of the residue, Appendix II A, is concordant with the *reference spectrum* of terbinafine hydrochloride (*RS 475*).

TESTS

Dissolution

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

TEST CONDITIONS

(a) Use Apparatus 2 and rotate the paddle at 50 revolutions per minute.
(b) Use 900 mL of a solution prepared by dissolving 6.8 g of *potassium dihydrogen orthophosphate* in sufficient *water* to produce 1000 mL and adjusting the pH to 2.0 with an 85% w/v solution of *orthophosphoric acid*, at a temperature of 37°, as the medium.

PROCEDURE

(1) After 30 minutes withdraw a sample of 20 mL of the medium and measure the *absorbance* of the filtered sample, suitably diluted with the dissolution medium if necessary, to give a solution expected to contain the equivalent of 0.00139% w/v of terbinafine, at the maximum at 274 nm, Appendix II B using dissolution medium in the reference cell.
(2) Dilute 1 volume of a 0.156% w/v solution of *terbinafine hydrochloride BPCRS* in *methanol* to 100 volumes with dissolution medium. Measure the *absorbance* of the resulting solution using dissolution medium in the reference cell.

DETERMINATION OF CONTENT

Calculate the total content of terbinafine, $C_{21}H_{25}N$, in the medium from the *absorbances* obtained and using the declared content of $C_{21}H_{25}N$ in *terbinafine hydrochloride BPCRS*.

LIMITS

The amount of terbinafine released is not less than 75% (Q) of the stated amount.

Related substances

Carry out the method for *liquid chromatography*, Appendix III D, using the following solutions in a 50% v/v solution of *acetonitrile*.

(1) Mix, with the aid of ultrasound, a quantity of the powdered tablets containing the equivalent of 0.25 g of terbinafine in 80 mL, cool and dilute to 100 mL. Centrifuge and filter the supernatant liquid through a 0.45-µm filter (PTFE is suitable). Dilute 1 volume to 5 volumes.
(2) Dilute 1 volume of solution (1) to 100 volumes and further dilute 1 volume of the resulting solution to 10 volumes.
(3) 0.05% w/v of *terbinafine for system suitability EPCRS*.

CHROMATOGRAPHIC CONDITIONS

(a) Use a stainless steel column (15 cm × 3.0 mm) packed with *spherical end-capped octadecylsilyl silica gel for chromatography* (5µm) (Inertsil ODS2 is suitable).
(b) Use gradient elution and the mobile phase described below.
(c) Use a flow rate of 0.8 mL per minute.
(d) Use an ambient column temperature.
(e) Use a detection wavelength of 280 nm.
(f) Inject 20 µL of each solution.

MOBILE PHASE

Buffer solution To 2.0 mL *of triethylamine R2,* add 950 mL of *water*. Adjust to pH 7.5 with a mixture of 5 volumes of *glacial acetic acid* and 95 volumes of *water* and dilute to 1000 mL with *water*.

Mobile phase A 30 volumes of the buffer solution and 70 volumes of a mixture of 40 volumes of *acetonitrile* and 60 volumes of *methanol*.

Mobile phase B 5 volumes of the buffer solution and 95 volumes of a mixture of 40 volumes of *acetonitrile* and 60 volumes of *methanol*.

Time (Minutes)	Mobile phase A (% v/v)	Mobile phase B (% v/v)	Comment
0-4	100	0	isocratic
4-25	100→0	0→100	linear gradient
25-30	0	100	isocratic
30-31	0→100	100→0	linear gradient
31-35	100	0	re-equilibration

SYSTEM SUITABILITY

The test is not valid unless, in the chromatogram obtained with solution (3), the *resolution* between the peaks due to impurity B and terbinafine is at least 2.0.

LIMITS

In the chromatogram obtained with solution (1):

identify any peak corresponding to impurity E and multiply the area of this peak by a correction factor of 0.5;

the area of any peak corresponding to impurity E is not greater than 0.5 times the area of the principal peak in the chromatogram obtained with solution (2) (0.05%);

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 5 times the area of the principal peak in the chromatogram obtained with solution (2) (0.5%).

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

ASSAY

Weigh and powder 20 tablets. Carry out the method for *liquid chromatography*, Appendix III D, using the following solutions dissolved in a 50% v/v solution of *acetonitrile*.

(1) Mix, with the aid of ultrasound, a quantity of the powdered tablets containing the equivalent of 0.25 g of terbinafine in 80 mL, cool and dilute to 100 mL. Centrifuge and filter the supernatant liquid through a 0.45-µm filter (PTFE is suitable). Dilute 1 volume to 5 volumes.
(2) 0.056% w/v of *terbinafine hydrochloride BPCRS*.
(3) 0.05% w/v of *terbinafine for system suitability EPCRS*.

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* between the peaks due to impurity B and terbinafine is at least 2.0.

DETERMINATION OF CONTENT

Calculate the content of $C_{21}H_{25}N$ in the tablets from the chromatogram obtained using the declared content of $C_{21}H_{25}N$ in *terbinafine hydrochloride BPCRS*.

STORAGE

Terbinafine Tablets should be protected from light.

LABELLING

The quantity of the active ingredient is stated in terms of the equivalent amount of terbinafine.

IMPURITIES

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