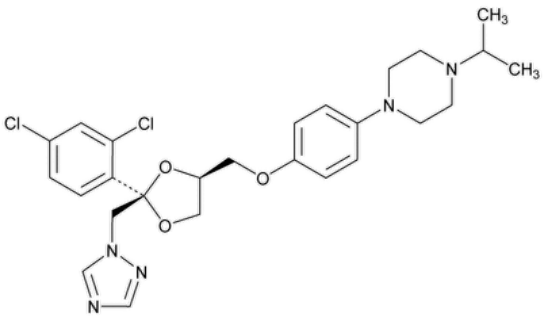
Status: Currently Official on 18-Feb-2025
Official Date: Official as of 01-May-2020
Document Type: USP Monographs
DocId: GUID-E6E9676F-A37E-426A-8093-1AD69413DA41_2_en-US
DOI: https://doi.org/10.31003/USPNF_M80885_02_01
DOI Ref: 54lto

Terconazole



$C_{26}H_{31}Cl_2N_5O_3$ 532.46

Piperazine, 1-[4-[[2-(2,4-dichlorophenyl)-2-(1*H*-1,2,4-triazol-1-ylmethyl)-1,3-dioxolan-4-yl]methoxy]phenyl]-4-(1-methylethyl)-, *cis*-.

cis-1-[*p*-[[2-(2,4-Dichlorophenyl)-2-(l*H*-1,2,4-triazol-1-ylmethyl)-1,3-dioxolan-4-yl]methoxy]phenyl]-4-isopropylpiperazine CAS RN®: 67915-31-5; UNII: 0KJ2VE664U.

» Terconazole contains not less than 98.0 percent and not more than 102.0 percent of $C_{26}H_{31}Cl_2N_5O_3$, calculated on the dried basis.

Packaging and storage—Preserve in light-resistant containers. Store at room temperature.

USP Reference standards ⟨11⟩—
USP Terconazole RS

Change to read:

Identification, ▲*Spectroscopic Identification Tests* ⟨197⟩*, Infrared Spectroscopy: 197K.*▲ (CN 1-May-2020)

Specific rotation ⟨781S⟩**:** between −1° and +1° at 20°.

Test solution: 40 mg per mL solution in methylene chloride.

Loss on drying ⟨731⟩—Dry it in a vacuum at 80° for 4 hours: it loses not more than 0.75% of its weight, a 2.0-g specimen being used.

Residue on ignition ⟨281⟩**:** not more than 0.1%, a 2.0-g specimen being used.

Related compounds—[Note—Use the solutions within 24 hours if protected from light and within 1 hour if not protected from light.]

Solution A—Prepare and filter a 0.6% ammonium carbonate solution in water.

Solution B: acetonitrile.

Solution C: tetrahydrofuran.

Mobile phase—Use variable mixtures of *Solution A, Solution B,* and *Solution C* as directed for *Chromatographic system.* Make adjustments if necessary (see *System Suitability* under *Chromatography* ⟨621⟩).

Standard solution—Dissolve in and dilute with alcohol an accurately weighed quantity of USP Terconazole RS to obtain a solution having a known concentration of about 0.1 mg per mL.

Test solution—Dissolve in and dilute with alcohol an accurately weighed quantity of Terconazole to obtain a solution having a concentration of about 10 mg per mL.

Chromatographic system (see *Chromatography* ⟨621⟩)—The liquid chromatograph is equipped with a 225-nm detector and a 4.6-mm × 10-cm column that contains 3-µm packing L1. The flow rate is about 2 mL per minute. The chromatograph is programmed as shown in the table below.

Time (minutes)	*Solution A* (%)	*Solution B* (%)	*Solution C* (%)	Elution
0–15	80→55	20→25	0→20	linear gradient
15–17	55→0	25→80	20	linear gradient
17–20	0	80	20	isocratic
20–21	0→80	80→20	20→0	step gradient

Time (minutes)	*Solution A* (%)	*Solution B* (%)	*Solution C* (%)	Elution
21–25	80	20	0	re-equilibration

Chromatograph the *Standard solution*, and record the peak responses as directed for *Procedure:* the tailing factor for terconazole peak is not less than 0.9 and not more than 1.3; and the relative standard deviation for replicate injection is not more than 5.0%.

Procedure—Separately inject equal volumes (about 10 µL) of the *Test solution* and the *Standard solution* into the chromatograph, record the chromatograms, and measure the peak responses. Identify the impurities using the relative retention times given in *Table 1*. Calculate the percentage of each terconazole related compound in the portion of Terconazole taken by the formula:

$$100(C_S/C_U)(r_U/r_S)(1/F)$$

in which C_S and C_U are the concentrations, in mg per mL, of terconazole in the *Standard solution* and the *Test solution,* respectively; r_U is the peak response of each impurity obtained from the *Test solution;* r_S is the peak response of terconazole obtained from the *Standard solution;* and F is the relative response factor for each impurity relative to terconazole.

Table 1

Impurity	Approx. RRT	Relative Response Factor (*F*)	Limit (%)
B[a]	0.88	0.94	0.50
A[b]	0.95	0.92	0.50
Any unspecified impurity	—	1.0	0.10
Total impurities	—	—	1.0

[a] 1-[4-[[(2*RS*,4*SR*)-2-(2,4-Dichlorophenyl)-2-[(4*H*-1,2,4-triazol-4-yl]methyl]-1,3-dioxolan-4-yl]methoxy]phenyl]-4-(1-methylethyl)piperazine.

[b] 1-[4-[[(2*RS*,4*RS*)-2-(2,4-Dichlorophenyl)-2-[(1*H*-1,2,4-triazol-1-yl)methyl]-1,3-dioxolan-4-yl)methoxy]phenyl]-4-(1-methylethyl)piperazine.

The limits in *Table 1* are met. Disregard any impurity that is less than 0.10%.

Assay—Dissolve about 135 mg of Terconazole, accurately weighed, in about 70 mL of previously neutralized glacial acetic acid. Titrate with 0.1 N perchloric acid VS, and determine the endpoint potentiometrically (see *Titrimetry ⟨541⟩*). Each mL of 0.1 N perchloric acid is equivalent to 17.75 mg of $C_{26}H_{31}Cl_2N_5O_3$.

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
TERCONAZOLE	Documentary Standards Support	SM12020 Small Molecules 1
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM12020 Small Molecules 1

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. 51(1)

Current DocID: GUID-E6E9676F-A37E-426A-8093-1AD69413DA41_2_en-US
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