

Thioridazine Hydrochloride Tablets

» Thioridazine Hydrochloride Tablets contain not less than 90.0 percent and not more than 110.0 percent of the labeled amount of $C_{21}H_{26}N_2S_2 \cdot HCl$.

Packaging and storage—Preserve in tight, light-resistant containers.

USP Reference standards (11)—*USP Thioridazine Hydrochloride RS*.

NOTE—Throughout the following procedures, protect test or assay specimens, the Reference Standard, and solutions containing them, by conducting the procedures without delay, under subdued light, or using low-actinic glassware.

Identification—Tablets meet the requirements under *Identification—Organic Nitrogenous Bases* (181), 2 mL of sodium bicarbonate solution (1 in 12) being used in place of the 2 mL of 1 N sodium hydroxide specified in the test.

Dissolution (711)—

Medium: 0.1 N hydrochloric acid; 1000 mL.

Apparatus 2: 75 rpm.

Time: 60 minutes.

Procedure—Determine the amount of $C_{21}H_{26}N_2S_2 \cdot HCl$ dissolved from ultraviolet absorbances at the wavelength of maximum absorbance at about 262 nm of filtered portions of the solution under test, suitably diluted with *Dissolution Medium*, if necessary, in comparison with a Standard solution having a known concentration of USP Thioridazine Hydrochloride RS in the same medium.

Tolerances—Not less than 75% (*Q*) of the labeled amount of $C_{21}H_{26}N_2S_2 \cdot HCl$ is dissolved in 60 minutes.

Uniformity of dosage units (905): meet the requirements.

Assay—

Mobile phase—Prepare a filtered and degassed mixture of acetonitrile, water, and triethylamine (850:150:1). Make adjustments if necessary (see *System Suitability* under *Chromatography* (621)).

Standard preparation—Dissolve an accurately weighed quantity of USP Thioridazine Hydrochloride RS in methanol with the aid of sonication, and dilute quantitatively and stepwise, if necessary, with methanol to obtain a solution having a known concentration of about 125 μ g per mL.

Assay preparation—Weigh and finely powder not less than 20 Tablets. Transfer an accurately weighed portion of the powder, equivalent to about 100 mg of thioridazine hydrochloride, to a 100-mL volumetric flask. Add about 80 mL of methanol, and shake by mechanical means for 30 minutes. Dilute with methanol to volume, and sonicate for 45 minutes with intermittent shaking. Allow the undissolved solids to settle, and filter, discarding the first 20 mL of the filtrate. Transfer 25.0 mL of the clear filtrate to a 200-mL volumetric flask, dilute with methanol to volume, and mix. Filter through a 0.45- μ m disk before injecting into the chromatograph.

System suitability preparation—Dissolve 100 mg of mesoridazine besylate in 100 mL of methanol. Mix 1.0 mL of this solution with 9.0 mL of the *Standard preparation*.

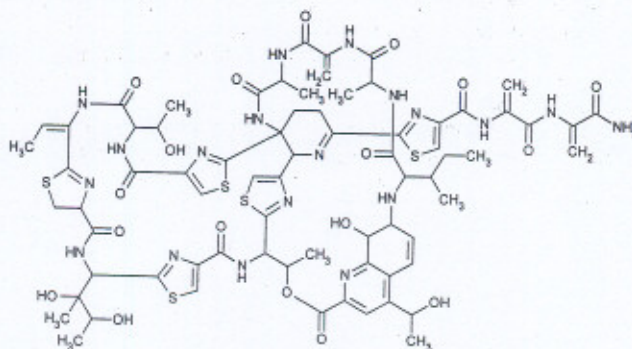
Chromatographic system (see *Chromatography* (621))—The liquid chromatograph is equipped with a 265-nm detector and a 4.6-mm \times 25-cm column that contains packing L1. The flow rate is about 2.5 mL per minute. Chromatograph the *Standard preparation* and the *System suitability preparation*, and record the peak responses as directed under *Procedure*: the resolution, *R*, between the mesoridazine and thioridazine peaks is not less than 1.0, and the relative standard deviation for replicate injections of the *Standard preparation* is not more than 2.0%.

Procedure—Separately inject equal volumes (about 10 μ L) of the *Standard preparation* and the *Assay preparation* into the chromatograph, record the chromatograms, and measure the responses for the major peaks. Calculate the quantity, in mg, of $C_{21}H_{26}N_2S_2 \cdot HCl$ in the portion of Tablets taken by the formula:

$$0.8C(r_V/r_S)$$

in which *C* is the concentration, in μ g per mL, of USP Thioridazine Hydrochloride RS in the *Standard preparation*, and r_V and r_S are the peak responses obtained from the *Assay preparation* and the *Standard preparation*, respectively.

Thiostrepton



$C_{72}H_{85}N_{19}O_{18}S_5$ 1664.89 [1393-48-2].

» Thiostrepton is an antibacterial substance produced by the growth of strains of *Streptomyces azureus* (Fam. Streptomycetaceae). It has a potency of not less than 900 USP Thiostrepton Units per mg, calculated on the dried basis.

Packaging and storage—Preserve in tight containers.

Labeling—Label it to indicate that it is for veterinary use only.

USP Reference standards (11)—*USP Thiostrepton RS*.

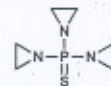
Identification, Infrared Absorption (197K).

Loss on drying (731)—Dry about 1 g of sample in vacuum at 60° for 3 hours; it loses not more than 5.0% of its weight.

Residue on ignition (281): not more than 1.0%.

Assay—Proceed as directed under *Antibiotics—Microbial Assays* (81), preparing the *Test Dilution* as follows. Transfer about 60 mg of Thiostrepton, accurately weighed, to a beaker. Add about 125 mL of dimethyl sulfoxide, and stir with a magnetic stirrer until dissolved (about 5 minutes). Transfer this solution to a 200-mL volumetric flask, washing the beaker and the stirring bar with dimethyl sulfoxide. Add the washings to the volumetric flask, dilute with dimethyl sulfoxide to volume, and mix. Dilute this solution quantitatively with dimethyl sulfoxide to obtain a *Test Dilution* having a concentration of thiostrepton assumed to be equal to the median dose of the Standard.

Thiotepa



$C_6H_{12}N_3PS$ 189.22

Aziridine, 1,1',1''-phosphinothioylidynetris-

Tris(1-aziridinyl)phosphine sulfide [52-24-4].

» Thiotepa contains not less than 97.0 percent and not more than 102.0 percent of $C_6H_{12}N_3PS$, calculated on the anhydrous basis.

Caution—Great care should be taken to prevent inhaling particles of Thiotepa or exposing the skin to it.

Packaging and storage—Preserve in tight, light-resistant containers, and store in a refrigerator.

USP Reference standards (11)—*USP Thiotepa RS*.

Identification, Infrared Absorption (197S)—

Solution: 3 in 400.

Medium: carbon disulfide.

Melting range (741): between 52° and 57°.

Water, Method I (921): not more than 2.0%.

Assay—

Mobile phase—Prepare a suitable filtered and degassed mixture of water and acetonitrile (9:1). Make adjustments if necessary (see *System Suitability* under *Chromatography* (621)).

Standard preparation—Dissolve an accurately weighed quantity of USP Thiotepa RS in *Mobile phase* to obtain a solution having a known concentration of about 1.5 mg per mL.

Assay preparation—Transfer about 75 mg of Thiotepa, accurately weighed, to a 50-mL volumetric flask, dissolve in *Mobile phase*, dilute with *Mobile phase* to volume, and mix.

Resolution solution—Transfer about 10 mg of USP Thiotepa RS to a 4-mL vial, add 2 mL of methanol, and mix. Add 50 μ L of 0.1% phosphoric acid solution. Place a cap on the vial, and heat at 65° for 50 seconds. Cool the solution, add 1 mL of methanol, and mix.

Chromatographic system (see *Chromatography* (621))—The liquid chromatograph is equipped with a 215-nm detector and a 4-mm \times 15-cm column that contains packing L1. The flow rate is about 0.8 mL per minute. Chromatograph the *Resolution solution*, and record the peak responses as directed under *Procedure*: the relative retention times are about 1.25 for methoxythiotepa and 1.0 for thiotepa, and the resolution, *R*, between the methoxythiotepa peak and the thiotepa peak is not less than 3.0. Chromatograph the *Standard preparation*, and record the responses as directed under *Procedure*: the tailing factor for the thiotepa peak is not more than 1.8, the column efficiency is not less than 2600 theoretical plates, and the relative standard deviation for replicate injections is not more than 2.0%.

Procedure—Separately inject equal volumes (about 10 μ L) of the *Standard preparation* and the *Assay preparation* into the chromatograph, record the chromatograms, and measure the responses for the major peaks. Calculate the quantity, in mg, of C₆H₁₂N₃PS in the portion of Thiotepa taken by the formula:

$$50C(r_1/r_2),$$

in which *C* is the concentration, in mg per mL, of USP Thiotepa RS in the *Standard preparation*, and *r*₁ and *r*₂ are the thiotepa peak responses obtained from the *Assay preparation* and the *Standard preparation*, respectively.

Thiotepa for Injection

» Thiotepa for Injection is Thiotepa, with or without added substances, that is suitable for parenteral use. It contains not less than 95.0 percent and not more than 110.0 percent of the labeled amount of thiotepa (C₆H₁₂N₃PS).

Packaging and storage—Preserve in *Containers for Sterile Solids* as described under *Injections* (1), and store in a refrigerator, protected from light.

USP Reference standards (11)—USP Thiotepa RS.

Completeness of solution (641)—The contents of 1 container dissolved in Sterile Water for Injection or other diluent as directed in the labeling to obtain a solution containing 3.75 mg of thiotepa per mL yields a clear solution.

Identification, Infrared Absorption (197S)—

Test and Standard solutions—Use the *Assay solution* and *Standard solution* prepared as directed in the *Assay*.

pH (791): between 5.5 and 7.5, in a solution, constituted as directed in the labeling, containing 10 mg of thiotepa per mL.

Loss on drying (731)—Dry the contents of 1 container, accurately weighed, over silica gel for 24 hours: it loses not more than 0.5% of its weight.

Bacterial endotoxins (85): not more than 6.25 USP Endotoxin Units per mg of thiotepa.

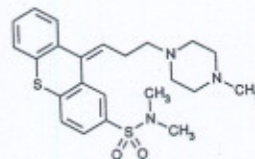
Other requirements—It meets the requirements for *Sterility Tests* (71), *Uniformity of Dosage Units* (905), and *Labeling* under *Injections* (1).

Assay—Remove, as completely as possible, the contents of not less than 20 containers of Thiotepa for Injection, weigh, and mix. Transfer an accurately weighed portion of the powder, equivalent to about 75 mg of thiotepa, to a suitable container, extract with three 5-mL portions of carbon disulfide, and filter the carbon disulfide extract with the aid of vacuum. Concentrate the combined filtrates under vacuum to approximately 5 mL. Transfer the carbon disulfide solution to a 10-mL volumetric flask with the aid of a few mL of carbon disulfide, and dilute with carbon disulfide to volume (*Assay solution*). Concomitantly determine the absorbances of this solution and a Standard solution of USP Thiotepa RS in the same medium having a known concentration of about 7.5 mg per mL (*Standard solution*), in 0.1-mm cells, at the wavelength of maximum absorbance at about 10.75 μ m, with a suitable infrared spectrophotometer, using carbon disulfide as the blank. Calculate the quantity, in mg, of thiotepa (C₆H₁₂N₃PS) in the portion of Thiotepa for Injection taken by the formula:

$$10C(A_U/A_S),$$

in which *C* is the concentration, in mg per mL, of USP Thiotepa RS in the Standard solution; and *A*_U and *A*_S are the absorbances of the *Assay solution* and the *Standard solution*, respectively.

Thiothixene



C₂₃H₂₉N₃O₂S₂ 443.63

9*H*-Thioxanthene-2-sulfonamide, *N,N*-dimethyl-9-[3-(4-methyl-1-piperazinyl)propylidene]-, (*Z*)-.

N,N-Dimethyl-9-[3-(4-methyl-1-piperazinyl)propylidene]thioxanthene-2-sulfonamide [5591-45-7; 3313-26-6].

» Thiothixene contains not less than 96.0 percent and not more than 101.5 percent of C₂₃H₂₉N₃O₂S₂, calculated on the dried basis.

Packaging and storage—Preserve in tight, light-resistant containers.

USP Reference standards (11)—USP Thiothixene RS. USP (*E*)-Thiothixene RS.

Identification—

A: Infrared Absorption (197S)—

Solution: 1 in 20.

Medium: chloroform.

B: Ultraviolet Absorption (197U)—

Solution: 10 μ g per mL.

Medium: methanol. Absorptivities at about 230 nm and 307 nm, calculated on the dried basis, do not differ by more than 4.0%.

Melting range, Class I (741): between 147° and 153.5°.

Loss on drying (731)—Dry it in vacuum at 100° for 3 hours: it loses not more than 2.0% of its weight.

Residue on ignition (281): not more than 0.2%.

Selenium (291): 0.003%.

Heavy metals, Method II (231): 0.0025%.

Limit of (*E*)-thiothixene—[NOTE—Prepare all solutions in low-actinic glassware.]

Mobile phase—Transfer 6.9 g of monobasic sodium phosphate to a 1-liter volumetric flask, dissolve in deionized water, dilute with deionized water to volume, and mix. Filter through a suitable membrane filter. Mix 4 volumes of this solution with 6 volumes