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Pergolide Tablets

» Pergolide Tablets contain an amount of Pergolide Mesylate equivalent to not less than 90.0 percent and not more than 110.0 percent of the labeled amount of pergolide ($C_{19}H_{26}N_2S$).

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

USP Reference standards ⟨11⟩—

USP Pergolide Mesylate RS
USP Pergolide Sulfoxide RS
(8β)-8-[(Methylsulfinyl)methyl]-6-propyl-D-ergoline.

Thin-layer chromatographic identification test ⟨201⟩—

Adsorbent: 0.25-mm layer of binder-free silica gel.

Test solution—Transfer a number of Tablets, equivalent to 1 mg of pergolide, to a separator containing 20 mL of methylene chloride and 10 mL of 0.1 N sodium hydroxide. Shake until the Tablets have disintegrated, allow the layers to separate, and drain the methylene chloride layer through a small funnel containing about 1 g of anhydrous sodium sulfate, collecting the filtrate in a suitable stoppered vessel. Wash the sodium sulfate with a few mL of methylene chloride, adding these washes to the filtrate, and evaporate to dryness under a stream of nitrogen. Redissolve the residue in 2 mL of a mixture of methylene chloride and methanol (1:1).

Standard solution: 0.65 mg per mL, in a mixture of methylene chloride and methanol (1:1).

Application volume: 20 µL.

Developing solvent system: a mixture of chloroform, methanol, and ethyl acetate (8:1:1). Allow the plate to equilibrate for about 10 minutes in the developing chamber prior to development.

Procedure—Proceed as directed in the chapter. Place the plate in a chamber containing iodine vapors, and locate the spots.

Dissolution ⟨711⟩—

Medium: simulated gastric fluid TS (without enzymes) containing 20 µg of L-cysteine per mL; 500 mL.

Apparatus 2: 50 rpm.

Time: 30 minutes.

Determine the amount of $C_{19}H_{26}N_2S$ dissolved by employing the following method.

Mobile phase—Prepare a filtered and degassed mixture of acetonitrile, water, and triethylamine, (21:19:0.08). Adjust with phosphoric acid to a pH of 5.0. Make adjustments if necessary (see *System Suitability* under *Chromatography ⟨621⟩*).

Triethylamine phosphate suspension—Add 1.0 mL of triethylamine to 500 mL of acetonitrile, mix, and adjust with phosphoric acid to a pH of 5.0. A white precipitate will form. Stir continuously during use.

Resolution solution—Prepare a solution of USP Pergolide Mesylate RS and USP Pergolide Sulfoxide RS containing a known amount of each equivalent to the labeled amount of pergolide in each 500 mL of *Medium*.

Standard solution—Transfer about 16 mg of USP Pergolide Mesylate RS, accurately weighed, to a 250-mL volumetric flask, dissolve in 10.0 mL of methanol, dilute with *Medium* to volume, and mix. Dilute this solution quantitatively and stepwise with *Medium* to obtain a solution having a known concentration equivalent to the labeled amount of pergolide in each 500 mL.

Chromatographic system (see *Chromatography ⟨621⟩*)—The liquid chromatograph is equipped with a fluorometer set to an excitation wavelength of 224 nm and an emission wavelength of 350 nm and with a 4.6-mm × 15-cm column that contains base-deactivated packing L10. The flow rate is about 2 mL per minute. Chromatograph the *Resolution solution*, and record the peak responses as directed for *Procedure:* the resolution, *R*, between pergolide sulfoxide and pergolide is not less than 1.0. Chromatograph the *Standard solution*, and record the peak responses as directed for *Procedure:* the relative standard deviation for replicate injections, determined from the pergolide peak, is not more than 2.0%.

Procedure—Immediately before injection, pipet 2.0 mL of *Triethylamine phosphate suspension*, continuously stirred, into a suitable container containing 5.0 mL of the solution for injection, and mix to obtain a clear solution. Separately inject equal volumes (about 200 µL) of the *Standard solution* and filtered portions of the solutions under test into the chromatograph, record the chromatograms, and measure the areas

for the major peaks. Calculate the amount, in mg, of pergolide ($C_{19}H_{26}N_2S$) dissolved by the formula:

$$500C(314.50/410.60)(r_U/r_S)$$

in which *C* is the concentration, in µg per mL, of USP Pergolide Mesylate RS in the *Standard solution;* 314.50 and 410.60 are the molecular weights of pergolide and pergolide mesylate, respectively; and r_U and r_S are the peak areas obtained from the solution under test and the *Standard solution*, respectively.

Tolerances—Not less than 75% *(Q)* of the labeled amount of $C_{19}H_{26}N_2S$ is dissolved in 30 minutes.

Uniformity of Dosage Units ⟨905⟩: meet the requirements.

Chromatographic purity—

Mobile phase, System suitability solution, Standard preparation, and *Chromatographic system*—Proceed as directed in the *Assay*.

Diluted standard preparation—Transfer 3.0 mL of the *Standard preparation* to a 50-mL volumetric flask. Dilute with *Mobile phase* to volume, and mix.

Test preparation—Use the *Assay preparation*.

Procedure—Separately inject equal volumes (about 100 µL) of the *Diluted standard preparation* and the *Test preparation* into the chromatograph, and measure all of the peak responses. Calculate the percentage of each impurity in the Tablets by the formula:

$$20C(314.50/410.60)(r_i/r_S)$$

in which *C* is the concentration, in µg per mL, of USP Pergolide Mesylate RS in the *Diluted standard preparation;* 314.50 and 410.60 are the molecular weights of pergolide and pergolide mesylate, respectively; r_i is the peak response of the individual impurity obtained from the *Test preparation;* and r_S is the peak response of pergolide obtained from the *Diluted standard preparation:* not more than 6.0% of pergolide sulfoxide is found; not more than 0.5% of any individual impurity, excluding pergolide sulfoxide, is found; and not more than 1.0% of total impurities, excluding pergolide sulfoxide, is found.

Assay—

Mobile phase—Prepare a solution of 0.038 M sodium 1-octanesulfonate containing 0.0077 mg of methionine per mL and 2.45 mL of glacial acetic acid per L. Adjust with 5 N sodium hydroxide to a pH of 4.1. Prepare a filtered and degassed mixture of this solution and acetonitrile (65:35). Make adjustments if necessary (see *System Suitability* under *Chromatography ⟨621⟩*).

System suitability solution—Prepare a solution of USP Pergolide Mesylate RS and USP Pergolide Sulfoxide RS in *Mobile phase* having a known concentration of about 6.5 µg per mL of pergolide mesylate and 0.1 µg per mL of pergolide sulfoxide.

Standard preparation—Dissolve an accurately weighed quantity of USP Pergolide Mesylate RS in *Mobile phase*, and dilute quantitatively and stepwise with *Mobile phase* to obtain a solution having a known concentration of about 6.5 µg per mL.

Assay preparation—Place 20 whole Tablets into a suitable stoppered container, add *Mobile phase*, shake and sonicate until the Tablets have dissolved, and quantitatively dilute to obtain a solution containing about 5 µg per mL of pergolide.

Chromatographic system (see *Chromatography ⟨621⟩*)—The liquid chromatograph is equipped with a fluorometer set to an excitation wavelength of 280 nm and an emission wavelength of 335 nm and with a 4.6-mm × 7.5-cm column that contains base-deactivated packing L7. The flow rate is about 1.5 mL per minute. The column temperature is maintained at 35°. Chromatograph the *System suitability solution*, and record the peak responses as directed for *Procedure:* the resolution, *R*, between pergolide sulfoxide and pergolide is not less than 12.0; and the relative standard deviation for replicate injections is not more than 2.0%.

Procedure—Separately inject equal volumes (about 100 µL) of the *Standard preparation* and the *Assay preparation* into the chromatograph, and measure the responses for the major peaks. Calculate the quantity, in mg, of pergolide ($C_{19}H_{26}N_2S$) in the portion of Tablets taken by the formula:

$$0.001C(314.50/410.60)(r_U/r_S)$$

in which *C* is the concentration, in µg per mL, of USP Pergolide Mesylate RS in the *Standard preparation;* 314.50 and 410.60 are the molecular weights of pergolide and pergolide mesylate, respectively; and r_U and r_S are the peak responses obtained from the *Assay preparation* and the *Standard preparation*, respectively.

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

Topic/Question	Contact	Expert Committee
PERGOLIDE TABLETS	Documentary Standards Support	SM32020 Small Molecules 3

Topic/Question	Contact	Expert Committee
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. Information currently unavailable

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