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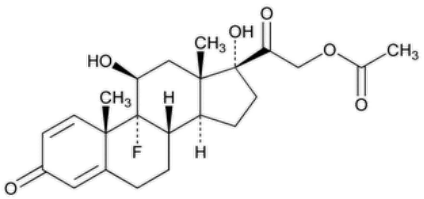
Isoflupredone Acetate



$C_{23}H_{29}FO_6$ 420.47

Pregna-1,4-diene-3,20-dione, 21-(acetyloxy)-9-fluoro-11,17-dihydroxy-, (11β)-.

9-Fluoro-11β,17,21-trihydroxypregna-1,4-diene-3,20-dione 21-acetate CAS RN®: 338-98-7; UNII: 55P9TUL75S.

» Isoflupredone Acetate contains not less than 97.0 percent and not more than 103.0 percent of $C_{23}H_{29}FO_6$, calculated on the dried basis.

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

Labeling—Label it to indicate that it is intended for veterinary use only. Where it is intended for use in preparing injectable dosage forms, the label states that it is sterile or must be subjected to further processing during the preparation of injectable dosage forms.

USP Reference standards ⟨11⟩—

USP Isoflupredone Acetate RS
USP Prednisolone Acetate RS

Change to read:

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

Absorptivity—

Test preparation: 25 mg in 2000 mL of alcohol.

Procedure—Proceed as directed under *Ultraviolet-Visible Spectroscopy* ⟨857⟩, and measure the absorbance at 240 nm: the absorptivity is between 35.0 and 38.0.

Specific rotation ⟨781S⟩: between +110° and +120°.

Test solution: 10 mg per mL, in dioxane.

Bacterial Endotoxins Test ⟨85⟩ —Where the label states that Isoflupredone Acetate is sterile or that it must be subjected to further processing during the preparation of injectable dosage forms, it contains not more than 125 USP Endotoxin Units per mg of isoflupredone acetate.

Loss on drying ⟨731⟩—Dry it at 105° for 4 hours: it loses not more than 1.0% of its weight.

Residue on ignition ⟨281⟩: not more than 0.5%.

Chromatographic purity—

Solution A—Prepare a mixture of water, methanol, acetonitrile, and glacial acetic acid (500:350:150:3), and degas.

Solution B—Prepare a mixture of acetonitrile, methanol, and water (550:500:3), and degas.

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

System suitability solution—Dissolve accurately weighed quantities of USP Isoflupredone Acetate RS and USP Prednisolone Acetate RS in *Solution A* to obtain a solution having known concentrations of about 0.03 mg of each per mL. Sonicate, if necessary, to dissolve.

Test solution—Dissolve an accurately weighed quantity of Isoflupredone Acetate in *Solution A* to obtain a solution having a concentration of about 0.3 mg per mL. Sonicate, if necessary, to dissolve. Use this solution within 16 hours.

Chromatographic system (see *Chromatography* ⟨621⟩)—The liquid chromatograph is equipped with a 254-nm detector and a 4.6-mm × 25-cm column that contains packing L7. The flow rate is about 1 mL per minute. Protect the column from temperature fluctuations. The chromatograph is programmed as follows.

Time (minutes)	*Solution A* (%)	*Solution B* (%)	Elution
0	100	0	equilibration
0–32.5	100	0	isocratic
32.5–47.5	100→0	0→100	linear gradient

Time (minutes)	*Solution A* (%)	*Solution B* (%)	Elution
47.5–50.5	0	100	isocratic
50.5–51.5	0→100	100→0	linear gradient
51.5–61.5	100	0	isocratic

Chromatograph the *System suitability solution,* and record the peak areas as directed for *Procedure:* the retention time for isoflupredone acetate is between 21 and 26 minutes; the relative retention times are about 1.1 for prednisolone acetate and 1.0 for isoflupredone acetate; the resolution, *R,* between isoflupredone acetate and prednisolone acetate is not less than 1.2; and the column efficiency determined from isoflupredone is not less than 6000 theoretical plates.

Procedure—Inject a volume (about 50 µL) of the *Test solution* into the chromatograph, record the chromatogram, and measure the areas for the major peaks. Calculate the percentage of each impurity in the portion of Isoflupredone Acetate taken by the formula:

$$100(r_i/r_s)$$

in which r_i is the peak response for each impurity; and r_s is the sum of the responses of all the peaks: not more than 1.0% of any individual impurity is found; and not more than 2.0% of total impurities is found, excluding those that are present in amounts less than 0.05%.

Other requirements—Where the label states that it is sterile, it meets the requirements for *Sterility Tests ⟨71⟩* when tested as directed for *Direct Transfer Method* under *Test Procedures.*

Assay—

Mobile phase—Prepare a mixture of *n*-butyl chloride, water-saturated *n*-butyl chloride, tetrahydrofuran, methanol, and glacial acetic acid (475:475:70:35:30). Make adjustments if necessary (see *System Suitability* under *Chromatography ⟨621⟩*).

Diluent—Use water-saturated chloroform.

Internal standard solution—Dissolve an accurately weighed quantity of fluoxymesterone in *Diluent* to obtain a solution having a known concentration of about 0.9 mg per mL.

Standard preparation—Dissolve about 4 mg of USP Isoflupredone Acetate RS, accurately weighed, in 8.0 mL of *Internal standard solution* and 32.0 mL of *Diluent.*

Assay preparation—Transfer about 4 mg of Isoflupredone Acetate, accurately weighed, to a suitable container. Dissolve in 8.0 mL of *Internal standard solution* and 32.0 mL of *Diluent*, centrifuge, and use the clear chloroform portion.

Chromatographic system (see *Chromatography ⟨621⟩*)—The liquid chromatograph is equipped with a 254-nm detector and a 4-mm × 30-cm column that contains packing L3. The flow rate is about 0.7 mL per minute. Chromatograph the *Standard preparation,* and record the peak areas as directed for *Procedure*: the relative retention times are about 1.0 for isoflupredone acetate and 1.2 for fluoxymesterone; the resolution, *R,* between isoflupredone acetate and fluoxymesterone is not less than 2.0; and the relative standard deviation for replicate injections is not more than 2.0%.

Procedure—Separately inject equal volumes (about 12 µL) of the *Standard preparation* and the *Assay preparation* into the chromatograph, record the chromatograms, and measure the areas for the major peaks. Calculate the quantity, in mg, of $C_{23}H_{29}FO_6$ in the portion of Isoflupredone Acetate taken by the formula:

$$W_S(R_U/R_S)$$

in which W_S is the weight, in mg, of USP Isoflupredone Acetate RS taken to prepare the *Standard preparation;* and R_U and R_S are the peak area ratios of isoflupredone acetate to fluoxymesterone 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
ISOFLUPREDONE ACETATE	Documentary Standards Support	SM32020 Small Molecules 3
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

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