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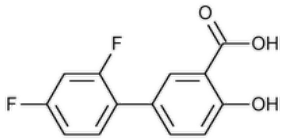
Diflunisal



$C_{13}H_8F_2O_3$ 250.20

[1,1'-Biphenyl]-3-carboxylic acid, 2',4'-difluoro-4-hydroxy-.

2',4'-Difluoro-4-hydroxy-3-biphenylcarboxylic acid CAS RN®: 22494-42-4; UNII: 7C546U4DEN.

» Diflunisal contains not less than 98.0 percent and not more than 101.5 percent of $C_{13}H_8F_2O_3$, calculated on the dried basis.

Packaging and storage—Preserve in well-closed containers.

USP Reference standards ⟨11⟩—

USP Diflunisal RS

Identification—

Change to read:

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

Change to read:

B: ▲*Spectroscopic Identification Tests* ⟨197⟩*, Ultraviolet-Visible Spectroscopy: 197U*▲ (CN 1-May-2020) —

Solution: 40 µg per mL.

Medium: hydrochloric acid in methanol (1 in 120).

Absorptivities at 315 nm, calculated on the dried basis, do not differ by more than 3.0%.

Loss on drying ⟨731⟩—Dry it in vacuum at a pressure not exceeding 5 mm of mercury at 60° for 4 hours: it loses not more than 0.3% of its weight.

Residue on ignition ⟨281⟩: not more than 0.1%.

Chromatographic purity—Prepare a solution of it in methanol containing about 10 mg per mL. Prepare solutions of USP Diflunisal RS in methanol having concentrations of 10, 0.05, and 0.02 mg per mL, respectively (*Standard solutions A*, *B*, and *C*). Apply 5-µL portions of all four solutions to a suitable thin-layer chromatographic plate (see *Chromatography* ⟨621⟩) coated with a 0.25-mm layer of chromatographic silica gel mixture and previously washed with methanol. Allow the spots to dry, and develop the chromato gram in a freshly prepared solvent system consisting of a mixture of *n*-hexane, dioxane, and glacial acetic acid (85:10:5) in a paper-lined, equilibrated tank, until the solvent front has moved about three-fourths of the length of the plate. Remove the plate from the developing chamber, mark the solvent front, allow to air-dry, and examine the plate under short-wavelength UV light: the chromatograms show principal spots at about the same R_F value. Estimate the concentration of any spot observed in the chromatogram of the test solution, other than the principal spot, by comparison with the spots in the chromatograms of *Standard solutions B* and *C:* the intensity of any individual spot is not greater than that of the principal spot obtained from *Standard solution C* (0.2%), and the sum of all additional spots is not greater than that of the principal spot obtained from *Standard solution B* (0.5%).

Assay—

Mobile phase—Prepare a suitable mixture of water, methanol, acetonitrile, and glacial acetic acid (55:23:10:2) such that the retention time of diflunisal is about 18 minutes. Make adjustments if necessary (see *System Suitability* under *Chromatography* ⟨621⟩).

Standard preparation—Dissolve an accurately weighed quantity of USP Diflunisal RS in a mixture of acetonitrile and water (4:1) to obtain a solution having a known concentration of about 1 mg per mL. Dilute an accurately measured volume of this solution with a mixture of acetonitrile and water (1:1) to obtain a solution having a known concentration of about 0.2 mg per mL.

Assay preparation—Transfer about 50 mg of Diflunisal, accurately weighed, to a 50-mL volumetric flask. Dilute with a mixture of acetonitrile and water (4:1) to volume, and mix. Transfer 5.0 mL of this solution to a 25-mL volumetric flask. Dilute with a mixture of acetonitrile and water (1:1) to volume, and mix.

Chromatographic system (see *Chromatography* ⟨621⟩)—The liquid chromatograph is equipped with a 254-nm detector and a 3.9-mm × 30-cm column that contains packing L1 and is maintained at a temperature of 40°. The flow rate is about 1.5 mL per minute. Chromatograph the *Standard preparation*, and record the peak responses as directed under *Procedure:* the column efficiency determined from the analyte peak is not less than 2500 theoretical plates, the tailing factor is not more than 2.0, the capacity factor is not less than 7.2, and the relative standard deviation for replicate injections is not more than 1%.

Procedure—Separately inject equal volumes (about 10 µL) 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 $C_{13}H_8F_2O_3$ in the portion of Diflunisal taken by the formula:

$$250C(r_U/r_S)$$

in which C is the concentration, in mg per mL, of USP Diflunisal RS in the *Standard preparation*, and r_U and r_S are the peak responses of the major peaks 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
DIFLUNISAL	Documentary Standards Support	SM22020 Small Molecules 2

Chromatographic Database Information: Chromatographic Database

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

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