Acetazolamide Compounded Oral Suspension

DEFINITION

Acetazolamide Compounded Oral Suspension contains NLT 90.0% and NMT 110.0% of the labeled amount of acetazolamide ($C_4H_6N_4O_3S_2$).

Prepare Acetazolamide Compounded Oral Suspension, 25 mg/mL, as follows (see *Pharmaceutical Compounding—Nonsterile Preparations* ⟨795⟩).

Acetazolamide	2.5 g
Vehicle: a 1:1 mixture of Vehicle for Oral Solution, *NF* (regular or sugar-free), and Vehicle for Oral Suspension, *NF*, or Cherry Syrup, *NF*, a sufficient quantity to make	100 mL

If using tablets, place in a mortar and comminute to a fine powder, or add *Acetazolamide* powder. Add about 20 mL of the *Vehicle*, and mix to a uniform paste. Add the *Vehicle* in small portions almost to volume, and mix thoroughly after each addition. Transfer the contents of the mortar, stepwise and quantitatively, to a calibrated bottle. Add enough liquid *Vehicle* to bring to final volume, and mix well.

ASSAY

- **PROCEDURE**

Mobile phase: Dissolve 4.1 g of anhydrous sodium acetate in 950 mL of water, and add 20 mL of methanol and 30 mL of acetonitrile. Adjust with glacial acetic acid to a pH of 4.0.

Standard stock solution: Transfer about 25 mg of USP Acetazolamide RS, accurately weighed, to a 50-mL volumetric flask, add 5.0 mL of 0.5 N sodium hydroxide, and mix to dissolve. Dilute with water to volume, and mix.

Standard solution: 250 µg/mL of USP Acetazolamide RS from the *Standard stock solution* in water

Sample solution: 250 µg/mL of acetazolamide from Oral Suspension in *Mobile phase*. Agitate the container of Oral Suspension for 30 min on a rotating mixer, remove a 5-mL sample, and store in a clear glass vial at −70° until analyzed. At the time of analysis, remove the sample from the freezer, allow to reach room temperature, and mix with a vortex mixer for 30 s. Pipet 1.0 mL of this solution to a 100-mL volumetric flask, and dilute with *Mobile phase* to volume.

Chromatographic system

(See *Chromatography* ⟨621⟩, *System Suitability*.)

Mode: LC

Detector: UV 254 nm

Column: 4.6-mm × 25-cm; 5-µm packing L1

Flow rate: 2 mL/min

Injection volume: 20 µL

System suitability

Sample: *Standard solution*

[NOTE—The retention time for the acetazolamide peak is about 3 min.]

Suitability requirements

Relative standard deviation: NMT 1.1% for replicate injections

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of the labeled amount of acetazolamide ($C_4H_6N_4O_3S_2$) in the portion of Oral Suspension taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times 100$$

r_U = peak response from the *Sample solution*

r_S = peak response from the *Standard solution*

C_S = concentration of USP Acetazolamide RS in the *Standard solution* (µg/mL)

C_U = nominal concentration of acetazolamide in the *Sample solution* (µg/mL)

Acceptance criteria: 90.0%–110.0%

SPECIFIC TESTS

- **pH** ⟨791⟩: 4.0–5.0 (Vehicle for Oral Solution and Vehicle for Oral Suspension), 3.1–3.9 (Cherry Syrup)

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Package in tight, light-resistant containers. Store at controlled room temperature, or in a refrigerator.
- **BEYOND-USE DATE:** NMT 60 days after the day on which it was compounded when stored at controlled room temperature, or in a refrigerator
- **LABELING:** Label it to state that it is to be well shaken before use, and to state the *Beyond-Use Date*.
- **USP REFERENCE STANDARDS** ⟨11⟩
  USP Acetazolamide RS

Acetazolamide Tablets

DEFINITION

Acetazolamide Tablets contain NLT 95.0% and NMT 105.0% of the labeled amount of acetazolamide ($C_4H_6N_4O_3S_2$).

IDENTIFICATION

- **A. INFRARED ABSORPTION** ⟨197K⟩

Sample: Extract a quantity of finely powdered Tablets, equivalent to about 500 mg of acetazolamide, with 50 mL of acetone. Filter, and add sufficient solvent hexane to the filtrate to cause formation of a heavy, white precipitate. Collect the precipitate on a medium-porosity, sintered-glass funnel, and dry with suction.

Acceptance criteria: Meet the requirements

- **B.** The retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the *Assay*.

ASSAY

- **PROCEDURE**

Mobile phase: Dissolve 4.1 g of anhydrous sodium acetate in 950 mL of water, add 20 mL of methanol and 30 mL of acetonitrile, and mix. Adjust with glacial acetic acid to a pH of 4.0.

Standard solution: 0.1 mg/mL of USP Acetazolamide RS prepared as follows. Transfer USP Acetazolamide RS into a suitable volumetric flask, add 0.5 N sodium hydroxide equivalent to 10% of the final volume, and dilute with water to volume.

Sample stock solution: Nominally equivalent to 1.0 mg/mL of acetazolamide prepared as follows. Transfer a portion of the powder, from NLT 20 Tablets, equivalent to 100 mg acetazolamide into a 100-mL volumetric flask. Add 10 mL of 0.5 N sodium hydroxide, sonicate for 5 min, cool to room temperature, and dilute with water to volume. Filter a portion of this solution, discarding the first 20 mL of the filtrate.

Sample solution: Nominally equivalent to 0.1 mg/mL of acetazolamide prepared as follows. Transfer 10.0 mL of *Sample stock solution* and 10 mL of 0.5 N sodium hydroxide to a 100-mL volumetric flask, and dilute with water to volume.

Chromatographic system

(See *Chromatography* ⟨621⟩, *System Suitability*.)