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# Acetazolamide Oral Suspension

General Notices

*NOTE: This monograph has been developed to cover unlicensed formulations.*

**Action and use**

Carbonic anhydrase inhibitor; diuretic; treatment of glaucoma and ocular hypertension; treatment of mountain sickness.

## DEFINITION

Acetazolamide Oral Suspension is a suspension containing Acetazolamide in a suitable flavoured vehicle.

*The oral suspension complies with the requirements stated under Oral Liquids and with the following requirements. Where appropriate, the oral suspension also complies with the requirements stated under Unlicensed Medicines.*

**Content of acetazolamide, $C_4H_6N_4O_3S_2$**

95.0 to 105.0% of the stated amount.

*Shake the oral suspension vigorously before carrying out the following tests*.

## IDENTIFICATION

A. In the Assay, the chromatogram obtained with solution (1) shows a peak with the same retention time as the principal peak in the chromatogram obtained with solution (2).
B. To a quantity of the oral suspension containing 25 mg of Acetazolamide add 5 mL of *water*, 0.15 mL of 1M *sodium hydroxide* and 0.1 mL of *weak copper sulfate solution*. A greenish blue colour or precipitate is produced.

## TESTS

**Acidity**

pH, 4.0 to 5.0, Appendix V L.

**Dissolution**

Complies with the requirements stated under Unlicensed Medicines, Oral Suspensions, using 900 mL of 0.01M *hydrochloric acid* as the dissolution medium and rotating the paddle at 50 revolutions per minute. Use a volume of the oral suspension containing one dose.

**Related substances**

Carry out the method for *thin-layer chromatography*, Appendix III A, using the following solutions.

(1) Shake a quantity of the oral suspension containing 50 mg of Acetazolamide for 20 minutes with 10 mL of a mixture of equal volumes of *ethanol (96%)* and *ethyl acetate* and filter.
(2) Dilute 1 volume of solution (1) to 100 volumes with a mixture of equal volumes of *ethanol (96%)* and *ethyl acetate*.

CHROMATOGRAPHIC CONDITIONS

(a) Use as the coating *silica gel $GF_{254}$*.

(b) Use the mobile phase as described below. Use the tank without lining the walls and allow to saturate for 1 hour before development.
(c) Apply 20 µL of each solution.
(d) Develop the plate to 15 cm.
(e) After removal of the plate, allow it to dry in air and examine under *ultraviolet light (254 nm)*.

MOBILE PHASE

A freshly prepared mixture of 20 volumes of 13.5M *ammonia*, 30 volumes of *ethyl acetate* and 50 volumes of *propan-2-ol*.

LIMITS

Any *secondary spot* in the chromatogram obtained with solution (1) is not more intense than the spot in the chromatogram obtained with solution (2) (1%).

## ASSAY

Carry out the method for *liquid chromatography*, Appendix III D, using the following solutions.

(1) To a weighed quantity of the oral suspension containing 0.25 g of Acetazolamide add 50 mL of *methanol* and mix with the aid of ultrasound for 5 minutes. Add sufficient 0.01M *sodium hydroxide* to produce 200 mL and mix with the aid of shaking for 15 minutes; dilute 10 mL of the resulting solution to 100 mL with *water* and filter through a 0.45-µm filter.
(2) To 0.25 g of *acetazolamide BPCRS* add 50 mL of *methanol* and mix with the aid of ultrasound for 5 minutes. Add sufficient 0.01M *sodium hydroxide* to produce 200 mL and mix with the aid of shaking for 15 minutes; dilute 10 mL of the resulting solution to 100 mL with *water* and filter through a 0.45-µm filter.

CHROMATOGRAPHIC CONDITIONS

(a) Use a stainless steel column (10 cm × 4.6 mm) packed with *aminopropylsilyl silica gel for chromatography* (2.7 µm) (Ascentis Express RP-Amide is suitable).
(b) Use isocratic elution and the mobile phase described below.
(c) Use a flow rate of 1 mL per minute.
(d) Use a column temperature of 30°.
(e) Use a detection wavelength of 254 nm.
(f) Inject 10 µL of each solution.

MOBILE PHASE

5 volumes of *methanol* and 95 volumes of a 0.0631% w/v solution of *ammonium formate*, adjusted to pH 3.5 with *formic acid*.

DETERMINATION OF CONTENT

Determine the *weight per mL* of the oral suspension, Appendix V G, and calculate the content of $C_4H_6N_4O_3S_2$, weight in volume, using the declared content of $C_4H_6N_4O_3S_2$ in *acetazolamide BPCRS*.

## STORAGE

Acetazolamide Oral Suspension should be protected from light.