Edition: BP 2025 (Ph. Eur. 11.6 update)

Cyclizine Tablets

General Notices

Action and use

Histamine H_1 receptor antagonist; antihistamine.

DEFINITION

Cyclizine Tablets contain Cyclizine Hydrochloride.

The tablets comply with the requirements stated under Tablets and with the following requirements.

Content of cyclizine hydrochloride, $C_{18}H_{22}N_2,HCl$

95.0 to 105.0% of the stated amount.

IDENTIFICATION

A. Extract a quantity of the powdered tablets containing 0.1 g of Cyclizine Hydrochloride with 10 mL of *ethanol (96%)*, filter and evaporate the filtrate to dryness. The *infrared absorption spectrum* of the residue, Appendix II A, is concordant with the *reference spectrum* of Cyclizine Hydrochloride *(RS 076)*.
B. Extract a quantity of the powdered tablets containing 0.5 g of Cyclizine Hydrochloride with 20 mL of *water* and filter. The filtrate yields reaction A characteristic of *chlorides*, Appendix VI.

TESTS

Related substances

Carry out the method for *gas chromatography*, Appendix III B, using the following solutions prepared immediately before use.

(1) Triturate a quantity of the powdered tablets containing 0.20 g of Cyclizine Hydrochloride with 8 mL of *methanol*, add 2 mL of 1M *sodium hydroxide* and filter. Dilute 1 volume of the resulting solution to 4 volumes with *methanol*.
(2) Dilute 1 volume of solution (1) to 100 volumes with *methanol* and dilute 1 volume of the resulting solution to 5 volumes with *methanol*.
(3) 0.0025% w/v of *cyclizine hydrochloride BPCRS*, 0.0025% w/v of *1-methylpiperazine BPCRS* (impurity A) and 0.0025% w/v of *diphenylmethanol BPCRS* (impurity B) in *methanol*.

CHROMATOGRAPHIC CONDITIONS

(a) Use a fused silica column (25 m × 0.33 mm) coated with a 0.5-µm film of *phenyl(5)methyl(95)polysiloxane* (HP-5 is suitable).
(b) Use *helium* as the carrier gas with a constant flow rate of 1 mL per minute.
(c) Use the gradient system described below.
(d) Use a split injection ratio of 1:25.

(e) Use a flame ionisation detector at 290°.
(f) Inject 1 µL of each solution.
(g) The peaks elute in the order: methanol, 1-methylpiperazine, diphenylmethanol, cyclizine.

Time (minutes)	Temperature	Comment
0→14	100°→240°	linear gradient
14→16	240°→270°	linear gradient
16→30	270°	isocratic

SYSTEM SUITABILITY

Inject solution (3) six times. The relative standard deviation of each of the areas of the three principal peaks is not more than 5.0%.

The test is not valid unless in the chromatogram obtained with solution (3);

the *peak-to-valley ratio* between methanol and 1-methylpiperazine is at least 50;
the *resolution factor* between diphenylmethanol and cyclizine is at least 18.

LIMITS

In the chromatogram obtained with solution (1):

the area of any peak corresponding to 1-methylpiperazine (impurity A) is not greater than the peak corresponding to 1-methylpiperazine in solution (3) (0.5%);

the area of any peak corresponding to diphenylmethanol (impurity B) is not greater than the peak corresponding to diphenylmethanol in solution (3) (0.5%);

the area of any other *secondary peak* is not greater than the area of the principal peak in the chromatogram obtained with solution (2) (0.2%);

the sum of the areas of all *secondary peaks* is not greater than 5 times the area of the principal peak in the chromatogram obtained with solution (2) (1.0%).

Disregard any peak with an area less than 0.5 times that of the peak due to cyclizine in the chromatogram obtained with solution (2) (0.1%).

ASSAY

Weigh and powder 20 tablets. Shake a quantity of the powder containing 0.125 g of Cyclizine Hydrochloride with 400 mL of 0.05M *sulfuric acid* for 15 minutes. Add sufficient 0.05M *sulfuric acid* to produce 500 mL, filter, dilute 5 mL of the filtrate to 100 mL with 0.05M *sulfuric acid* and measure the *absorbance* of the resulting solution at the maximum at 225 nm, Appendix II B. Calculate the content of $C_{18}H_{22}N_2$,HCl taking 390 as the value of A(1%, 1 cm) at the maximum at 225 nm.