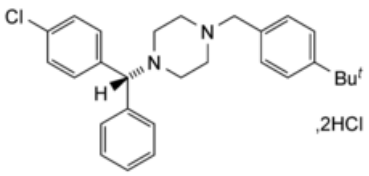
Edition: BP 2025 (Ph. Eur. 11.6 update)

Buclizine Hydrochloride

General Notices



$C_{28}H_{33}ClN_2,2HCl$ 506.0 *129-74-8*

Action and use

Histamine H_1 receptor antagonist; antiemetic.

DEFINITION

Buclizine Hydrochloride is (*RS*)-1-(4-*tert*-butylbenzyl)-4-(4-chlorobenzhydryl)piperazine dihydrochloride. It contains not less than 99.0% and not more than 100.5% of $C_{28}H_{33}ClN_2,2HCl$, calculated with reference to the dried substance.

CHARACTERISTICS

A white or slightly yellowish, crystalline powder.

Practically insoluble in *water*; sparingly soluble in *propane-1,2-diol*; very slightly soluble in *ethanol (96%)*.

IDENTIFICATION

A. The *infrared absorption spectrum*, Appendix II A, is concordant with the *reference spectrum* of buclizine hydrochloride *(RS 032)*.
B. A 0.25% w/v solution in *ethanol (50%)* yields reaction A characteristic of *chlorides*, Appendix VI.

TESTS

Related substances

Carry out the method for *liquid chromatography*, Appendix III D, using four solutions in the initial mobile phase containing (1) 0.0010% w/v of the substance being examined, (2) 0.50% w/v of the substance being examined, (3) 0.0010% w/v of *1,4-bis(4-chlorobenzhydryl)piperazine BPCRS* and (4) 0.50% w/v of *buclizine hydrochloride impurity standard BPCRS*.

The chromatographic procedure may be carried out using a stainless steel column (20 cm × 4 mm) packed with *octadecylsilyl silica gel for chromatography* (10 µm) (Nucleosil C18 is suitable). Use as the initial mobile phase *0.01M*

sodium heptanesulfonate in a mixture of 55 volumes of *water* and 45 volumes of *acetonitrile* and as the final mobile phase *0.01M sodium heptanesulfonate* in a mixture of 20 volumes of *water* and 80 volumes of *acetonitrile*. Before use, adjust the pH of both the initial and final mobile phases to 4.0 with *1M orthophosphoric acid*. Carry out a linear gradient elution with a flow rate of 2 mL per minute for 30 minutes and maintain the final mobile phase for 10 minutes with the same flow rate. Use a detection wavelength of 230 nm.

The test is not valid unless the chromatogram obtained with solution (4) closely resembles the chromatogram supplied with *buclizine hydrochloride impurity standard BPCRS*.

In the chromatogram obtained with solution (2) the area of any peak corresponding to 1,4-bis(4-chlorobenzhydryl)-piperazine is not greater than the area of the peak obtained in the chromatogram with solution (3) and the area of any other *secondary peak* is not greater than the area of the peak in the chromatogram obtained with solution (1).

Loss on drying

When dried to constant weight at 100° to 105°, loses not more than 1.0% of its weight. Use 1 g.

Sulfated ash

Not more than 0.1%, Appendix IX A.

ASSAY

Carry out Method I for *non-aqueous titration*, Appendix VIII A, using 0.4 g and determining the end point potentiometrically. Each mL of *0.1M perchloric acid VS* is equivalent to 25.30 mg of $C_{28}H_{33}ClN_2,2HCl$.

IMPURITIES

A. 1,4-bis(4-chlorobenzhydryl)piperazine,
B. 4-chlorobenzhydrol, 1-(4-chlorobenzhydryl)piperazine,
4-chlorobenzophenone.