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

Levomepromazine Tablets

General Notices

Action and use

Dopamine receptor antagonist; neuroleptic.

DEFINITION

Levomepromazine Tablets contain Levomepromazine Maleate.

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

Content of levomepromazine maleate, $C_{19}H_{24}N_2OS,C_4H_4O_4$

95.0 to 105.0% of the stated amount.

IDENTIFICATION

A. To a quantity of the powdered tablets containing 50 mg of Levomepromazine Maleate add 10 mL of *water* and 2 mL of 1M *sodium hydroxide*, shake, extract with 15 mL of *ether* and allow to separate. Wash the ethereal layer with 5 mL of *water*, filter through phase-separating paper (Whatman 1 PS is suitable) containing *anhydrous sodium sulfate*, evaporate the ether to dryness and dry the residue at 100° for 3 hours. The *infrared absorption spectrum* of the dried residue, Appendix II A, is concordant with the *reference spectrum* of levomepromazine (*RS 404*).
B. Carry out the method for *thin-layer chromatography*, Appendix III A, using the following solutions.
(1) Mix a quantity of the powdered tablets containing 0.2 g of Levomepromazine Maleate with 10 mL of a mixture of 1 volume of *water* and 9 volumes of *acetone*, shake with the aid of ultrasound for 5 minutes, allow to stand and use the clear supernatant liquid.
(2) 0.6% w/v of *maleic acid* in *anhydrous formic acid*.

CHROMATOGRAPHIC CONDITIONS

(a) Use as the coating *TLC silica gel* F_{254} (Macherey-Nagel plates are suitable).
(b) Use the mobile phase as described below.
(c) Apply 10 µL of each solution.
(d) Develop the plate to 15 cm.
(e) After removal of the plate, dry at 120° for 10 minutes and examine under *ultraviolet light (254 nm)*.

MOBILE PHASE

3 volumes of *water*, 7 volumes of *anhydrous formic acid* and 90 volumes of *di-isopropyl ether*.

CONFIRMATION

The chromatogram obtained with solution (1) shows a spot remaining on the line of application and a spot which is similar in position to the principal spot in the chromatogram obtained with solution (2).

TESTS

Dissolution

Comply with the requirements for Monographs of the British Pharmacopoeia in the *dissolution test for tablets and capsules*, Appendix XII B1.

TEST CONDITIONS

(a) Use Apparatus 2, rotating the paddle at 50 revolutions per minute.
(b) Use 500 mL of 0.1M *hydrochloric acid*, at a temperature of 37°, as the medium.

PROCEDURE

(1) After 30 minutes withdraw a 10 mL sample of the medium and measure the *absorbance* of the filtered sample, suitably diluted with the dissolution medium if necessary, at the maximum at 311 nm, Appendix II B using 0.1M *hydrochloric acid* in the reference cell.
(2) Measure the *absorbance* of a suitable solution of *levomepromazine maleate BPCRS* at the maximum at 311 nm, Appendix II B, using 0.1M *hydrochloric acid* in the reference cell.

DETERMINATION OF CONTENT

Calculate the total content of levomepromazine maleate, $C_{19}H_{24}N_2OS,C_4H_4O_4$, in the medium from the absorbances obtained and using the declared content of $C_{19}H_{24}N_2OS,C_4H_4O_4$ in *levomepromazine maleate BPCRS*. The amount of levomepromazine maleate released is not less than 60% of the stated amount.

Related substances

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

(1) Mix a quantity of the powdered tablets containing 0.1 g of Levomepromazine Maleate with 10 mL of a mixture of 1 volume of 18M *ammonia* and 99 volumes of *methanol*, shake with the aid of ultrasound for 5 minutes, mix, filter (Whatman No. 40 paper is suitable), discarding the first portion of filtrate, and use the filtrate.
(2) Dilute 1 volume of solution (1) to 200 volumes with the same solvent.

CHROMATOGRAPHIC CONDITIONS

(a) Use as the coating *TLC silica gel* GF_{254}.
(b) Use the mobile phase as described below.
(c) Apply 10 µL of each solution.
(d) Develop the plate to 15 cm.
(e) After removal of the plate, dry in air and examine under *ultraviolet light (254 nm)*.

MOBILE PHASE

5 volumes of *diethylamine*, 10 volumes of *acetone* and 85 volumes of *toluene*.

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) (0.5%).

ASSAY

Carry out the following procedure protected from light. Weigh and powder 20 tablets. To a quantity of the powdered tablets containing 50 mg of Levomepromazine Maleate add 15 mL of 0.2M *methanolic ammonia*, stir for 2 minutes, filter and collect the filtrate. Repeat the extraction with a further 3 successive 15-mL quantities of 0.2M *methanolic ammonia*, grinding the residue with a glass rod before extraction. Dilute the combined filtrates to 100 mL with 0.2M *methanolic ammonia*, mix and dilute 10 volumes of the solution to 100 volumes with *methanol* and further dilute 10 volumes of this

solution to 100 volumes with the same solvent. Measure the *absorbance* of this solution at the maximum at 254 nm, Appendix II B, using *methanol* in the reference cell. Measure the *absorbance* of a 0.0005% w/v solution of *levomepromazine maleate BPCRS* in 0.002M *methanolic ammonia* at the same wavelength using *methanol* in the reference cell and calculate the content of $C_{19}H_{24}N_2OS,C_4H_4O_4$ in the tablets using the declared content of $C_{19}H_{24}N_2OS,C_4H_4O_4$ in *levomepromazine maleate BPCRS*.

STORAGE

Levomepromazine Tablets should be protected from light.