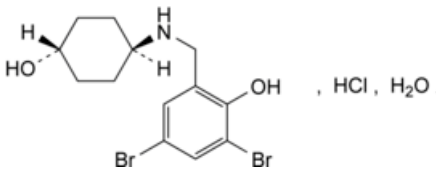
Edition: BP 2025 (Ph. Eur. 11.6 update)

# Dembrexine Hydrochloride Monohydrate

General Notices

*(Dembrexine Hydrochloride Monohydrate for Veterinary Use, Ph. Eur. monograph 2169)*




, HCl , $H_2O$

$C_{13}H_{18}Br_2ClNO_2,H_2O$ 433.6 *52702-51-9*

Ph Eur

## DEFINITION

*trans*-4-[(3,5-Dibromo-2-hydroxybenzyl)amino]cyclohexanol hydrochloride monohydrate.

**Content**

98.0 per cent to 101.0 per cent (anhydrous substance).

## CHARACTERS

**Appearance**

White or almost white, crystalline powder.

**Solubility**

Slightly soluble in water, freely soluble in methanol, slightly soluble in anhydrous ethanol.

## IDENTIFICATION

A. Infrared absorption spectrophotometry (2.2.24).

*Comparison* *dembrexine hydrochloride monohydrate CRS*.

B. It gives reaction (a) of chlorides (2.3.1).

## TESTS

**Related substances**

Liquid chromatography (2.2.29). *Prepare the solutions immediately before use.*

*Test solution* Dissolve 25.0 mg of the substance to be examined in *methanol R* and dilute to 10.0 mL with the same solvent.

*Reference solution (a)* Dilute 1.0 mL of the test solution to 50.0 mL with *methanol R*. Dilute 1.0 mL of this solution to 10.0 mL with *methanol R*.

*Reference solution (b)* Dissolve 2.5 mg of *tribromophenol R* (impurity E) in *methanol R* and dilute to 50.0 mL with the same solvent. To 1.0 mL of this solution add 1.0 mL of the test solution and dilute to 10.0 mL with *methanol R*.

*Blank solution* *Methanol R*.

*Column*:

— *size*: *l* = 0.15 m, Ø = 4.0 mm;

— *stationary phase*: *end-capped octadecylsilyl silica gel for chromatography R* (5 µm);

— *temperature*: 40 °C.

*Mobile phase*:

— *mobile phase A*: dissolve 1.0 g of *potassium dihydrogen phosphate R* in 900 mL of *water R*, adjust to pH 7.4 with a 0.5 M potassium hydroxide solution prepared from *potassium hydroxide R* and dilute to 1000 mL with *water R*; mix 80 volumes of this solution with 20 volumes of *methanol R*;

— *mobile phase B*: *methanol R*, *acetonitrile R* (20:80 *V/V*);

| Time (min) | Mobile phase A (per cent *V/V*) | Mobile phase B (per cent *V/V*) |
|---|---|---|
| 0 - 7 | 75 | 25 |
| 7 - 15 | 75 → 50 | 25 → 50 |
| 15 - 20 | 50 | 50 |
| 20 - 25 | 50 → 75 | 50 → 25 |
| 25 - 30 | 75 | 25 |

*Flow rate* 1.0 mL/min.

*Detection* Spectrophotometer at 250 nm.

*Injection* 10 µL.

*Relative retention* With reference to dembrexine (retention time = about 6 min): impurity A = about 2.3; impurity B = about 1.3.

*System suitability* Reference solution (b):

— *resolution*: minimum 2 between the peaks due to dembrexine and impurity E.

*Limits*:

— *impurities A, B*: for each impurity, not more than the area of the principal peak in the chromatogram obtained with reference solution (a) (0.2 per cent);

— *unspecified impurities*: for each impurity, not more than the area of the principal peak in the chromatogram obtained with reference solution (a) (0.2 per cent);

— *total*: not more than 2.5 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.5 per cent);

— *disregard limit*: 0.5 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.1 per cent).

**Water** (*2.5.12*)

3.5 per cent to 5.0 per cent, determined on 0.500 g.

**Sulfated ash** (*2.4.14*)

Maximum 0.1 per cent, determined on 1.0 g.

## ASSAY

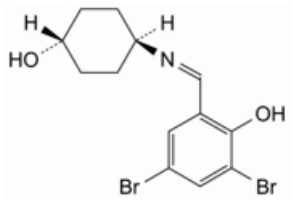
Dissolve 0.350 g in 40 mL of *methanol R*. Add 40 mL of *acetone R* and 1 mL of *0.1 M hydrochloric acid*. Carry out a potentiometric titration (*2.2.20*) using *0.1 M sodium hydroxide*. Read the volume added between the 2 points of inflexion.

1 mL of *0.1 M sodium hydroxide* is equivalent to 41.56 mg of $C_{13}H_{18}Br_2ClNO_2$.

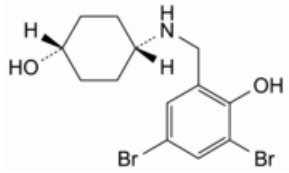
## IMPURITIES

*Specified impurities* A, B.

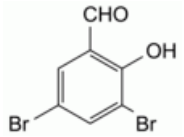
*Other detectable impurities (the following substances would, if present at a sufficient level, be detected by one or other of the tests in the monograph. They are limited by the general acceptance criterion for other/unspecified impurities and/or by the general monograph Substances for pharmaceutical use (2034). It is therefore not necessary to identify these impurities for demonstration of compliance. See also 5.10. Control of impurities in substances for pharmaceutical use)* C, D, E.



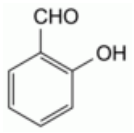

A. *trans*-4-[(3,5-dibromo-2-hydroxybenzylidene)amino]cyclohexanol,



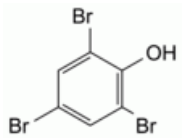

B. *cis*-4-[(3,5-dibromo-2-hydroxybenzyl)amino]cyclohexanol,




C. 3,5-dibromo-2-hydroxybenzaldehyde,




D. 2-hydroxybenzaldehyde (salicylaldehyde),




E. 2,4,6-tribromophenol.

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