CINCHONA BARK
FOR HOMOEOPATHIC PREPARATIONS

CHINA RUBRA
FOR HOMOEOPATHIC PREPARATIONS

Cinchona cortex ad praeparationes homoeopathicas

Other latin names used in homoeopathy: **China**
Cinchona succirubra
Quinquina

DEFINITION

The herbal drug complies with the requirements of monograph *Cinchona bark (0174*).

STOCK

DEFINITION

Cinchona bark mother tincture complies with the requirements of the general technique for the preparation of mother tinctures (see *Homoeopathic Preparations (1038)* and French Pharmacopoeia Authority Supplement). The mother tincture is prepared with *ethanol (*65 percent *V/V)*, using the dried bark of *Cinchona pubescens* Vahl (*Cinchona succirubra* Pavon) or of its varieties or hybrids.

Content adjusted value: minimum 0.30 per cent *m/m*; maximum 0.65 per cent *m/m* of total alkaloids, expressed as quinine ($C_{20}H_{24}N_2O_2$; M_r 324.4).

CHARACTERS

Appearance: red-brown liquid.

IDENTIFICATION

Thin-layer chromatography (*2.2.27*).

Test solution. Add a few drops of *concentrated ammonia R* to 10 mL of mother tincture and extract with 2 quantities, each of 10 mL, of *methylene chloride R.* Combine the organic phases and evaporate to dryness on a water-bath. Dissolve the residue in 10 mL of *ethanol* (*96 per cent*) *R.*

Reference solution. Dissolve 0.5 mg of *quinidine R*, 10 mg of *cinchonine R*, 10 mg of *cinchonidine R* and 17.5 mg of *quinine R* in 25 mL of *ethanol (96 per cent) R*.

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.

Plate: *TLC silica gel plate R.*

Mobile phase: *diethylamine R, methylene chloride R* (10:90 *V/V*).

Application: 10 µL, as bands.

Development: over a path of 15 cm.

Drying: heat for 10 min at 100 - 150 °C. Allow to cool.

Detection A: spray with *anhydrous formic acid R.* Examine in ultraviolet light at 365 nm.

Results A: see below the sequence of fluorescent zones present in the chromatograms of the reference solution and the test solution. Furthermore other fluorescent zones may be present in the test solution chromatogram.

Top of the plate	
Quinidine: an intense blue zone Quinine : an intense blue zone	An intense blue zone (quinidine) An intense blue zone (quinine)
Reference solution	**Test solution**

Detection B: spray with *iodoplatinate reagent R.* Examine in daylight.

Results B: see below the sequence of zones present in the chromatograms of the reference solution and the test solution

Top of the plate	
Cinchonine: a purple zone, turning purple-grey Quinidine: a purple zone, turning purple-grey Cinchonidine: an intense dark blue zone Quinine: a purple zone, turning purple-grey	A purple zone, turning purple-grey (cinchonine) A purple zone, turning purple-grey (quinidine) (may be absent) An intense dark blue zone (cinchonidine) A purple zone, turning purple-grey (quinine)
Reference solution	**Test solution**

TESTS

Ethanol (*2.9.10*): 60 per cent *V/V* to 70 per cent *V/V*.

Dry residue (*2.8.16*): minimum 1.5 per cent *m/m*.

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.

ASSAY

Evaporate the ethanol from 10.0 g of mother tincture on a water-bath. Render the aqueous residue alkaline with *dilute ammonia R.* Extract with fractions of 15 mL of *methylene chloride R* until the alkaloids have been thoroughly extracted. Combine the organic phases and dry over *anhydrous sodium sulfate R.* Filter. Wash the filter with 15 mL of *methylene chloride R.* Combine the filtrate and the washing solution and evaporate on a water-bath. Dissolve the dry residue in 10 mL of *glacial acetic acid R* and titrate with *0.1 M perchloric acid*, using *crystal violet R* as indicator.

1 mL of *0.1 M perchloric acid* is equivalent to 16.2 mg of quinine.

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.