

IPECACUANHA FOR HOMOEOPATHIC PREPARATIONS

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Cephaelis acuminata and Cephaelis ipecacuanha ad praeparationes homoeopathicas

Other Latin name used in homoeopathy: **Radix**

The herbal drug complies with the monograph *Ipecacuanha root (094)*.

STOCK

DEFINITION

Ipecacuanha 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 per cent V/V) using dried, fragmented, underground parts of *Cephaelis ipecacuanha* (Brot.) A. Rich., known as Matto Grosso Ipecacuanha, or *Cephaelis acuminata* Karsten, known as Costa Rica Ipecacuanha, or using a mixture of both species.

Adjusted content: minimum 0.10 per cent and maximum 0.30 per cent *m/m* of total alkaloids, expressed as emetine (C₂₉H₄₀N₂O₄; M_r 480.7)

CHARACTERS

Appearance: reddish-brown liquid.

IDENTIFICATION

Thin layer chromatography (2.2.27).

Test solution. Evaporate 2 mL of mother tincture on a water-bath. Dissolve the residue in 1 mL of *concentrated ammonia R* and 5 mL of *ether R*. Stir vigorously with a glass rod and allow to stand for 10 min. Filter. The test solution is composed of the organic layer.

Reference solution. Dissolve 2.5 mg of *hydrochloride emetine CRS* and 3 mg of *hydrochloride cephaeline CRS* in *methanol R* and dilute to 20 mL with the same solvent.

Plate: TLC silica gel plate *R*.

Mobile phase: *concentrated ammonia R*, *methanol R*, *ethyl acetate R*, *toluene R* (2:15:18:65 V/V/V/V).

Development: over a path of 10 cm.

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

Application: 10 µL, as bands.

Drying: in air.

Detection A: spray with a 5 g/L solution of *iodine R* in *ethanol (96 per cent) R* and heat at 60 °C for 10 min. Examine in ultraviolet light at 365 nm.

Results A: see below the sequence of fluorescent zones present in the chromatograms obtained with the reference solution and the test solution.

Top of the plate	
Emetine: an intense yellow zone Cephaeline: a light blue zone	A yellow zone (emetine) A light blue zone (cephaeline)
Reference solution	Test solution

Detection B: examine in daylight.

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

Top of the plate	
Emetine: a yellow zone Cephaeline: a light brown zone	A yellow zone (emetine) A light brown zone (cephaeline)
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 0.90 per cent *m/m*.

ASSAY

In a flask, evaporate 75.0 g of mother tincture to dryness. Add 100 mL of *ether R* to the residue. Shake for 5 min and add 5 mL of *dilute ammonia R1*. Shake the flask frequently for 1 h and add 5 mL of *water R*. Shake vigorously and transfer the ether layer into a second flask while filtering over a plug of cotton. Wash the residue from the first flask with two quantities each of 25 mL of *ether R* and each time filter on the same plug of cotton. Combine the ether solutions and evaporate the ether by distillation. Dissolve the residue in 2 mL of *ethanol (90 per cent V/V) R*, evaporate the ethanol to dryness and heat at 100 °C for 5 min. Dissolve the residue in 5 mL of previously neutralised *ethanol (90 per cent V/V) R* while heating on a water-bath. Add 15.0 mL of *hydrochloric acid 0.1 M* and titrate the excess of acid with *sodium hydroxide 0.1 M* using 0.5 mL of *methyl red mixed solution R* as indicator.

1 mL of *hydrochloric acid 0.1 M* is equivalent to 24.03 mg of total alkaloids, expressed as emetine.

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