

**COFFEE RAW
FOR HOMOEOPATHIC PREPARATIONS**

**COFFEA CRUDA
FOR HOMOEOPATHIC PREPARATIONS**

***Coffea arabica* ad praeparationes homoeopathicas**

DEFINITION

The herbal drug complies with the requirements of monograph *Coffee, raw*.

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DEFINITION

Raw coffee mother tincture complies with the requirements of the general technique for the preparation of the mother tincture (see *Homeopathic Preparations (1038)* and French Pharmacopoeia Supplement). The mother tincture is prepared with ethanol (65 per cent V/V), using the dried, green seed of *Coffea arabica* L., of *Coffea canephora* Pierre ex Fröhner and varieties of these species.

Content: minimum 0.06 per cent *m/m* of caffeine ($C_8H_{10}N_4O_2$; M_r 194.2).

CHARACTERS

Appearance: brownish-yellow liquid.

IDENTIFICATION

Thin-layer chromatography (2.2.27).

Test solution: Mother tincture.

Reference solution (a): Dissolve 10 mg of *caffeine R* in 10 mL of *ethanol (60 per cent V/V) R*.

Reference solution (b): Dissolve 50 mg of *theophylline R* in 10 mL of 1 M *sodium hydroxide*.

Plate: TLC silica gel plate *R*.

Mobile phase: glacial acetic acid *R*, water *R*, butanol *R* (10:10:40 V/V/V).

Application: 20 µL as bands.

Development: over a path of 10 cm.

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

Drying: in air.

Detection A: 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	
	A pale blue zone A brown zone within a greenish-blue zone A brownish-yellow zone A greenish-blue zone
Reference solution	Test solution

Detection B: first spray with a mixture of 2 g of *iodine R* and 1 g of *potassium iodine R* in 100 mL of *ethanol (96 per cent) R* then with a mixture of 10 volumes of *hydrochloric acid R1* and 10 volumes of *ethanol (96 per cent) R*. 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	
Theophylline: a purplish-brown zone Caffeine: a purplish-brown zone	A purplish-brown zone (caffeine)
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 1.0 per cent *m/m*.

ASSAY

Liquid chromatography (2.2.29).

Test solution. Take 5.00 g of mother tincture and dilute to 100.0 mL with the mobile phase.

Reference solution. In a 100.0 mL volumetric flask, dissolve 0.025 g of *theophylline R* and 0.030 g of *caffeine R* in the mobile phase and dilute to 100.0 mL with the same solvent. Place 10.0 mL of this solution in a 100.0 mL volumetric flask and dilute to 100.0 mL with the mobile phase.

Column:

- size: $l = 0.250$ m, $\varnothing = 4.6$ mm,
- stationary phase: octadecylsilyl silica gel for chromatography R (5 μ m),
- temperature: room temperature.

Mobile phase: methanol R, water R (35:65 V/V).

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

Flow rate: 1 mL/min.

Detection: 272 nm.

Injection: 20 µL.

System suitability: reference solution.

Elution order: when the chromatographic procedure is carried out according to the prescribed conditions, the constituents elute following the order given for the preparation of the reference solution. Note the retention times of each constituent.

Locate caffeine in the test solution chromatogram using the retention time determined in the reference solution chromatogram.

Calculate the percentage content m/m of caffeine, from the expression:

$$\frac{A_1 \times m_2 \times 10}{A_2 \times m_1}$$

A_1 = area of the peak due to caffeine in the chromatogram obtained with the test solution,

A_2 = area of the peak due to caffeine in the chromatogram obtained with the reference solution,

m_1 = mass of the mother tincture sample, in grams,

m_2 = mass of caffeine in the reference solution, in grams.

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

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