ALOE CAPENSIS
FOR HOMOEOPATHIC PREPARATIONS

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Aloe ferox ad praeparationes homoeopathicas

DEFINITION

The herbal drug complies with the requirements of monograph *Aloes, cape (0258).*

STOCK

DEFINITION

Aloe capensis 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 concentrated and dried juice of the leaves of various species of *Aloe*, mainly *Aloe ferox* Miller and its hybrids.

Content: minimum 0.7 per cent *m/m* of hydroxyanthracene derivatives, expressed as barbaloin ($C_{21}H_{22}O_9$, M_r 418.4).

CHARACTERS

Appearance: dark brown liquid.

IDENTIFICATION

Thin-layer chromatography (*2.2.27*).

Examine the chromatograms obtained in the test for Aloe barbadensis.

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

Top of the plate	
Aloe-emodin: a violet-red zone	A violet-red zone (aloe-emodin) Three blue zones
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Barbaloin: a yellow zone	A yellow zone (barbaloin) Two yellow zones (aloinosides A and B) A blue zone (aloesine)
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Reference solution	**Test solution**

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

TESTS

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

Dry residue (*2.8.16*): minimum 7.0 per cent *m/m.*

Aloe barbadensis.

Thin-layer chromatography (*2.2.27*).

Test solution. Mother tincture.

Reference solution. Dissolve 50 mg of *barbaloin R* and 10 mg of *aloe-emodin R* in 10 mL of *methanol R*.

Plate: *TLC silica gel plate R.*

Mobile phase: *water R, methanol R, ethyl acetate R* (13:17:100 *V/V/V*).

Application: 5 µL as bands.

Development: over a path of 10 cm.

Drying: in air.

Detection: spray with a 100 g/L solution of *potassium hydroxide R.* Heat at 100-105 °C for 5-10 min. Examine in ultraviolet light at 365 nm.

Results: in the chromatogram obtained with the test solution, the presence of a violet, fluorescent zone immediately below the zone corresponding to barbaloin shows adulteration by *Aloe barbadensis* Miller.

ASSAY

Ultraviolet and visible absorption spectrophotometry (*2.2.25*).

Test solution. In a 100.0 mL volumetric flask, place 1.000 g of mother tincture and dilute to 100.0 mL with *water R*. Place 10.0 mL of this solution in a 100 mL round bottomed flask containing 1 mL of a 600 g/L solution of *ferric chloride R* and 6 mL of *hydrochloric acid R.* Heat under a reflux condenser for 4 h. Allow to cool. Transfer the solution into a separating funnel. Wash the flask successively with 4 mL of *water R*, 4 mL of *1 M sodium hydroxide* and 4 mL of *water R;* add the washings to the content of the flask. Shake the content of the separating funnel with 3 quantities, each of 20 mL of *peroxide-free ether R.* Combine the ether solutions, wash twice with 10 mL of *water R* and discard the washings. Dilute the organic layer to 100.0 mL with *peroxide-free ether R.* Take 20.0 mL of the solution and carefully evaporate them to dryness, under reduced pressure. Dissolve the residue in 10.0 mL of a 5 g/L solution of *magnesium acetate R* in *methanol R*.

Compensation liquid. Methanol R.

Measure the absorbance of the test solution at 512 nm, in comparison with the compensation liquid.

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Calculate the percentage content *m/m* of hydroxyanthracene derivatives, expressed as barbaloin, from the expression:

$$\frac{A \times 500}{255 \times m}$$

*i.*e. taking the absorbance of barbaloin, to be 255.
A = absorbance of the test solution at 512 nm,
m = mass of the mother tincture sample, in grams.

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