

**PARADISE PLANT
FOR HOMOEOPATHIC PREPARATIONS**

**MEZEREUM
FOR HOMOEOPATHIC PREPARATIONS**

***Daphne mezereum* ad praeparationes homoeopathicas**

DEFINITION

Bark of fresh stem of *Daphne mezereum* L.

CHARACTERS

Macroscopic characters described under identification.

IDENTIFICATION

Greyish, flexible, thin strips. Outside surface marked with lenticels and scars. Yellowish inside surface.

TESTS

Loss on drying (2.2.32): minimum 40.0 per cent, determined on 5.0 g of finely-cut drug by drying in an oven at 105 °C for 2 h.

STOCK

Paradise plant 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 bark of fresh stem of *Daphne mezereum* L.

Content: minimum 0.015 per cent *m/m* of daphnetin (C₉H₆O₄; *M_r* 178.1).

CHARACTERS

Appearance: greenish-yellow liquid.

IDENTIFICATION

A. Thin layer chromatography (2.2.27).

Test solution. Mother tincture.

Reference solution. Dissolve 5 mg of *umbelliferone R* and 5 mg of *scopoletin R* in 20 mL of *methanol R*.

Plate: TLC silica gel plate R.

Mobile phase: acetone R, toluene R (20:80 V/V).

Application: 20 µL, as bands.

Development: over a path of 10 cm.

Drying: in air.

Detection: examine in ultraviolet light at 365 nm.

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	
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Umbelliferone : a blue zone Scopoletin : a blue zone	A blue zone (umbelliferone) A purplish-blue zone
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Reference solution	Test solution

B. Thin layer chromatography (2.2.27).

Test solution. Mother tincture.

Reference solution. Dissolve 10 mg of *β-sitosterol R* and 10 mg of *oleanolic acid R* in 10 mL of *methanol R*.

Plate: TLC silica gel plate R.

Mobile phase: acetone R, toluene R (20:80 V/V).

Application: 20 µL, as bands.

Development: over a path of 10 cm.

Drying: in air.

Detection: spray with *vanillin reagent R*. Heat at 100-105 °C for 10 min. Examine in daylight.

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

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

Top of the plate	
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β -Sitosterol : a purplish zone Oleanolic acid: a purplish-blue zone -----	A purplish zone A more or less intense purplish zone A purplish-blue zone -----
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. In a 20.0 mL volumetric flask, place 10.000 g of a mother tincture sample, precisely weighed and dilute to 20.0 mL with *methanol R*.

Reference solution. In a 50.0 mL volumetric flask, dissolve 5.0 mg of *daphnetin R* in *methanol R* and dilute with the same solvent.

Column:

– size: $l = 0.25$ m, $\varnothing = 4.6$ mm.

– stationary phase: *octadecylsilyl silica gel for chromatography R* (5 μ m).

Mobile phase: *phosphoric acid R*, *acetonitrile R*, *water R* (1:100:900 V/V/V).

Flow rate: 1.5 mL/min.

Detection: spectrophotometer at 320 nm.

Injection: 10 μ L.

Retention time: *daphnetin R*, about 15 min.

System suitability: reference solution.

– symmetry factor: 1.3 – 1.5

Calculate the percentage content *m/m* of daphnetin, from the expression:

$$\frac{A_1 \times m_2 \times 40}{A_2 \times m_1}$$

A_1 = area of the peak of daphnetin in the chromatogram obtained with the test solution,

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

A_2 = area of the peak of daphnetin in the chromatogram obtained with the reference solution,
 m_1 = mass of the mother tincture sample, in grams,
 m_2 = mass of the sample of daphnetin in the reference solution, in grams.