

SALVIA CHAMELEAGNEA HERBA

Definition

Salvia Chameleagnea Herba consists of the leaves and smaller stems of *Salvia chameleagnea* Berg. (Lamiaceae)

Synonyms

Salvia paniculata L.

Vernacular names

Bloublomsalie, afrikaansesalie (A), purple sage

Description¹

Macroscopical



Figure 1 – Live plant

Much branched shrub 0,6-2m high; stems scabrid to pilose, gland dotted; **leaves** petiolate, simple, coriaceous, obovate to broadly elliptic, 15-30mm x 5-20mm, green, scabrid to slightly hairy, gland dotted on both surfaces; margin entire to denticulate, apex obtuse; **flowers** (Nov-May) borne in large panicles 100-300mm long, comprising 2-flowered verticils; calyx reddish-purple, gland dotted, enlarging to 12 mm long in fruit; corolla blue to purple, often with white on lower lip, 18-30mm long.



Figure 2 – line drawing

Microscopical



Figure 3 – microscopical features

¹ Codd, L.E. (1985). The genus *Salvia*. *Flora of Southern Africa* **28(4)**: 79-101.

Characteristic features are: the abundant unicellular clothing hairs of both leaf surfaces, ± 30 microns long with blunt apex; the occasional bicellular clothing hairs up to 60 microns in length; the numerous glandular trichomes of stem and both leaf surfaces, with unicellular stalk and large unicellular head ± 80 microns in diameter; the fairly common glandular hairs with elongated unicellular stalk and unicellular head ± 8 microns in diameter; the polygonal epidermal cells of the lower leaf surface lamina; the absence of calcium oxalate crystals.

1. Uni- and bicellular clothing hairs of stem and leaf, up to 60μ long; glandular trichome with unicellular stalk and large unicellular head $\pm 80\mu$ in diameter; glandular hair with elongated unicellular stalk and unicellular head $\pm 8\mu$ in diameter
2. Polygonal cells of lower leaf epidermis with striated cuticle
3. Clothing hair
4. Cells of upper leaf epidermis with sinuous walls and striated cuticle
5. T/S leaf lamina showing glandular and clothing hairs and cuticularised epidermis

Crude drug

Collected as required or available in the marketplace as bundles of fresh or dried material comprising leaves and smaller stems, with occasional flowers and fruit; texture rough leathery, colour dull green, odour characteristic pungent-aromatic.

Geographical distribution



Figure 4 – distribution map

Widespread in fynbos vegetation on sandy slopes, roadsides and flats, along watercourses or amongst rocks, from Clanwillam to the Cape Peninsula and eastwards to Riversdale and Ladismith (also Oudtshoorn, Namaqualand and Karoo).

Quality standards

Identity tests

Thin layer chromatography on silica gel using as solvent a mixture of toluene:diethyl ether:1.75M acetic acid (1:1:1). Reference compound cineole (0,1% in chloroform). Method according to Appendix 2a. R_f values of major compounds: 0.40 (mustard yellow); 0.43 (mauve); 0.49 (beige brown); 0.53 (maroon) cineole: 0.83 (blue-purple)

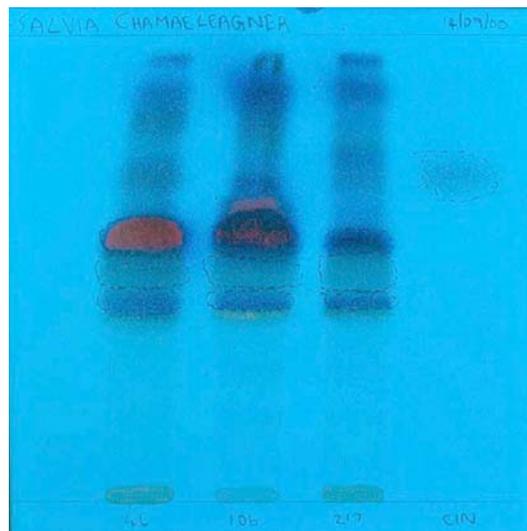


Figure 5 – TLC plate

HPLC on C_{18} column, method according to Appendix 2b.

Major compounds:

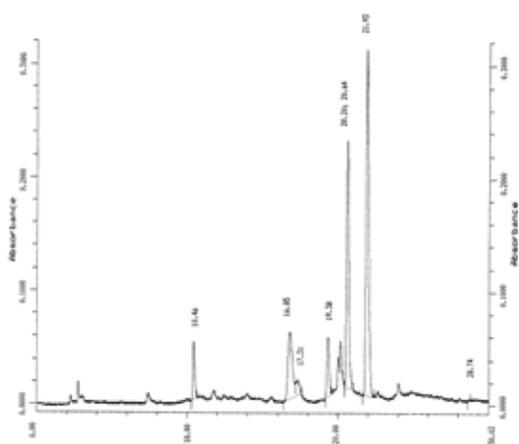


Figure 6 a – MeOH HPLC spectrum

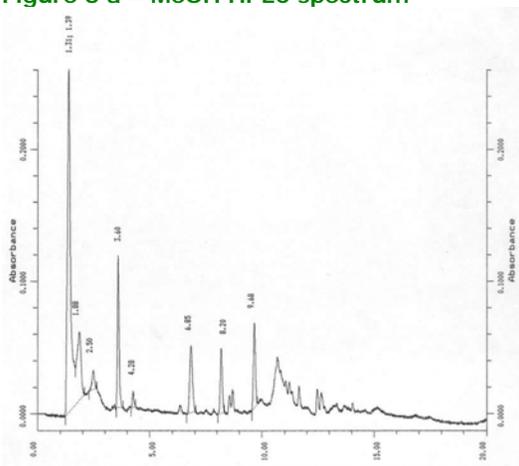


Figure 6 b – DMC HPLC spectrum

Methanol extract: (Figure 6a)
Retention times (mins): 10.46; 16.85
DCM extract: (Figure 6b)
Retention times (mins): 3.60; 6.85

Ethanol (70%) soluble extractive value:
not less than 28.75% (range: 28.75-29.53%)

Purity tests

Assay

Not yet available

Major chemical constituents

Microchemical tests in our laboratories indicated the presence of tannins but not of saponins, alkaloids nor of cardiac or anthraquinone glycosides. The chemistry of many other members of the genus *Salvia*

(±900 species), particularly those used medicinally or as culinary herbs, has been well researched. Compounds isolated include diterpene abietanes (figure 7), isopimarene derivatives and steroids². Little information is available in the scientific literature concerning the secondary chemistry of this species.

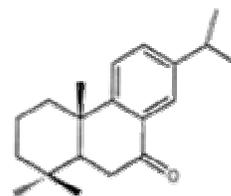


Figure 7: chemical constituents

Dosage forms

Used mainly as an infusion or decoction, applied locally or taken orally.

Medicinal uses

This herb is considered an effective remedy for cough, including whooping cough, bronchitis, colds and diarrhoea. It has been used for gynaecological problems and to treat convulsions. In the Western Cape leaf infusions are taken for headache, fever and stomach ache and applied externally to burn wounds.

Pharmacology/bioactivity

Little is known of the pharmacology of this species. No *in vitro* antimicrobial activity of aqueous extracts of *S. chamelaeagnea* against *Pseudomonas aeruginosa*, *Candida albicans*, *Staphylococcus aureus* or *Mycobacterium smegmatis* was observed, in the concentrations used for disc assays in our laboratories.

The results of an investigation of cytotoxicity and antiviral activity of 16 South African plant species showed that aqueous extracts of *Salvia chameleagnea* were not markedly cytotoxic, at any concentration used in the assay, to HeLa, Vero, Jurkat E6.1, AA-2 and

² Ulubelen, A. (2003). Cardioactive and antibacterial terpenoids from some *Salvia* species. *Phytochemistry* **64**(2): 395-399.

CEM-SS cells³. Similar extracts, in a cell culture antiviral assay, were found to reduce the infectivity of both Coxsackie B2 virus and HSV-1 at the higher concentrations used. In an *in vitro* assay however, the replication of neither virus was inhibited.

(See monograph on *Salvia Africana Lutea* for summary of known bioactivity of the genus *Salvia*)

Contraindications

In view of the lack of phytochemical, pharmacological or toxicological information concerning this species, the same caution should be exercised as for *Salvia africana-lutea*.

Adverse reactions

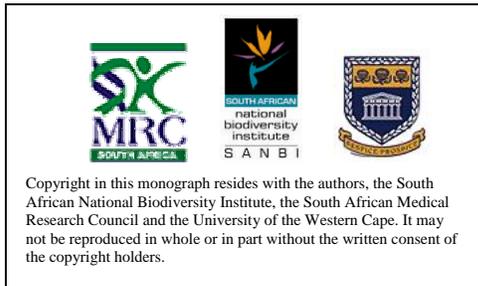
See *S.africana-lutea*

Precautions

See *S.africana-lutea*

Dosage

To be determined.



³ Treurnicht, F. T. (1997). An evaluation of the toxic and potential antiviral effects of some plants used by South Africans for medicinal purposes. MSc thesis, University of Stellenbosch.