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Swertia purpurascens (D.Don) C.B.Clarke. (ပန်ခါး/ရမ်းဆေးခါး)

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Swertia purpurascens (D.Don) C.B.Clarke. (ပန်ခါး/ရှမ်းဆေးခါး)

1. Scope

This standard prescribes the specification and identification for quality criteria of *Swertia purpurascens* (D.Don) C.B.Clarke. (ပန်ခါး/ရှမ်းဆေးခါး) aerial part to be used as a single agent or as an ingredient of the traditional medicine formulations.

2. Definition

Swertia purpurascens (D.Don) C.B.Clarke. (Swertia) belongs to the family Gentianaceae; its aerial part is used in Traditional Medicines.

3. Description

3.1. Macroscopic characteristics

Yellowish herb, glabrous, with cylindrical stem. Leaf oblong or lanceolate, flowers small, pale red-purple, a darker complete ring at its base, 5 merous, filaments dilated downwards, united into a short tube free from the corolla. Odour aromatic, taste bitter.

3.2. Microscopic characteristics

Transverse section of *Swertia purpurascens* (D.Don) C.B.Clarke. stem shows:

- cork 4-6 layers, composed of rectangular cells
- cortex layer composed of 10-12 layers of thick-walled cells
- under the cortex layer pith consists of thin-walled parenchyma cell surrounded by vascular bundles

3.3. Characters of the powdered drug

Yellowish brown powder, aromatic odour and strongly bitter taste.

The diagnostic characters are:

- pollens from flower
- cork in sectional view
- parenchyma cells from pith

4. Specification

4.1. Physicochemical data

- Loss on drying at 105 °C : Not more than 8.92 %
- Foreign matter : Not more than 2 %
- Total ash : Not more than 3.35 %
- Acid-insoluble ash : Not more than 0.25 %
- Ethanol soluble extract : Not less than 27.75 %
- Water soluble extract : Not less than 23.16 %

5. Identification

5.1. Phytochemical test

- A) In a test tube containing 0.5-1.0 mL of ethanol extract of sample, add 5-10 drops of hydrochloric acid, followed by a small piece of magnesium ribbon. Boil solution for few minutes, red colour is produced.
- B) Dissolve a small amount of aqueous extract of sample in 2 mL of distilled water, and add a few drops of 10 % aqueous ferric chloride solution. Blue colour is produced.

5.2. TLC analysis

Macerate 1 g of powdered drug in 5 mL of methanol, shake for 30 minutes, allow to stand for overnight, filter and filtrate is used for chromatography.

- Application volume : 2 μ L
- Developing solvent system : Hexane: Ethyl acetate (7:3)
- Spray reagent : 10% Ethanolic sulphuric acid
- Stationary phase : Silica gel G (A, D & E are glass plates, B & C are aluminium sheets GF₂₅₄)

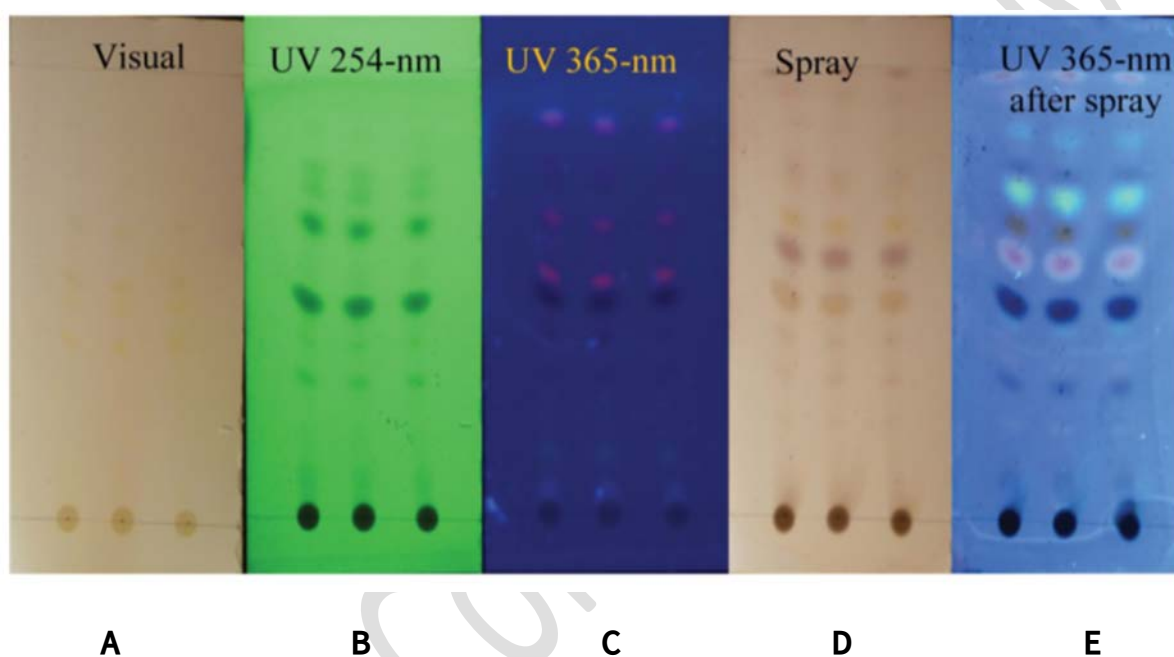


Fig.1. Thin-layer Chromatogram of methanol extract of the dried aerial part of *Swertia purpurascens* (D.Don) C.B.Clarke.

Table.1. R_f values of components in methanol extract of the dried aerial part of *Swertia purpurascens* (D.Don) C.B.Clarke.

R _f	Visual	UV 254 nm	UV 365 nm	Spray	365 nm after spray
0.89	-	-	-	Greenish blue	Light green
0.82	-	-	Red	Brown	Yellowish green
0.81	-	-	Red	Yellow	Dark blue
0.72	Green	Brown	Red	Violet	Orange
0.61	Green	Brown	Dark blue	Dark brown	Dark blue
0.53	-	-	Red	Brown	Pink
0.41	-	-	Dark blue	-	Dark blue
0.11	-	-	Yellow	-	Dark blue
0.08	-	-	Light blue	-	Pale yellow

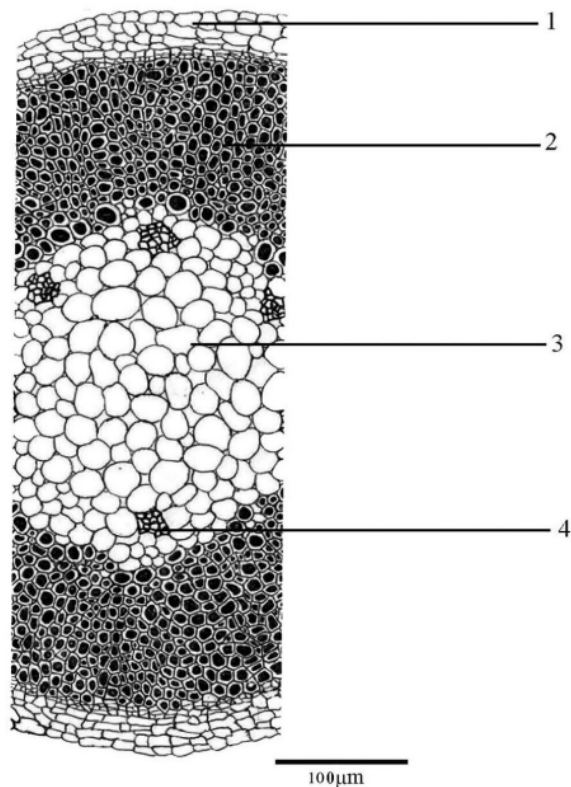


Fig.2. Transverse section of *Swertia purpurascens* (D.Don) C.B.Clarke. stem

1. Cork
2. Thick-walled parenchymatous cells
3. Thin-walled parenchymatous cells
4. Vascular bundle

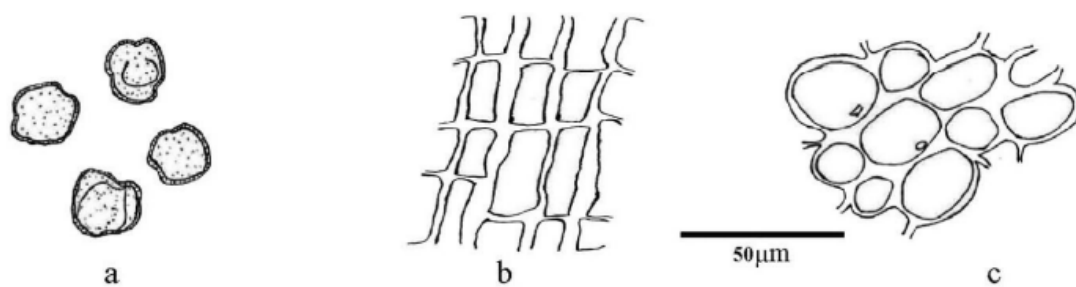


Fig.3. Characters of the powdered drug

- a. Pollens from flower
- b. Cork in sectional view
- c. Parenchyma cells from pith

6. Reference

Department of Traditional Medicine, Ministry of Health. Myanmar Herbal Pharmacopoeia. VOLUME I. Nay Pyi Taw, Myanmar; 2013. Pg 72-75.

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