

Evaluation of samples containing phenolic derivatives

Lab No. 8

1- Aloe:

Origin: Solid residue obtained by evaporating the juice flows from the cut leaves of different species of *Aloe* e.g. (*Aloe vera*, *Aloe ferox*, *Aloe affinis* etc.).

Family: Liliaceae

Description:

Condition: Powder.

Color: Dark brown (black).

Odor: Characteristic.

Taste: Very bitter.

Solubility: Soluble in alcohol, insoluble in water.

Chemical tests:

Modified Borntrager's test:

Powder + 5 ml dilute HCl + 5ml ferric chloride , heat in water bath for 15 min, filter while hot, then cool. Filtrate + CHCl₃ shake well, take the lower layer in test tube+ dil ammonia → rose red color in the ammonia layer (upper layer).

Uses:

- In cosmetic products.
- In the treatment of burns.

Active constituent: Anthraquinone glycoside.

Microscopical examination:

Large prisms grouped into masses.

2- Senna:

Origin: Dried leaves of *Cassia angustifolia*.

Family: Leguminosae.

Description:

Condition: Powder.

Color: Green.

Odor: Slight.

Taste: Characteristic.

Solubility: Soluble in water and in dilute alcohol but insoluble in absolute alcohol.

Chemical tests:

Borntrager test:

Powder + 5 ml H₂SO₄ , boil for 2 min., filter while hot, then cool. Filtrate + extract by shaking with 5ml benzene, take the upper benzene layer in test tube+2 ml dil ammonia (shake) → rose red color in the ammonia layer (lower layer).


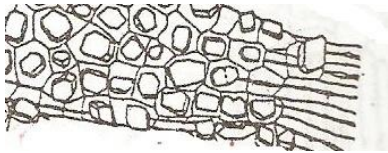
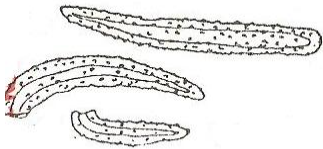
Uses:

Laxative.

Active constituents:

Glycoside deriv. of anthraquinone e.g. sennoside A,B,C and D.

Microscopical examination:

1-Paracytic stomata.	2-Crystal sheath of Ca.oxalate.	3-Simple hair (non glandular).
		

3- Cascara:

Origin: Dried bark of *Rhamnus Purshiana*.

Family: Rhamnaceae.

Description:

Condition: Powder.

Colour: Reddish brown.

Odour: Slight.

Taste: Characteristic.

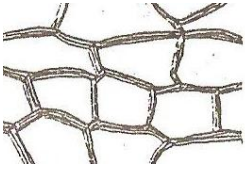
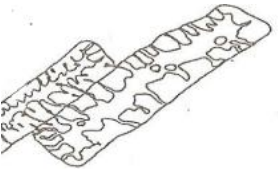
Uses:

Tonic and laxative in large dose.

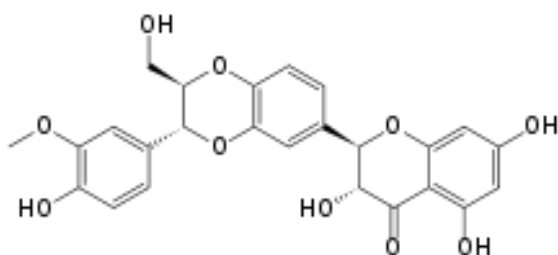
Active constituents:

Glycoside (cascaroside).

Microscopical examination:

1-Phloem fiber free or with Ca.oxalate	2-Cork cells.	3-Scleride
		

4- Silymarin:



It consists of Flavonolignans (flavonoids linked with coniferyl alcohol).

It has antihepatotoxic principles.

Origin:

It isolated from the fruit of *Silybum marianum*.

Description:

Condition: Powder.

Color: Yellow or brown.

Odor: Odourless.

Taste: Bitter.

Solubility: Soluble in water.

Uses:

- It is used in treatment of liver dysfunction.
- It prevents cells against toxins.
- Antioxidant and anti-inflammatory.

Chemical tests:

1-Spot of silymarin solution on filter paper + FeCl_3 ➔ Black spot.

2-Silymarin solution + Dil NaOH ➔ Yellow.

3- Spot of silymarin solution on filter paper + vapour of NH_4OH ➔ Yellow spot.

Microscopical examination:

1-Fiber.

2-Starch.

3-Oil gland.