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LAXATIVES


Indian senna

Senna

Synonym

senai- ki- patti, tinnevelley senna, cassia senna

B.S

It consist of dried leaflets of Cassia Angustifolia known as indian senna or Cassia Senna vahl

family

Leguminosae

it should contain note less than 1 % of sennoside A and B on dried basis

GEOGRAPHICAL SOURCE

inndian senna cultivated in tinnevelley, madurai, ramnathpuram districs in Tamilnadu,

kaddapa dist in Anthrapradesh, Kutch in Gujarat and Rajasthan

cultivation collection and preparation

sowing is done by **seed broadcasting method** .

for earlier germination seed surface is triturated with sand .

seeds are sown thinly.

it required red loamy or coarse gravelly soil(high proportion of small stones). First sowing done in feb- march.

Second sowing done in oct- november.

It required semi irrigation or light irrigation..

Once flowers are grown cutting given to flower stalk for further branching to occur. leaves are harvested after 2-3 months of planting.

First plucking done when leaflets fully grown, second plucking after one month of first plucking. Last plucking done after 4-6 weeks of second. Plant is uprooted after third plucking.

Leaflets are dried in shade for 7-10 days.

leaves are tossed(move from side to side or back and forth) to separate pods.

Then packed in to large bundles under hydraulic pressure.

Pressing produce transverse line on Indian senna witch are absent on Alexandrian senna leaves.

Macroscopic characteristics

colour- yellowish green

odour- slight

taste- mucilaginous, bitter and charecterstic

size- 7-8 mm width, 25-60 mm length

shape- lanceolate, apex acute with spine at top.trichomes present on both surfaces.

Microscopic characterstics

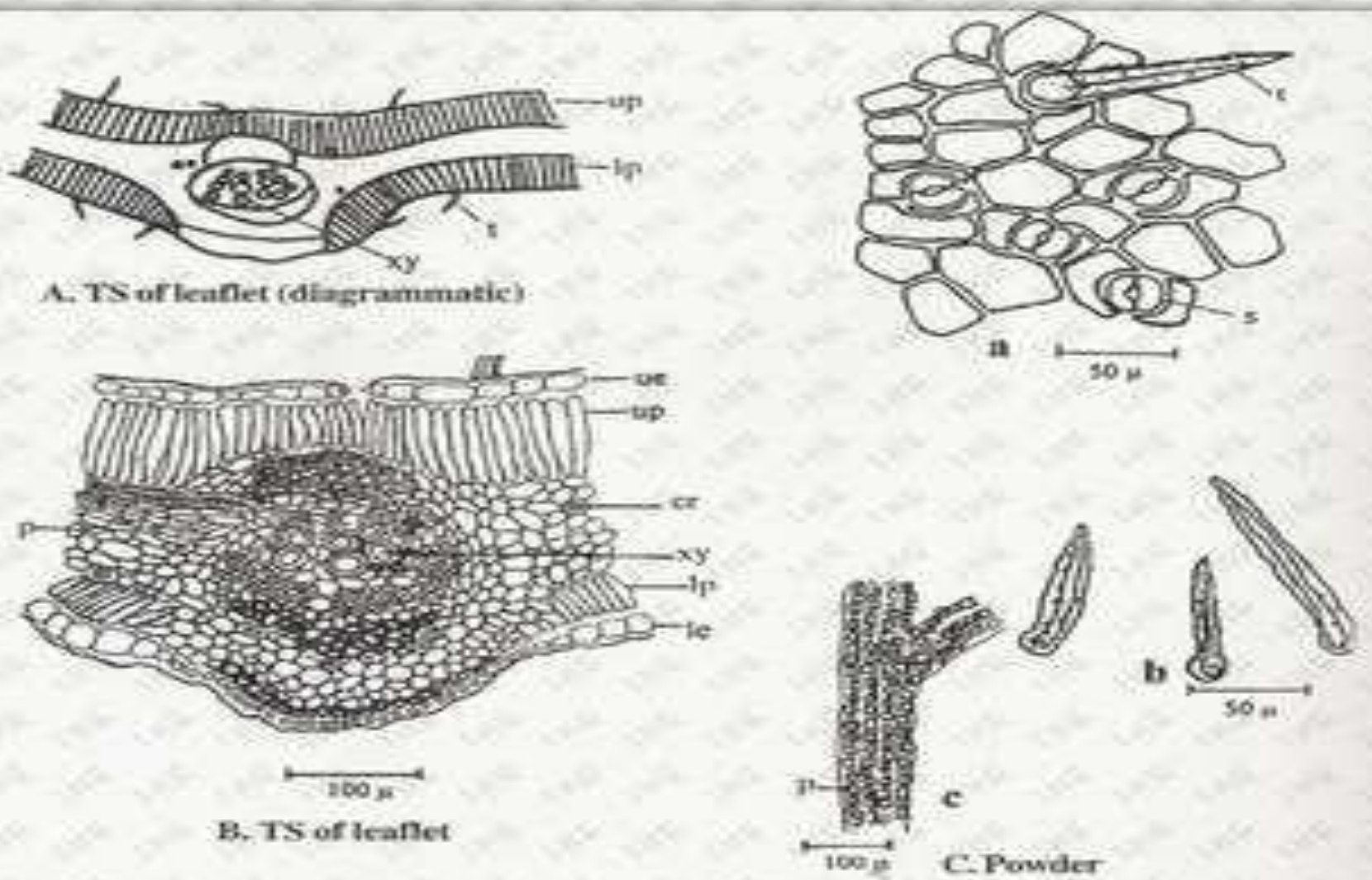


Figure 9.1. Microscopy of leaflet of *Cassia senna* var. *senna*. **a**, epidermal cells with paracytic stomata and trichome; **b**, trichome; **c**, cells containing Ca oxalate prisms; **cr**, Ca oxalate crystals; **le**, lower epidermis; **lp**, lower palisade (wavy); **p**, prism; **s**, stomata (paracytic); **t**, trichome; **ue**, upper epidermis; **up**, upper palisade; **xy**, xylem.

it is isobilateral leaf.(divided into symmetrical halves)trichomes present on both surfaces.

Trichome,s are unicellular, conical, thick walled warty, slightly curved at base

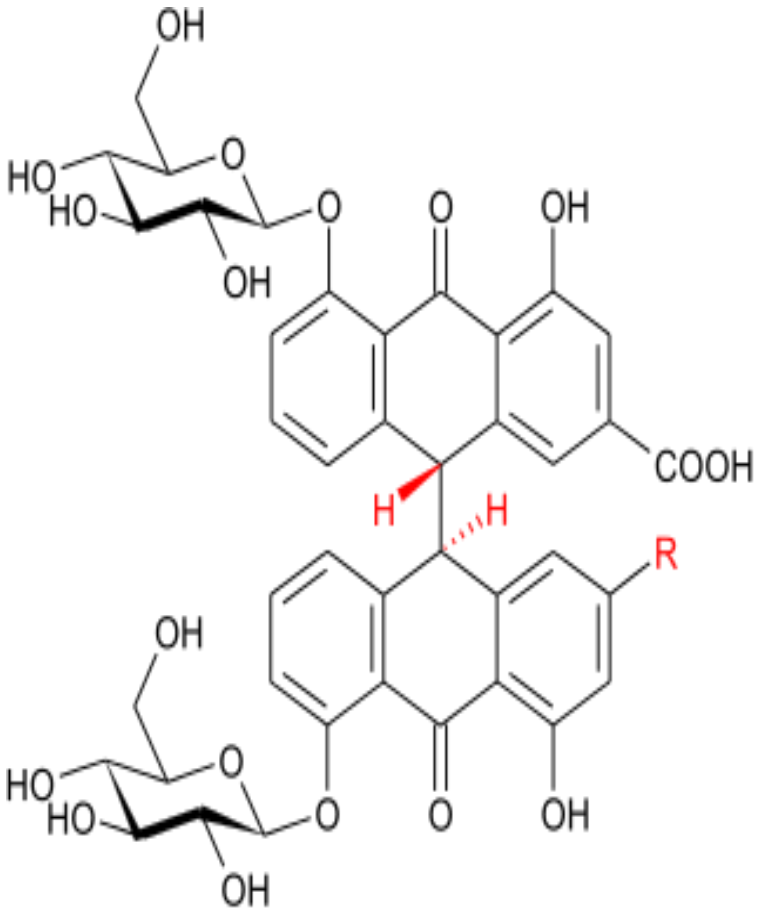
.palisade tissue present on upper and lower surface, they contain cluster crystals of cal oxalate

Pricyclic fibers present towards upper epidermis and above xylem

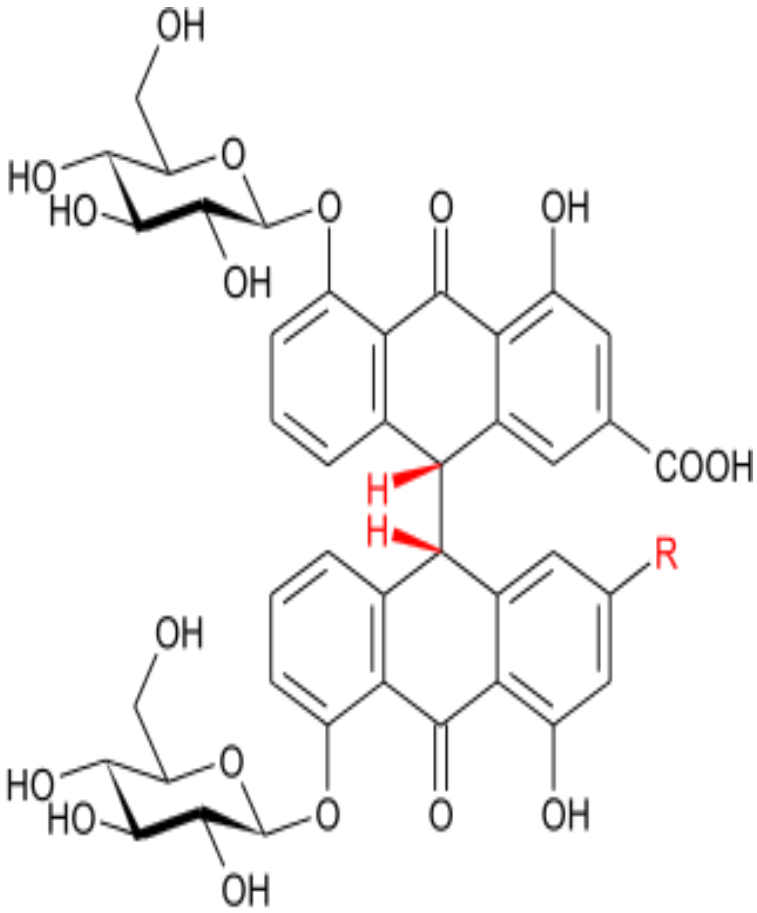
Chemical constituents

sennoside A , sennoside B . they have rhein(cassic acid) dianthrone as aglycone.

other anthraquinone -sennoside C,D, rhein , kaempferol, aloe- emodin, isorhamnetin, mucilase , resin, myricyl alcohol, salicylic acid, crysophagic acid, Cal. oxalate. tinnevelley glucoside



Sennosid A: R = COOH
Sennosid C: R = CH_2OH



Sennosid B: R = COOH
Sennosid D: R = CH_2OH

USES

purgative

MOA-

anthraquinone glycosides absorbed first in intestinal tract, then aglycone is separated and excreted in colon. it causes irritation and stimulation of colon, so movement(peristalsis) of colon increases, peristalsis also reduce water absorption hence soft and bulky faeces are formed. due to resin and emodin content griping occurs hence drug is given with carminatives.

Aloe

Aloes

Synonym

Aloe, Hindi-musabbar, kumari. Marathi- korphad

BS

It is dried juice of leaves of **Aloe Barbadensis** miller known as curacao aloe or ***ALoe Perryi*** *baker* known as socotrine aloes or **Aloe Ferox** miller, and hybrids of this species **Aloe Africana** miller and **Aloe Spicatya** baker known as cape aloes

family

Liliaceae

Geographical source

it is indigenous to estern and southern Africa.

Cultivated in Caribben Island, Europe,

India

Cultivation and collection

Propagation is done from root suckers.

Root suckers planted in rows about 50 cm apart.

Plant grow in dry climate and poor grade soil.

Roots do not penetrate much in soil. Manure is

provided.

Leaves are cut first time after second year of planting and drug is obtained from leaves for 12 years.

After 12 years plant is uprooted and new crop is taken.

during collection cut is given at base of leaves so juice located in parenchymatous cells of pericycle exudes out.

Preparation of aloe

1 barbados or curacao aloes

it is obtained by giving cut on leaves of aloe barbadensis.

because of spines on leaves it is put in to kerosene tins immediately after cutting .

Then kept in tilted position on V- shaped wooden troughs to drain out juice.

juice is boil in copper pans for evaporation to obtain thick juice. Then it is poured it to metal containers , where it hardens.

2 cape aloes

Obtained from aloe ferox and its hybrid species.

Leaves are cut transversely and kept in circular manner in basin shaped depression lined with goat skin or canvas.

They are kept in this position for 5-6 hours till all juice exudes out and collected in goat skin.

juice is boiled in iron kettle with continuous stirring with wooden paddle.

Once juice is thick it is poured in to wooden cases where it solidify.

3 socotrin aloes

It is obtained from aloe perryi in east Africa.

juice is collected in goat skin and allowed to become semisolid in nature.

It is exported in past like consistency.

4 zanzibar aloes

it is verity of socotrine aloe.

Juice is placed in skin of small carnivorous animals, where it solidify.

Then packed in wooden boxes.

It is also called monkey skin aloe, although skin is not of monkey.

Description

1 curacao aloes

Odour-strong odour resembling to iodoform.

Taste is bitter.

Colour is brownish black, opaque mass.

Fracture-uneven fractured surface

2 cape aloes

colour- dark brown or greenish brown to olive brown mass.

Taste – nauseating and bitter.

Odour - sour but distinct.

Fracture - glassy

3 socotrine aloes

colour- brownish yellow, opaque mass with pasty consistency.

Taste- extremely bitter, nauseous.

Odour –unpleasant

4 zanziber aloes

colour- liver brown.

Odour- characteristic but not disagreeable.

taste bitter.

Fracture – dull, waxy, smooth, even

Microscopic charecterstics-

TS shows

outermost cuticle followed by epidermis, palisade tissue, mucilaginous parenchyma mesophyll.

mesophyll contains vascular bundle covered with pericycle fibers layer.

Inside pericycle ,aloetic cells are located witch contains aloe gel (viscous yellow).

Calcium oxalate crystals present in parenchyma. leaves are

sessile

Microscopic chrecters of aloe powder

It is useful for identification of powdered aloes. it is studied in lacto phenol reagent to gradually solubilize particles so crystals can clearly seen

1 curacao aloes

fragments consist of large number of very small needle or slender prisms

2 cape aloes

transparent, brown, angular or irregular fragments.

3 socotrine aloes

fragments consist of large prisms in group or dispersed form.

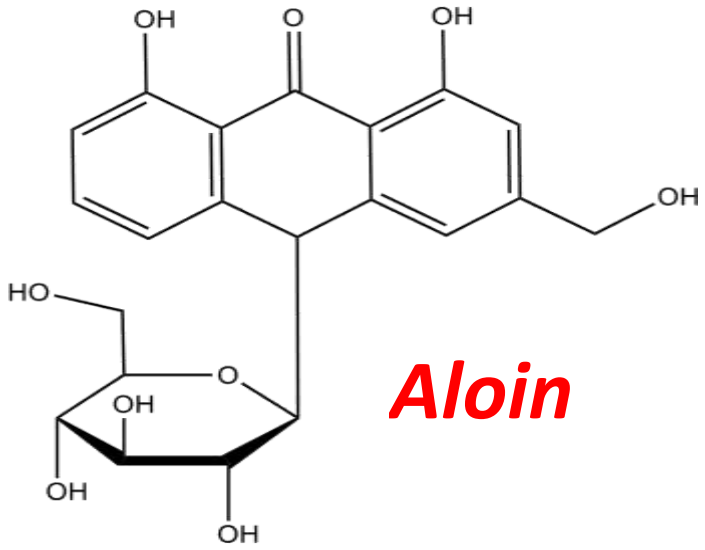
4 zanzibar aloes

irregular lumps in with modular masses are embedded.

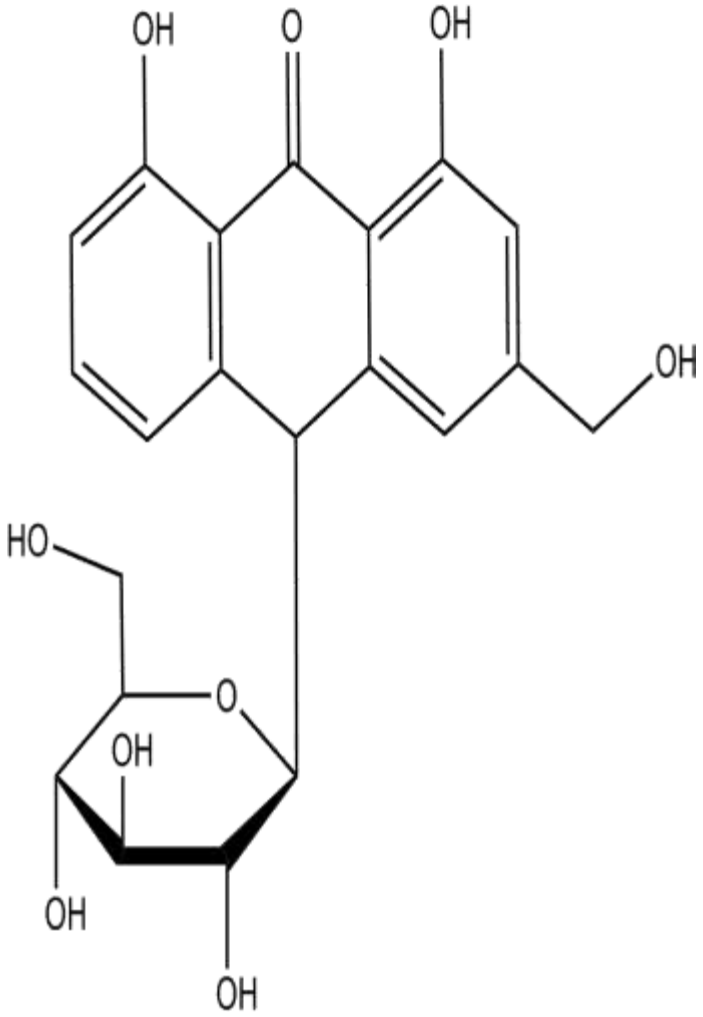
Chemical constituents

anthraquinone glycosides. main active constituent is ***Aloin.*** Aloin is also called as ***barbaloin.*** barbaloin is C-glycoside

Other



Aloin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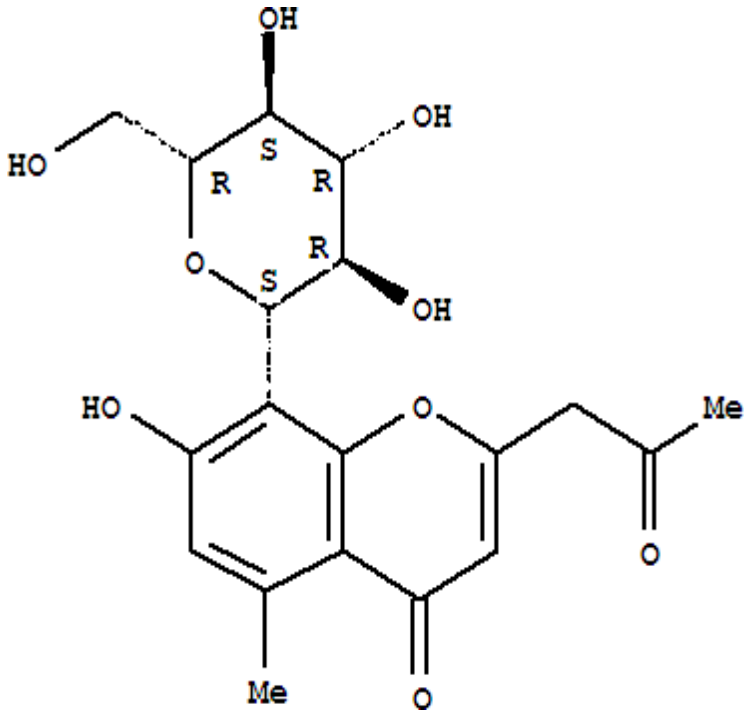
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Chemical teasts

general chemical tests

1 gm aloe is powder boiled with 10 ml water, filtered. Filtrate used for bromine test and schoenteten,s reaction.

1 bromine test- filtrate+ freshly prepared bromin solution= pale yellow ppt of tetrabromalin

2 schoenteten,s test- filtrate+ borax shake well until borax dissolves.few drop of this soluition added in test tube filled with water= green fluorescence appears.

Special test

these test are to distinguish between varieties of aloe

1 nitrous acid test-

aqueous solution of aloe + sodium nitrate crystals + acetic acid

curacao aloes-sharp pink to carmine colour

cape aloes- faint pink colour

socotrine and zanzibar aloes- very less change in colour

1- Nitric acid test-

nitric acid applied to drug or its aqueous solution

curacao aloes- deep brownish red colour **cape aloe-** brownish colour changes to green **socotrine aloes-** pale brownish- yellow colour **zanzibar aloes-** yellowish brown colour

3 kupraloin test(klunge,s isobarbaloin test)-

Dil. aqueous solution of aloe+ drop of copper sulphat+ sodium chloride + excess 90% alcohol

Curacao aloes-wine red colour persist for 4 hours ***Cape aloes***- faint colour

rapidly changes to yellow ***Socotrine aloes***-no colour

Uses

Stronger purgative than all anthraquinon glycosides.

To prevent gripping action carminative can be given.

it is ingredient of compound tincture of benzoin(friar,s balsam)

aloe gel is used for topical application and many cosmetic uses.

RHUBARB

Rhubarb

synonym

East indian rhubarb, China rhubarb, Turky rhubarb

BS

it consist of peeled dried rhizomes and roots of

Rheum Palmatum *linn*

family

polygonaceae

Macroscopic charecters

colour- externally brown, internally deep yellow colour

taste -astringent ***odour-*** characterstic

Chemical constituents

antharaquinones

Chrysophanol

, aloe-

emodin,

emodin,

Others

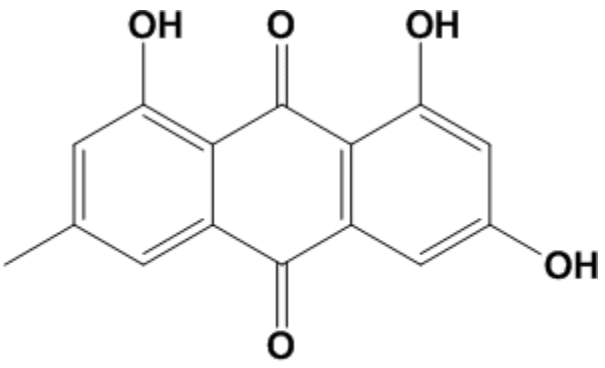
physcion,

rhein

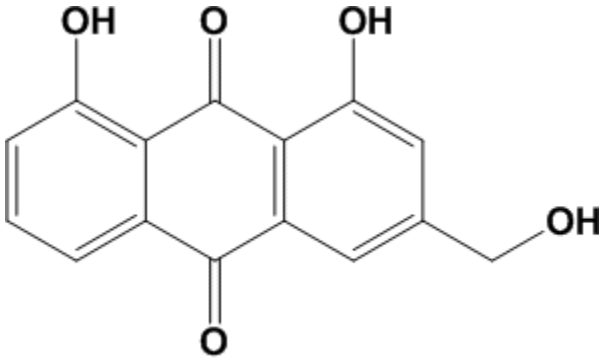
tannoids,
starch,

cal oxalate,

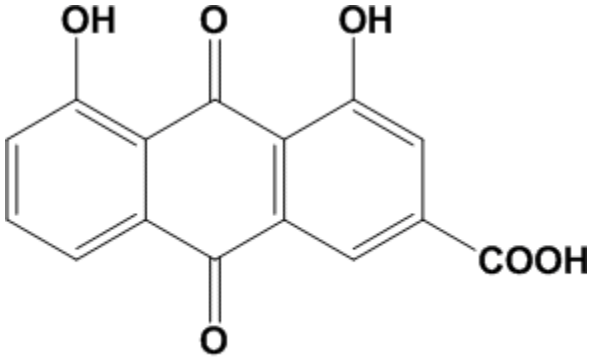
resins phloretin is purgative



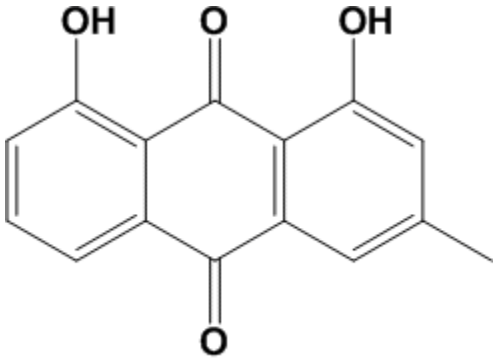
Emodin



Aloe-Emodin



Rhein



Chrysophanol

chemical test

1 -Rhubarb powder+ ammonia= pink colour

2 -Rhubarb powder+ 5% potassium hydroxide solution= blood red colour

USES

Laxative,purgative,stomachic,tonic,demulcent,cholagogue,astringent,antitumer,antispasmodic,antiseptic,anticholestrolemic