5.1 LAXATIVES

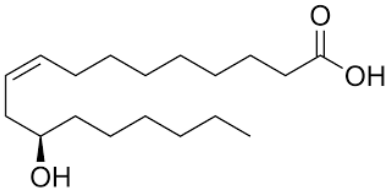
PHB Education

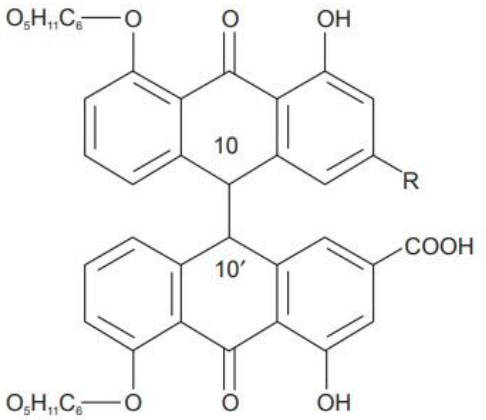
S. No.	Herbal Drug	Biological Source	Morphology	Chemical Constituent	Uses	Test
1.	Castor Oil	Castor oil is the fixed oil obtained by cold expression of the seeds of *Ricinus communis* Linn., belonging to family Euphorbiaceae.	Oil colourless or slightly yellow coloured. It is a viscid liquid which has slight odour with slightly acrid taste. Castor oil is soluble in absolute alcohol in all proportions;	Castor oil consists of glyceride of ricinoleic acid, isoricinoleic, stearic, and dihydroxy stearic acids. Ricinoleic acid is responsible for laxative property. Castor oil also contains vitamin F.	**Castor oil is:** • mild purgative • fungistatic, • used as an *ointment base, *plasticizer, *wetting agents, *lubricating agent. • Ricinoleic acid is used in contraceptive creams and jellies; • used as an emollient • pharmaceuticals and cosmetics.	About 5 ml of light petroleum when mixed with 10 ml of castor oil shows a clear solution. This test is not shown by other oils.
2.	Senna	Senna leaf consists of the dried leaflets of Cassia acutifolia Delile (C. senna L.) known as Alexandrian senna and of C. angustifolia Vahl., which is commercially known as Tin-nevelly	From image	Senna contains sennosides A and B (2.5%) based on the aglycones sennidin A and B, sennosides C and D which are glycosides of heterodianthrones of aloe-emodin and rhein are present.	Senna leaves are used as laxative. It causes irritation of large intestine and have some griping effect. Thus, they are prescribed along with carminatives. Senna is stimulant cathartic and exerts its action by increasing the tone of the smooth muscles in large intestine.	Borntrager test for anthraquinones: The leaves are boiled with dilute sulphuric acid and filtered. To the filtrate organic solvent like benzene, ether or chloroform is added and shaken. The

		senna. It belong family Leguminosae.				organic layer is separated, and to it add ammonia solution. The ammoniacal layer produces pink to red colour indicating the presence of anthraquinone glycoside.
3.	Aloe	Aloe is the dried juice collected by incision, from the bases of the leaves of various species of Aloe. Aloe barbadensis Mil and Aloe ferox Miller., belonging to family Liliaceae.	Colour: Yellowish brown to chocolate brown. Odour: strong odour resembles with Iodoform Taste: Bitter & Unpleasant. It is a short stemmed plant growing to 60-100cm tall, spreading by offsets.	Anthracene glycosides (11 to 40%). Barbaloin or Aloin, a C glycoside. Isobarbaloin, aloe-emodin and aloesone. Aloinosides A and B (only in Cape aloes). Resins (resinotannol +cinnamic acid or coumaric acid).	❖ Purgative ❖ Laxative ❖ Used for Ulcers and burns ❖ Aloe found many uses in cosmetics nowadays like, ❖ Hair conditioner ❖ Hand and body lotion ❖ Moisture base cleanser ❖ Shampoo and facewash	• Bromine test. • Borax test for Anthranol. • Nitrous acid test. • Modified anthraquinone test.
4.	Ispaghula	Ispaghula consists of dried seeds of	From Image	Ispaghula seeds contain about 10% mucilage which	Ispaghula seeds are used as an excellent demulcent and bulk	Ispaghula seeds when treated with

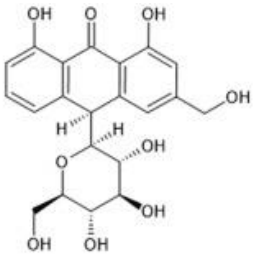
		Plantago ovata Forskal, belonging to family Plantaginaece.		is present in the epidermis of testa. Mucilage consists of two complex polysaccharides, of which one is soluble in cold water and the other soluble in hot water. Chemically it is pentosan and aldobionic acid. Pentosan on hydrolysis yields xylose and arabinose and aldobionic acid yields galactouronic acid and rhamnose.	laxative in chronic constipation. The laxative activity of ispaghula mucilage is purely mechanical. It is also useful in dysentery, chronic diarrhoea, in cases of duodenal ulcers and piles. It works effectively as a soothing agent. Ispaghula husk is also used for similar purpose.	ruthenium red give red colour due to the presence of mucilage.

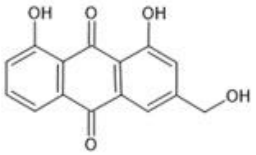
Ricinoleic acid

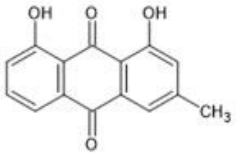


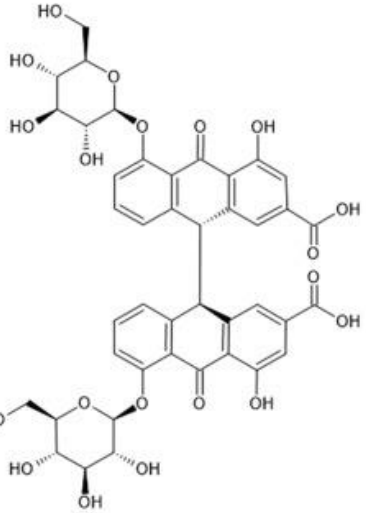


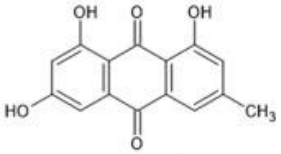
Glycoside	10 - 10′	R
Sennoside A	trans	COOH
Sennoside B	meso	COOH
Sennoside C	trans	CH_2OH
Sennoside D	meso	CH_2OH

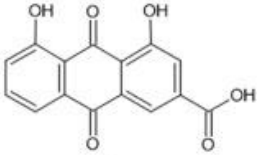

Aloin A

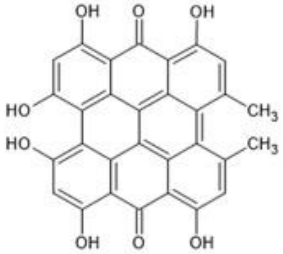

Aloe-emodin

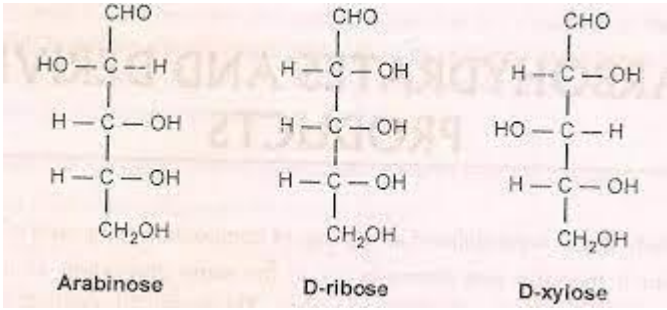

Chrysophanol


Sennoside A


Emodin


Rhein


Hypericin



Morphology of Ispaghula

Colour	Pinkish gray to brown
Odour	None
Taste	Mucilaginous
Shape	Ovate, boat shaped, cymbiform
Size	1.5–3.5 mm long, 1–1.8 mm wide.
Weight of 100 seeds	0.15–0.19 g
Appearance	Seeds are hard, translucent and smooth, the dorsal (convex surface) consist of a small elongated glossy reddish brown spot at the centre while the ventral (concave surface) has a cavity having nil urn covered with a thin whitish membrane

Morphology of Senna

Character	Indian Senna	Alexandrian senna
Appearance	Generally entire and less broken in good condition	Broken and brittle in nature
Size	2.5–5.0 cm long and 7–9 mm wide	2.4 cm long and 6–12 mm wide.
Shape	Lanceolate	Ovate lanceolate
Apex	Less acute with a sharp spine	Acute with a sharp spine
Margin	Entire, flat	Entire curled
Base	Less asymmetrical	Conspicuously asymmetrical
Veins	Pinnate, distinct towards the under surface and anastomosing towards margin	Pinnate, distinct towards the under surface and anastomosing towards margin
Surface	Transverse and oblique impressions, less pubescent (hairy)	Without transverse and oblique impressions and more pubescent
Texture	Flexible and less brittle	Thin more brittle
Odour	Faint	Faint
Colour	Light green	Light greyish green
Test	Bitter mucilaginous	Bitter mucilaginous
Vein Islet Number	19–22.5	25–29.5
Stomatal index	14–20	10–15
Palisade ratio	4–12	4.5–18