SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

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GYMNEMA SYLVESTRE

FAMILY: Asclepiadaceae.
COMMON NAMES: Gurmar, Dhuleti

CHEMICAL CONSTITUENTS:

- Gymnema leaves consists of triterpene saponin belonging to oleanane and dammarene class.

- MAJOR COMPONENTS:

Gymnemic acid and gymnemasaponins belong to oleanane class.

Gurmarin and gymnemasides belong to dammarane saponins.

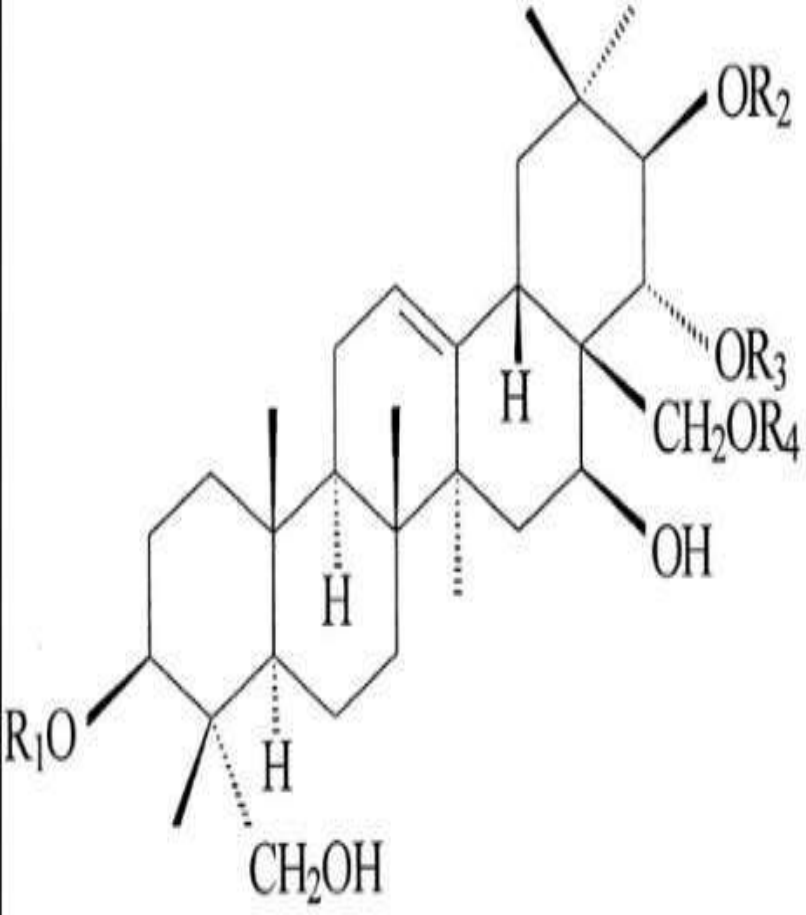
- OTHER COMPONENTS:

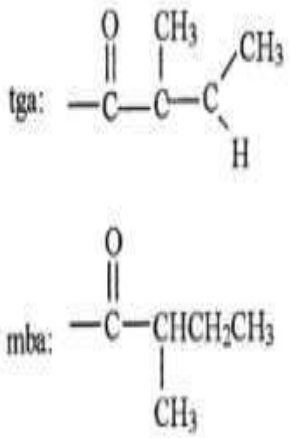
flavones, anthraquinone, hentriacotane and pentatriacotane, resins, tartaric acid, glcosides and stigmasterol.

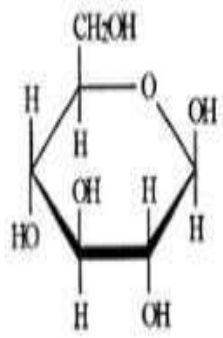
- Alkaloids, organic acids (5.5%),

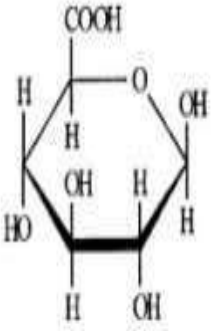
parabin, calcium oxalate (7.3%), cellulose (22%), lignin.

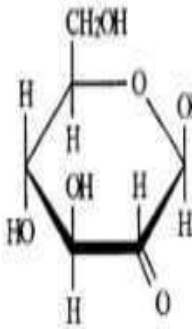
Chemistry: The proposed structure of gymnemic acid as D-glucuronide of hexahydroxy-triterpene esterified with acids. ‘Gurmarin’ a 35 amino acid peptide with 3 intramolecular disulphide bond is obtained from gymnema leaves which suppresses the neural response to sweet taste.





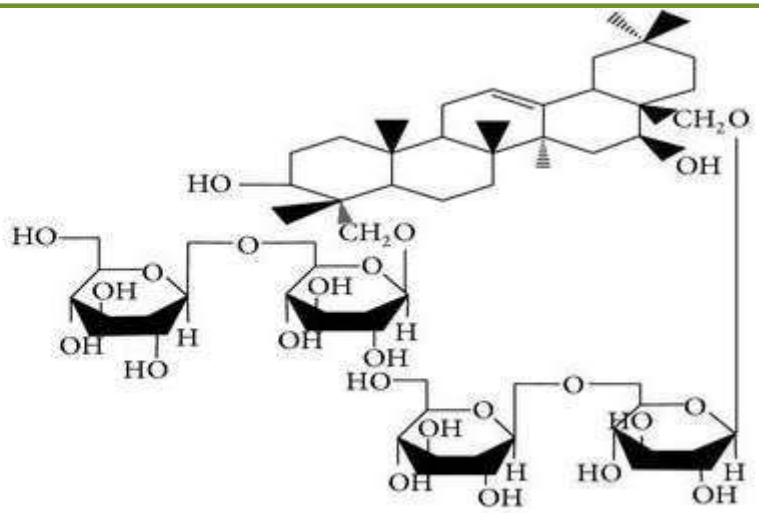

β-glc


β-glcA


β-OG

	R_1	R_2	R_3	R_4
Gymnemagenin	H	H	H	H
Gymnemic acid I	β -gla	tga	tga	tga
Gymnemic acid II	β -gla	mba	mba	mba
Gymnemic acid III	β -gla	mba	mba	mba
Gymnemic acid IV	β -gla	tga	tga	tga

Gymnemic acids and gymnemasaponins



Gymnemasaponins V

Triterpenoid saponins

Gymnemasins A	3-O [β-D-glucopyranosyl (1-3)-β-D-glucopyranosyl]-22-O-tiglyol gymnemanol
Gymnemasins B	3-O-[β-D-glucopyranosyl-(1-3)-β-D-glucuronopyranosyl]-gymnemanol
Gymnemasins C	3-O-β-D-glucuronopyranosyl-22-O-tigloyl-gymnemanol
Gymnemasins D	3-O-β-D-glucopyranosyl-gymnemanol

Gurmarin

A novel 35-amino-acid peptide with a 4209 molecular weight

<^{1}Glu- Gln- Cys- Val- ^{5}Lys- Lys- Asp- Glu- Leu- ^{10}Cys- Ile- Pro-Tyr- Tyr- ^{15}Leu- Asp- Cys- Cys- Glu- ^{20}Pro- Leu- Glu- Cys- Lys-^{25}Lys- Val- Asn- Trp- Trp- ^{30}Asp- His- Lys- Cys- Ile- ^{35}Gly>.
(Glu = pyroglutamic-acid residue)

OTHER USES

- Used in treatment of blood pressure and cardiac rhythms.
- Decreasing Glycosylated haemoglobin Hb1AC.
- Used in glycosuria.
- Used in antiinflammatory, anti helminthes, expectorant and snake bites.
- Lowering serum cholestrol and triglycerides.
- Used for weight loss.

SIDE EFFECTS:

- Hypoglycemic effects
- Neurological effects

Pterocarpus marsupium

Family: Leguminosae.

Common Name: Malabar kino, Indian kino tree or vijayasar

Chemical constituents:

- Genus Pterocarpus contains rich sources of polyphenolic compounds.
- The plant contains pterostilbene 45%, alkaloids 0.4%, tannins 5%, protein.
- Non-glucosidal tannins: Kinotannic acid, Kinonin ($C_{28}H_{24}O_{12}$), Kinored ($C_{28}H_{22}O_{11}$), Pyrocatechin, Pyrocatechin acid & small quantities of resin, pectin and gallic acid.
- flavonol glycoside: 6 hydroxy3,5,7,4tetramethoxyflavone, 6-O rhamnopyranoside, 8-hydroxy 4'-methoxy isoflavone 7-Oglucopyranoside.
- Marsupin and Pterostilbene significantly lower the blood glucose levels useful in NIDDM.
- Root contains benzofuranone, **marsupin,** dihydro chalcone, pterosupin, stilbene, **pterostilbene**, homoisoflavonepteromarsupone, trans-stilbene,liquiritigenin, isoliquiritigenin.

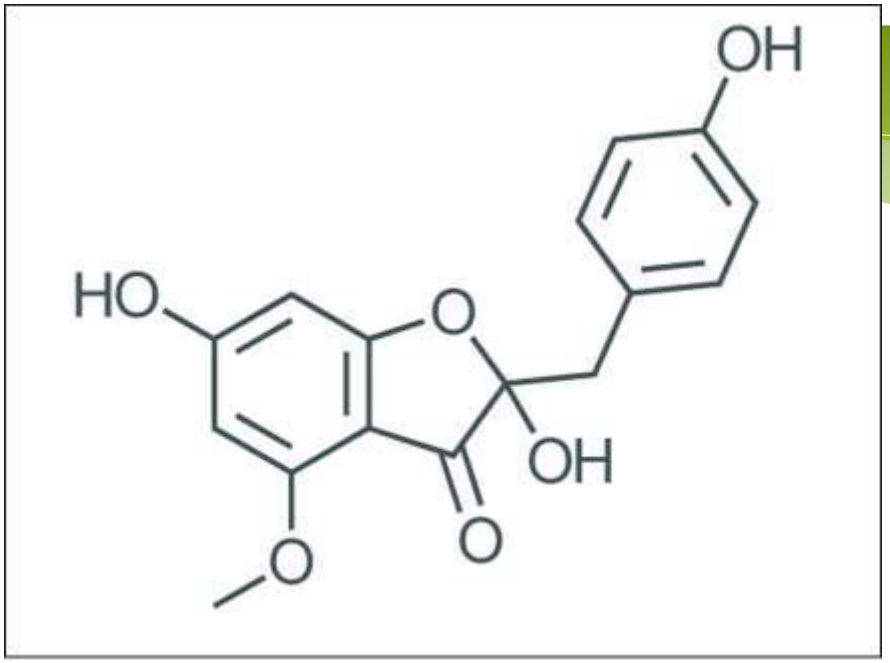
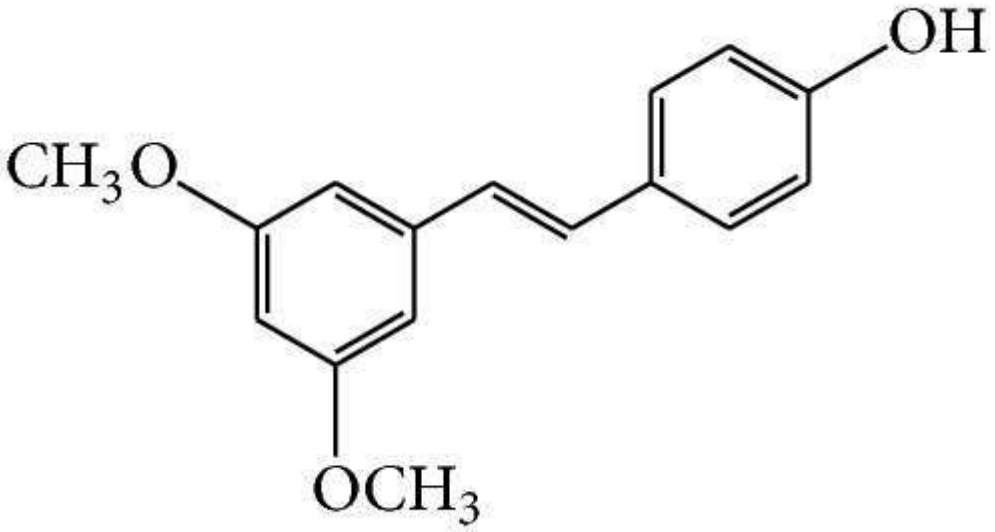


Figure 3 Marsupsin



Pterostillbene

Other Uses:

- Used in diarrhoea.
- Bleeding and gout problems.
- Skin problems.
- Intestinal parasites.
- Dental problems.
- Anti microbial properties.
- Hyperlipidemia.
- Arthritis

Side Effects:

- For the reason that it has astringent properties, It is used to treat Diarrhoea. Therefore, It is not suggested during constipation.
- Sufferers of diabetic who are already on diabetic treatment should take this herb with precaution, Because it lowers blood sugar levels.