



Nature of Drugs

Dept. of Pharmacology, GMC
Amritsar

1



Plant products

- Alkaloids
- Glycosides
- Oils
- Tannins
- Resins
- Antibacterials
- Gums, Waxes.

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2

Alkaloids

- Organic nitrogenous.
- Basic, insoluble in water.
- Mineral acids form water soluble salts.
- Names end with 'ine'.
- Atropine, morphine, nicotine.
- Pilocarpine, caffeine, emetine.
- Animal alkaloids are called amines.
- Adrenaline, Nor Adrenaline, Dopamine, Histamine & 5-HT.

Glycosides

- Organic non-nitrogenous.
- Neutral or Highly acidic soluble in water.
- Hydrolyse on heating with mineral acids & split in two components, sugar & non-sugar (aglycone or genin).
- Sugar responsible for water and lipid solubility, cell permeability, tissue fixation & potency.
- Genin responsible for pharmacological actions, e.g. Digoxigenin & Digitoxigenin.

Fixed Oils

- Fixed Oils from plants are Glycosides of Oleic, Palmitic & Stearic acids.
- Edible, food value, used for cooking.
- Mustard, Sunflower, Peanut & Coconut oil.
- Castor oil used as purgative.
- Fixed oils from animals – Cod liver, Shark liver oil.

Volatile Oils

- Flowers, leaves, fruits & seeds of plants.
- Contain 'terpene' serving as solvent.
- Water soluble with smell & taste.
- Volatilized by heat & possess aroma.
- No food value.
- Used as carminative, antiseptic or flavoring agent.
- Cardamom, peppermint, clove or turpentine oil.
- Camphor, menthol solid at room temp.

Mineral Oils

- Mixture of hydrocarbon of methane obtained from petroleum.
- Liquid paraffin used as laxative.
- Soft & Hard paraffin used as ointment bases.

Tannins

- Organic non-nitrogenous substances obtained from plants.
- Water soluble.
- Tincture of catechu used as anti-diarrhoeal agent.
- Tincture of Kalmegh used as appetiser.

Resins

- Solid non-volatile formed by oxidation or polymerization of volatile oils in plants.
- Insoluble in water, soluble in alcohol.
- Podophyllum resins used as cauterizing agent in venereal warts.
- Jalap & Colocynth used as purgatives.
- Oleoresin is a mixture of resin with volatile oil, e.g. Male fern extract.

Inactive (Inert) Plant Products.

- Gums are polysaccharide secreting products of plants. Thick mucilaginous colloids form with water. Gum acacia & Gum tragacanth used as emulsifying agents for preparation of emulsions & suspensions.
- Waxes are vegetable waxes, animal waxes like sheep wool & honeycomb by bees.
- Bees wax is yellow & converted to white wax by bleaching.
- Waxes used for ointments, creams, suppositories.