

Pharmacologically Active  
Constituents 2  
Sem5 Gen  
Dr. Amit Saha.

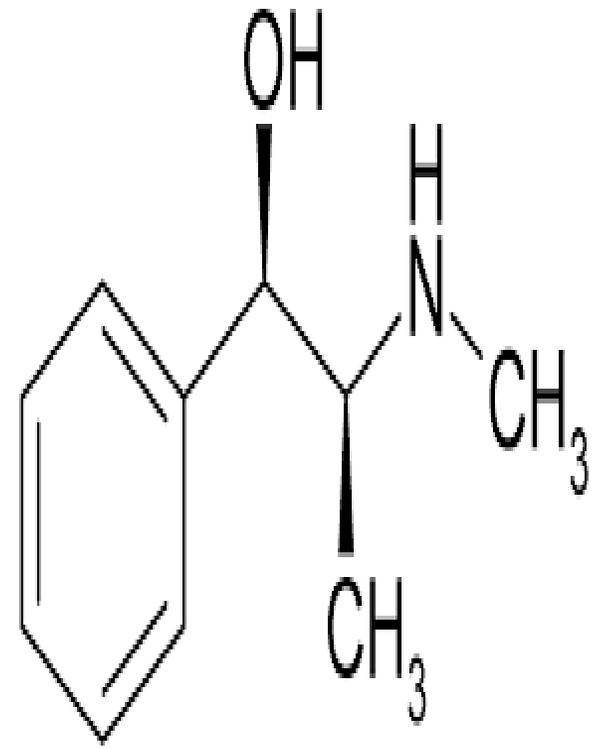
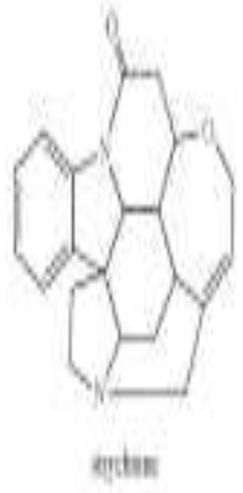
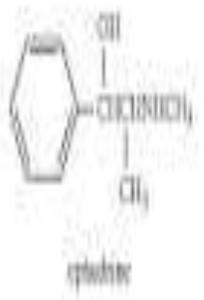
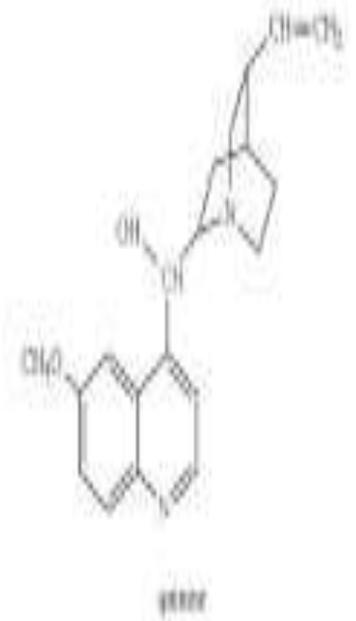
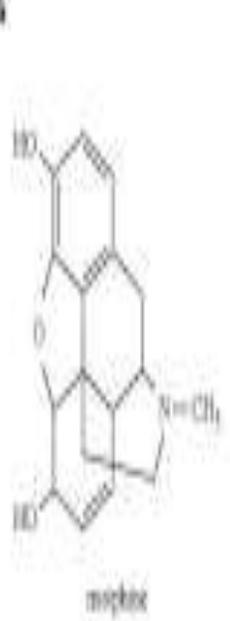
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# ALKALOIDS



- Alkaloids-**Alkaloids** are a group of naturally occurring chemical compounds that mostly contain basic nitrogen atoms. **Alkaloids** are produced by a large variety of organisms including bacteria, fungi, plants, and animals.
- The term is derived from vegetable alkali. They may be defined as organic nitrogenous substances of plant origin exhibiting well defined physiological actions.
- A true alkaloid has a nitrogen atom as a part of heterocyclic system and a complex molecular structure.

Alkaloids



- Strychnin- *Strychnos nux-vomica*(Loganiaceae)
- Parts used- Dried ripe seeds
- Chief Components- Strychnin, Brucine, Vomisine, Novacine, Icajine
- Uses- Circulatory stimulant in surgical shock cases, respiratory stimulant in poisoning cases, improves appetite and digestion.

# Strychnos nux-vomica



- Reserpine-Rauwolfia serpentina(Apocynaceae)
- Parts used- Dried rhizome and roots
- Chief Components-  
Reserpine, Rescinnamine, serpentine, ajmaline, phytosterols, fatty acids, sugar.
- Uses-Treatment of hypertension, circulatory disorder, neuro psychiatric disorder.

# Rauwolfia serpentina



- Vinblastine- *Catharanthus roseus* (Apocynaceae)
- Parts used- Dried Leaves
- Chief Components- Indole alkaloids- Vinblastine, Vincristine, Vinorelbine.
- Uses- Treatment of Hodgkin's disease (cancer of lymph/liver/spleen), treatment of childhood leukaemia, used in combination as antitumor drug .

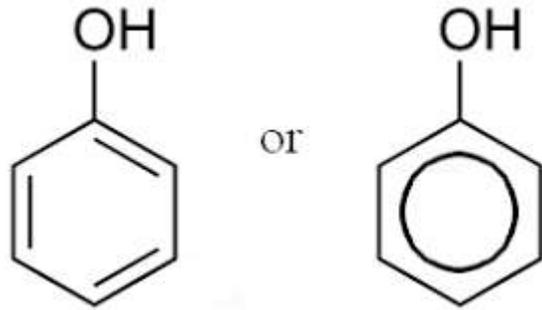
# Catharanthus roseus



# Phenols

- **Phenolics** are aromatic benzene ring compounds with one or more hydroxyl groups produced by **plants** mainly for protection against stress.
- **Phenolics** play important roles in **plant** development, particularly in lignin and pigment biosynthesis. They also provide structural integrity and scaffolding support to **plants**.

# Phenol Structure



# Capsaicin

- Source-**Capsaicin** (pronounced "cap-SAY-a-sin") is the chemical in chili peppers that makes them spicy. Pepper belongs to the genus *Capsicum* which is a member of the Solanaceae family. The genus *Capsicum* consists of approximately 31 species of which the five domesticated species are *C. annum*, *C. baccatum*, *C. chinense*, *C. frutescens*, and *C. pubescens*. Specifically, **capsaicin** occurs in the fruits of plants in the Capsicum family, including jalapeño peppers, cayenne peppers, and other chili peppers.

# Capsicum



# Parts Used

- Capsaicin is present in large quantities in the placental tissue (which holds the seeds), the internal membranes and, to a lesser extent, the other fleshy parts of the fruits of plants in the genus *Capsicum*. The seeds themselves do not produce any capsaicin, although the highest concentration of capsaicin can be found in the white pith of the inner wall, where the seeds are attached

# Uses

- Globally pepper is known for its high nutritional value, health benefits and medicinal properties. It is rich in vitamins and minerals, has antimicrobial and anticancer properties. Chili pepper has preventive and therapeutic properties for many ailments such as different types of cancer, rheumatism, stiff joints, bronchitis and chest colds with cough and headache, arthritis, heart arrhythmias and many other ailments

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