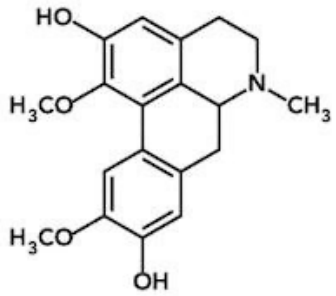
FOLIA BOLDO

- *Peumus boldus*, Monimiaceae
- Mediterranean plant, Chili
- Leaves are exported in large amounts and are widely used to prepare a digestive tea. Traditionally they were employed for headaches, rheumatism.
- Mainly terpenoidal essential oil and a number of **isoquinoline and aporphine alkaloids**



Boldine

FOLIA BOLDO

- 0.2-0.5 % alkaloids
- (**Boldine**, isoboldine, *N*-methyllaurotetanine, laurotetanine)
- 10-30 ml/kg essential oiĬ (limonene, pinene, p- cymene, linalool, cineole, camphor, ascaridole)
- Flavonoids (rhamnetin, isorhamnetin, kaempferol etc.)

FOLIA BOLDO

- Leaf extract is choloretic (a compound that increase the volume of secretion of bile from the liver) and colagogue (a compound that stimulates the contraction of the gallbladder).
- A combination preparation is available with *Cynara scolymus*, *Cassia angustifolia* and *Aloe* used for constipation.
- Comm. E suggest it as spasmolytic, choloretic and for GI problems.

RADIX BERBERIDIS

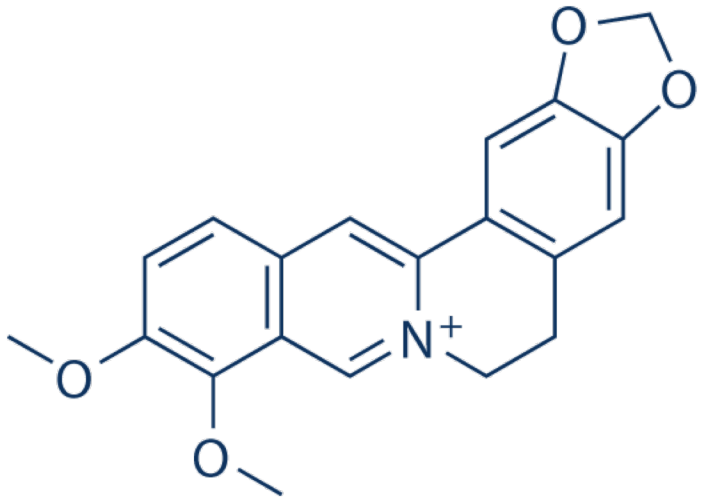
- The roots of *Berberis* sp. (*B. vulgaris, B. crataegina*)
- Plants belonging to the genus *Berberis* (Family: Berberidaceae) are widely distributed with nearly 550 species worldwide. Extracts and compounds obtained from *Berberis* species, especially Berberine alkaloid, showed effectiveness in the management of diabetes and other metabolic diseases.
- Contains 2-3% alkaloids.
- Main alkaloid is **Berberine**. Berberine, a quaternary ammonium salt belonging to a group of benzylisoquinoline alkaloids, is the most active compound reported from *Berberis* species, and it is considered to be highly effective against diabetes and other metabolic diseases.
- The other alkaloids are columbamine**,** palmatine, jatrorrhizine etc.

RADIX BERBERIDIS

Tonic and antipyretic when consumed as tea.

Berberine possesses hypotensive activity.

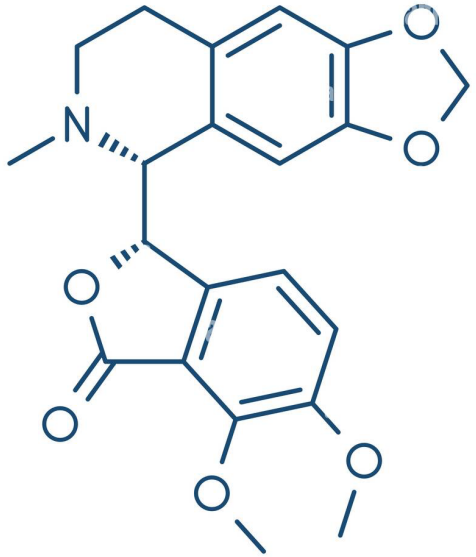
The plant is called as «karamuk»in Turkish.



Berberine

RHIZOMA HYDRASTIS

- ***The roots and rhisomes of Hydrastis canadensis*** (Ranunculaceae).
- Grows naturally in North America and Canada
- The perennial plant can reach up to ½ m.
- Rhizoma Hydrastis contains 3-4% alkaloids.
- 80 % of total alkaloid is **hydrastine** which carries phytalylisoquinoline sceleton wih tertiary N.
- Hydrastine is **an isoquinoline alkaloid** which was discovered in 1851. Hydrolysis of hydrastine yields hydrastinine, which was patented by Bayer as a haemostatic drug during the 1910s.

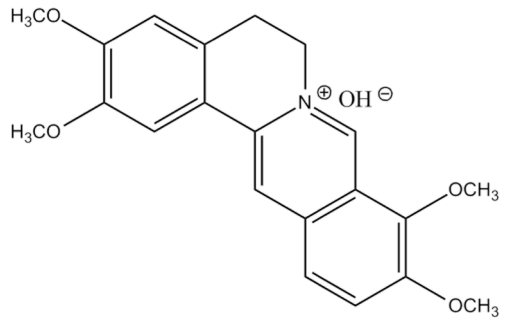


hydrastine

RHIZOMA HYDRASTIS

- Vasoconstructive and haemostatic activity
- Vasculary protectant with other plants such as Hamamelis..
- To treat hemoorrhoids
- Studies have confirmed antioxidant and antiinflammatory properties of berberine.
- Goldenseal is a very popular dietary supplement in the United States especially in combination with Echinacea for preventing cold and flu and accounted for one of the 15 top selling herbal supplements.
- Goldenseal extract is used today for relieving symptoms of cold, flu, sore throat, canker sores, as well as treating a variety of other conditions such as ulcer, mild eye irritation, and indigestion.
- The root of goldenseal was used by Native Americans as a dye for clothing and also for treating inflammation as well as infection of the eyes and skin.

RADIX COLOMBO



Palmatine

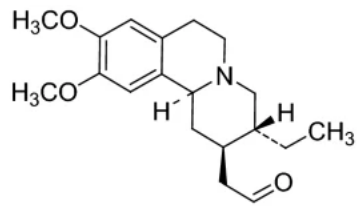
- Menispermaceae
- *The roots of Jateorhiza palmata*
- *Jateorhiza palmata* (calumba) is a perennial climbing plant from East Africa.
- Carries 2-3% alkaloids; palmatine, jatrorrhizin and columbamine. It contains isoquinoline alkaloids and is used mainly as a bitter tonic especially in cases of anorexia nervosa.
- **Palmatine** chloride is a uterine contractant and shows antibacterial and antimalarial properties.

RADIX IPECACUANHAE

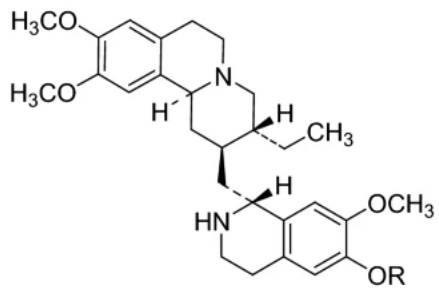
- The underground parts of *Cephaelis ipecacuanha, C. acuminata*
- Grows naturally in South America.
- The roots were used to make syrup of ipecac, a powerful emetic, a longtime over the counter medicine no longer approved for medical use in the West, for lack of evidence of safety and efficacy.
- Ipecacuanha contains the alkaloids emetine (methylcephaeline), cephaeline, psychotrine, *O*-methylpsychotrine. It also contains the pseudo-tannin ipecacuanhic acid or cephaelic acid.

RADIX IPECACUANHAE

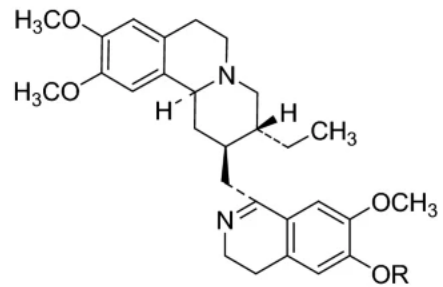
- Ipecacuanha consists of the dried roots and rhizomes of either *Cephaëlis ipecacuanha* or *C. acuminata.* In large doses it is an emetic, and in smaller ones it is an expectorant and a restorative.
- It is also considered as a specific in treatment of dysentery.
- The treatment with ipecacuanha pharmaceutical substance as well as the pure emetine has been ceased on the grounds of their toxicity, and is gradually replaced by safer and more effective compounds.



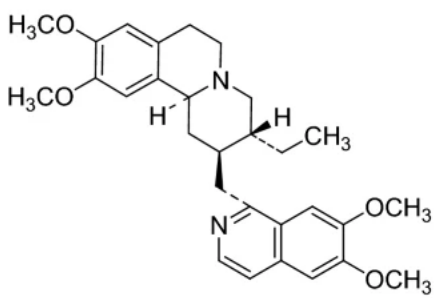
Protoemetine



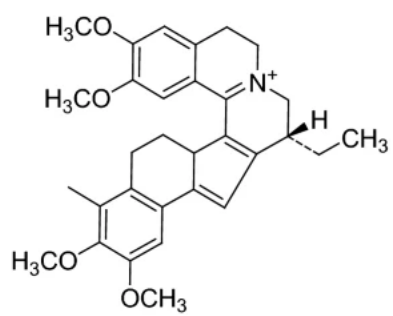
Emetine, R = –CH_3
Cephaeline, R = –H



O-Methylpsychotrine, R = –CH_3
Psychotrine, R = –H

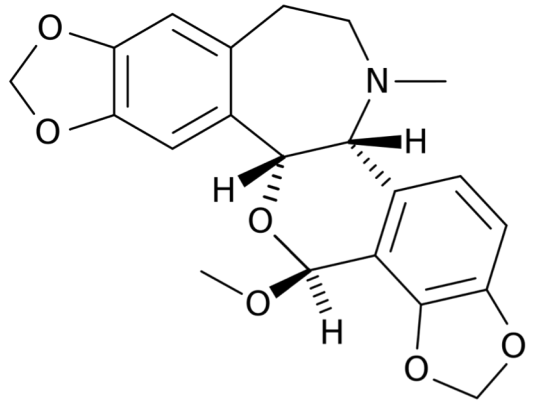


Emetamine



Rubremetine

Papaver rhoeas



Rhoeadine

- In Turkish the plant is called as «Gelincik Çiçeği»
- Belongs to Papaveraceae family
- Flowers contain 0.05% alkaloids.
- **Rhoeadine** (rheadine) is an alkaloid derived from the flowers of the corn poppy (Papaver rhoeas)
- Mild sedative activity. It has been studied for its potential use in the treatment of morphine dependence.

CURARE

Curare is defined as «wide variety of highly toxic plant extracts». Curare was originally used by South American Indians as a narrow poison that causes paralysis of skeletal muscle.

As a potent muscle relaxant, curare can cause death quickly by inducing asphyxia due to rapid relaxation of diaphragmatic muscles. According to one source, death from respiratory arrest can take place within a few minutes in birds and small prey, and up to 20 min in larger mammals. Curare is considered to be highly toxic.

In 1912, an extract from *Chondrodendron tomentosum* has been used clinically to reduce spasms in patients with tetanus andthose treated with shock therapy, and to treat mus-cular rigidity and spastic paralysis.

CURARE

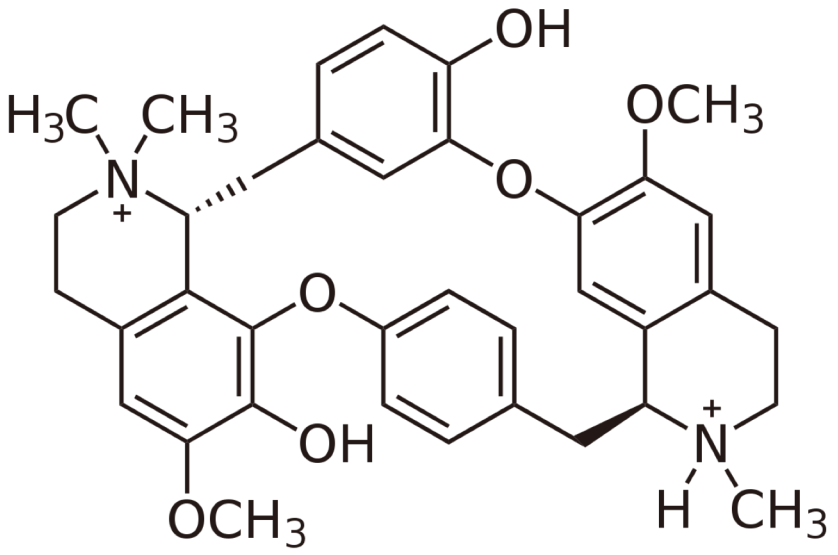
Curare mimics acetylcholine by binding to receptorat muscle synapses, preventing nerves from stimulating muscular contraction and causing death by respiratory paralysis. It is a neuromuscular non-depolarizing agent and a nicotinic antagonist. The potassium channel blocker tetraethylammonium (TEA) has been shown to reverse the effects of tubocurarine.

CURARE

Crude curare is a resinous dark brown to black mass with a sticky to hard consistency and an aromatic, tarry odour. Crude preparations of curare were classified according to the containers used for them: pot curare in earthenware jars, tube curare in bamboo, and calabash curare in gourds. Tube curare was the most toxic form, typically being prepared from the woody vine *Strychnos toxifera*.

The main alkaloid responsible for the pharmacological activity of curare preparations is **tubocurarine**, first isolated from tube curare in 1897 and gained in crystalline form in 1935. Tubocurarine chloride (as d-tubocurarine chloride), was the form initially used in medicine. It was first used for general anesthesia in 1942, as the commercial preparation intocostrin.

- Although highly effective as a muscle relaxant, **tubocurarine** also caused significant hypotension (a drop in blood pressure), which limited its use.



tubocurarine

Tubocurarine is a benzylisoquinoline derivative