

Learning unit: Phytopharmacology

Important terms

pharmacognosy

natural drugs

active substances

- primary metabolites
- secondary metabolites
- examples of active substances with pharmacological effects
 - mucilages
 - alkaloids (tropane alkaloids, ergot alkaloids, opium alkaloids, vinca alkaloids)
 - flavonoids
 - tannins
 - bitter principles
 - essential oils
 - saponins
 - cardioactive glycosides
- examples of drugs of natural origin or their semisynthetic derivatives

types of herbal preparations

- herbal medicinal products
 - marketing authorisation process
- food supplements
 - market launch process

examples of medicinal herbs and their reasonable use

- hypnosedatives, anxiolytic agents
 - valerian – essential oils, valepotriates (*Valeriana officinalis*)
 - passion flower – flavonoids, indole alkaloids (*Passiflora incarnata*)
 - hop – essential oils, flavonoids (*Humulus lupulus*)
- muscle relaxants
 - cannabis extract – THC, cannabidiol (*Cannabis sativa*)
- laxatives
 - bulk-forming – fibre (psyllium, *Plantago ovata*)
 - stimulant – anthraquinones (*Cassia senna*)
- drugs used in GIT disorders
 - cholagogues – essential oils (fennel – *Foeniculum vulgare*, mint – *Mentha piperita*)
 - GIT spasmolytics – essential oils (chamomile – *Matricaria chamomilla*, mint – *Mentha piperita*)
- antiemetics
 - ginger – essential oils (*Zingiber officinale*)
- antitussive and mucoactive drugs
 - marshmallow – mucilages (*Althaea officinalis*)
 - liquorice – saponins (*Glycyrrhiza glabra*)
- dermatologics
 - astringents – tannins (witch hazel, *Hamamelis sp.*)
 - wound healing substances – propolis (honey bee product), chamomile (*Matricaria chamomilla*)
 - emollients – plant oils

examples of poisonous plants and mushrooms

- belladonna (*Atropa belladonna*)
- lilly-of-the-valley (*Convallaria majalis*)
- yew (*Taxus* sp.)
- herb-paris (*Paris quadrifolia*)
- foxglove (*Digitalis* sp.)
- castor oil plant (*Ricinus communis*)
- mezereum (*Daphne mezereum*)
- periwinkle (*Vinca minor*)
- death cap (*Amanita phalloides*)
- panther cap (*Amanita pantherina*)

algorithm of poisoning treatment

- see the learning unit JS13 General principles of intoxication therapy
- Toxicology information center

Learning outcomes

Student estimates potential use of a medicinal herb based on its main active substance. Student identifies reliable sources of information about herbal medicines and medicinal herbs. Student can advise on the use of medicinal herbs in selected non-serious diseases. Student explains potential risks of self-treatment with plants and knows the most important poisonous plants and mushrooms.

Recommended literature

Rang & Dale's Pharmacology, 9th edition, 2020

Study materials in the IS for courses aVLFA0721p, aVLFA0721c, aVLFA0822p and aVLFA0822c

Exam questions

Drugs of natural origin are incorporated in other learning units from special pharmacology.