

# Practical Pharmacognosy

2<sup>nd</sup> Stage

2<sup>nd</sup> semester

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Lab.1

## Medicinal plants



# INTRODUCTION

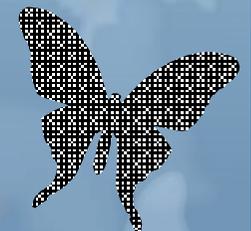
- Of all forms of life, plants are the **most vital** to all others. The connection we have with plants is **critical and life giving**.
- In addition to providing the **oxygen** we breathe, plants often have **complex molecular structures** that are able to **heal our bodies**.
- Every ancient culture known to man has had some form of medicinal relationship with plants.
- It is estimated that **70-80 % of people** worldwide rely on traditional herbal medicine to meet their primary health care needs.

# *Pharmacognosy*

- *Pharmacognosy* is the study of medicines derived from natural sources.
- The word "*Pharmacognosy*" is derived from the Greek words pharmakon (drug), and gnosis (knowledge).
- The term "*Pharmacognosy*" was used for the first time by the Austrian physician Schmidt in 1811.



- According to the American society of Pharmacognosy, *Pharmacognosy* "is the study of natural product molecules (typically secondary metabolites) that are useful for their **medicinal, ecological, or other functional properties**".
- Although most pharmacognosy studies **focus on plants and medicines derived from plants**, other types of organisms are also regarded as pharmacognosy interesting, in particular, various types of **microbes(bacteria, fungi,...etc.)**, and recently various **marine organisms**.



- Plant preparations are said to be **medicinal or herbal** when they are used to promote **health** beyond basic nutrition.
- The study of drugs from plants includes the subjects of **botany, chemistry and pharmacology**.
- **Botany** includes the identification (**taxonomy**), **genetics** and **cultivation** of plants.
- **Chemistry** includes the **isolation, identification and quantification** of constituents in plant materials.
- **Pharmacology** is the study of the **biological effects** that the chemicals in medicinal plants have on cell cultures, animals and humans.



## *Classification of vegetable drugs for study:*

- 1) **Alphabetical:** using either Latin or English names.
- 2) **Taxonomic:** Families, Genera, and Species.
- 3) **Morphological:** either organized drugs (leaves, flowers and seeds) or unorganized (extracts, gums, oils....etc.).
- 4) **Pharmacological or therapeutic use.**
- 5) **Chemical** e.g. alkaloids, glycosides, V.O....etc.

# *The most important points you have to recognize for plant drugs:*

- The Botanical name.
- Family name.
- Local name.
- Part used.
- Active compounds.
- Basic structure.
- Dosage form.
- Therapeutic use.

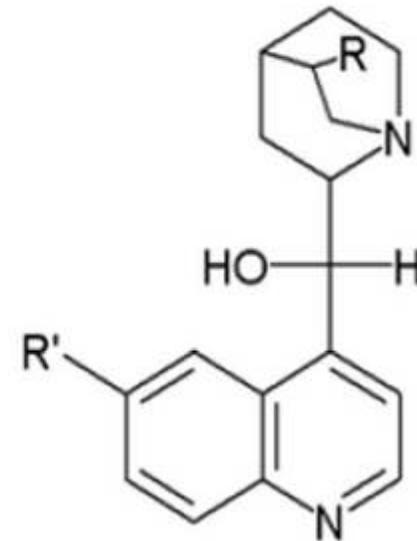




# *Cinchona*



- Botanical name: Cinchona succirubra
- Family name: Rubiaceae
- Local name: الكينينة
- Part used: bark
- Active compound: Alkaloid quinine
- Basic structure:
- Dosage form: Tablets
- Therapeutic use: Malaria



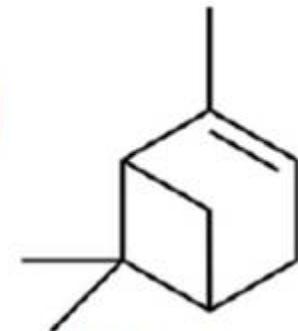
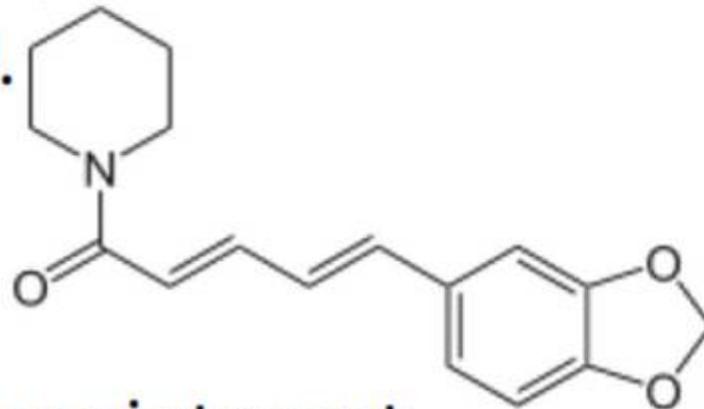
# Black pepper

- Botanical name: Piper nigrum Linne
- Family name: Piperaceae



- Local name: الفلفل الاسود
- Active compound: Piperine alkaloid and terpenes volatile oil.

- Basic structure:



**Pinene**

- Dosage form: powder, ointment.
- Therapeutic use: Stimulant, febrifuge.

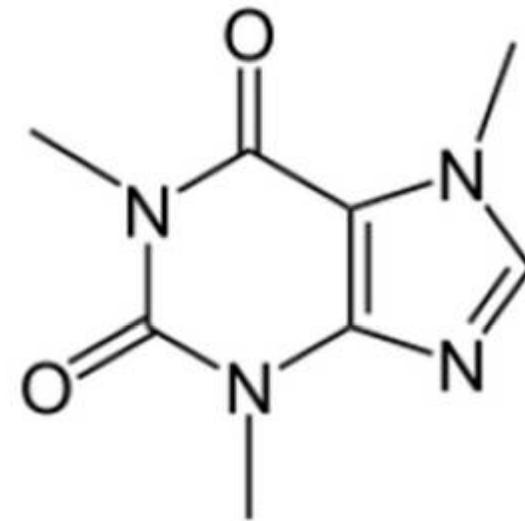




# Coffee

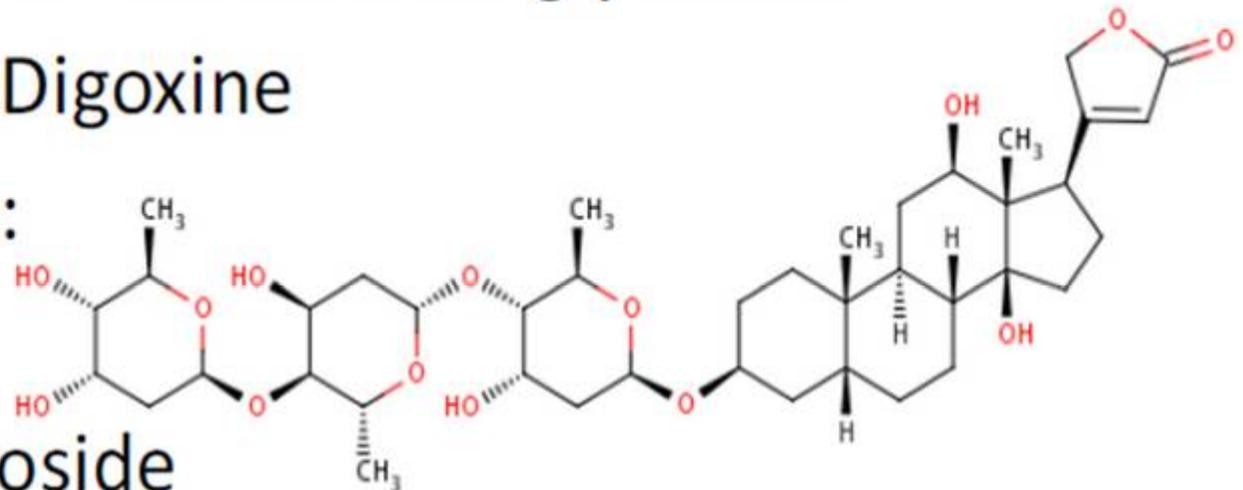


- Botanical name: Coffea arabica
- Family name: Rubiaceae
- Local name: القهوة
- Part used: Coffee seeds
- Active compound: caffeine
- Basic structure:
- Therapeutic use: Central stimulant



# Digitalis

- Botanical name: Digitalis lanata
- Family name: Scrophulariaceae
- Local name: زهرة الكشتبان
- Part used: Dried leaves
- Active compound: Cardiotonic glycoside
- Basic structure: Digoxine
- Therapeutic use:
- Cardiotonic glycoside
- (increase the tone of heart muscle).

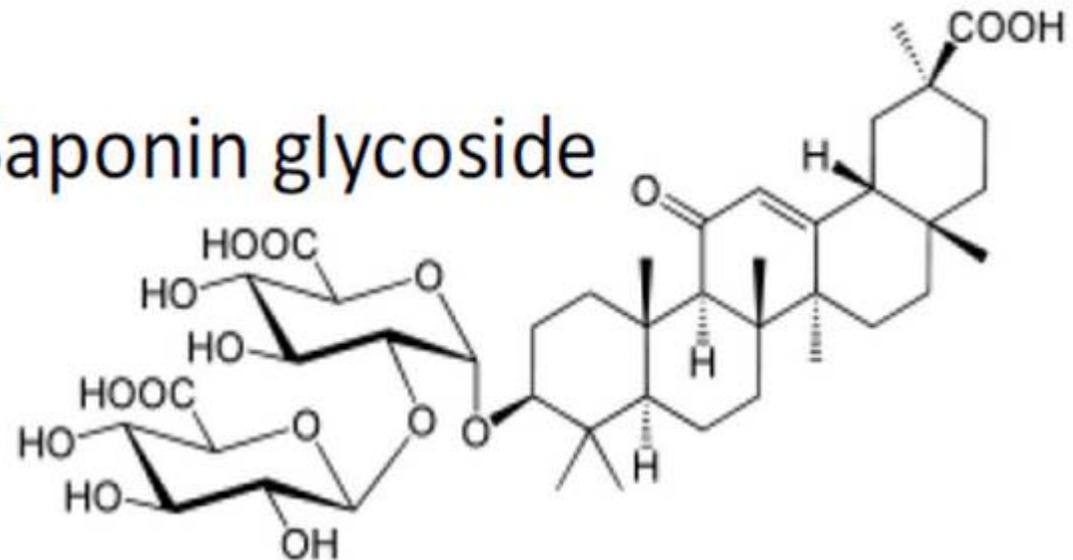


# Glycyrrhiza

Botanical name: Glycyrrhiza glabra



- Family name: Leguminosae
- Local name: السوس
- Part used: Root
- Active compound: Saponin glycoside (glycyrrhizin).
- Basic structure:
- Therapeutic use: Demulcent, expectorant, laxative.

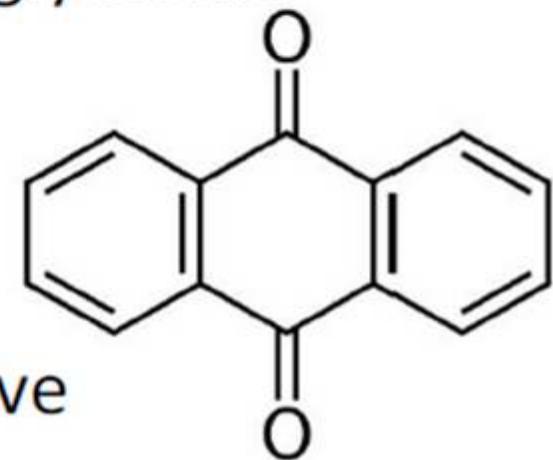




# Senna



- Botanical name: Cassia acutifolia
- Family name: Leguminosae
- Local name: السنامكي
- Part used: leaves and pods.
- Active compound: Anthraquinone glycoside
- Basic structure:



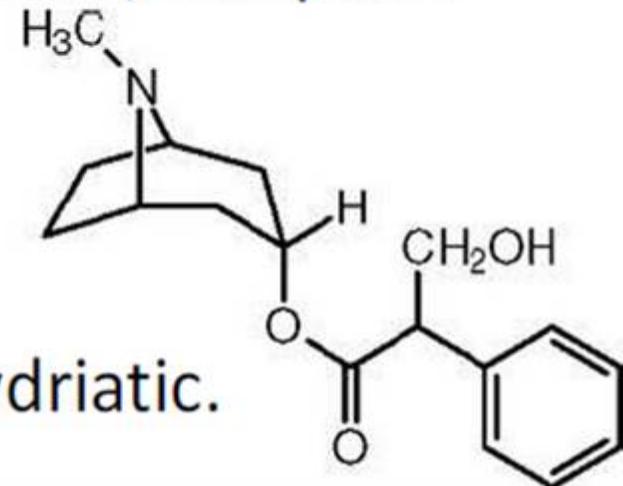
- Therapeutic use: cathartic or laxative



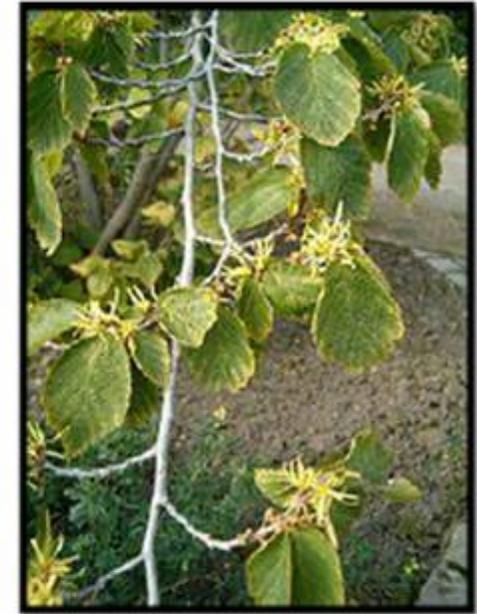
# Belladonna



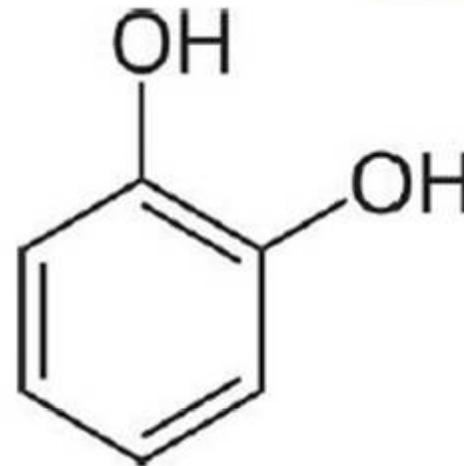
- Botanical name: Atropa belladonna
  - Family name: Solanaceae
  - Local name: ست الحسن
  - Part used: Leaves
  - Active compound: Hyoscyamine, hyosine, atropine.
  - Basic structure:
- 
- Dosage form: tablet, drops, inj.
  - Therapeutic use: antispasmodic, mydriatic.



# Hamamelis(Wilch hazel)



- Botanical name: Hamamelis virginiana
- Family name: Hamamelidaceae
- Local name: عصا الساحر
- Part used: leaves
- Active compound: Tannins
- Basic structure: catechol



- Dosage form: decoction or infusion.
- Therapeutic use: astringent homeostatic.

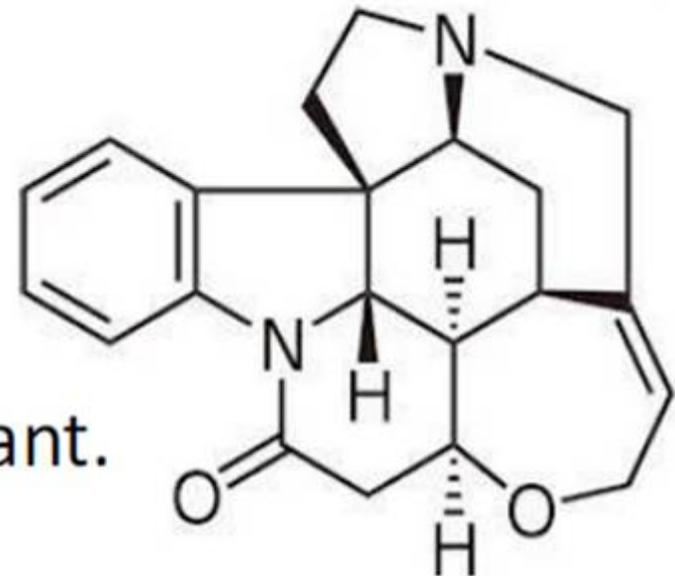


## Nux vomica



- Botanical name: Strychnos nux vomica
- Family name: Loganiaceae
- Part used: dried ripe seed
- Active compound: alkaloid (Strychnine and brucine)
- Basic structure:

- Therapeutic use: central stimulant.



*Thank you*

