

## **Course description, Phyto II**

Phytochemistry means the study of the plant (natural chemistry).

In pharmacy we emphasize on the plant chemistry.

During our course we will study different groups of plant natural products with medicinal or industrial value.

In the second part (phyto II) the course deals with two major classes:

1. Alkaloids: preparation methods, general chemical properties, protoalkaloids, pyridine, piperidine, quinoline, isoquinoline, indole, steroidal, terpene alkaloids
2. Glycosides: preparation methods, general chemical properties, phenols, anthraquinones, flavonoids, cardiacglycosides, sulphur, cyanoglycosides
3. tannins and coumarins

### **Qualifications and Goals**

#### **1- Intended Learning Outcomes (ILOs):**

##### **a- Knowledge and Understanding:**

By the end of the course, students will have the required knowledge about the most important medicinal natural products: alkaloids and glycosides.

##### **b- Intellectual Skills:**

- Upon successful completion of this course, students will be able to:
- Identify alkaloids structure and chemistry and glycosides importance and chemical identification

##### **c- Practical skills:**

- Independent study and SAR of different groups
- Chemical Test for important drugs; morphine, atropine, quinine...etc

**d- General and transferable skills:**

- Working in a group, and be able to put a plan for small projects
- Launch the internet for medicinally used plant alkaloids and important medicinal glycosides



**Course content**

COG402

Lecturer: Rabab Mohammed, Hall 3004, Wednesdays: 5-7pm

Week 1	Introduction to alkaloids
Week 2	protoalakoids
Week 3	Pyridine Alkaloids, pepridine alkaloids
Week 4	<u>Tropane alkaloids, Quinoline alkaloids</u> <u>Opium alkaloids</u> <b>Quiz</b>
Week 5	Indole alkaloids, carboline alkaloids Imidazole alkaloids
Week 6	Purine alkaloids, Steroidal alkaloids, Diterpene alkaloids <b>Quiz</b>

Week 7	Introduction to glycosides
Week 8	Phenolic Glycosides  <b>Quiz</b>
Week 9	anthraquinone glycosides
Week 10	<u>Flavonoid glycoside</u>  <b>Quiz</b>
Week 11	Cardiac glycosides
Week 12	Other GLYCOSIDES  Anticancer and hallucinating drugs <b>Quiz</b>



### Teaching-training activities

**Class activity: Wednesdays 5-7 pm.**

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### **Phyto II, 2010**

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- Each 2 or 3 students will be assigned one natural product from the course subject
- Each group discusses the natural product (alkaloid or glycoside) on the white board with emphasis on the following points:

A. chemistry of the drug

B. origin of the drug

C. preparation/extraction of the drug in pure form for industry

D. Synthesis and chemical test (quantitative and qualitative)

E. medicinal, pharmacological or industrial uses

F. pharmaceutical dosage if present

G. other notes about the mentioned drug/natural chemical

- **No ppt presentation is required**
- **Questions and answers are highly encouraged (bonus mark)**
- **A written document with the group name in closed file should be handed to dr. rabab before the presentation time**



## **Support**

my dear students i am available all saturday untill 3pm and wednesday untill 7pm.



## **Methods of evaluation**

### **1- Students Assessment methods:**

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Assessed by final written examination: week 16 or 18

Practical examination: week 14-15

Semester work: week 1-14

**Weighting of assessments:**

Semester work: 20 marks, weight 20%

Practical examination: 20 marks, weight 20%

Midterm examination: 20 marks, weight 20%

Final written examination: 30 marks, weight 30%

Oral examination: 10 marks, weight 10%

Total marks 100

Total weigh: 100%

