Pharmacognosy **lecture: 1**

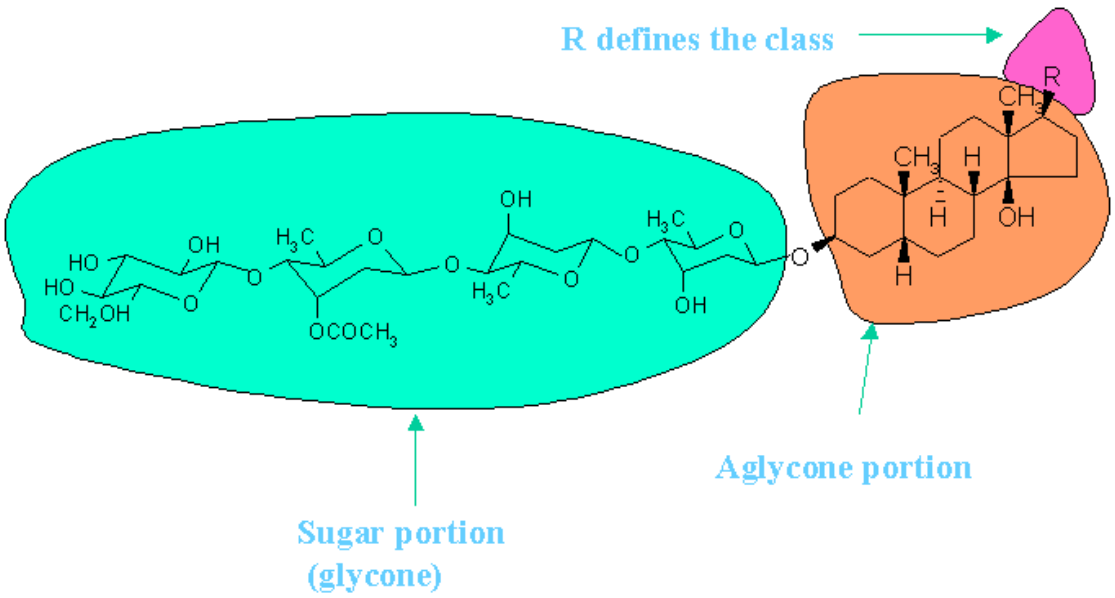
Glycosides

Any compound which is up on hydrolysis will give one or more sugar molecules and non- sugar molecule. The non- sugar part of the glycosides is known as a glycone while the sugar part is known as glycone.

Chemistry of glycosides

Chemically the glycosides are acetyl, in which the hydroxyl group of the sugar is condensed with hydroxyl group of the non-sugar component to form an oxide ring.

Both α and β glycosides are depending up on the stereo confugration of the glycosidic linkage, but only the beta glycoside is present in plants.



Biologic activity of glycosides

Biologic activity of glycosides is related to a glycone part. The function of the glycone part is related to increase solubility and absorption of the glycone part to be easy to reach to the target cell to produce the biologic or pharmacologic activity.

Hydrolysis of glycosides

Glycosides are hydrolyzed either by acids or enzymes e.g. Emulsin. Emulsin is the enzyme responsible for hydrolysis of beta type glycoside in to glycone and a glycone part.

Classification of glycosides

They are different types of classification

A-classification depend on the sugar part

B-classification depend on the glycosidic bond

C-classification depend on the therapeutic activity and the structure of the a glycone part (non sugar part)

Classification By glycone/presence of sugar

If the glycone group of a glycoside is glucose, then the molecule is a glucoside
If it is fructose, then the molecule is a fructoside
If it is glucuronic acid, then the molecule is a glucuronide

Classification of the glycosides by the glycosidic linkage

1- O-glycosides example: digoxin

2-N-glycosides example: adenosin

3-S-glycosides example: sinigrin

4-C-glycosides example: anthraquinone

Classification of glycoside

The third classification is mostly used and according to this glycosides are classified in to

1-cardioactive glycosides

2-anthraquinione glycosides

3-saponin glycosides

4-cyanophore glycosides

5-isothiocyanate glycosides

6-flavonoid glycosides

7-alcohol glycosides