



GLYCOSIDES

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ELEMENTS



Define
Glycosides



Classification
of Glycosides



Glycosides
specially in
medicine

Introduction

Number of medicinal plants containing organic constituents in conjugation with a sugar moiety .It can be 1 or 2 .such compounds are called as glycosides.

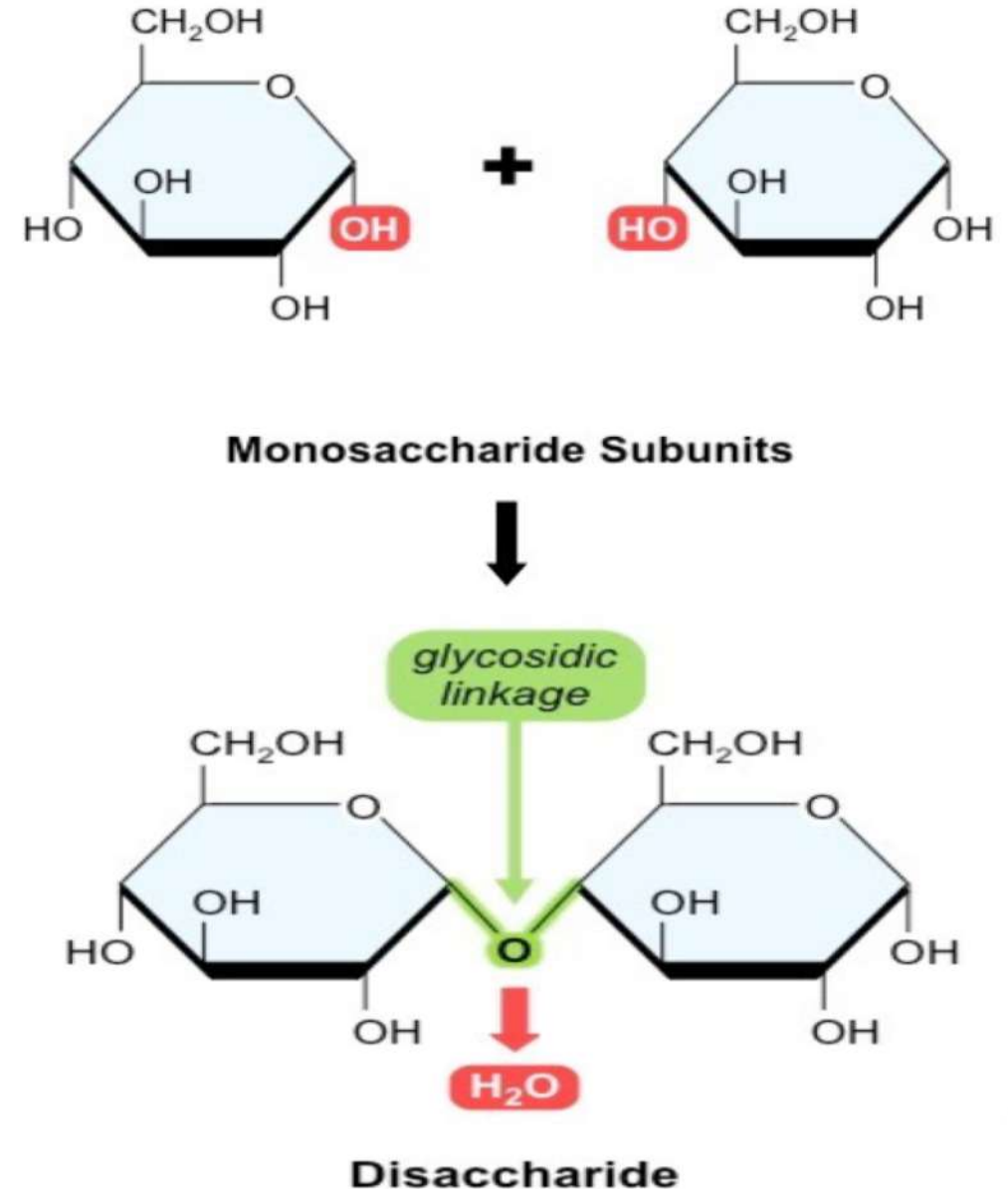


Definition of Glycosides

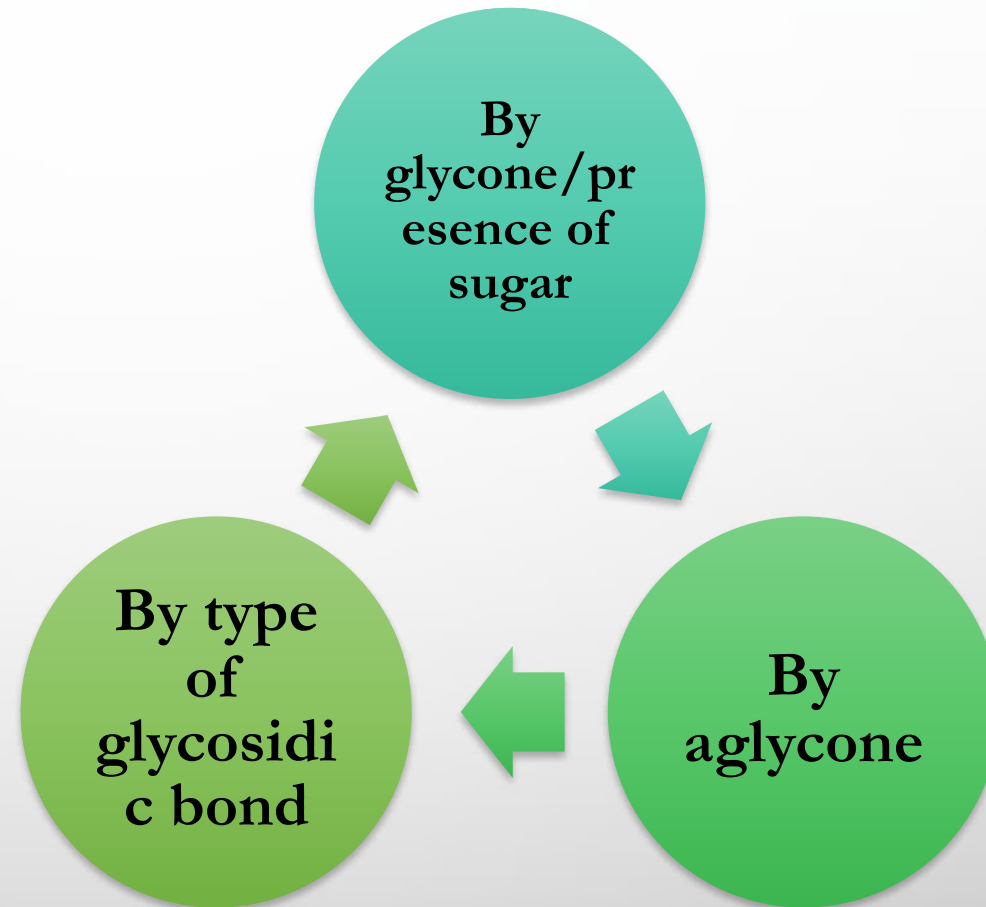
Definition:-glycosides are define as organic compound from plants and animal source, which on enzymatic hydrolysis gives one or more sugar moieties along with an non sugar moiety. Sugar moiety is called glycon and non sugar moiety is called aglycon or genin.

Examples:

1. Disaccharides = monosaccharides + monosaccharides
2. Glycolipid = Glyco + lipid
3. Glycoprotein = Glyco + protein
4. Digitalis = Glyco + Steroid



CLASSIFICATION OF GLYCOSIDES

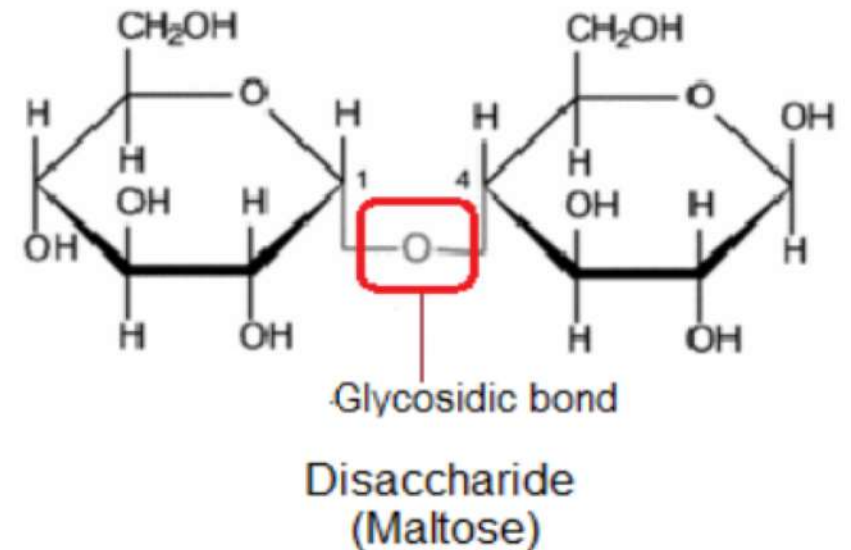
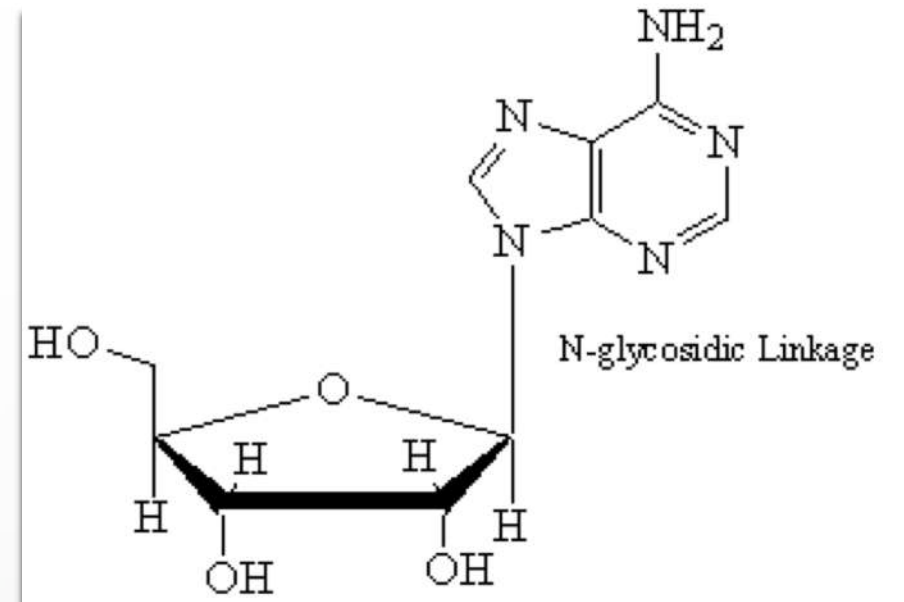


By type of glycosidic bond

Depending on whether the glycosidic bond lies "below" or "above" the plane of the cyclic sugar molecule, glycosides are classified as α -glycosides or β -glycosides. Some enzymes such as α -amylase can only hydrolyze α -linkages; others, such as emulsin, can only affect β -linkages.

There are four type of linkages present between glycone and aglycone:

- 1.C-linkage/glycosidic bond, "nonhydrolysable by acids or enzymes"
- 2.O-linkage/glycosidic bond
- 3.N-linkage/glycosidic bond
- 4.S-linkage/glycosidic bond



Use of Glycosides in medical

Glycoside in medicine: Number of biologically compound are glycosides used in vivo like Salicin :
Discovered by Charles Fredrick Gerhard 1853.

-found in the willow bark -use as analgesic, anti-inflammatory and antipyretic.

-has action very similar to that of aspirin.

Digitalis: discovered by William Withering 1785.

- found in digitalis purpurea "plant".

- used in the treatment of congestive heart failure and heart arrhythmia - inhibiting sodium

-potassium ATPase pump .



SUMMARY

1. Glycosides are defining as organic compound from plants, bound to another functional group.
2. Classification of glycosides by the glycone/ presence, by the type of glycosidic bond, and by the aglycone.
3. There are four type of linkages present between glycone and aglycone.
4. Glycosides can be used in modern medicine because of their cardio tonic, purgative, analgesic, anti-arrhythmic, demulcent action.

References

<https://en.wikipedia.org/>

<https://www.pharmatutor.org/pharmacognosy/glycoside.html>



THANK YOU