

# Glycoside Formation.

A hemiacetal, can react with an alcohol in acidic solution to form an acetal. Glucose itself is a hemiacetal. The hemiacetal hydroxyl group C-OH at C<sub>1</sub> of glucose can react similarly to produce the corresponding acetal. However, when glucose is treated with methyl alcohol in the presence of HCl two isomeric compounds are obtained. This is because, glucose solution both  $\alpha$ - and  $\beta$ -forms are present in equilibrium with each other and each reacts separately.

In carbohydrate chemistry acetals derived from glucose are called glucosides or in general term glucoside. A specific name may be called as fructoside for fructose and so on. The  $C-OH-C$  linkage which joins the two components of an acetal is called the glycosidic linkage.

The  $\alpha$ - and  $\beta$ -methyl glucosides are crystalline, water soluble compounds and have properties analogous to the acetals. Like acetals they are stable towards bases but are hydrolysed in acid solution to yield the parent sugar and alcohol. They do not reduce Fehling solution.



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