



Lect.3.

Four Experiment:

Test for reducing monosaccharide reducing and di saccharide.

Barfoed's Test

Object : To distinguish the reducing monosaccharide reducing and di saccharide.

Principle

This Test differs from Fehling's and Benedict's Test the reduction cupric ions is carried out mildly acid medium . Aldose and ketoses can reduce cupric ions even in acidic conditions. Monosaccharide's react very fast and give appositve test within three minutes. Di saccharides can also react and give appositve test.



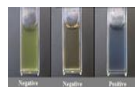
Reagent

1- copper acetate 2-glacial acetic acid

This is prepared from dissolved 24 g copper acetate in 400ml of water, to this add 25ml of 8.5% glacial acetic acid, stir and cool the solution and then add distilled water to making the volume up to 500ml.

Procedure

Add 3 ml of Barfoed's test in test tube, and add 2ml of given solution heat in a boiling water for 2-5 minutes cool. A positive test is indicated by a red precipitate



Lect.3

Seliwanoff's Test: To distinguish between aldo and Keto sugars

Theory: Seliwanoff's Test is positive test for keto sugars only

Principle

The carbohydrates are converted into furfural derivatives by concentrated HCl in Seliwanoff's Test reagent, only furfural derivatives of Keto hexose (5 hydroxyl methyl furfural) with resorcinol to form a cherry red color complex

Hydroxyl methyl furfural + Levulinic acid \rightarrow Fructose + HCl

cherry red color complex \rightarrow Hydroxyl methyl furfural + Resorcinol

Reagent

1-Resorcinol 2- HCl (con)

This is prepared from dissolved 0.05 g in 500ml of water, this add 33ml of HCl acid (con) 36% to it very slowly, add distilled water to making the volume up to 100ml, add HCl (con) finally 12%

Volume of acid \ volume of solution X concentration of acid

ml \ 100ml = 12% \times 33

Procedure

Add 3 ml of Seliwanoff's test Reagent in test tube, and add 2ml of Carbohydrates solution in test tube mix given boil for 1-2 minutes cool, A positive test is cherry red color complex.