

جامعة الانبار

كلية : الصيدلة

قسم : فرع العلوم المختبرية السريرية

اسم المادة باللغة العربية: الكيمياء الحياتية

اسم المادة باللغة الإنكليزية: Biochemistry I

المرحلة: الثالثة

التدريسي: المدرس المساعد زهير عبدالستار احمد

عنوان المحاضرة باللغة العربية: اختبار مولش , اختبار بندكت , اختبار بارفويد

عنوان المحاضرة باللغة الإنكليزية: Molisch Test, Benedict Test,

Barfoed's Test



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practical lab.(8) (Carbohydrates)



Experiments

1- Molisch Test :

It is a general test for CHO .

Principle:-

- The sulfuric acid (H_2SO_4) strips 3 water molecules to form the furfural compound and binds with the alpha-naphthol to a **violet ring**.



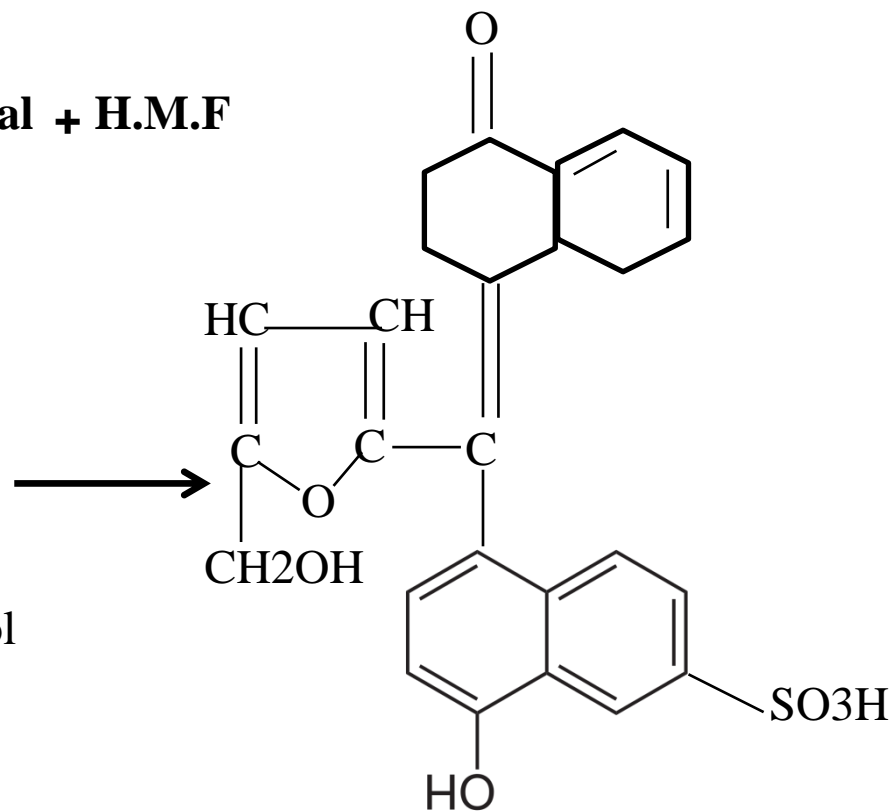
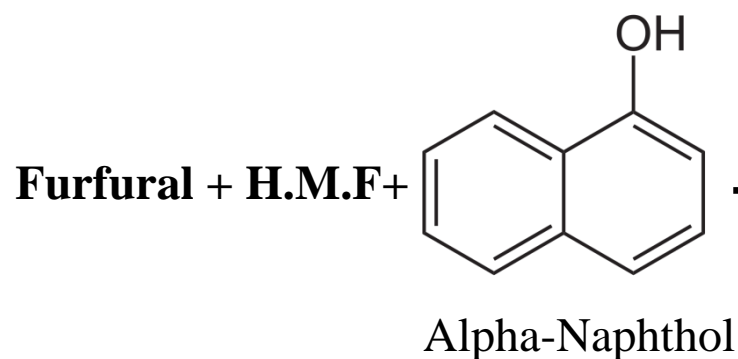
Experiments

Molisch Test :

Method:-

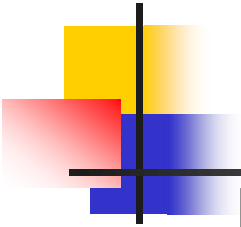
- 1ml test solution + 2 drops of α -naphthol
- mix well
- add 2-3 ml of conc. H_2SO_4
- **violet ring** appears at the junction of two layers.

Experiments

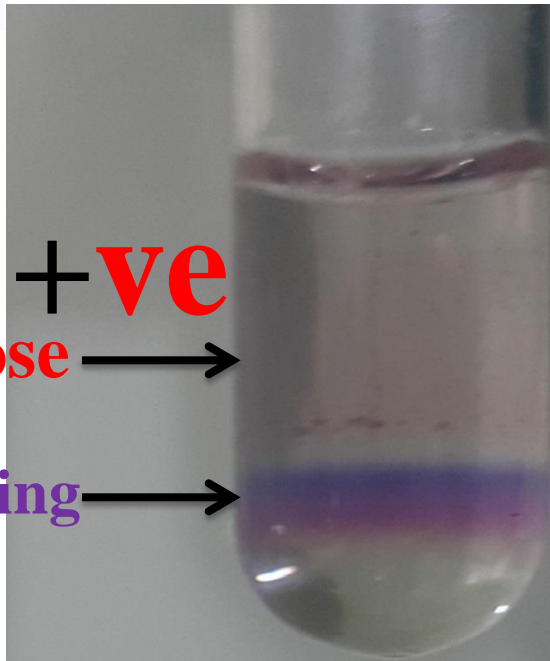


H.M.F=Hydroxy Methyl Furfural

Purple Complex



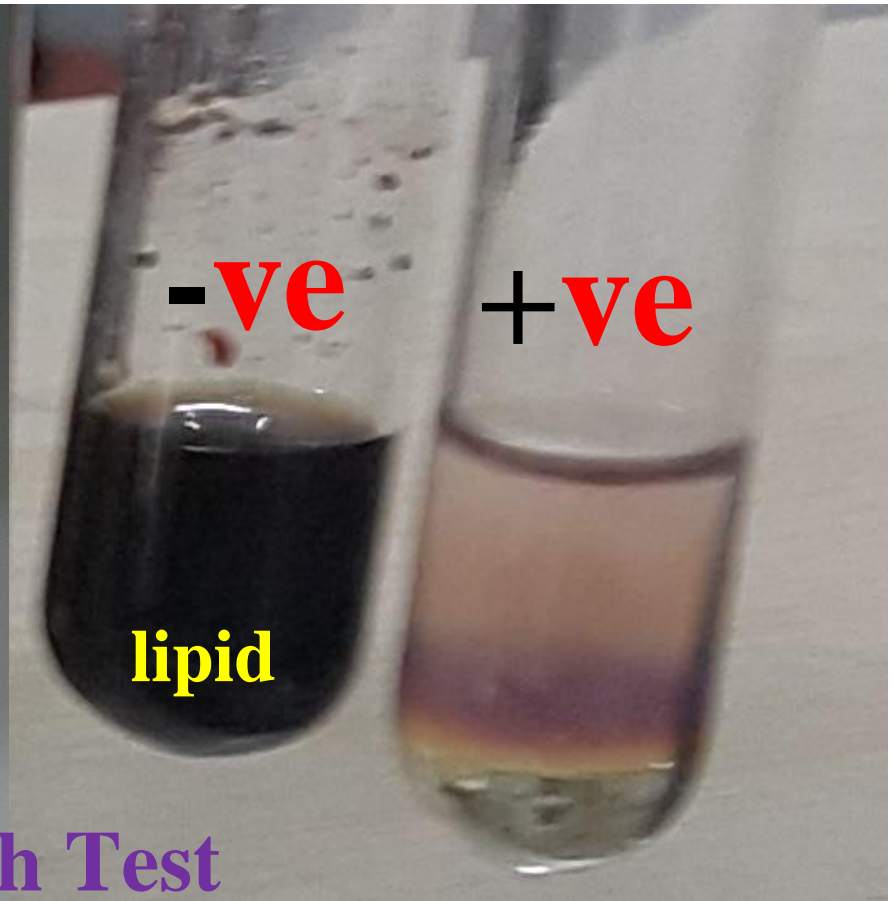
+ve
Glucose →
violet ring →



-ve

+ve

lipid



Molisch Test



2- Benedict Test:

This test is to differentiate between reducing mono, disaccharides and non-reducing disaccharides.

Principle:-

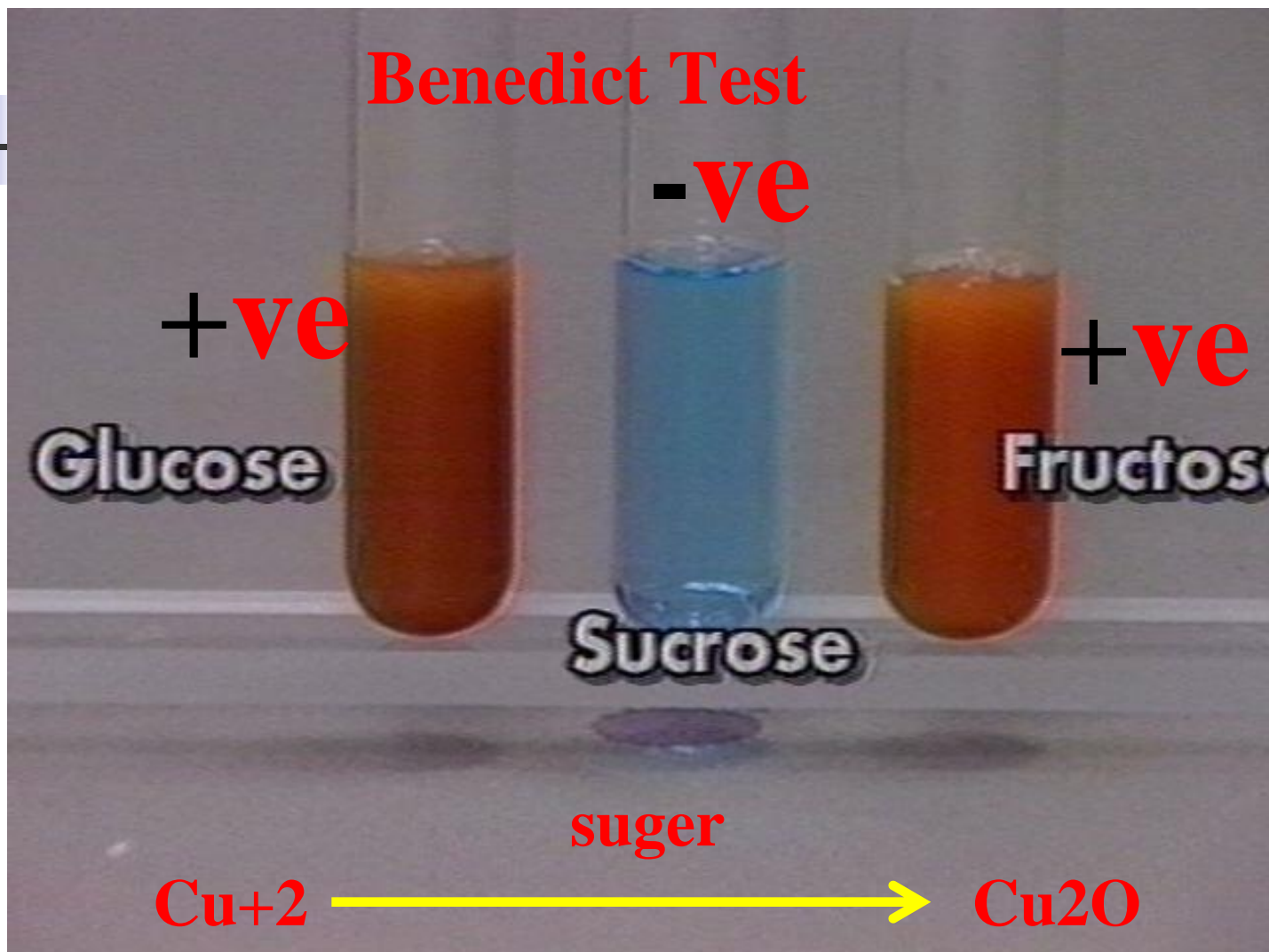
It is based on the reduction of copper ions to copper oxide in a hot alkaline medium.



Benedict Test:

Method:

- 1ml test solution + 1ml Benedict's reagent
- heat the mixture in Boiling Water Bath for (3min)
- Reddish brown ppt.



Cu^{+2} $\xrightarrow{\text{suger}}$ Cu_2O
(in hot alkaline medium) red ppt



3- Barfoed's Test:

This test is used to distinguish between monosaccharides and disaccharides, since the monosaccharide reduces the Cu^{+2} ion faster than disaccharide in the hot **acidic medium**.



Method:

- 1ml of the solution to be tested +2ml of Barfoed's reagent.
- test tubes into a boiling water bath and heat for 2 minutes.
- Remove the tubes from the bath and allow to cool.
- Formation of a red precipitate of Cu_2O .



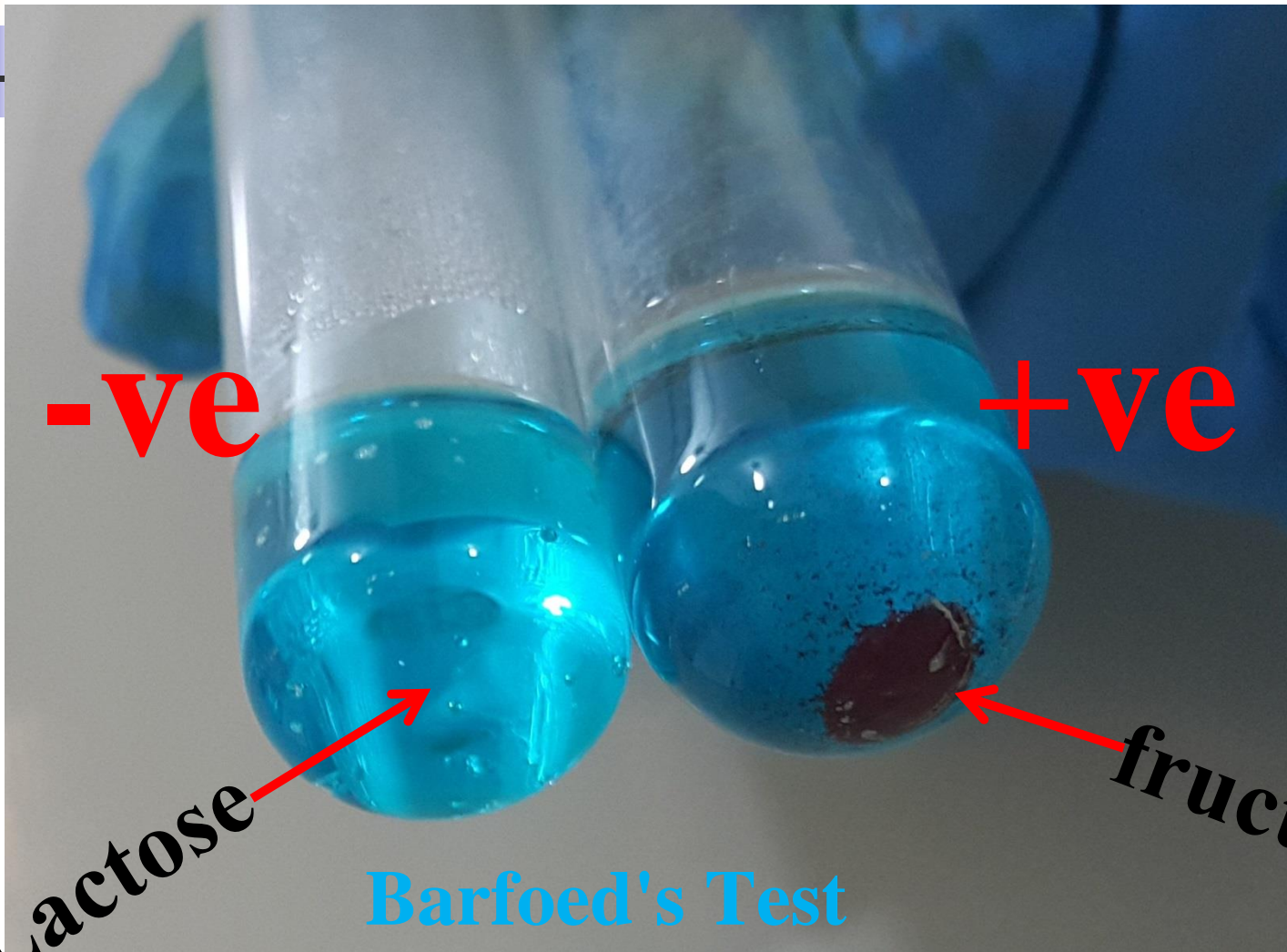
-ve

+ve

Lactose

fructose

Barfoed's Test



thank you for
listening

