

**Al-Rasheed University College**  
**Biology Department**  
**Second Year**

# **BIOCHEMISTRY LABORATORY**

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## CARBOHYDRATES

To classify carbohydrates and to study its physical and chemical properties several tests were developed for this purpose:

### Experiment No.(1) Molisch Test:

- This is a common chemical test to detect the presence of carbohydrates.
- The test reagent ( $H_2SO_4$ ) dehydrates pentose to form furfural and dehydrates hexoses to form 5- hydroxymethyl furfural.
- The furfural and 5- hydroxymethyl furfural further react with  $\alpha$ -naphthol present in the test reagent to produce a purple ring.

### Material:

1. Carbohydrate solution (glucose 1-2 %).
2. 2% alcoholic solution of  $\alpha$ -naphthol (Molisch reagent).
3. Concentrated sulfuric acid ( $H_2SO_4$ ).

### Method:

1. Two ml of a sample solution is placed in a test tube.
2. 3-4 drops of the Molisch reagent is added. And mix well.
3. A small amount (about 2 ml) of concentrated sulfuric acid is slowly added down the sides of the sloping test-tube, without mixing, to form a layer. A positive reaction is indicated by appearance of a purple ring at the interface between the acid and test layers.

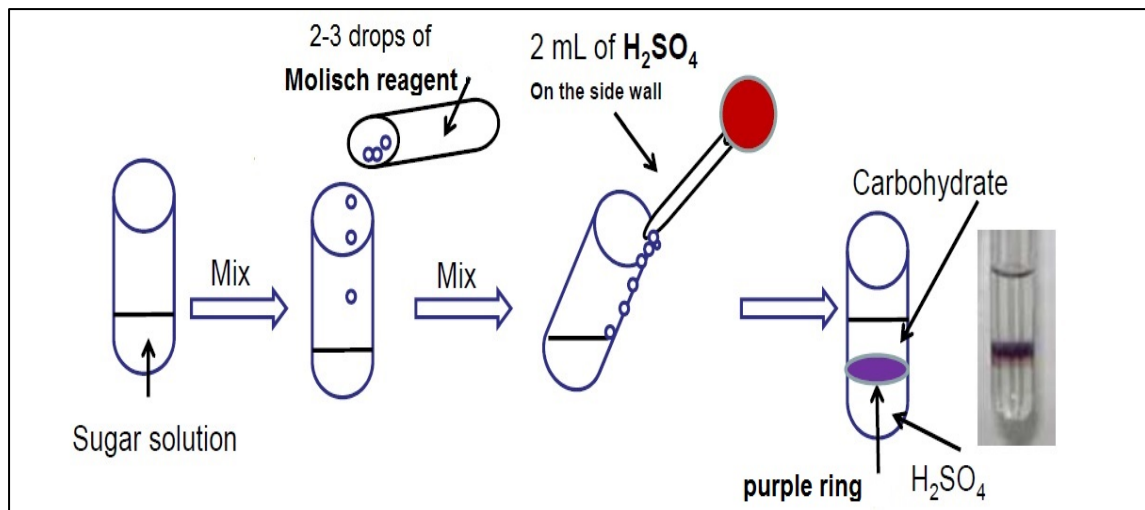


Figure 1. Proceduer of Molisch's Test