

EXPERIMENT No.15

AIM: To test the presence of carbohydrate in the given food sample.

PROCEDURE:

S.No	EXPERIMENT	OBSERVATION	INFERENCE
1	<u>CONC H₂SO₄ TEST</u> Food sample + conc. H ₂ SO ₄ . Heat	Charring occurs with smell of burnt sugar	Carbohydrate present.
2	<u>MOLISCH'S TEST</u> Food sample + Molisch's reagent (1% alcoholic solution of α naphthol) + conc. H ₂ SO ₄ along the sides of the test tube.	A purple ring is obtained at the junction of the two layers.	Carbohydrate present.
3	<u>BENEDICT'S / FEHLING'S TEST</u> Food sample + Benedict's reagent/ Fehling's reagent (A mixture of equal amounts of Fehling's A and Fehling's B). Heat.	A red ppt. is obtained.	Carbohydrate present.
4	<u>TOLLEN'S TEST</u> Food sample + Tollen's reagent (amm. silver nitrate solution). Heat on water bath.	A silver mirror is obtained the walls of the test tube.	Carbohydrate present.

EQUATIONS: (ON BLANK SIDE USING A PENCIL)

- $$\text{CHO}(\text{CHOH})_4\text{CH}_2\text{OH} + 2\text{Cu}^{2+} + 5\text{OH}^- \rightarrow \text{COOH}(\text{CHOH})_4\text{CH}_2\text{OH} + \text{Cu}_2\text{O} + 3\text{H}_2\text{O}$$

Glucose Gluconic acid
- $$\text{CHO}(\text{CHOH})_4\text{CH}_2\text{OH} + 2[\text{Ag}(\text{NH}_3)_2]^+ + 3\text{OH}^- \rightarrow \text{COOH}(\text{CHOH})_4\text{CH}_2\text{OH} + 4\text{NH}_3 + 2\text{Ag} \downarrow + 2\text{H}_2\text{O}$$

Glucose (Gluconic acid)

RESULT: : (ON RULED SIDE) The food sample has been tested for carbohydrate.