

Carbohydrate Tests

Purpose:

To test food samples for the presence of monosaccharides and the polysaccharide starch.

Part A: Benedict's TEST for Monosaccharides

Methods:

1. Add 1 cm of the sample to be tested to a test tube.
2. Add 1 cm of **Benedict's solution** to the test tube and swirl.
3. Leave the test tube in a **boiling water bath** for about 5 minutes.
4. Make note of the final colour & compare it with the table below.

Colour results

No monosaccharide sugars present-BLUE

Trace amounts of monosaccharide sugars present-GREEN

Low amounts of monosaccharide sugars present-YELLOW

Moderate amounts of monosaccharide sugars present-ORANGE

Large amounts of monosaccharide sugars present-RED/ORANGE

Observations:

	+	-	Banana	Apple	Table sugar	Yogurt	Potatoes	Bread	Peanuts
	Control	Control							
Final solution colour									
Nutrient present & quantity									

Analysis:

1. What is the basic formula of a carbohydrate?

2. Were you surprised at any results? Which ones and why?

3. If a student added Benedict's solution to a sample of apple juice and it turned green immediately, would this mean there were monosaccharides present? Explain and expand.

Part B: Lugol's TEST for Starch

Methods

1. Add 1 ml of the sample solution to a test tube.
2. Add 5 drops of **Lugol's solution** to the test tube and swirl.
3. Observe any colour changes during that time as well as the final colour.

Colour results

No Starch present - YELLOWISH

Low amounts of Starch present - BROWNISH

Moderate to large amounts of Starch present- DARK BLUE-PURPLE

Observations:

	+ Control	- Control	Banana	Apple	Table sugar	Yogurt	Potatoes	Bread	Peanuts
Final solution colour									
Nutrient present & quantity									

Analysis cont...

4. State the type of carbohydrate found in each sample. Think carefully since not all carbs were tested for.

5. What were the results for table sugar for both tests?
Hypothesize why table sugar produced these results.

6. What value is there in knowing the chemical make up
of foods you eat?

7. Examine the nutrition facts label provided which was
obtained from a cookie package.
a. What carbs would be presents?

b. What test results would you expect to see? Provide
reasons for your hypothesis.

Nutrition Facts	
Serving Size 1 Cookie (60g)	
Servings Per Container 1	
Amount Per Serving	
Calories 220	Calories from Fat 90
	% Daily Value*
Total Fat 10g	17%
Saturated Fat 2g	12%
Trans Fat 0g	-
EPA + DHA 2000mg	n.a.
Cholesterol 19mg	6%
Sodium 160mg	5%
Total Carbohydrates 29g	10%
Dietary Fiber 5g	20%
Sugars 10g	-
Protein 3g	2%
Vitamin D 200% . Vitamin A 10%	
Calcium 35% . Iron 8%	
*Percent Daily Values based on a 2000 calorie diet	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary fiber	25g 30g
Calories per gram	
Fat 9	Carbohydrate 4 Protein 4

Ingredients: Gluten free oats, orange juice, purified fish oil, cranberries / chocolate chip / ginger or tropical fruit, egg whites, extra virgin olive oil, white rice flour, applesauce, honey, banana puree, natural vanilla extract, calcium citrate-carbonate, orange peel fiber, cinnamon, baking powder, baking soda, xanthan, natural spices, vitamin D3.

Produced by
AMBO Foods, LLC
Venice FL 34292 USA.
941-489-4400

Research suggests
omega-3 oil may
activate your cells
to burn more fat.

Each cookie contains
2000mg of effective
omega-3 (EPA/DHA)

No trans-fats
No high fructose corn syrup
No coloring or artificial additives
No artificial preservatives

NET WT 2.11oz (60g)
Patent Pending