

# WJEC England Biology GCSE

## SP1.3B: Food tests

### Practical notes



## Food tests

### Aim

Conduct qualitative chemical tests for starch, reducing sugars, proteins, and lipids.

### The Iodine test for starch

#### Equipment

- Food sample
- A test tube
- Iodine solution ( $0.01 \text{ mol/dm}^3$ )
- Pipettes.

#### Method

1. Put some of the food sample into a test tube.
2. Add a few drops of iodine solution to the food sample using a pipette.
3. If starch is present, the solution turns from brown to blue-black. Note any colour change in a table of results.

### The Benedict's test for reducing sugars (including glucose)

#### Equipment

- Food sample
- A test tube
- Benedict's solution
- Hot water bath
- Thermometer
- Pipettes

#### Method

1. Add an equal volume or excess of Benedict's solution to the food sample in a test tube.
2. Place in a hot water bath for a few minutes.
3. If reducing sugar is present, a brick red precipitate is formed. If reducing sugar is absent, the solution remains blue. Note any colour change in a table of results.

### Test for protein

#### Equipment

- A test tube
- A  $10\text{cm}^3$  measuring cylinder
- Biuret solution

#### Method

1. Add a few drops of Biuret's reagent (sodium hydroxide and copper (II) sulphate) to the food sample in a test tube.
2. Shake the solution to mix and wait for a few minutes.
3. If protein is present, the solution turns from blue to purple.



### Sources of error

Colour change of Benedict's test and Biuret test may be subtle and difficult to judge if the concentration of the tested molecule is low.

### Safety precautions

Tie hair back and wear safety goggles when performing the Benedict's test using a Bunsen burner and hot water bath.

Handle Biuret solution with care as it contains copper sulphate (poisonous) and sodium hydroxide (corrosive) - wear eye protection. Wash immediately if it comes into contact with skin and wipe away any spills to surfaces.

Keep ethanol solution away from flames as ethanol is highly flammable.

