

WJEC Wales Biology GCSE

2.6: Testing Urine Samples

Practical Notes



Testing Urine Samples

Aim

Test the 4 artificial urine samples provided for A. glucose, which may be an indication of diabetes, and B. protein, which may be an indicator of kidney damage.

Equipment

- Test tubes
- Syringe
- Benedict's reagent
- Biuret solution
- Measuring cylinder
- Artificial urine samples
- Hot water bath
- Pipettes

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

Method

1. Add an equal volume or excess of Benedict's solution to the urine 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 10cm³ measuring cylinder
- Biuret solution

Method

1. Add a few drops of Biuret's reagent (sodium hydroxide and copper (II) sulphate) to the urine 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.

Safety precautions

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

Wear gloves and safety goggles when handling Biuret solution.

Be careful when handling the hot water bath for Benedict's solution.

