

Mandatory experiment 5.1

To investigate the action of amylase on starch

Apparatus required: droppers; graduated cylinder; Bunsen burner; tripod; gauze; 400 ml beaker; thermometer (or electric water bath); 4 test-tubes; test-tube rack; tongs; labels/marker pen



Chemicals required: starch solution; amylase solution; iodine solution; Benedict's solution

In this experiment we want to see if amylase will break down starch. In order for the enzyme to work, it must be kept at the correct temperature, in this case human body temperature. We do this by using a water bath kept at 37°C.

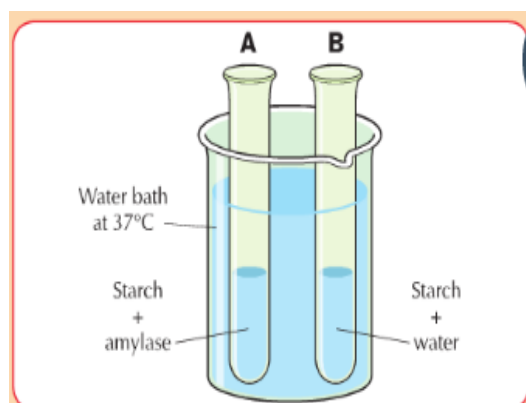


Fig. 5.3 To show the action of amylase on starch.

Method

1. Set up the apparatus as in Fig. 5.3.
2. Leave both test-tubes in the water bath for five minutes.
3. Remove the test-tubes and place in a test-tube rack.
4. Place half the contents of tube A into test-tube labelled C.
5. Test the contents of tube A for starch by adding a few drops of iodine solution. Record the result.
6. Test the contents of tube C for reducing sugars using Benedict's solution. Record the result.
7. Place half the contents of tube B into test-tube labelled D.
8. Repeat the starch and reducing sugar tests on the contents of tubes B and D. Record the results.

TEST-TUBE	CONTENTS AT START	TESTED FOR AT END	RESULT	CONCLUSION
A	Starch + amylase	Starch	No starch present	Starch broken down by amylase
B	Starch + water	Starch	Starch present	Starch not broken down
C	Starch + amylase	Reducing sugar	Reducing sugar present	Starch has been broken down to reducing sugar
D	Starch + water	Reducing sugar	Reducing sugar absent	Starch not broken down