

Property of Enzyme

Materials:

Dry yeast, Potato, Chicken liver, Manganese dioxide,
Water, 3% Hydrogen peroxide, 1mol/l HCl solution, 1mol/l NaOH solution,
Beaker, Syringe, Spirit lamp, Test tube, Incense stick

Experiment 1

Procedure:

- (1) Add following things in hydrogen peroxide.
yeast, grated potato, chicken liver, manganese dioxide
- (2) Put lighted incense into test tube.



Experiment 2: Effect of temperature on reactivity of catalase.

- (1) Dissolve 3g of dry yeast in water. It is enzyme solution.
- (2) As the following table, prepare 6 test tubes (A~F).

Syringe No.	Temperature	Enzyme solution	Water	HCl	NaOH	H ₂ O ₂
A	0	2ml				2ml
B	Room temp	2ml				
C	100	2ml				2ml
D	Room temp	2ml	2ml			2ml
E	Room temp	2ml		2ml		2ml
F	Room temp	2ml			2ml	2ml

* Attention

Test tube A: After cooling each solutions by ice, then mix them.

Test tube C: Boil the enzyme solution only.

All test tubes: Put 3% H₂O₂ into the test tube at last.

- (3) Compare the height of produced bubble.
- (4) Put a lighted incense stick in each syringe.

Extension:

(5) After the reaction stopped completely, add 3% H₂O₂ in syringe B again.

Comparison:

Use MnO₂ instead of enzyme.

Question:

- (1) What is enzyme and catalase?
- (2) How can you check that the bubble is oxygen?
- (3) What the difference between catalase and MnO₂?

Science: