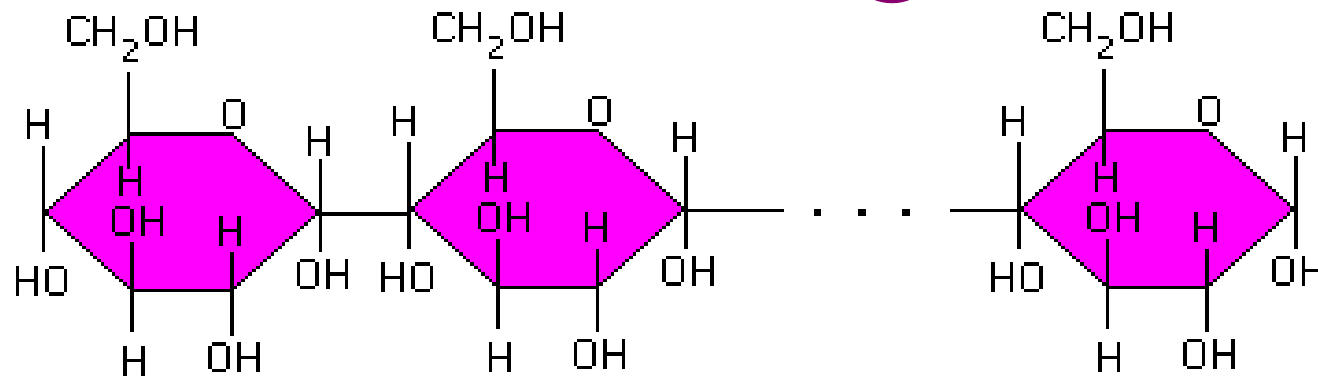


# Quantitative Determination Of Amylase Activity



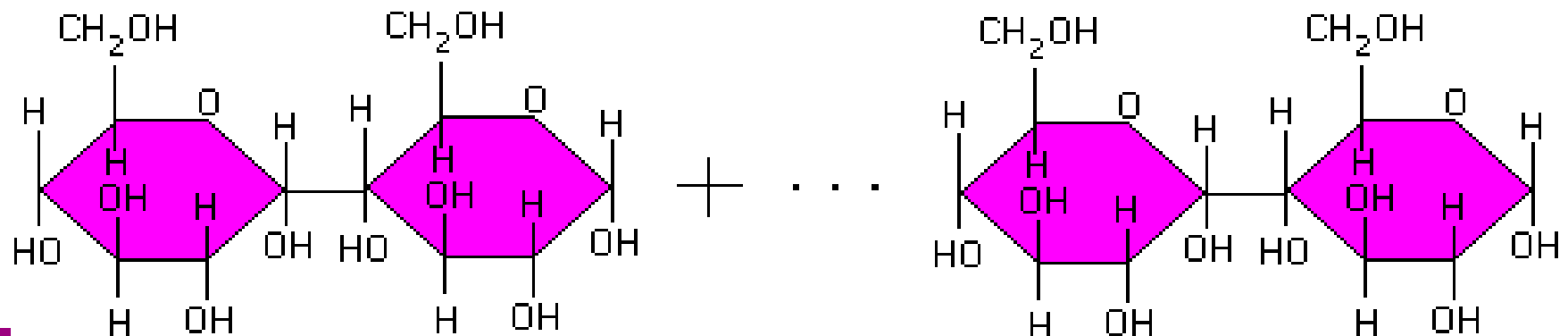
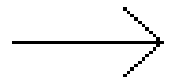
Done By: Sahar Al-subaie

# Amylase Function



(glycogen, polysaccharide)

(salivary amylase)



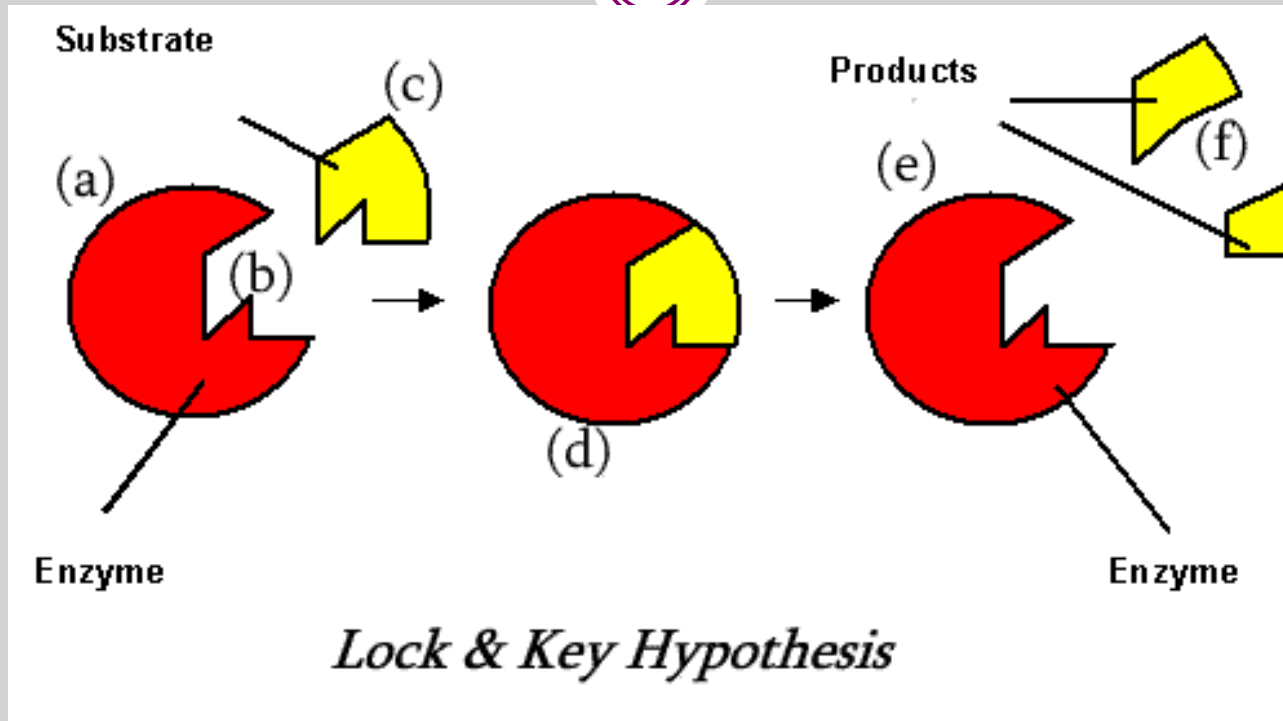
(maltose, disaccharide)

**Aim:**

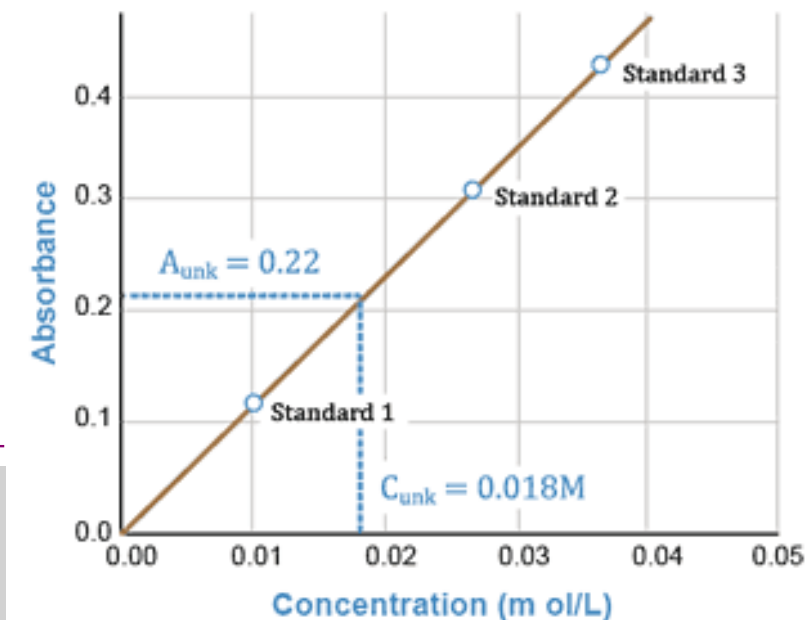


**Determination Of Amylase Activity.**

# General principle :

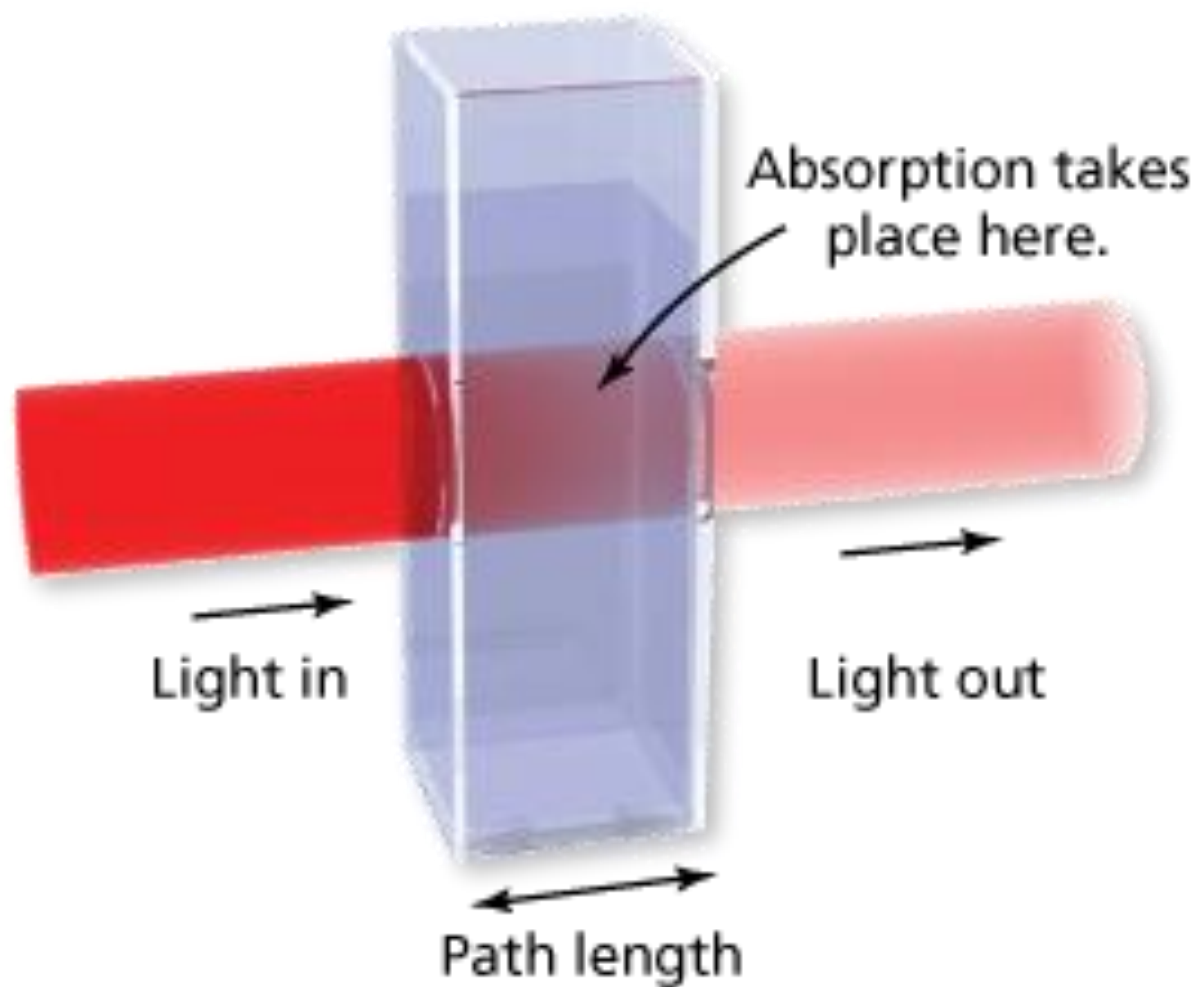


# Beer's Law



Beer's Law States That The Absorbance Is Directly Proportional To The Concentration Of A Solution.

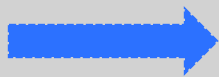
$$C1 \times V1 = C2 \times V2$$



# Principle



Maltose + Alkaline Dinitrosalicylic Acid



Orange-red Colour

# Procedure



**Part (1): Construction Of Maltose  
Std. Curve**

**Part (2): analysing The Unknown.**



## Part (1): construction of maltose std. Curve

	Std.1	Std.2	Std.3	Std.4
Maltose(1mg/ml)	0.1	0.5	1.5	2
H2O	1.9	1.5	0.5	---
Reagent(ml)	2	2	2	2
10 mins., boiling water bath. And cool,				
H2O (ml)	6	6	6	6

## Part (1): Construction Of Maltose Std. Curve:



- ❖ Read The Abs At 520 Nm.

- ❖ Do Calculations:

$$C1 \times V1 = C2 \times V2$$

- ❖ Create The Result Table.

- ❖ Draw The Carve

$$C_1 \times V_1 = C_2 \times V_2$$

$V_2 = V_1 + \text{Diluent volume}$

$C_2 = ?$

	Std.1	Std.2	Std.3	Std.4
Maltose(1mg/ml) $C_1$	0.1 $V_1$	0.5 $V_1$	1.5 $V_1$	2 $V_1$
<b>Diluent :</b> H2O	1.9	1.5	0.5	---
Reagent(ml)	2	2	2	2
10 mins., boiling water bath. And cool,				

## Part (2):analysing the unknown:

	tube1	tube2	tube3
Phosphate buffer	2.5 ml	2.5 ml	2.5 ml
Starch solution	2.5 ml	2.5 ml	2.5 ml
NaCl (1%)	1	1	1
Mix, incubate 10 mins at 37°C			
H <sub>2</sub> O	1	0.5	0.5
Diluted saliva	---	0.5	0.5
NaOH	----	----	0.5
incubation 15 mins, 37°C			
NaOH	0.5	0.5	----
Reagent	0.5	0.5	0.5

## Part (2):analysing The Unknown:



- ❖ Mix, Heat In Boiling Water For 5 Mins.
- ❖ Cool It At R.T
- ❖ Add 2 MI H<sub>2</sub>O
- ❖ Read Abs At 520nm

# Calculations



A)calculate The Correct Absorbance  
=final Abs-initial Abs  
=Tube 2 - Tube 3

# Calculations



B)calculate The Amount Of  
Maltose Formed Per Ml Of  
Saliva... ( Enzyme Activity)...

*Thank you*

