(Name)
Biology 9 - CP
H - Block 1/7/22

Pasteur Effect - Carbohydrate Consumption in Aerobic and Anaerobic Conditions

Statement of the Problem

The lab consists of looking at the consumption of sugar inside the presence and lack of oxygen. We are observing the change from aerobic and anaerobic reactions. Tracking the consumption of glucose with glucose indicator sticks (Diastix):

What happens with the concentration of glucose overtime compared to the rate of disappearance in an aerobic and anaerobic reaction vessel?

Hypothesis

My hypothesis is that the presence of oxygen will reduce the breakdown of glucose.

Materials

- (2x) 250ml Erlenmeyer Flask
- Instant Yeast
- Dextrose (D - Glucose)
- Measuring Scale
- Bath water
- Air Hose Bubbler
- Diastix test strips
- Standard Black Sharpie
- Plastic Storage Bin (able to fit in 2 Erlenmeyer Flasks)
- Timer;Stop Watch (Timer on phone works)
- Scale that measures in grams

Procedure

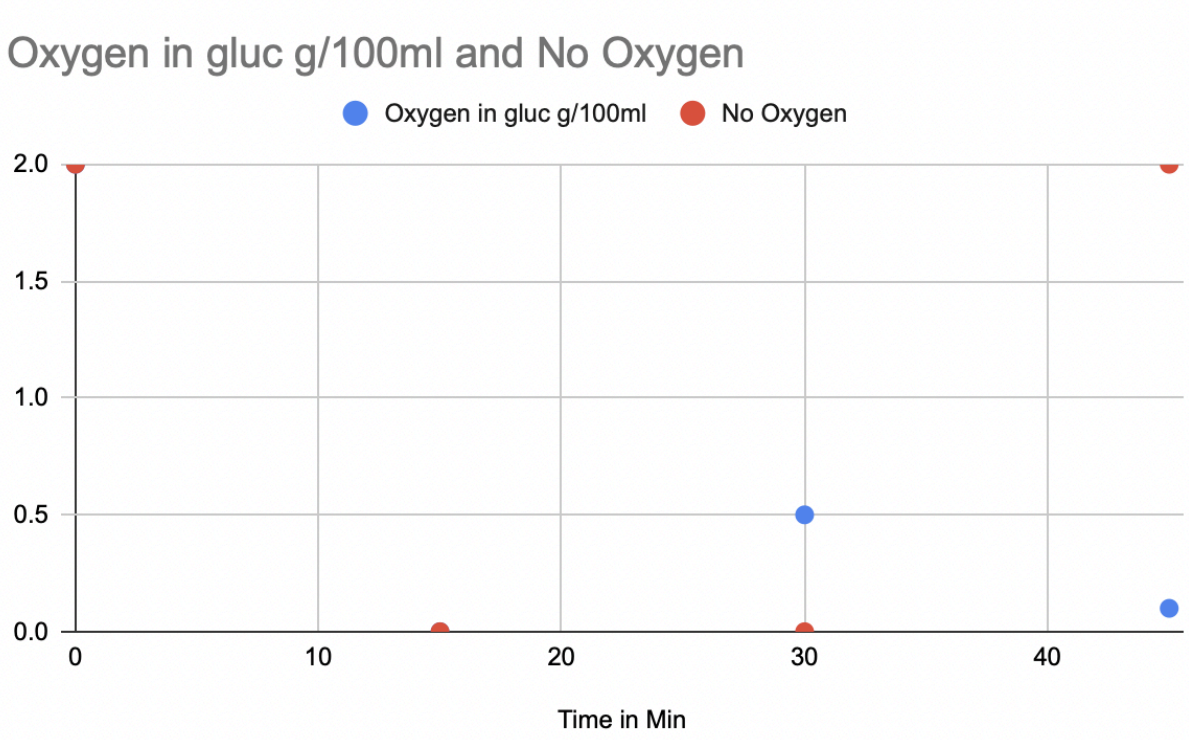
1. Set up a reasonable sized plastic storage bin filled with bath water at the temperature of 95 F.
2. Submerge the flasks in the water, about an inch of the flask shouldn't be in the water
3. Using the graduated cylinder, transfer 100 ml of warm bath water to each Erlenmeyer Flask
4. Using the Sharpie, label both of the glasses. One with " + Oxygen" and the other with " No Oxygen"
5. Measure out 2 grams of glucose, 2 grams for each of the flasks
6. Submerge an airline bubbler into the labeled bottle " + Oxygen"
7. Place down both of the flasks into the tub of water; Submerge the flasks in the water, about an inch of the flask shouldn't be in the water
8. Place the air hose into the flasks so that the end of it is submerged in the liquid
9. Once finished with putting the lab together, start recording the data
10. To begin, start by recording the measurement of the concentration of glucose in both of the bottles, **every 15 minutes**. To do this take 2 diastix and dip one of each inside of the flask, one in each flask.

11. Remove the stick right away and wait 30 seconds, by timing it with a device or stopwatch for 30 seconds
12. Compare the color to the color scale on the side of the diastix bottle, and write down the concentration of the glucose
13. After you have finished write down all the observations that were made during the lab
14. Clean up

The Difference in Consumption of a Sugar in the Presence and Absence of Oxygen

Start Time: 1:35pm

Actual Time	Time in Min	Oxygen in gluc g/100ml	No Oxygen
1:35	0	2	2
1:50	15	0	0
2:05	30	0.5	0
2:20	45	0.1	2



Results and Conclusion

In conclusion, we found out that there is a switch from aerobic and anaerobic conditions. First, there isn't anything I would change about this lab. Second, we find that there is a decrease in the rate of carbohydrates breakdown in yeasts. Next, after completing the lab I think that there was an experimental error that occurred, which I am unsure of why that happened. But in conclusion, I can confirm that a majority of the data states my hypothesis.

(Name)
Lab Report 3
H - Block

DNA Purification from A Kiwi Fruit

Statement of the Problem

This lab consists of purifying DNA from a kiwi fruit. To purify DNA it means often enough getting rid of everything that isn't DNA. The molecules we are getting rid of include proteins, lipids, and carbohydrates.

Hypothesis:

There is no hypothesis for this lab

Materials

- Balance
- Zip-lock bag
- Knife (to cut kiwi)
- Saran Wrap
- 100 ml graduated cylinder
- 250 ml beaker
- (2x) 12 ml syringes
- Timer (Use phone)
- Clinical Centrifuge
- Ice Bath
- 55 C Water Bath
- NaCl
- Dish Detergent
- Ice- Cold 70%
- Kiwi Fruit (Half a Kiwi should be enough)

Procedure

1. Dissolve 2g of NaCl in 90 ml water.
2. Once all the salt has dissolved, add 10 ml of detergent, then mix gently to avoid making foam.
3. Peel kiwi over plate and cut it into small pieces
4. Use a balance to measure out approximately 15g of kiwi bits then and put them into the zip-lock bag
5. Use your fingers to mash up the kiwi bits in the bag - be careful, bag may leak
6. Add 50 ml of the lysis solution from step 1
7. Place the bag with the kiwi mush and the lysis solution in the 60 C water bath. Incubate the mixture for 15 min
8. Chill the fruit mixture in the ice bath for 5 min
9. Next, transfer 12 ml of the chilled mixture into a blue cap tube with the Kiwi syringe
10. Spin down the mixture in the centrifuge for 2 min

11. Pour off the clear supernatant into a clean test tube
12. Slowly add 7 ml of chilled isopropanol with a clean syringe by letting the isopropanol run down along the side of the test tube. The isopropanol should stay on top of the fruit solution without any mixing
13. A white snot-like layer will form at the border (interface) between the fruit mixture and the ethanol.
14. Let sit for 2 min without touching it. More and more of the snot should form

Results and Conclusion

In conclusion, DNA is tightly packaged inside the nucleus of cells. The membranes of the cell and of the nucleus are high in fats so, we can break them down using the detergent.