

# Cellular respiration

[Health & Medicine](#), [Cellular Respiration](#)



Cellular Respiration In this lab the effects of different substrates on the rate of cellular respiration is being put to a test which is a very interesting experiment. The three major substrate solutions being used for this experiment are glucose, maltose, and alanine. The issues this experiment addresses are cellular respiration occur in different stages which are glycolysis, citric acid cycle, and fermentation. In this lab the experiment determines the effect of different substrates on rate of cellular respiration. Maltose would result in the greatest rate of cellular respiration the rationale is because it gives more carbon than others. Glucose would be a good alternate and result in the second best rate of cellular respiration the rationale is because it has six carbons. Alanine would result in the worst rate of cellular respiration the rationale is because it has the least carbon. The materials used for this experiment are test tubes, test tube racks, pipettes 10 ml, propipettes, beakers 100 ml, distilled water the substrate solutions used were glucose, maltose, and alanine also yeast suspension. The temperature bath was at 37 degrees and metric ruler was used for measurements of the air bubbles. - Preparation of an appropriate control -3. 3 ml to 3. 3 ml ratio of distilled water to substrate -3. 3 plus ml of yeast to fill test tubes -Incubation temperature 37 degrees -15 minute measurement (mm) intervals -Calculation of actual CO<sub>2</sub> production Procedure -Mix three tubes -Incubate mix control -Add yeast to the top -Invert test tubes -Measure out bubbles with metric ruler -Variable -Glucose and maltose The conclusion of this experiment was that glucose was the greatest rate of the cellular respiration the rationale is because it is completely broken down to CO<sub>2</sub> and most of ATP is generated by glucose. The simplest sugars work the best

because energy does not have to expend to break them down into usable forms. The second best rate of cellular respiration is maltose the rationale is because it is a disaccharide and may be harder to breakdown because it is a combination of monosaccharide. Alanine is the worst rate of cellular respiration the rationale is because it is an amino acid that means proteins are broken down to amino acid. I reject my hypothesis because my prediction in the beginning of the lab was that maltose would have the greatest rate of cellular respiration the second best would be glucose and the last would be alaine. The results in the experiment proved that glucose was the best rate of cellular respiration than maltose and alanine was the least rate of cellular respiration. Glucose is the greatest rate of cellular respiration because it is a simple sugar. Maltose is the second best rate of cellular respiration because it is a monosaccharide which is two or more simple sugars. Alanine is the least rate of cellular respiration because it is an amino acid which is a breakdown of proteins. In the beginning of the lab I predicted that maltose would be the greatest rate of cellular respiration and glucose would be the second best rate because it has six carbon but glucose turned out to be the best in the end of the experiment. I thought that maltose would be the greatest rate of cellular respiration because it has more carbon than alanine and glucose but my prediction was wrong. Glucose turned out to be the greatest rate of cellular respiration because it a simple sugar which is easily broken down. And alanine turned out to be the least rate of cellular respiration which is harder to breakdown.