

Lab 9: Cellular Respiration & Fermentation

Terms to Remember	Procedures
Glycolysis - the process by which glucose is broken into 2 pyruvate	Glycolysis takes place in the cytoplasm and produces 2 ATP
Calcium Carbonate - CaCO_3 , chalk	The Krebs Cycle takes place in the mitochondria and produces 2 ATP
Aerobic - <i>with</i> oxygen	The Electron Transport Chain takes place in the folds of the cristae of the mitochondria and produces 32 ATP
Electron Transport Chain (E.T.C.) - a protein complex through which electrons move to extract energy, produces the most ATP	Alcoholic Fermentation Equation: $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2(\text{C}_2\text{H}_5\text{OH}) + 2\text{CO}_2 + 2\text{ATP}$

Lab 9: Cellular Respiration & Fermentation (cont)

ATP - Adenosine Triphosphate, cellular energy	Rates of Fermentation Starch = lowest rate of fermentation, must break down into smaller parts before fermentation can begin Sucrose = faster rate of fermentation, is a disaccharide and there is less to break down Glucose = highest rate of fermentation, is a monosaccharide and is in its simplest form
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Lactic Acid - build up in muscle tissue causing soreness and cramping	Yeast = <i>Saccharomyces cerevisiae</i>
Mitochondria - a double membrane bound organelle that generates ATP	Aerobic Respiration Equation: $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{ATP}$

Budding - a form of asexual reproduction used by yeast	Respirometer: used to measure the rate of oxygen consumption
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Lab 9: Cellular Respiration & Fermentation (cont)

Anaerobic - <i>without</i> oxygen	KOH was used to capture the carbon dioxide produced by the live beans, so that we are <i>just</i> measuring the oxygen being emitted
Kreb's Cycle - a cyclical pathway that takes place in the matrix of the mitochondria	Lactic Acid Equation: $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 2(\text{C}_3\text{H}_6\text{O}_3) + 2\text{ATP}$
Cellular Respiration = aerobic Fermentation = anaerobic	The cramping of muscles is caused by the lack of oxygen in the cells.

Lab 10: Molecular Biology - DNA in Biotechnology

Terms to Remember	Procedures
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Lab 11: DNA Fingerprint Analysis and Cell Division

Terms to Remember	Procedures
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Lab 12: Mendelian Genetics

Terms to Remember	Procedures
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