Generate free glucose-important control point

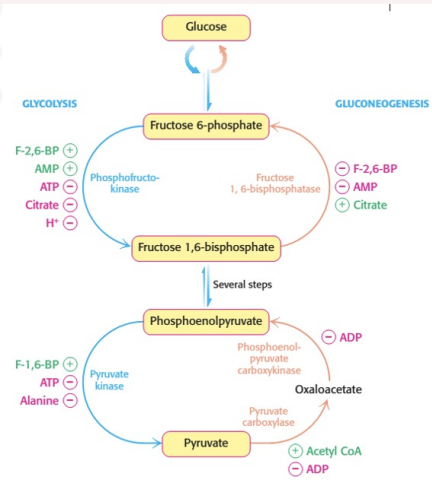
1. In most tissues, glucose 6-phosphate (G6P), instead of glucose, is the end product, and is used to synthesize glycogen.

Glucose 6-phosphatase is present only in the liver and to a lesser extent the kidney.

6 ATPs are spent in synthesizing glucose from pyruvate

Energy charge determines whether glycolysis or gluconeogenesis will be most active

GlucoSSS and Glycolysis are Reciprocally Regulated



Lactate and Alanine

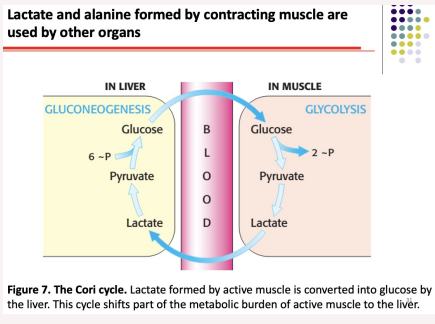
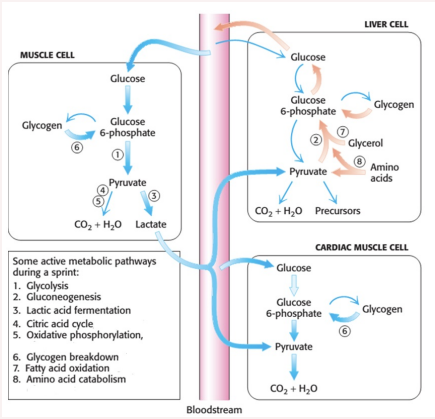


Figure 7. The Cori cycle. Lactate formed by active muscle is converted into glucose by the liver. This cycle shifts part of the metabolic burden of active muscle to the liver.

Cooperate between Gsis and Glusis during a sprint



Summary

The place for eukaryotic oxidative phosphorylation

The driving force for oxidative phosphorylation

Respiratory chain, components, sequence of e- transfer, sites of H+ pump

ATP synthase, chemiosmotic hypothesis, binding change mechanism

Shuttles for molecules across the mitochondrial membranes (ATP/ADP, cytoplasmic NADH)

The regulation of cellular respiration (ATP/ADP, NAD+/NADH, FAD/FADH2)

Summary

Glycolysis Is an Energy-Conversion Pathway in Many Organisms

Glycolysis, 2 stages, 10 steps, 3 key steps, 2 ATPs, 1 NADH, significance

The Glycolytic Pathway Is Tightly Controlled

3 key steps, 3 key enzymes, allosteric activator/inhibitors

Glucose Can Be Synthesized from Non-carbohydrate Precursors

Gluconeogenesis, noncarbohydrate sources, four new reactions

Gluconeogenesis and Glycolysis Are Reciprocally Regulated

Summary (cont)

key control points, allosteric activator/inhibitors

RegulationofCellularRespirationGoverned primarily

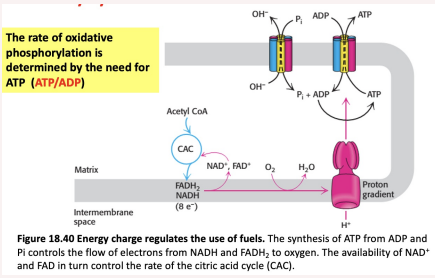


Figure 18.40 Energy charge regulates the use of fuels. The synthesis of ATP from ADP and Pi controls the flow of electrons from NADH and $FADH_2$ to oxygen. The availability of NAD^+ and FAD in turn control the rate of the citric acid cycle (CAC).

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