BI/CH 422/622	
OUTLINE: Krebs' Cycle	
Introduction and review Transport	How did he figure it out?
Glycogenolysis Glycolysis	8 Steps
Introduction & overview; 2 phases Phase I Phase II	Citrate Synthase Aconitase
Summary: logic, energetics, labeling studie Other sugars Pasteur: Anaerobic vs Aerobic	Isocitrate dehydrogenase Ketoglutarate dehydrogenase
Fermentations: anaerobic fates of pyruvate	Succinyi-CoA synthetase Succinate dehydrogenase
Lactate-lactate dehydrogenase Acetoacetate decarboxylase	Malate dehydrogenase
Ethanol-pyruvate decarboxylase & alcohol dehydrogenase	Energetics; Regulation Summary
Pyruvate oxidation: Oxidative Phosphorylation	
aerobic fates of pyruvate pyruvate dehydrogenase complex	Electron Transport Chemiosmotic theory
complex	ATP synthesis





























## Pyruvate Oxidation

Localization: In Eukaryotes, Respiration is Localized to the Mitochondria (Compartmentation)

- Glycolysis occurs in the cytoplasm.
- Pyruvate Oxidation and Citric Acid Cycle occurs in the mitochondrial matrix.<sup>†</sup>
- Fantastic example of *Compartmentation*.
- Oxidative
  phosphorylation
  occurs in the inner
  membrane.

<sup>†</sup>Except succinate dehydrogenase, which is located in the inner membrane













