

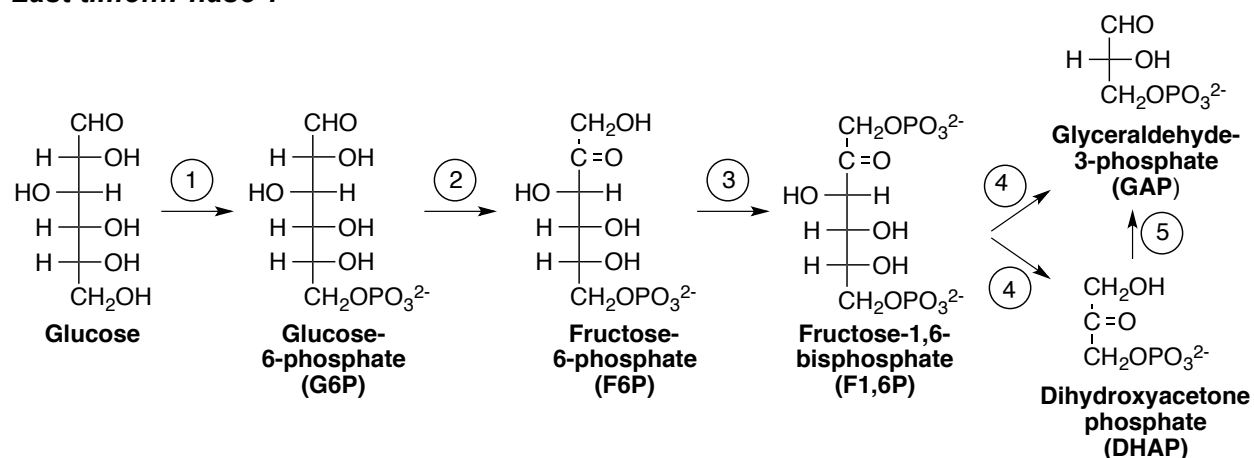
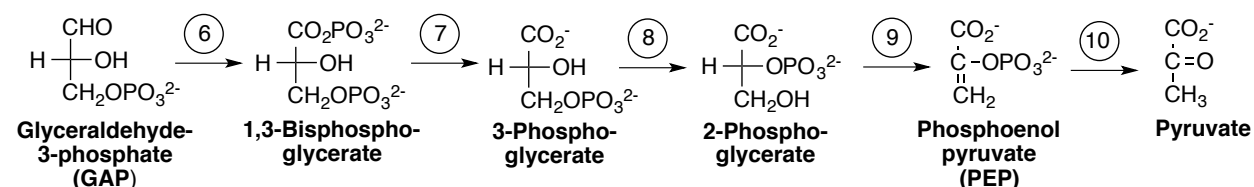
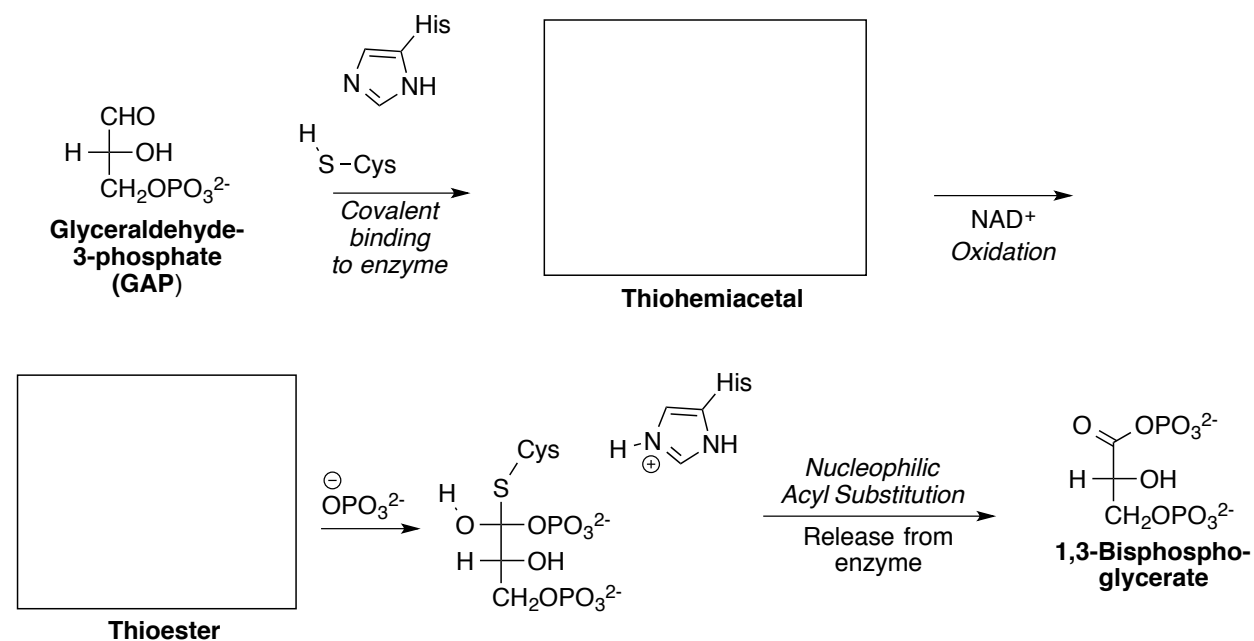
LECTURE OUTLINE**Lecture 10:** Glycolysis Phase 2**Lecture 11 (formerly mislabeled as lecture 10):** Fates of Pyruvate (McMurry 29.5)

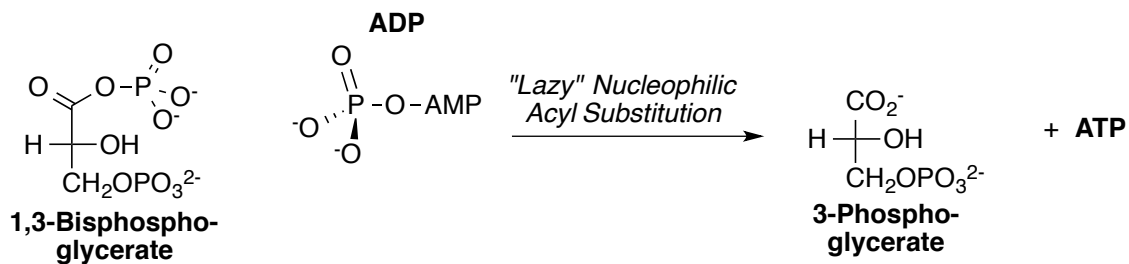
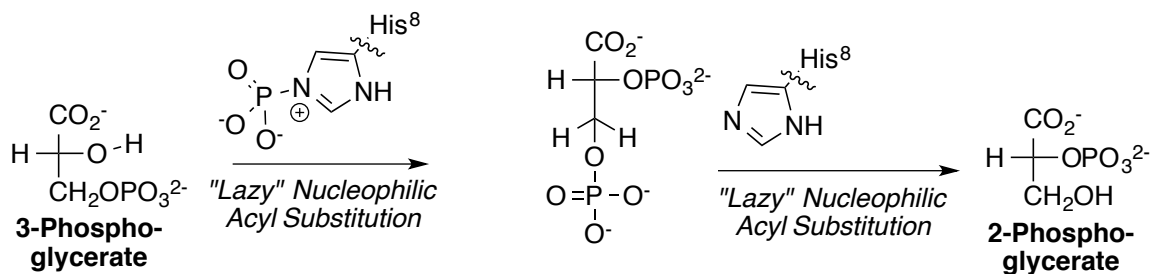
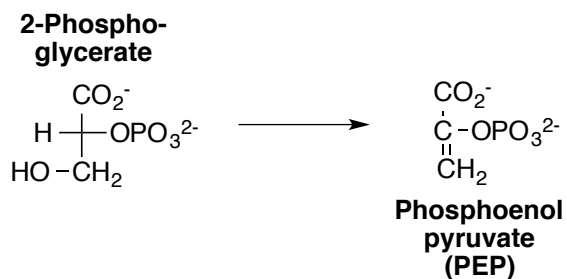
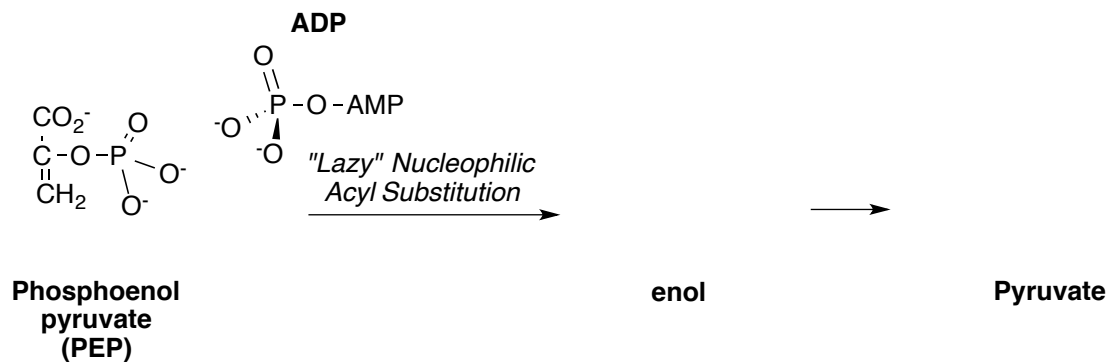
- Anaerobic metabolism

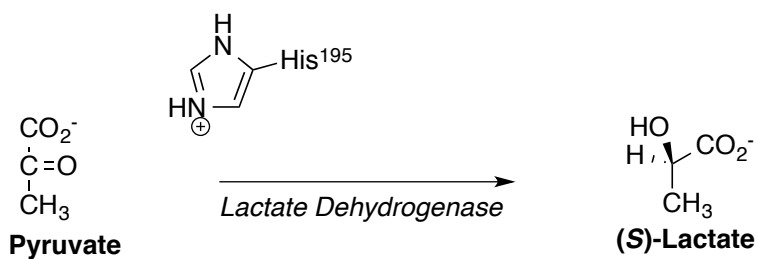
1. Lactate – enantioselective NADH reduction
2. Ethanol & CO₂ (yeast) – TPP ylide binding

- Aerobic metabolism (mammals)

3. Acetyl CoA – TPP ylide binding & lipoamide transfer

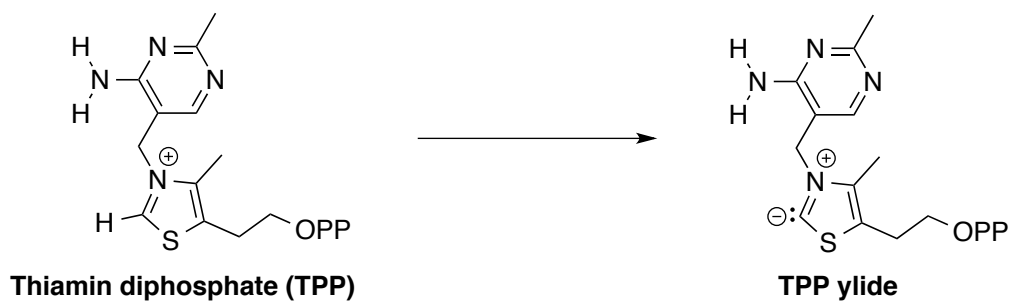
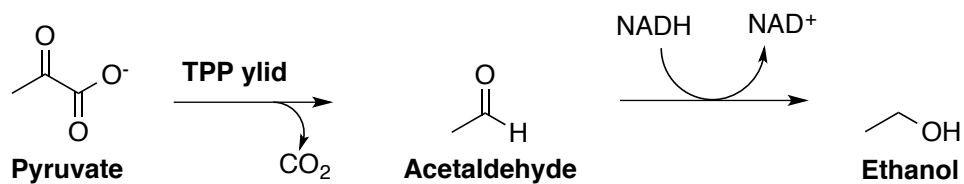
Last time...Phase 1**This time...Phase 2 – Profit!****Step 6 – GAP Dehydrogenase**

Step 7 – Phosphoglycerate kinase**Step 8 – Phosphoglycerate mutase****Step 9 – Enolase****Step 10 – Pyruvate kinase**

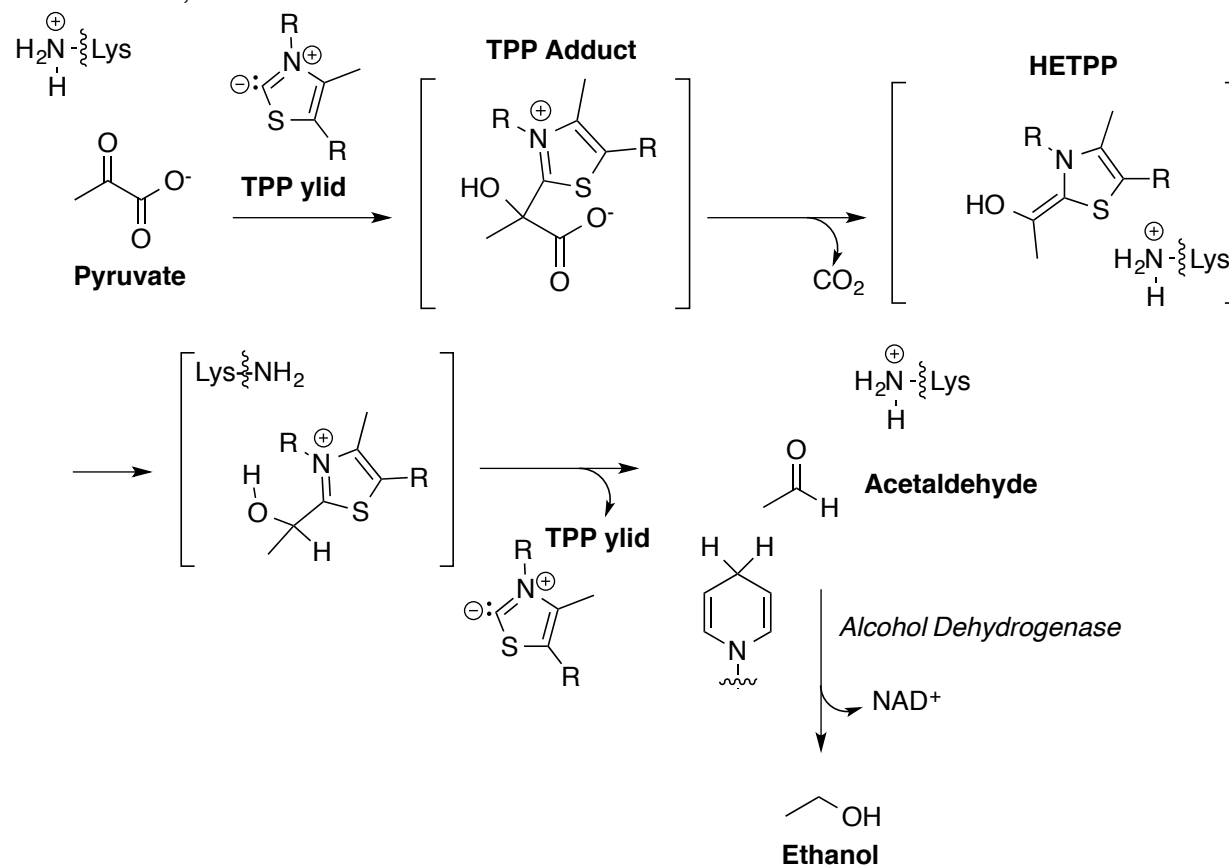
Lecture 11: Fates of Pyruvate**1. Anaerobic Metabolism in mammals**

Other fates of pyruvate (#2-3) involve decarboxylation ($-\text{CO}_2$)

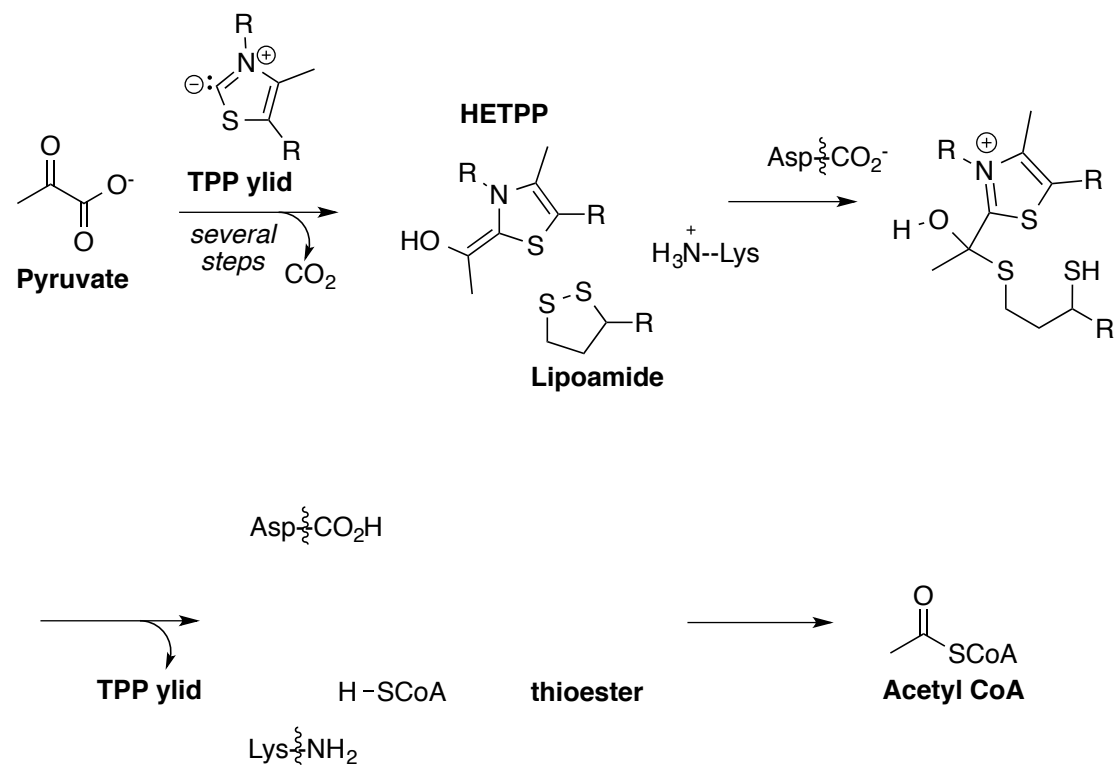
TPP – the decarboxylation cofactor

**2. Yeast anaerobic metabolism (fermentation)**

Fermentation, add the arrows...



3. Aerobic Metabolism (mammals) – Pyruvate Dehydrogenase Complex



Active Site Recap

Acids

Bases

Reducing Agent

Oxidizing Agent

Decarboxylation

Phosphate Transfer

Acyl Transfer

Covalent Binding to Enzyme

Stabilizing Factors (Place-Holders)

Next time...Lipids!

Mevalonate Pathway to Isopentenyl Diphosphate & Conversion to Terpenoids - McM 27.1-3,5