CHEM 109, Lecture 10

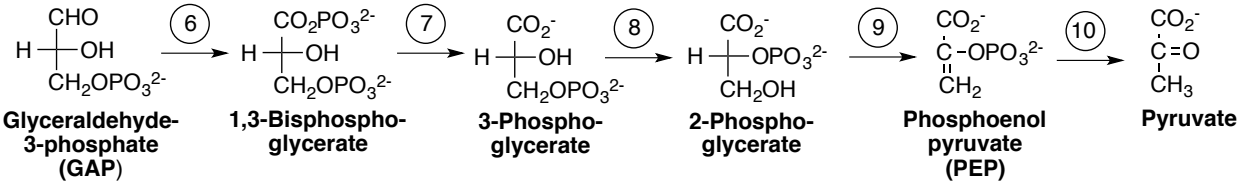
Glycolysis Phase 2

Decarboxylation Overview

Lecture 10 HW = re-print lecture blanks, fill in missing intermediates and mechanisms – these notes are your answer key (check webcast too)

Last time…Phase 1 left us with 2 x GAP

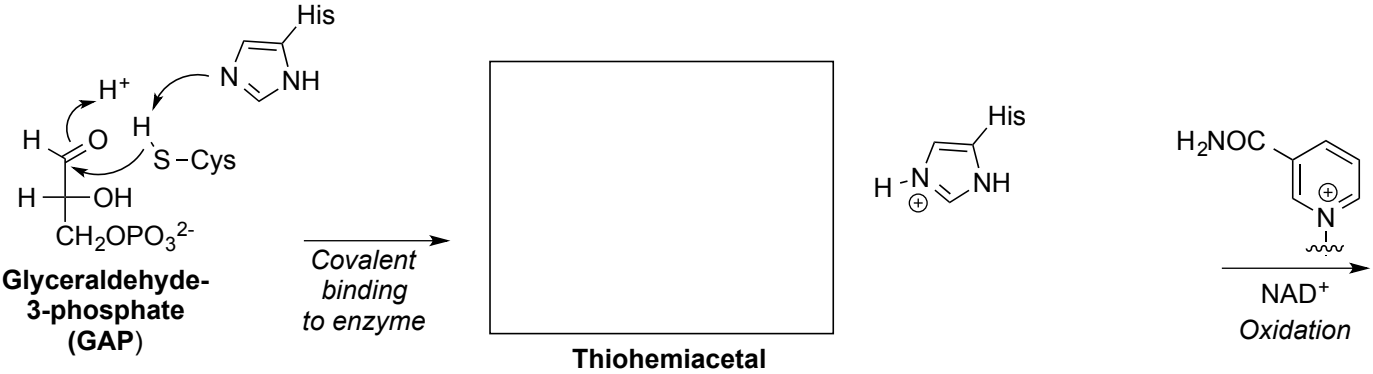
This time…Phase 2 – Profit!

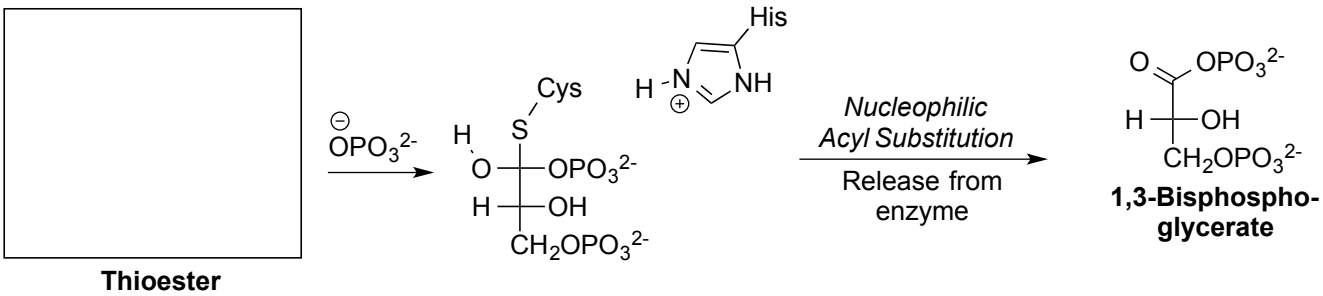


Hemiacetal **Thiohemiacetal** **Ester** **Thioester**

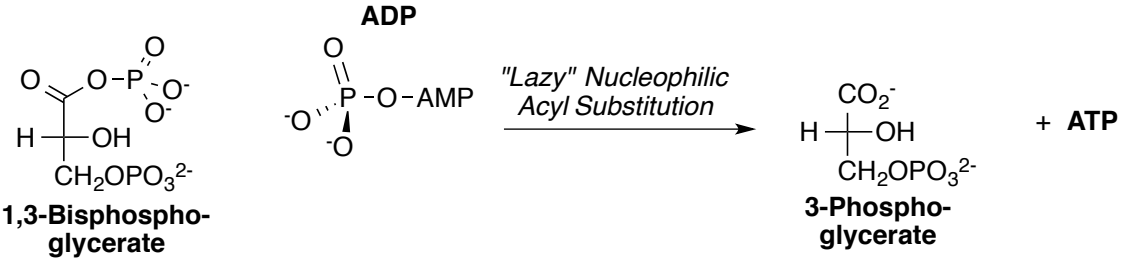
Step 6 – *GAP Dehydrogenase*

1. Covalent binding of **GAP** to active site *via* **thiohemiacetal** bond with cysteine residue
2. Oxidation to **thioester** via NAD^+
3. Phosphorylation
4. Release product from active site

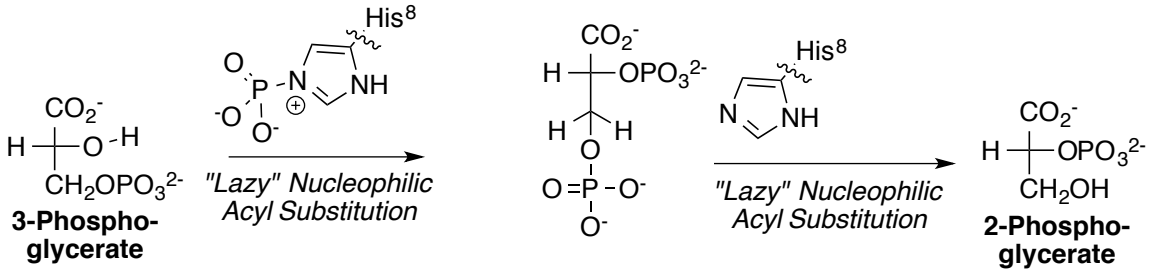




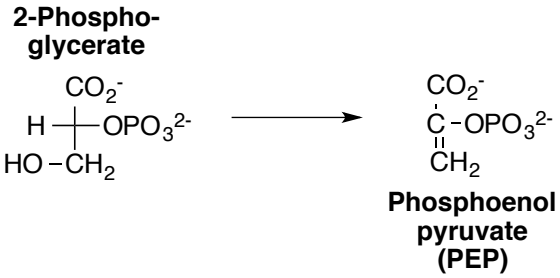
Step 7 – *Phosphoglycerate kinase*



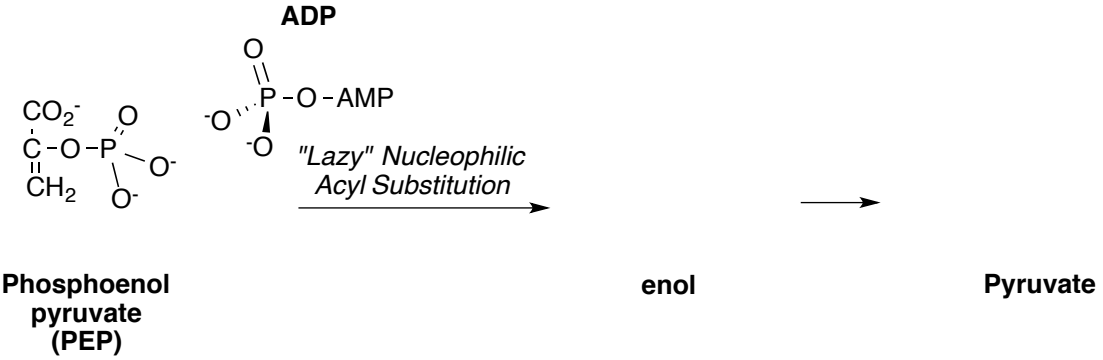
Step 8 – *Phosphoglycerate mutase*



Step 9 – *Enolase*

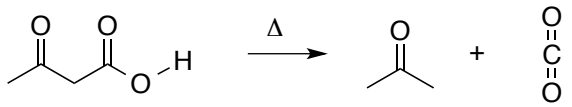


Step 10 – *Pyruvate kinase*

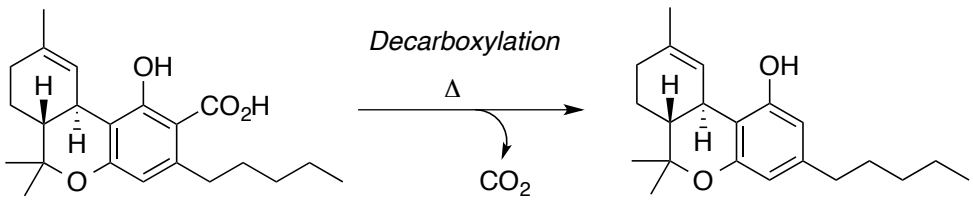


Preview to fates of Pyruvate…

<u>Decarboxylation</u> → loss of CO_2



β-keto acid



Tetrahydrocannabinolic acid (THCA) **Tetrahydrocannabinol (THC)**