

(31) Today

Chap 16.1 & 16.2: The Citric Acid Cycle

Next Class (32)

Chap 16.1 & 16.2: The Citric Acid Cycle

Chap 19: ETC

(33) Second Class from Today

Chap 19: ETC

Third Class from Today (34)

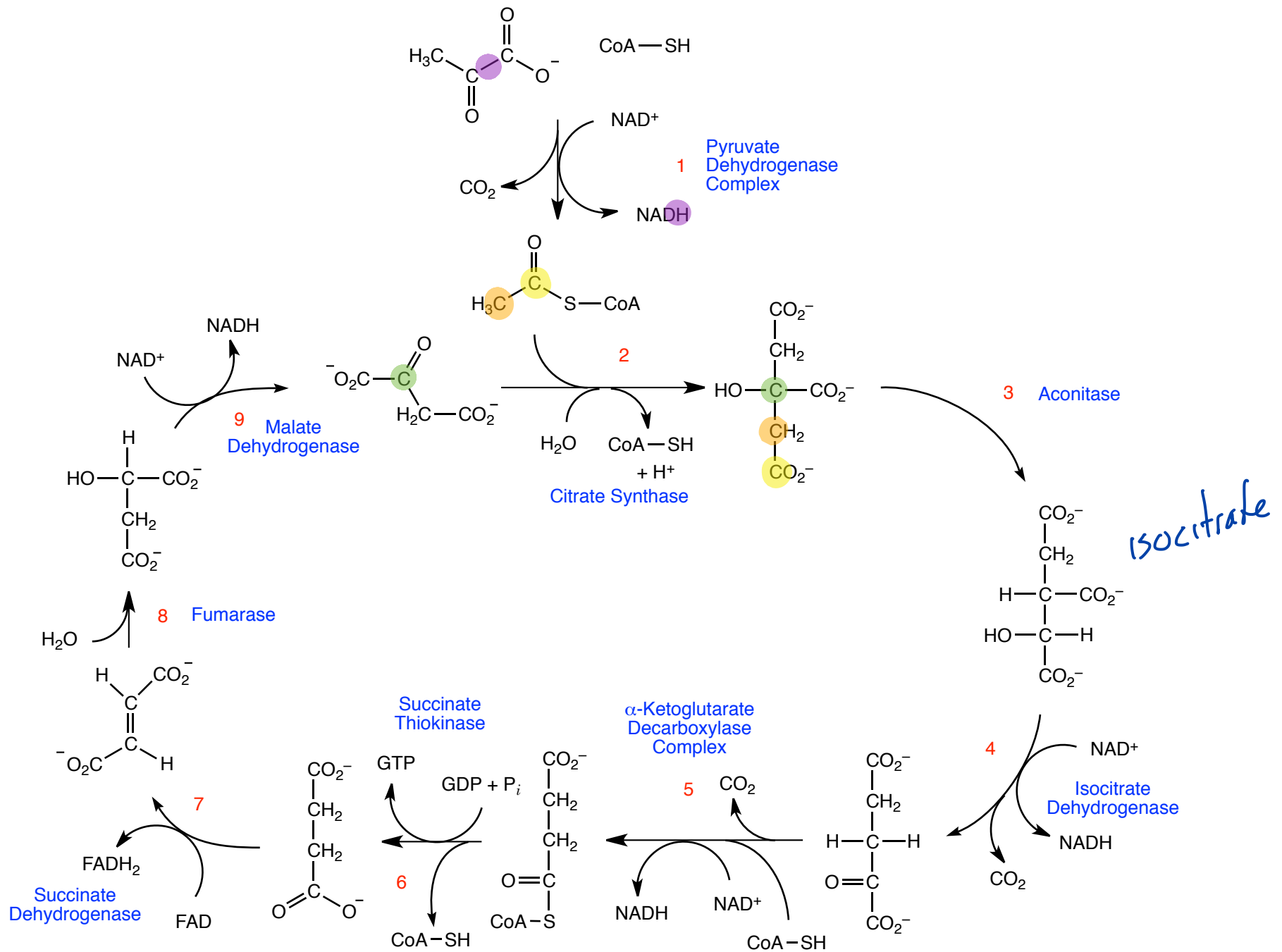
Chap 19: ETC

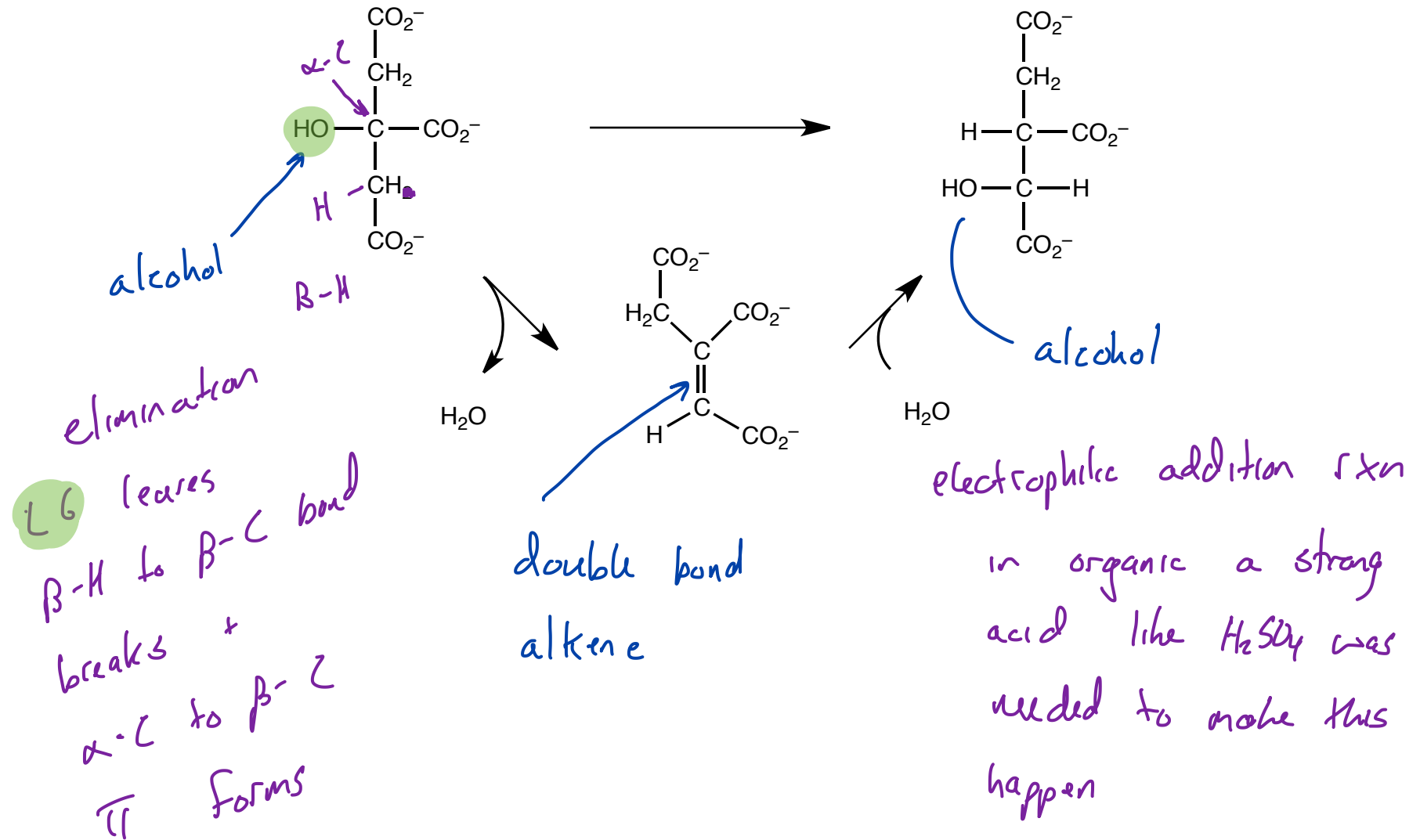
Rework Test 3 and hand in on Monday, May 5.

Biochemistry Final Scheduled for Wednesday, May 7 from 8:00 to 10:00.

Formation of Isocitrate

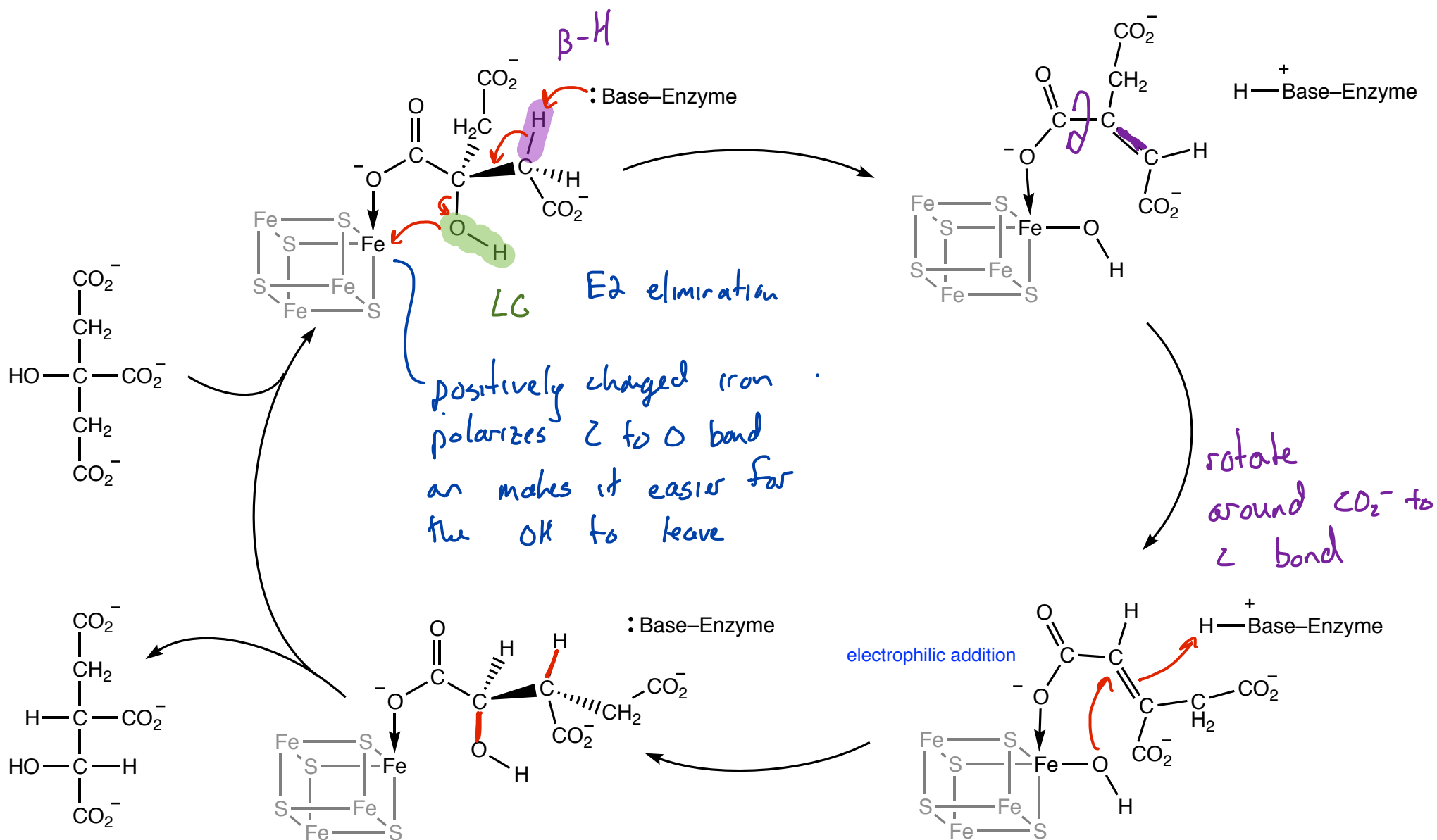
Section 16.1, 16.2





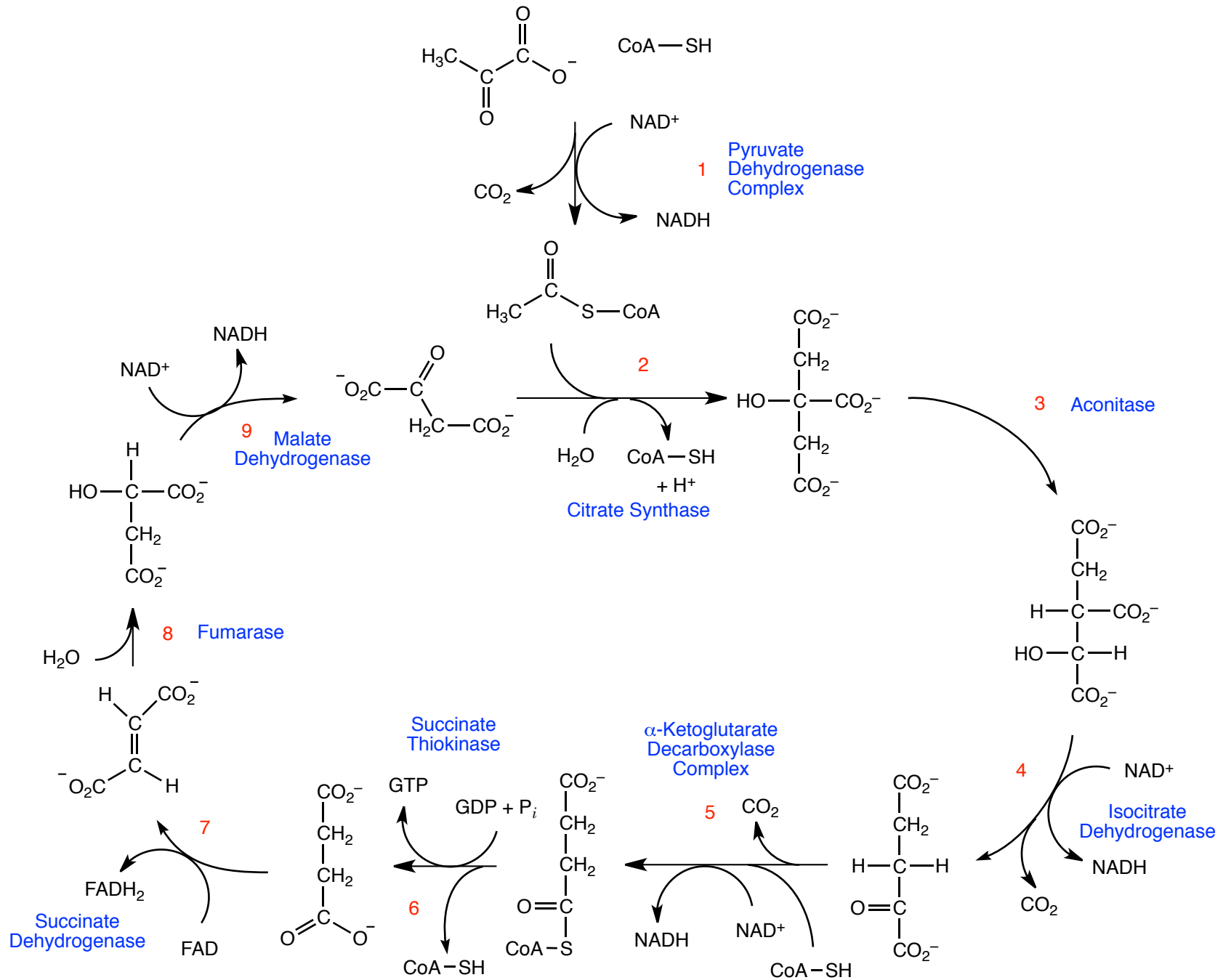
Aconitase

Section 16.1

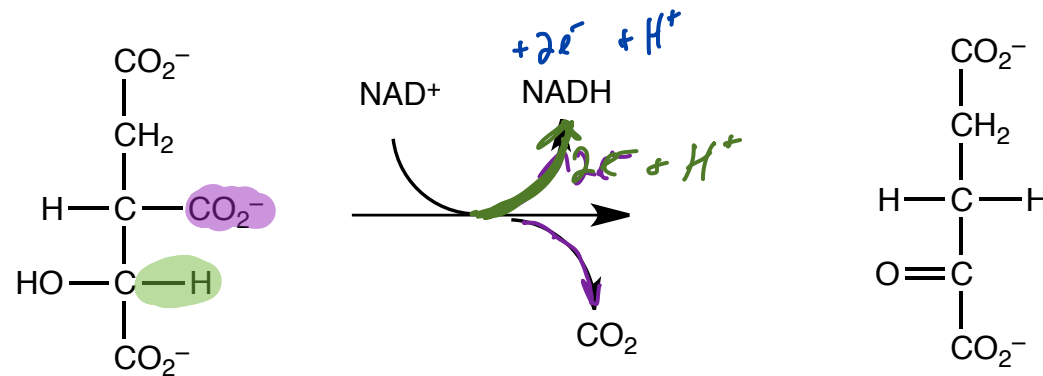


Oxidation of Isocitrate

Section 16.1, 16.2



Formation of α -ketoglutarate *Step 4 isocitrate dehydrogenase* Section 16.1, 16.2

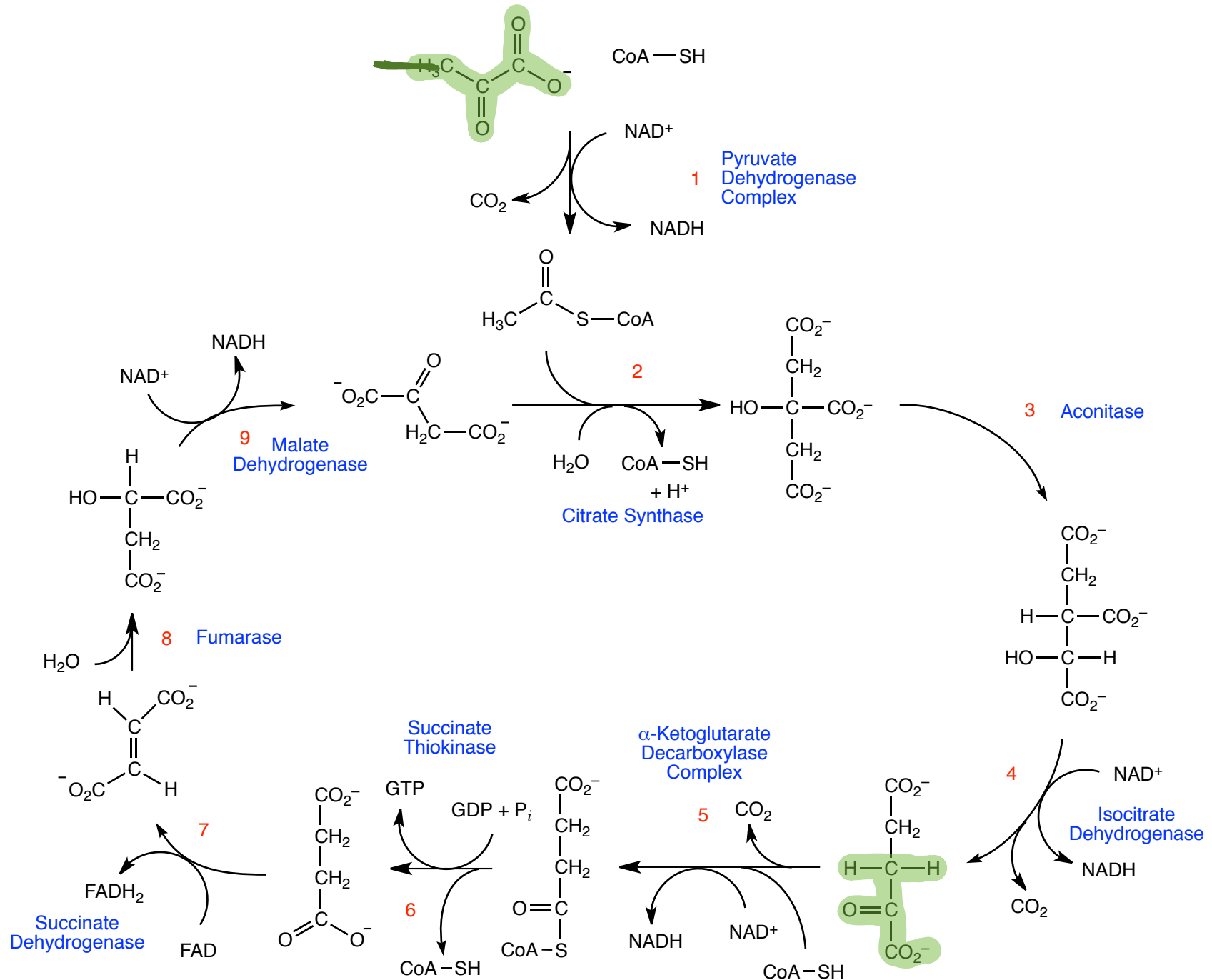


This is oxidation where e^- 's are being transferred from isocitrate to NAD^+ to form NADH

Formation of CO_2 is the driving force for this reaction

Oxidation of α -Ketoglutarate

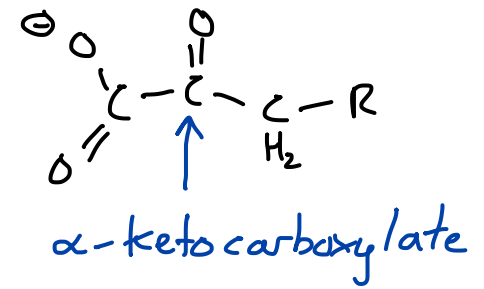
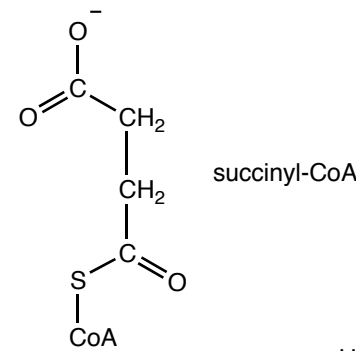
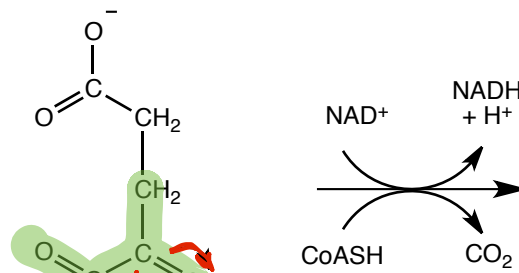
Section 16.1, 16.2



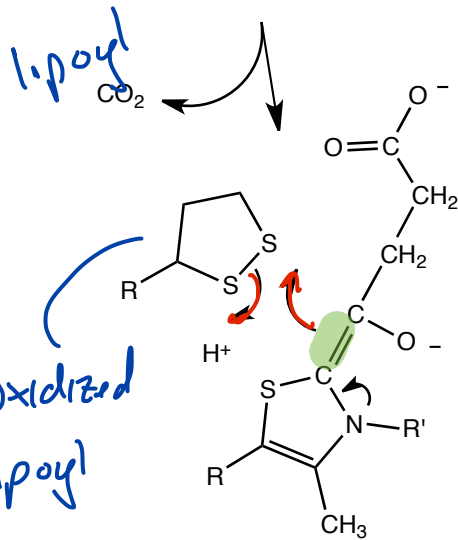
Oxidation of α -Ketoglutarate to Succinyl-CoA

Section 16.1, 16.2

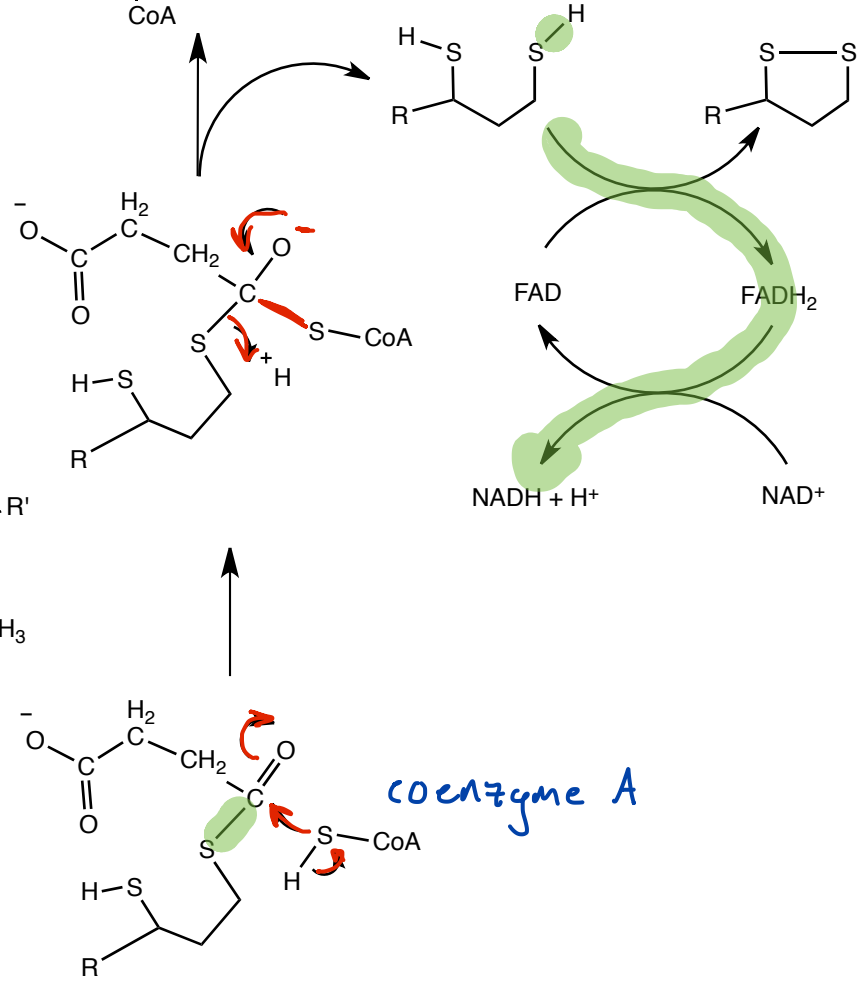
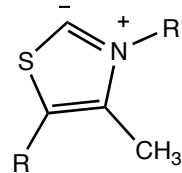
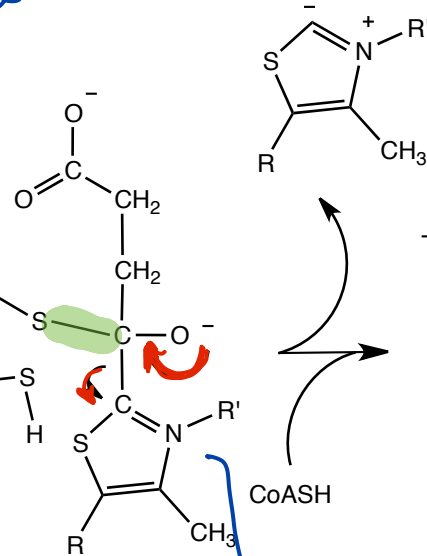
this is the same chemistry as pyruvate dehydrogenase complex



thiamine pyrophosphate makes decarboxylation possible



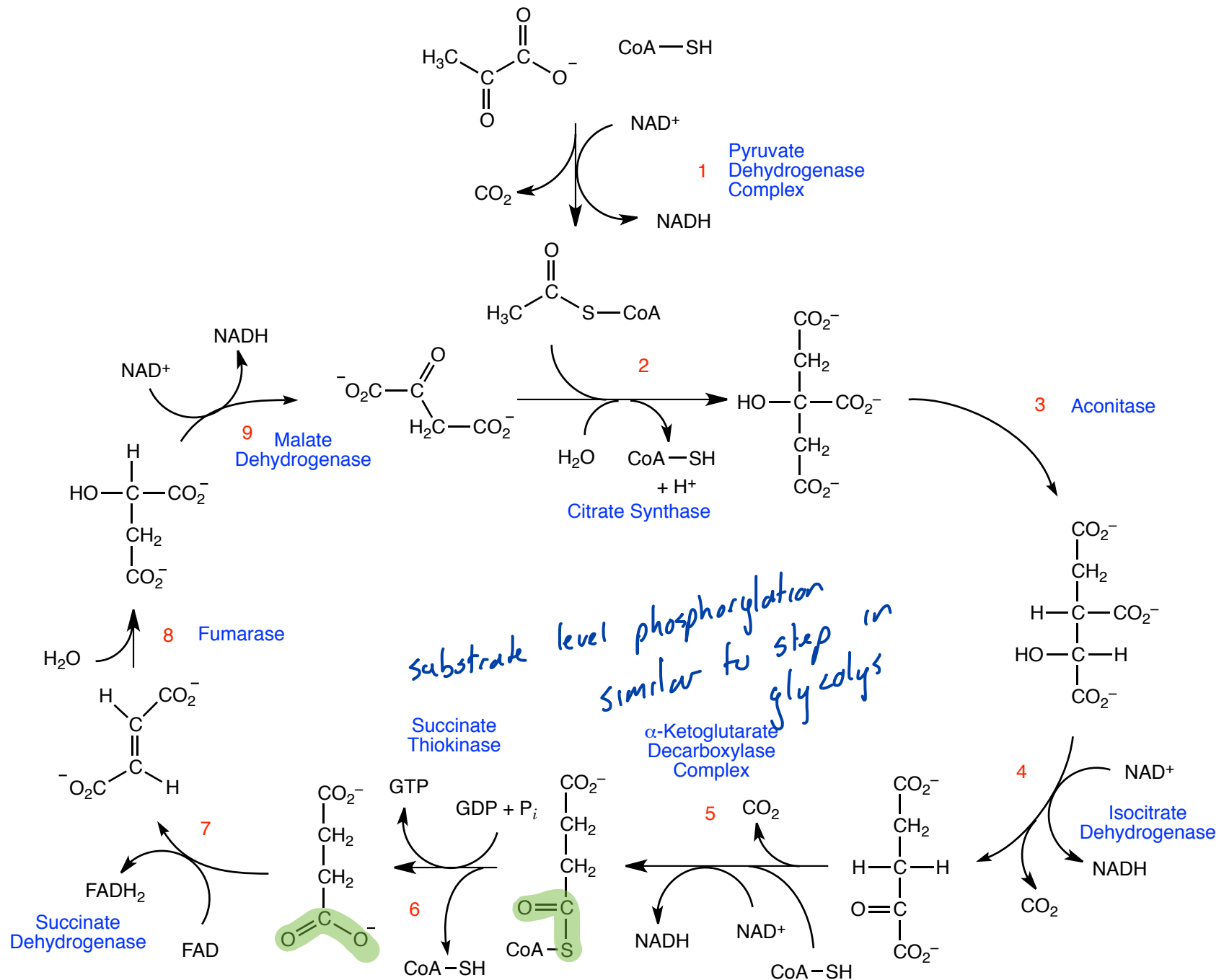
reduced lipoyl



tetrahedral intermediate reforms $\text{C}=\text{O}$ and thiamine leaves

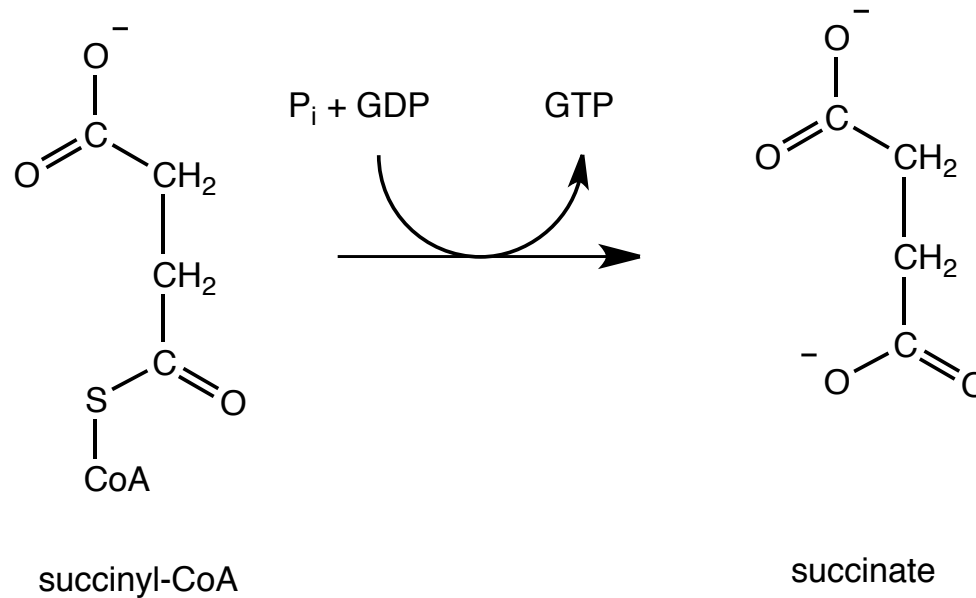
Oxidation of α-Ketoglutarate

Section 16.1, 16.2



Succinyl-CoA to Succinate: Substrate Level GTP Synthesis

Section 16.1, 16.2

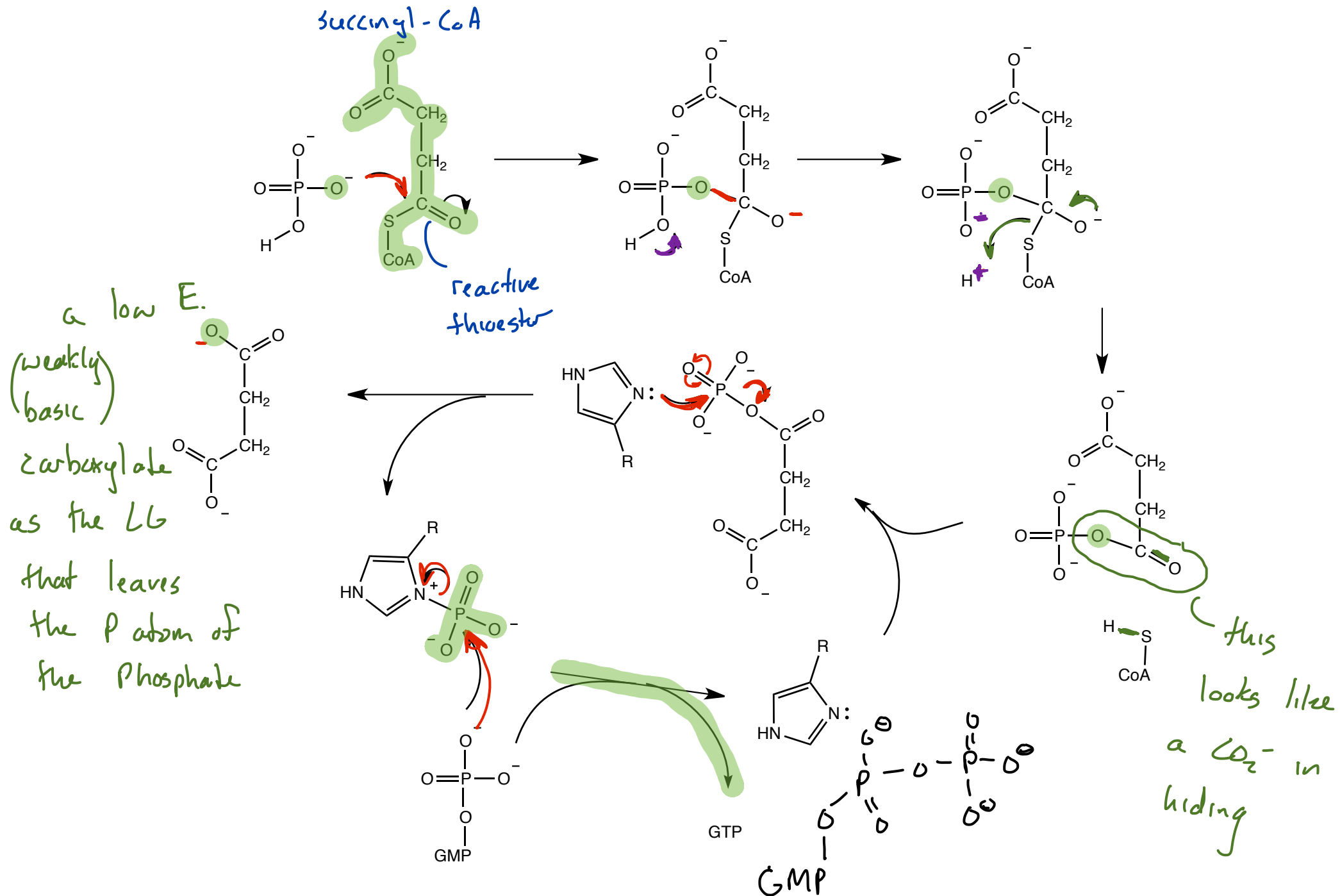


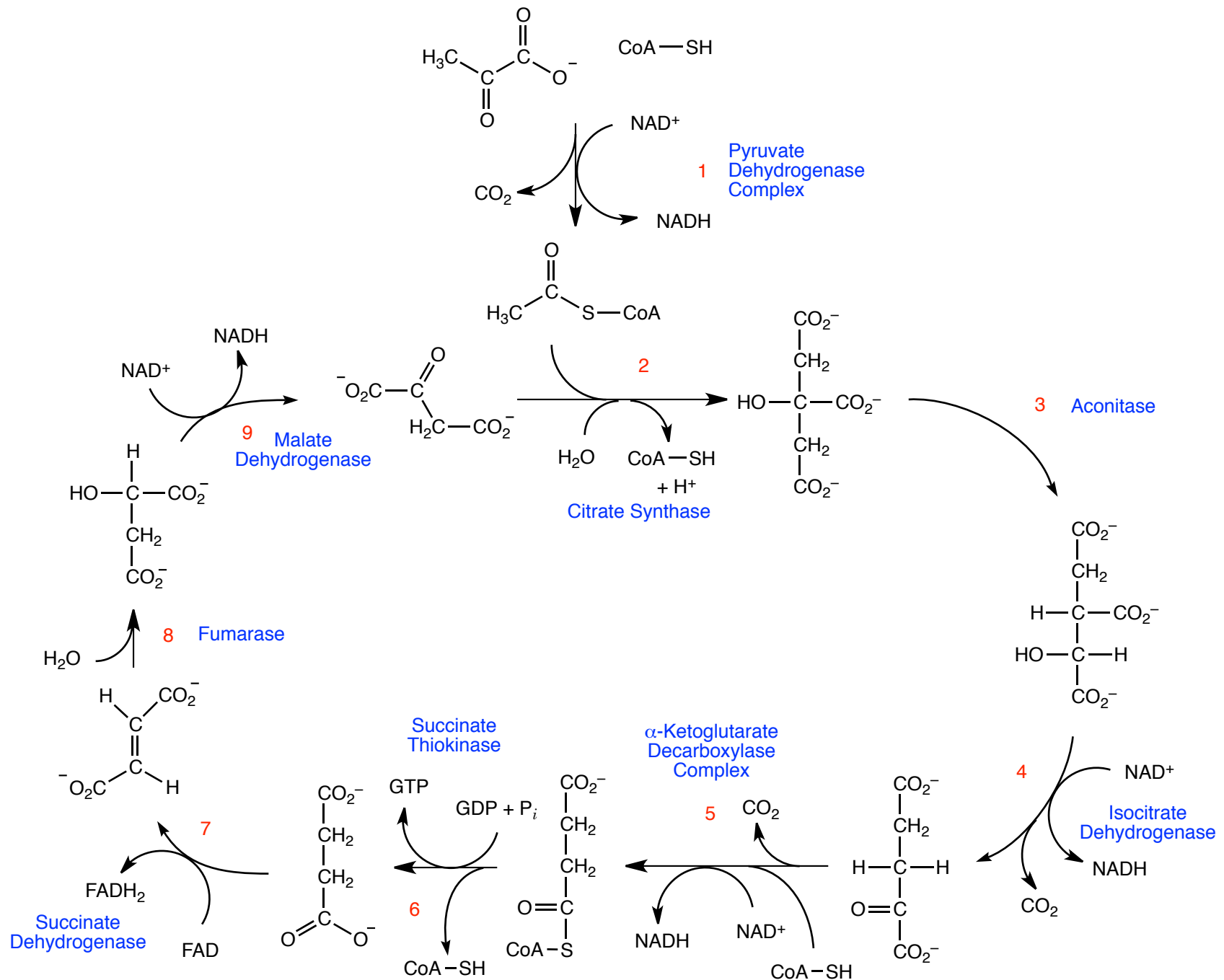
substrate level phosphorylation
similar to step in
glycolysis where

phosphoglycerate is
produced from
1,3-bisphosphoglycerate

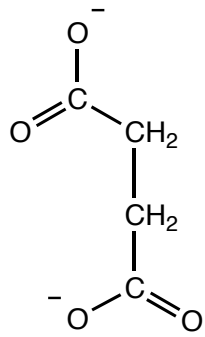
Succinyl-CoA to Succinate: Substrate Level GTP Synthesis

Section 16.1, 16.2

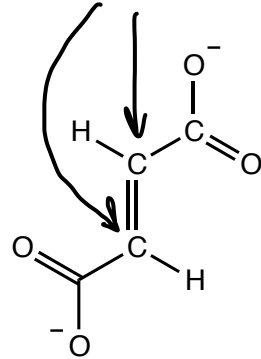
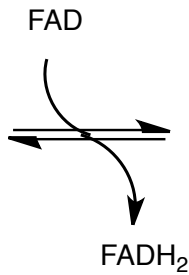




Final Two Oxidations

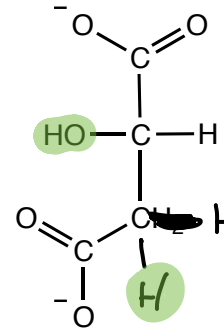
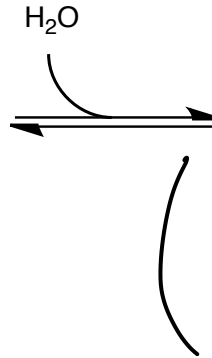


succinate



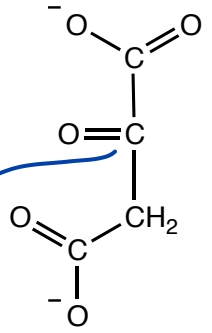
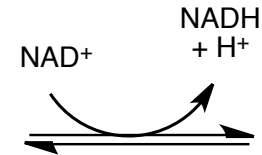
fumarate

C atoms oxidized



L-malate

E Add of H₂O to db



oxaloacetate

this C was oxidized

Section 16.1, 16.2