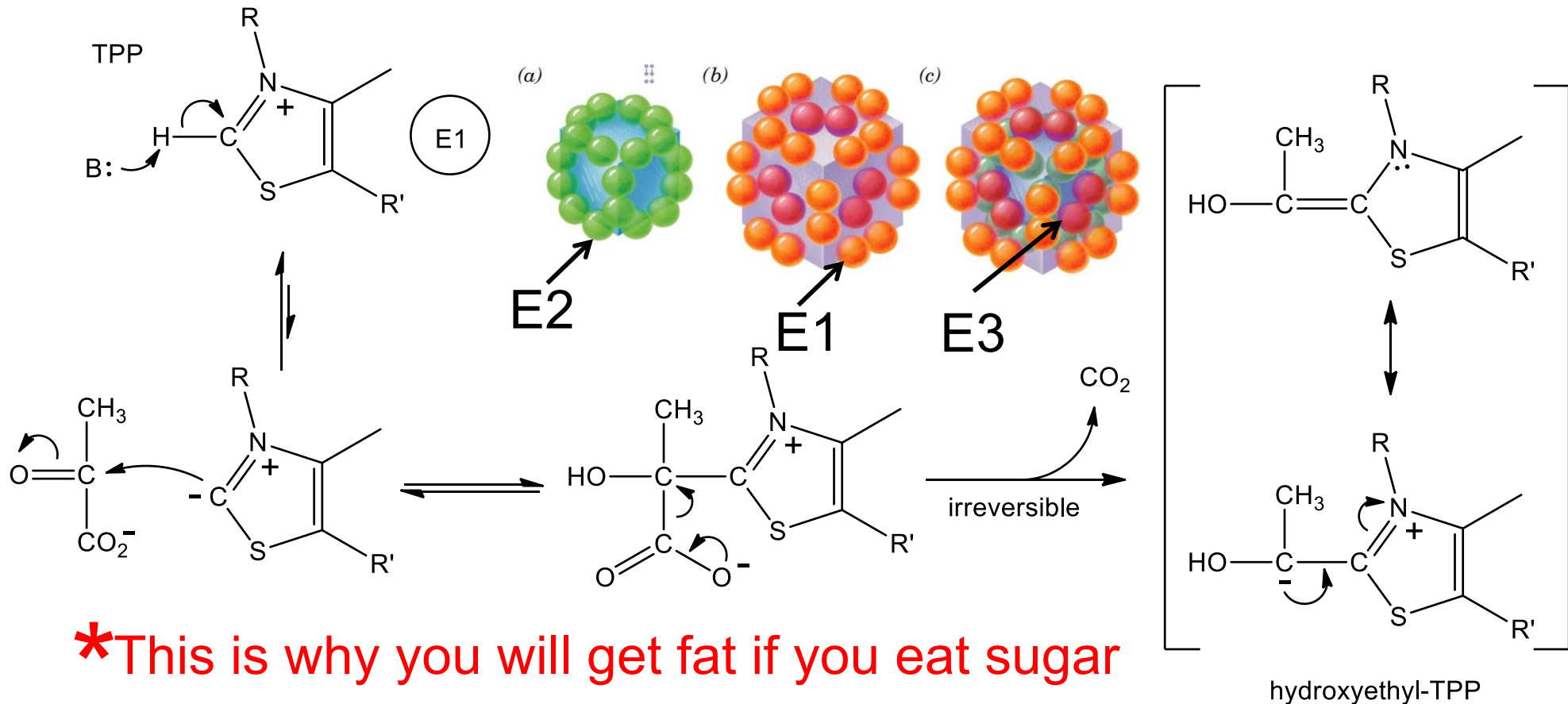
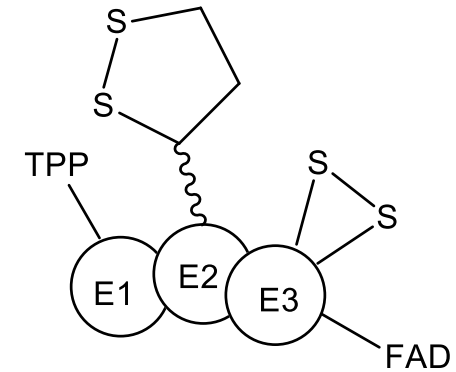
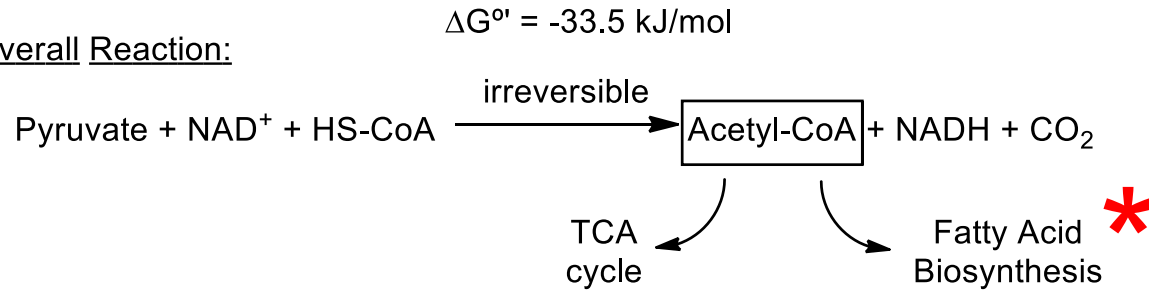


Pyruvate Dehydrogenase Complex

Pyruvate Dehydrogenase (PDH)

Overall Reaction:

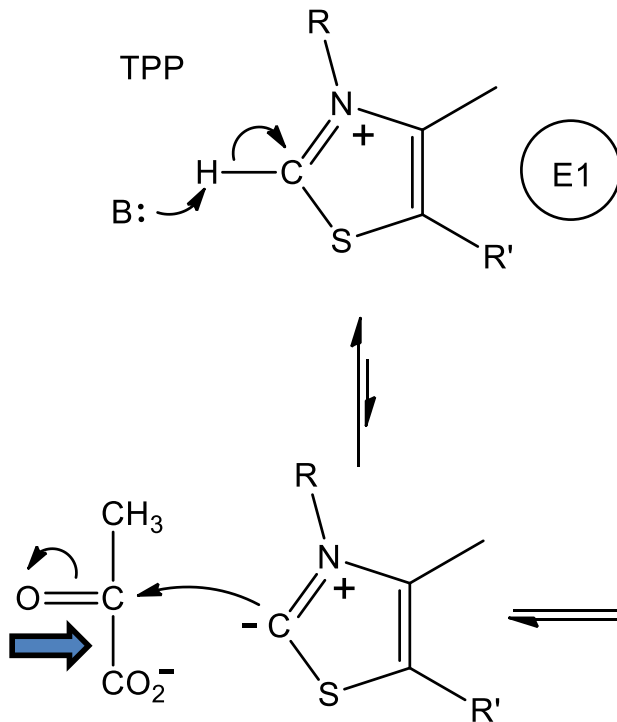
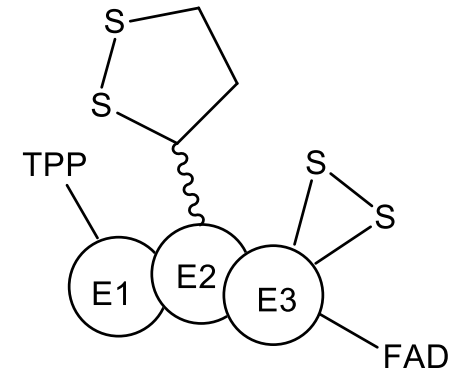
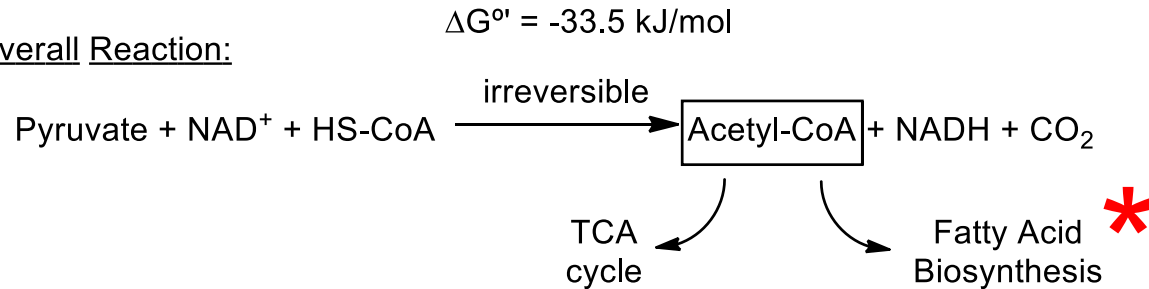


***This is why you will get fat if you eat sugar**

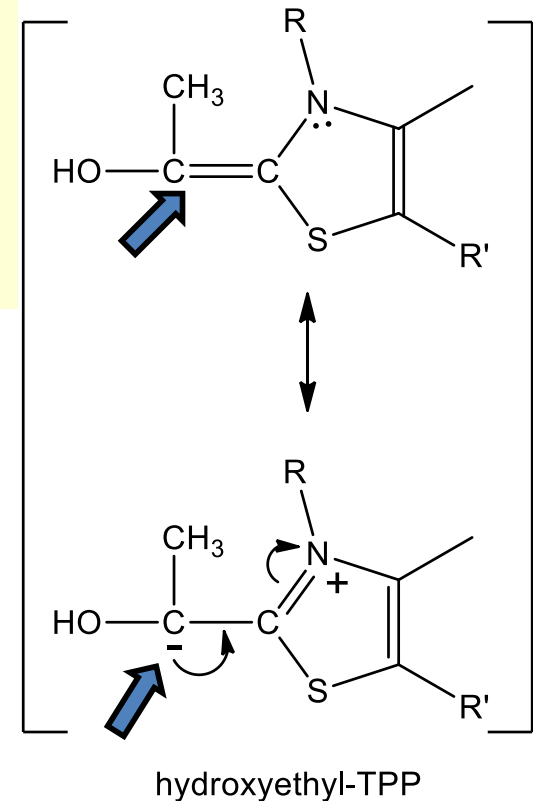
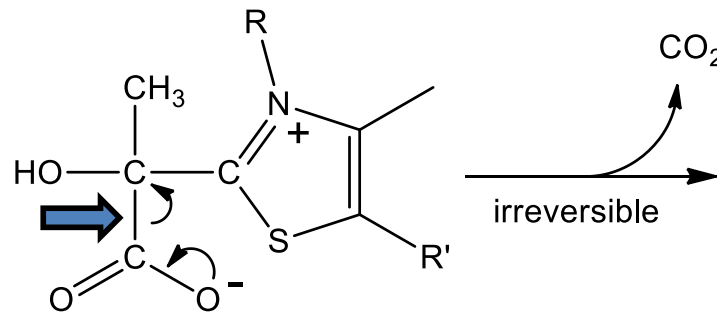
Pyruvate Dehydrogenase Complex

Pyruvate Dehydrogenase (PDH)

Overall Reaction:



Note that the electrons in this bond came from glucose ... you should be able to find them and track them to NADH and then to oxygen – Follow the green arrows

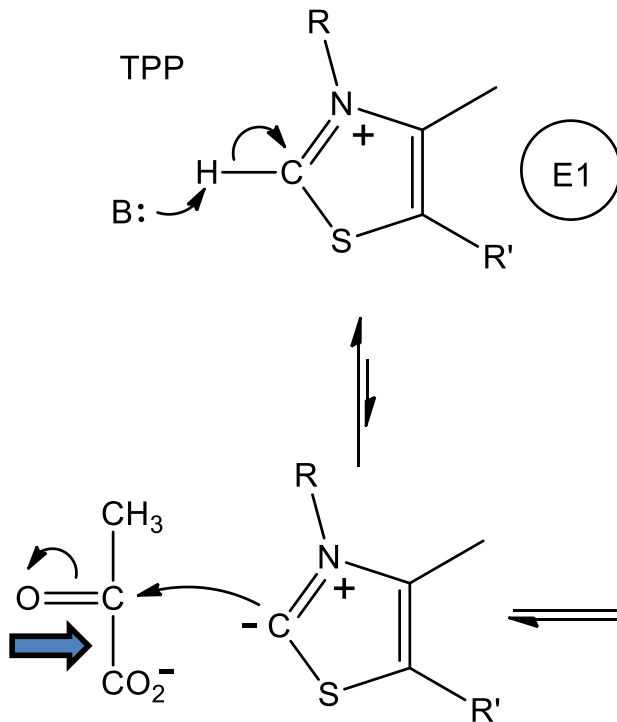
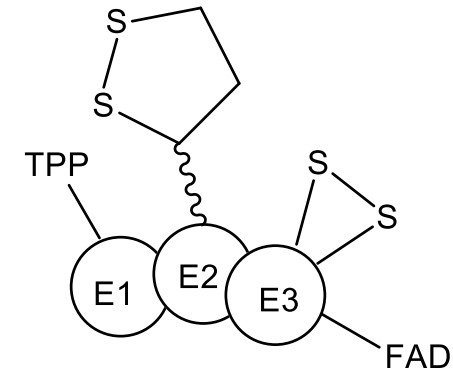
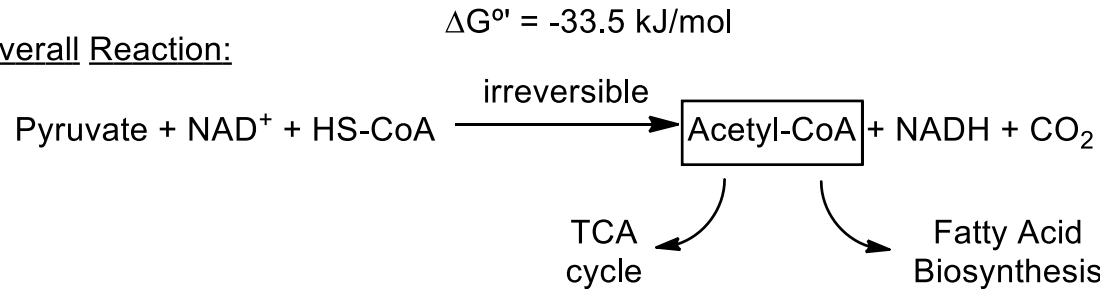


*This is why you will get fat if you eat sugar

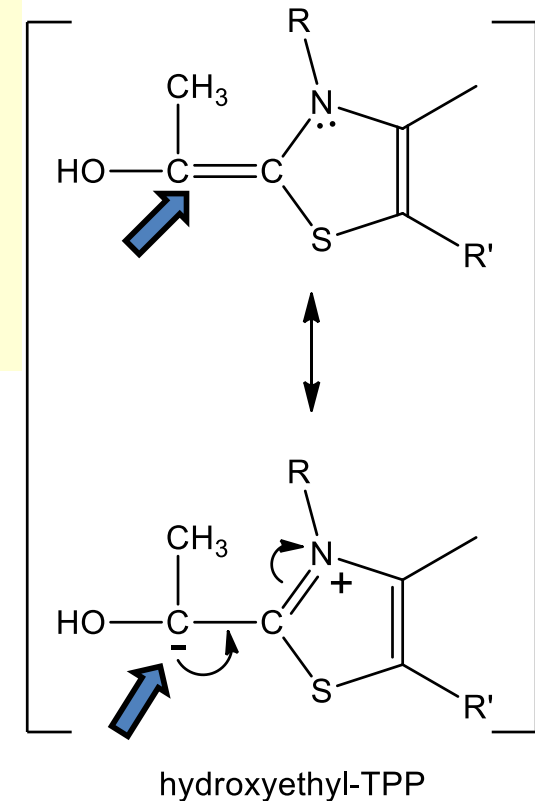
Pyruvate Dehydrogenase Complex

Pyruvate Dehydrogenase (PDH)

Overall Reaction:



Also Note similarity to the Pyruvate Decarboxylase (PDC) reaction JoAnne taught ... in that reaction, the HO-ethyl-TPP is released as acetaldehyde ... look at her notes

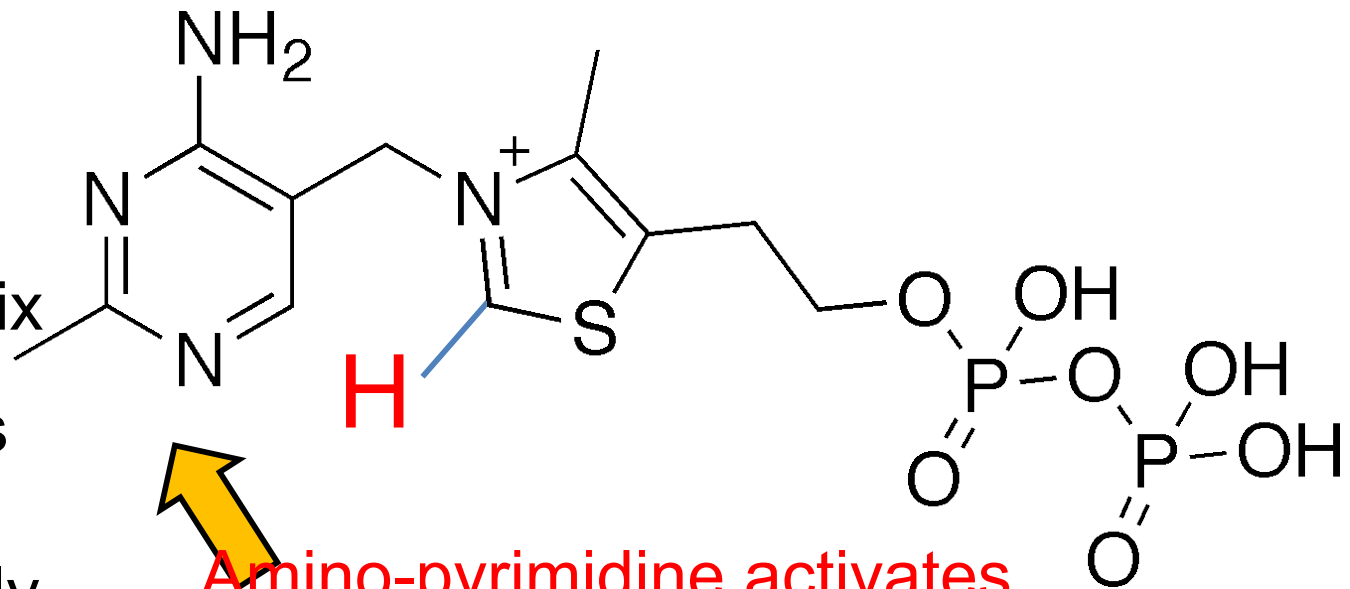


Vitamin B1 (Thiamine)

Pyruvate Dehydrogenase
I need you to think about
The electron flow (as well as
The carbon flow)

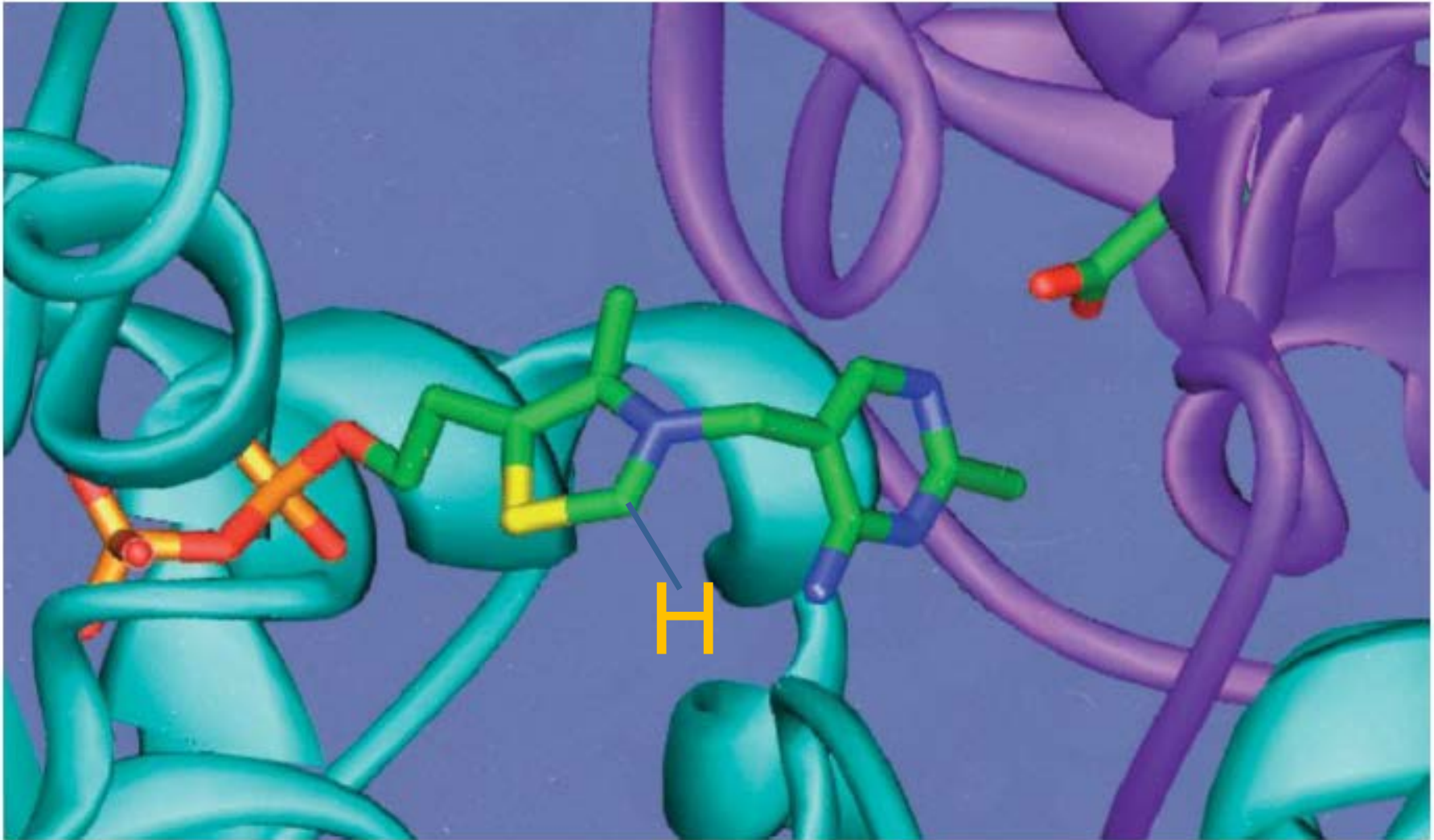
Note: Pyruvate
moves from the
cytoplasm to the
mitochondrial matrix

In prokaryotes, this
occurs in the
cytoplasm, probably
near the plasma
membrane

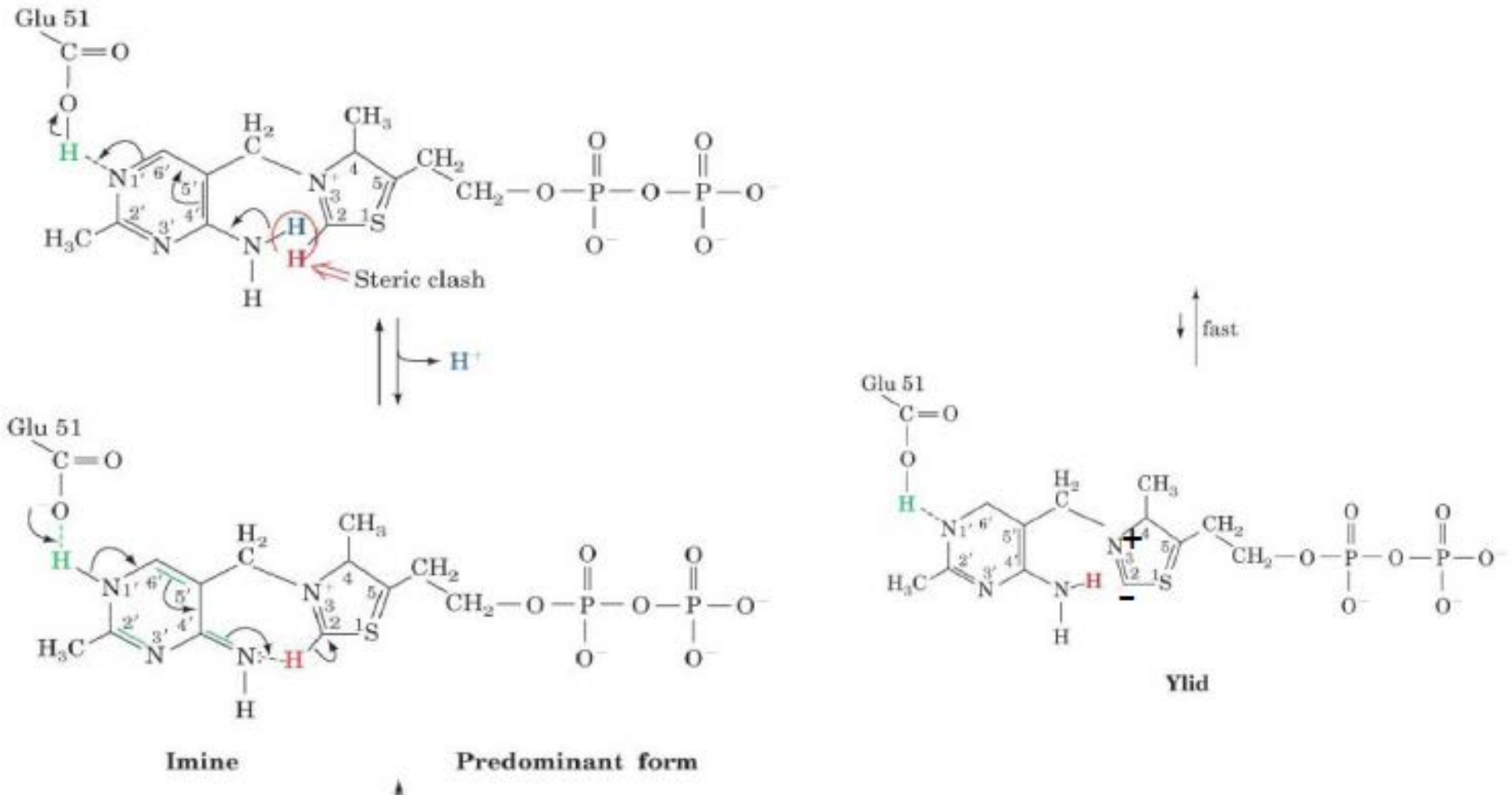


Amino-pyrimidine activates
red hydrogen ... lowers
pKa of thiazole proton ... to
about 18

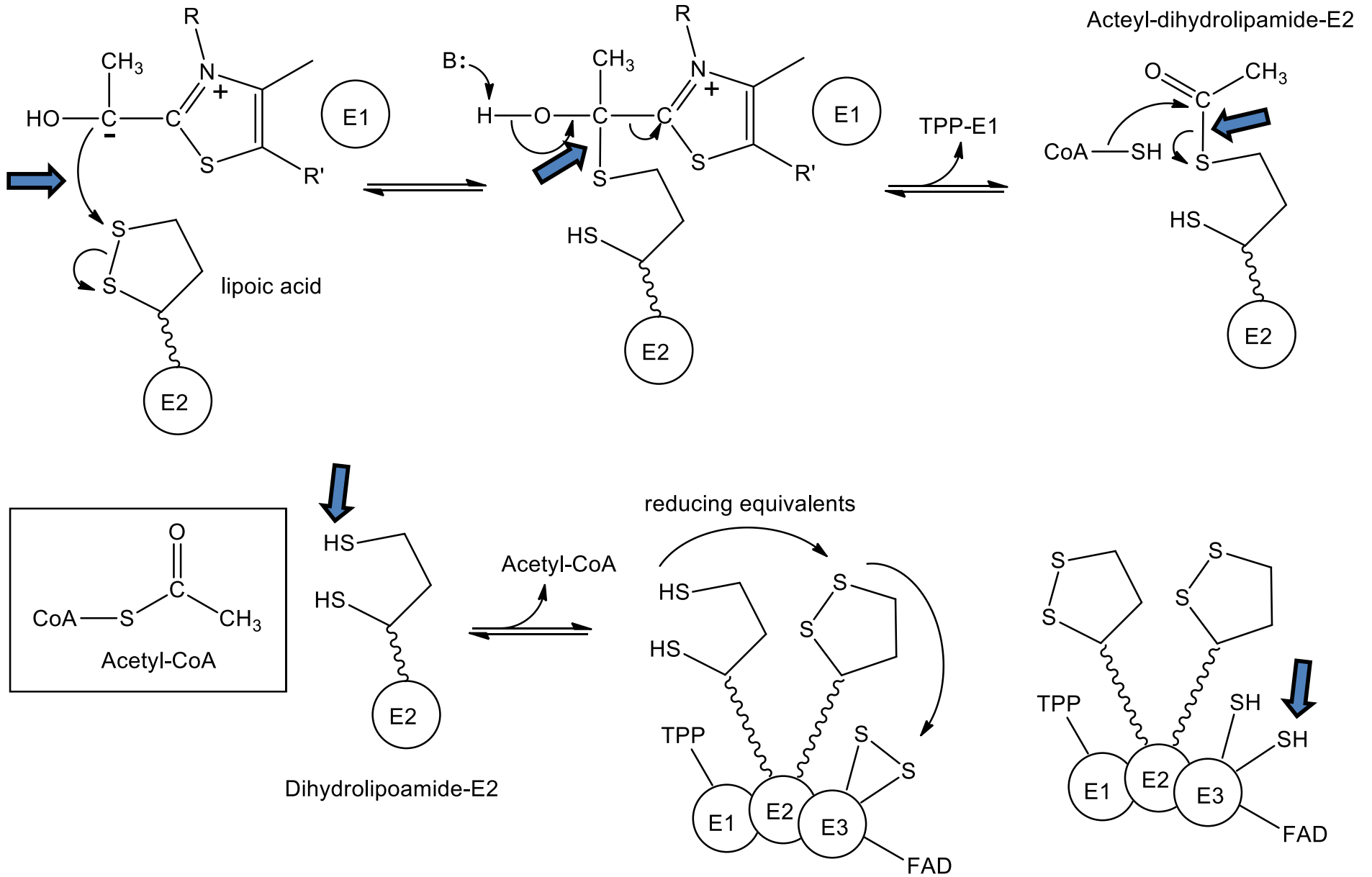
Role of pyrimidine base in ylid formation: no GBC from protein in the vicinity of the thiazolium proton



From JoAnne's Notes

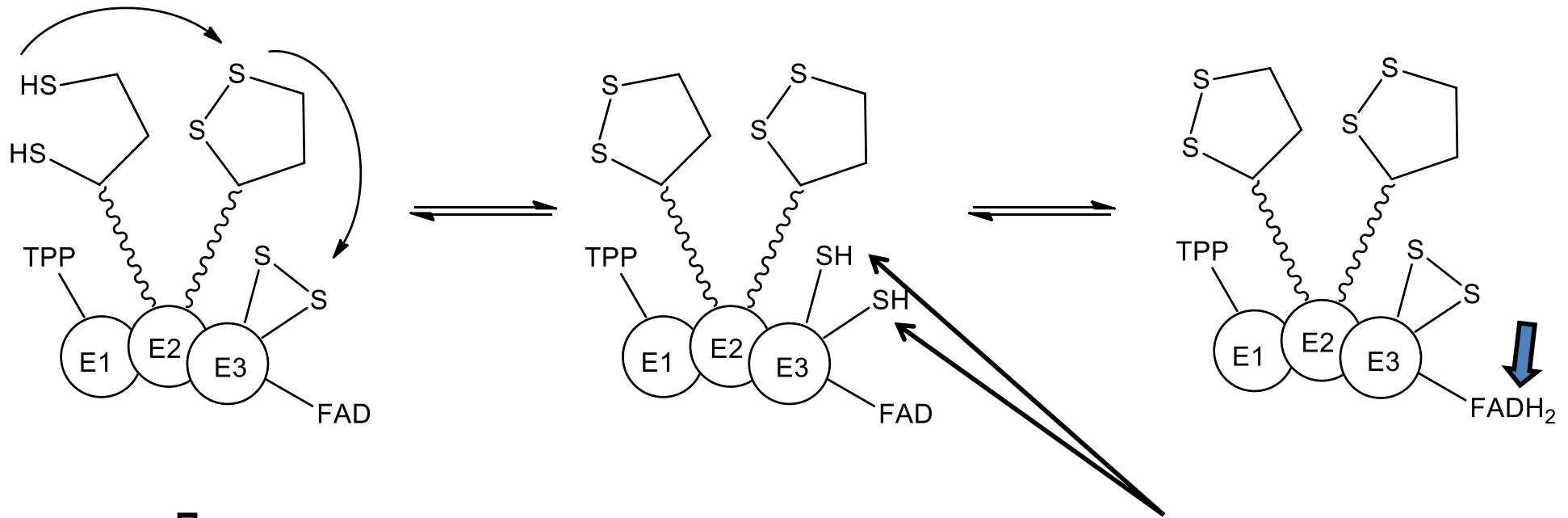


Pyruvate Dehydrogenase (PDH)

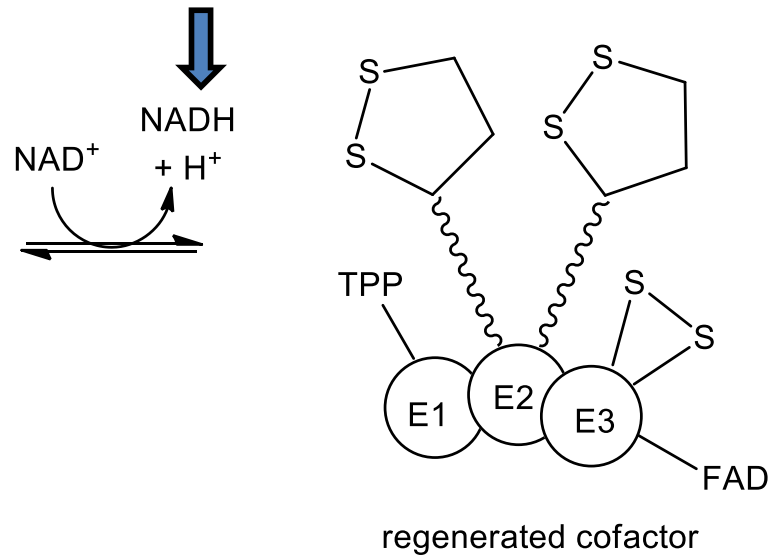


Pyruvate Dehydrogenase (PDH)

reducing equivalents



Cys 43 and Cys 48 on the E3 subunit



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5.07SC Biological Chemistry I
Fall 2013

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