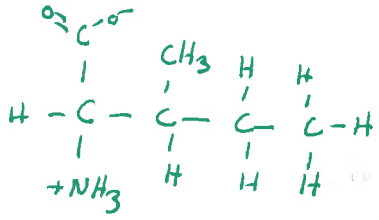
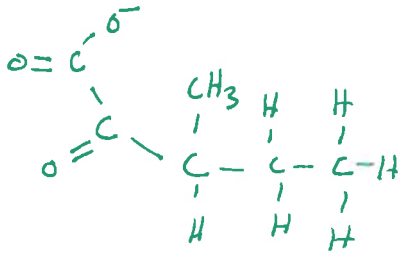
Name: Kay

Quiz 38

a. Draw isoleucine.

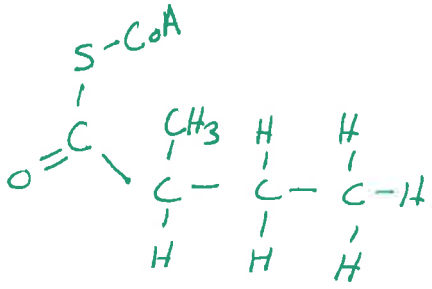


b. Convert isoleucine to an α-keto acid.



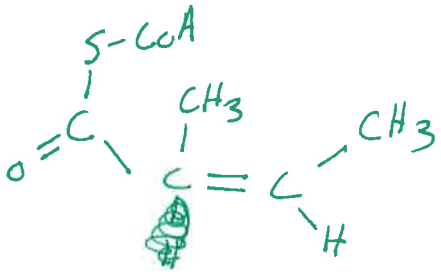
i. What enzyme catalyzes this step? transaminase
ii. What cofactor or cofactors are required for this step? PLP
iii. What glycolysis or TCA cycle metabolites are needed for this step? an α-keto acid

c. Perform the reaction exactly analogous to the reaction catalyzed by α-ketoglutarate dehydrogenase on the isoleucine metabolite from the previous step.



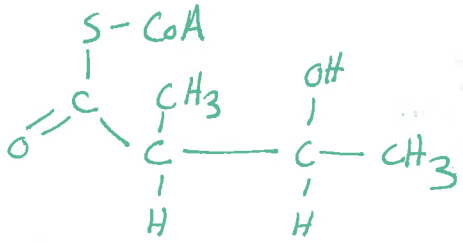
i. What cofactor or cofactors likely participate in this reaction? CoA-SH NAD^+

d. Perform the reaction exactly analogous to the reaction catalyzed by acyl-CoA dehydrogenase on the isoleucine metabolite from the previous step.

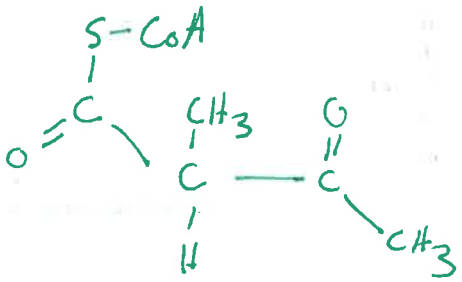


i. What cofactor or cofactors likely participate in this reaction? FAD

e. Perform the reaction exactly analogous to the reaction catalyzed by enoly-CoA hydratase on the isoleucine metabolite from the previous step.



f. Perform the reaction exactly analogous to the reaction catalyzed by β-hydroxy-acyl-CoA dehydrogenase on the isoleucine metabolite from the previous step.



i. What cofactor or cofactors likely participate in this reaction? NAD^+

g. Perform the reaction exactly analogous to the reaction catalyzed by thiolase on the isoleucine metabolite from the previous step.