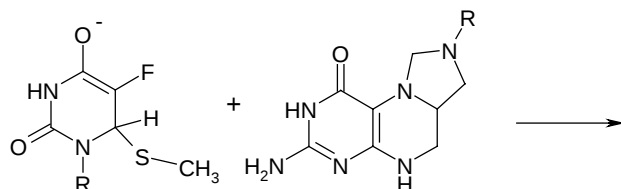
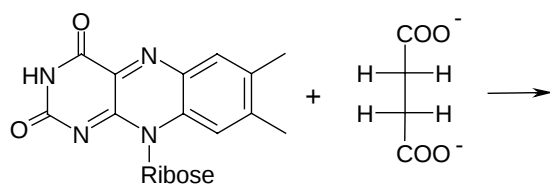
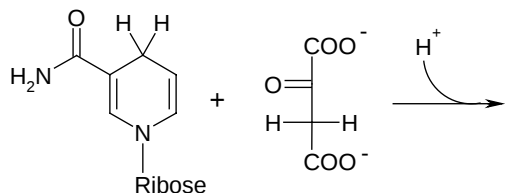


Vitamin Problems for Week 7:

Chem 109C (Kahn)

A) Cofactors

Complete the following reactions and name the participating cofactor.



Catalysis: True or False

- 1) Replacement of two tryptophan residues that bind chloride in the active site of haloalkane dehalogenase with alanine residues is expected to facilitate catalysis because such mutant will have a larger pocket that can better accommodate the chloride ion.
- 2) Extensive dialysis of alcohol dehydrogenase to remove all bound NAD^+ will lead to about 2-fold decrease in activity because in the apoenzyme, the hydride can be transferred only to a nearby phenylalanine residue.
- 3) Treatment of ketosteroid isomerase with EDTA sequesters all transition metal ions and is expected to reduce the activity of this enzyme significantly.
- 4) The oxidation of ethanol by alcohol dehydrogenase is accompanied by decrease of absorbance at 340 nm as the highly conjugated NAD^+ cofactor is consumed.
- 5) The oxidative half-reaction in the cholesterol oxidase reaction cycle refers to the oxidation of cholesterol to 5-cholesten-3-one.