

9.4: Solutions for Selected Problems

Exercise 9.1.1:

Steps 3 and 4 (isocitrate to alpha-ketoglutarate and alpha-ketoglutarate to succinyl coenzyme A).

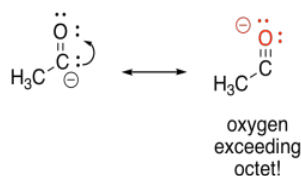
Exercise 9.1.2:

Step 5 (succinyl coenzyme A to succinate).

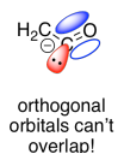
Exercise 9.1.3:

Steps 3 (isocitrate to alpha-ketoglutarate; NADH), 4 (alpha-ketoglutarate to succinyl coenzyme A; NADH), 6 (succinate to malate; FADH₂), and 8 (malate to oxaloacetate; NADH).

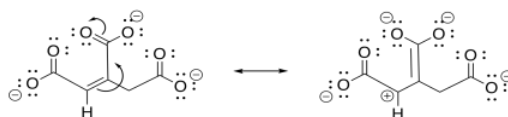
Exercise 9.2.1:



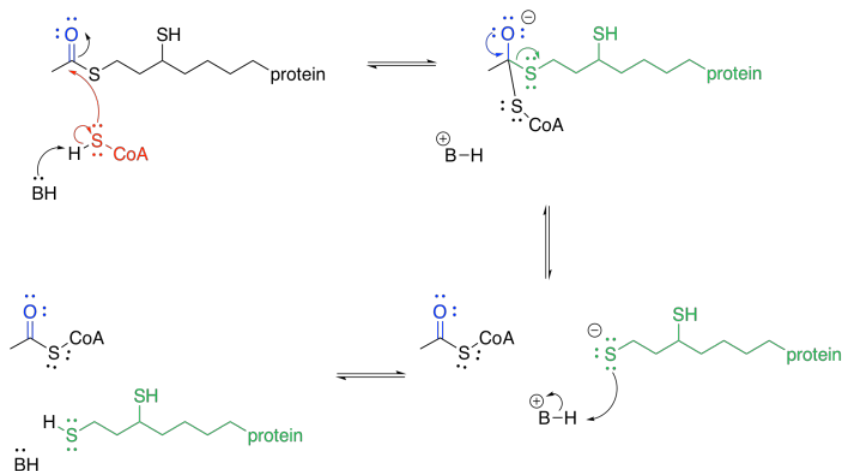
Exercise 9.2.2:



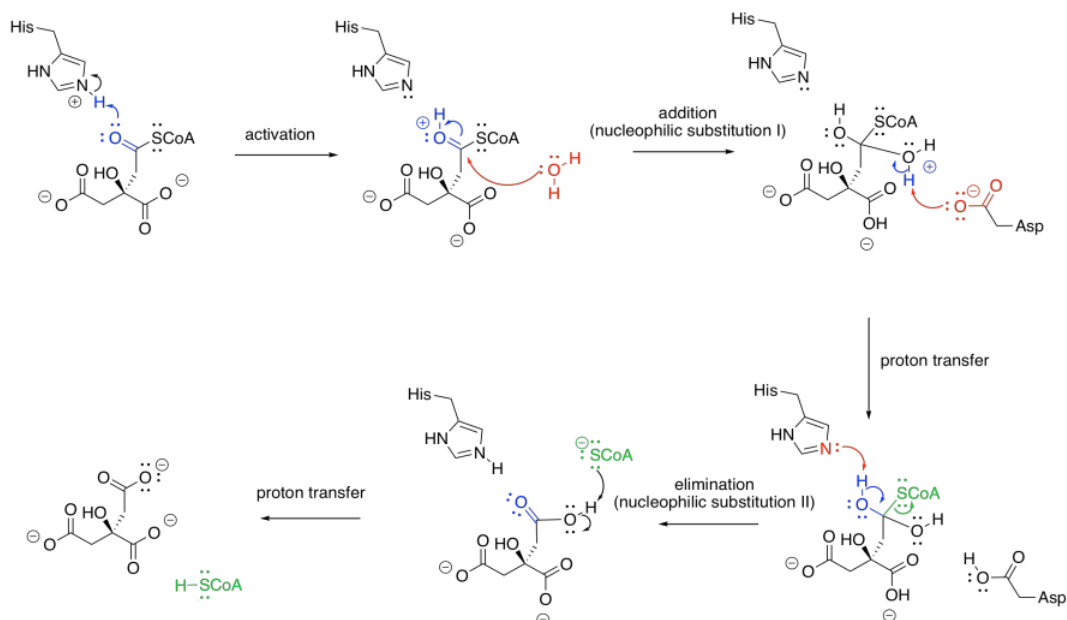
Exercise 9.2.3:



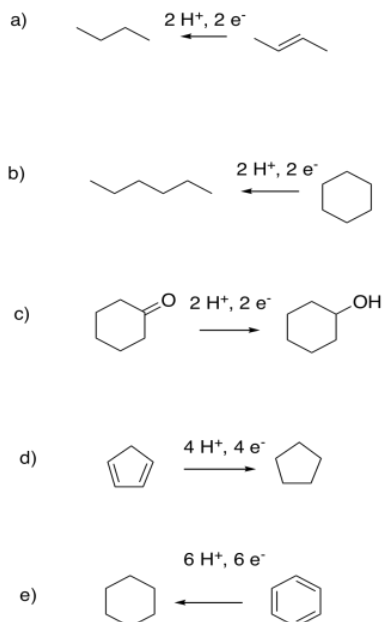
Exercise 9.3.1:



Exercise 9.3.2:

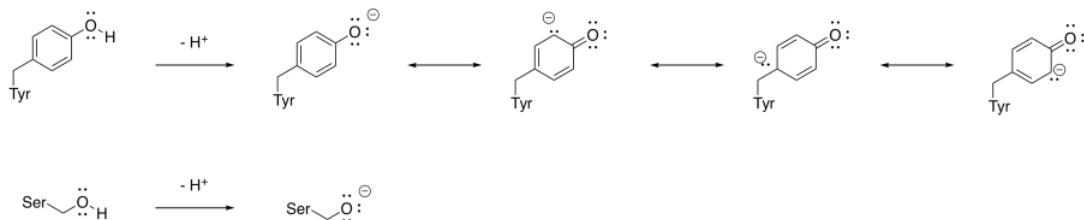


Exercise 9.3.3:

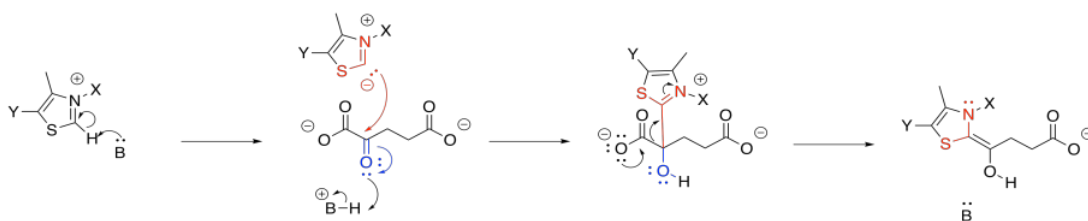


Exercise 9.3.4:

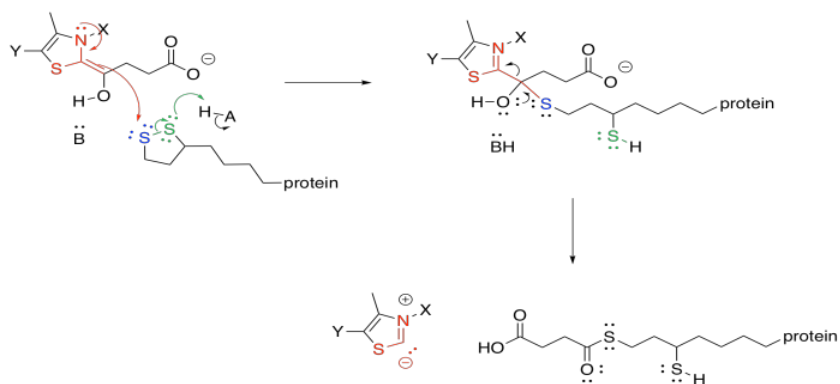
The anion that results from deprotonation of tyrosine is resonance-stabilised, but the anion that results from deprotonation of serine is not. The tyrosine anion is more stable compared to the serine anion and therefore the tyrosine anion forms more readily.



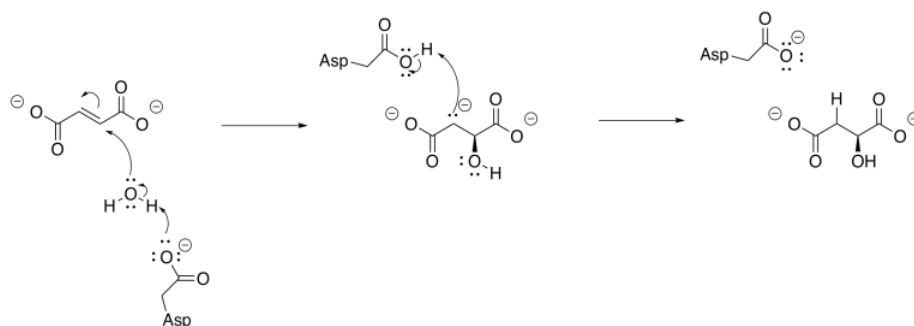
Exercise 9.3.5:



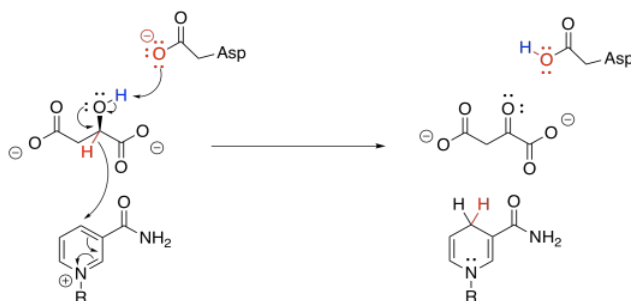
Exercise 9.3.6:



Exercise 9.3.7:



Exercise 9.3.8:



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