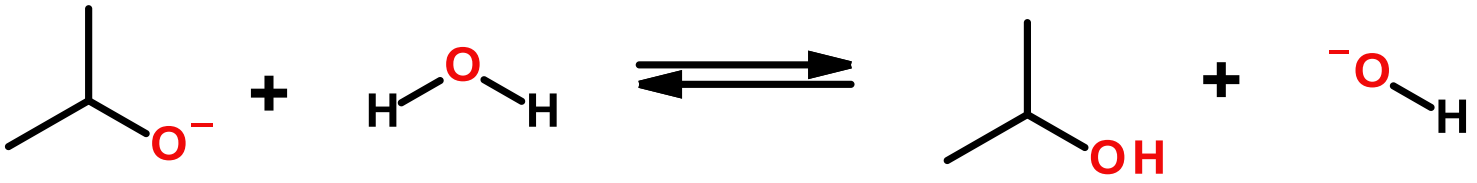
The following chemical equation represents the acid/base reaction of water and an alkoxide. Which is more stable? The products (right side of the equation) or the reactants (starting materials or the left side of the equation)?

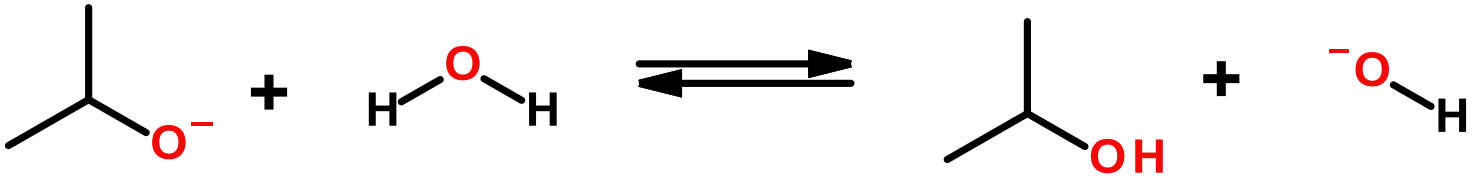
2016-10-12 Q1



A. Starting materials (left side of the equation)
B. Products (right side of the equation)

The following chemical equation represents the acid/base reaction of water and an alkoxide. Which is more stable? The products (right side of the equation) or the reactants (starting materials or the left side of the equation)?

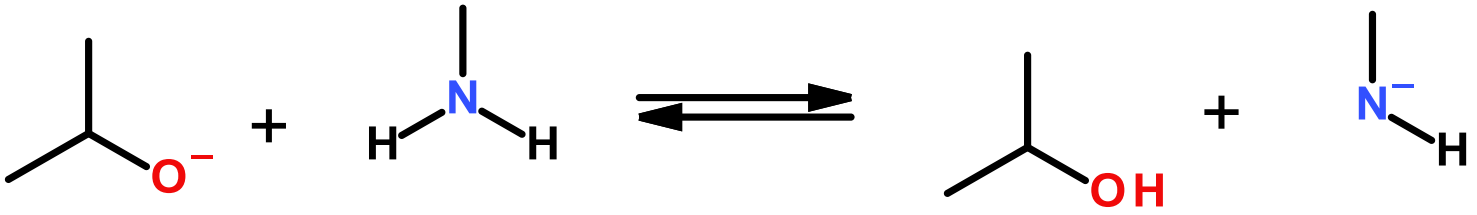
2016-10-12 Q1



A. Starting materials (left side of the equation)
B. Products (right side of the equation)

The following chemical equation represents the acid/base reaction of an amine and an alkoxide. Which is more stable? The products (right side of the equation) or the reactants (starting materials or the left side of the equation)?

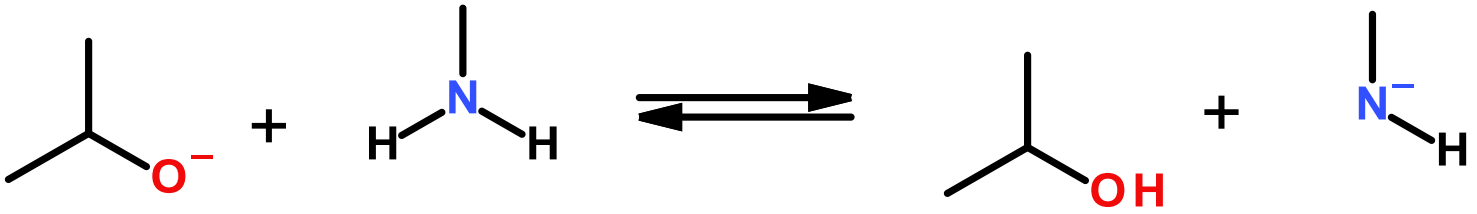
2016-10-12 Q2



A. Starting materials (left side of the equation)
B. Products (right side of the equation)

The following chemical equation represents the acid/base reaction of an amine and an alkoxide. Which is more stable? The products (right side of the equation) or the reactants (starting materials or the left side of the equation)?

2016-10-12 Q2



A. Starting materials (left side of the equation)
B. Products (right side of the equation)

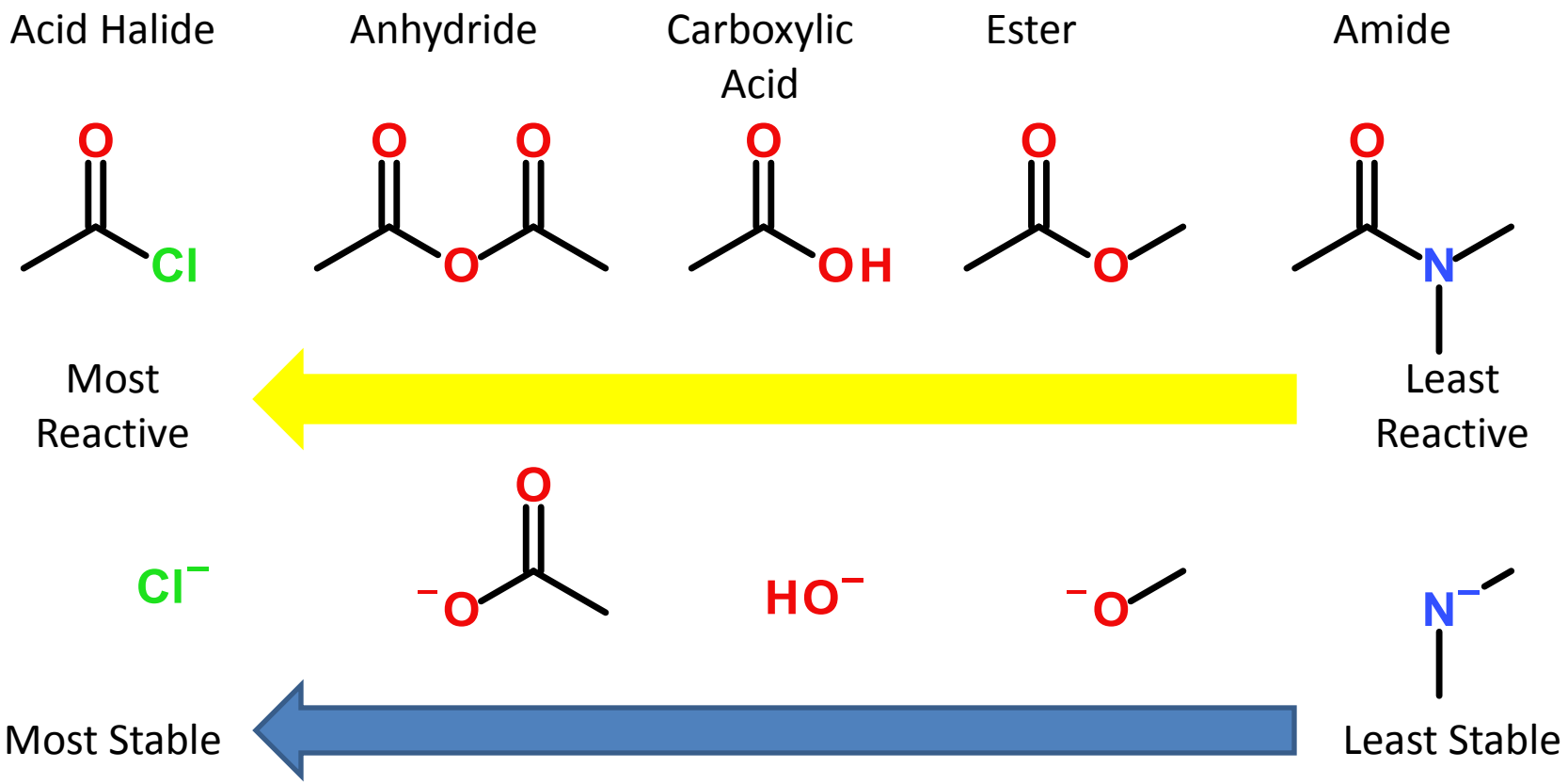
Exam 2

- **Time:**
  - **Tuesday, October 18: 7:00 – 9:00PM OR**
  - **Wednesday, October 19: 7:00 – 9:00PM OR**
  - **Thursday, October 20: 7:00 – 10:00PM**
- **Location – Soc/Anthro Testing Center**
  - Chapters will be covered in this order: Chapter 19, 12
- **Practice Exams are Posted**
  - Ex2-14-98 Practice Exam 2A
  - Ex2-14-98 Practice Exam 2B
- **Deadline for alternate arrangements is Monday, 10/17/2016 at 4:30 PM (i.e., close of business)**
  - **An oral make-up exam will be required for making up the exam for all students not taking the exam on the above dates or having already made prior arrangements**

Order of Coverage (Exam 2)

	Homework Assignment	Due Date
13	Ex2-07-B7-12-03A Carbox Acid Rxns	Thursday, October 6, 2016
14	Ex2-07-B7-12-03B Carbox Acid Rxns	Friday, October 7, 2016
15	Ex2-08-B7-12-04A Naming Carbox Acid Derivatives	Saturday, October 8, 2016
16	Ex2-08-B7-12-04B Naming Carbox Acid Derivatives	Sunday, October 9, 2016
17	Ex2-09-B7-12-05A Rxns Acid Chlorides	Monday, October 10, 2016
18	Ex2-09-B7-12-05B Rxns Acid Chlorides	Tuesday, October 11, 2016
19	Ex2-10-B7-12-06A Rxns Esters	Wednesday, October 12, 2016
20	Ex2-10-B7-12-06B Rxns Esters	Thursday, October 13, 2016
21	Ex2-11-B7-12-07A Rxns Amides	Friday, October 14, 2016
22	Ex2-11-B7-12-07B Rxns Amides	Saturday, October 15, 2016
23	Ex2-12-B7-12-08A Step Growth Polymers	Sunday, October 16, 2016
	Exam 2	**October 18, 19, 20**

Carboxylic Acid Derivatives



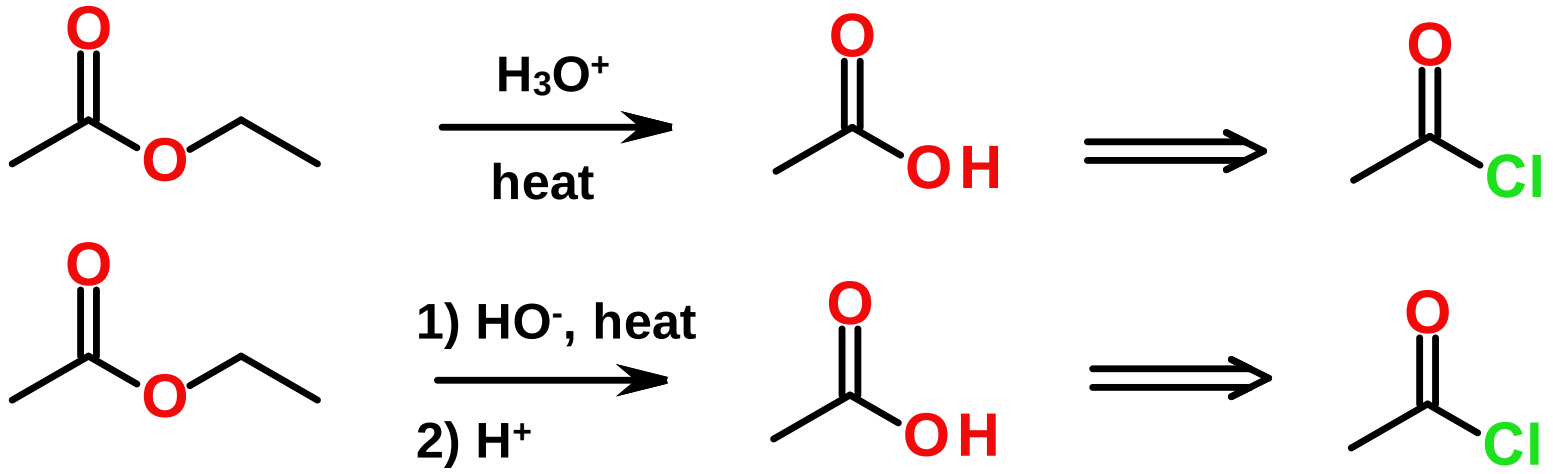
H^+, heat		Most forceful
H^+	heat	
Neutral		Least forceful
X^-	heat	
X^-, heat		Most forceful

Reacting with stronger carboxylic acid derivatives

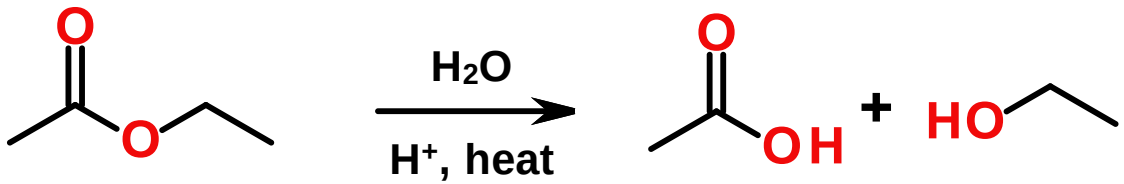
WAYS TO INCREASE ENERGY!

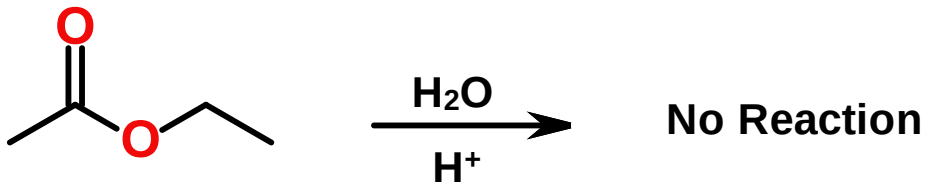
Esters to Acid Chlorides

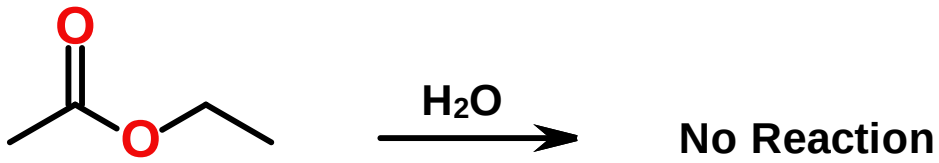
- No direct route!
- Must convert to a carboxylic acid, then to the acid chloride

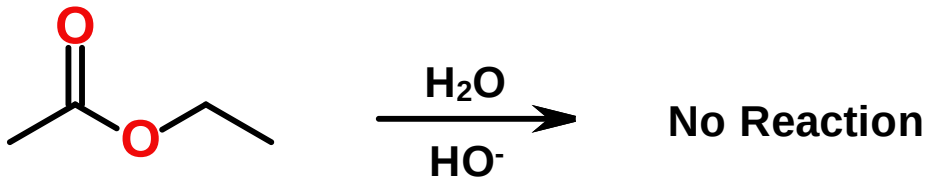


Esters to Carboxylic Acids

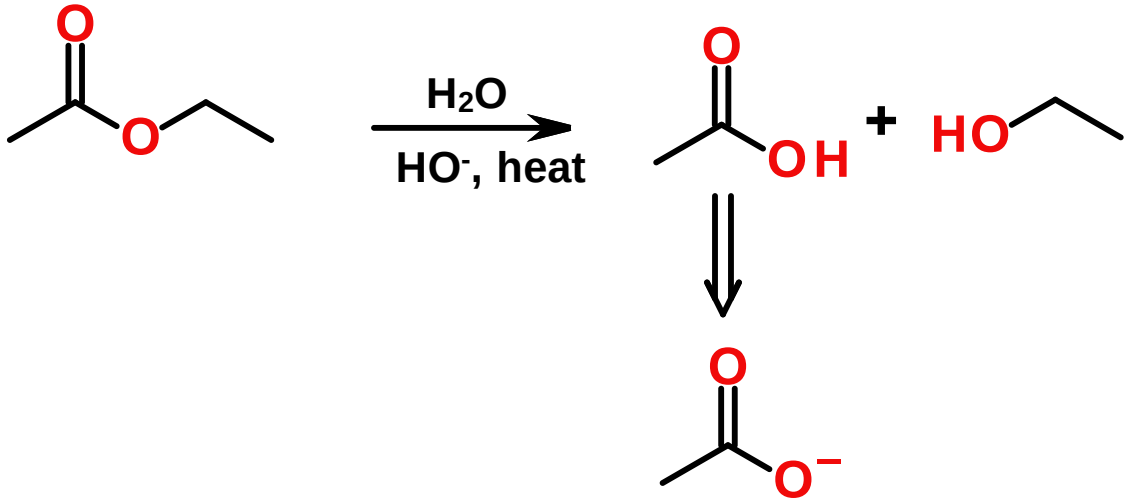




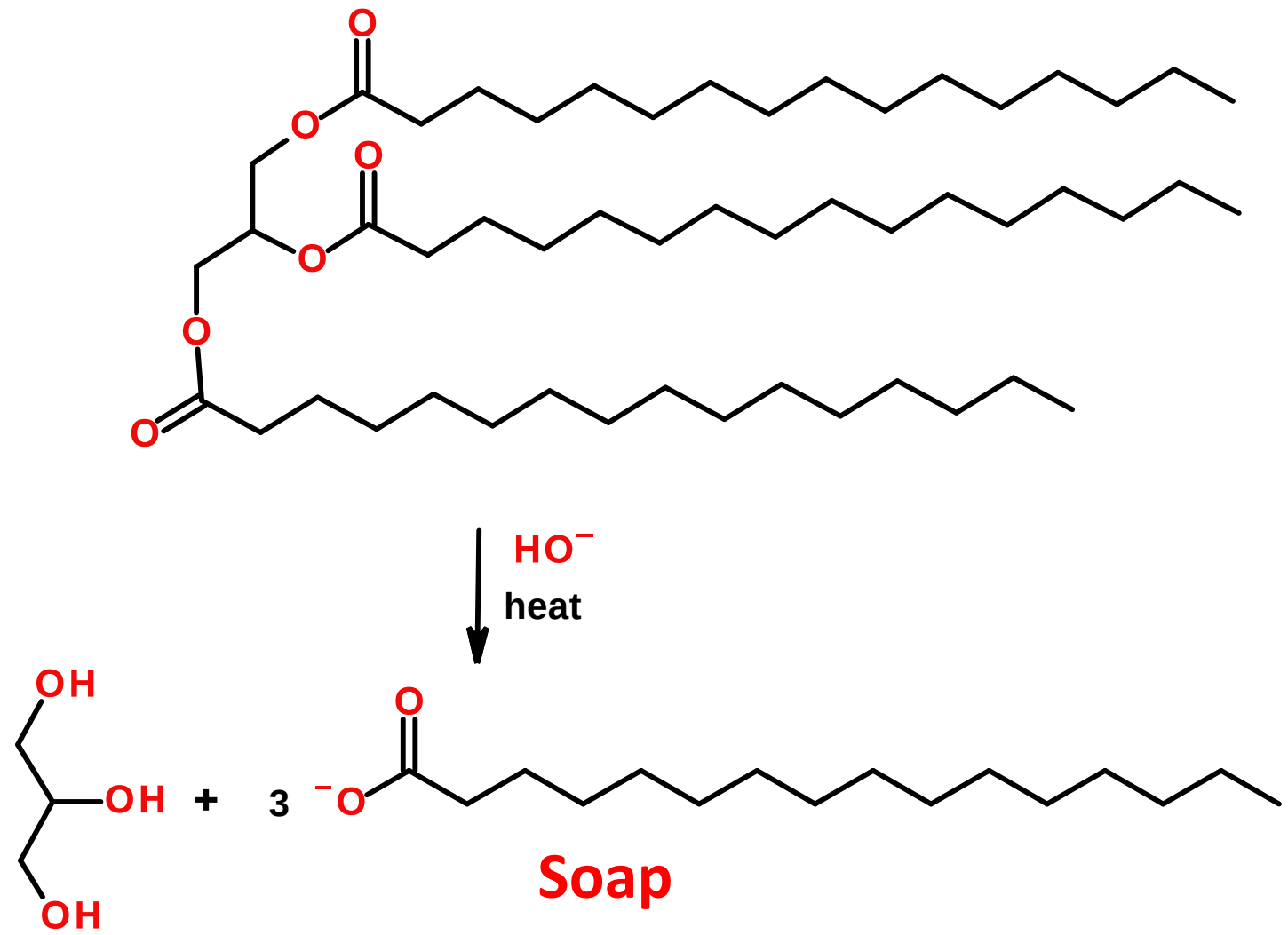




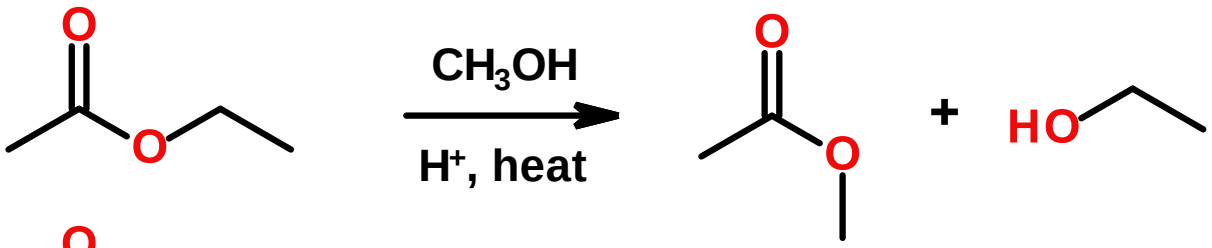
HO^- more stable than $CH_3CH_2O^-$

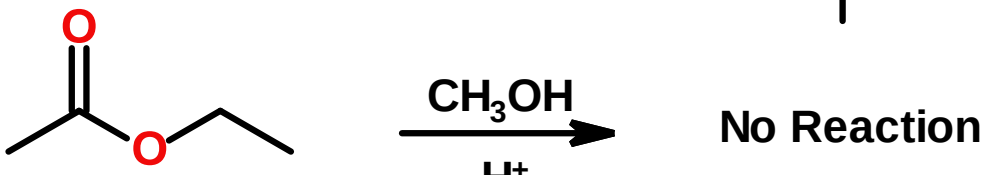


Practical Example

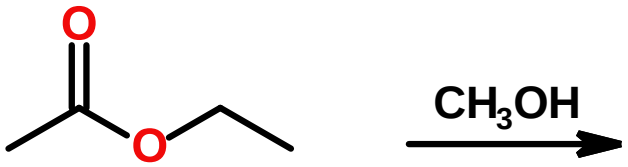


Trans-esterification

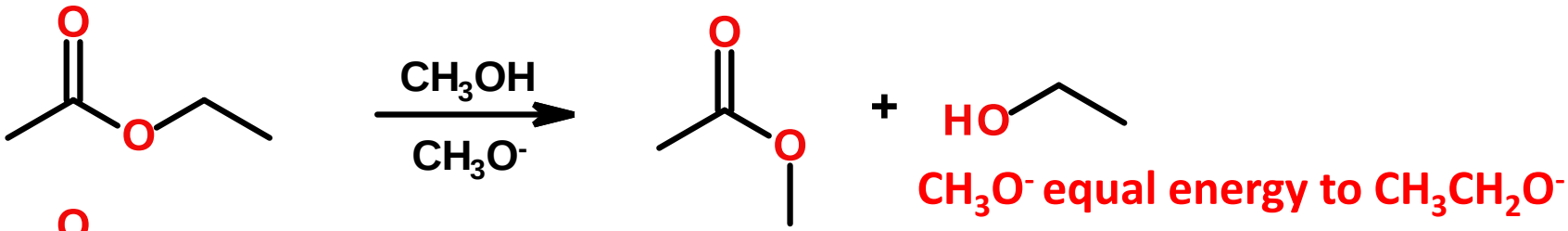




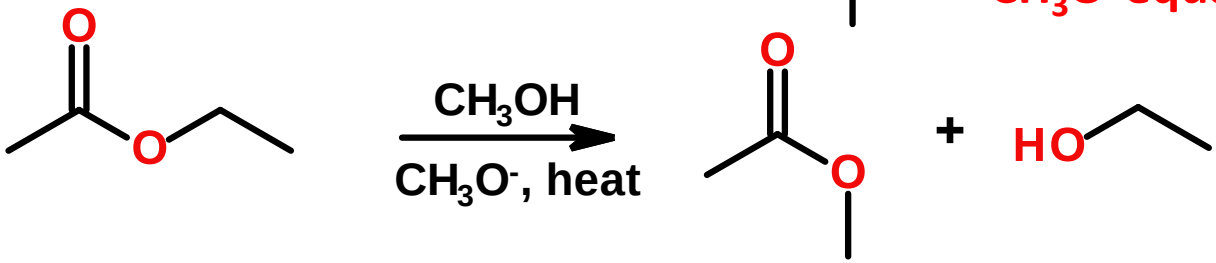
No Reaction



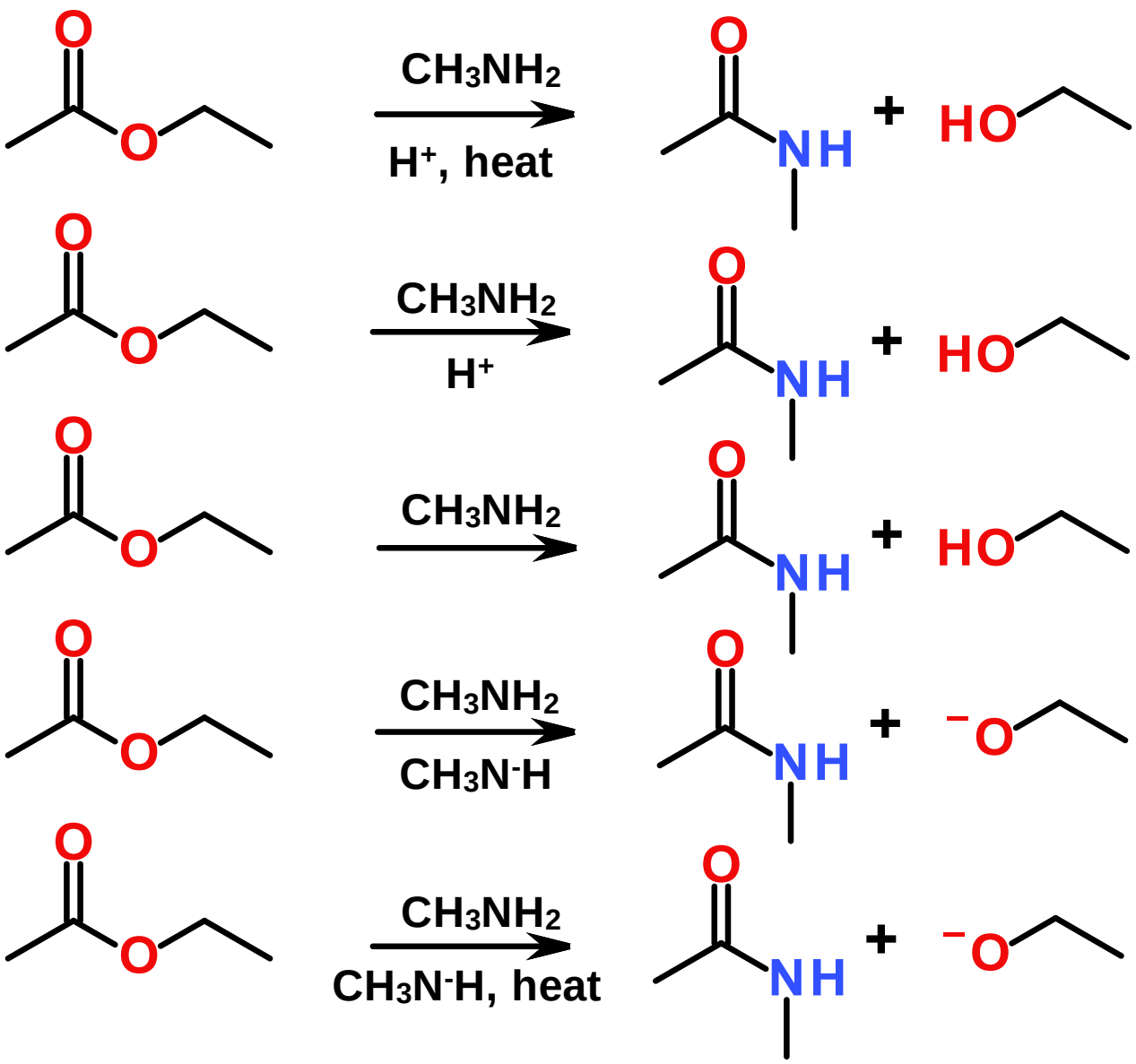
No Reaction



CH_3O^- equal energy to $CH_3CH_2O^-$

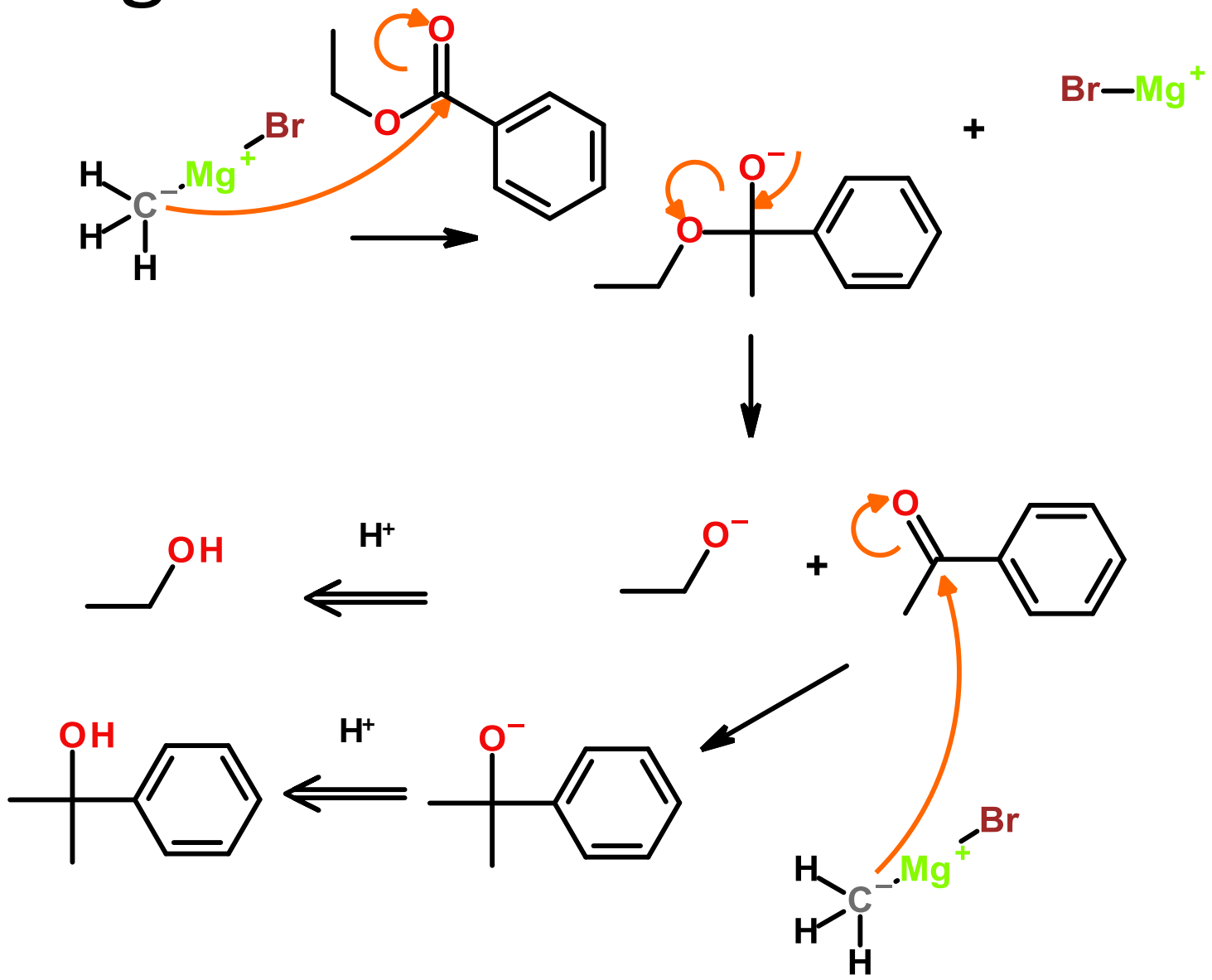


Esters to Amides

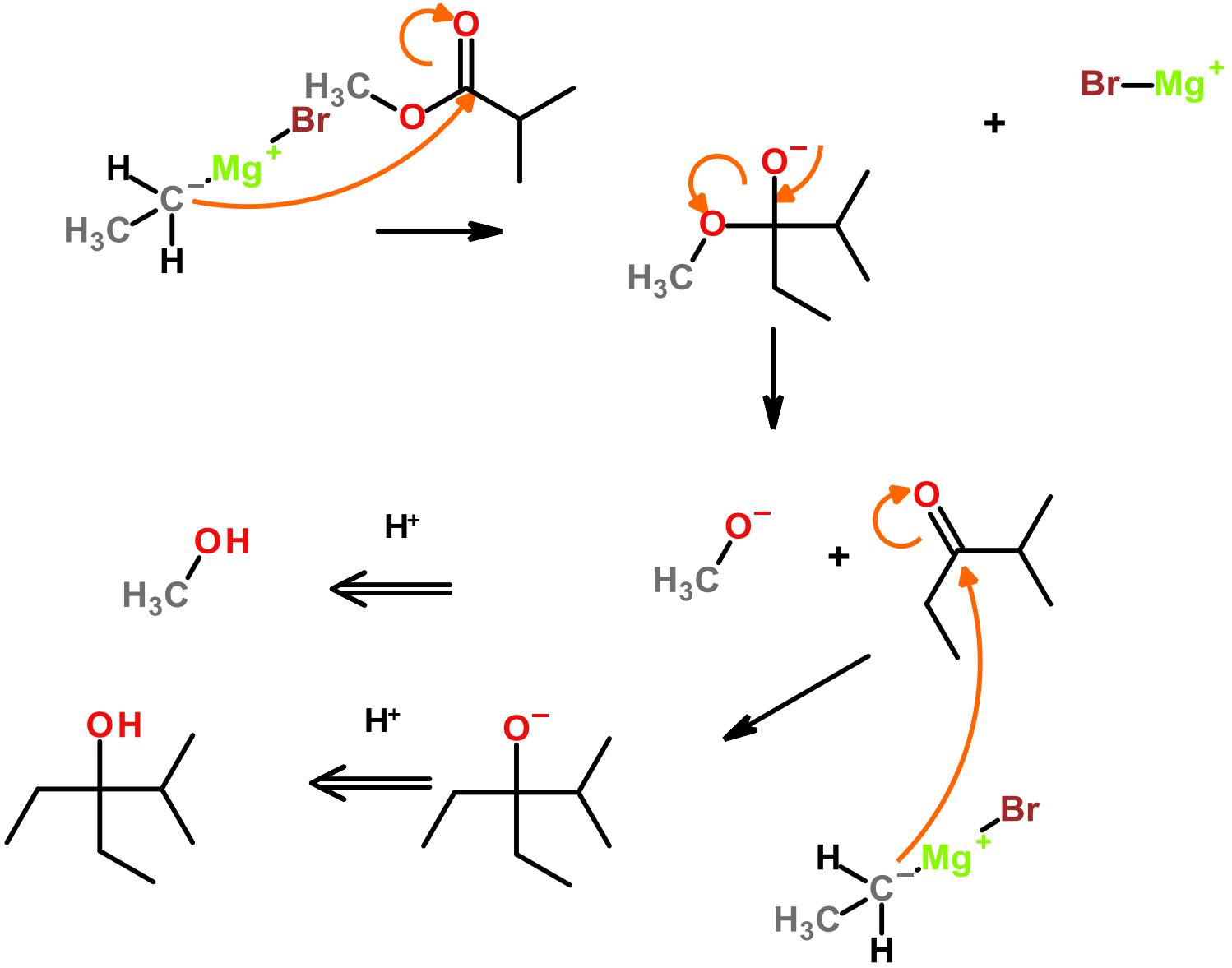


Amides are more stable than esters.

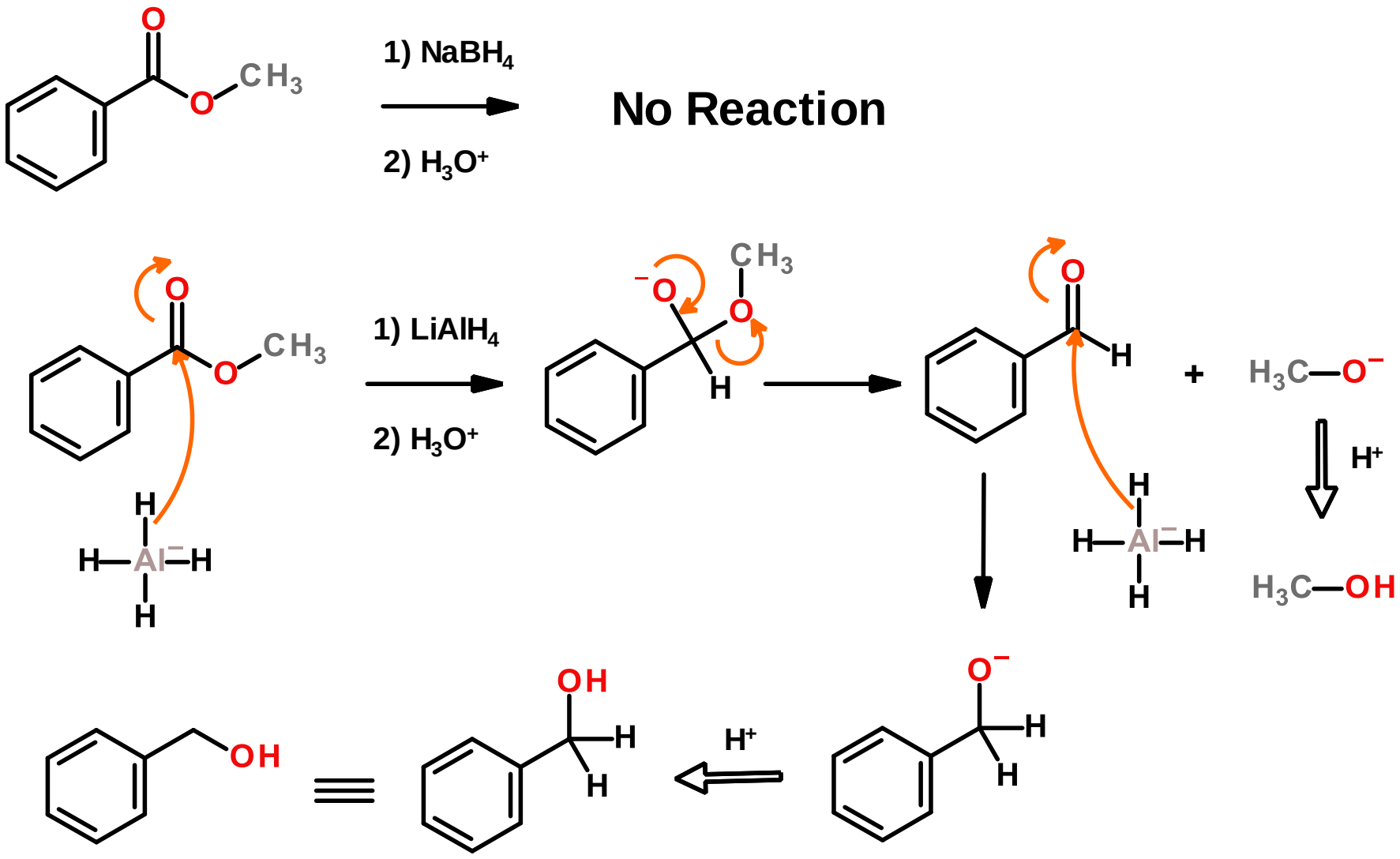
Grignard Reactions with Esters



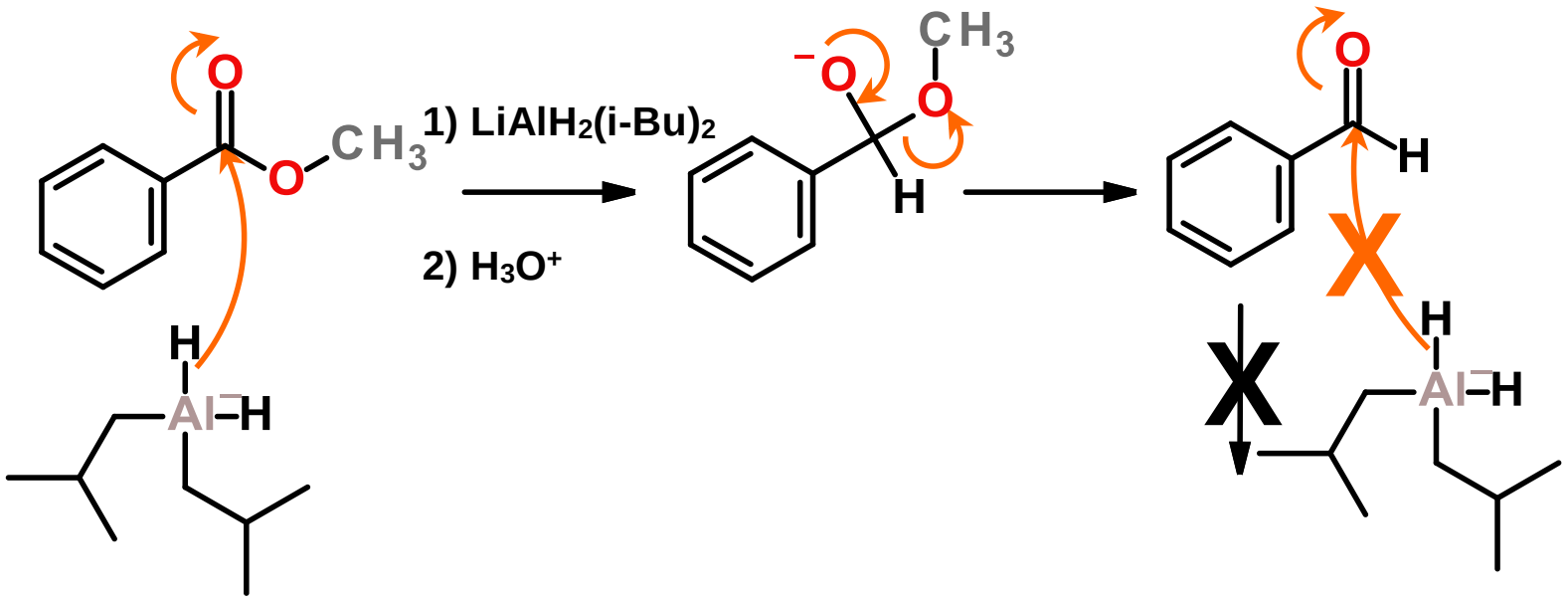
Grignard Reactions with Esters



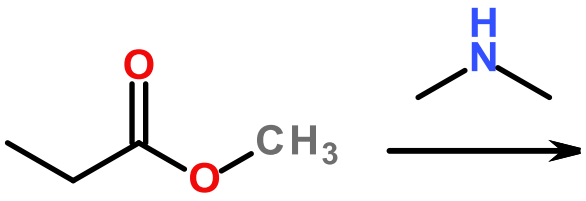
Hydride Reduction of Esters

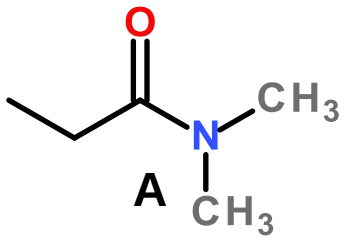


DiBAH Reduction of Esters

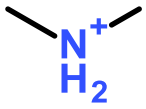


Give the major organic product(s) of the following reaction. Give your answer as a text answer, with the correct answers being listed in alphabetical order. (Example: xxxx a b)

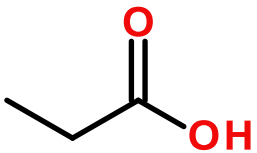




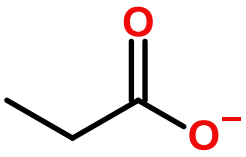
A



B



C



D

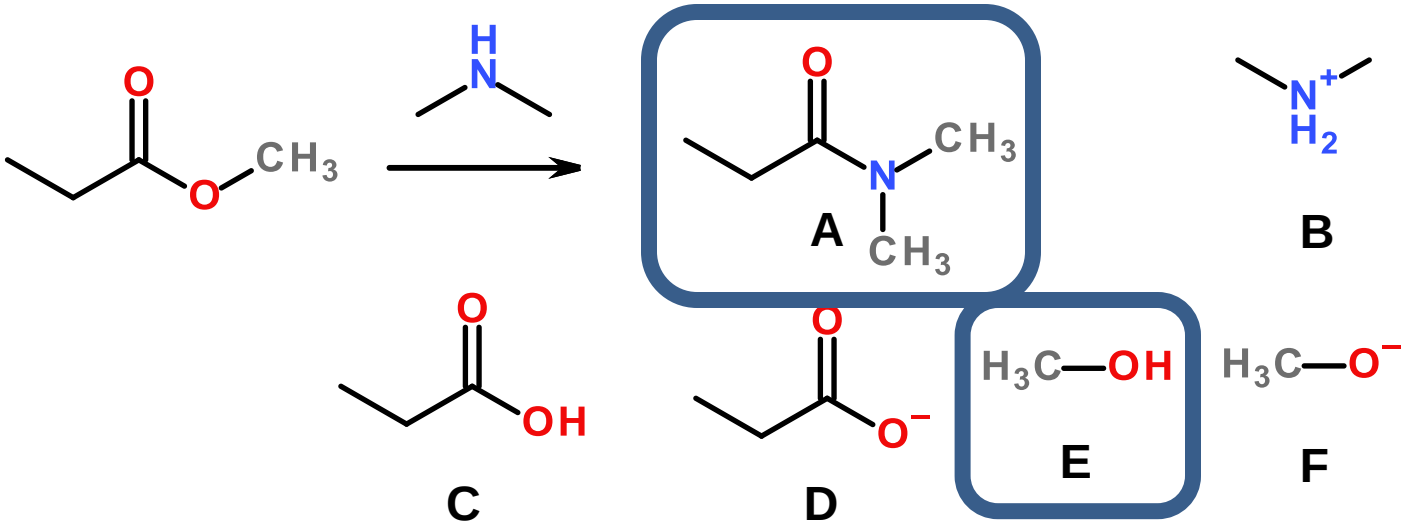
E

F

G - None of these products are a major product of the reaction that is shown.

2016-10-12 Q3

Give the major organic product(s) of the following reaction. Give your answer as a text answer, with the correct answers being listed in alphabetical order. (Example: xxxx a b)

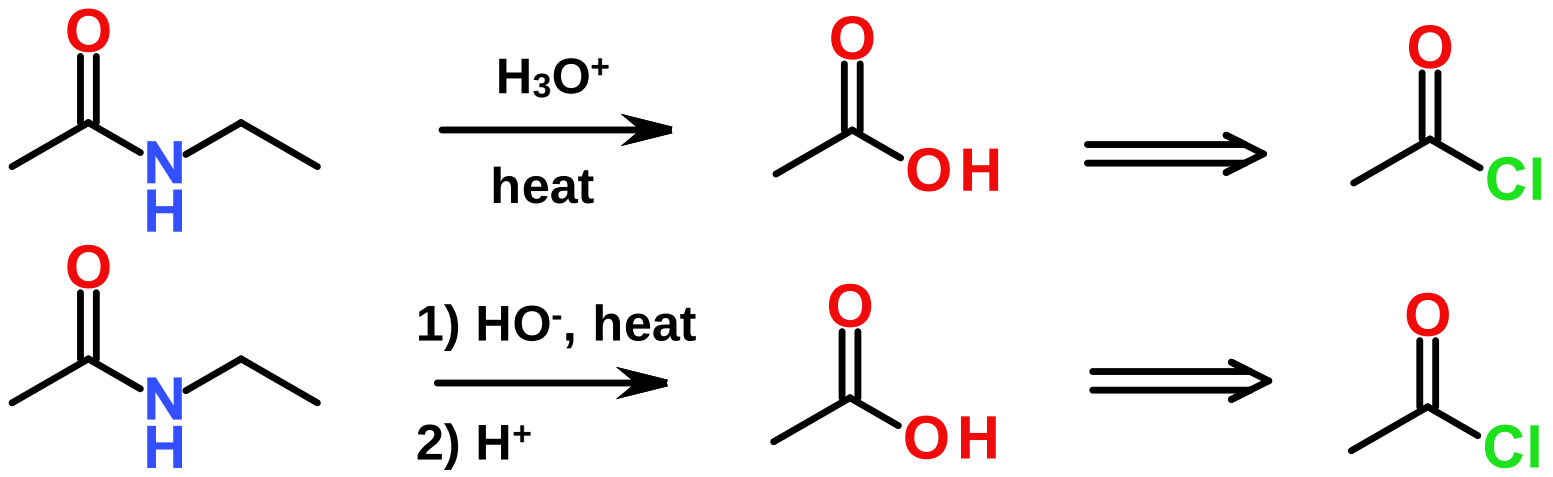


G - None of these products are a major product of the reaction that is shown.

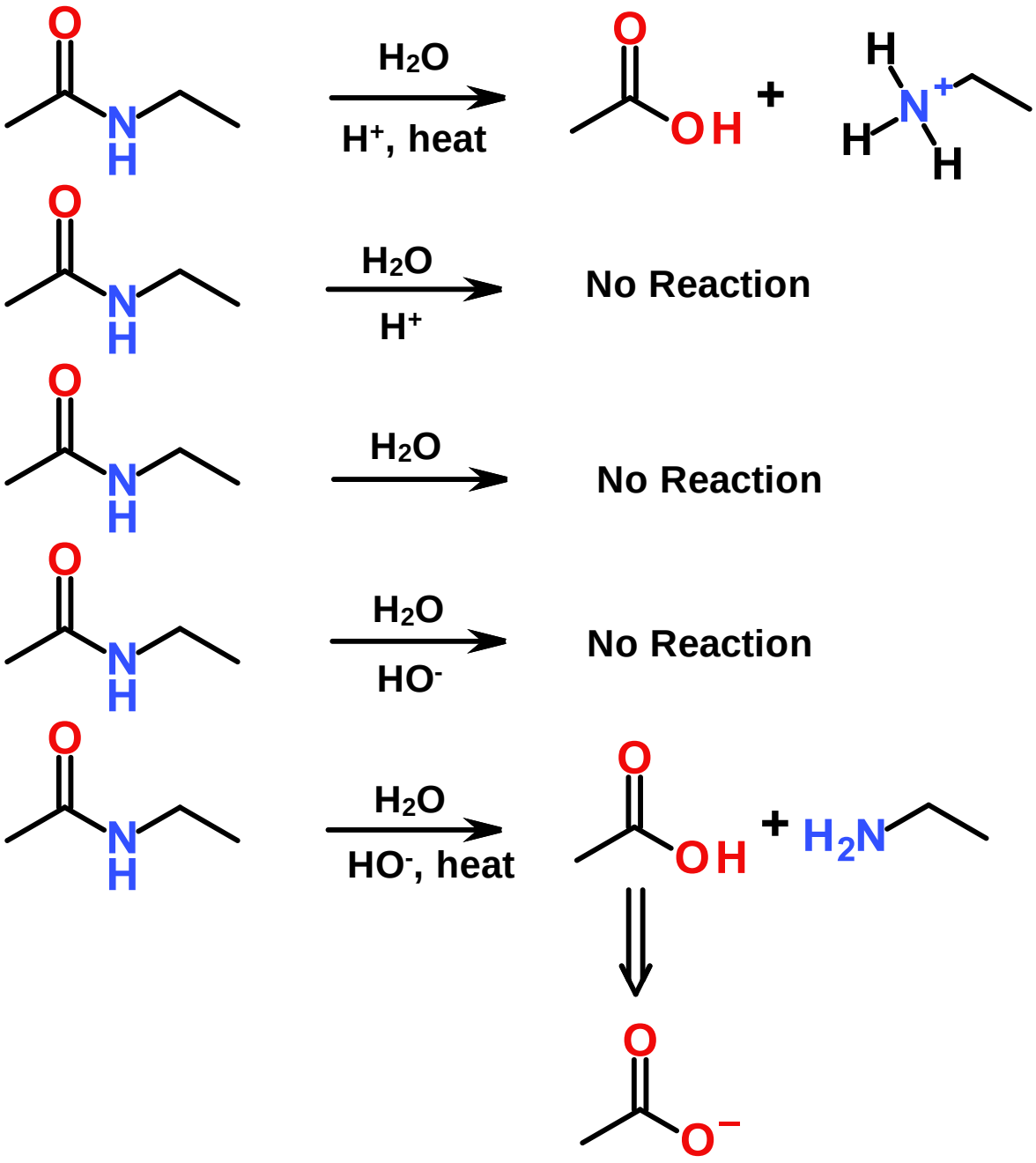
2016-10-12 Q3

Amides to Acid Chlorides

- No direct route!
- Must convert to a carboxylic acid, then to the acid chloride



Amides to Carboxylic Acids



Amides to Esters