

The Chemistry of Carboxylic Acids

April 24, 2013

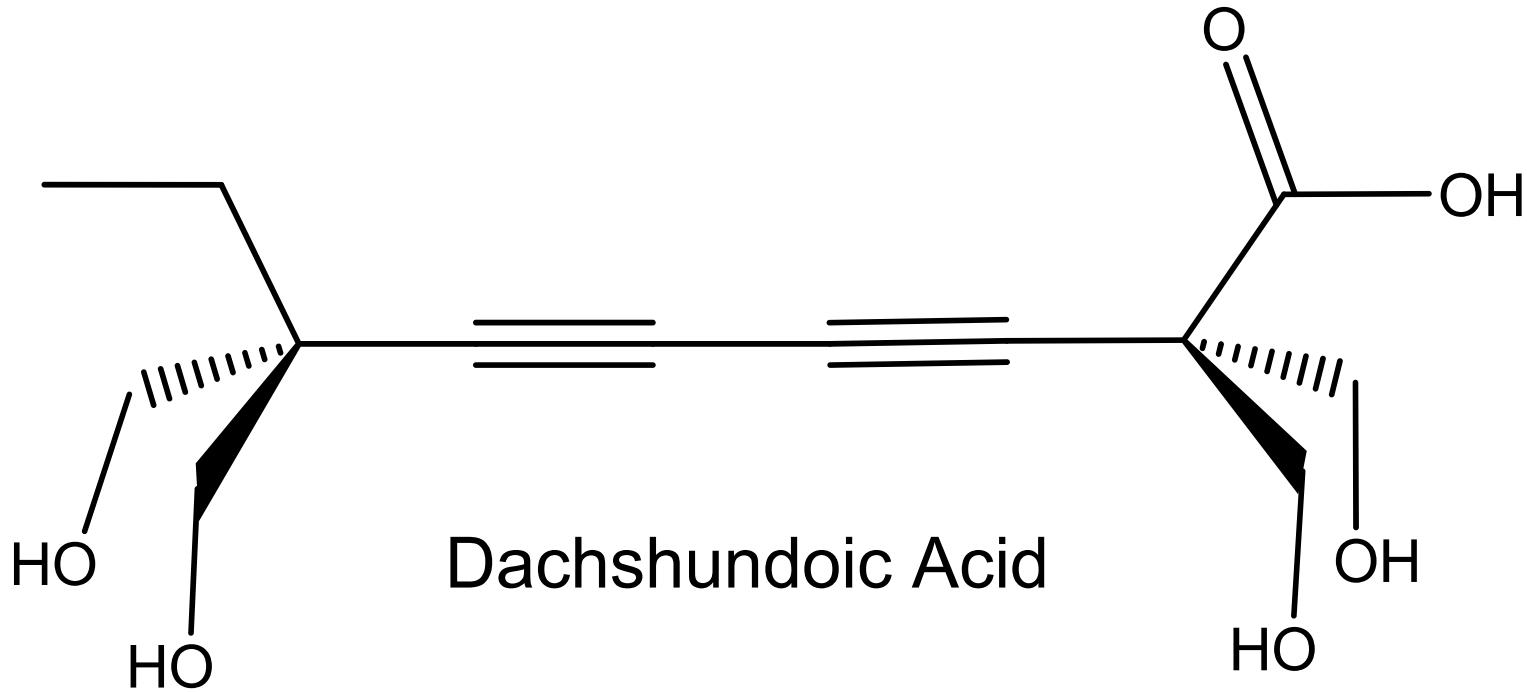
- Reduction of nitriles (continued).
- Famous decarboxylation reactions.
- Reaction of esters/chlorides with Grignards/cuprates.

Announcements

Suggested Problems for Chapter 20: 20.25, 20.27, 20.30, 20.32, 20.35, 20.38, 20.40, 20.43, 20.45, 20.46, 20.49, 20.51, 20.53, 20.55.
Chapter 21: 21.31, 21.34, 21.35, 21.39, 21.43, 21.44, 21.46, 21.48, 21.51, 21.53, 21.54 (b,d), 21.55 (f,g,h,i), 21.56 (b,c,e), 21.60.

TA Office Hours: Mon 7-8 pm: Rob Craig - 302 Schlinger (x4056); Tue 3-4 pm: Kelly Kim - 302 Schlinger (x4047); Tue 7-8 pm: Corey Reeves - 302 Schlinger (x4056); Wed 5-6 pm: Adam Boynton - 139 Noyes (x3202); Wed 8-9 pm: Ben Suslick (UTA) - Lloyd Lounge; Thu 8-9 pm: Evan Zhao (UTA) - Fleming Lounge ; Thu 9-10 pm: Crystal Chu - 202 Schlinger (x3634); Sun 3-4 pm: Chung Wan Lee - 302 Schlinger (x4056).

Quiz #2: Friday 9:00-9:55 AM, 153 Noyes.



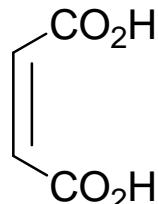
2,2,7,7-tetrakis(hydroxymethyl)nona-3,5-diynoic acid

(courtesy Katie O'Leary, age 9 almost 10)

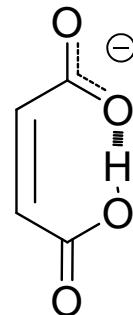
The case of maleic vs. fumaric acids...

maleic acid

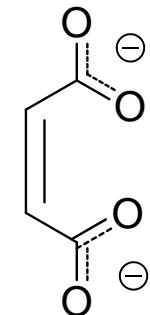
$pK_{a1} = 1.6$
 $pK_{a2} = 6.1$



$pK_{a1} = 1.6$

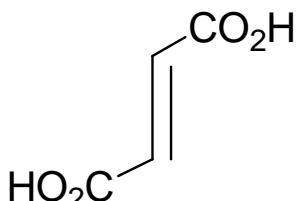


$pK_{a2} = 6.1$

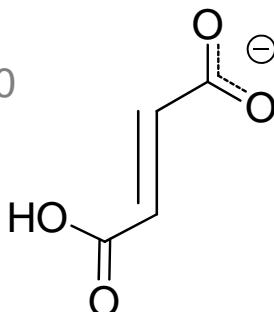


fumaric acid

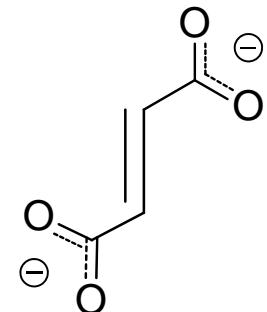
$pK_{a1} = 3.0$
 $pK_{a2} = 4.4$



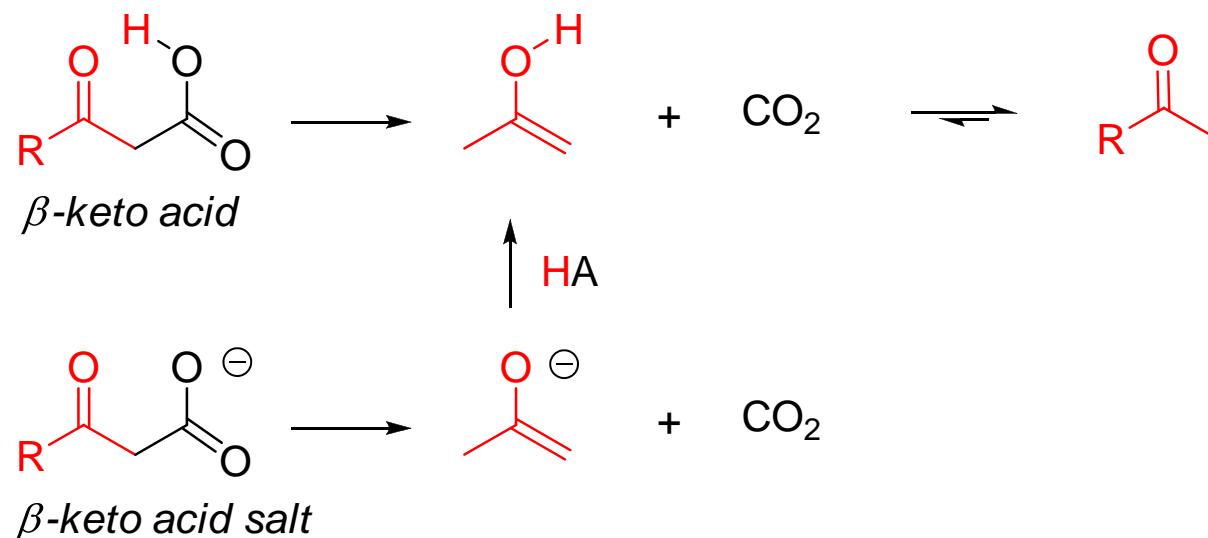
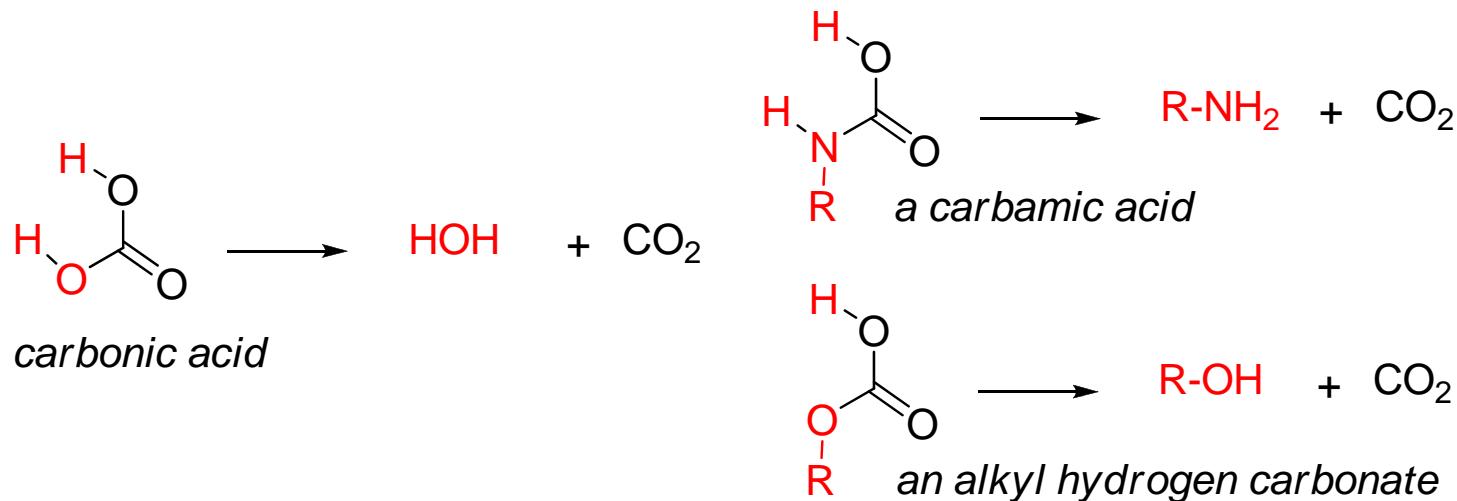
$pK_{a1} = 3.0$



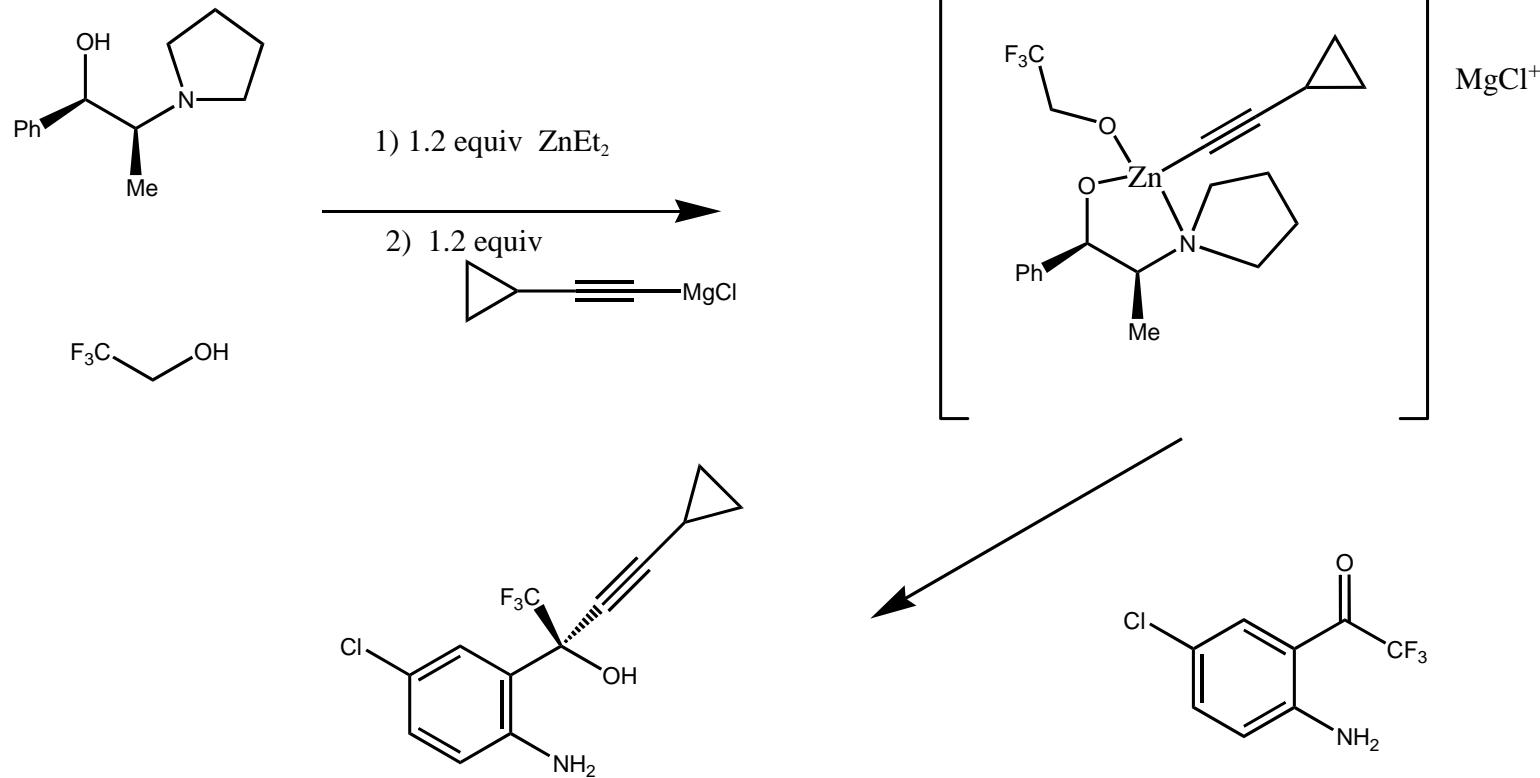
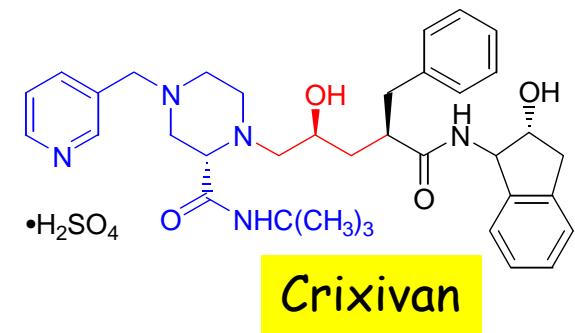
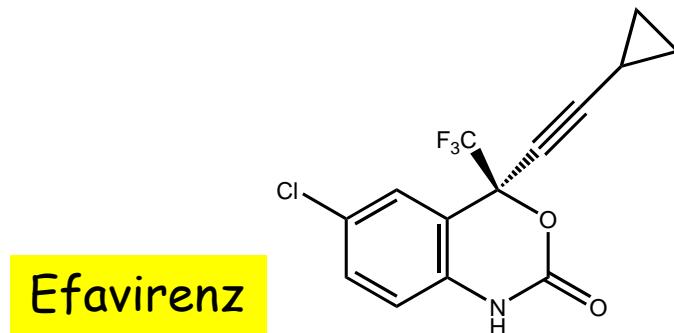
$pK_{a2} = 4.4$



Famous Decarboxylation Reactions



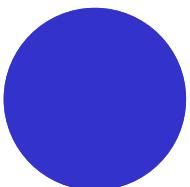
Efavirenz (DMP-266, *STOCRIN*, *SUSTIVA*)



Li^+
0.60 Å



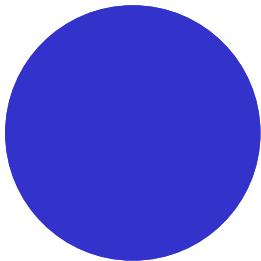
Na^+
0.95 Å



Mg^{++}
0.65 Å



K^+
1.33 Å



Ca^{++}
0.99 Å

