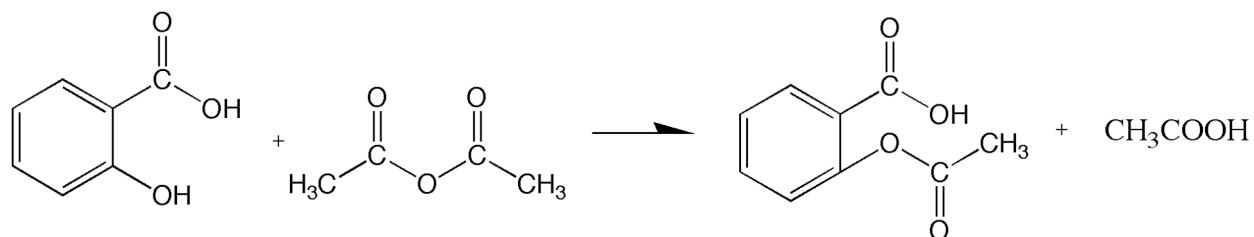


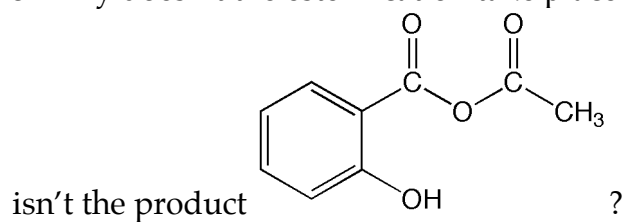
Exercise 2: Reactions with carbonyl groups I

1. Give the mechanism for the transesterification of salicylic acid (i.e., the aspirin synthesis):



2. What step makes the acid catalyst (in Chem 238, it was a couple drops of concentrated phosphoric acid) necessary in your mechanism above? Specifically, what *won't* happen in the mechanism if there is no acid catalyst?

3. Why doesn't the esterification take place on the acid OH group? In other words, why



4. The Fischer esterification makes an ester from an alcohol and a carboxylic acid. Give the mechanism for making methyl benzoate from benzoic acid and methanol.

