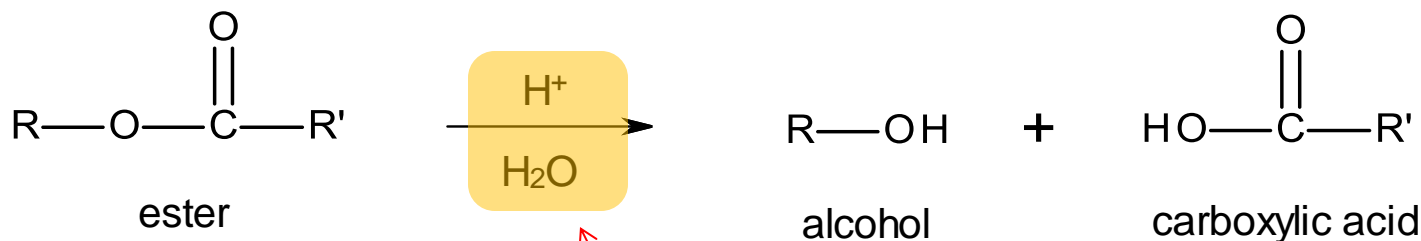


Chemical reactions of esters

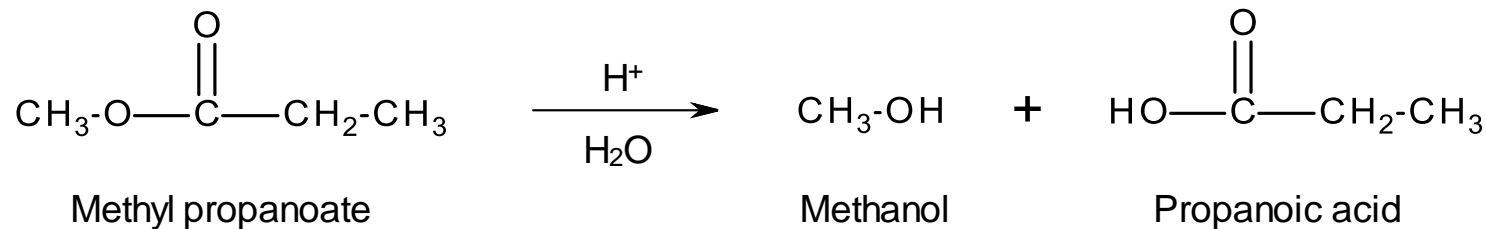
hydrolysis = reverse of condensation reaction

- Ester hydrolysis: the hydrolysis of an ester is accomplished by reacting water with the ester in the presence of an acid catalyst (ester hydrolysis is the reverse reaction of esterification).



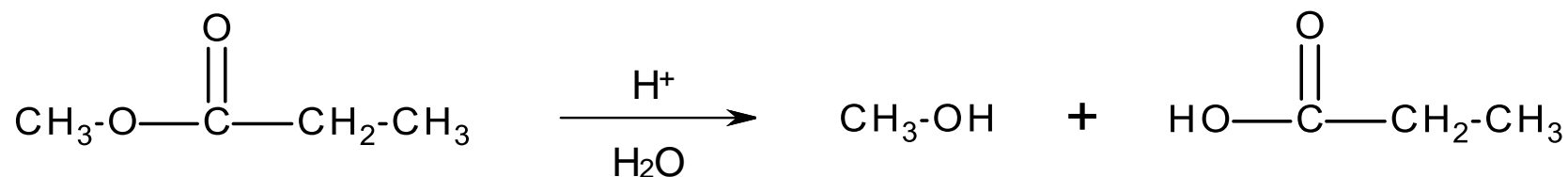
acidic conditions
used for hydrolysis

- An example:



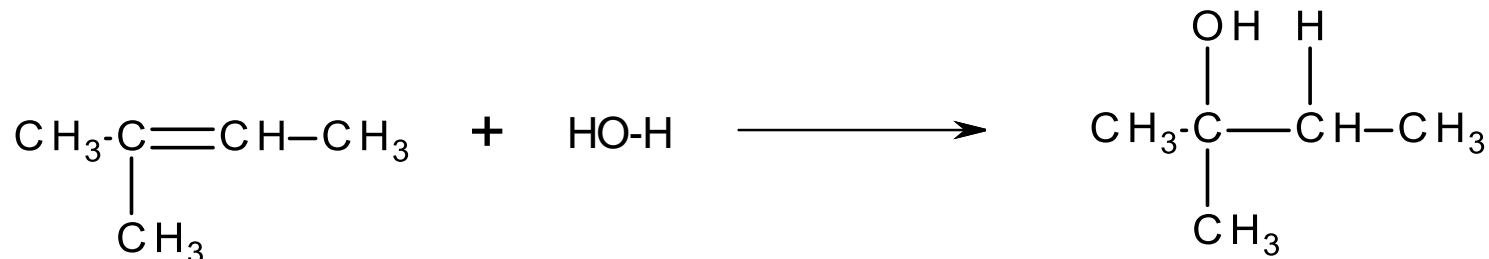
Some things that sound the same but mean different things

- Hydrolysis: reverse of condensation → water is reacted with a large molecule to break it into two smaller molecules



one organic molecule becomes two

- Hydration: water is added across a multiple bond, breaking a π -bond and producing new C-H and C-OH bonds. Example:



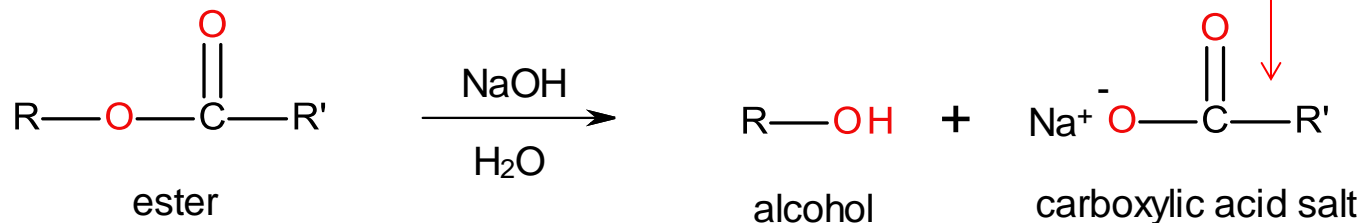
one organic molecule on reactant and product sides

Chemical reactions of esters

Hydrolysis in basic conditions = saponification

- Ester saponification: another hydrolysis reaction, but this time, under basic conditions. Rather than a carboxylic acid, the acid salt is produced here.

because the carboxylic acid that *would* form during hydrolysis can't exist in basic conditions



- Example:

