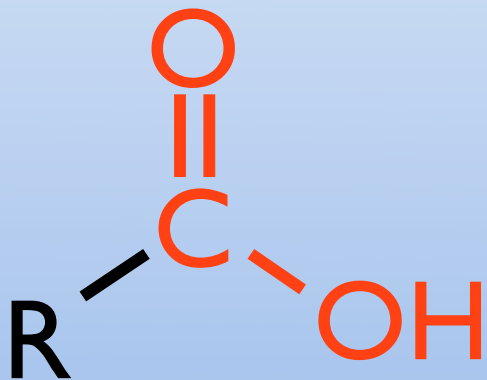


Important Reaction for Biochemistry

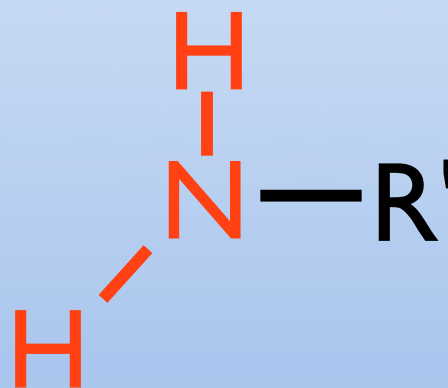
Formation of an Amide

The don't call them functional groups for nothing

Carboxylic Acid

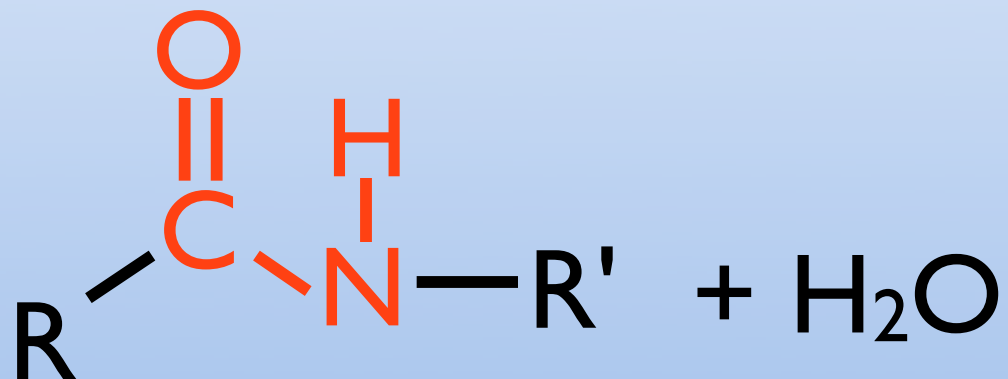
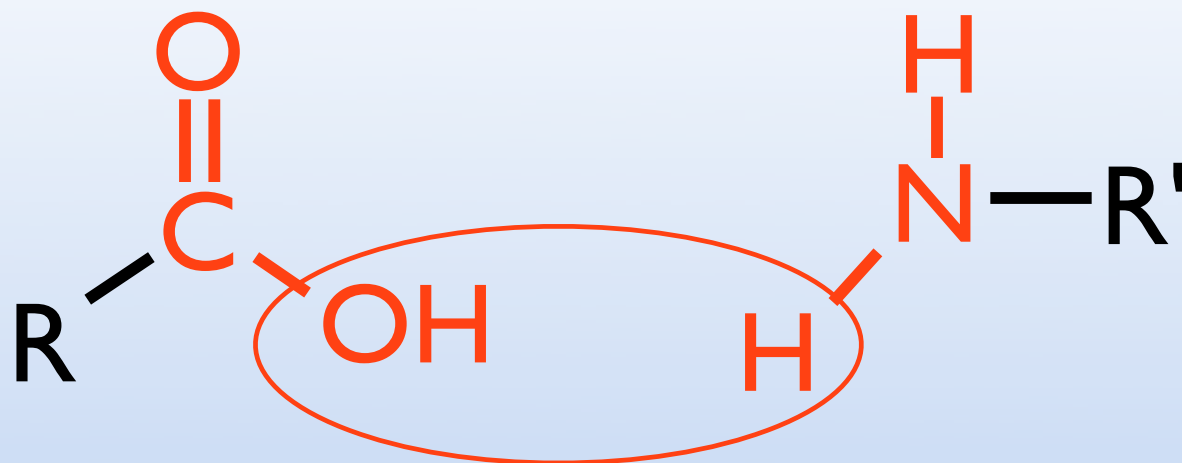


Primary Amine



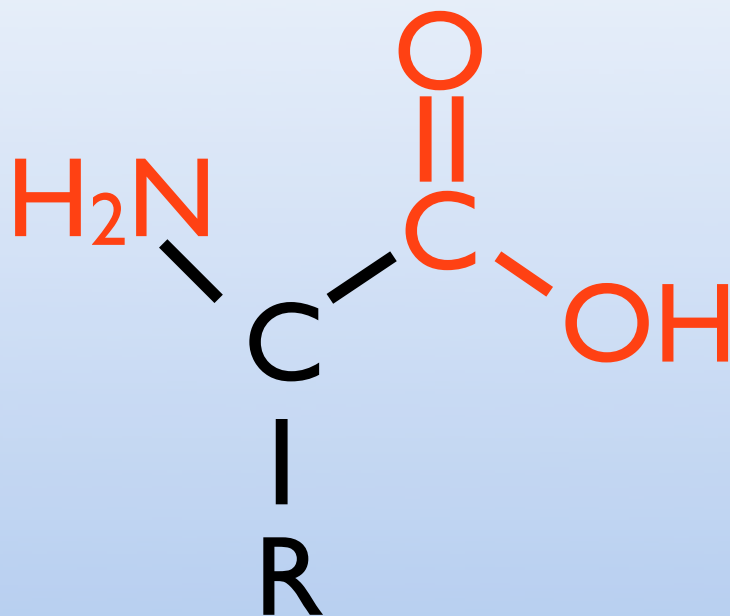
Carboxylic Acid

Primary Amine



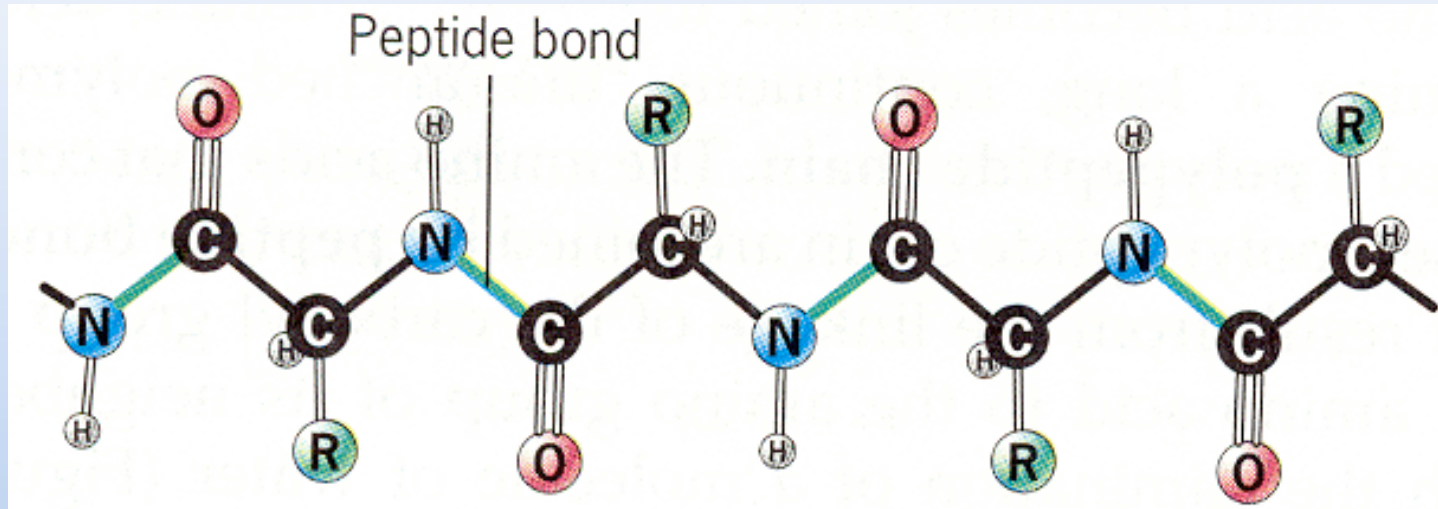
Amide + Water

Amino Acid



Carboxylic End and Amine End
Can react with itself
(or similar molecules) in a chain

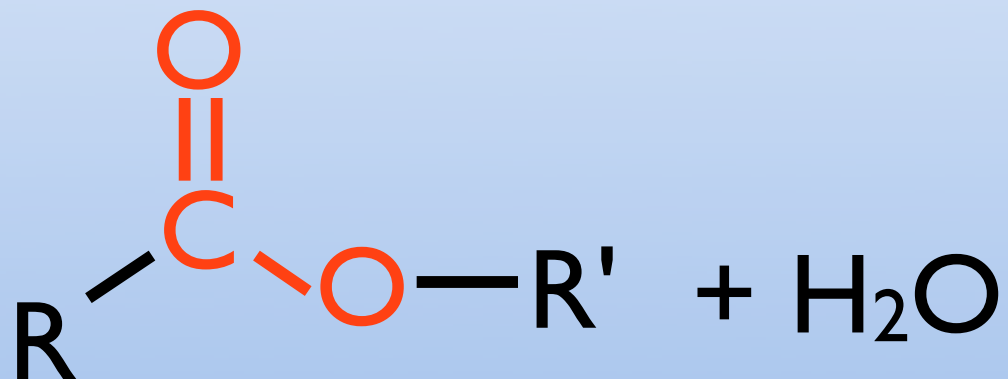
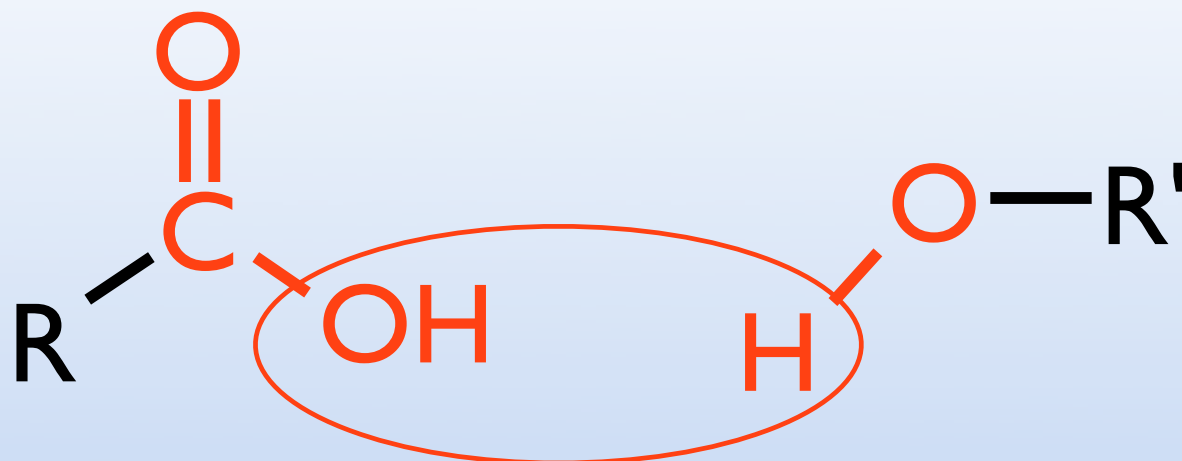
Polypeptide



Two distinct ends
N-terminus is an amine
C-terminus is a carboxylic acid

Carboxylic Acid

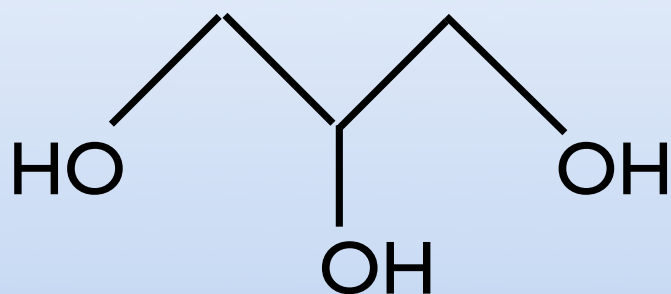
Alcohol



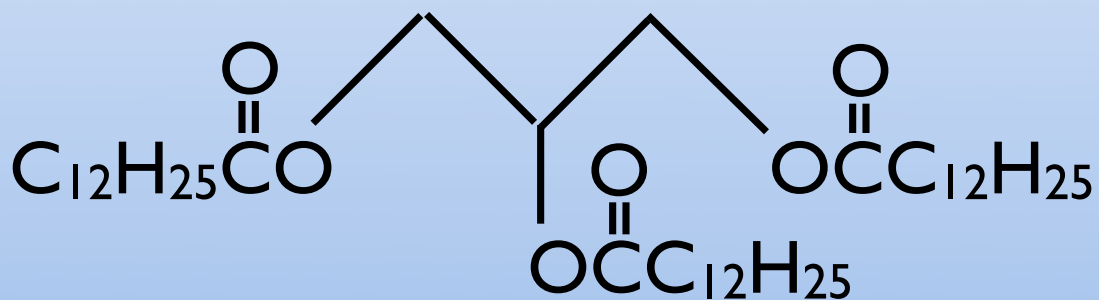
Ester + Water

Triglycerides

Glycerol



Fatty Acid
(carboxylic acid with long chain)



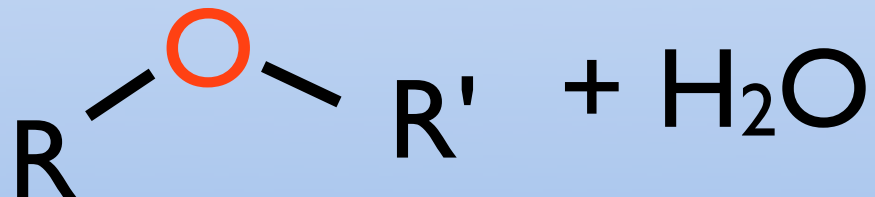
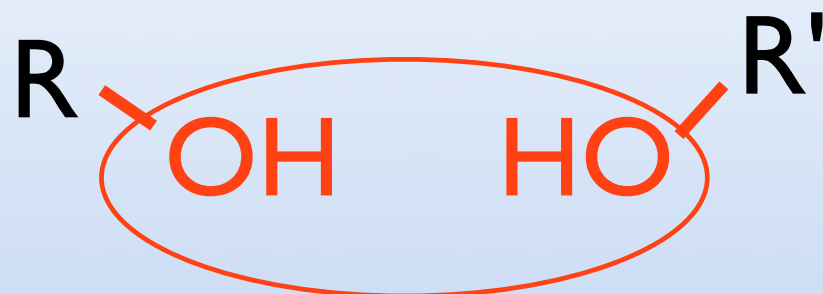
Makes Triglyceride

The three fatty acids can
all be the same or different

High levels of triglycerides is linked to
build up of plaque in the arteries
= heart disease

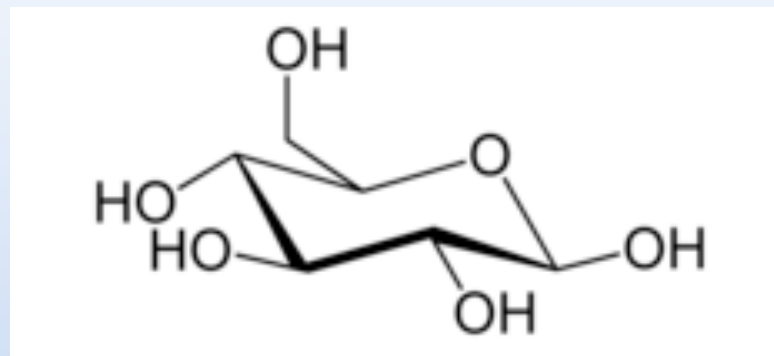
Alcohol

Alcohol



Ether + Water

Sugars

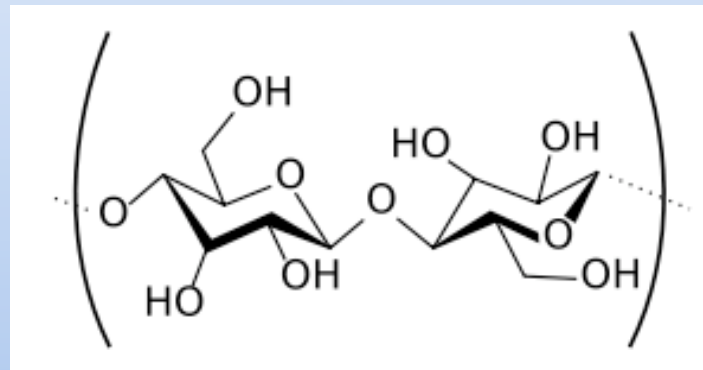
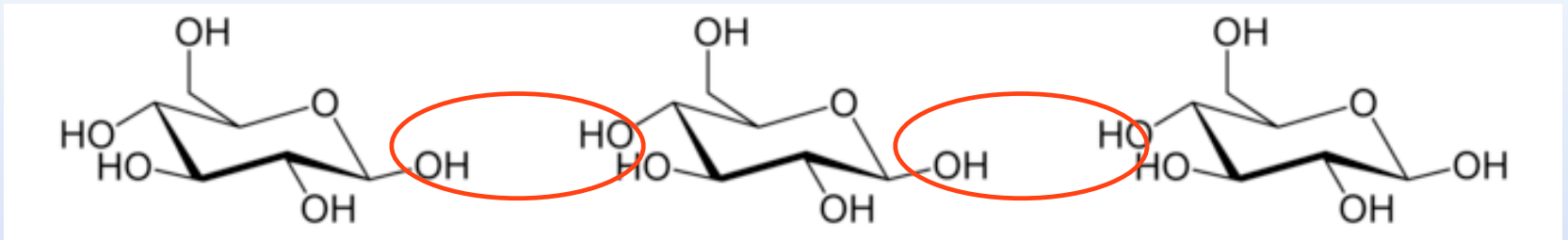


Glucose

(key factor for sugars lots of hydroxyls)

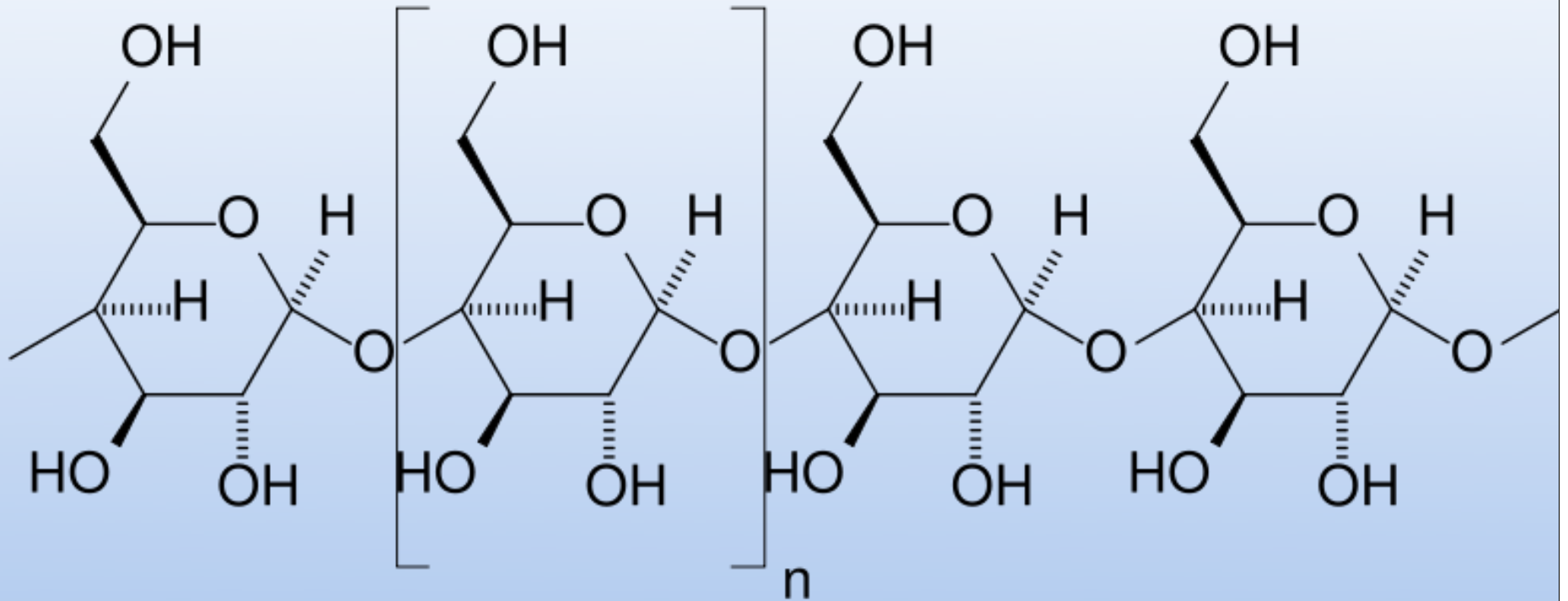
They can react to form chains of sugars
polysaccharide

Cellulose



Very long ether chain
(pretty much all plant material)

Polysaccharide (Starch)



Sugars, Carbohydrates
monosaccharides (one)
disaccharides (two)
polysaccharides (many)

Condensation Reactions (two molecules make one + water)

Carboxylic Acid + Amine = Amide + water

Carboxylic Acid + Alcohol = Ester + water

Alcohol + Alcohol = Ether + water