

**Chapter 4 - Functional Groups Hunt – Biomolecules Review**

As mentioned (in class), generally “plain” hydrocarbons are not found in living cells. There are usually other groups of atoms attached somewhere on the molecule. There are certain groups of atoms that are frequently attached to the organic molecules we will be studying, and these are called **functional groups**. These are things like **hydroxyl groups** which form **alcohols**, **carbonyl groups** which form **aldehydes** or **ketones**, **carboxyl groups** which form **carboxylic acids**, and **amino groups** which form **amines**. These groups tend to act the same and have similar properties no matter where on a carbon backbone molecule they’re stuck. Additionally, a molecule may have more than one functional group and/or more than one type of functional group attached.

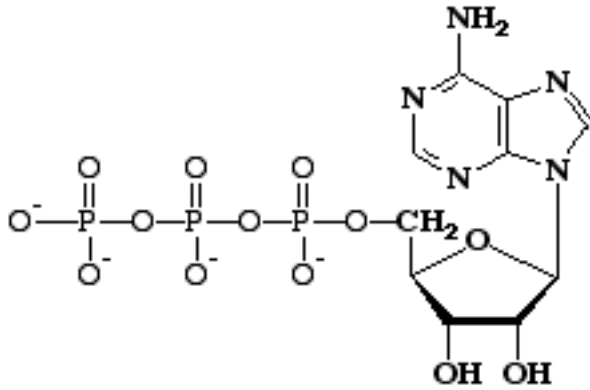
Go to [http://www.phschool.com/science/biology\\_place/biocoach/biokit/intro.html](http://www.phschool.com/science/biology_place/biocoach/biokit/intro.html)

Complete reading all sections – focus on the sections with functional groups (concept 6) and isomers (concept 4). Take the self quiz.

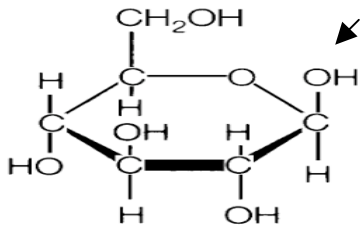
**Identify the functional groups in the following molecules:**

<b>Functional group:</b>	<b>Symbol Used below:</b>	<b>Example:</b>
Alcohol (Hydroxyl Group)	-OH	
Aldehyde (Carbonyl Group)		
Ketone (Carbonyl Group)		
Carboxylic Acid (Carboxyl Group)		
Amine (Amino Group)		
Amino Acid (Amino Group + Carboxyl Group)		
Phosphate group		
Sulfhydryl group		

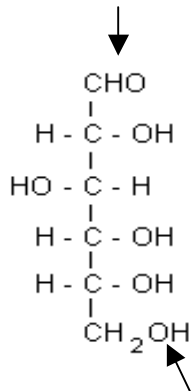
**Biomolecules: Circle and identify the functional groups -**



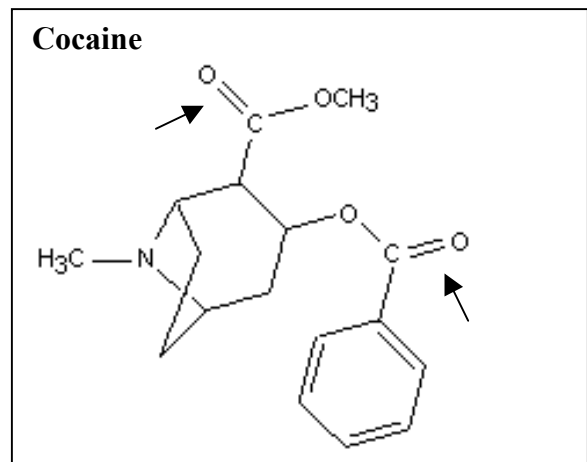
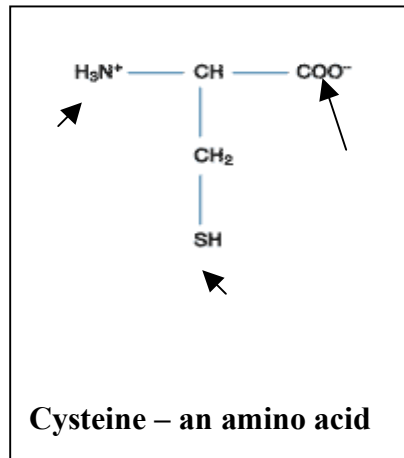
**ATP or Adenosine Triphosphate – The ENERGY molecule of your cells**

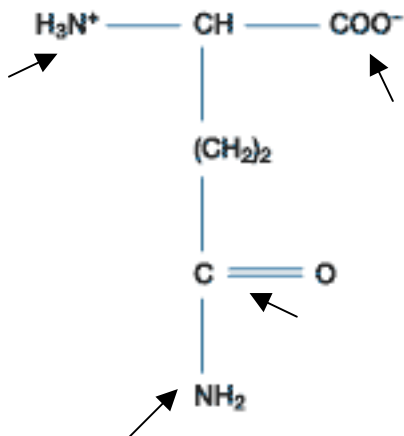


**Glucose –ring form**

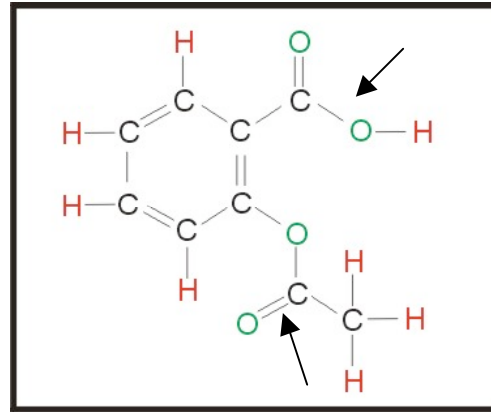


**Also Glucose!**



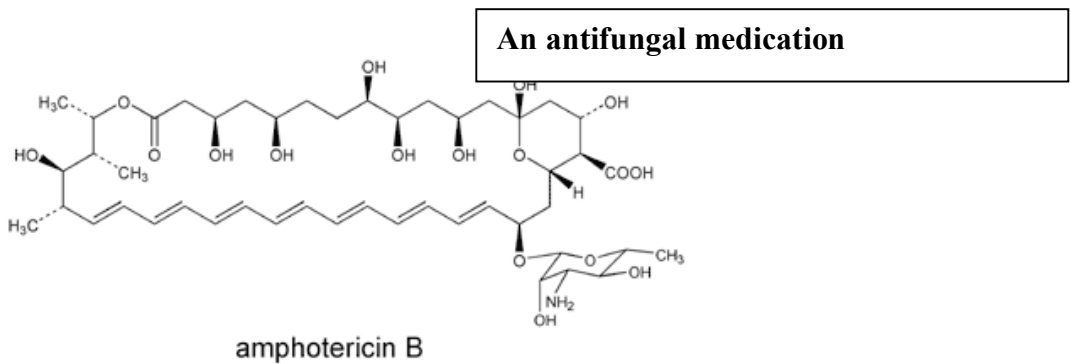


Glutamine – also an amino acid



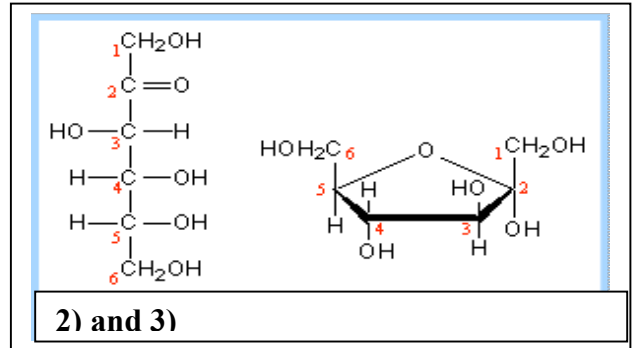
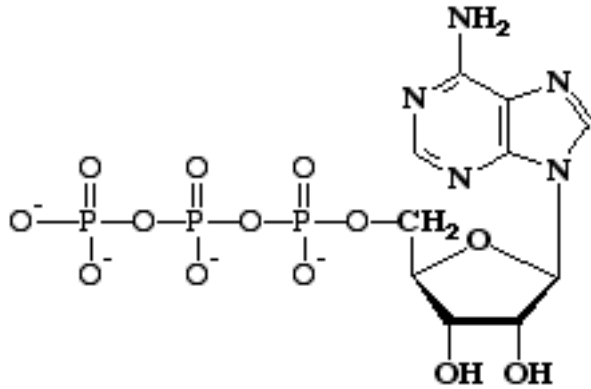
Aspirin

Find 5 examples of biomolecules from your text that have functional groups and draw/print them – identify the functional group/s they carry. Use chapter 5 for this activity.

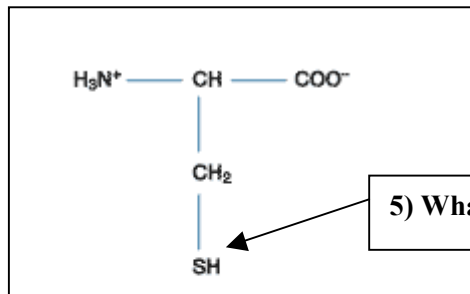


Macromolecules Review: wait for chapter 5

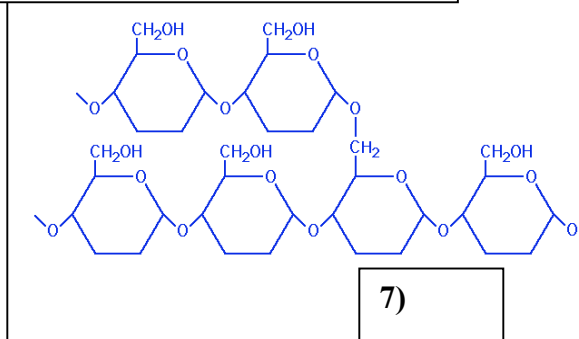
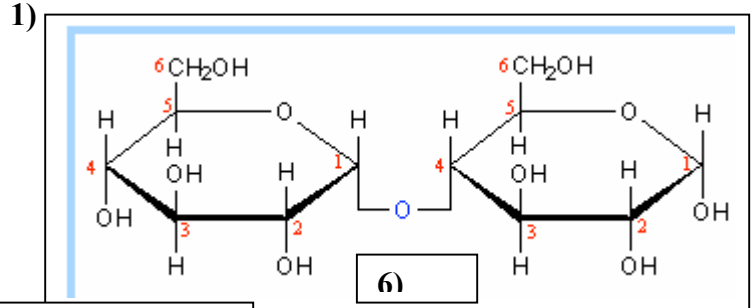
Name the following macromolecules and identify the monomeric subunits. State what helped you figure out the identity of the macromolecule.



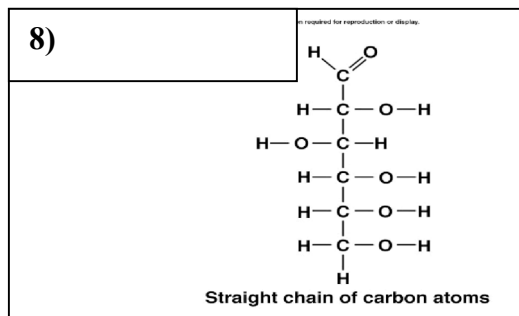
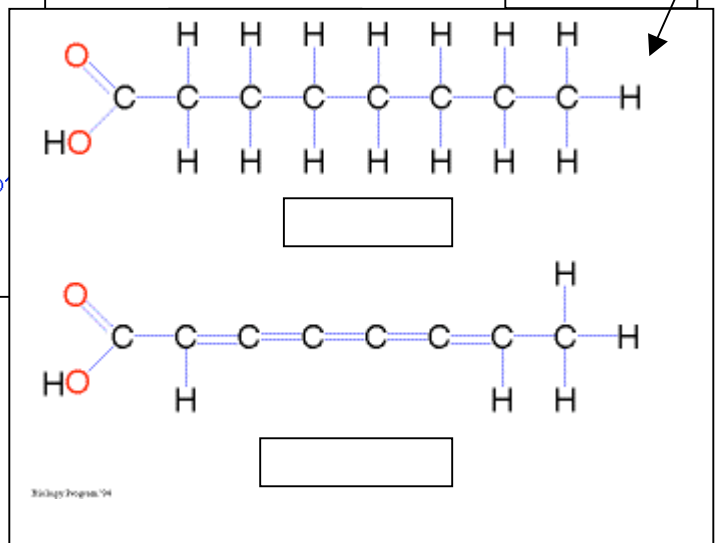
4) Identify the macromolecule below:

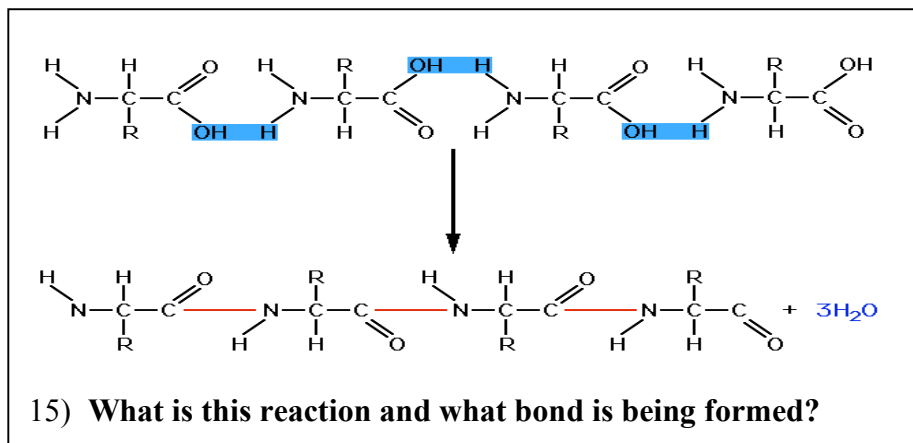
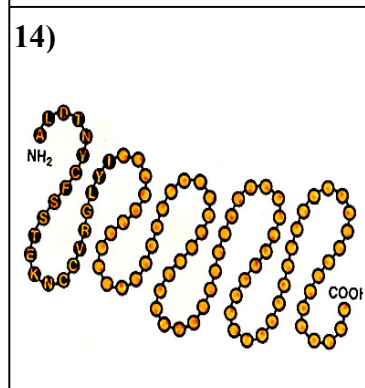
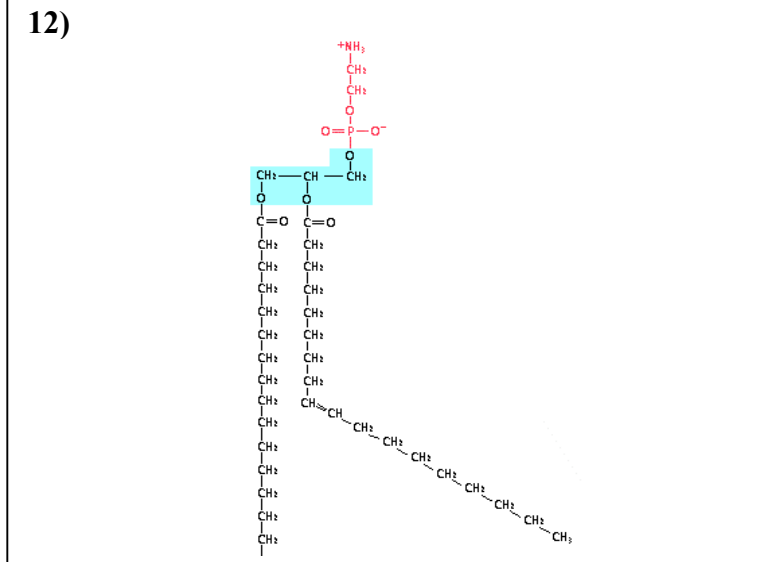
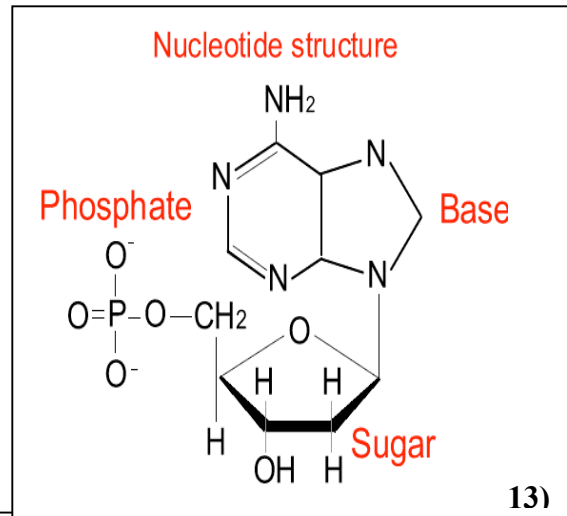
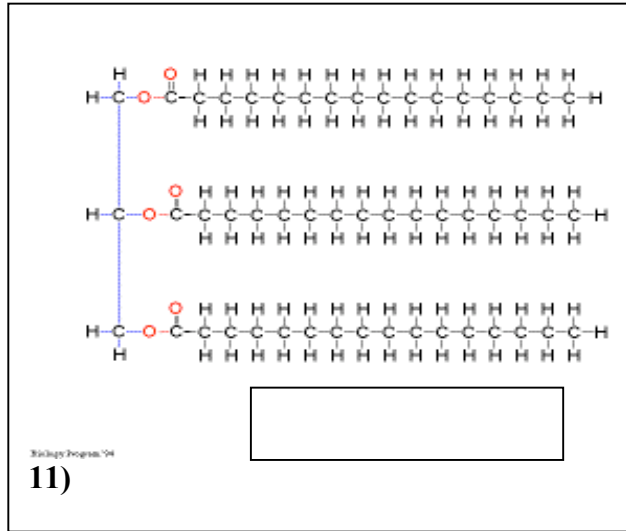


5) What is the importance of this ?



9),and 10)





Take a quiz online: [Click here to connect to online macromolecule quiz](#)

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