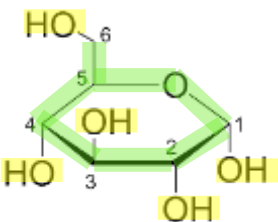
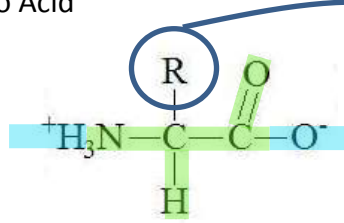

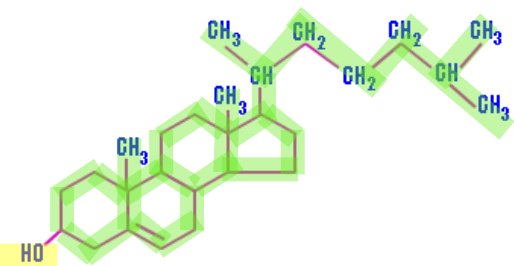
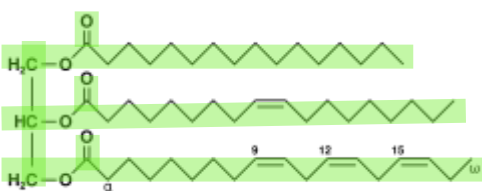
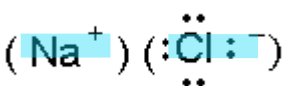


SOLUBILITY IN WATER polar covalent bonds / non-polar covalent bonds / ions

MOLECULE	-PHILIC/-PHOBIC	EXPLANATION	IMPLICATION
<p>Glucose</p> 	Hydrophilic	Because of all the polar –OH groups, glucose can dissolve in water. <i>The slightly negative O of water is attracted to the slightly positive H's of the glucose and the slightly positive H's of water are attracted to the slightly negative O's of the glucose.</i>	Glucose dissolves into blood plasma (which is mostly water) and can be transported in the plasma to the cells of the body.
<p>Amino Acid</p> 	Variable	Because of the H+ and O-ions, amino acids are soluble – but how soluble depends on the R group (which changes in different amino acid molecules)	Amino acids are able to be transported in the blood plasma. In proteins, amino acids with hydrophobic R groups will clump together in the middle of the protein, away from water.
<p>Oxygen</p> 	Hydrophobic	Because it is non-polar, oxygen dissolves in water sparingly. How easily oxygen dissolves depends on the temperature of the water (colder = easier to dissolve)	Since oxygen doesn't easily dissolve in blood plasma, it must to the cells of the body through the blood by a transport protein (hemoglobin).
<p>Cholesterol</p> 	Hydrophobic	The single polar –OH is not enough to have water dissolve the primarily non-polar molecule in very high quantities.	To travel through the blood, cholesterol is transported inside little molecular "sacs" made of amphipathic molecules (hydrophobic on the inside and hydrophilic on the outside).
<p>Fat</p> 	Hydrophobic	As entirely non-polar molecules, fats and oils do not dissolve in water.	To travel through the blood, fats are transported inside little molecular "sacs" made of amphipathic molecules (hydrophobic on the inside and hydrophilic on the outside).
<p>Sodium Chloride (salt)</p> 	Hydrophilic	The Na+ and Cl- ions will be fully soluble in water. <i>The slightly negative O of water is attracted to the positive Na+ and the slightly positive H's of water are attracted to negative Cl-</i>	Ions are able to travel in the blood plasma through the body