

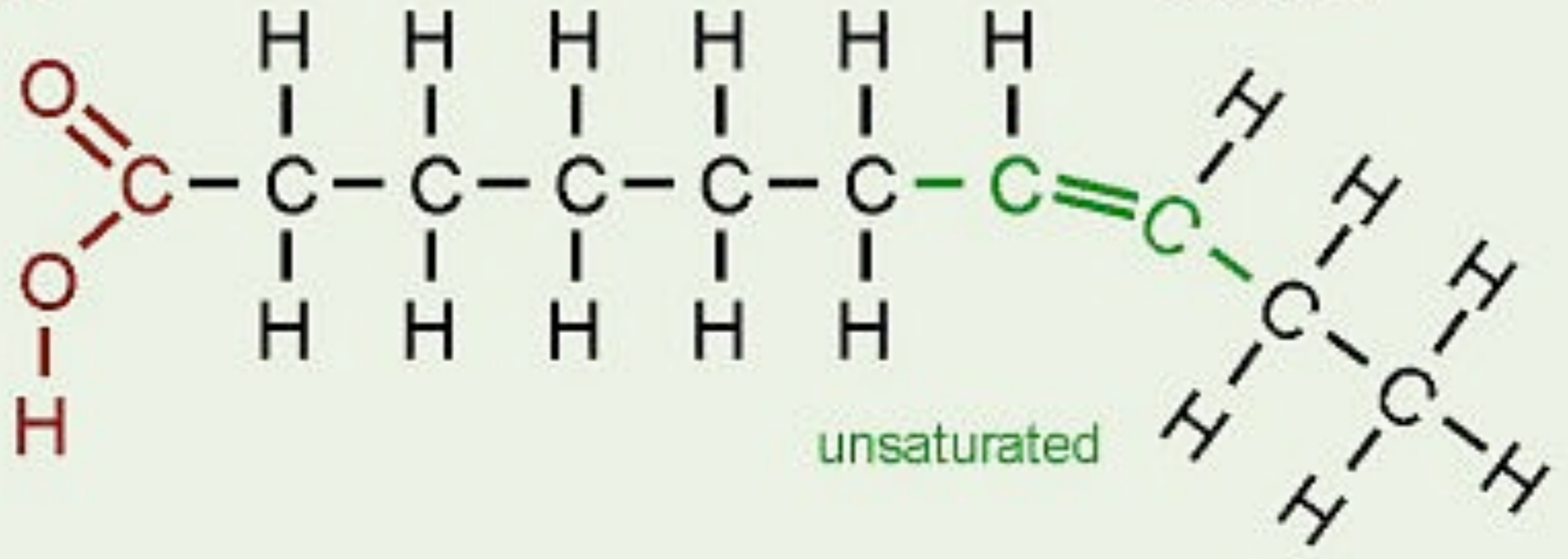
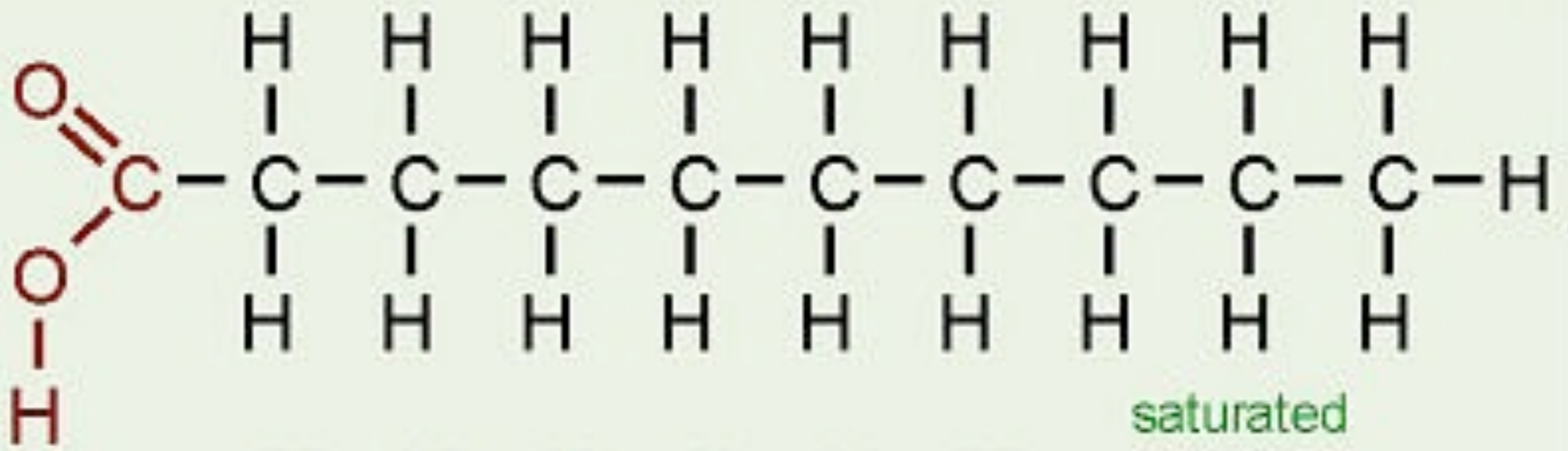
Lipids

What do they do?

- * Energy
- * Structure
- * Building Blocks

Saturated vs. Unsaturated

- * What do you think of when you think of saturated fat?



- * **Saturated fats - no double bonds (eg. Lard).**
- * **Unsaturated - one double bond**
- * **Polyunsaturated - many double bonds (Eg. Sunflower, canola, olive and corn oils)**
- * **Double bonds appear between carbons resulting in less hydrogen atoms.**

- * Hydrogenation: the process of converting oil to fat by destroying double bonds through the addition of H**
- * goes from unsaturated to saturated**

*** There are four classes of lipids:**

*** Triglycerides**

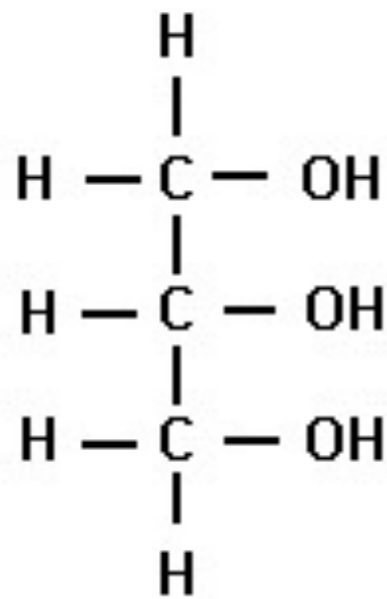
*** Phospholipids**

*** Steroids**

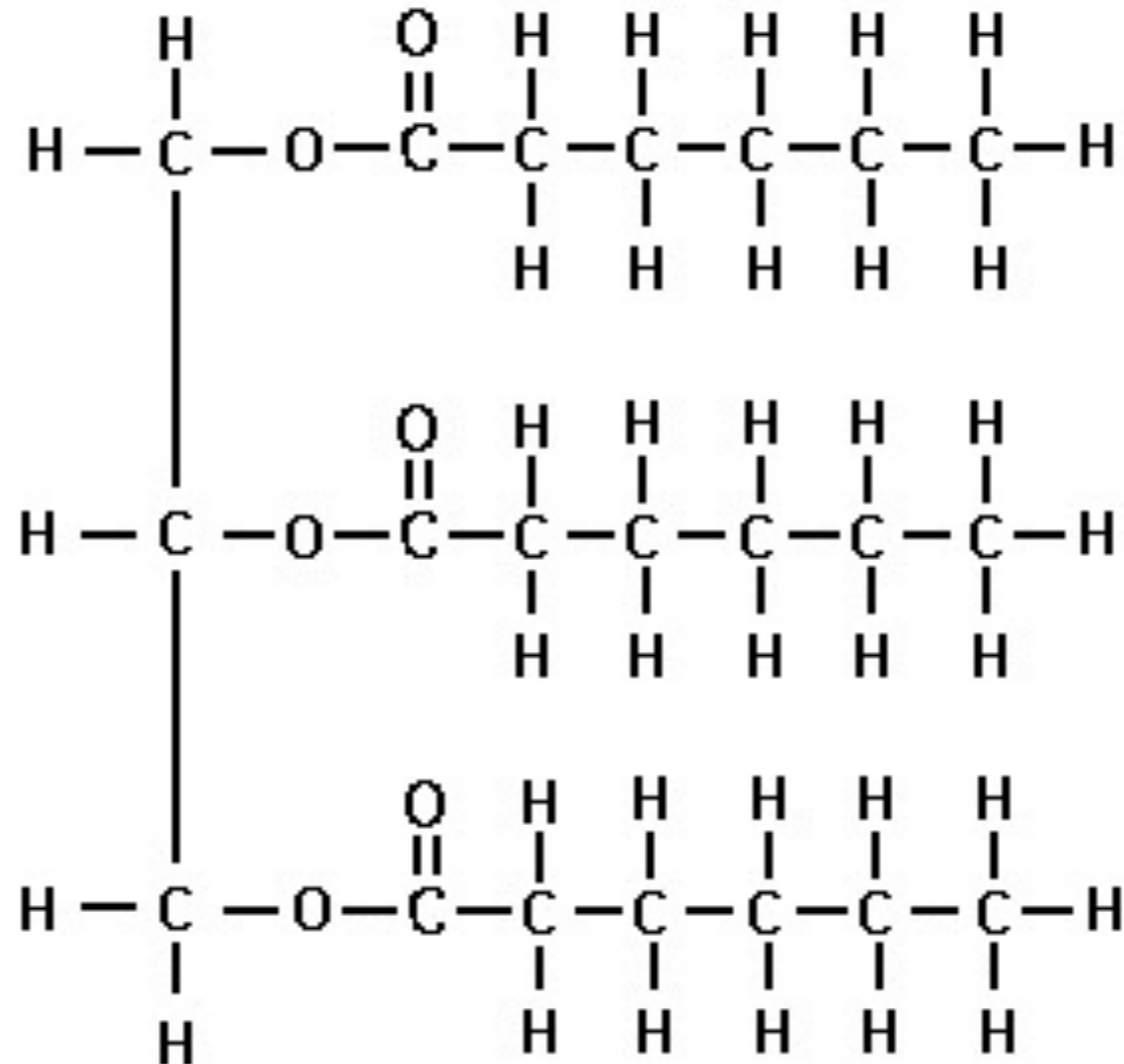
*** Waxes**

Triglyceride

* Triglyceride = 1 glycerol + 3 Fatty Acids



Glycerol



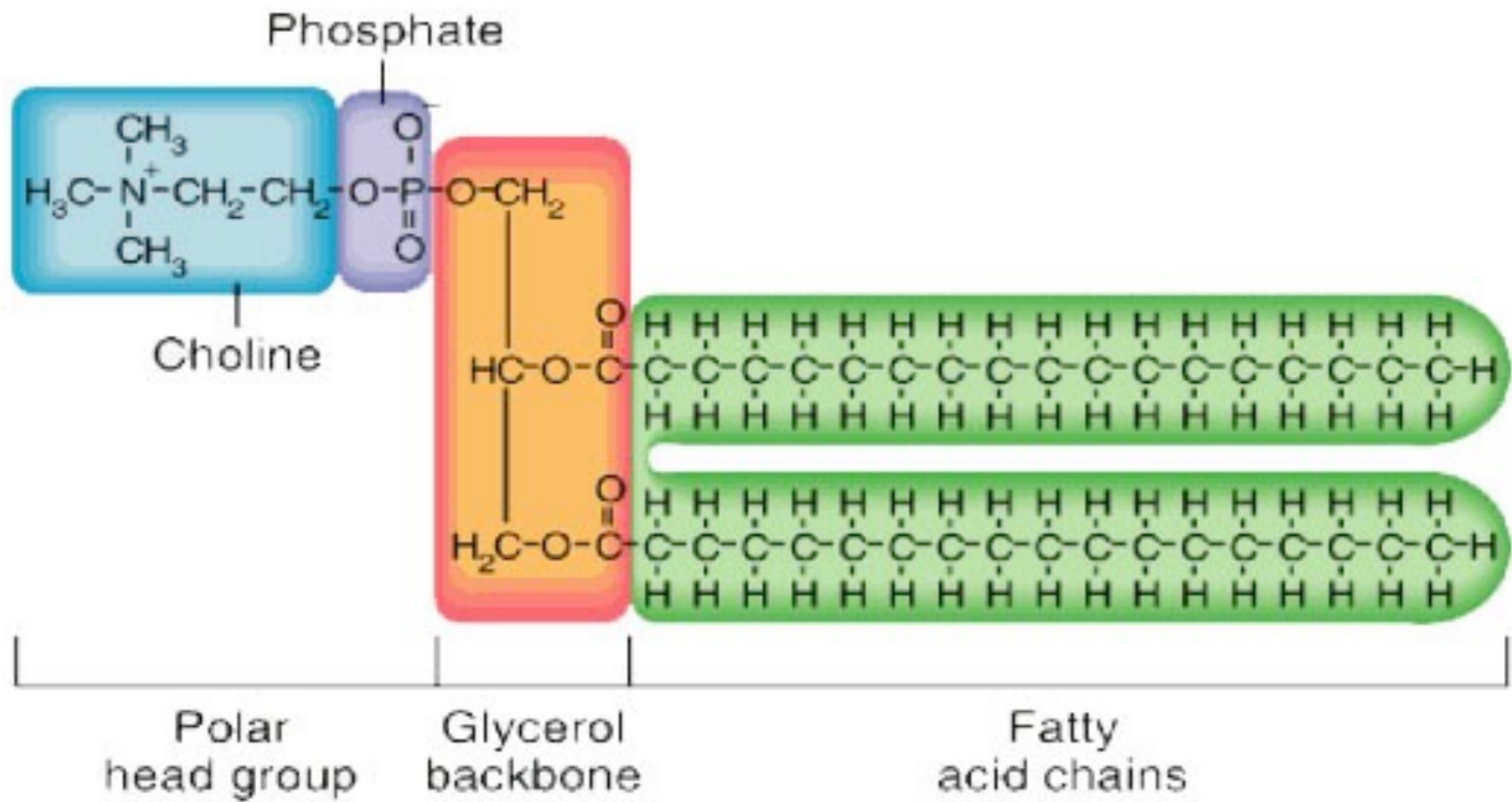
Triglyceride-Saturated

Triglyceride

- * High levels of triglycerides have been linked to atherosclerosis.

Phospholipid

- * Made up of three parts
 - * Glycerol
 - * Phosphate with a nitrogen group on its end (polar and hydrophilic)
 - * 2 fatty acids (non polar and hydrophobic)
- * the hydrophilic and hydrophobic regions are critical in cell membrane formation

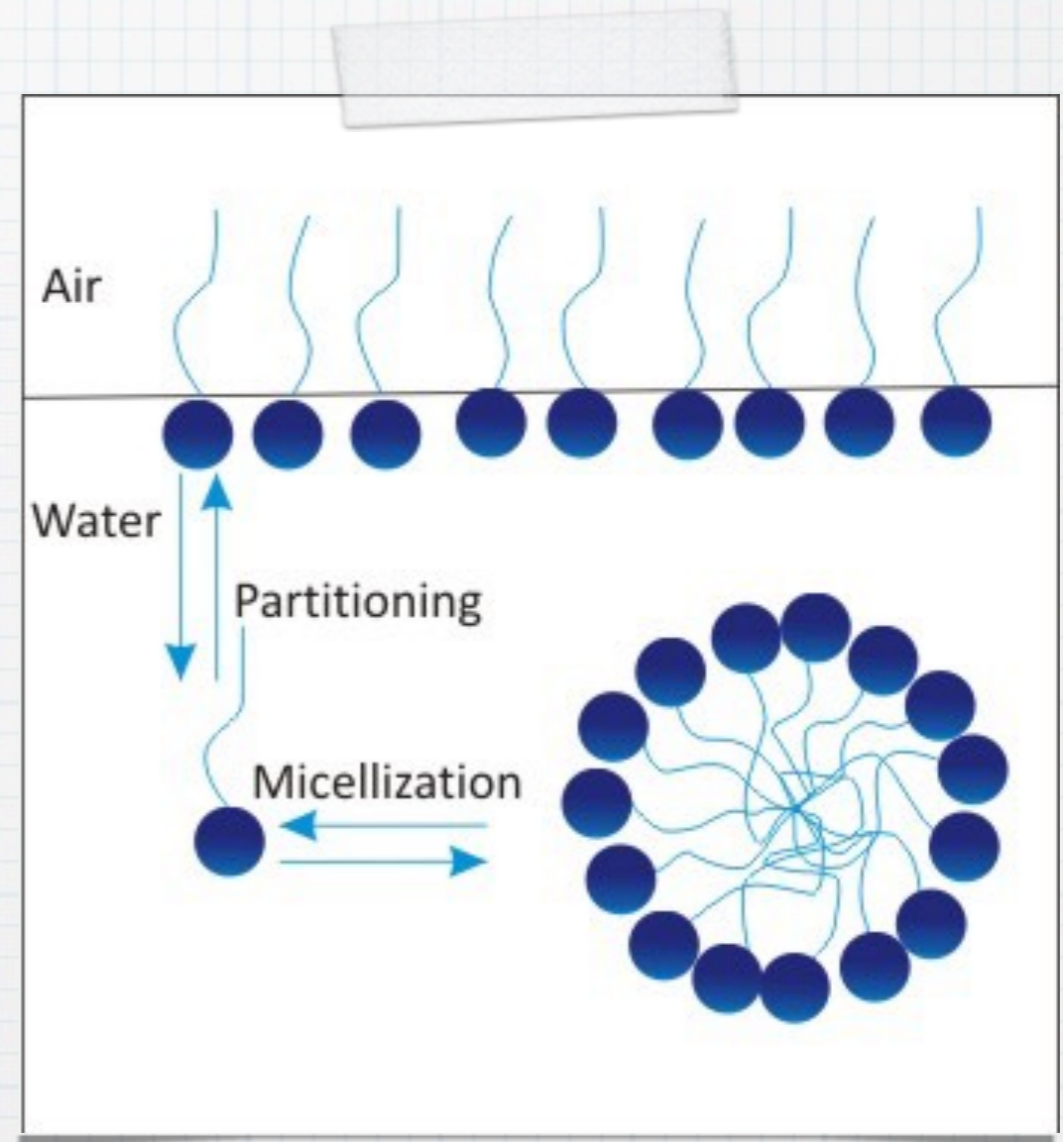


Phospholipid

- * Are considered to be amphipathic, both polar and non-polar

Phospholipid

- * When mixed with water, phospholipids form micelles



Sterols

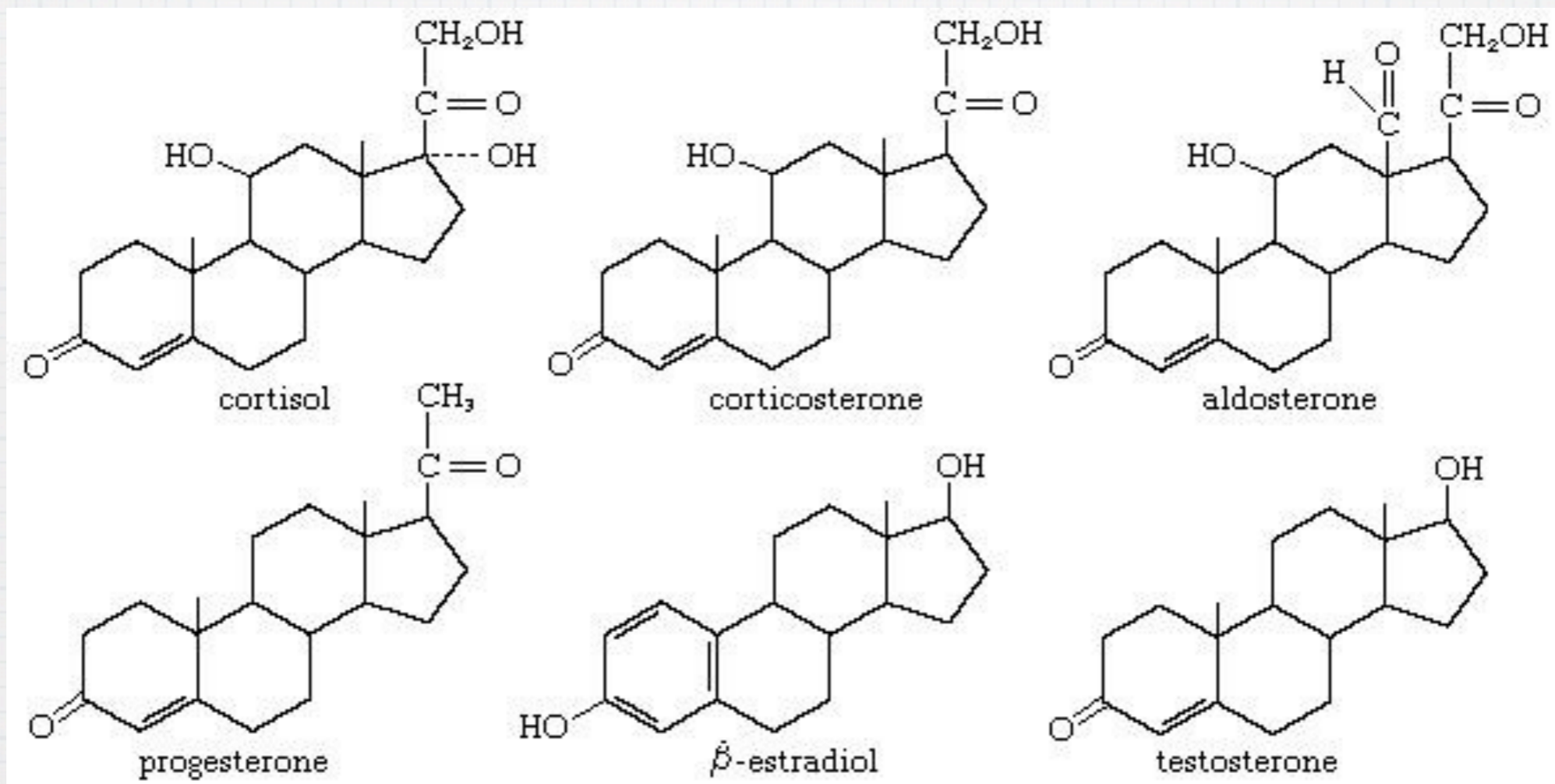
- * Contain hydrocarbon rings
- * Most common is cholesterol, important building blocks in cell membranes

Sterols

- * Many useful functions
- * Building block for vitamins and bile salts
- * Sex hormones like progesterone and estrogen

Sterols

* contain 4 fused carbon rings



Waxes

- * Act as waterproof coating.
- * Backbone is a long chain of alcohol, not glycerol

