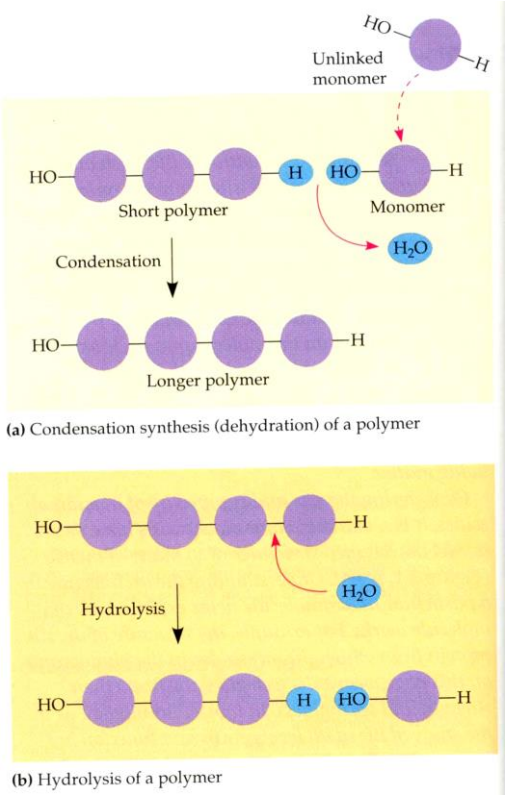
Lipids

Figures, tables, graphs are copied from http://www.estrellamountain.edu/faculty/farabee/biobk/biobooktoc.html, when not the source site is indicated.

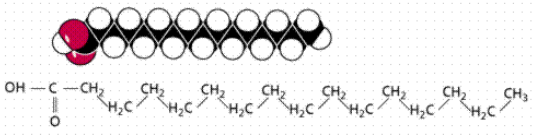


Lipids:

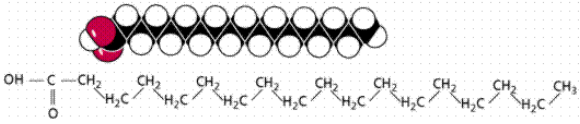
very well soluble in hydrophobic and organic solvents
highly hydrophobic or amphipatic
triglycerides: glycerol + 3 fatty acids
- stored as cytoplasmic lipid
- energy storage
- fat as cushion, insulater (under skin, in abdomen)
- obesity
- organic solvent

phospholipids: contain phosphoric acid, they are amphipathic lipids: contain hydrophobic and hydrophylic regions
- significance: membrane components

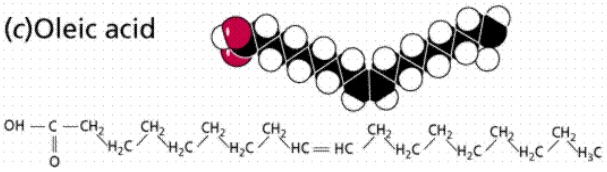
(a)Palmitic acid



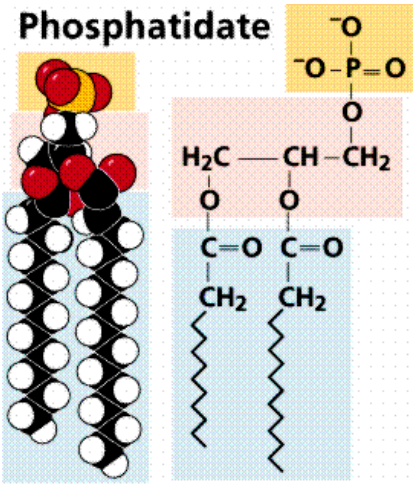
(b)Stearic acid

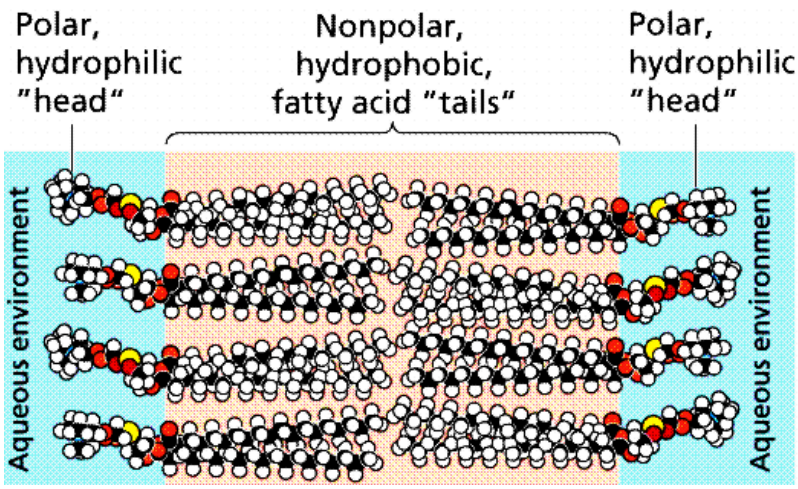


(c)Oleic acid



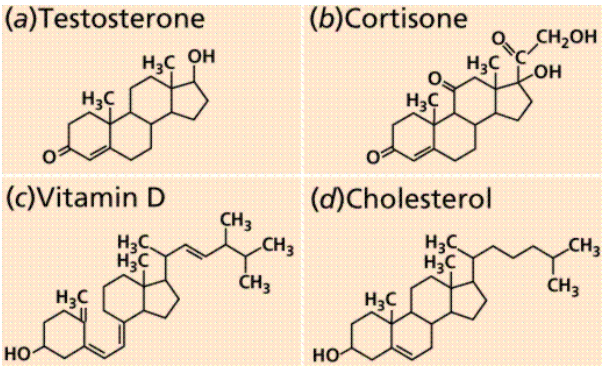
*Glycolipids:*they have sugar component
They are markers, e.g.: AB0 blood groups

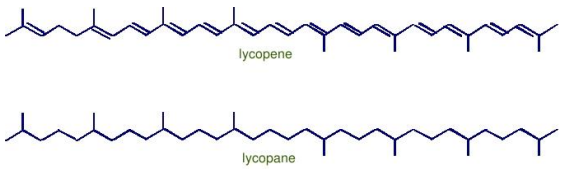




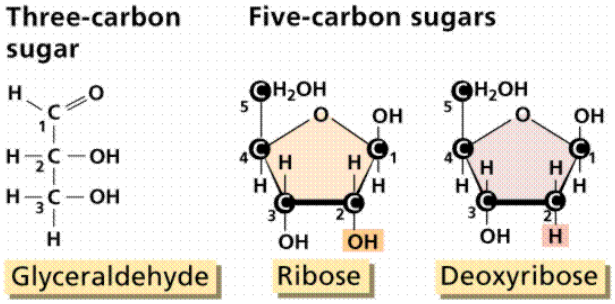
Steroids: sterane structure, e.g. cholesterol (membrane component), steroid hormones, bile acids, vitamin D3

carotenoids pigments (conjugated double-bonds) e.g.: carotene (carrot) , retinal (eye)





Carbohydrates



general formula: $(CH_2O)_n$

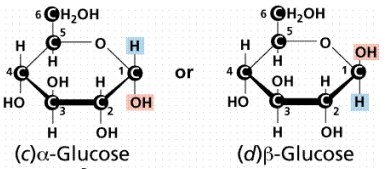
they are polyhydroxi aldehydes or ketones

monosaccharides

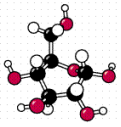
trioses: e.g. glyceraldehyde-3-phosphate

pentoses: e.g. ribose, deoxyribose

hexoses: e.g. glucose, fructose, mannose, galactose



disaccharides: e.g. sucrose (glucose + fructose), maltose (glucose + glucose), lactose (glucose + galactose)



oligosaccharides

polysaccharides

cellulose (cell wall)

starch: amylose + amylopectin glucose

glycogene: glucose storage (mainly in liver and muscle)