

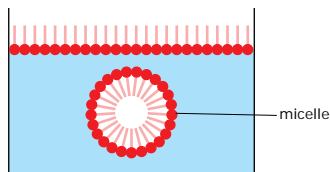
Fatty Acids and Other Lipids - Part 2

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LIPID AGGREGATES

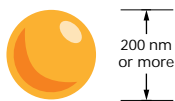
Fatty acids have a hydrophilic head and a hydrophobic tail.

In water they can form a surface film or form small micelles.

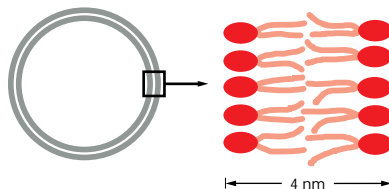


Their derivatives can form larger aggregates held together by hydrophobic forces:

Triglycerides form large spherical fat droplets in the cell cytoplasm.

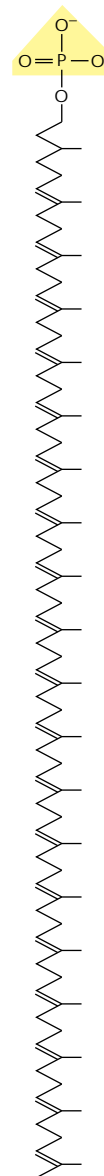


Phospholipids and glycolipids form self-sealing lipid bilayers that are the basis for all cellular membranes.



POLYISOPRENOIDS

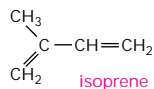
long chain polymers of isoprene



dolichol phosphate—used to carry activated sugars in the membrane-associated synthesis of glycoproteins and some polysaccharides

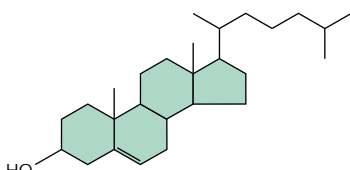
OTHER LIPIDS

Lipids are defined as the water-insoluble molecules in cells that are soluble in organic solvents. Two other common types of lipids are steroids and polyisoprenoids. Both are made from isoprene units.

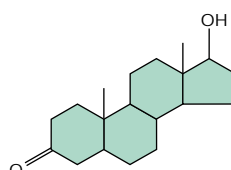


STERIODS

Steroids have a common multiple-ring structure.



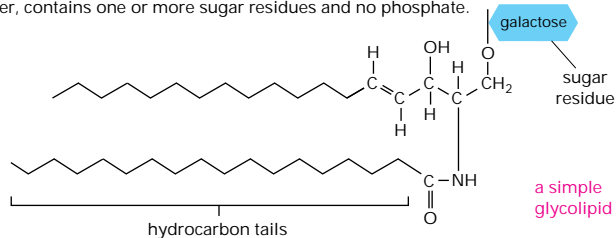
cholesterol—found in many membranes



testosterone—male steroid hormone

GLYCOLIPIDS

Like phospholipids, these compounds are composed of a hydrophobic region, containing two long hydrocarbon tails, and a polar region, which, however, contains one or more sugar residues and no phosphate.



galactose

sugar residue

a simple glycolipid