

Made with Goodnotes

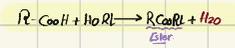
- ① source of energy [Energy]
- ② Energy store in adipose tissue serve as

Lipid

Insoluble in water but freely soluble in non-polar organic solvents like, benzene, ether, acetone and chloroform

Simple Lipid

→ Fatty acids + Fatty alcohol



→ glycerol + 3 Fatty acids → triglycerides → oils → Solid at room temperature
 → miscible with water

Glycerol:

If is a Polyhydric alcohol containing 3OH

→ the importance:

① Coronary heart disease like [angina] → act as Vasodilator in triglycerin

② glaucoma's due to its ability to [dehydrate tissue from its content of water]

③ In Pharmaceutical and cosmetic

④ As explosive.

Fatty Acids:

Straight chain.

Carbon atoms + 2 → Hydrogen atoms + oxygen ends.

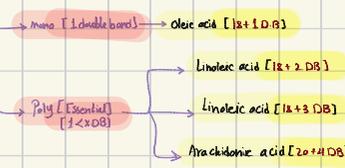
Carboxyl groups → calls carboxylic acid.

Classification: [absence or presence of double bonds]

① Saturated FAs [No double bonds]



② Unsaturated FAs [Presence of double bond]

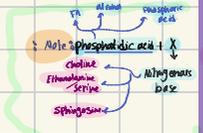


poly
 ① most involved in diet [including animal synthesis from]
 ② growth
 ③ Essential for synthesis of Phospholipids & Prostoglandins.

Compound Lipid

→ Lipids + non lipids, e.g:

- ① Phospholipids
- ② glycolipids
- ③ Sulfolipids
- ④ Lipoproteins



① Phospholipids:

Lecithin [Phosphatidyl choline]

X → choline.

F → In the cell membrane
 lipotropic factor -
 long surfactant -
 [Respiratory distress syndrome]

Cephalin.

X → Ethanolamine or serine.

F → Blood coagulation.
 Note: They share in the structure of [thromboplastin] → essential for blood clotting.

Sphingomyelin

X → sphingosine & choline.

F → in the nervous system [myelin sheath].

② Glycolipids:

Lipid part

FA

Alcohol

Non Lipid part

Carbohydrate

Sphingosine base

F → Present mainly in the nervous tissue (brain, nerves).
 act as electric insulators of nerve in poles.

③ Lipoproteins:

F → Lipid transport in the blood



Types of lipoproteins:

Chylomicrons

Transport exogenous dietary triglycerides

From small intestine

For the tissue.

Mainly triglycerides

Synthesis: small intestine

VLDL

Transport endogenous triglycerides

From liver

to tissue

Mainly triglycerides

Synthesis: liver

LDL

Transport cholesterol

From liver to peripheral tissue

Mainly cholesterol

Synthesis: liver

HDL

Transport cholesterol

From peripheral tissue to liver

Mainly Protein & phospholipids

Synthesis: liver

Derived lipid:

→ derived from simple L and compound L by hydrolysis

FA
Glycerol

→ and substances related to lipids as steroids.

① Cholesterol

② Vitamin-D.

③ Steroid hormones [sex hormones].

④ Bile acids and salts.

[All of them contain a steroid nucleus.]