NAME: ONOJA ENEWA

MATRIC NO:19/MHS06/034

DEPT: MEDICAL LABORATORY SCIENCE

COURSE: BCH 202

Vitamin C (ascorbi acid) is not used as a coenzyme but is still required by enzymes in hrodroxylation reactions eg it’s is required for the continued activity of proyl hydroxylase. This enzyme synthesizes 4-hydroxyproline, an amino acid that is required in collagen synthesis, the major connective tissue in vertebrates, but is rarely found anywhere else. vitamin C is involved in the hydroxylation reactions of steroid hormones (in the adrenal cortex) , adrenaline e.t.c.

Phospholipids: These are made up of fatty acid, glycerol or other alcohol, phosphoric acid and nitrogenous base. Phospholipids are the major lipid constituents of cell membranes. Like fatty acids, phospholipids are amphipathic in nature, i.e. each has a hydrophilic or polar head (phosphate group) and a long hydrophobic tail (containing two fatty acid chains).

Classification of Phospholipids

There are two classes of phospholipids based on the type of alcohol present in them

1.Glycerophospholipids or phosphoglycerides, that contain glycerol as the alcohol. In glycerophospholipid, the hydroxyl groups at C1 and C2 of glycerol are esterified with two fatty acids. The C3 hydroxyl group of the glycerol is esterified to phosphoric acid and resulting compound called, phosphatidic acid. Phosphatidic acid is a key intermediate in the bio- synthesis of other glycerophospholipids. In glycerophospholipid, phosphate group of phosphatidic acid becomes esterified with the hydroxyl group of one of the several nitrogen base or other groups. Different types of glycerophospholipids based on the different nitrogenous bases are listed below:

• Phosphatidyl choline (lecithin)

• Phosphatidyl ethenolamine (cephalin)

• Phosphatidyl serine

• Phosphatidyl inositol

• Lysophospholipid

• Plasmalogens

• Cardiolipins.

2. Sphingophospholipids that contain sphingosine as the alcohol. e.g. Sphingomyelins

Differences between phospholipids and glycolipids

-Phospholipids provides the basic structure of cell membrane, whereas glycolipids act as cell-cell recognition and receptor sites for chemical signals.

-Phospholipids contain phosphoric acid while glycolipds are formed by the association of lipids and carbohydrates,thus do not contain phosphoric acid.

-Phospholipids contain nitrogenous bases while glycolipids contain ceramide.

-Phospholipids contain either glycerol or shingosine as the alcohol present while glycolipids contain only shingosine as the carbohydrate present