

November 2019

29 Friday

Classification of Lipid.

"with water, soap touch meat"
To the tongue, 9 am taste ful.
with in limel 9 am dutital
in excess, 9 am dangerous.

Lipid may be regarded as
organic substances relatively

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insoluble in water, soluble
in organic solvent (alcohol ether etc).
actually as potentially related
to the fatty acid and utilize by
the living cells.

Study of lipid is called
lipidomics.

lipos - fat, are

2019							OCTOBER						
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20	21	22	23	24	25	26	27	28	29	30	31		

2020 JANUARY

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Lipid
 Simple complex Derived

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of a great importance to the body as the chief concentrated storage form of energy. besides their role in cellular structure and various other biochemical function.

Lipids are classified into

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Simple, complex and Derived, and miscellaneous lipid.

Simple lipid:- Ester of fatty acid with alcohol. This are mainly of two type.

(a) Fats and oils (b)

(c) Waxes.

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Fats and oils - (triacylglycerols) :-

These are ester of fatty acid with glycerol. The difference betⁿ fat and oil is only physical. Thus oil is a liquid and fat is a solid at room temperature.

④ Waxes :-

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Ester of fatty acid (usually long chain) with alcohol other than glycerol. These alcohol may be aliphatic or alicyclic. Cetyl alcohol is most commonly found in waxes. Waxes are used in the preparation of candles, lubricants.



cosmetic, ointments, polishes etc.

2. Complex (or compound) Lipid

These are ester of fatty acid with alcohol containing additional groups such as phosphate, nitrogenous base, carbohydrate, protein etc. They are further divided —

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① Phospholipid

They contain Phosphoric acid and frequently nitrogenous base. This is in addition to alcohol and fatty acid.

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Two types

(i) Glycerophospholipid:- These phospholipid contain glycerol as the alcohol eg. lecithin, cephalin.

(ii) Sphingophospholipid:- Sphingosine is the alcohol in this group of phospholipid eg. sphingomyelin.

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Sphingomyelin

(b) Glycolipid:- These lipid contain a fatty acid, carbohydrate and nitrogenous base, the alcohol is sphingosine, hence they are also called glycosphingolipids.

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Glycerol and phosphate are absent e.g. cerebroside, gangliosides.

c. Lipoprotein: - macromolecular complexes of lipids with protein.

d) Other complex lipids: - sulfo -

lipid, aminolipid and

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lipopolysaccharides are among the other complex lipid.

3. Derived lipids:

These are the

derivatives obtained on the hydro-

lysis of group 1 and group 2

lipids which possess the characteri-

stics of lipids. These include

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glycerol and other alcohol, fatty acid, mono and diacylglycerol, lipid (fat) soluble vitamins, steroid hormones, hydrocarbons and keton-bodies.

4. Miscellaneous lipid :- These include a large number of

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Compounds possessing

the characteristics of lipid eg. carotenoids, squalene, hydrocarbon such as pentalocane (in bee wax), terpene etc.

Neutral lipid :- The lipid which are ~~the~~ uncharged, are referred to as neutral lipid, These are

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mono, di - triacylglycerol, cholesterol and cholesterol ester

Function:- Biological. fⁿ / importance or significance.

Ans - Lipid perform several important function -

① They are the concentrated fuel reserve of the body (triacylglycerol).

2. Lipid are the constituents of membrane structure and regulate the membrane permeability (phospholipids and cholesterol).

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3. They serve as source of fat soluble vitamins (A-D-E and K).
4. Lipids are imp't as cellular metabolic regulators (Steroid hormones and prostaglandins).
5. Lipids protect the internal organs serve as insulating

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materials and give shape and smooth appearance to the body.

The lipids of physiological importance for the human serve as structural component of biological membrane.

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provide energy reserve, Pre-dominantly in the form of triglycerides, serve as biologically active molecules exerting a wide range of regulatory function.

- ① Energy reserve,
- ② Regulate hormones

③ transmit nerve impulse

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④ Cushion vital organ. and transport fat-soluble nutrient.

5. Aiding digestion and increasing Bioavailability