sixth directed work of biochemistry Structure and physicochemical properties of lipids

Exercise1: Which of the following statements regarding glycerophospholipids is (are) correct?

- **a.** Phospholipids are simple lipids.
- **b.** These are energy lipids.
- c. They all derive from phosphatidic acid.)
- **d.** These are amphiphilic molecules.

Exercise 2: Give the name of each of the following lipids, specifying the lipid class to which it belongs.

$$\begin{array}{c} \text{CH}_2\text{O-CO-(CH}_2)_{14}\text{-CH3} & \text{R}_1\text{-CO-O-CH}_2 \\ \text{CH-O-CO-(CH}_2)_7\text{-CH=CH-(CH}_2)_7\text{-CH3} & \text{R}_2\text{-CO-O-CH}_2 \\ \text{CH}_2\text{O-O-P-O-CH}_2 & \text{NH}_2 \\ \text{CH}_2\text{-O-P-O-CH}_2\text{-CH-COOH} \\ \text{CH}_2\text{OH} & \text{O-CH}_2\text{-CH-COOH} \\ \end{array}$$

Exercise 3.

Consider the following lipid:

$$H_2C \longrightarrow O \longrightarrow C \longrightarrow R_1$$
 $R_2 \longrightarrow C \longrightarrow CH$
 $H_2C \longrightarrow O \longrightarrow CH_2 \longrightarrow CH_2 \longrightarrow NH_3$

- What class does it belong to?
- Give the name of the alcohol to which the phosphatidyl radical is linked.

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- What do we obtain after alkaline hydrolysis.

Exercise 4. Give the structure of a lipid containing in its structure:

- A fatty acid having 18 carbon atoms. (Stearic acid)
- An amino alcohol. (sphingosine)
- Galactose.

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