

# چربی ها Lipids

دکتر مادی انصاری مادی پور

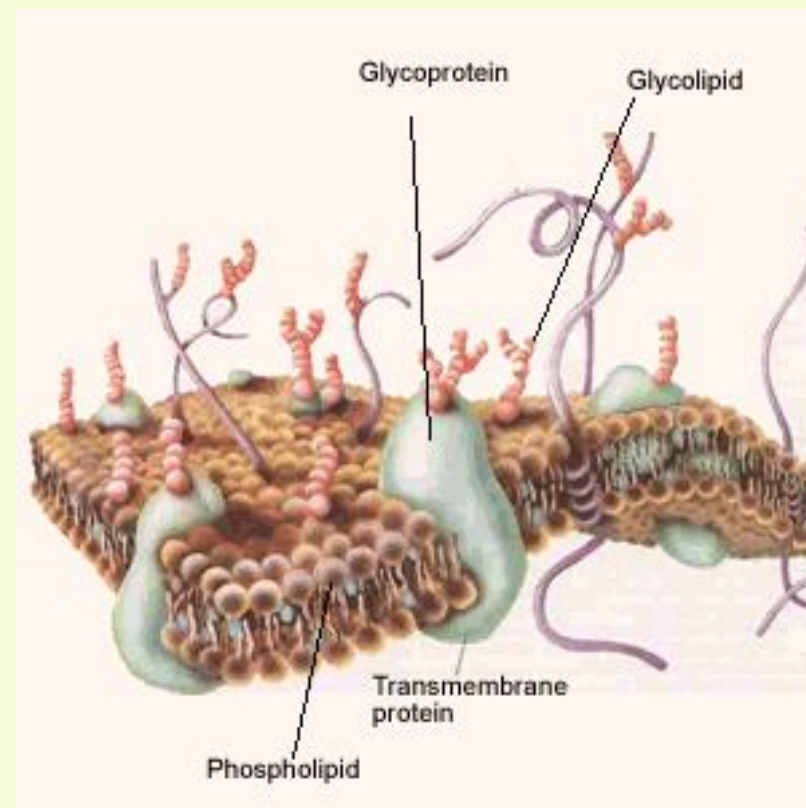
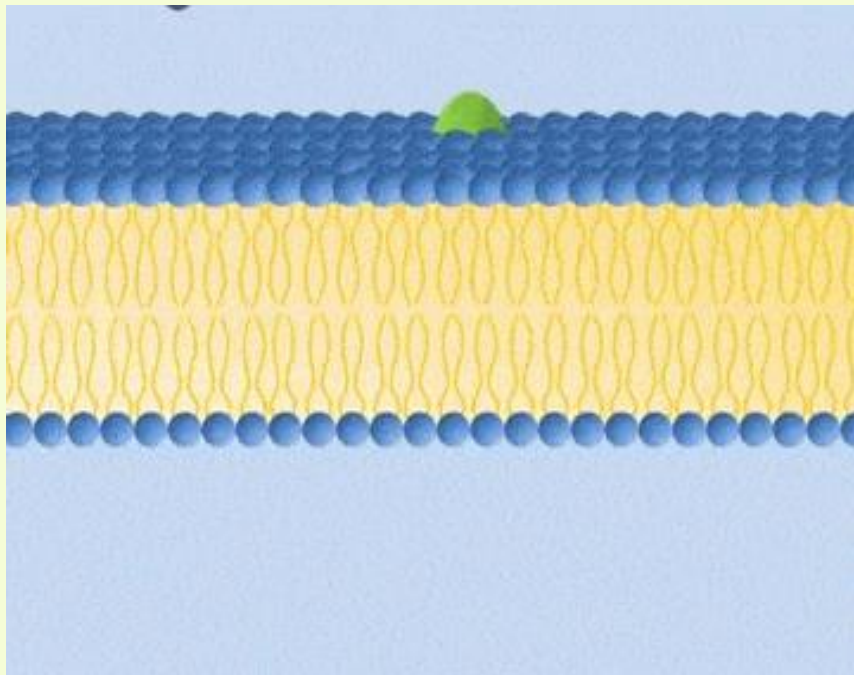
دانشکده پزشکی، اهواز

# Lipids چربی‌ها

غیر قطبی و نامحلول در آب

# چربی‌ها Lipids

## نقش ساختمانی در عشای سلول



# چربی ہا Lipids عایق حرارتی



# چربی ہا Lipids

عایق مکانیکی



# چربی ہا Lipids عایق رطوبتی



# چربی ہا Lipids

تولید انرژمی: حرارت و نور



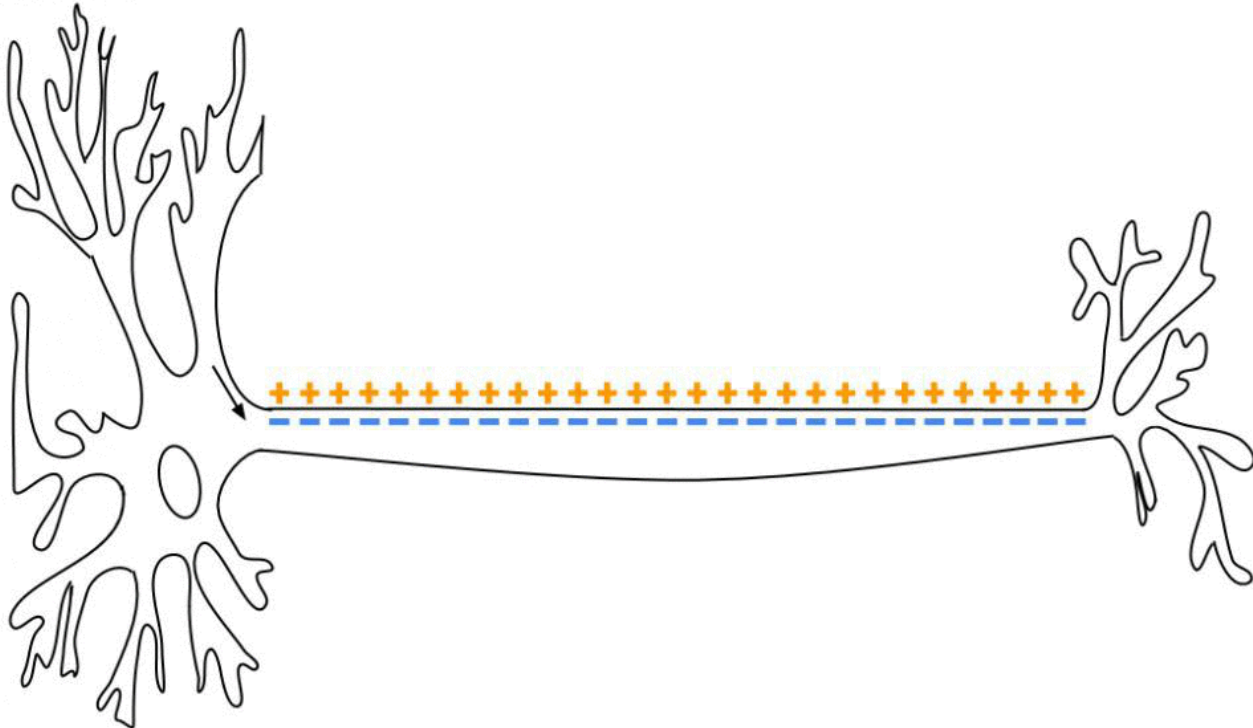
# چربی ہا Lipids

تولید انرژمی: حرارت و ATP



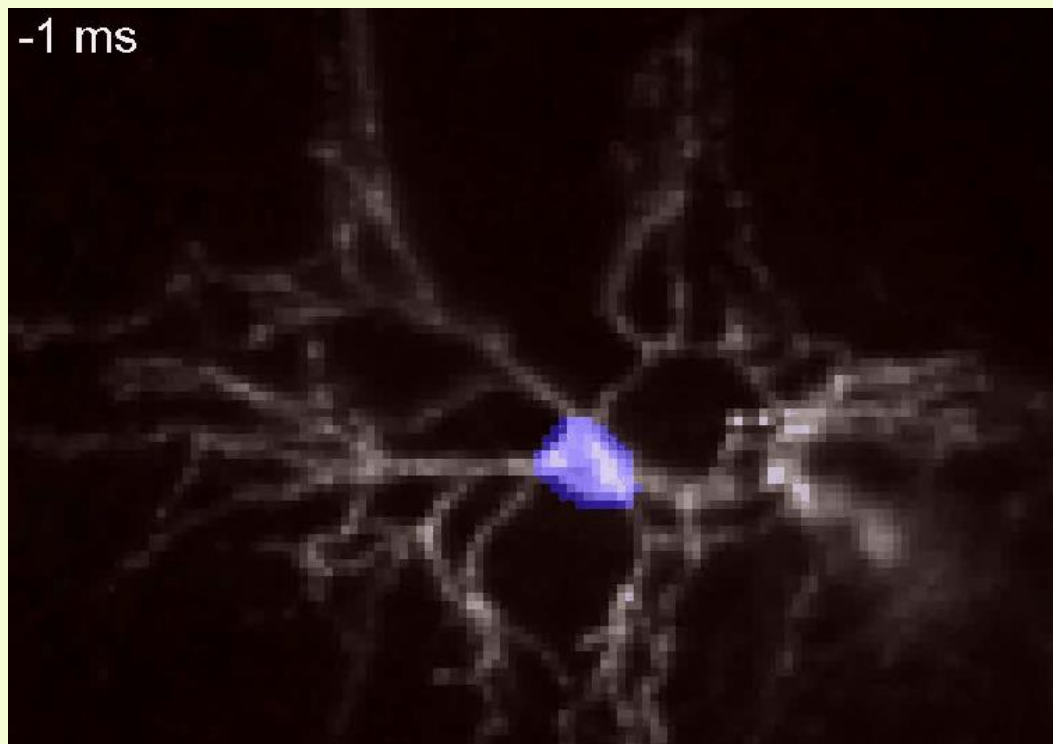
# چربی ها Lipids

عایق الکتریکی: کمک به ایجاد پتانسیل عمل و انتقال پیام عصبی در نورون ها



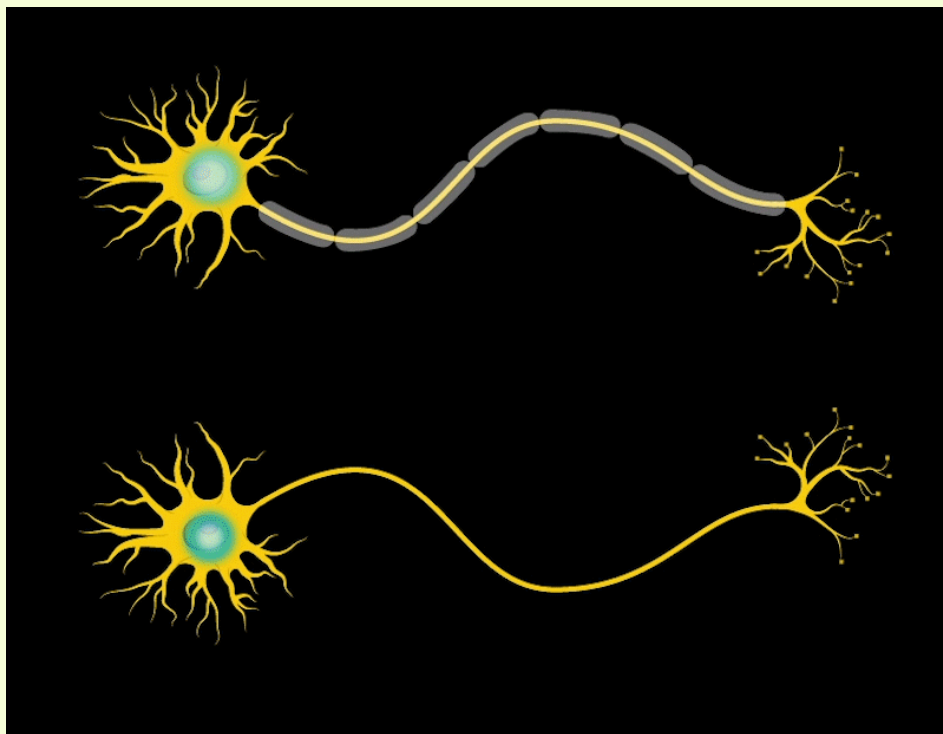
# چربی ها Lipids

عایق الکتریکی: کمک به ایجاد پتانسیل عمل و انتقال پیام عصبی در نورون ها



# چربی ہا Lipids

عایق الکتریکی: گمبہ ایجاد پائیل عمل و انتقال پیام عصبی در نوروں ہا



## **Lipids: Alcohol+ Fatty acid**

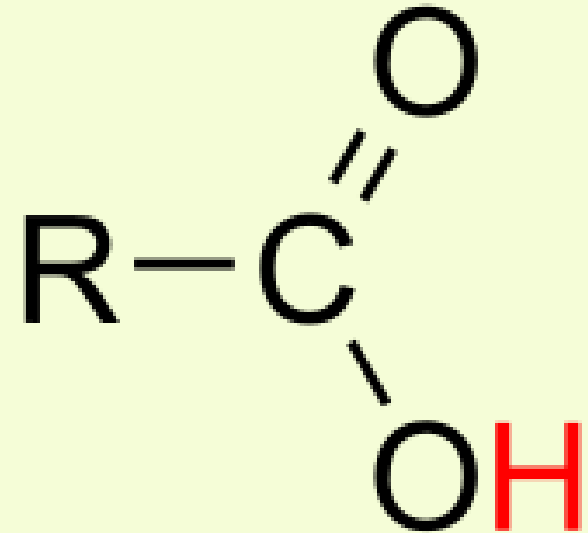
- 1. Glycerol:** Acylglycerol, glyceride
- 2. Sphingosine:** Sphingolipids
- 3. Fatty Alcohols:** Wax
- 4. Cholesterol:** Cholesterol esters

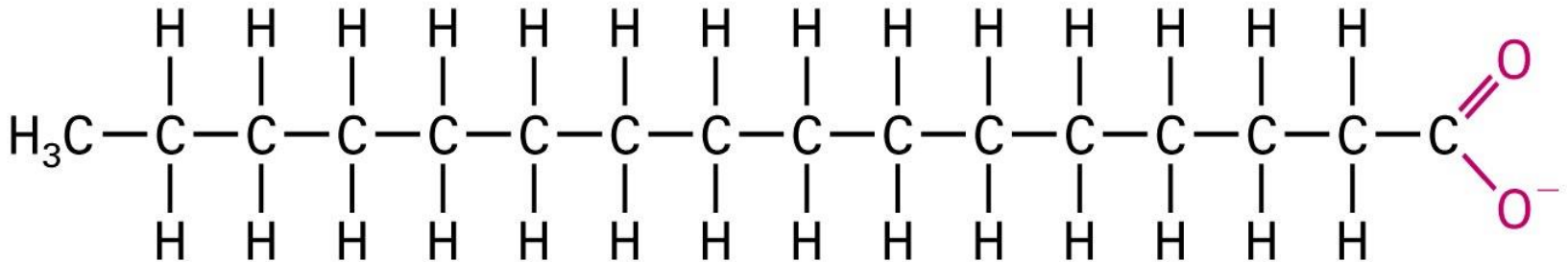
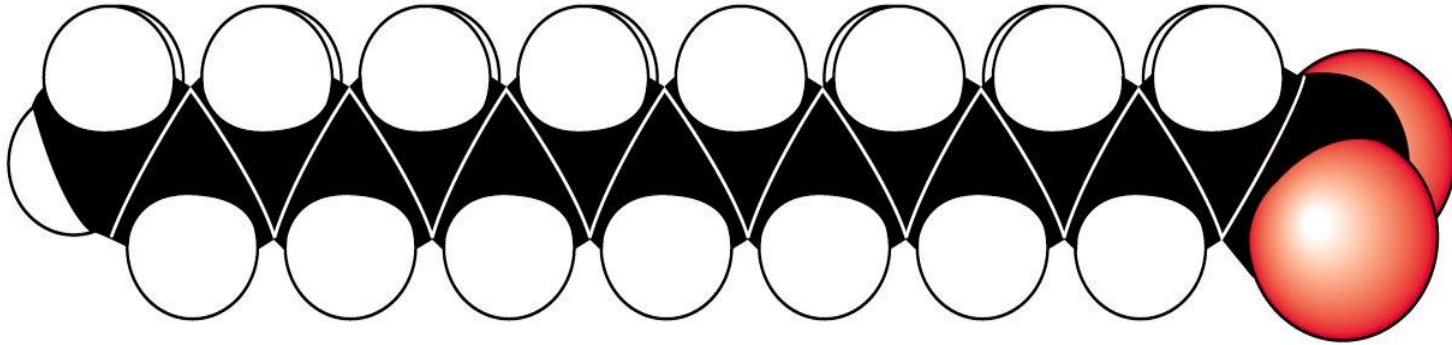
**Fatty acid derivatives:** Eicosanoids, Terpens

# Fatty acids

Organic acids

Carboxylic acids





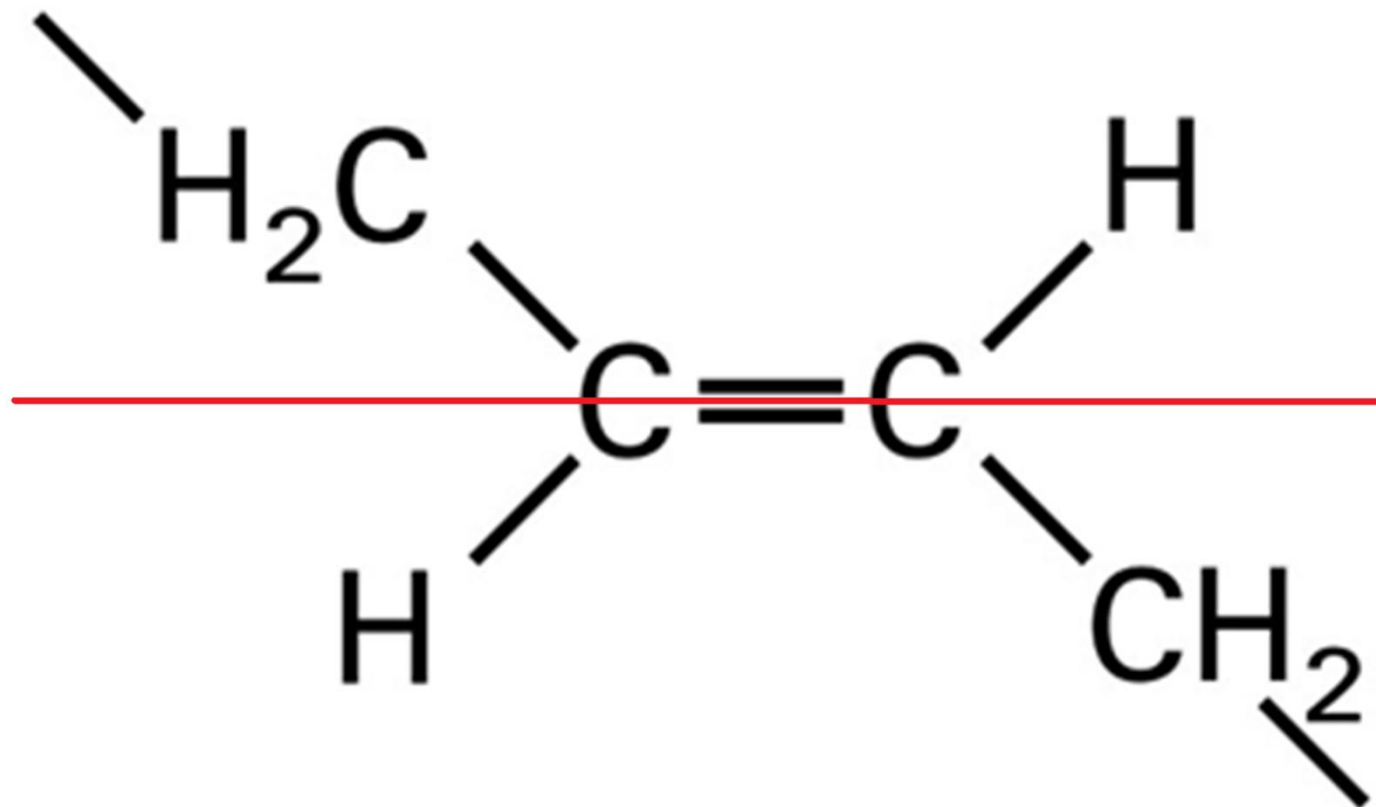
**Palmitate**  
**(ionized form of palmitic acid)**

## SATURATED FATTY ACIDS

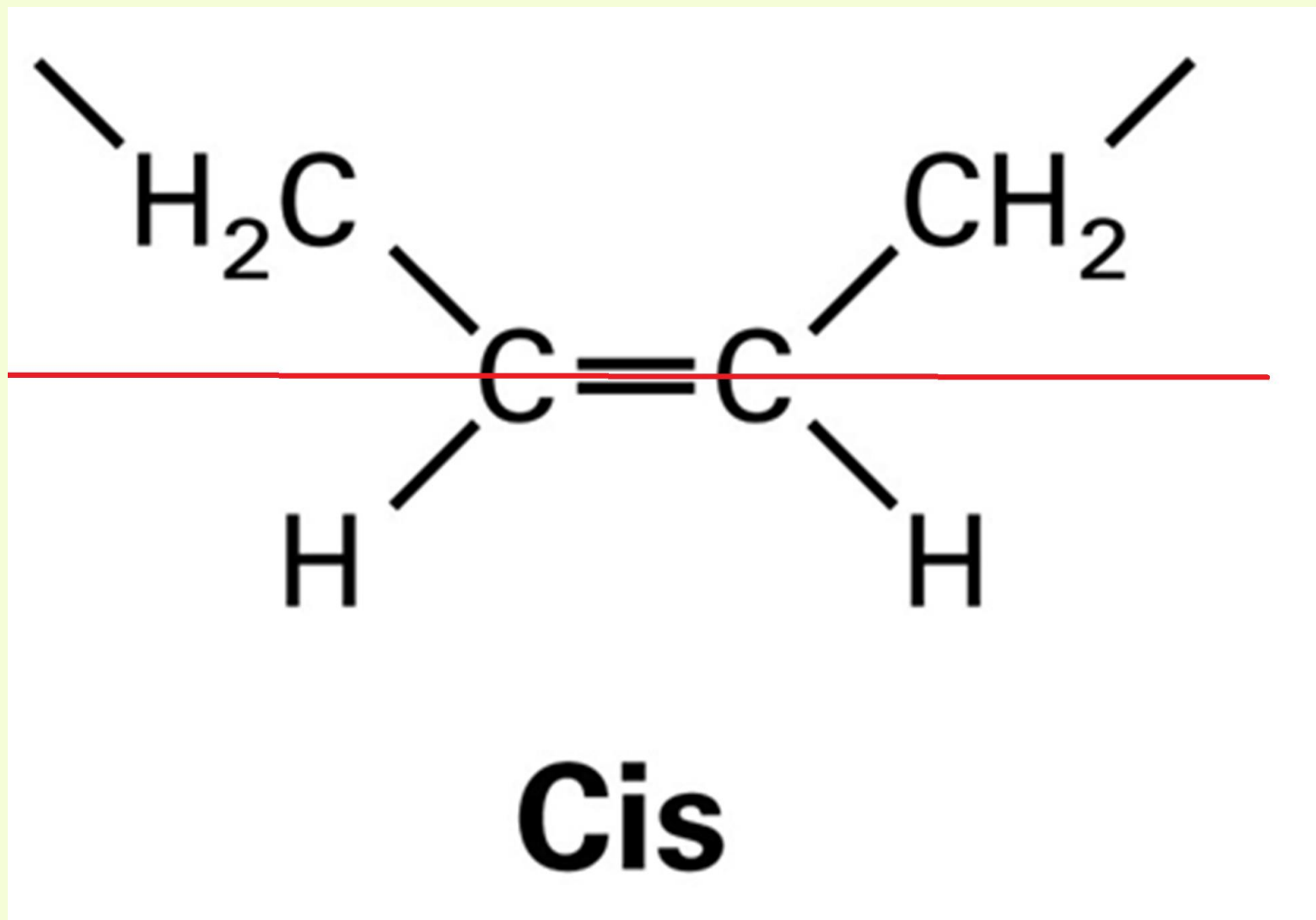
	Abbreviation	Chemical Formula
Myristic	C14:0	$\text{CH}_3(\text{CH}_2)_{12}\text{COOH}$
Palmitic	C16:0	$\text{CH}_3(\text{CH}_2)_{14}\text{COOH}$
Stearic	C18:0	$\text{CH}_3(\text{CH}_2)_{16}\text{COOH}$

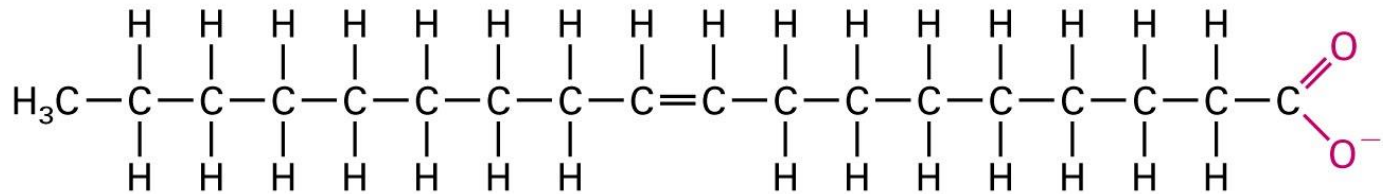
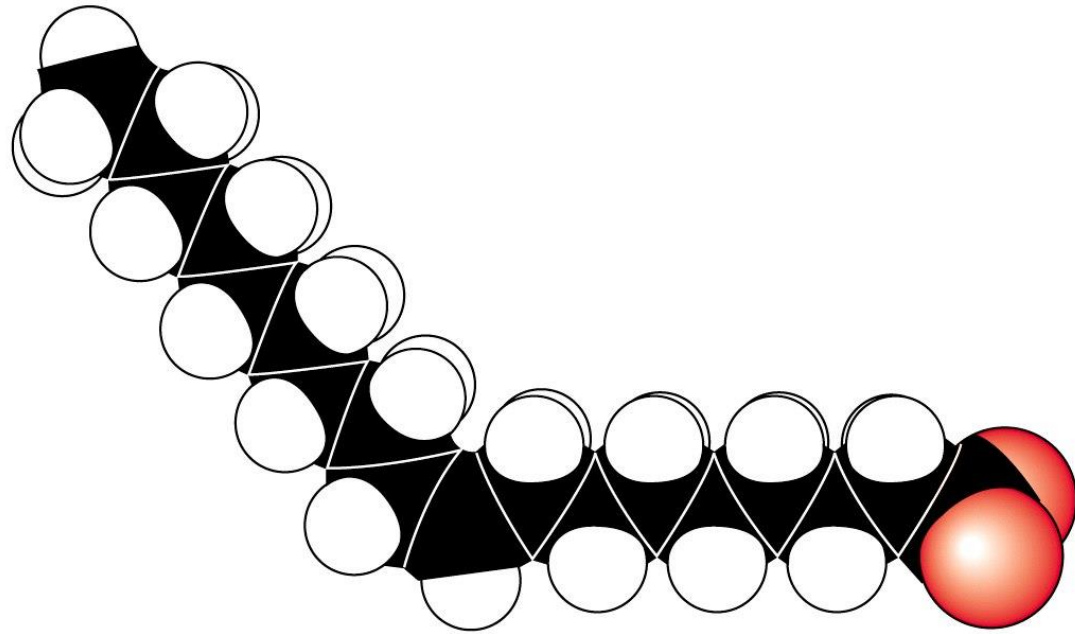
## UNSATURATED FATTY ACIDS

	Abbreviation	Chemical Formula
Oleic	C18:1	$\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOH}$
Linoleic	C18:2	$\text{CH}_3(\text{CH}_2)_4\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOH}$
Arachidonic	C20:4	$\text{CH}_3(\text{CH}_2)_4(\text{CH}=\text{CHCH}_2)_3\text{CH}=\text{CH}(\text{CH}_2)_3\text{COOH}$



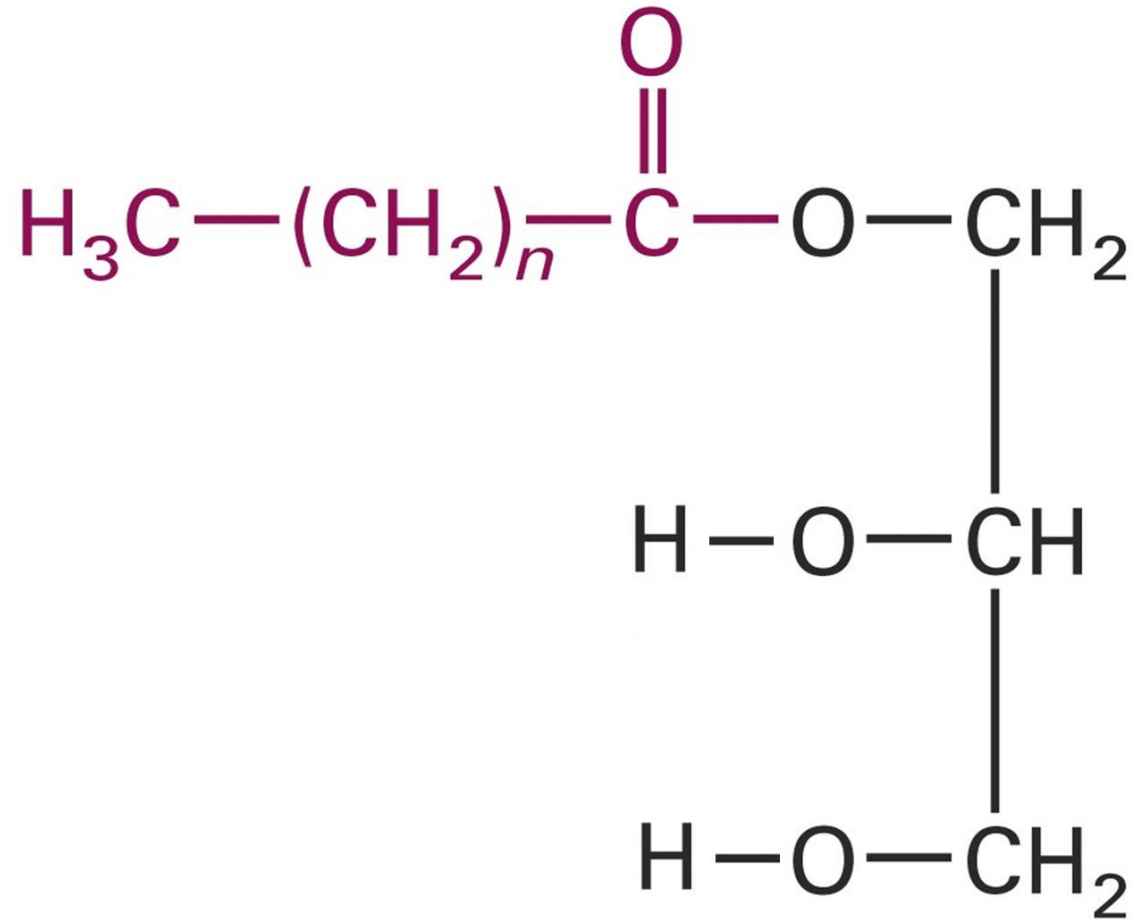
**Trans**



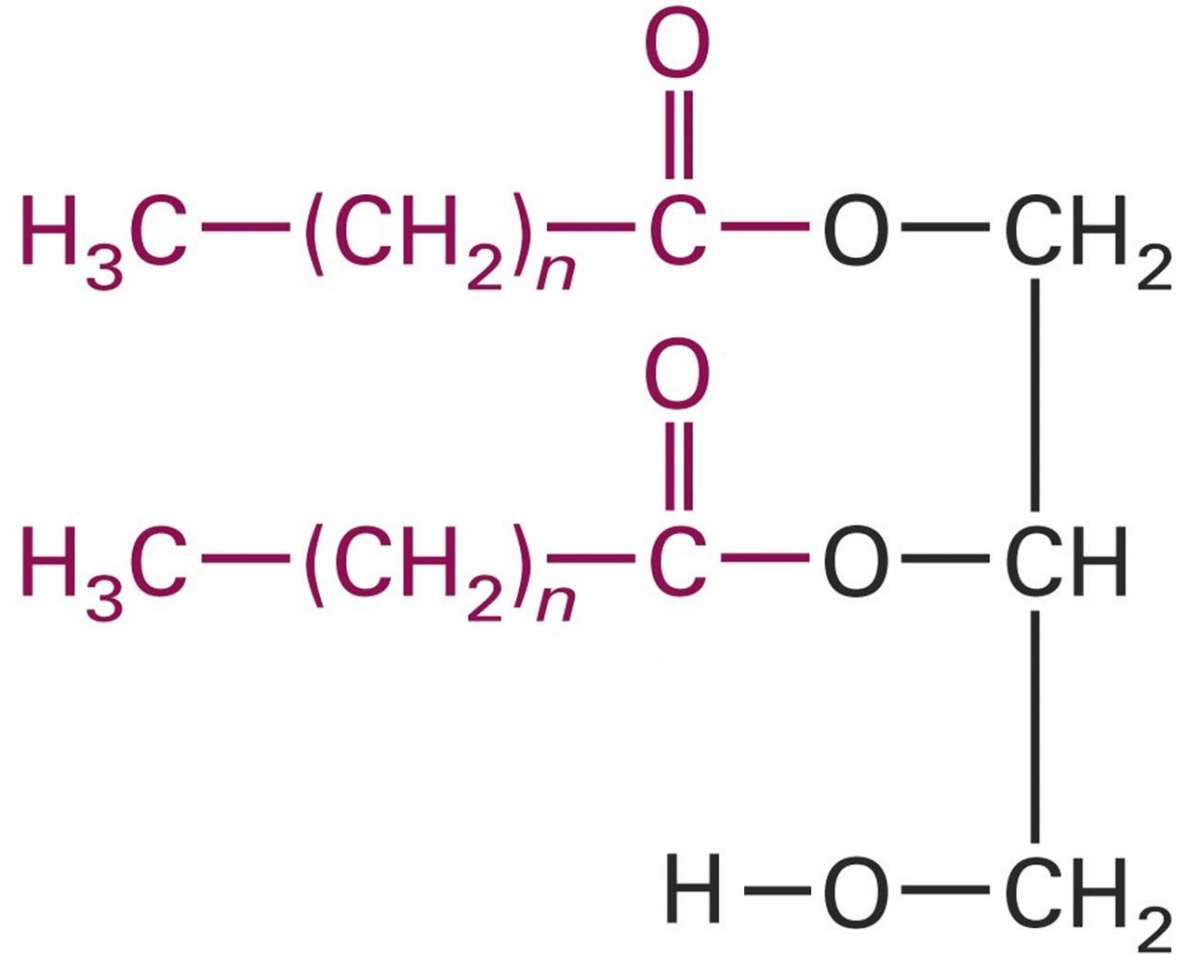


**Oleate**  
**(ionized form of oleic acid)**

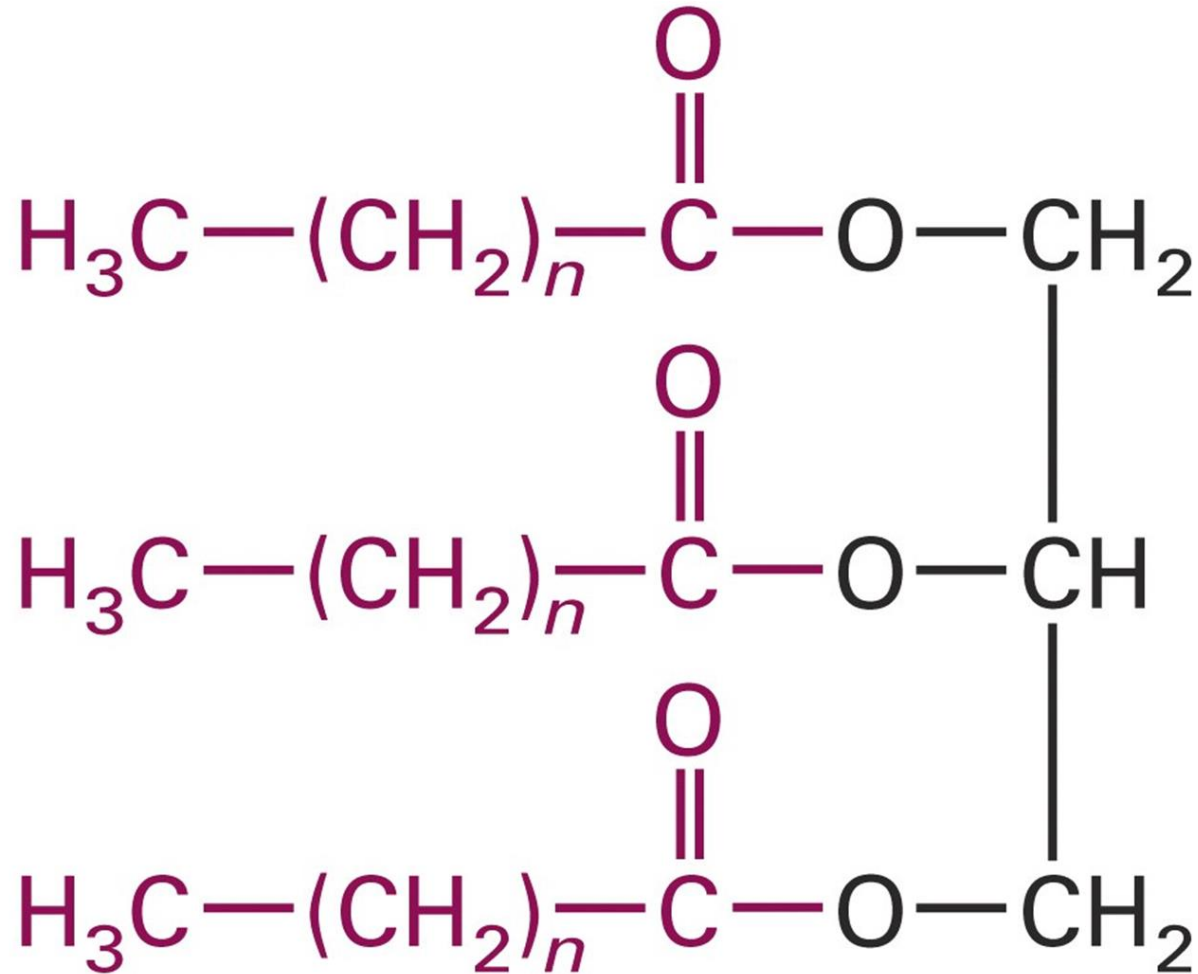
آسپل گلیسرول ہا ( گلیسرید ہا )



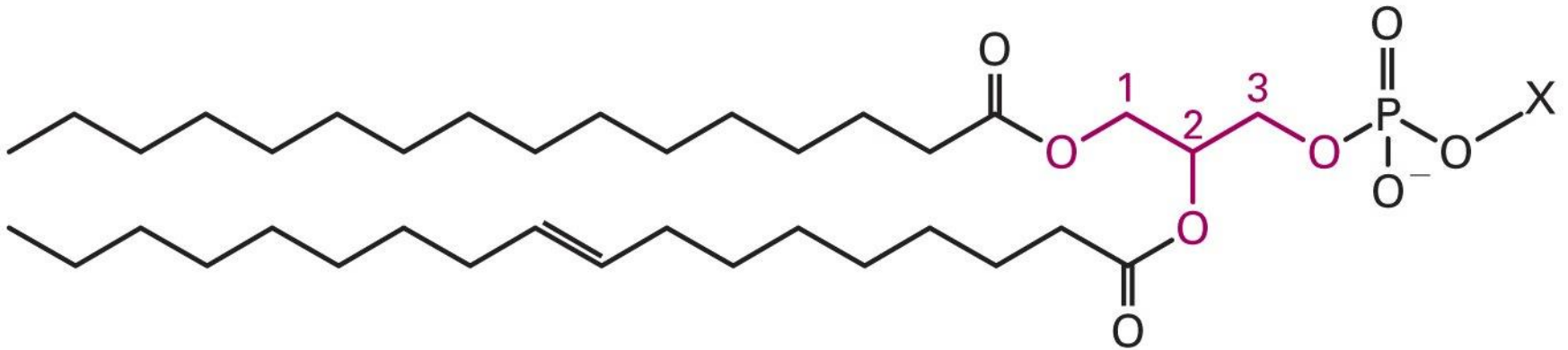
## Monoacylglycerol



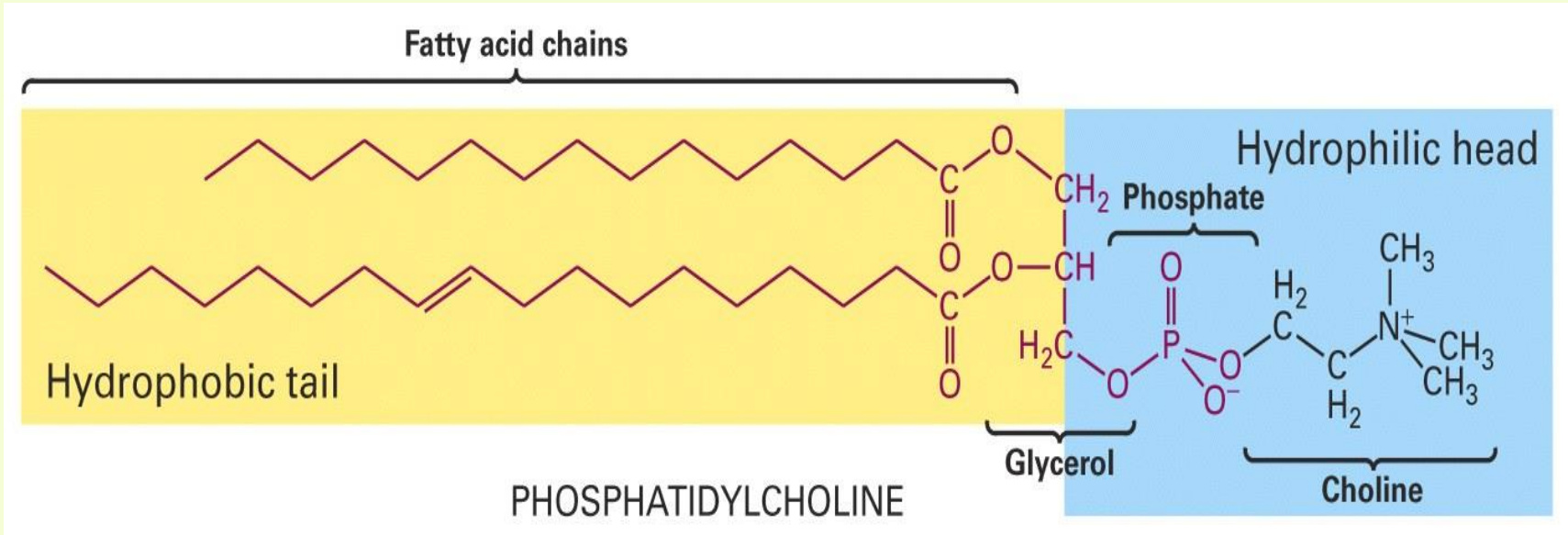
## Diacylglycerol

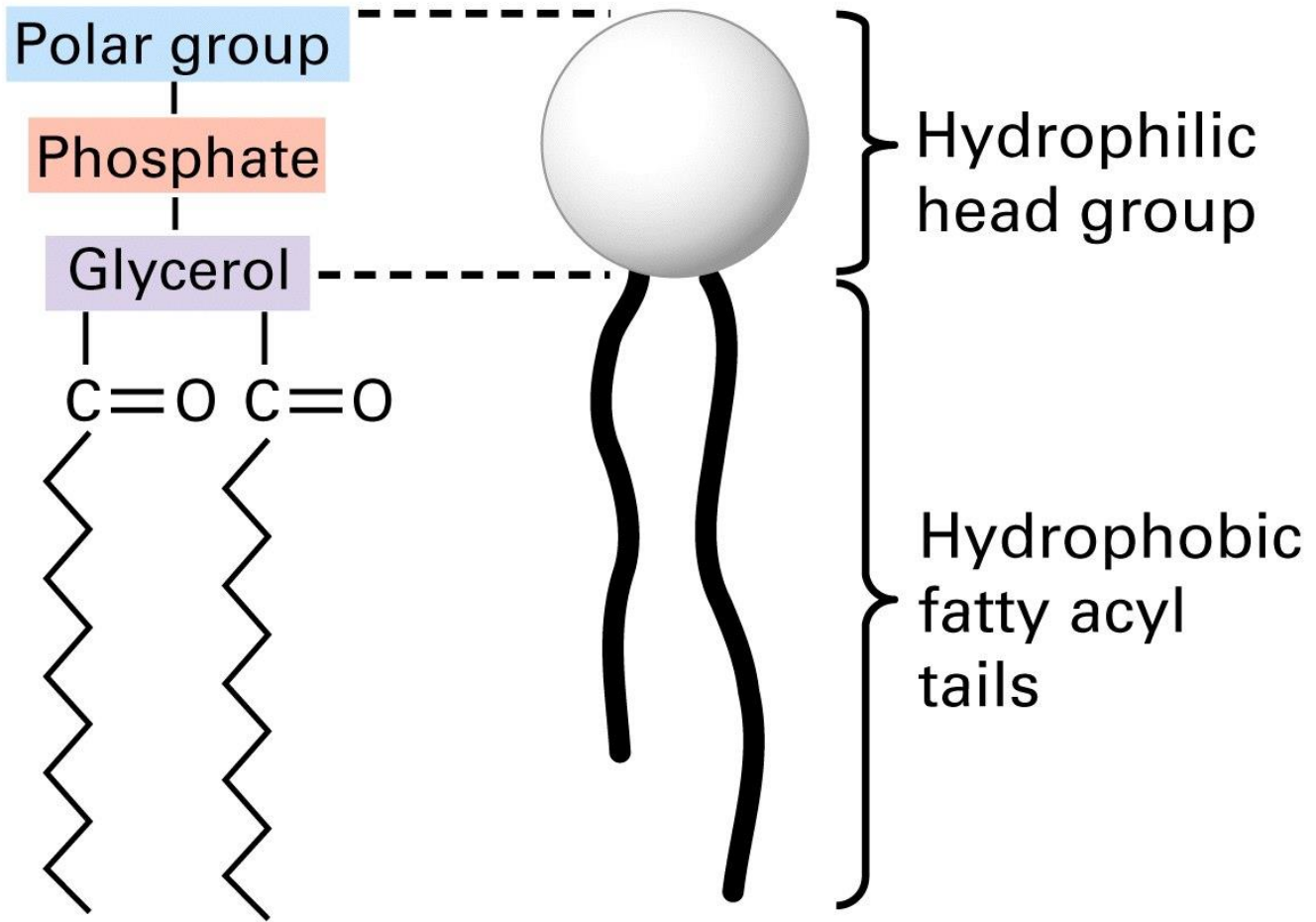


## Triacylglycerol

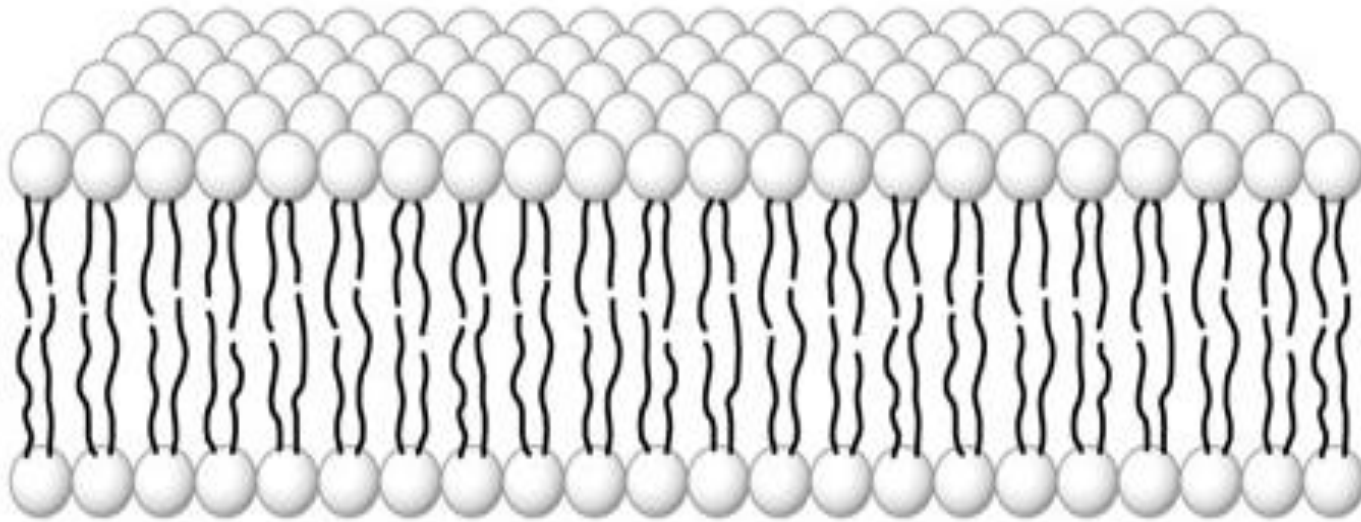


**Phospholipid  
(glycerol phospholipid)**

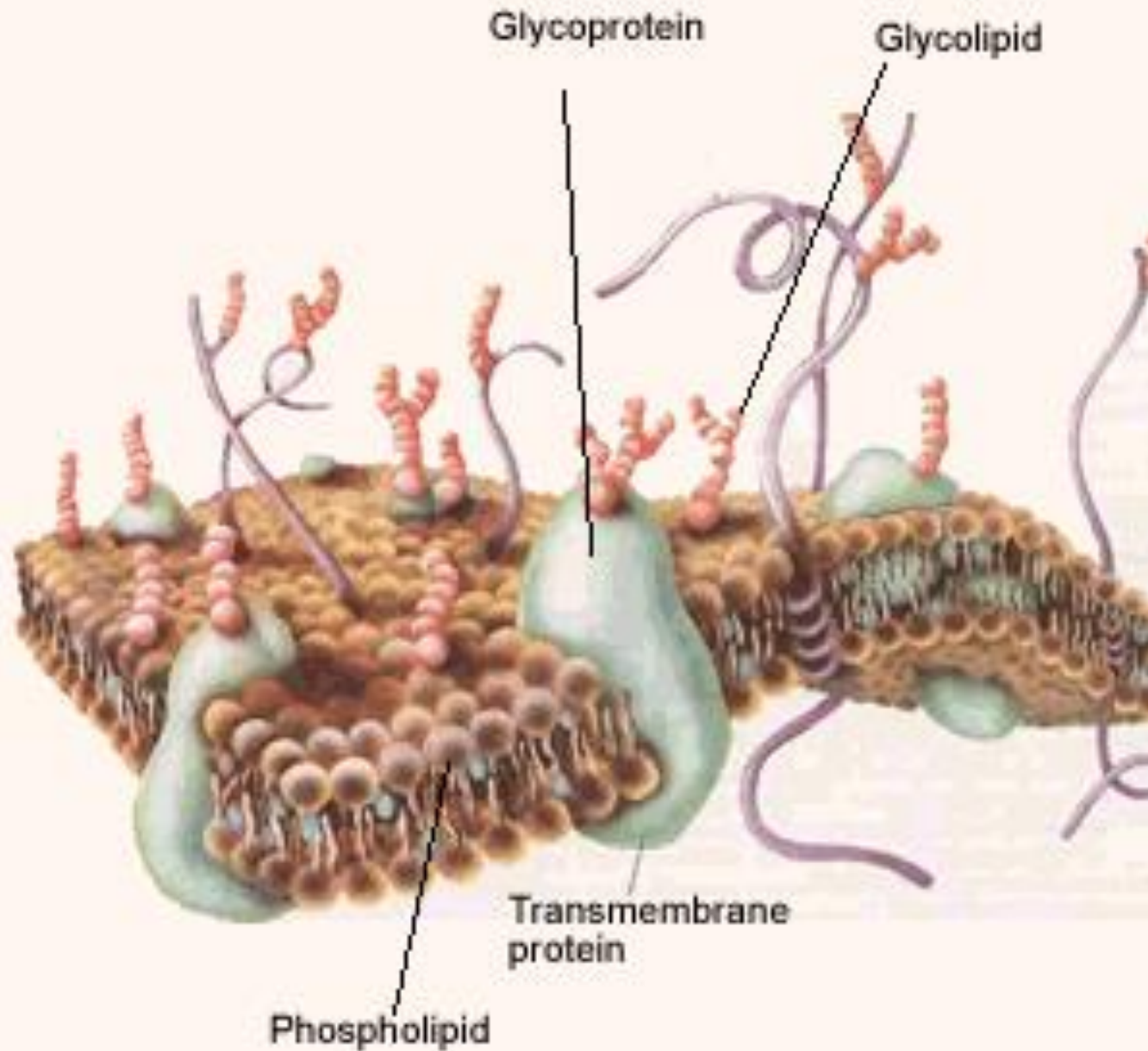


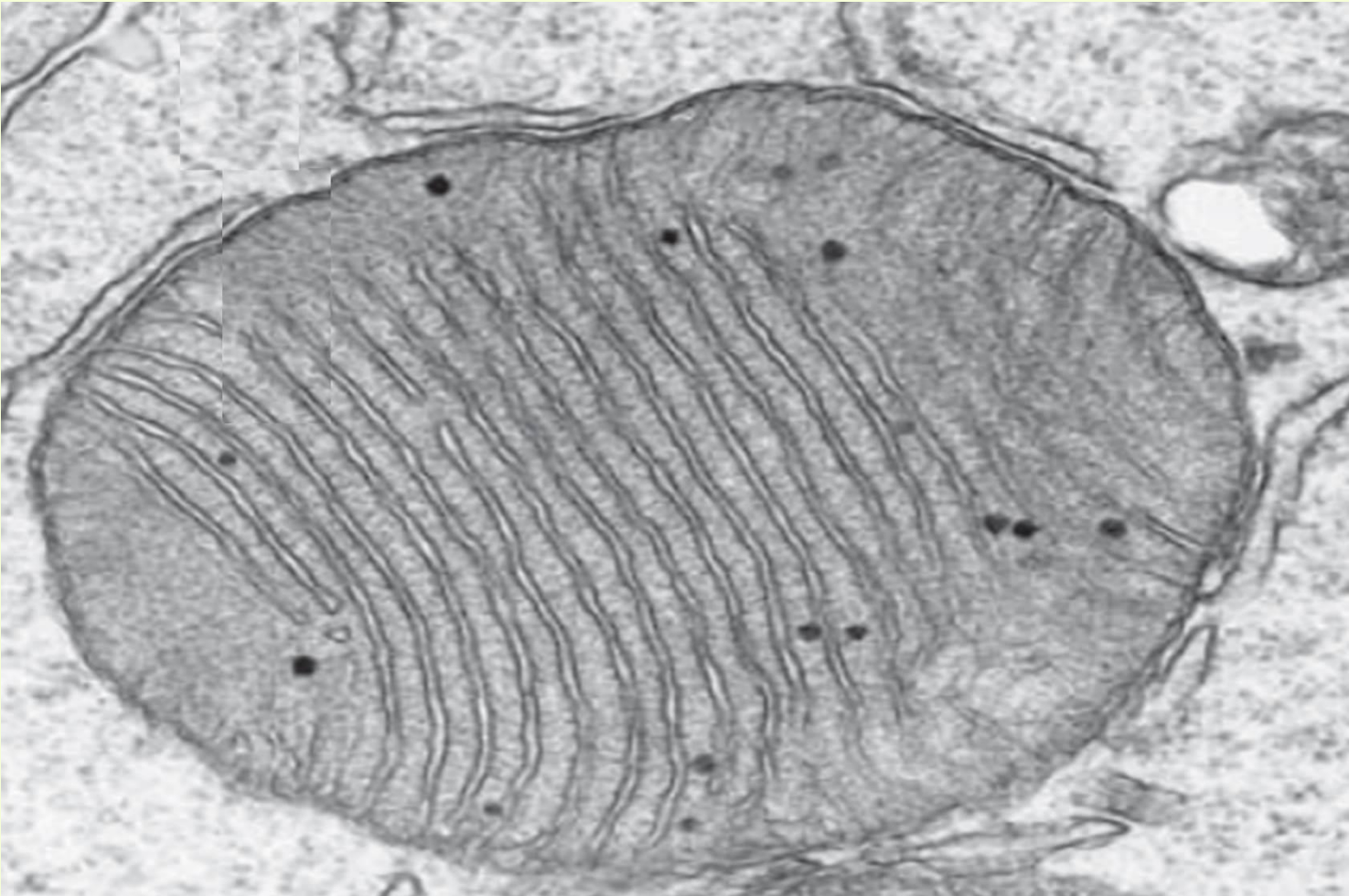


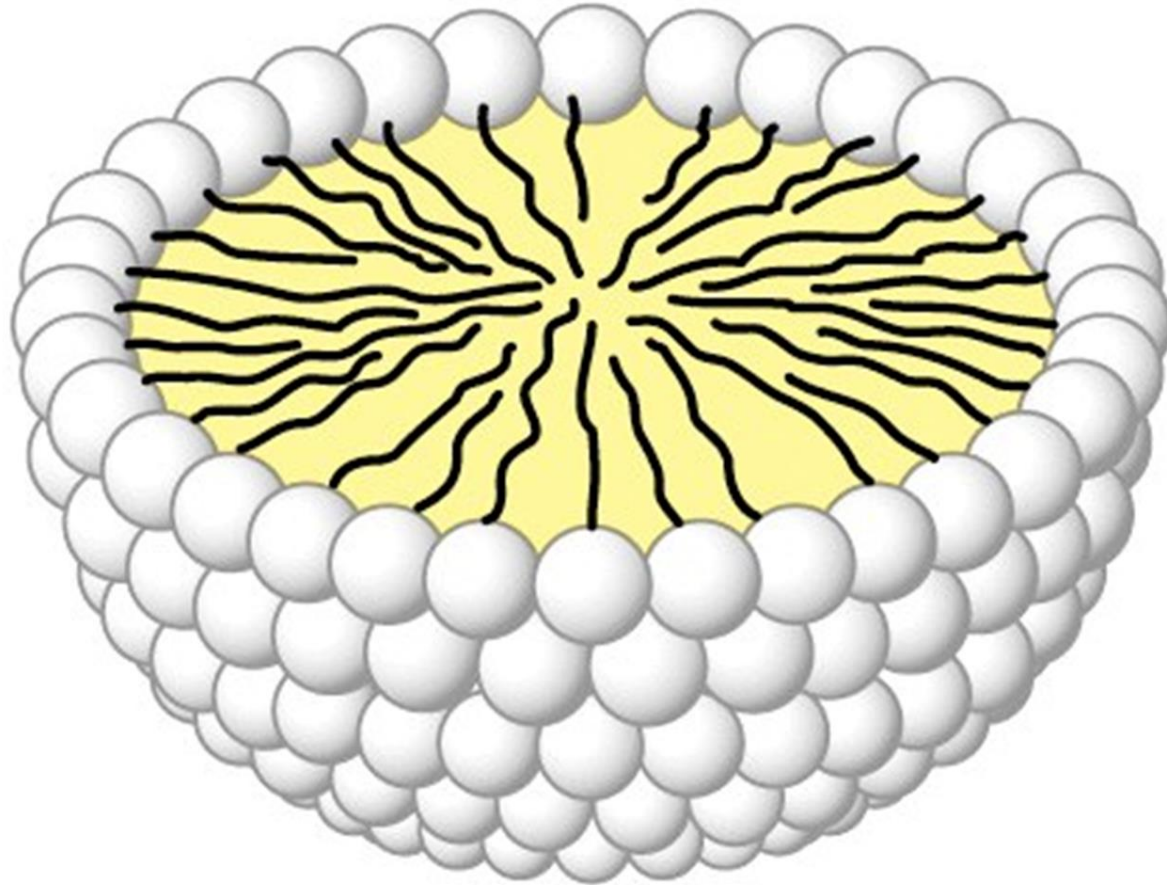
**Glycerophospholipid**



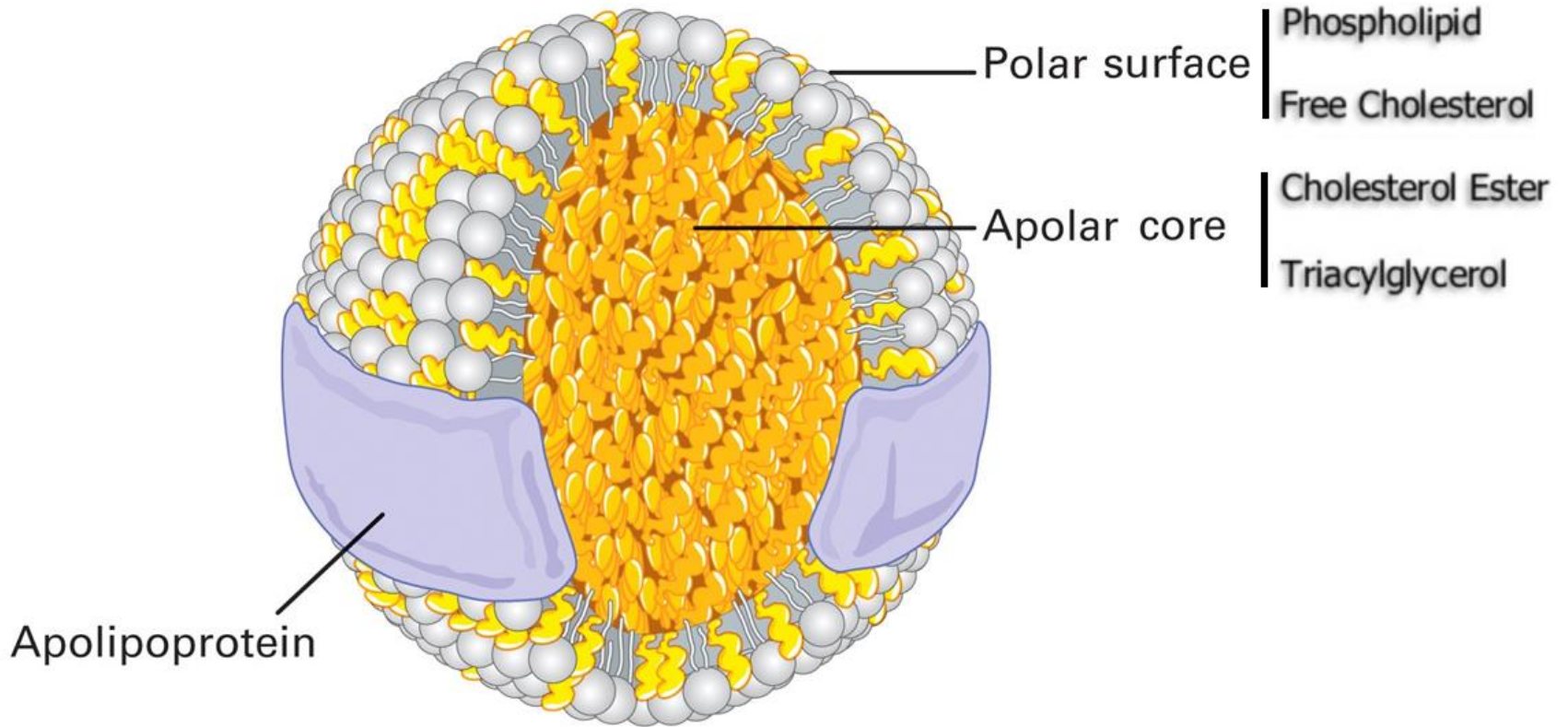
**Phospholipid bilayer**







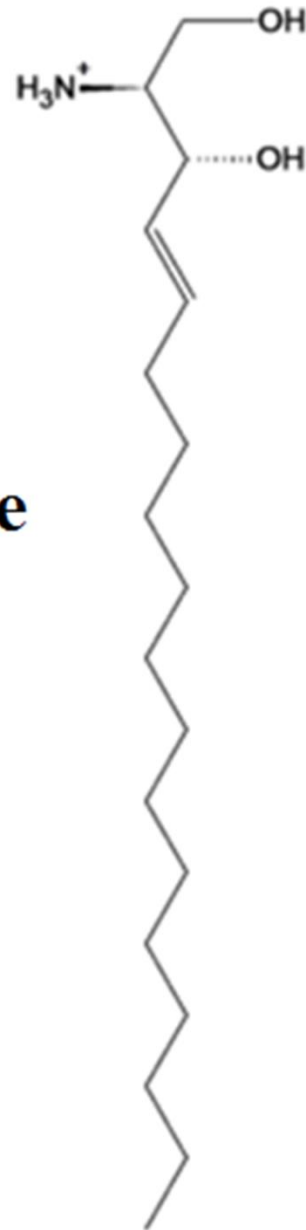
# Micelle

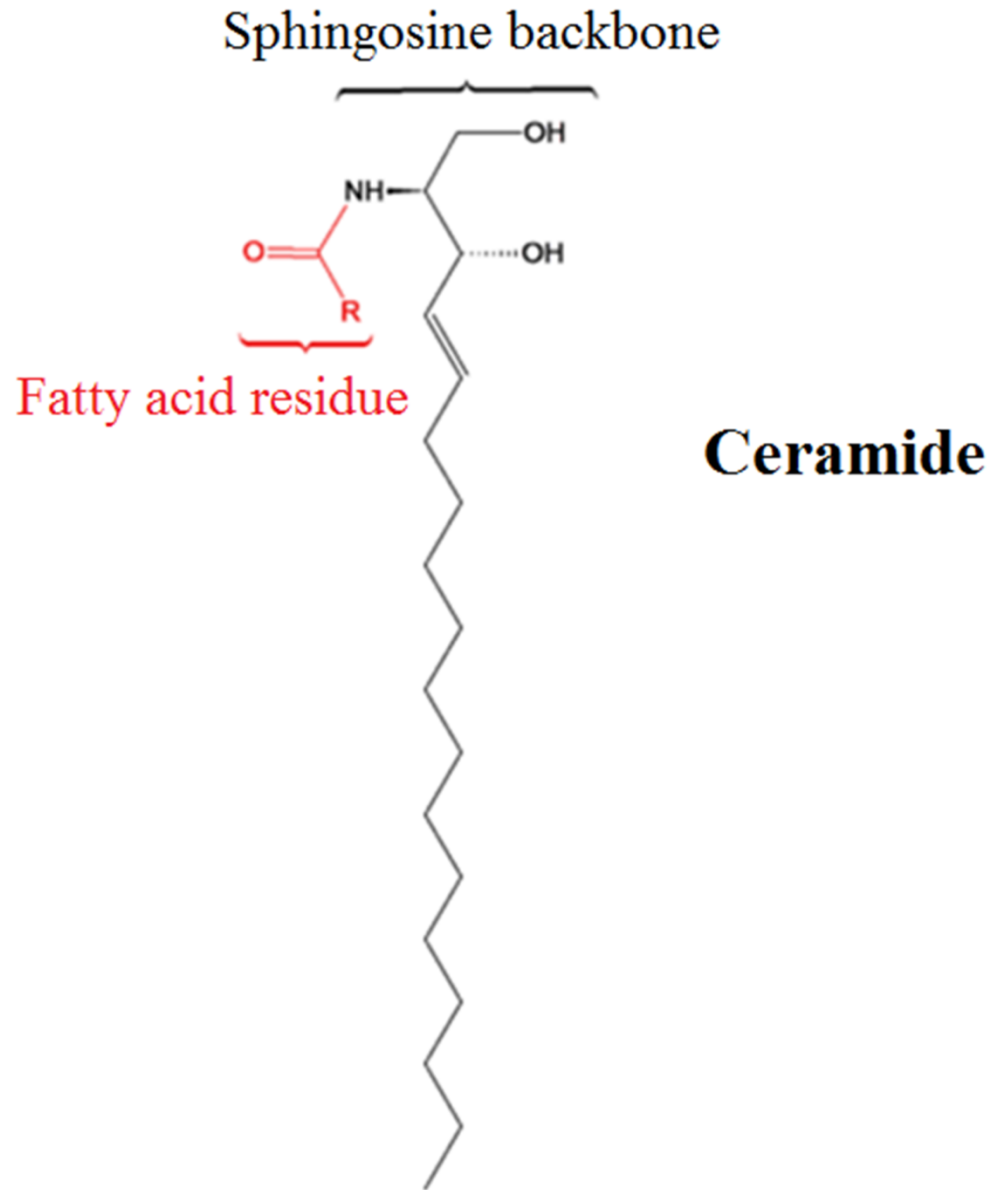


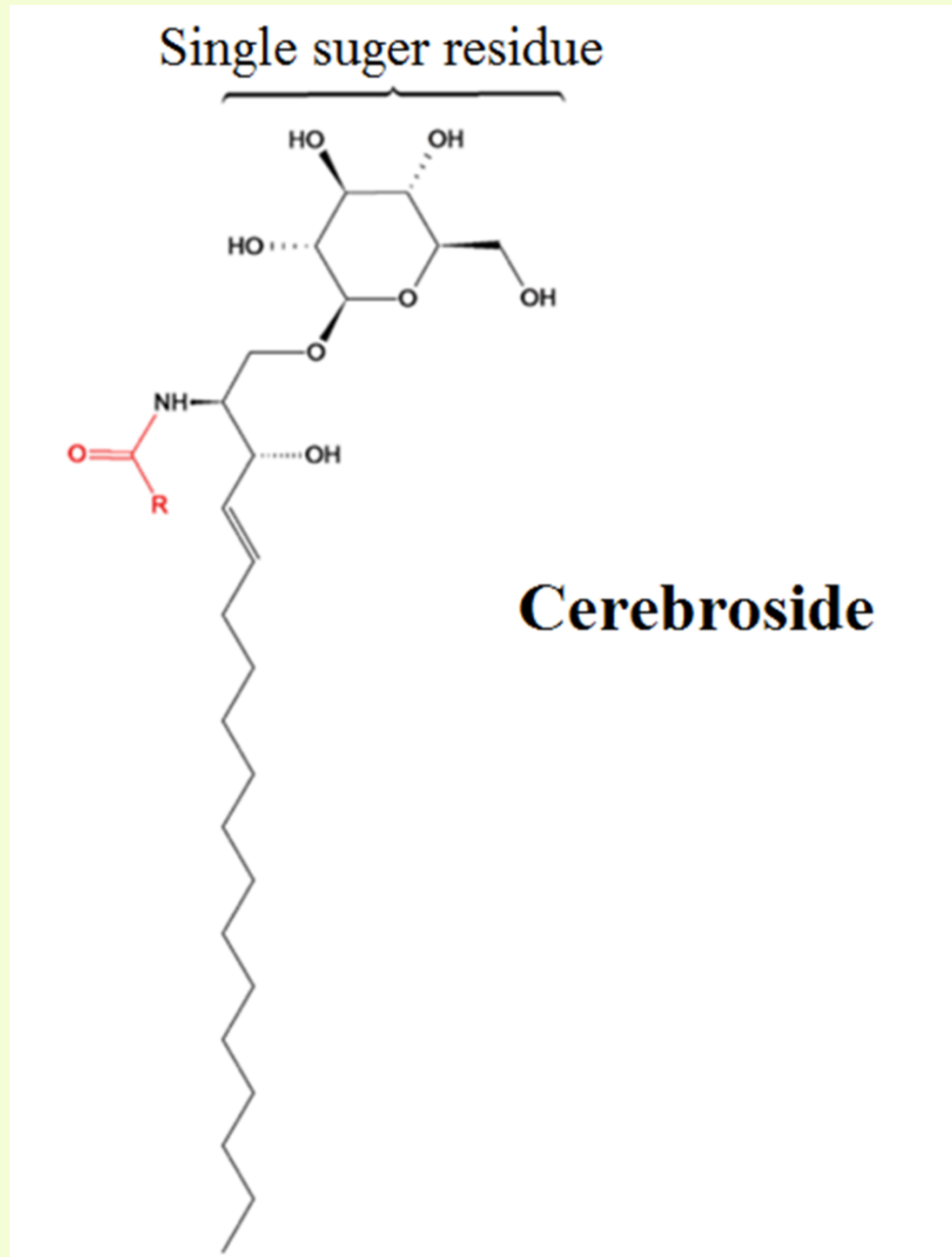
# Sphingolipids

اسفنگولسیدها

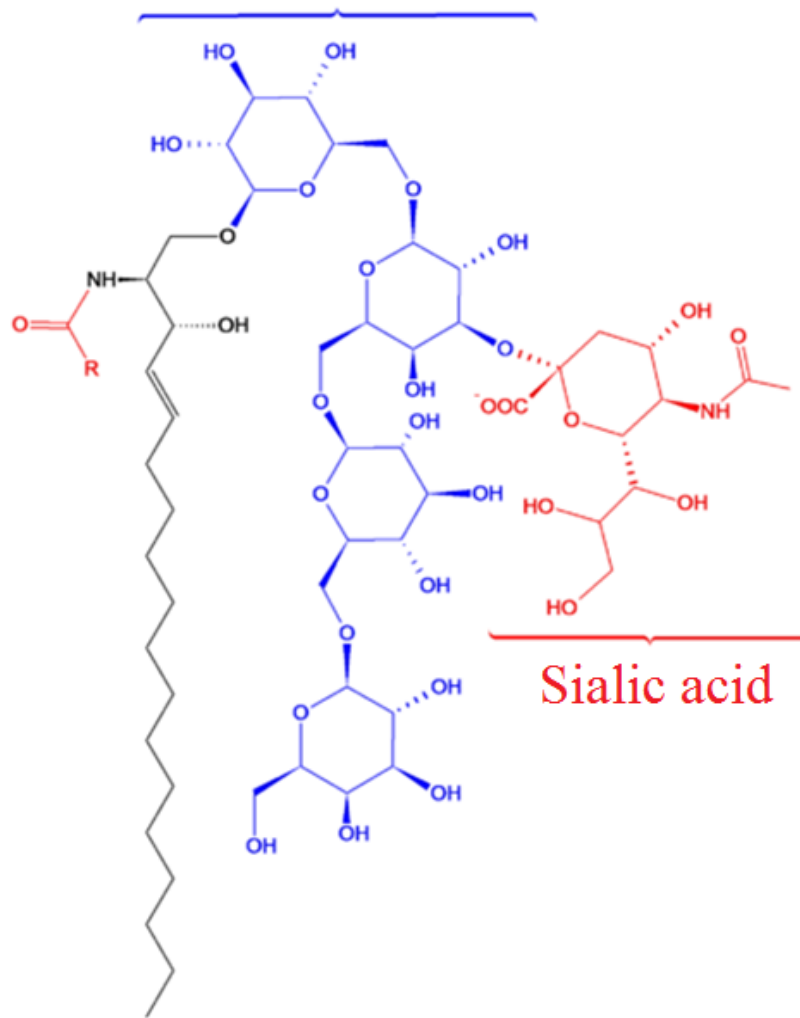
# Sphingosine



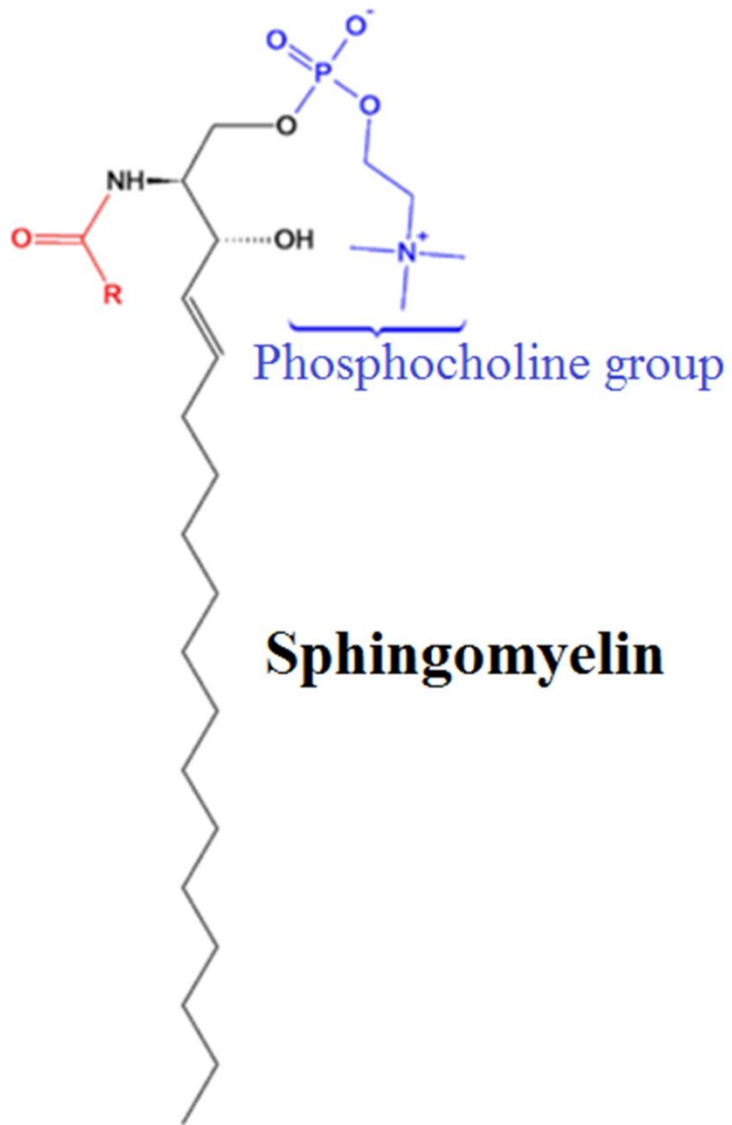




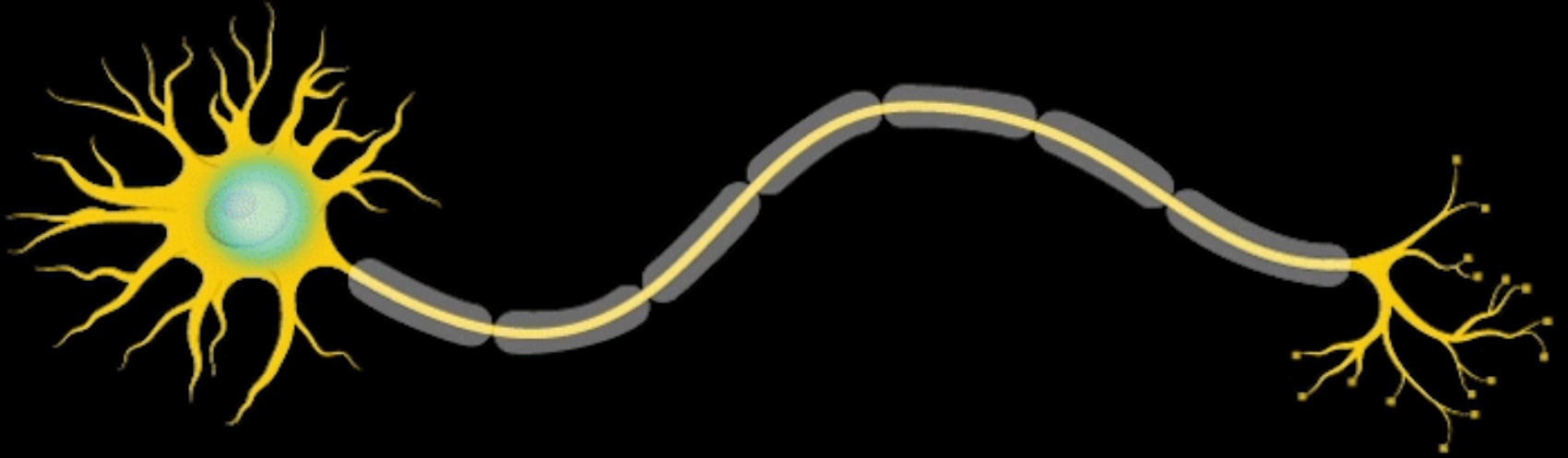
## Oligosaccharide residue



## A ganglioside



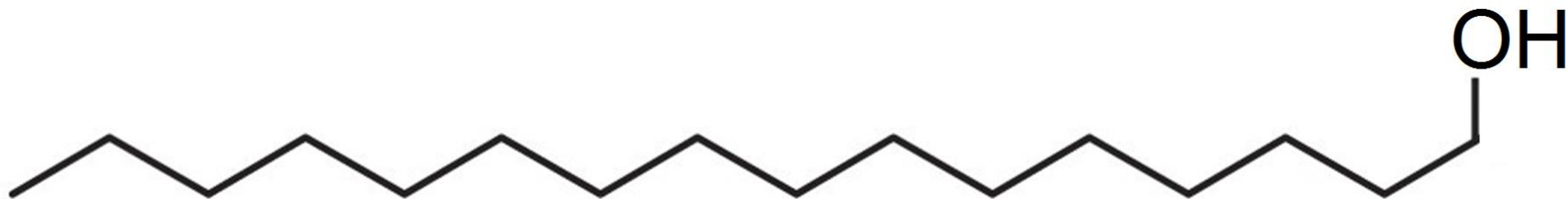
# اسٹیکو میلین

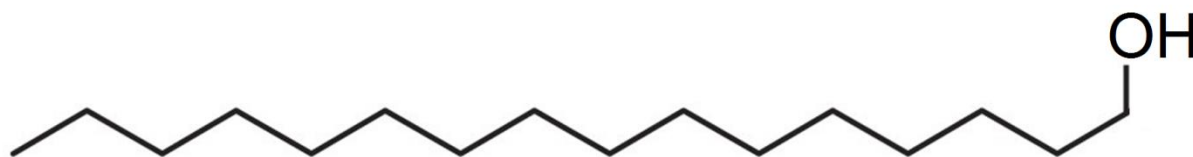


Wax

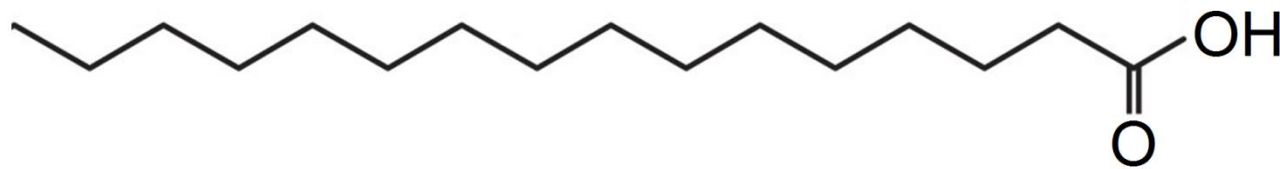


# Cetyl Alcohol



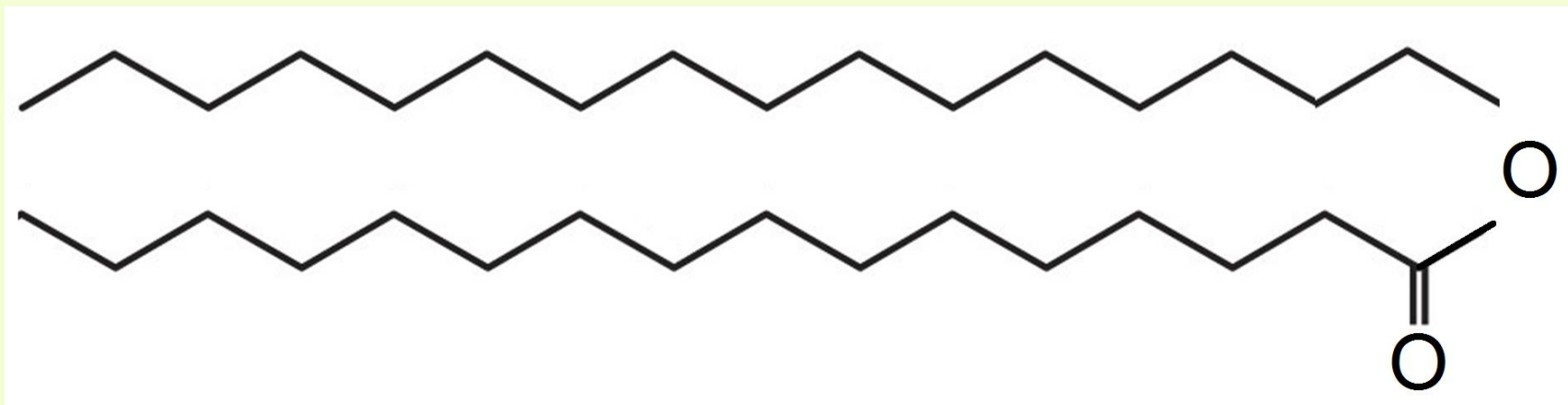


Cetyl Alcohol

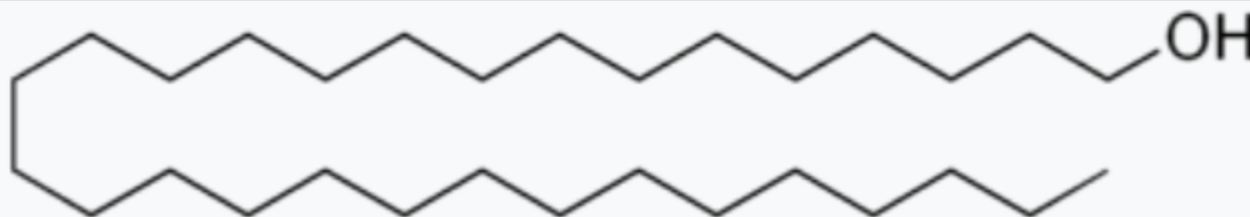


Palmitic acid

# Cetyl Palmitate



# Triaccontanol



## Names

### IUPAC name

Triaccontan-1-ol

### Other names

1-Triaccontanol

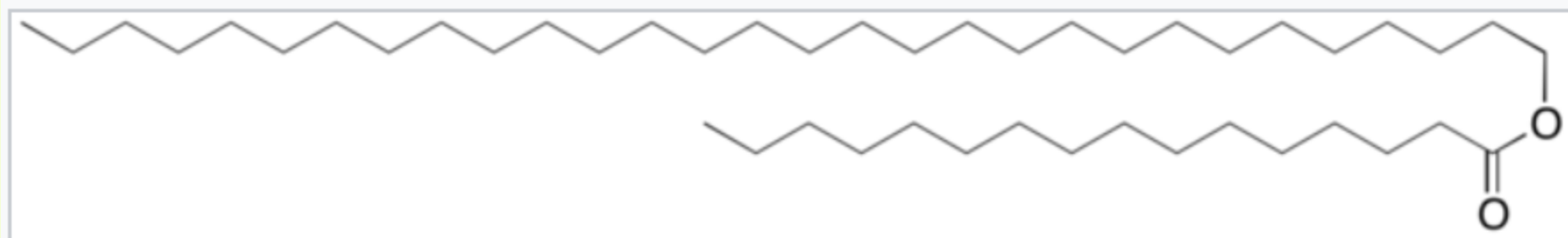
*n*-Triaccontanol

Melissyl alcohol

Myricyl alcohol

# Beeswax

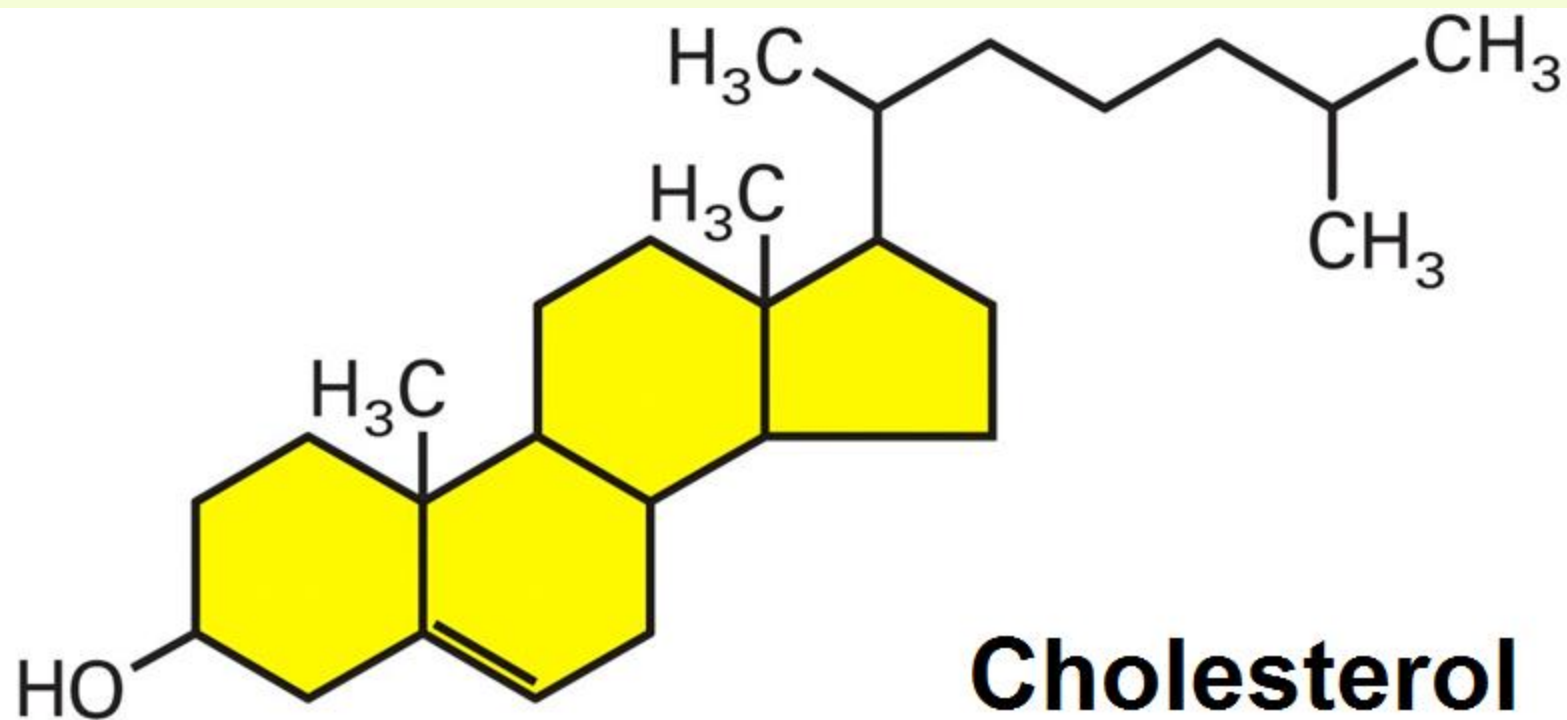
# موم زنبور عسل

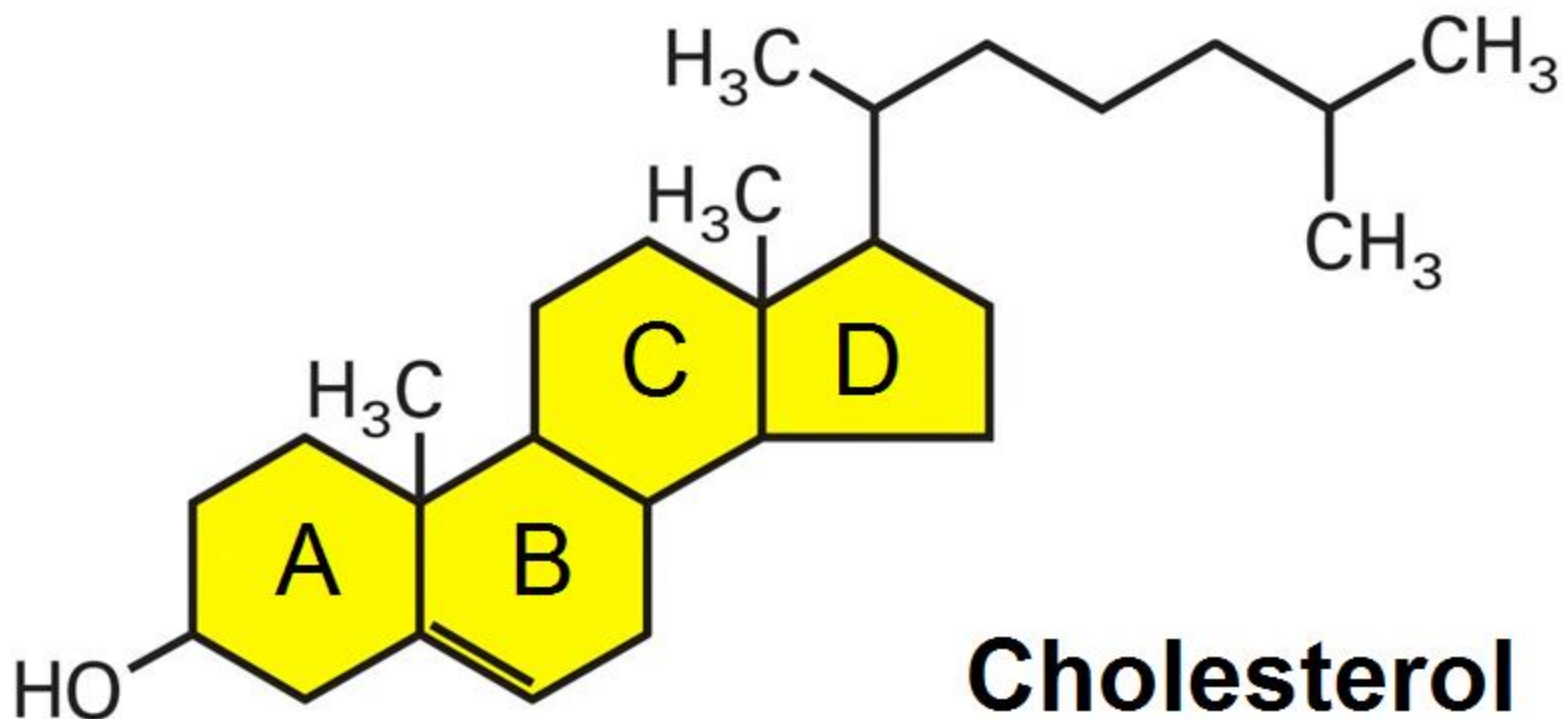


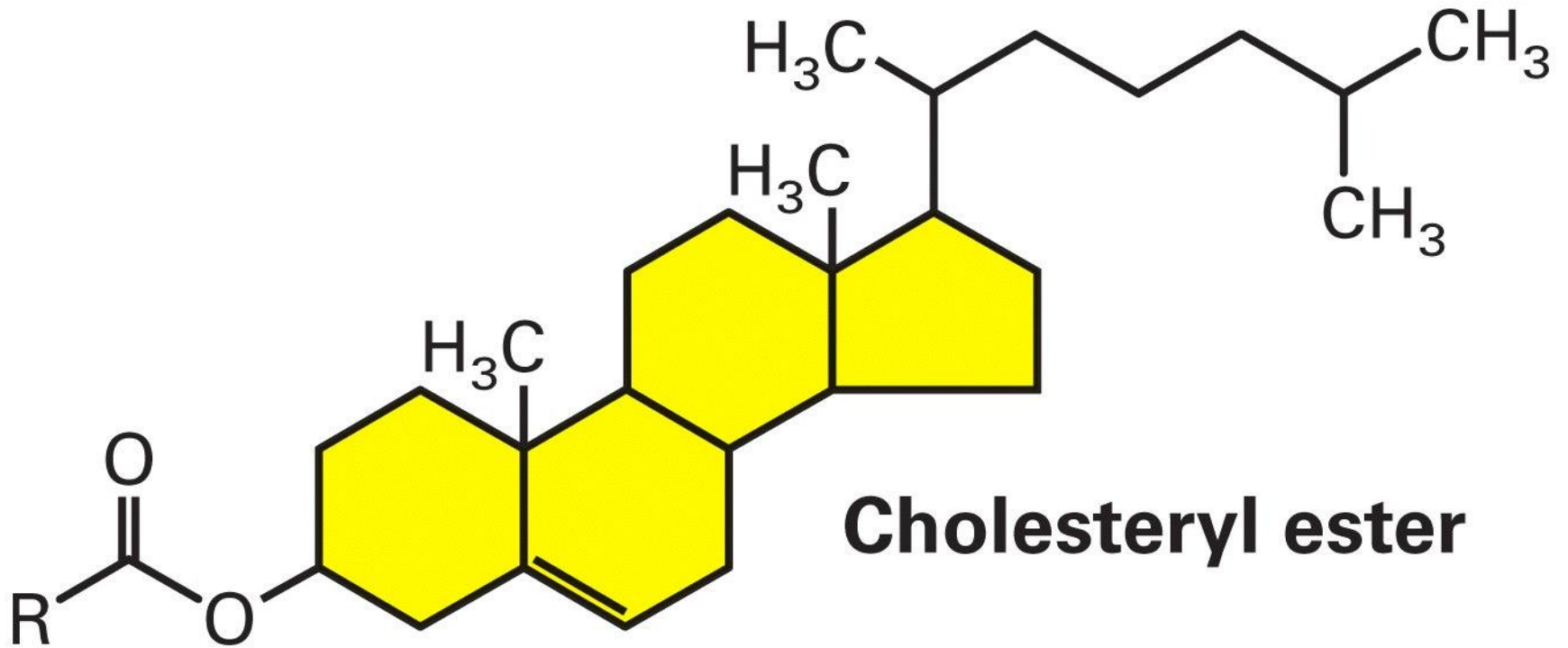
Triacontanyl palmitate

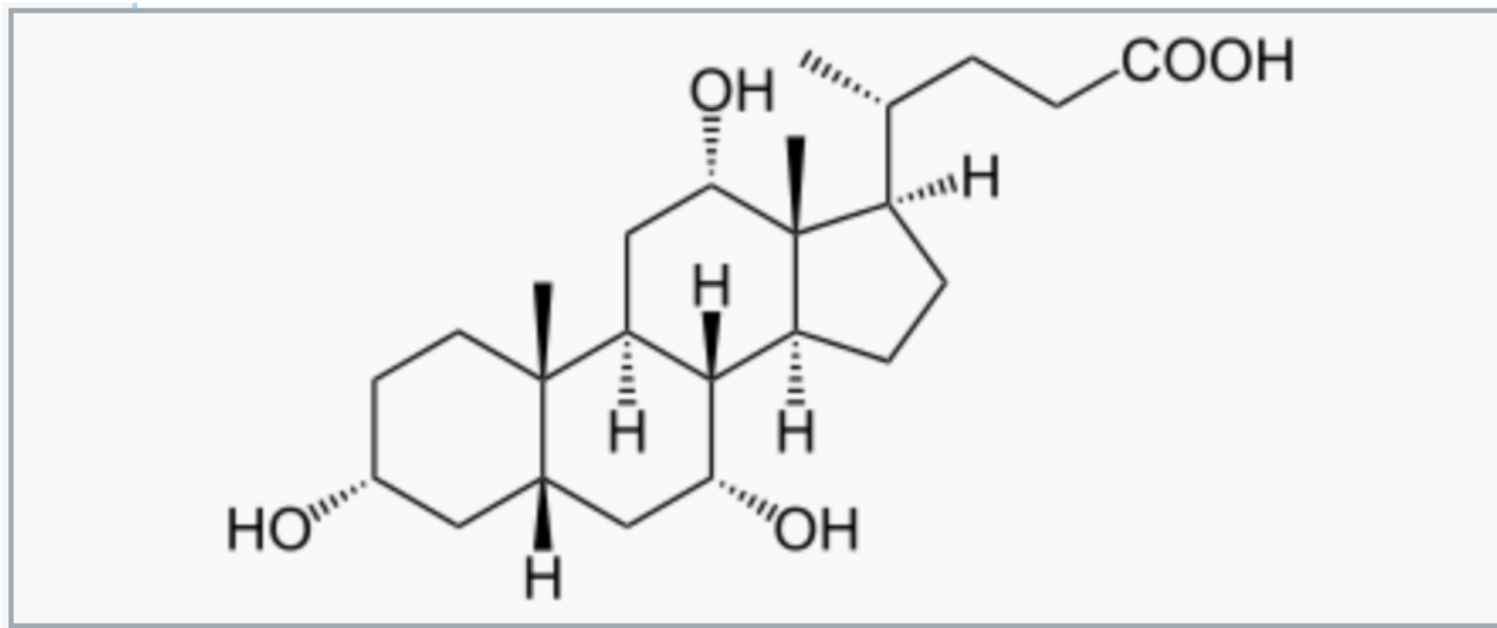
کلسترول استرها

# Cholesterol Esters

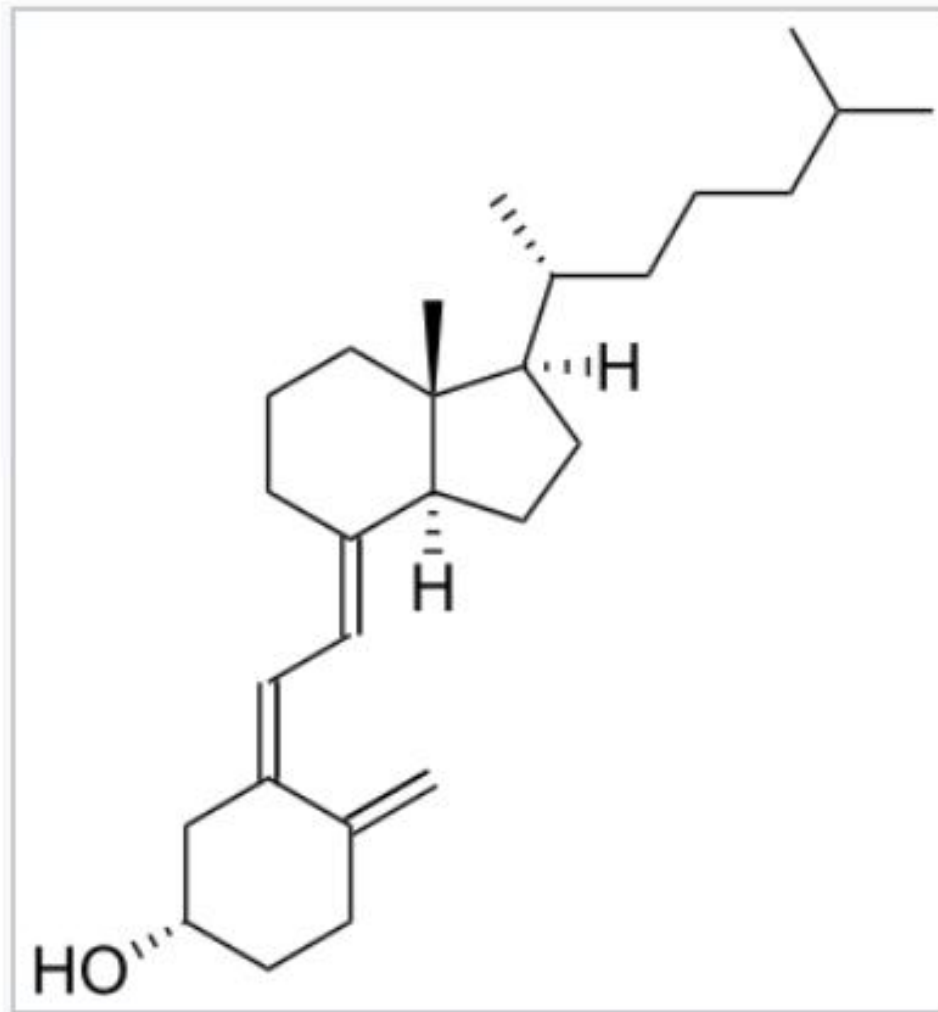




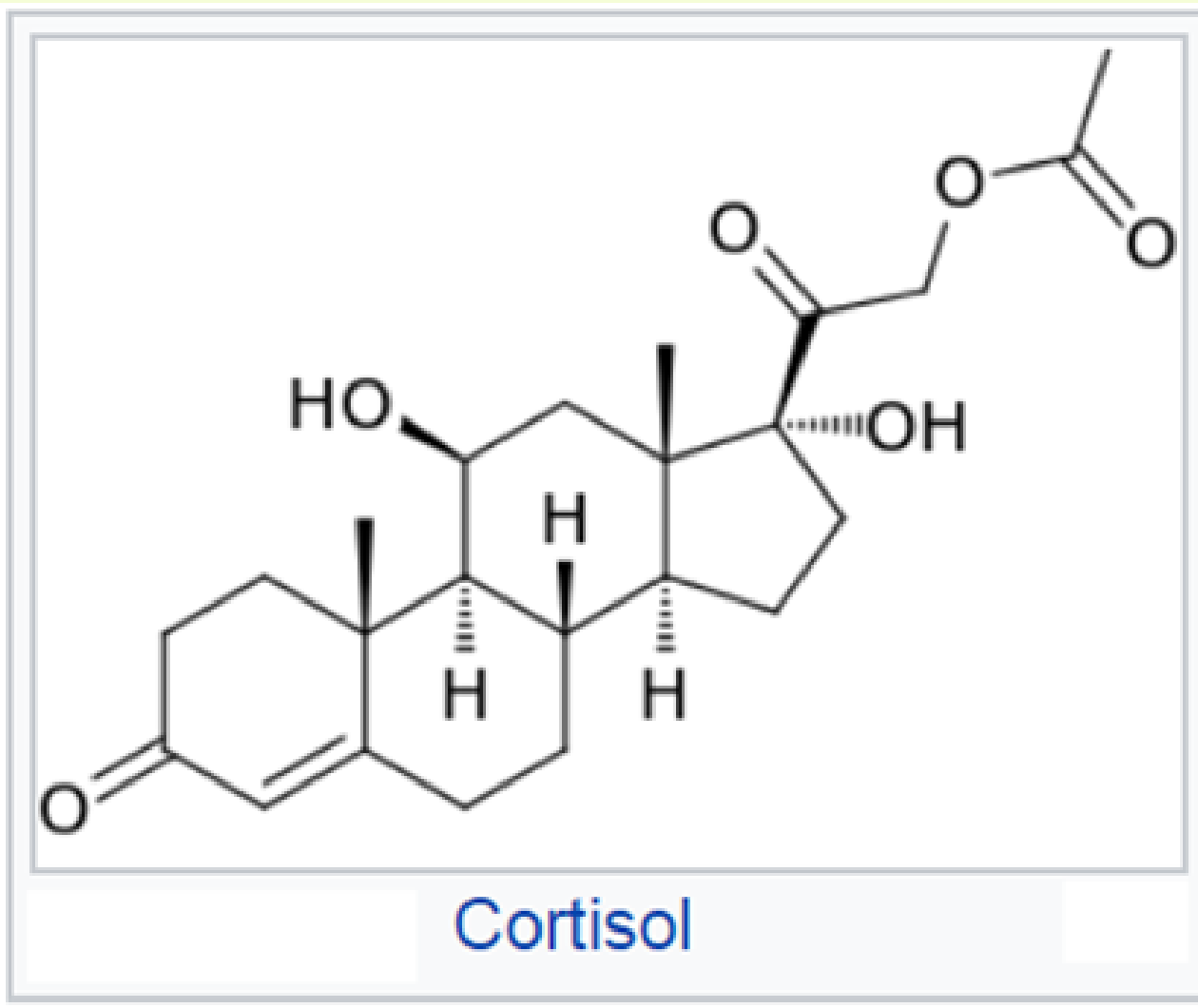


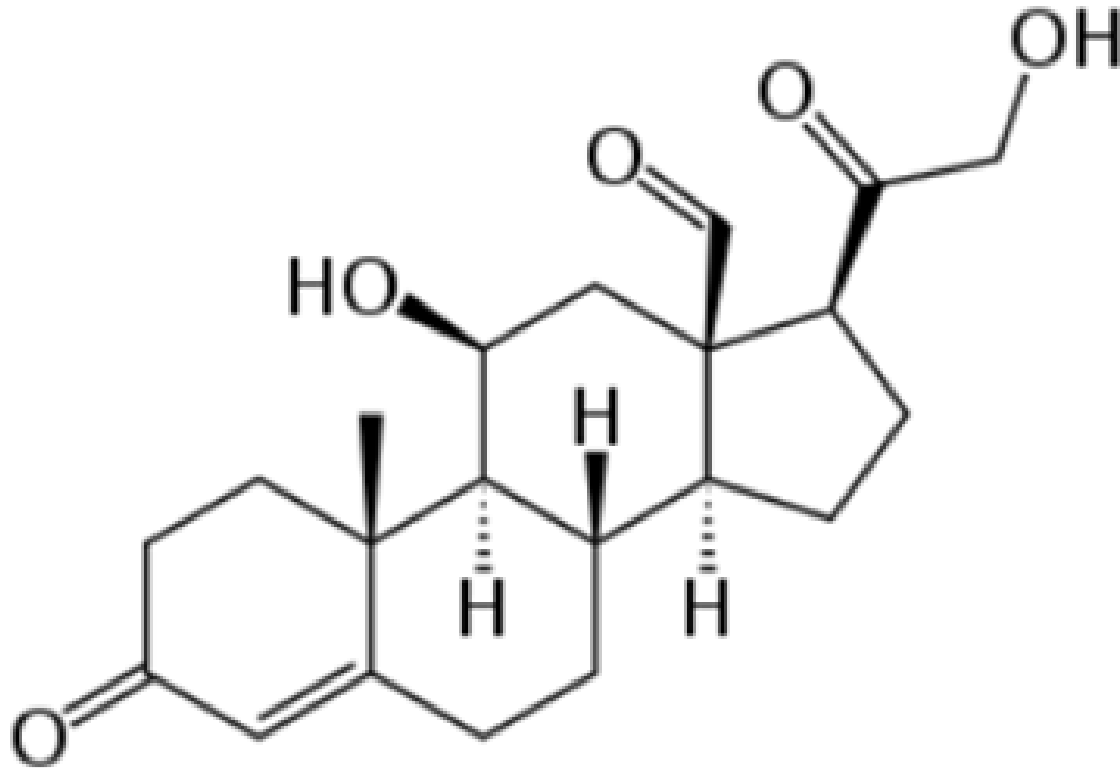


**Cholic acid**

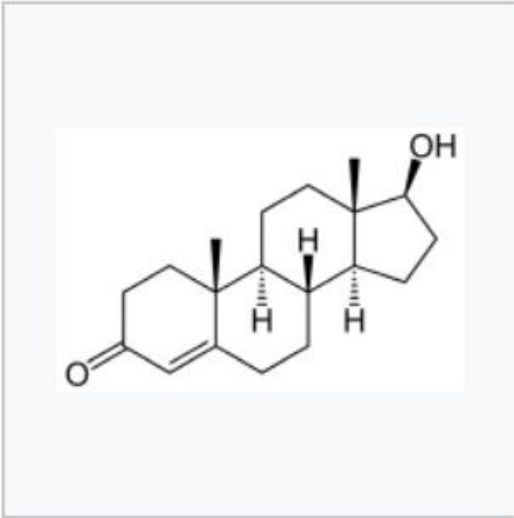


Cholecalciferol (vitamin D<sub>3</sub>)

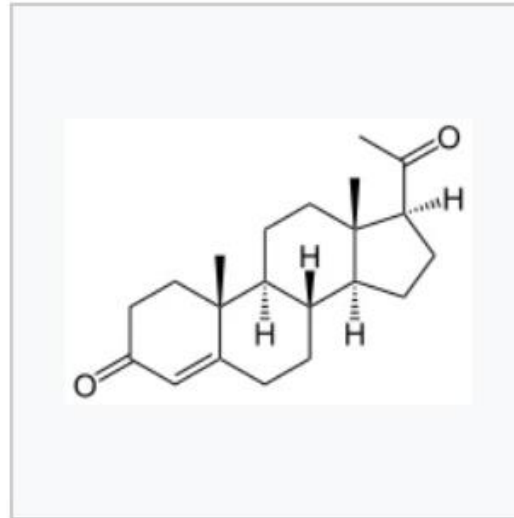




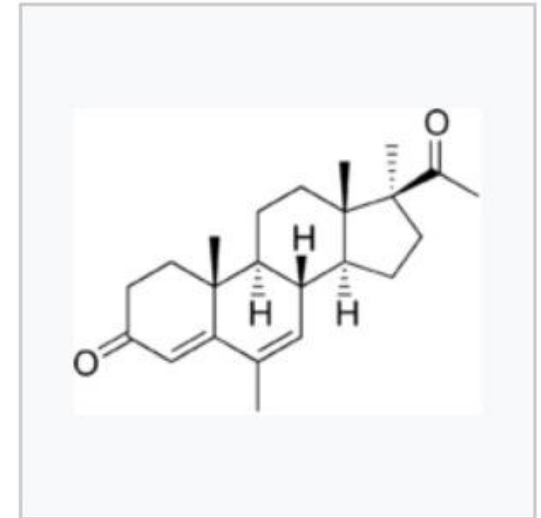
**Aldosterone**



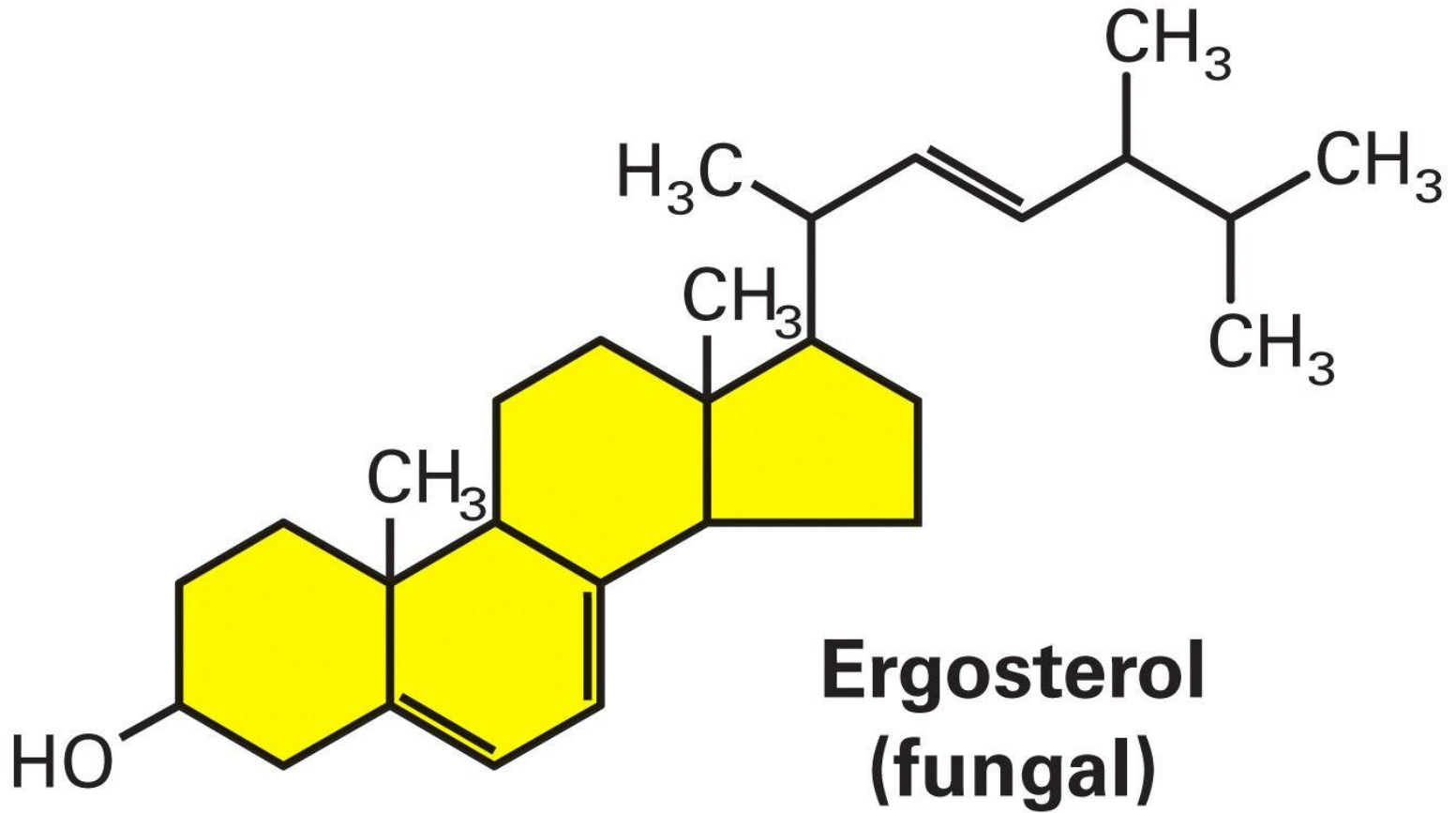
Testosterone, the

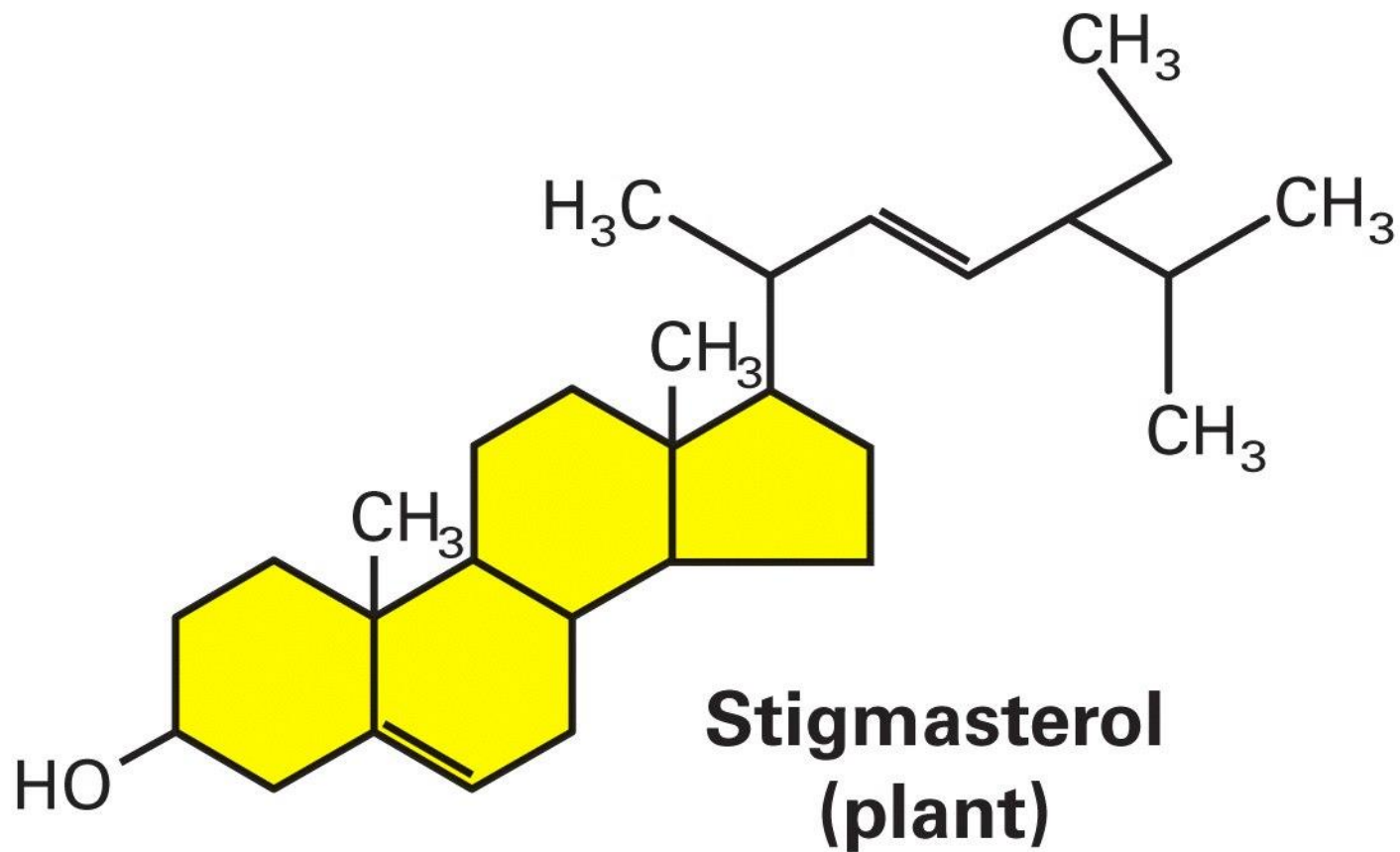


Progesterone, a steroid hormone involved in the female menstrual cycle, pregnancy, and embryogenesis

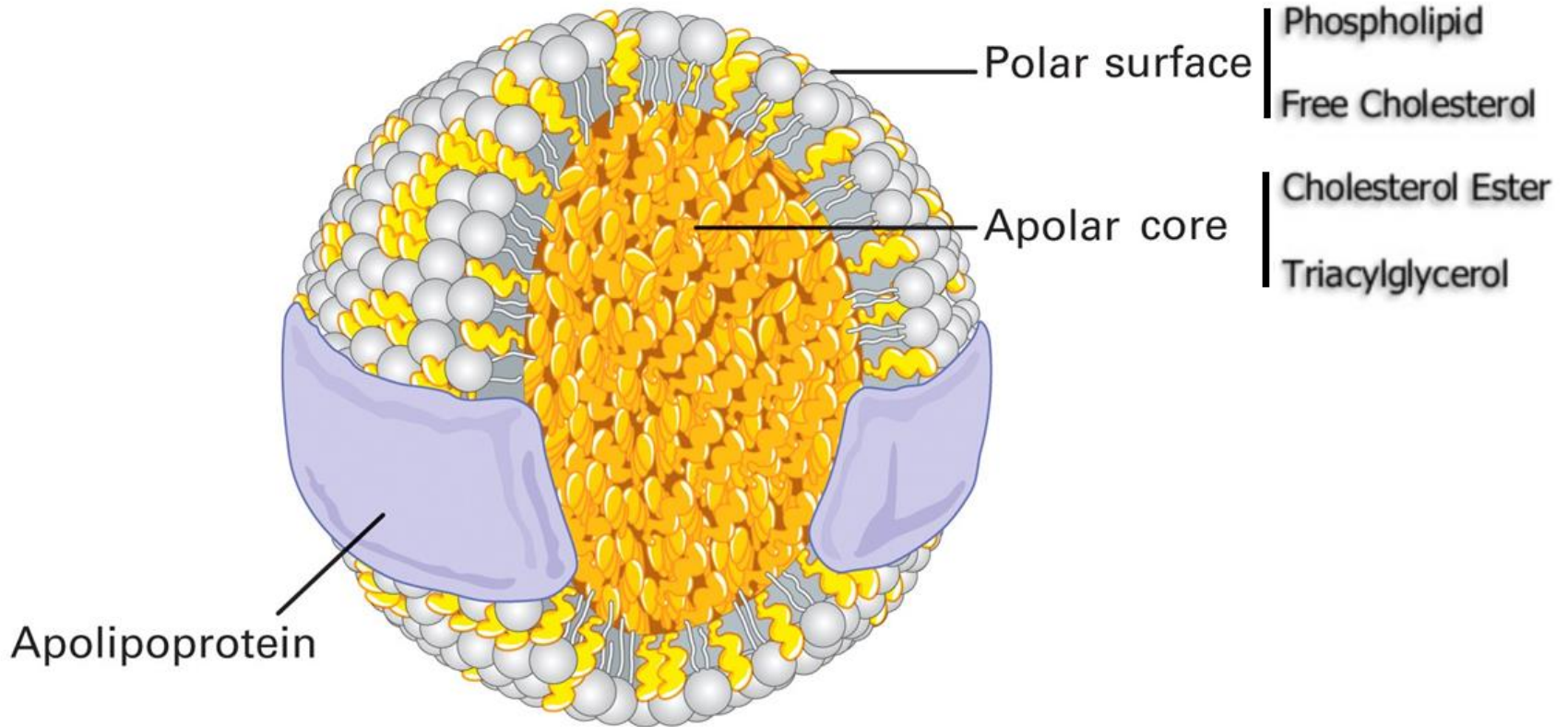


Medrogestone, a synthetic drug with effects similar to progesterone





# Lipoprotein



# Lipoproteins

## Chylomicrons

# Lipoproteins

**Chylomicrons**

**VLDL: Very Low Density Lipoproteins**

# Lipoproteins

**Chylomicrons**

**VLDL: Very Low Density Lipoproteins**

**IDL: Intermediate Density Lipoproteins**

# Lipoproteins

**Chylomicrons**

**VLDL: Very Low Density Lipoproteins**

**IDL: Intermediate Density Lipoproteins**

**LDL: Low Density Lipoproteins**

# Lipoproteins

## Chylomicrons

**VLDL:** Very Low Density Lipoproteins

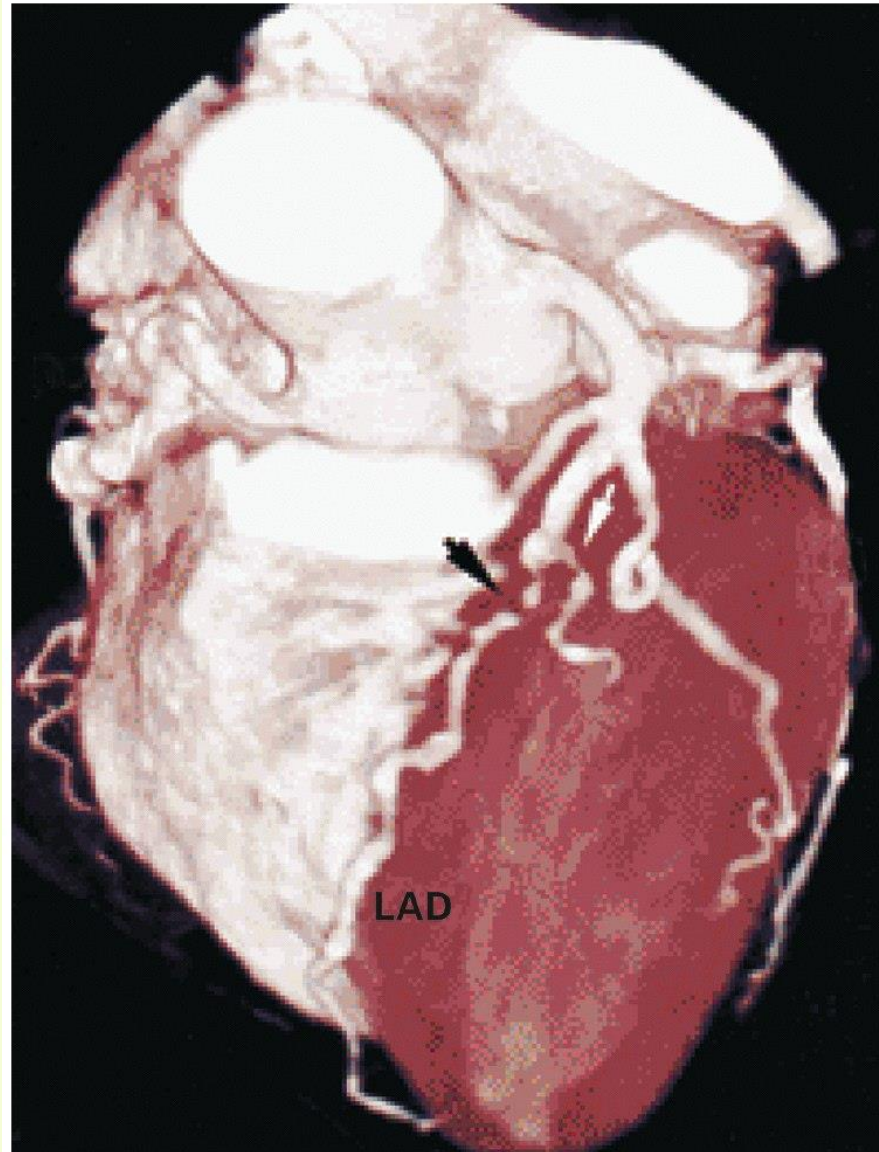
**IDL:** Intermediate Density Lipoproteins

**LDL:** Low Density Lipoproteins

**HDL:** High Density Lipoproteins

# Lipoproteins

<b>Class</b>	<b>Density (g/mL)</b>	<b>Diameter (nm)</b>	<b>Protein (%)</b>	<b>Cholesterol (%)</b>	<b>Phospholipid (%)</b>	<b>Triacylglycerol &amp; Cholesterol ester (%)</b>
<b>VLDL and Chylomicron</b>	0.95–1.006	30–80	10	22	18	50
<b>IDL</b>	1.006–1.019	25–50	18	29	22	31
<b>LDL</b>	1.019–1.063	18–28	25	46-50	21-22	8-10
<b>HDL</b>	>1.063	5–15	33	30	29	4-8





## **Lipids: Alcohol+ Fatty acid**

**1. Glycerol:** Acylglycerol, glyceride

**2. Sphingosine:** Sphingolipids

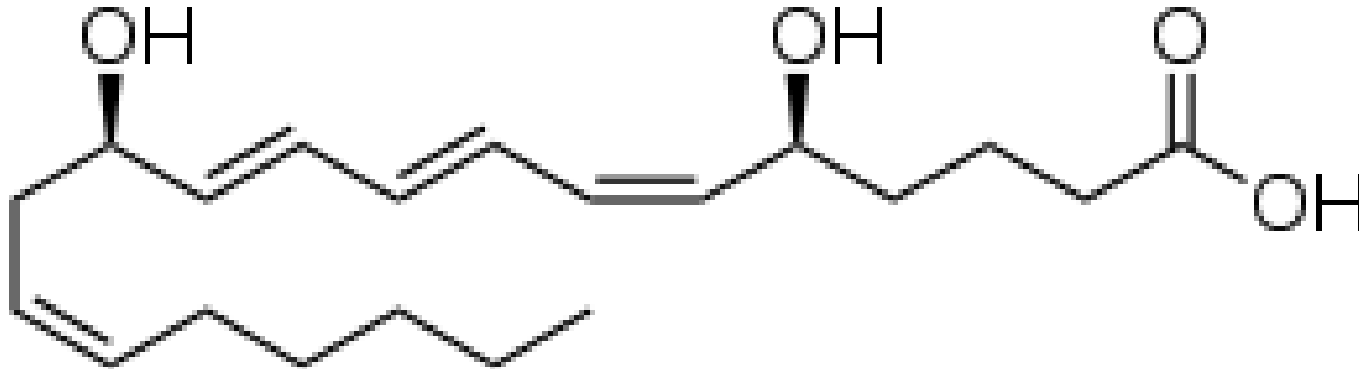
**3. Fatty Alcohols:** Wax

**4. Cholesterol:** Cholesterol esters

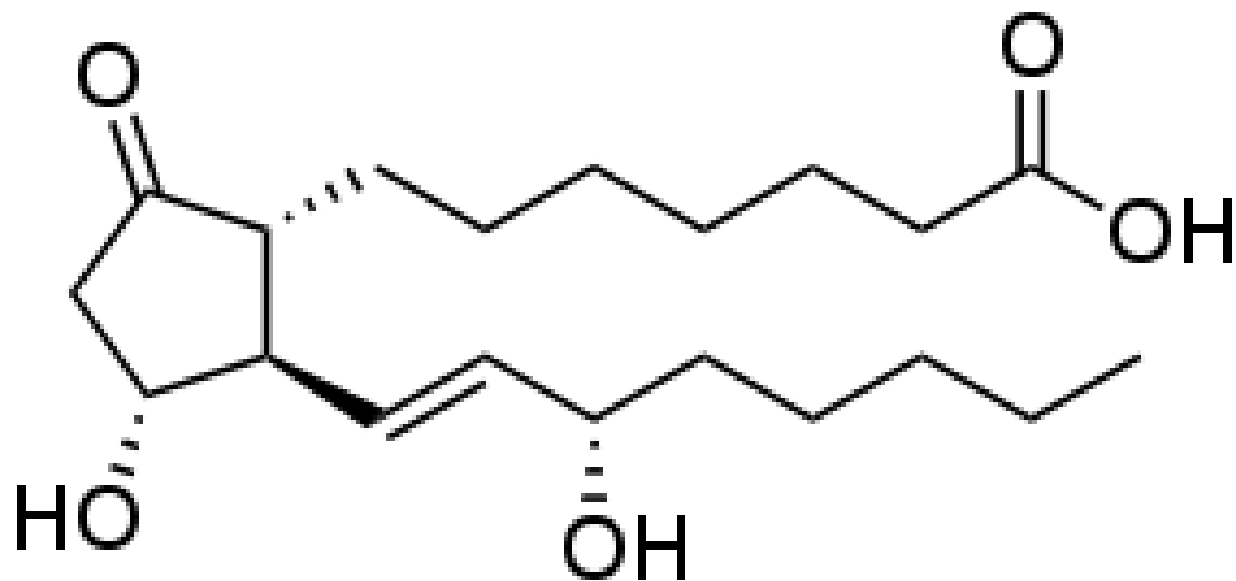
**Fatty acid derivatives:** Eicosanoids, Terpens



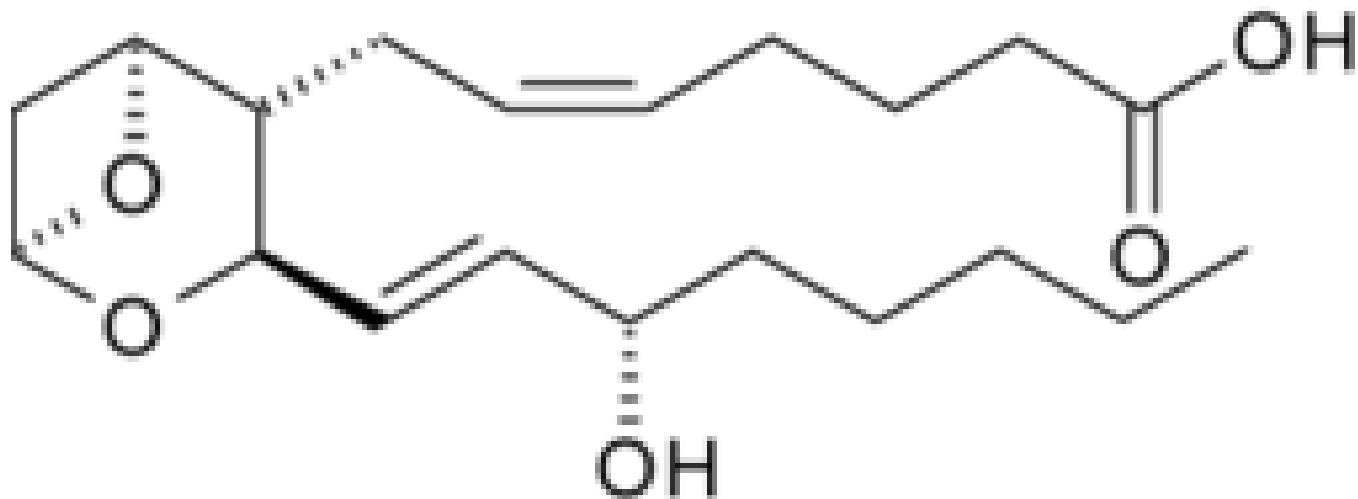
**Arachidonic acid**



# Leukotriene



Prostaglandin



# Thromboxane

برای مطالعه بیشتر به سایت دز آزما مراجعه فرمائید:

[www.dezazma.com](http://www.dezazma.com)