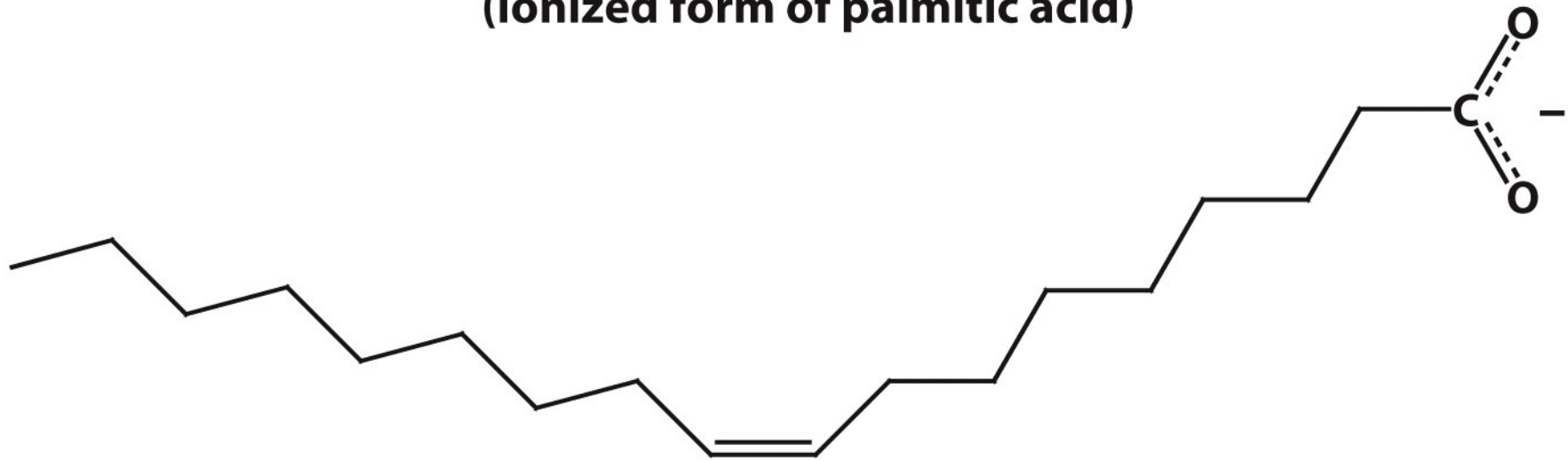
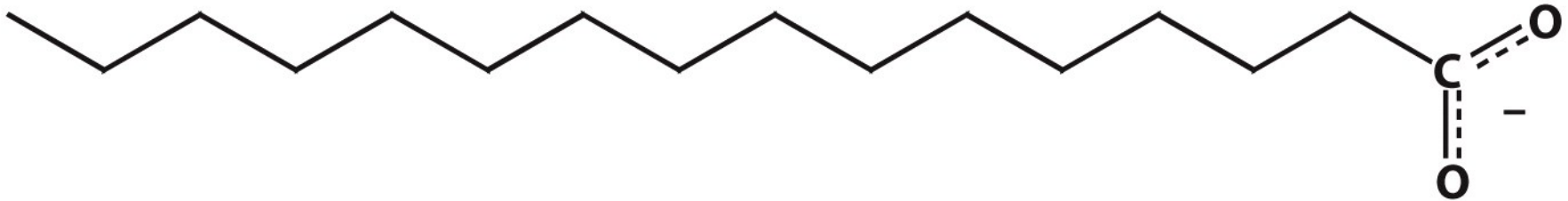


Palmitate
(ionized form of palmitic acid)

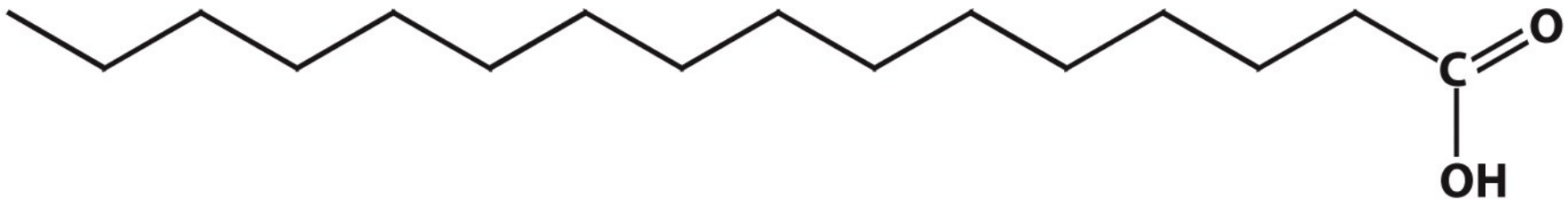


Oleate
(ionized form of oleic acid)

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Palmitate
(ionized form of palmitic acid)

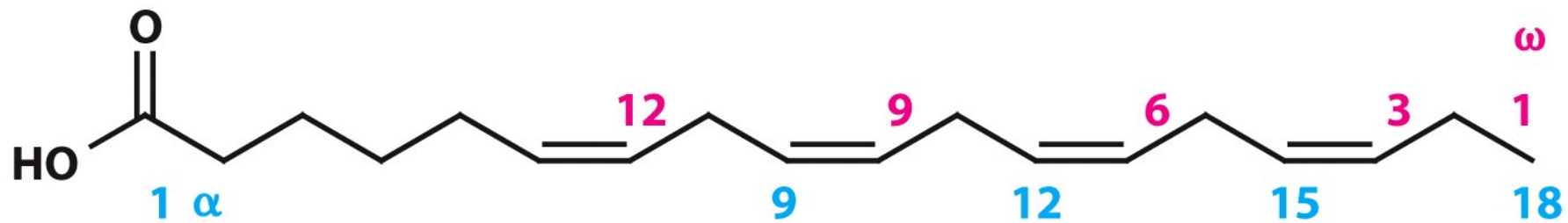


Palmitic acid



Methylene group

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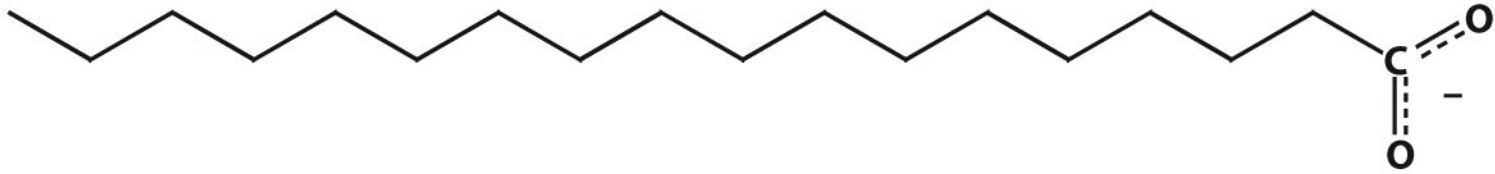
Table 11.1 Some naturally occurring fatty acids in animals

Number of carbon atoms	Number of double bonds	Common name	Systematic name	Formula
12	0	Laurate	<i>n</i> -Dodecanoate	$\text{CH}_3(\text{CH}_2)_{10}\text{COO}^-$
14	0	Myristate	<i>n</i> -Tetradecanoate	$\text{CH}_3(\text{CH}_2)_{12}\text{COO}^-$
16	0	Palmitate	<i>n</i> -Hexadecanoate	$\text{CH}_3(\text{CH}_2)_{14}\text{COO}^-$
18	0	Stearate	<i>n</i> -Octadecanoate	$\text{CH}_3(\text{CH}_2)_{16}\text{COO}^-$
20	0	Arachidate	<i>n</i> -Eicosanoate	$\text{CH}_3(\text{CH}_2)_{18}\text{COO}^-$
22	0	Behenate	<i>n</i> -Docosanoate	$\text{CH}_3(\text{CH}_2)_{20}\text{COO}^-$
24	0	Lignocerate	<i>n</i> -Tetracosanoate	$\text{CH}_3(\text{CH}_2)_{22}\text{COO}^-$
16	1	Palmitoleate	<i>cis</i> - Δ^9 -Hexadecenoate	$\text{CH}_3(\text{CH}_2)_5\text{CH}=\text{CH}(\text{CH}_2)_7\text{COO}^-$
18	1	Oleate	<i>cis</i> - Δ^9 -Octadecenoate	$\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{COO}^-$
18	2	Linoleate	<i>cis, cis</i> - Δ^9, Δ^{12} -Octadecadienoate	$\text{CH}_3(\text{CH}_2)_4(\text{CH}=\text{CHCH}_2)_2(\text{CH}_2)_6\text{COO}^-$
18	3	Linolenate	<i>all-cis</i> - $\Delta^9, \Delta^{12}, \Delta^{15}$ -Octadecatrienoate	$\text{CH}_3\text{CH}_2(\text{CH}=\text{CHCH}_2)_3(\text{CH}_2)_6\text{COO}^-$
20	4	Arachidonate	<i>all-cis</i> $\Delta^5, \Delta^8, \Delta^{11}, \Delta^{14}$ -Eicosatetraenoate	$\text{CH}_3(\text{CH}_2)_4(\text{CH}=\text{CHCH}_2)_4(\text{CH}_2)_2\text{COO}^-$

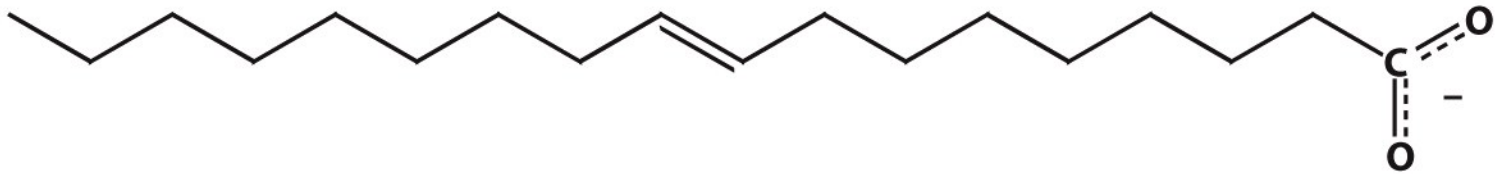
Table 11.1

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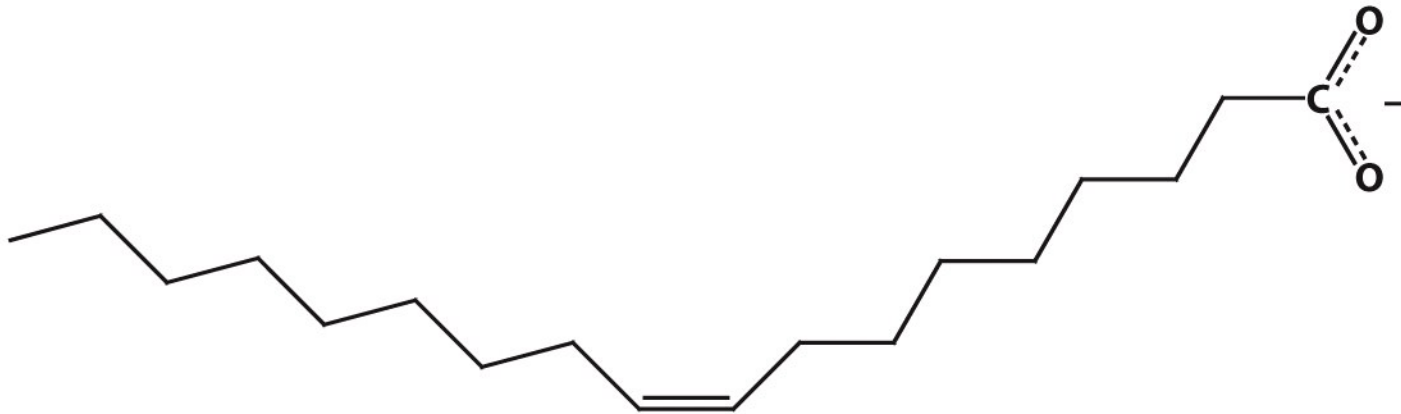
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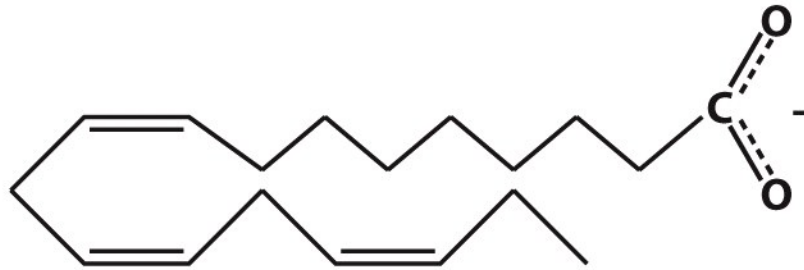
Stearate



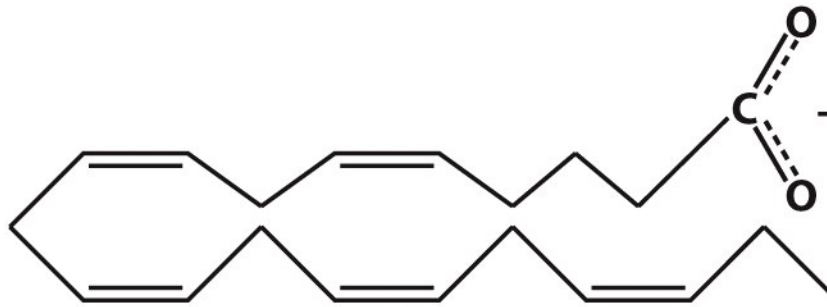
***trans*-Oleate**



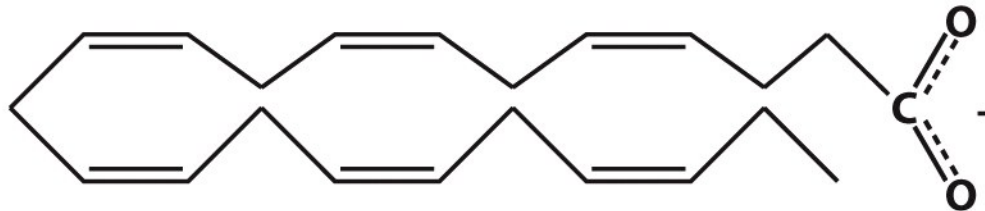
***cis*-Oleate**



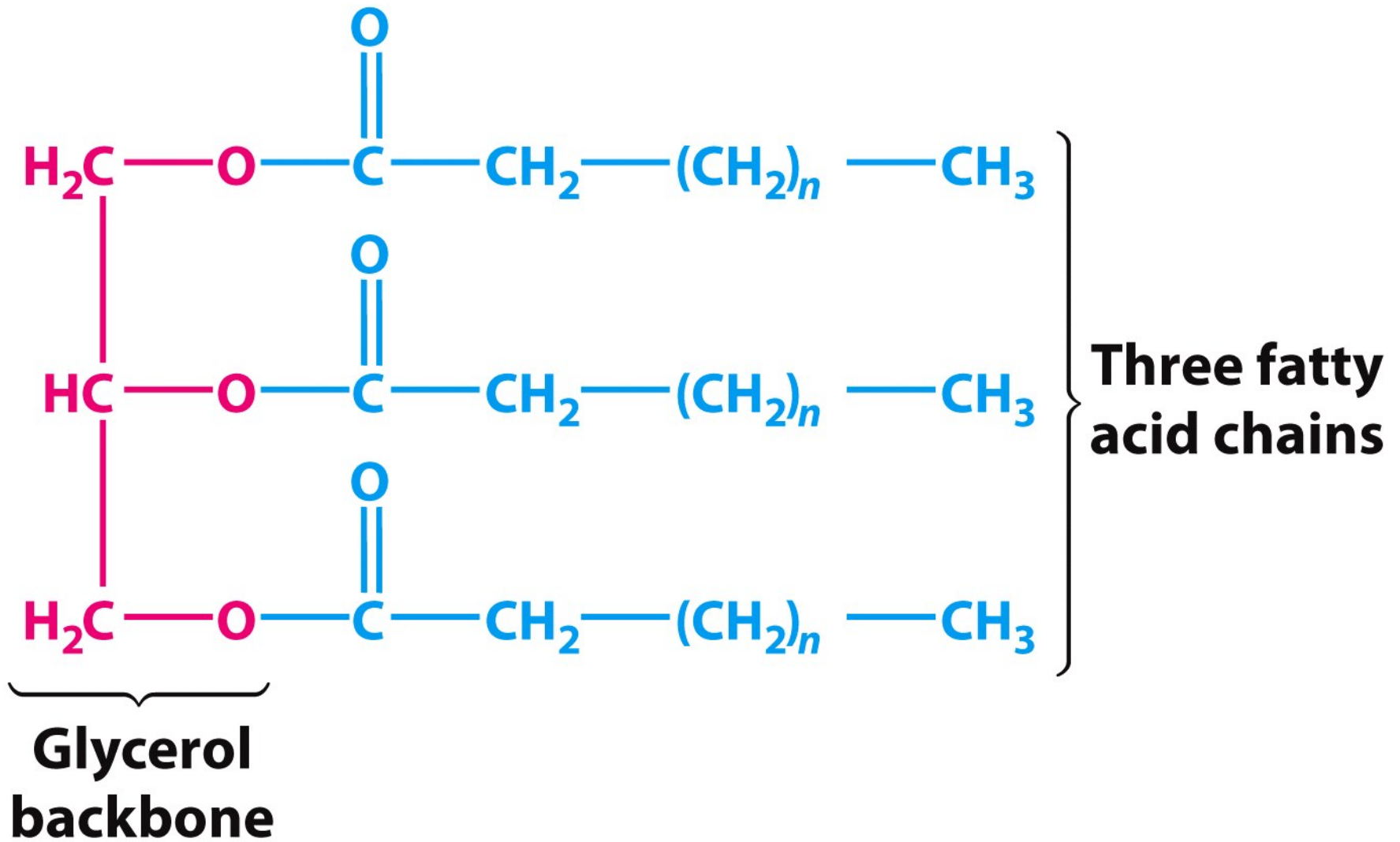
α -Linolenate



Eicosapentaenoate (EPA)



Docosahexaenoate (DHA)



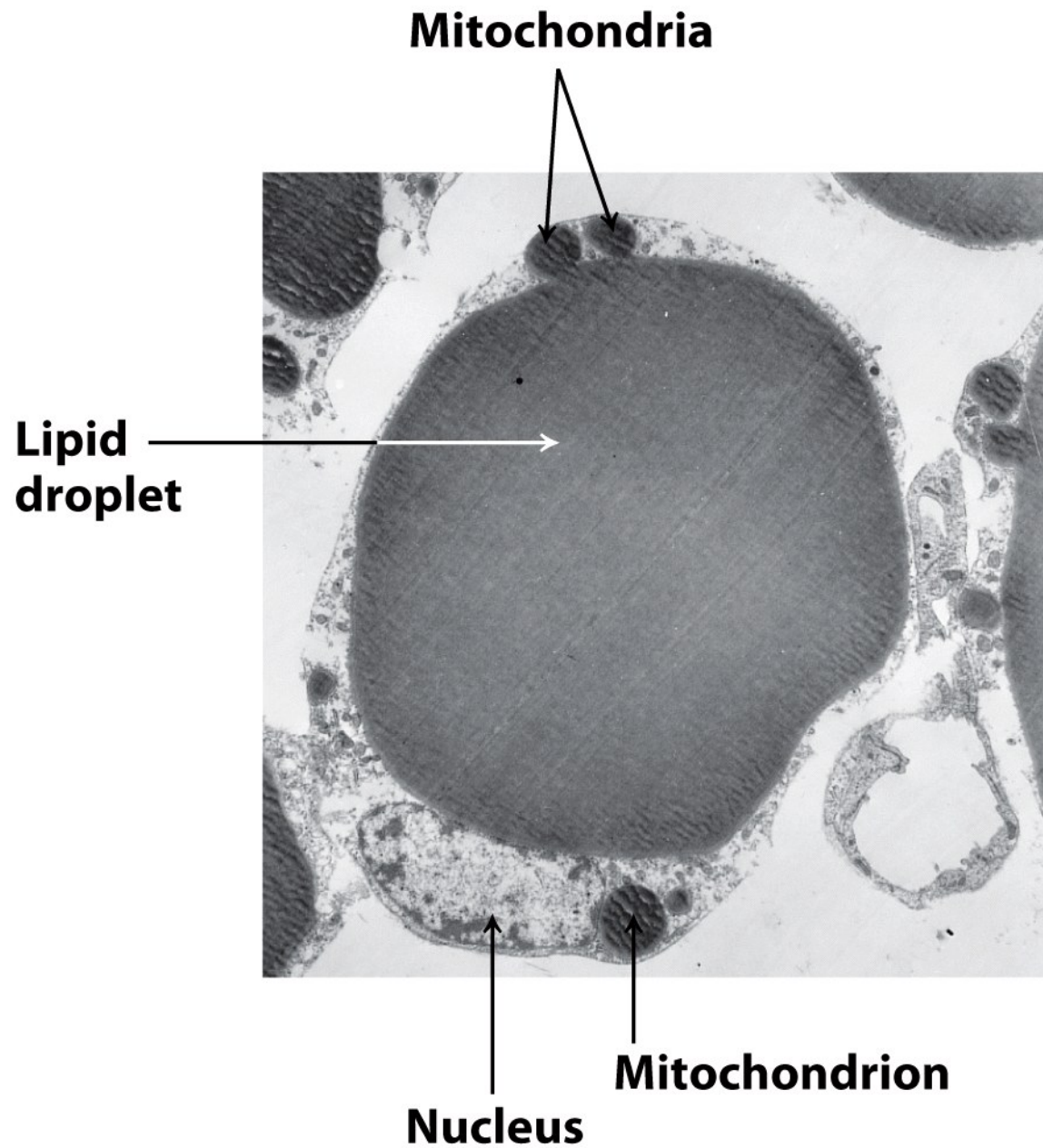


Figure 11.3
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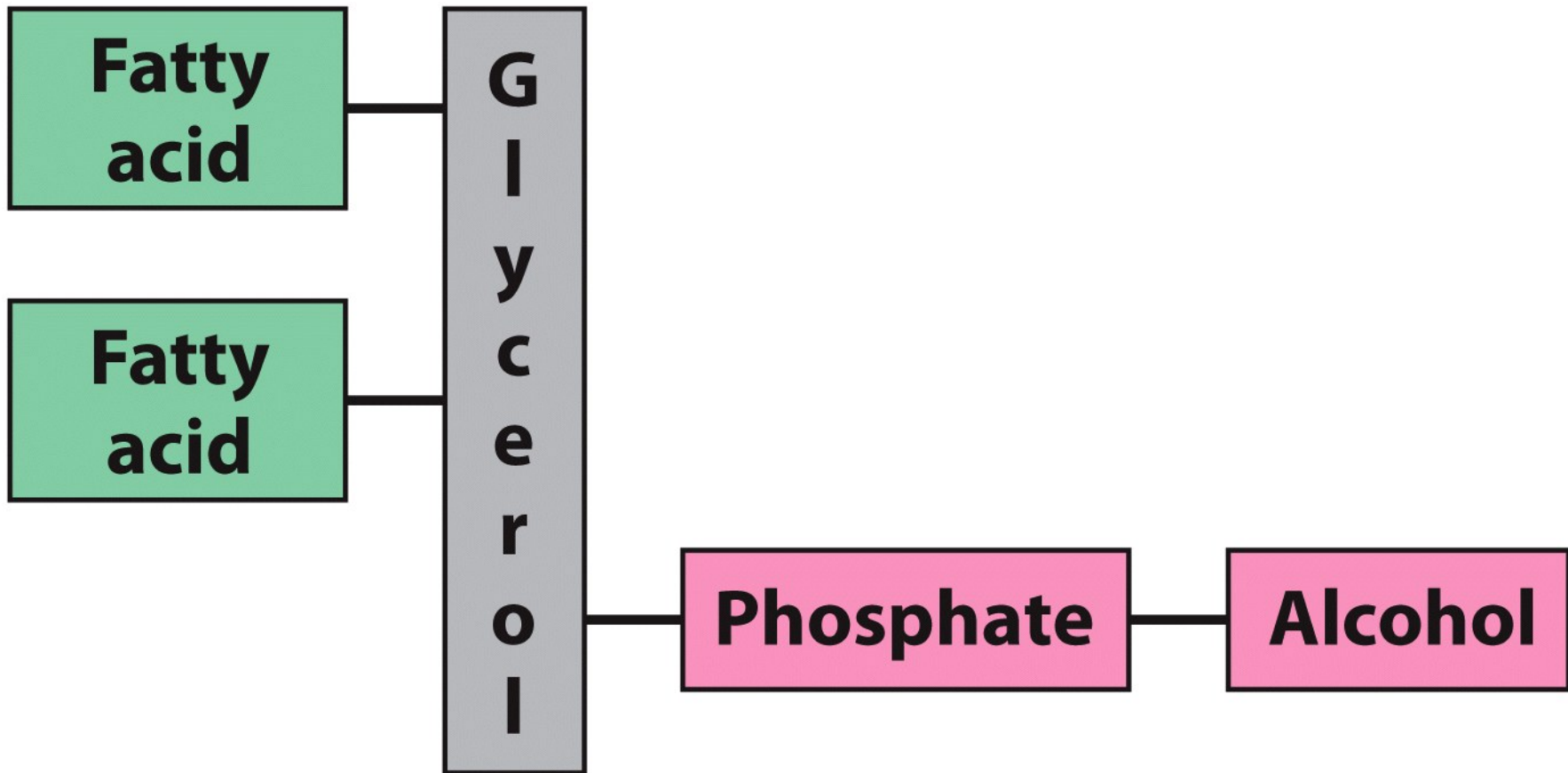
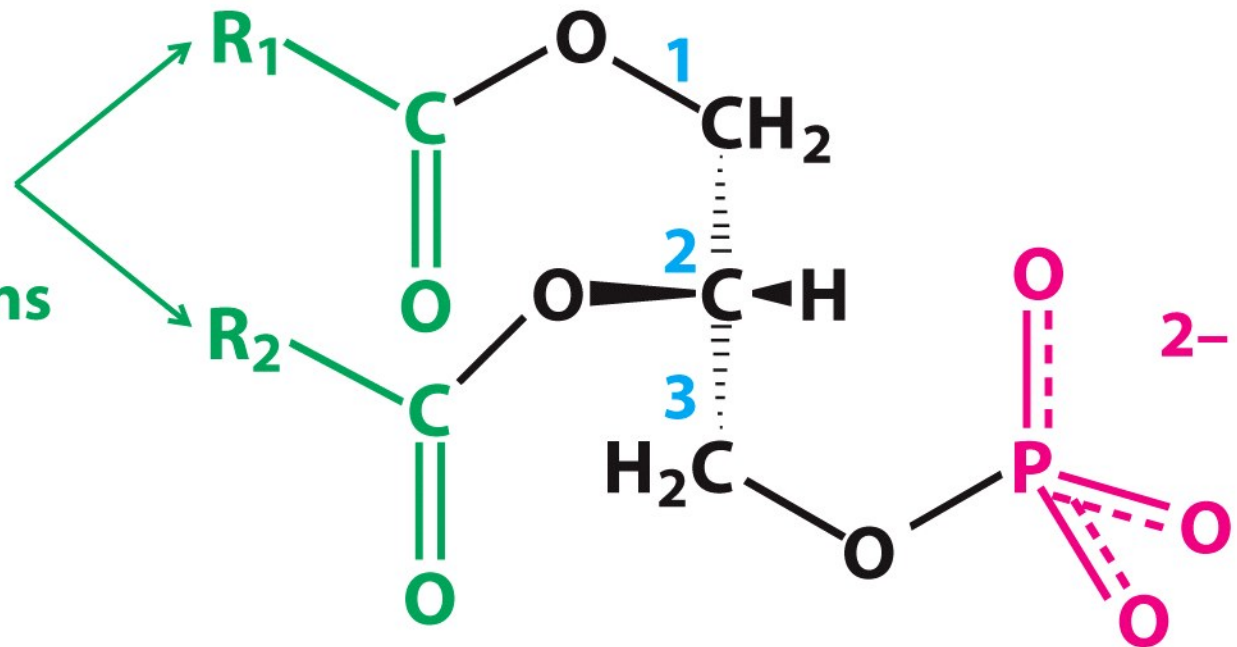


Figure 11.5
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Acyl groups
with fatty acid
hydrocarbon chains

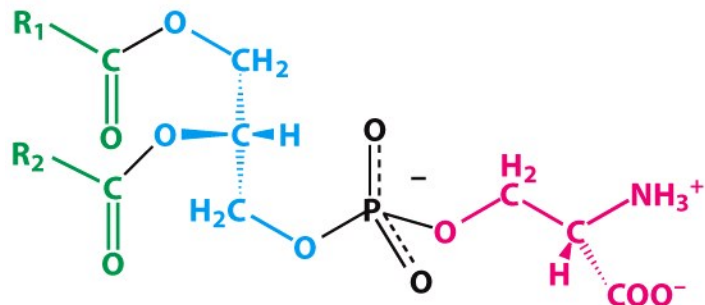


Phosphatidate (Diacylglycerol 3-phosphate)

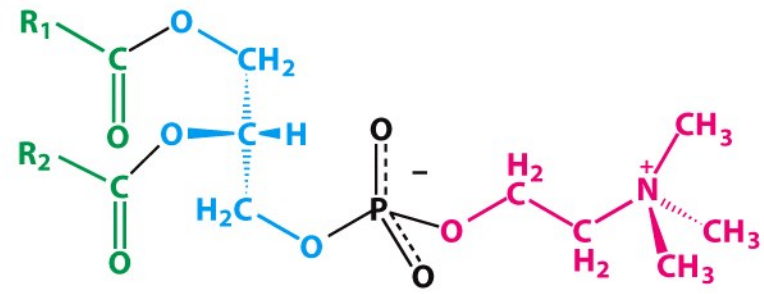
Figure 11.6

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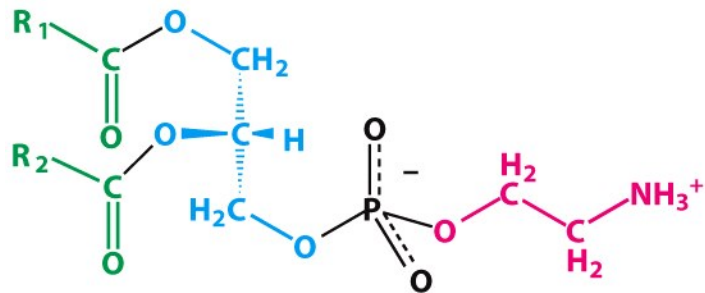
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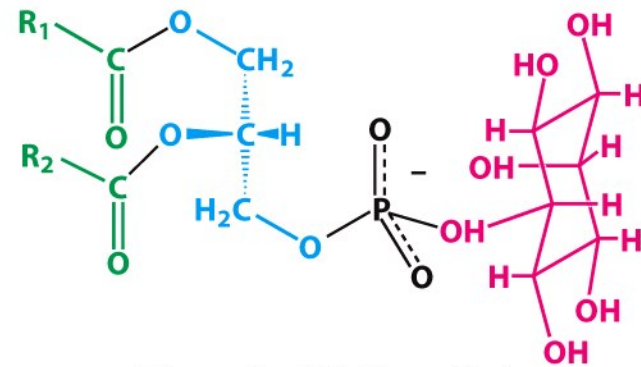
Phosphatidylserine



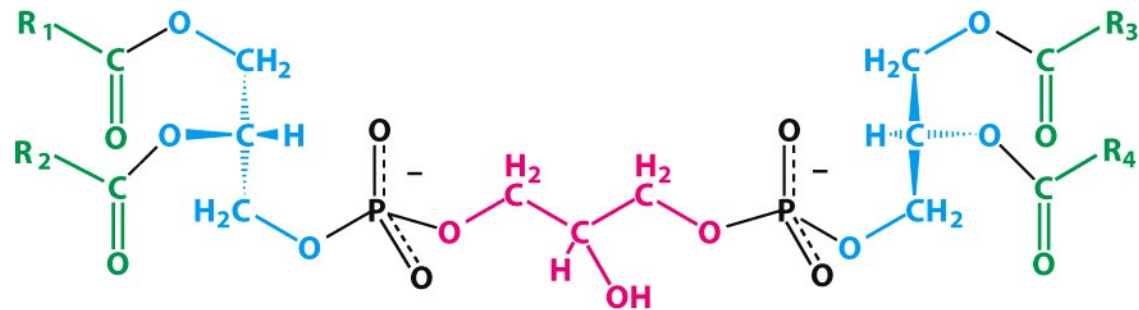
Phosphatidylcholine



Phosphatidylethanolamine



Phosphatidylinositol

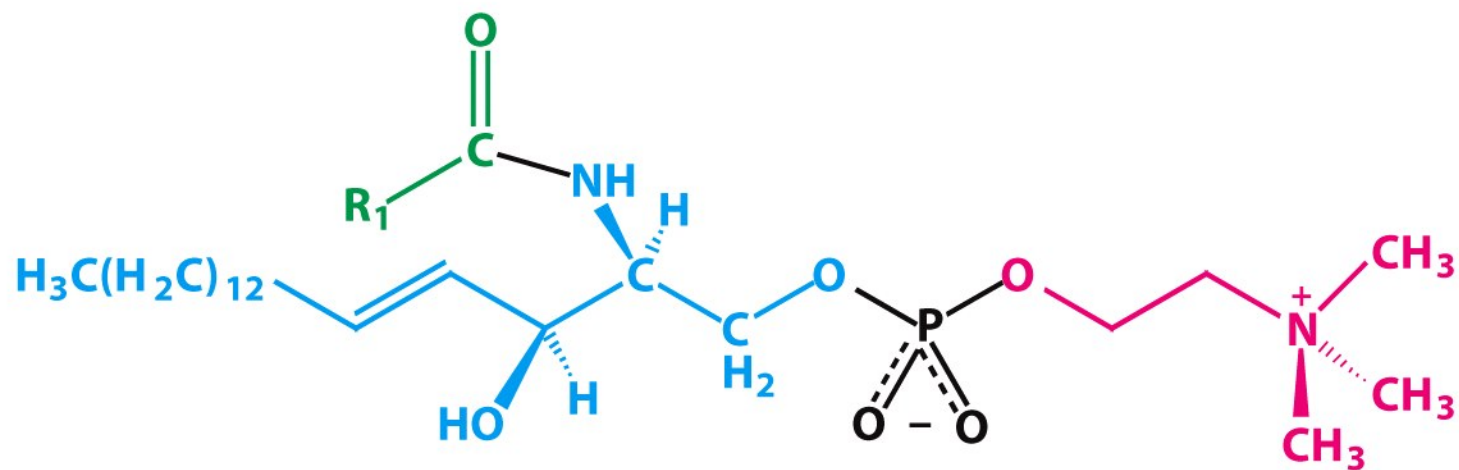


Diphosphatidylglycerol (cardiolipin)

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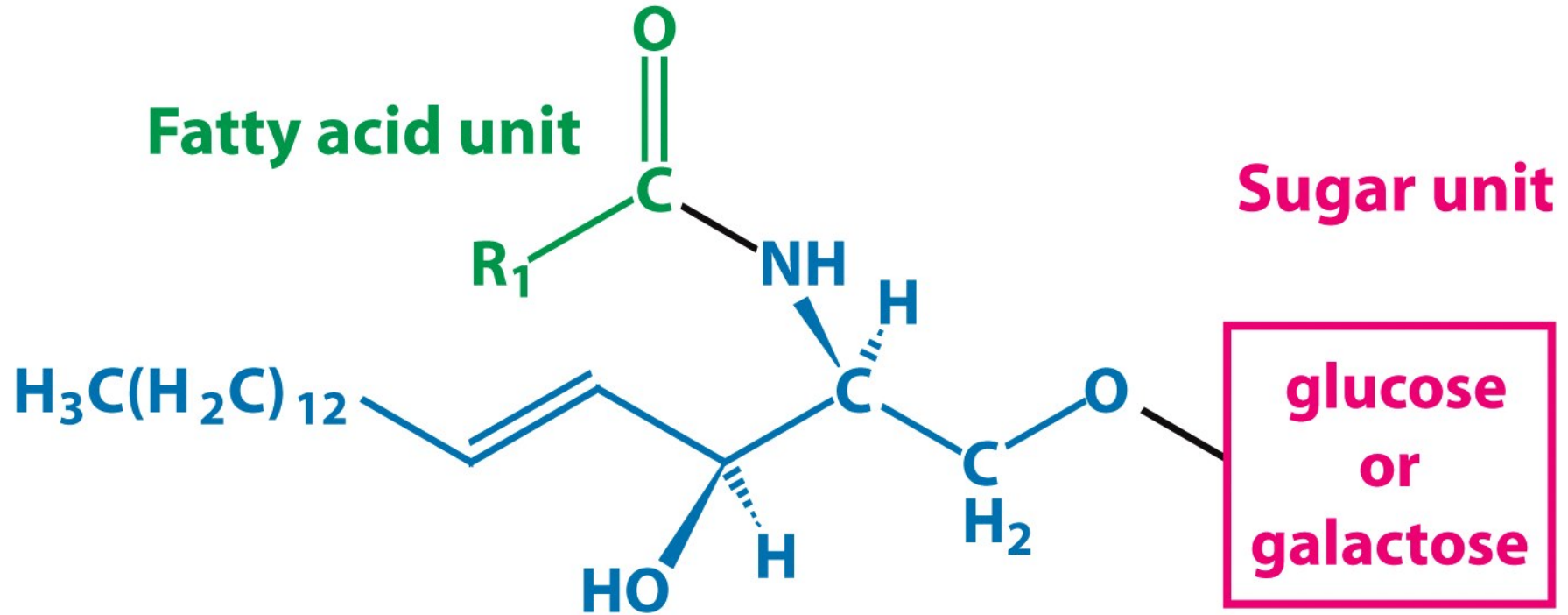


Sphingosine



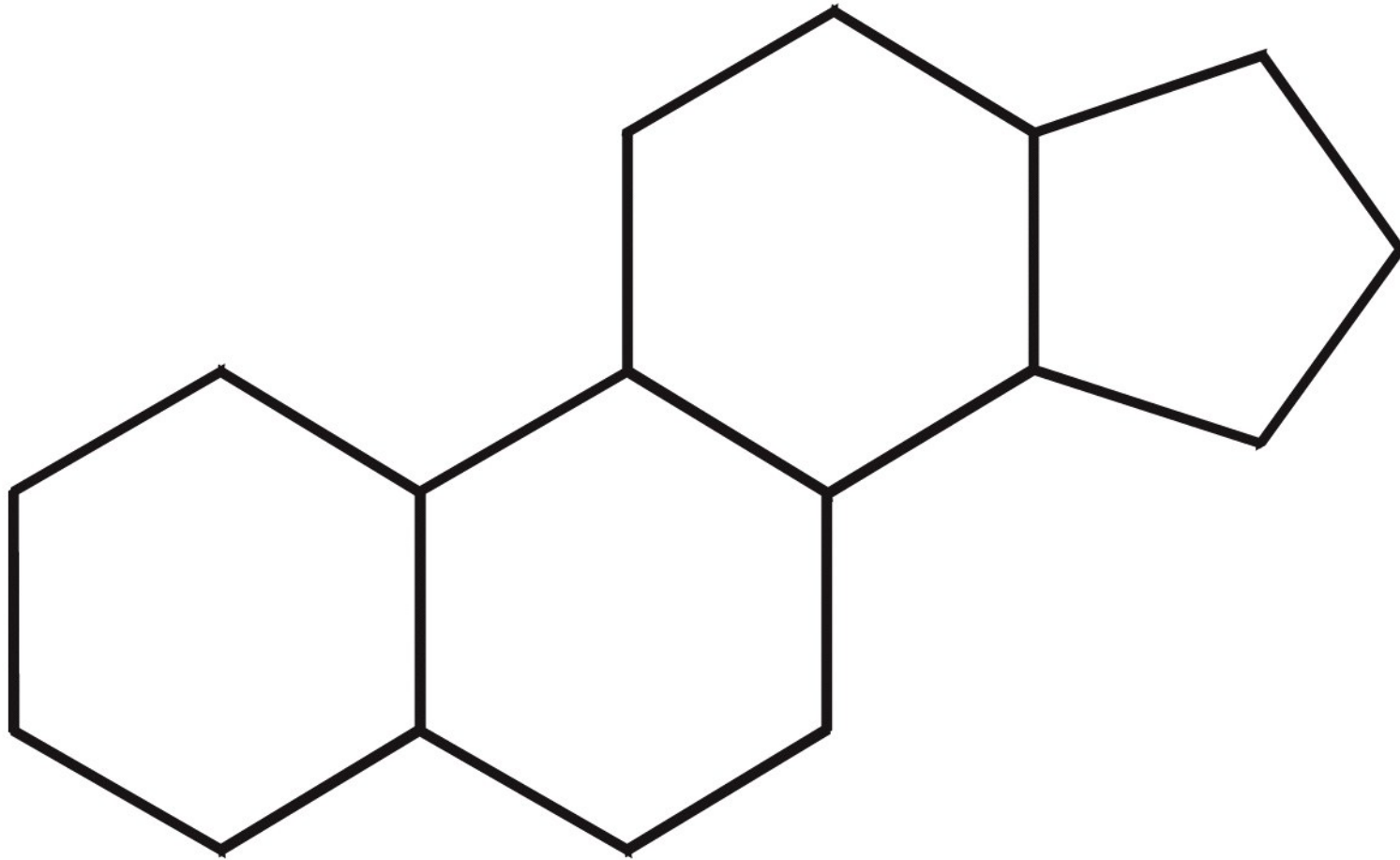
Sphingomyelin

Figure 11.8
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Cerebroside (a glycolipid)

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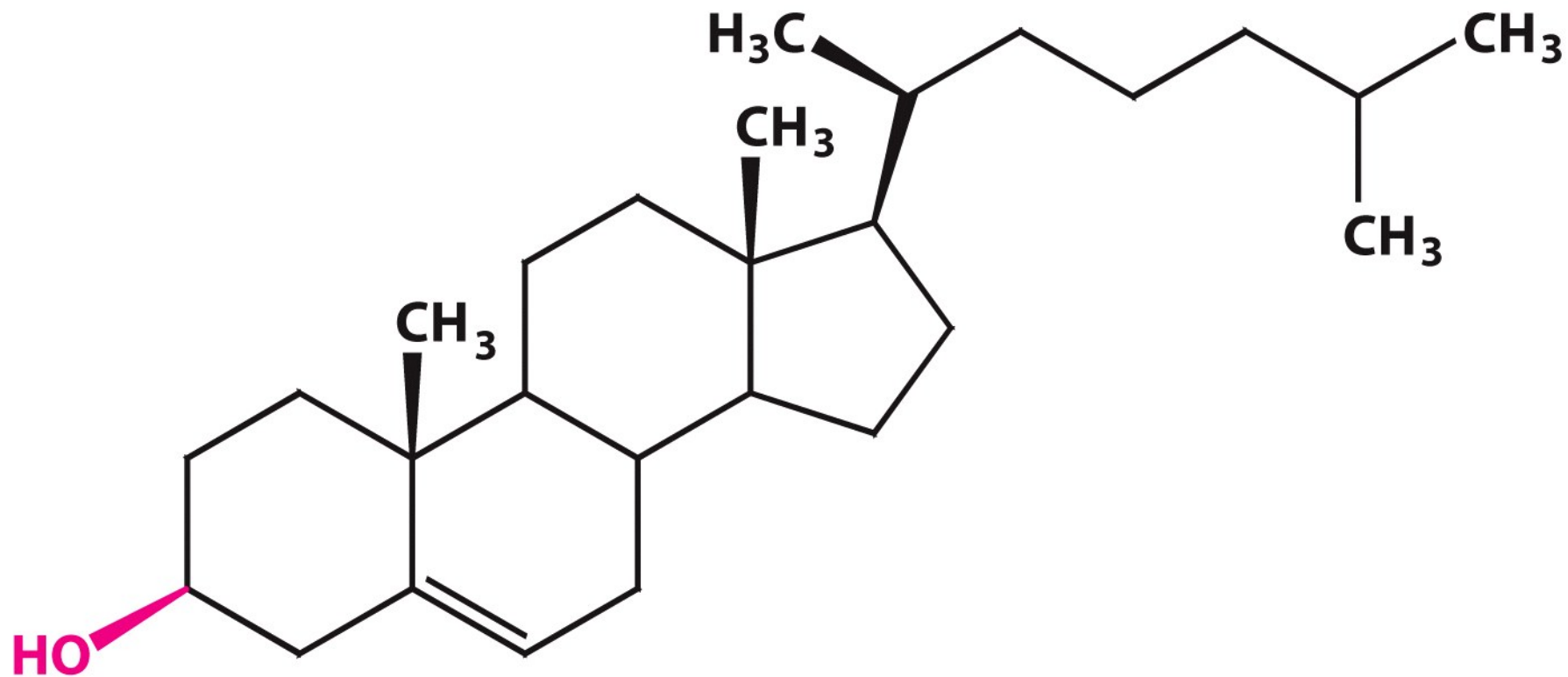


Steroid nucleus

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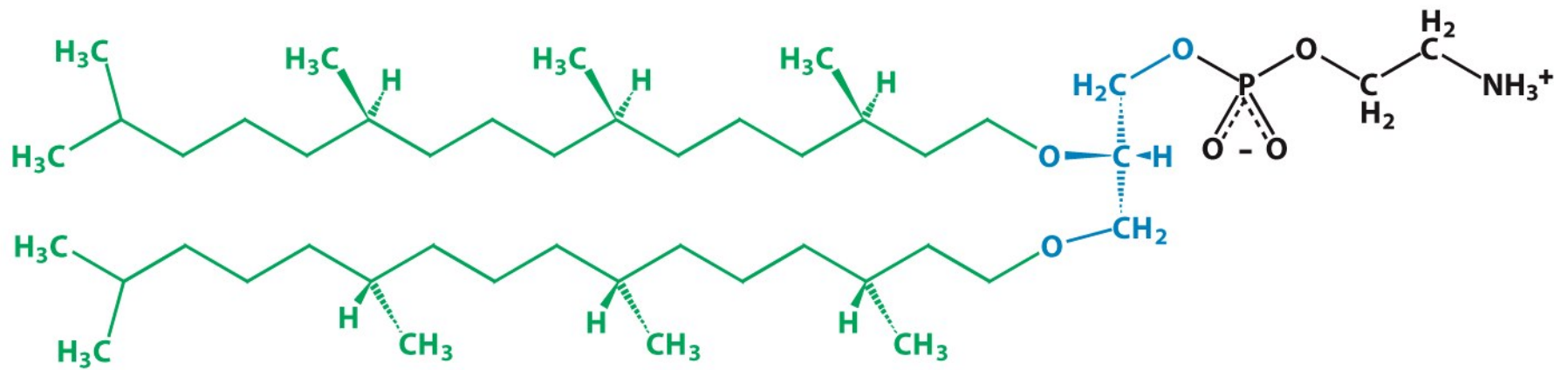
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Cholesterol

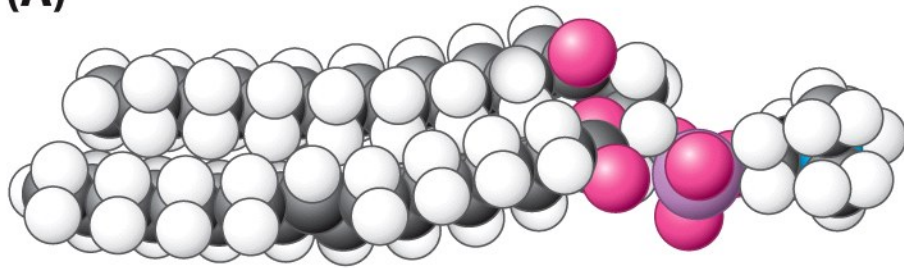
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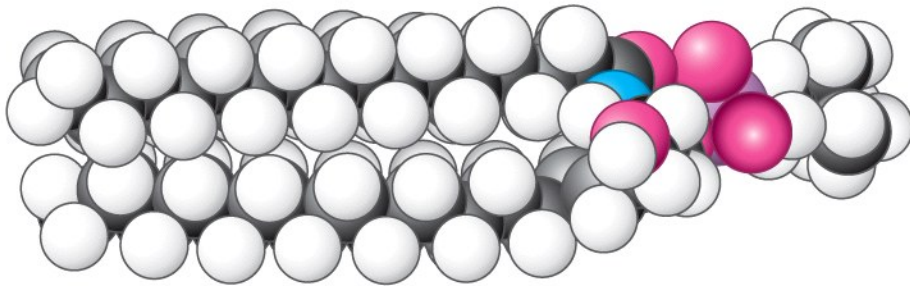
Membrane lipid from the archaeon *Methanococcus jannaschii*

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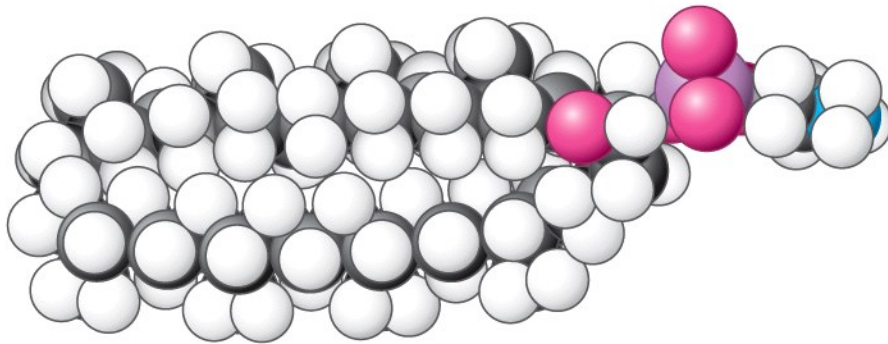
(A)



Phosphoglyceride

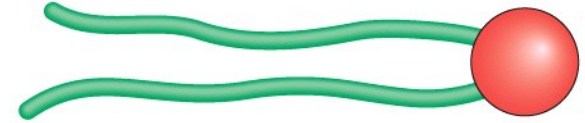


Sphingomyelin



Archaeal lipid

(B)



Shorthand depiction

Figure 11.9

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