Table 1.1 Chemical compositions as percentage of total number of atoms

Element	Composition in		
	Human beings (%)	Seawater (%)	Earth's crust (%)
Hydrogen	63	66	0.22
Oxygen	25.5	33	47
Carbon	9.5	0.0014	0.19
Nitrogen	1.4	0.1	0.1
Calcium	0.31	0.006	3.5
Phosphorus	0.22	0.1	0.1
Chloride	0.03	0.33	0.1
Potassium	0.06	0.006	2.5
Sulfur	0.05	0.017	0.1
Sodium	0.03	0.28	2.5
Magnesium	0.01	0.003	2.2
Silicon	0.1	0.1	28
Aluminum	0.1	0.1	7.9
Iron	0.1	0.1	4.5
Titanium	0.1	0.1	0.46
All others	0.1	0.1	0.1

Note: Because of rounding, total percentages do not equal 100%.
Source: After E. Frieden, The chemical elements of life, *Sci. Am.* 227(1), 1972, p. 54.

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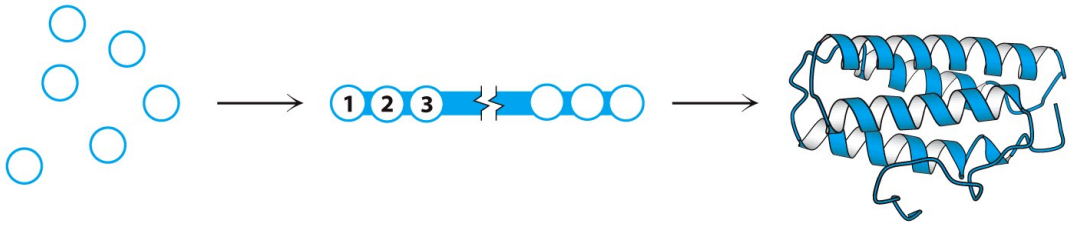

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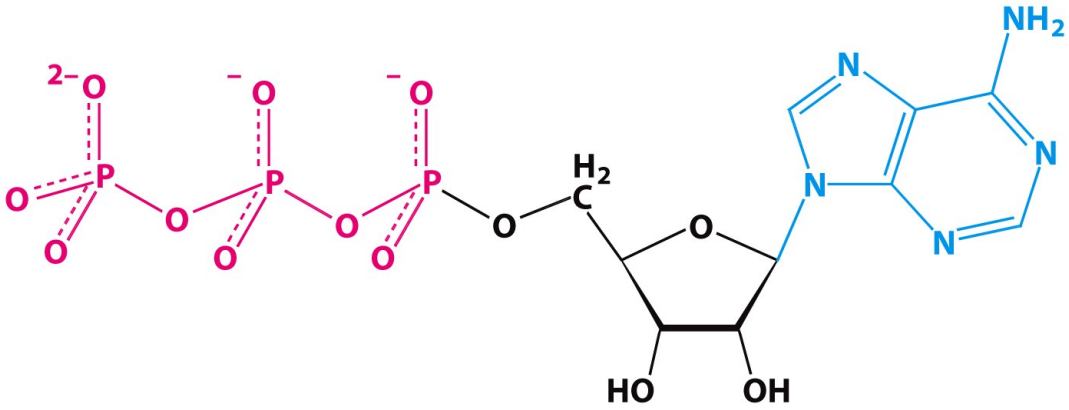

Adenosine triphosphate (ATP)

Figure 1.2
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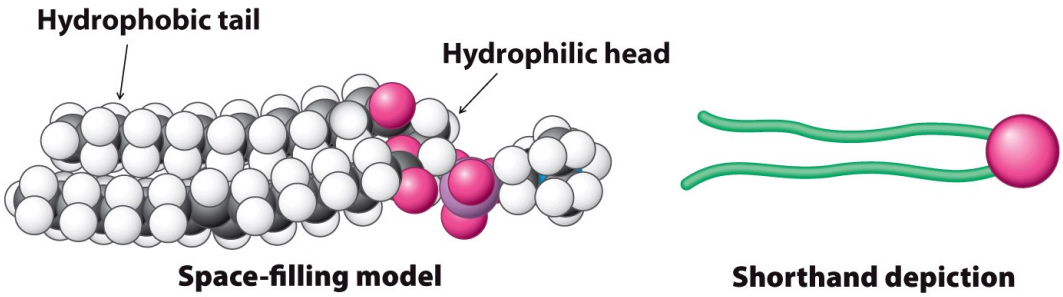

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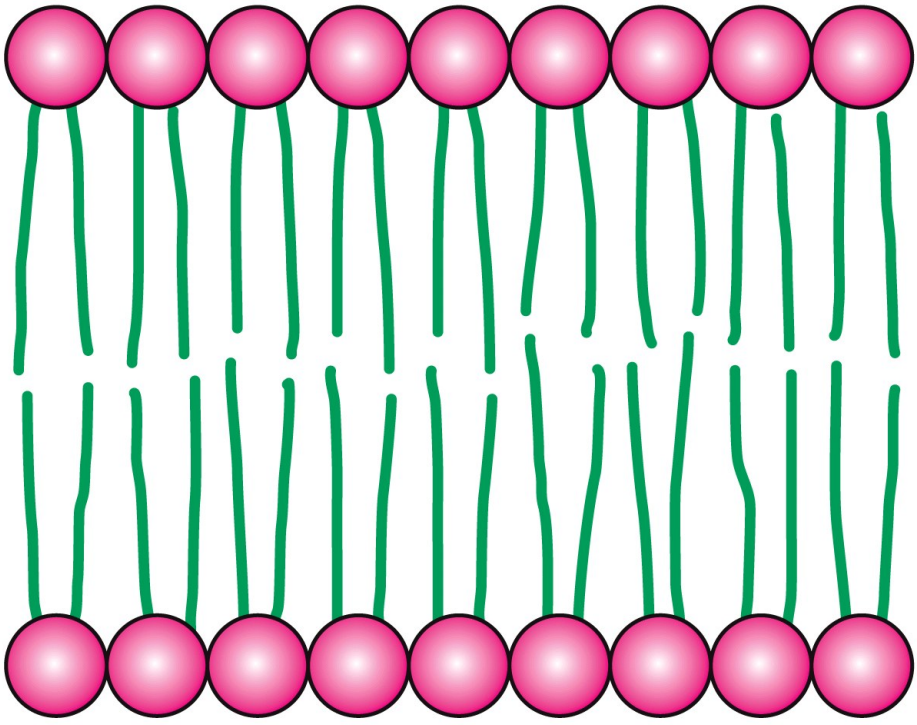

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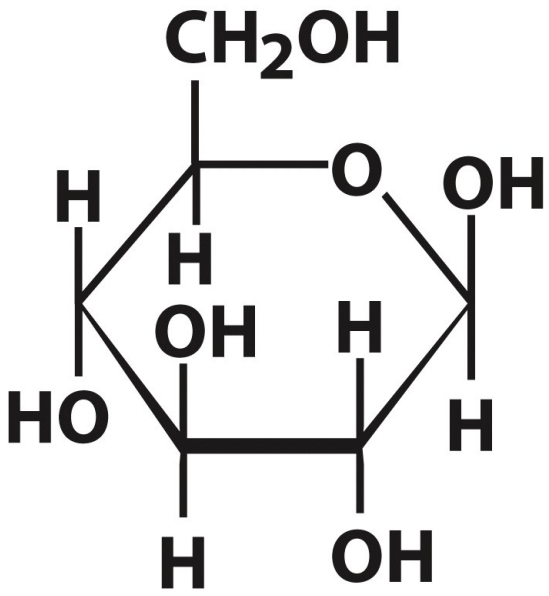

Glucose

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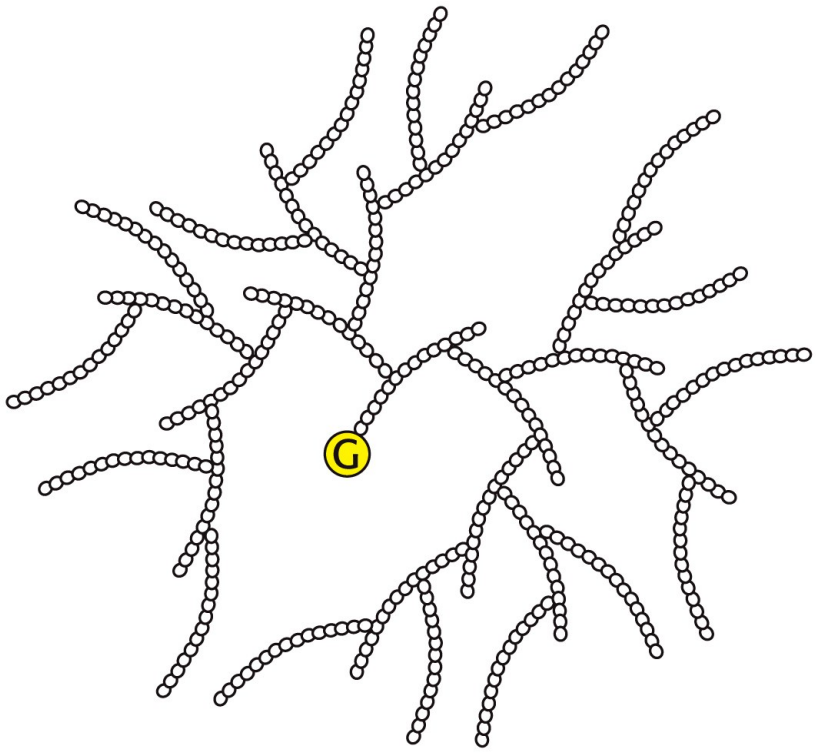

Figure 1.5
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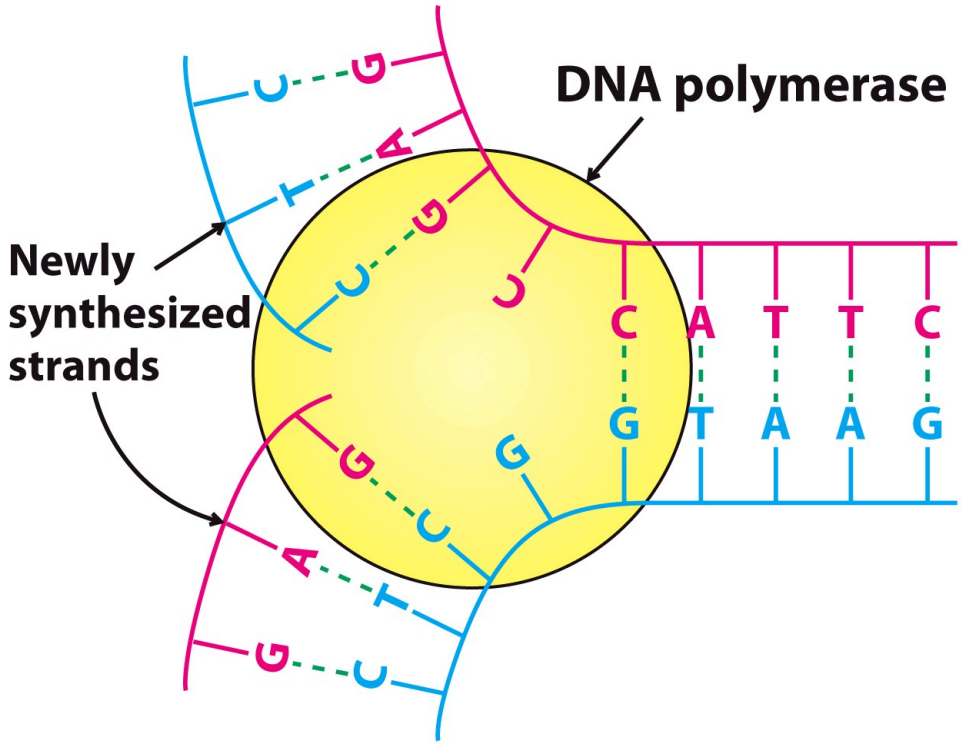

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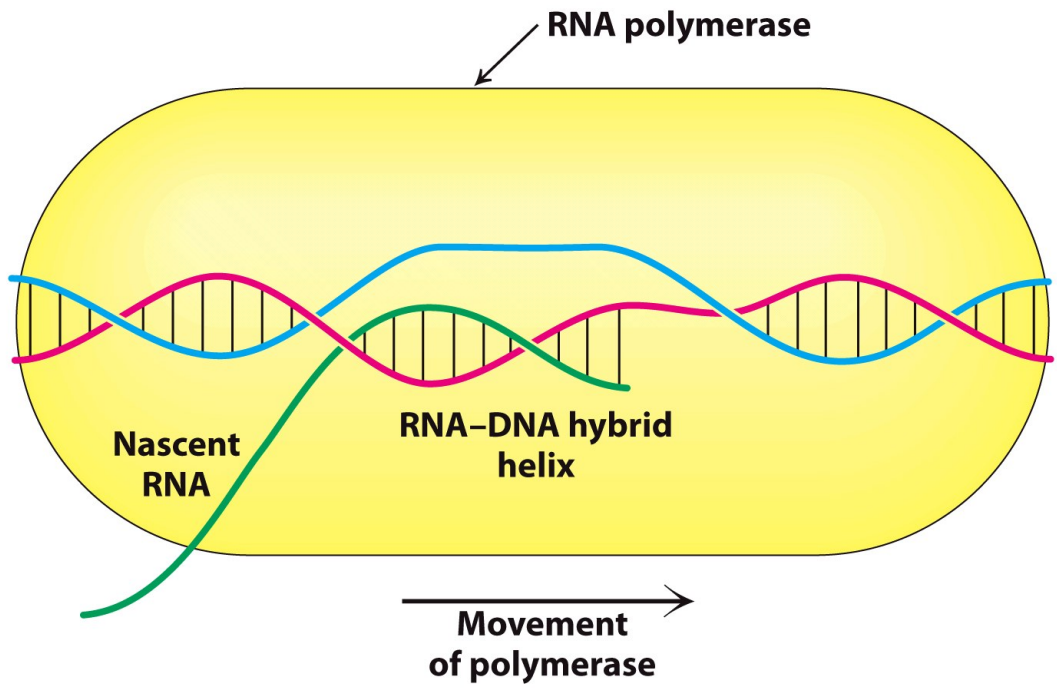

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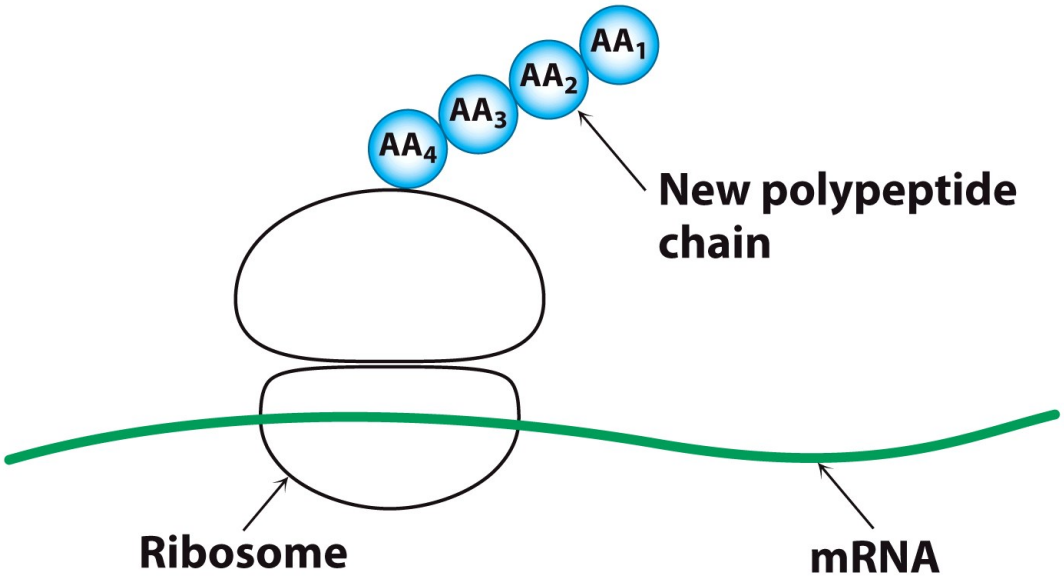

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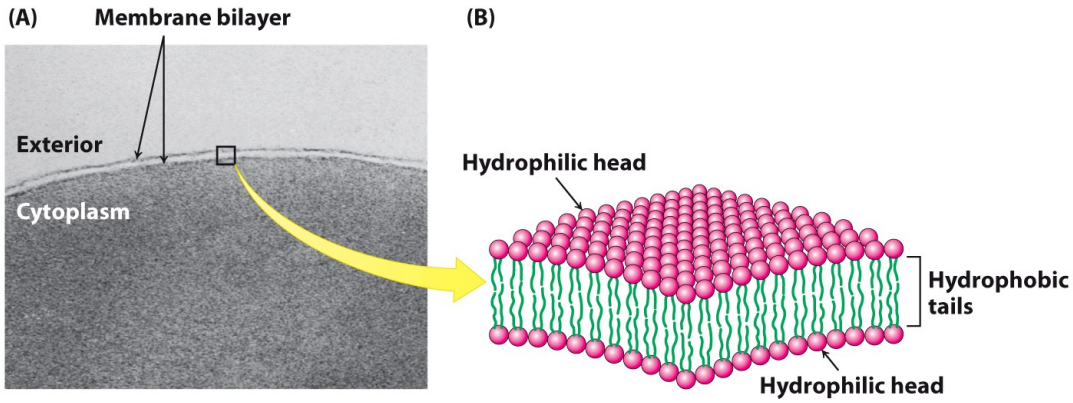

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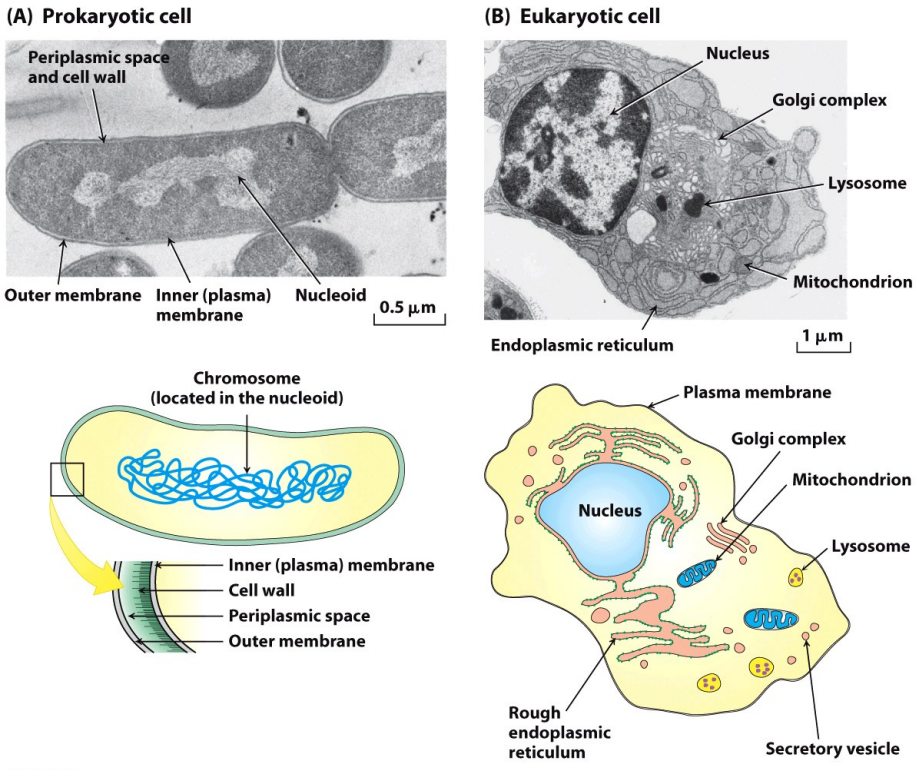

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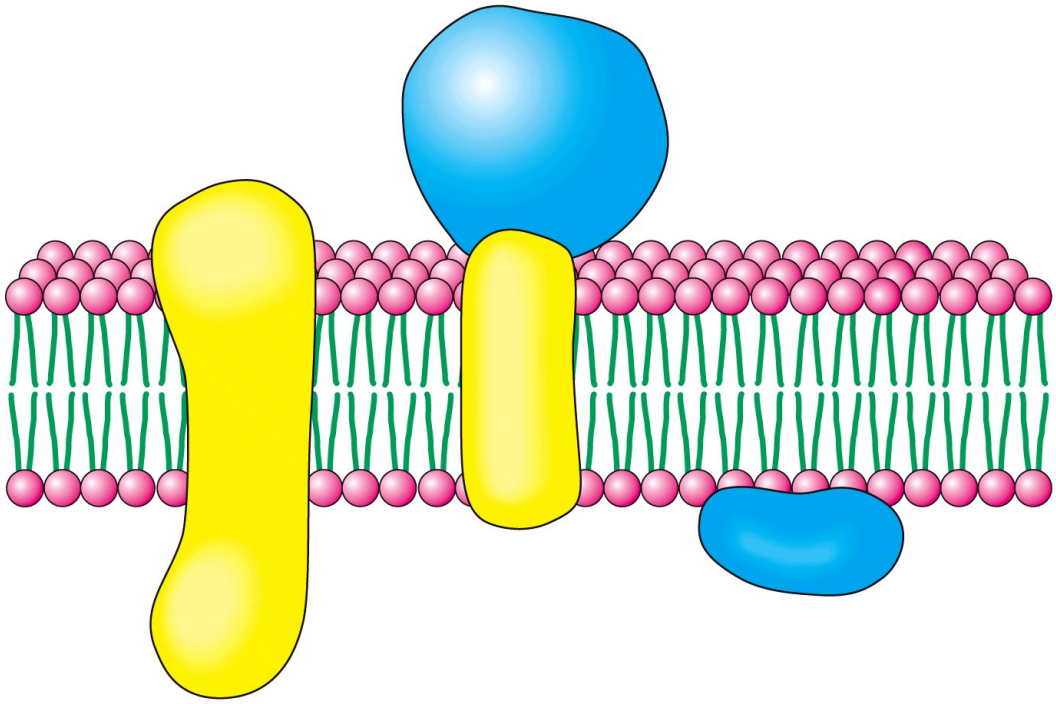

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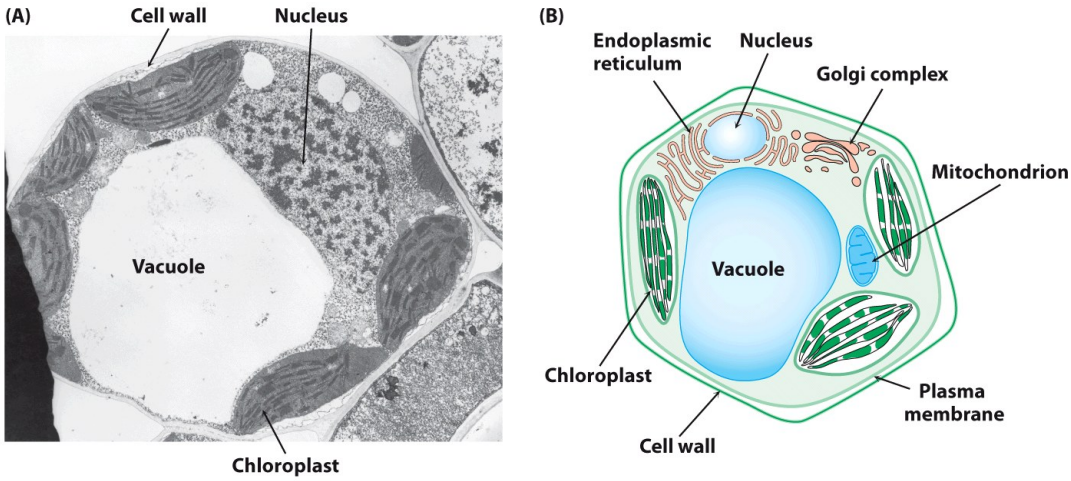

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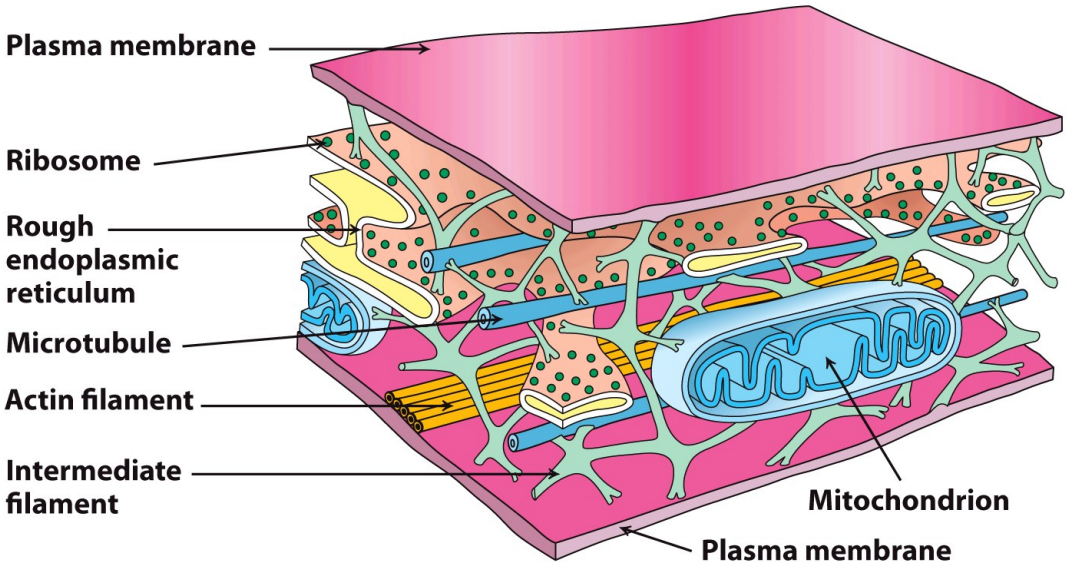

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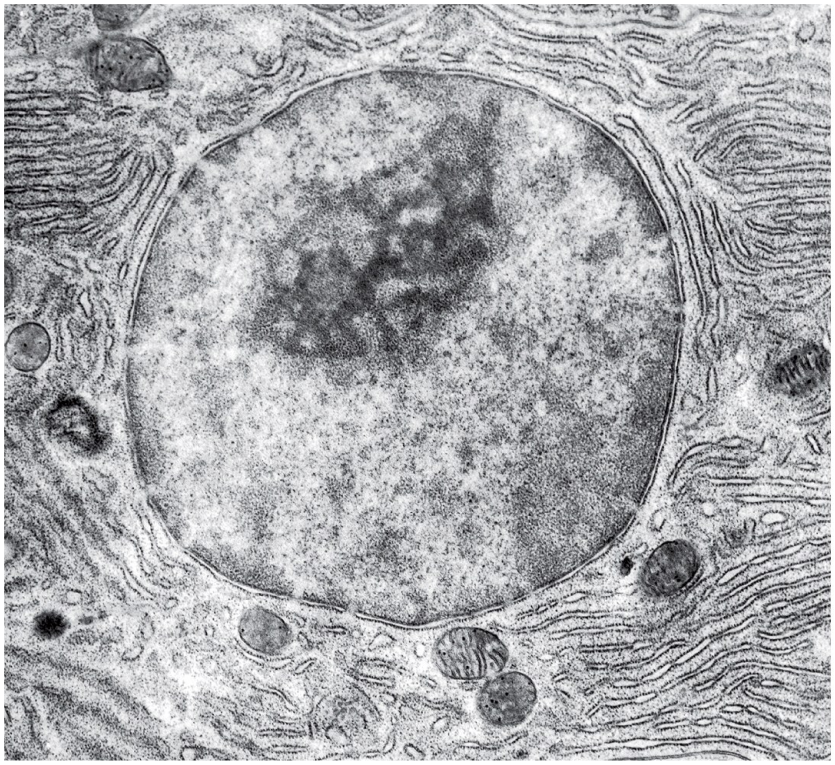

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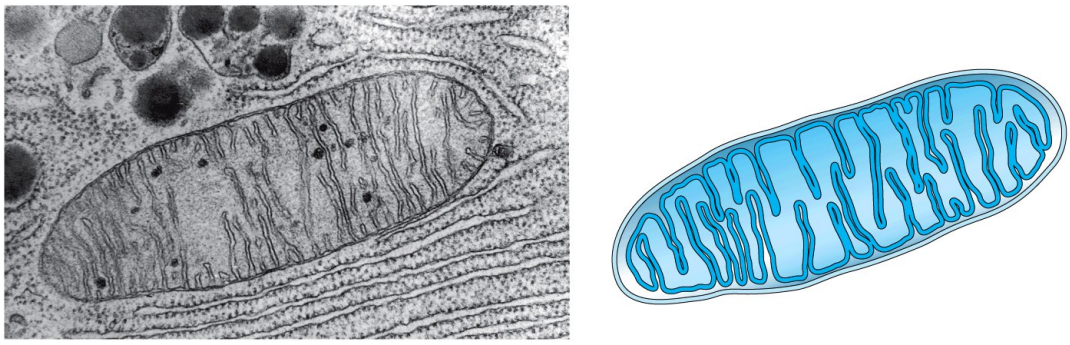
(A)

(B)



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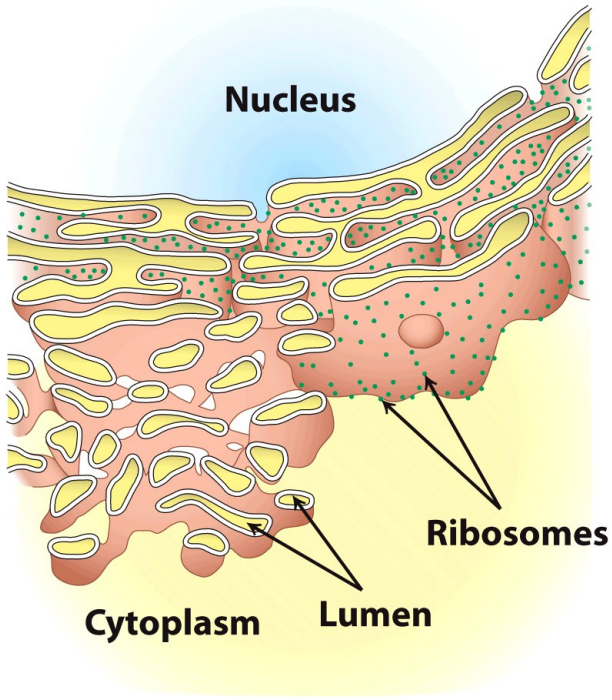

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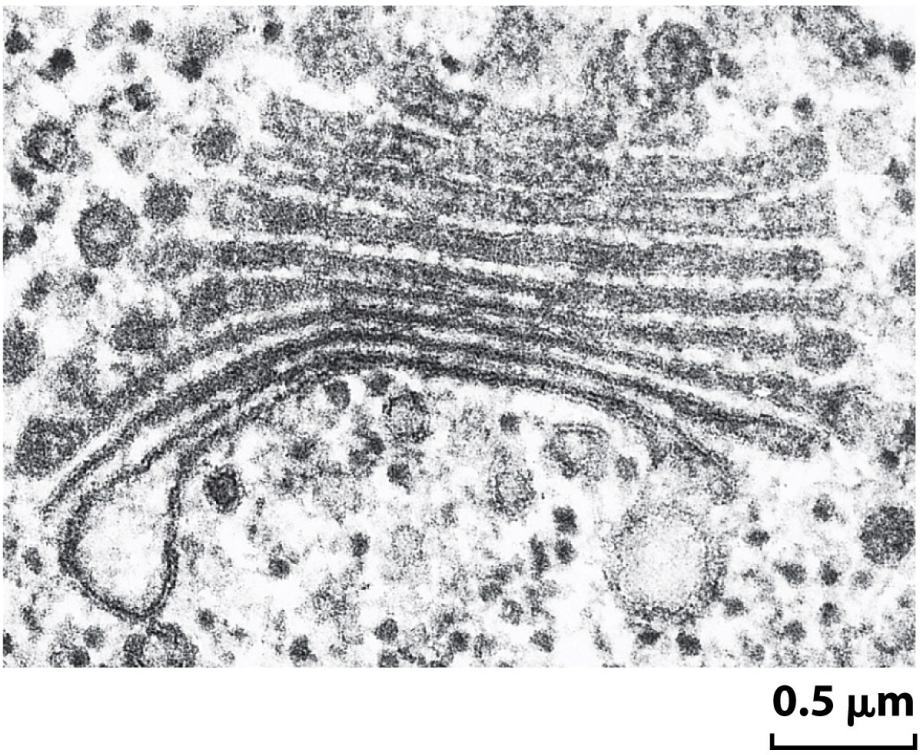

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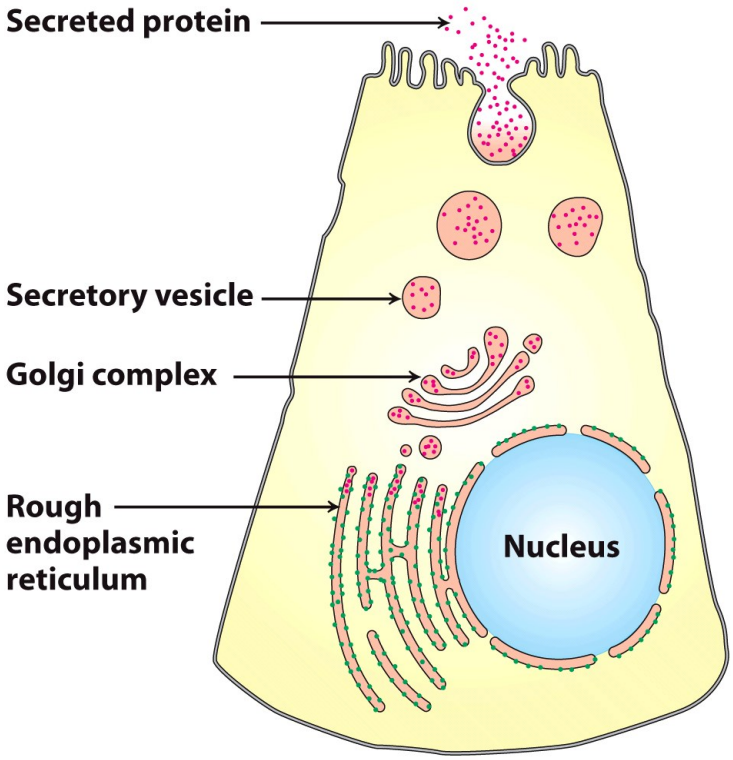

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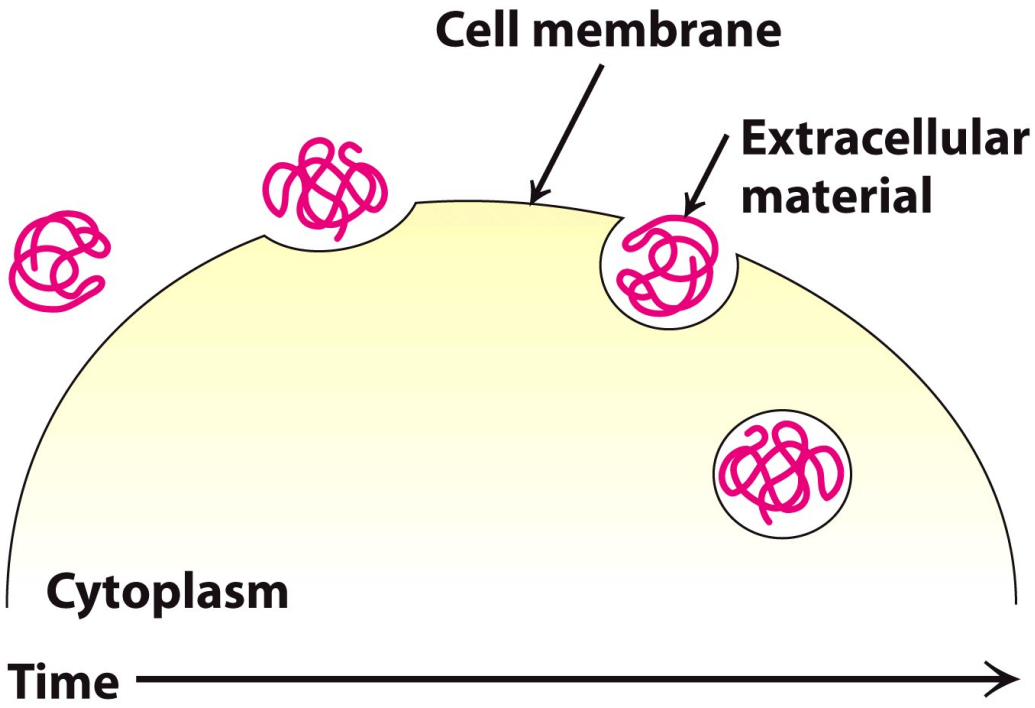

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Figure 1.20
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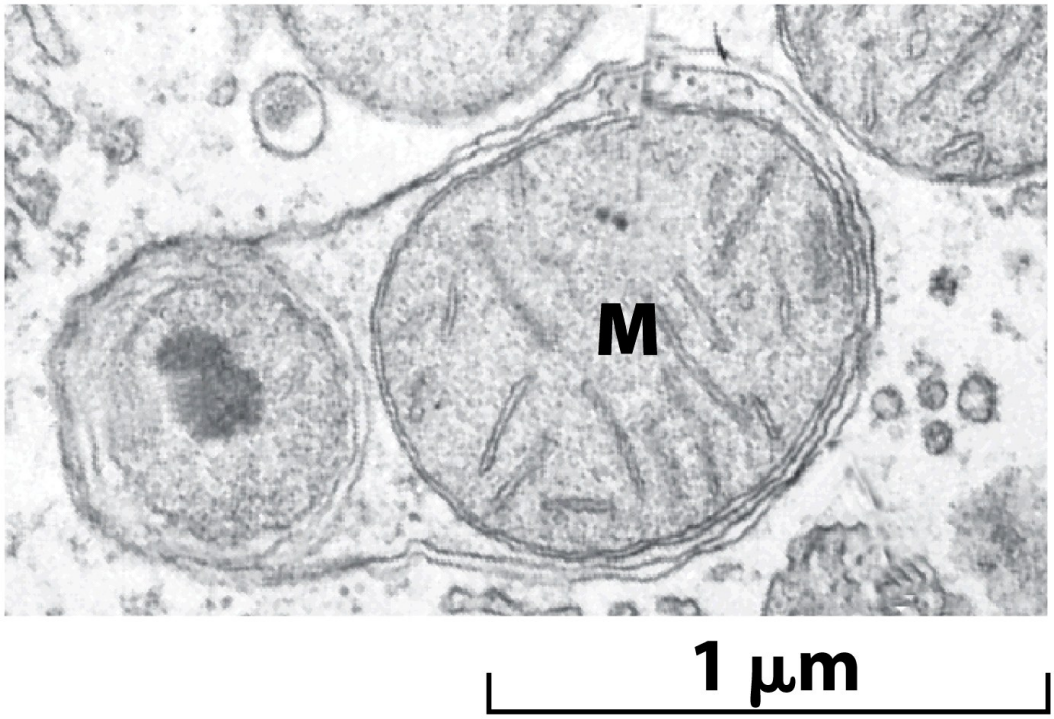

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