

**TABLE 3.2** Chemical composition of a prokaryotic cell<sup>a</sup>

Molecule	Percent of dry weight <sup>b</sup>	Molecules per cell (different kinds)
Total macromolecules	96	24,610,000 (~2500)
Protein	55	2,350,000 (~1850)
Polysaccharide	5	4,300 (2) <sup>c</sup>
Lipid	9.1	22,000,000 (4) <sup>d</sup>
Lipopolysaccharide	3.4	1,430,000 (1)
DNA	3.1	2.1 (1)
RNA	20.5	255,500 (~660)
Total monomers	3.0	— <sup>e</sup> (~350)
Amino acids and precursors	0.5	— (~100)
Sugars and precursors	2	— (~50)
Nucleotides and precursors	0.5	— (~200)
Inorganic ions	1	— (18)
Total	100%	—

<sup>a</sup>Data from Neidhardt, F.C., et al. (eds.), 1996. *Escherichia coli* and *Salmonella typhimurium*—*Cellular and Molecular Biology*, 2nd edition. American Society for Microbiology, Washington, DC.

<sup>b</sup>Dry weight of an actively growing cell of *E. coli*  $\cong 2.8 \times 10^{-13}$  g; total weight (70% water) =  $9.5 \times 10^{-13}$  g.

<sup>c</sup>Assuming peptidoglycan and glycogen to be the major polysaccharides present.

<sup>d</sup>There are several classes of phospholipids, each of which exists in many kinds because of variability in fatty acid composition between species and because of different growth conditions.

<sup>e</sup>Reliable estimates of monomer and inorganic ion composition are lacking.