

TABLE 3. Comparison of the macromolecular composition of *E. coli* B/r growing in glucose minimal medium ( $\mu = 1.36$ )<sup>a</sup>

Ratio	Colorimetric method		Previous	Ratio of colorimetric/ previous
	Relative units <sup>b</sup>	Absolute units <sup>c</sup>	Absolute units <sup>d</sup>	
Protein/mass	0.41	$5.3 \times 10^{17}$	$4.5 \times 10^{17}$	1.18
RNA/mass	0.98	$5.3 \times 10^{16}$	$4.3 \times 10^{16}$	1.23
DNA/mass	0.33	$8.6 \times 10^{15}$	$7.5 \times 10^{15}$	1.14
Protein/DNA	1.24 (0.41/0.33)	62	60	1.03
RNA/DNA	2.97 (0.98/0.33)	6.2	5.7	1.08
RNA/protein	2.39 (0.98/0.41)	0.10	0.096	1.04

<sup>a</sup> As determined here by colorimetric methods (Fig. 1) and previously by other methods involving radioactive labeling (13).

<sup>b</sup> Protein, RNA, and DNA per mass in relative units from Fig. 1. The ratios in the lower three rows were formed from the per-mass values; they are also illustrated in Fig. 2.

<sup>c</sup> Absolute units; protein/mass in amino acid residues per  $A_{460}$  unit of culture = relative units  $\times 1.3 \times 10^{18}$  amino acids (calibration factor, see Materials and Methods section). RNA/mass in RNA nucleotides per  $A_{460}$  unit of culture = relative units  $\times 5.4 \times 10^{16}$  nucleotides. DNA/mass in DNA nucleotides per  $A_{460}$  unit of culture = relative units  $\times 2.6 \times 10^{16}$  nucleotides. Ratios in amino acid residues per DNA nucleotide, RNA nucleotides per DNA nucleotide, and RNA nucleotides per amino acid residue, respectively, formed from the per-mass values.

<sup>d</sup> Protein and RNA per-mass values calculated from revised (see below) per-genome values of Table 2 in reference 13, assuming 2.0 genomes per cell and  $4.6 \times 10^8$  cells per mass unit (also from Table 2, reference 13); protein:  $4.86 \times 10^8$  amino acids/genome  $\times 2.0 \times (4.6 \times 10^8) = 4.5 \times 10^{17}$  amino acids/ $A_{460}$ ; RNA:  $4.68 \times 10^7$  nucleotides/genome  $\times 2.0 \times (4.6 \times 10^8) = 4.3 \times 10^{16}$  RNA nucleotides/ $A_{460}$ ; DNA:  $8.2 \times 10^6$  DNA nucleotides/genome  $\times 2.0 \times (4.6 \times 10^8) = 7.5 \times 10^{15}$  DNA nucleotides/ $A_{460}$ . The per-genome values were recalculated using the equations provided in Table 2 of reference 13, but using a value of 109 (32) for the molecular weight of the average *E. coli* amino acid residue (instead of 118) and a value of  $8.2 \times 10^6$  DNA nucleotides per genome (2) instead of  $7.6 \times 10^6$ .