

TABLE 1. ATP requirement for the formation of bacterial cells from glucose<sup>a</sup>

Macromolecule	% Dry wt	ATP requirement (mmol/g of macromolecule)	
		With amino acids	Without amino acids
Protein	52.2		
Amino acid formation		0.0	1.4
Polymerization		19.0	19.0
Polysaccharide	16.6		
G6P <sup>b</sup> formation		1.0	1.0
Polymerization		1.0	1.0
RNA	15.7		
Nucleoside formation		1.5	1.5
Polymerization		0.9	0.9
DNA	3.2		
Nucleoside formation		0.4	0.4
Polymerization		0.2	0.4
Lipid	9.4	0.1	0.1
Other functions			
mRNA turnover		1.4	1.4
Transport of ammonium ions		0.0	4.2
Transport of amino acids		4.8	0.0
Transport of potassium		0.2	0.2
Transport of phosphate		0.8	0.8
Total		31.3	32.3
$Y_{ATP}$ (g of cells/mol of ATP)		32	31

<sup>a</sup> Modified from reference 107.

<sup>b</sup> G6P, glucose 6-phosphate.