

**Table I** Biomass composition

Biomass component	Biomass fraction in % of total cell mass	Biomass fraction in mmol/g of cells	Biomass fraction in molecules/cell	Quantity determined by
DNA	5.00	1624	15 775	Sequence
RNA	6.50	2015	19 573	Sequence
protein	62.00	16 049	155 892	Sequence
ACP	0.003	3	29	LC-MS <sup>a</sup>
Glycolipid	10.00	63 702	618 768	GC/MS (fatty acid chains)
Phosphatidic acid	10.00	148 168	1 439 228	GC/MS (fatty acid chains)
Glycine	0.07	9220	89 558	GC/MS
L-alanine	0.09	9824	95 425	GC/MS
L-arginine	0.07	3913	38 009	GC/MS
L-asparagine	0.001	54	525	GC/MS
L-aspartate	0.12	9318	90 510	GC/MS
L-cysteine	0.001	67	651	GC/MS
L-glutamate	0.27	18 651	181 166	GC/MS
L-glutamine	0.004	294	2856	GC/MS
L-histidine	0.04	2422	23 526	GC/MS
L-isoleucine	0.02	1858	18 048	GC/MS
L-leucine	0.28	21 313	207 024	GC/MS
L-lysine	0.03	1741	16 911	GC/MS
L-methionine	0.02	1370	13 307	GC/MS
L-phenylalanine	0.08	5122	49 752	GC/MS
L-proline	0.08	6837	66 411	GC/MS
L-serine	0.03	3202	31 103	GC/MS
L-threonine	0.03	2489	24 177	GC/MS
L-tryptophan	0.04	1864	18 106	GC/MS
L-tyrosine	0.02	1366	13 269	GC/MS
L-valine	0.03	2793	27 130	GC/MS
Adenosine	0.05	1981	19 242	GC/MS
Cytidine	0.01	503	4886	GC/MS
Guanosine	0.05	1657	16 095	GC/MS
Thymidine	0.03	1242	12 064	GC/MS
Uridine	0.06	2541	24 682	GC/MS
Orthophosphate (Pi)	0.40	41 537	403 474	Colorimetric assay <sup>b</sup>
Thiamin diphosphate	0.00	100	971	Function
NADPH	0.01	100	971	Function
NADP +	0.01	100	971	Function
CoA	0.01	100	971	Function
FAD	0.01	100	971	Function
5fTHF	0.005	100	971	Function
Pyridoxal phosphate	0.002	100	971	Function
S-adenosyl-L-met	0.004	100	971	Function
CDP-CHO	0.0001	100	971	Function
G6P	4.51	174 748	1 814 216	100% biomass—rest

Abbreviations: ACP, acyl carrier protein; fTHF, formyl tetrahydrofolate; CDP-CHO, cytidine diphosphate choline; G6P, glycerol-6-phosphate.

The detailed process of biomass definition is described in Supplementary information.

<sup>a</sup>Maier *et al* (2011).

<sup>b</sup>Data from *E. coli* (Amin and Peterkofski, 1995; Neidhardt, 1996).