6. Supplementary Tables

Supplementary Table 1: Estimated costs for basal metabolism per hour. Estimated costs (in units of 10^9 ATP per cell) for basal metabolism per hour (M, normalized to 20°C) and total growth requirement in excess of maintenance (G). V denotes the cell volume (μm^3), W dry weight/cell (ng), and T temperature (in °C) at which experiments were performed. ND denotes Not Determined

Species	V	W	T	M	G	References
Prokaryotes:						
Aerobacter aerogenes	3.30[a]	0.00122	35	1.767	52.37	[111–113]
Bacillus subtilis	1.54	0.00063[a]	37	1.159	92.51	[114–119]
Bdellovibrio bacteriovorus	0.09	0.00005[a]	28	0.083	ND	[120, 121]
Clostridium cellulolyticum	0.16	0.00009	34	0.090	5.04	[122]
Clostridium butyricum	2.80	0.00105[a]	35	0.192	51.17	[123]
Clostridium thermocellum	0.47[a]	0.00111[a]	60	0.132	41.54	[124, 125]
Clostridium thermosaccharolyticum	1.10	0.00047	60	0.132	22.88	[126]
Enterococcus faecalis	0.76	0.00034[a]	37	0.127	15.42	[127, 128]
Escherichia coli	1.00	0.00028	34	0.213	15.65	[129, 130]
Lactobacillus casei	1.40	0.00058[a]	37	0.163	15.05	[131]
Lactococcus lactis	0.90	0.00040[a]	37	0.482	38.53	[127, 128]
Leuconostoc mesenteroides	0.79	0.00097	27	1.075	54.18	[132–136]
Mycoplasma genitalium	0.004	0.000004	37	0.004	0.07	[137]
Mycoplasma pneumoniae	0.050	0.000016	37	0.046	0.92	[138]
Paracoccus denitrificans	0.79	0.00035	35	0.248	14.04	[139, 140]
Pseudomonas putida	0.78	0.00035[a]	30	0.421	17.90	[114, 134, 135, 141]
Streptomyces coelicolor	1.31	0.00038	28	0.414	15.21	[142–144]
Streptococcus pyogenes	0.75	0.00025	37	0.130	20.47	[127, 128, 145]
Zymomonas mobilis	4.90	0.00171[a]	30	ND	136.65	[146–148]
Unicellular eukaryotes:						
Candida utilis	88.00	0.03330	30	15.052	2745.12	[149–153]
Chlamydomonas reinhardtii	122.00	0.06936	25	84.205	4551.12	[154–159]
Chlorella vulgaris	216.00	0.05020	37	145.135	7163.80	[160–166]
Leishmania donovani	41.00	0.01380	28	ND	246.82	[167–169]
Nannochloropsis sp.	9.15	0.00550	27	4.321	ND	
Saccharomyces cerevisiae	69.00	0.02800	30	18.785	2468.20	[170, 171] [172]
Schizosaccharomyces pombe	106.00	0.03800	30	8.700	2347.80	[173–175]
Tetrahymena thermophile	5712.00	3.52000	ND	ND	60200.00	[176–178]
Zygosaccharomyces bailii	66.10	0.02800[b]	28	8.036	842.80	[179, 180]
Muticellular eukaryotes (tissue culture):						
Mouse LS cell	550.00	0.66000	37	5374.674	9632.0	[181, 182]
Mouse Ehrlich ascite tumor cell	2485.00		37	ND	11438.00	[183–185]
Erythroid J2E cell	2500.00		37	ND	3612.00	[186–188]
MCF-7 human breast cancer cell	4000.00		37	ND	2694.55	[189]
Mouse hybridoma cell CRL-1606	900.00	0.25000	37	ND	6700.26	[190–192]
Marchantia polymoprha	2250.00[c]	2.47500	25	ND	236500.0	[193, 194]

a) Interconversion of cell volume and dry weight uses an empirical relationship determined by Lofere-Krosbacher [195].
b) Dry weight obtained by assuming the average weight to volume ratio for other unicellular eukaryotes in the analysis, 0.42 pg/μm^3.
c) Volume obtained from dry weight/cell by assuming 909 μm^3/ng dry weight.