TABLE 1 Dependence on growth osmolality of volume accessible to water, growth rate, and amounts of protein and water per *E. coli* cell

Growth Osmolality (Osm)	Growth rate* (generations/hr)	$\bar{V}^{wa}_{cell}$* (μl/mg DW)	Protein/cell† (pg/cell)	H_2O/cell‡ (fL/cell)
0.03	0.84 ± 0.07	2.96 ± 0.10	ND	1.77 ± 0.14
0.1	0.91 ± 0.04	2.52 ± 0.06	0.39 ± 0.02	1.52 ± 0.12
0.28	1.00 ± 0.10	2.45 ± 0.11	0.43 ± 0.04	1.48 ± 0.13
0.56	0.79 ± 0.06	ND	0.41 ± 0.01	ND
0.65	0.73 ± 0.03	2.06 ± 0.05	0.41 ± 0.01	1.24 ± 0.10
0.83	0.63 ± 0.11	1.99 ± 0.05	0.40 ± 0.04	1.20 ± 0.09
1.0	0.49 ± 0.04	1.87 ± 0.12	0.42 ± 0.05	1.13 ± 0.11
1.0 + 1 mM proline§	0.56 ± 0.05	ND	0.41 ± 0.03	ND

*Growth rates and amounts of cell water $\bar{V}^{wa}_{cell}$ for cells grown at 0.03 Osm, 0.1 Osm and 0.83 Osm were determined in this study; the other values of growth rate and $\bar{V}^{wa}_{cell}$ are from Cayley et al. (1991).

†Amounts of protein per viable cell in picograms are the average (±1 SD) of approximately five measurements, each performed in triplicate. Viable cell counts were determined by dilution plating samples on LB agar. The average of all measurements at all osmolalities is 0.41 ± 0.03 pg/cell.

‡The volume of water per cell in femtoliters was calculated using the average amount of protein per cell (0.41 ± 0.03 pg), the ratio of protein to dry weight of cells grown under these conditions (0.68) and tabulated values of $\bar{V}^{wa}_{cell}$.

§Proline is an osmoprotectant, accumulated from the medium, that increases the growth rate of osmotically stressed cells (Cayley et al., 1992; Csonka and Epstein, 1996).

ND, not determined.