

TABLE IV

Cell compartmentation in various strains of Salmonella typhimurium and Escherichia coli

The different bacterial strains were grown in nutrient broth or Medium 63 plus the indicated nutrients. Cultures grown on defined medium were harvested, washed with Medium 63, and finally suspended in this medium. The culture in nutrient broth was simply harvested and resuspended in nutrient broth. [³H]Water and inulin-[¹⁴C]carboxyl or [¹⁴C]sucrose were added to suspensions, and the distributions of these labeled compounds were determined by the centrifugation method. This information was then used in accord with Fig. 1 to estimate the total volume of cells in each suspension and to divide this volume into its cytoplasmic and periplasmic components. These results are expressed as the periplasmic fraction of the total cell volume.

Bacterial strain	Nutrients present during growth	Periplasmic fraction of total cell volume
<i>S. typhimurium</i> LT2	0.2% D-glucose	0.33
<i>S. typhimurium</i> LT2	Nutrient broth	0.20
SL3555 (<i>rfb galE</i>)	0.2% D-glucose + 0.002% L-histidine	0.19
SL756 (<i>galE</i>)	0.2% D-glucose	0.24
<i>E. coli</i> K12	0.2% D-glucose	0.21
<i>E. coli</i> ML308-225	0.2% D-glucose	0.37