

Bacteria

Bacteria are microscopic organisms which are probably the most widely distributed of all living matter.

RELATIVE SIZES OF VARIOUS BACTERIA

Organism	Rod Length μ m	Rod or Coccus Diameter μ m	Significance	Organism	Rod Length μ m	Rod or Coccus Diameter μ m	Significance
Acetobacter melanogenus	1.0-2.0	0.4-0.8	Strong beer/vinegar bacterium.	Mycoplasma pneumoniae (PPLO)		0.3-0.5	Smallest known free-living organism.
Alcaligenes viscolactis	0.8-2.6	0.6-1.0	Causes ropiness in milk.	Pediococcus acidilactici		0.6-1.0	Causes mash spoilage in brewing.
Bacillus anthracis	3.0-10.0	1.0-1.3	Causes anthrax in mammals.	Pediococcus cerevisiae		1.0-1.3	Causes deterioration in beer.
Bacillus stearothermophilus	2.0-5.0	0.6-1.0	Biological indicator for steam sterilization.	Pseudomonas diminuta	1.0	0.3	Test organism for retention of 0.2 μ m membranes.
Bacillus subtilis	2.0-3.0	0.7-0.8	Biological indicator for ethylene oxide sterilization.	Salmonella enteritidis	2.0-3.0	0.6-0.7	Causes food poisoning.
Clostridium botulinum (B).	3.0-8.0	0.5-0.8	Produces exotoxin causing botulism.	Salmonella hirschfeldii	1.0-2.5	0.3-0.5	Causes enteric fever.
Clostridium perfringens	4.0-8.0	1.0-1.5	Produces toxin causing food poisoning.	Salmonella typhimurium	1.0-1.5	0.5	Causes food poisoning in man.
Clostridium tetani	4.0-8.0	0.4-0.6	Produces exotoxin causing tetanus.	Salmonella typhosa	2.0-3.0	0.6-0.7	Causes typhoid fever.
Diplococcus pneumoniae		0.5-1.25	Causes lobar pneumonia.	Sarcina maxima		4.0-4.5	Isolated from fermenting malt mash.
Erwinia aroideae	2.0-3.0	0.5	Causes soft rot in vegetables.	Serratia marcescens	0.5-1.0	0.5	Test organism for retention of 0.45 μ m membranes.
Escherichia coli	1.0-3.0	0.5	Indicator of fecal contamination in water.	Shigella dysenteriae	1.0-3.0	0.4-0.6	Causes dysentery in man.
Haemophilus influenzae	0.5-2.0	0.2-0.3	Causes influenza and acute respiratory infections.	Staphylococcus aureus		0.8-1.0	Causes pus forming infections.
Klebsiella pneumoniae	5.0	0.3-0.5	Causes pneumonia and other respiratory inflammations.	Streptococcus lactis		0.5-1.0	Contaminant in milk.
Lactobacillus delbrueckii	2.0-9.0	0.5-0.8	Causes souring of grain-mashes.	Streptococcus pyogenes		0.6-1.0	Causes pus forming infections.
Leuconostoc mesenteroides		0.9-1.2	Causes slime in sugar solutions.	Vibrio parcolans	1.5-1.8	0.3-0.4	Test organism for retention of 0.2 μ m membranes.