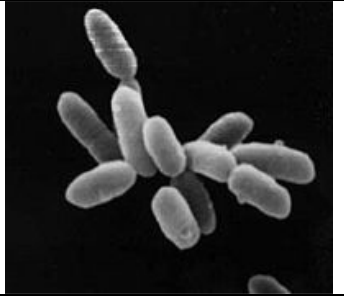



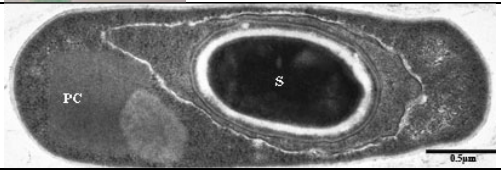


ARCHAEA: Prokaryotic, lack peptidoglycan in cell wall, some branched hydrocarbons in membrane, several kinds of RNA polymerase, Met is initiator amino acid, introns present in some genes, yes histones, yes circular chromosomes, includes many extremophiles, nonpathogenic for humans, ether linkages in phospholipids

<i>Halobacterium</i>	aerobic, require high salt concentrations, motile, rods or cocci, red or purple	
<i>Methanobacterium</i>	Anaerobic, non-motile, use CO ₂ to oxidize H ₂ and produce CH ₄ (methane), rod shaped	
<i>Thermoplasma</i>	facultative anaerobes, respire using sulfur and organic carbon, high temp, high acidity, lack cell wall, flagellated, heterotrophic	
<i>Sulfolobus</i>	high temp, high acidity, need sulfur as final electron acceptor, thrive in volcanic springs, flagellated	

BACTERIA: Prokaryotic, peptidoglycan cell wall, unbranched hydrocarbons in, membrane, one kind of RNA polymerase, formyl-Met as initiator amino acid, introns rare, no histones, circular chromosome, some pathogenic for humans

<i>Argobacterium</i>	Gram negative, rod-shaped, causes tumors in plants (via horizontal gene transfer> <i>Argobacterium tumefaciens</i> is used as a vector to introduce genes in GM plants)	  <p>tumors (galls) in plants</p>
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<i>Anabaena</i>	Filamentous cyanobacteria fixes nitrogen: heterocysts (large round cell on right) are terminally specialized cells along the filaments that produce ammonium from N ₂ using nitrogenase in a low-oxygen environment (hence thicker walls and inactive PSII); the nitrogen is exchanged with other cells in the filament for carbohydrates	
<i>Bacillus</i>	Gram-positive, rod shaped, obligate or facultative aerobes, produce dormant endospores when stressed,	
<i>Escherichia</i>	Gram-negative, rod shaped, facultative anaerobe, do not produce spores, live in GI tracts (vitamin K source), γ proteobacteria, O157:H7 strain causes disease	
<i>Rhizobium</i>	Gram negative, motile rod shaped, form nodules in legume roots that fix nitrogen, α proteobacteria	
<i>Salmonella</i>	Gram negative, rod-shaped, motile, γ proteobacteria, typhoid fever	
<i>Streptomyces</i>	Gram positive actinobacteria, thin filaments, source of antibiotics/antifungals	