

Cellular Structures in Bacteria

- Overview
 - Nucleoid region, ribosomes, macromolecules, cytoplasm
 - No membrane enclosed organelles!
- Ribosomes
 - Consists of RNA and proteins
 - Site of protein synthesis
 - Small than eukaryotic ribosomes
 - Prokaryotic: 70S, Eukaryotic: 80S
 - Important because this is how scientists make drugs that specifically target prokaryotes and leave our eukaryotic cells alone!
 - Composed of 30s and 50s subunits
 - Target of antibiotics
 - Example: streptomycin
- Nucleoid Region
 - Most bacteria only have 1 chromosome
 - Closed, circular, double-stranded DNA
 - Coiled and looped
 - Contains nucleoid proteins
 - Composed of DNA, RNA, and proteins
- Plasmids
 - Small, circular, nonessential pieces of DNA
 - Genes on plasmids carry advantages
 - Example: drug resistance
 - Separate from the chromosome
 - Allows exchange of genetic info between different cells
 - Applications in biotech
 - Example: cloning