CHAPTER 2 : Basic components of living systems Prokaryotic and eukaryotic cells

Prokaryotic cells

Prokaryotic organisms are always unicellular, relatively simple structure
DNA is not contained within a nucleus
Have some organelles, they're not membrane-bound

DNA

-Structure of DNA is contained within prokaryotes is fundamentally the same as in eukaryotes but it's packaged differently

-Prokaryotes generally have one molecule of DNA, a chromosome, which is supercoiled to make it more compact

-Genes on the chromosome are often grouped into operons, number of genes are switched off or on at the same time

Ribosomes

-Prokaryotic cells have smaller ribosomes compared to eukaryotic cells

-Relative size is determined by the rate at which they settle, or form a sediment in a solution

-Larger eukaryotic organisms are designated 80S and snale crokaryotic ribosomes, 70S

-They're both important for protein synthesis, although langer 80S ribosomes are involved in formation of more topolex proteins

Cell vereview Pag

-Prokaryotic cells have a cell wall made from peptidoglycan, also known as murenin, it's a complex polymer formed from amino acids and sugars

Flagella

-Flagella of prokaryotes is thinner than the equivalent structure of eukaryotes and don't have the 9+2 arrangement

-Energy to rotate the filament that forms the flagellum is supplied from the process of chemiosmosis, not from ATP as in eukaryotic cells

-Basal body attaches the filament comprising the flagellum to the cell-surface membrane of a bacterium

-Molecular motor causes hook to rotate giving the filament a whip like movement, propelling the cells