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Ribosomes and Inclusion Bodies

Cytoplasm in prokaryotes appear granular, due to the presence of following structures:

i. Ribosomes

Like eukaryotes, ribosomes are also found in prokaryotes and serves a common function, i.e., acts as a site of protein synthesis. Ribosomes are small, but are complex both in structure and chemical composition. They are about 15-20 nm in size.

In prokaryotes, ribosomes are found in association with the plasma membrane of the cell (as it lack endoplasmic reticulum) in the cytoplasmic matrix. The prokaryotic ribosomes are of 70S type.

It has following two sub-units

(a) Smaller subunit (30S)

(b) Larger subunit (50S)

Ribosomes generally occur in helical groups called polysome or polyribosomes. In each polysome 4-8 ribosomes are attached to a single strand of wRNA. The ribosomes of a polysome helps in the translation (mechanisms to synthesise several copies of the same protein) of RNA into protein.

ii. Inclusion Bodies

They are non-living structures present in the cytoplasm and not bounded by any membrane system. They may either lie free in the cytoplasm (e.g., Cyanophycean granules, glycogen granules) or may be covered by 2-4 nm thick, non-protein membrane (e.g., Gas vacuoles, sulphur granules, etc).