Micro-organisms

- Micro organisms are living structure of micro-scopial size.
- Protista
  - Prokaryotes
    - Bacteria belong to this group
  - Eukaryotes.
    - Fungi, algae, protozoa.
- Bacteria : size of bacteria is measured in unit of a micron
- Study of bacteria
  - unstained (wet)
    - examined mainly for bacterial motility
  - stained
    - smear made from baeterial culture or specimen
    - Heat kills & fixes the bacteria on slide due to coagulation of bacteria protein.

Gram's stain :

- Heat fixed smear of specimen is stained with crystal voilet for 1 min.
- Gram's stain
  - Gram positive
    - resist decolouration & retain the color of primary stain
  - Gram negetive.
    - decolourisation by acetone/ alcohol e
    - Take stain & appear red.

→ Acid fast stain (Zie) - Neelsen stain)

- It was discovered by Ehrlich & modified by Ziehl & Neelson.
- carbol fuzhsin stain is poured on a slide containing fixed smear.

* Morphology of Bacteria:

i) cocci:

- These are oval or spherical cells
- These may be arranged in pairs, chains, clusters.

ii) Bacilli:

- These are rod shaped cells
- coccbacilli: length of bacteria is approx. same as its width.
- streptobacillis: These bacillis are arranged in chains.
- comma shaped: curved appearance
- spirilla: rigid spiral forms.

* Bacterial Anatomy:

- outer layer or cell envelope of bacteria cell consist of 2 components:

a) Rigid cell wall b) plasma membrane.

i) cell wall:

- It is tough & rigid structure, surrounding bacteria like a shell

ii) Cytoplasmic membrane:

- It is thick elastic semi-permeable layer which lies beneath the cell wall.
- It acts as osmotic barrier
- It acts as a semi-permeable controlling inflow & outflow.

→ Ribosomes :- proteins synthesis
- composed of rRNA

→ Mesosomeres :- vesicular
- Multi-laminated

→ Nucleus :- DNA is double stranded
- Bacterial DNA is haploid.

→ Flagella :- They are for locomotion

→ Fimbraie :- Hair like appendages projecting from the cell surface
- thy are also called pili

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