

Shapes of Bacteria

Spherical/Cocci

- 0.5µm - 1.25µm in diameter
- Micrococci → appears singly.
- Diplococcus → appears in a pairs of cells
- Streptococci → appears in rows of cells or in chains
- Staphylococci → arrange in irregular clusters like bunches of grapes.
- Tetrads → arrange in a sequence of four
- Sarcinae → arrange in cuboidal or in a different geometrical or packet arrangement.

Rod shaped Bacteria

- Bacillus → 0.5-1.2µm in diameter, 3-7µm in length.
 - flagellated
 - non-flagellated
 Their ends are rounded or pointed.
- monobacillus → arrange singly
- Diplobacillus → present in a group of two
- Streptobacillus → in chains.
- Palisade → very rarely, the bacillus arrange in a palisade arrangement.

Spiral/Ahelical

- 10-50µm in length
- 0.5-3µm in diameter
- flagellated
- spira → called
- A single spirillum has more than one turn of helix

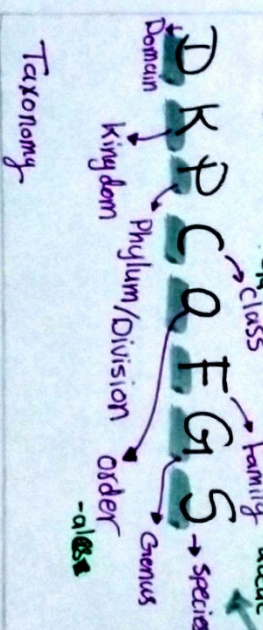
Vibrio / Coma

- 1.5 - 1.7µm in diameter
- up to 10µm in length
- They bear flagella at their end.
- eg → *Vibrio cholerae*.

Spirochaeta

- Their length is more as compared to their diameter
- appears like a cork screw & a trichous
- Their body is more flexible

Classification of Bacteria.



Methods used to classify bacteria

- Hierarchical classification
- Shapes & forms of Bacteria
- Physiology
- Molecular techniques: DNA, RNA & Protein synthesis

Ultrastructure of Bacterial cell

Structure external to cell wall

- Flagella
- Pili → somatic
- Fimbriae → sex/conjugative
- capsule
- sheaths
- prosthoeae & stalks
- cell wall

Structure internal to cell wall

- cytoplasmic membrane
- Mesosomes
- cytoplasm
- cytoplasmic inclusions & vacuoles
- Ribosomes
- Nuclear material
- Plasmid,