

LINNEAUS - Genus and species

KINGDOMS

EUCARYOTES - true nucleus

- * ANIMALS
- * PLANTS
- * FUNGI - primitive plants
- * PROTISTA - primitive animals (one cell)

EUBACTERIA - true bacteria

- * TYPICAL BACTERIA
- * PROCARYOTES

No nucleus

Single cells

Contain both RNA and DNA

ARCHEOBACTERIA - unusual bacteria

PROCARYOTES

extreme environments, hot springs

high salt concentration

do not have typical Eubacterial cell walls

Ribosomes similar to those in higher organisms

BACTERIAL CLASSIFICATION

DIVISION - SECTION - FAMILY - GENUS - SPECIES

DIVISIONS ARE DIVIDED ON BASIS OF CELL WALL STRUCTURE

DIVISION:

- I. - STAIN RED - GRAM NEGATIVE
- II. - STAIN BLUE - GRAM POSITIVE
- III. - WALL-LESS BACTERIA
- IV. - BACTERIA WITH UNUSUAL CELL WALLS
INCLUDING ARCHEOBACTERIA

ADDITIONAL CHARACTERISTICS WHICH FURTHER DIVIDE INCLUDE:

CELL MORPHOLOGY - SIZE, SHAPE

MOTILITY

COLONY COLOR

PATHOGENICITY

BIOCHEMICAL PROPERTIES

EXAMPLES:

DIVISION I - GRAM NEGATIVE

SECTION 1 - SPIROCHETES - SPIRAL SHAPE, FLEXIBLE

Treponema pallidum - syphilis

DIVISION II - GRAM POSITIVE

SECTION 16 - MYCOBACTERIAL - RODS, THICK WAXY WALLS

Mycobacterium tuberculosis

SECTION 12 - COCCI - GRAM POSITIVE SPHERES

FAMILY 1 - *MICROCOCCACEAE* - SPHERES

IRREGULAR CLUMPS OR

PACKETS OF 4

OR PACKETS OF 8

GENUS - *Staphylococcus* -

SPECIES

aureus - YELLOW COLONY; CAUSES BOILS

epidermidis - WHITE COLONY; NOT CAUSING DISEASE USUALLY

IMPORTANT GENUS (not in any family): *Streptococcus pyogenes* - STREP THROAT