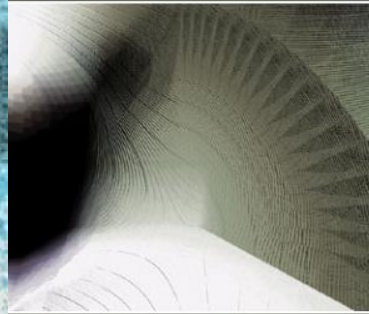
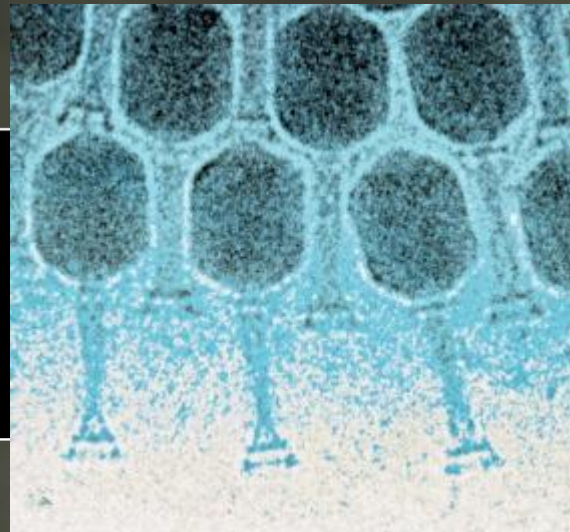


Viruses

Small but deadly!



What Is A Virus?

- Viruses do not fit in the six-kingdom system because they do not display most of the characteristics of living cells.
- Viruses can only live as parasites.
- They occupy a position between non-living and living.

Virus Anatomy

- Range in size from 20-400 nm (1 nm=10⁻⁹m)

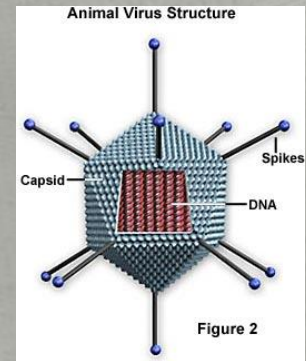
- Made up of nucleic acid and a protein covering called a capsid.

-Capsid →

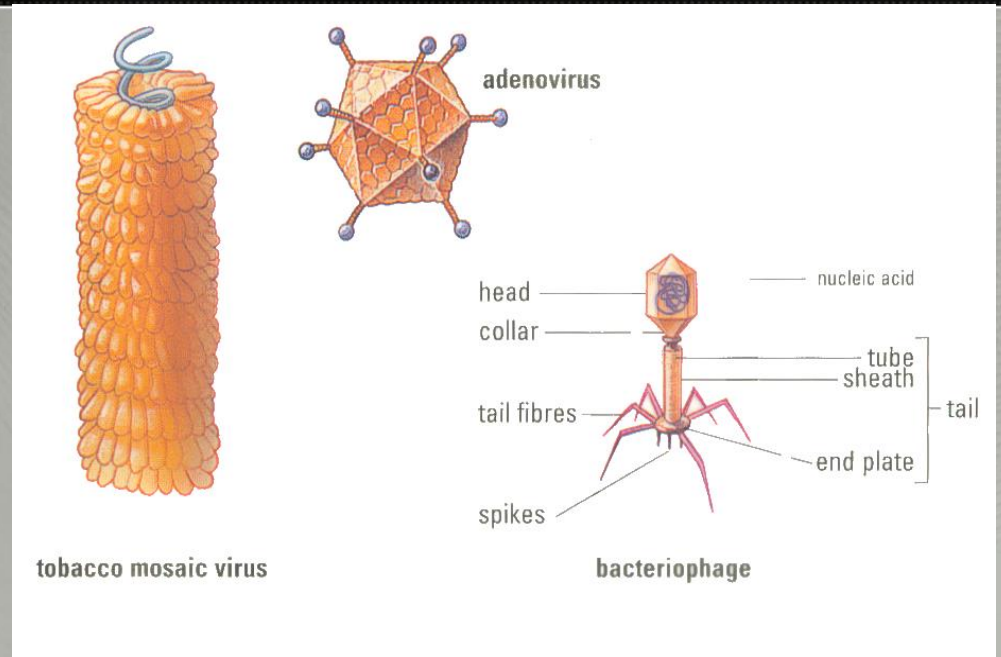
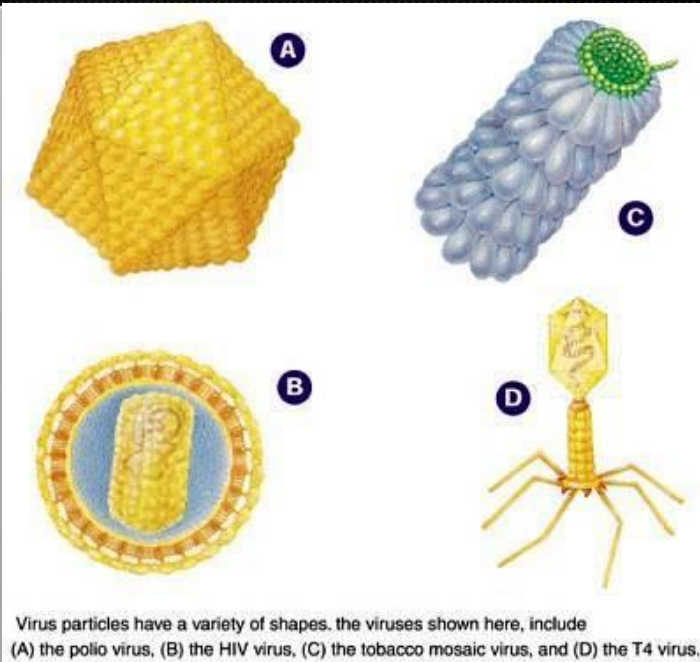
- made of protein molecules
- accounts for 95% of total virus
- gives virus its particular shape.

-Nucleic acid

- a single-stranded RNA or double-stranded DNA



Virus Shapes



Most viruses that infect plant and animal cells are:

- -Rod-shaped viruses
- -Globular-shaped viruses

Virus Specificity

- Viruses must enter cells to carry out life processes.
- Not every virus is considered to be disease-causing.
- Viruses are generally selective, and, in most cases, specific viruses enter only specific host cells.

Virus Specificity

- Some animal viruses have a broad host range

Eg.

- Swine flu virus (hogs and humans)
- Rabies

- Other animal viruses have a very narrow host range

Eg.

- Human cold virus usually infects only the cells of the upper respiratory tract.
- AIDS virus attaches only to a specific site on the surface of T4 white blood cells.

Reproductive Cycles of Viruses

Five BASIC STEPS

- 1 & 2 Attachment and entrance:** Virus chemically recognizes a host cell and attaches to it. Either the whole virus or only its DNA or RNA material enters the cell's cytoplasm.
- 3. Synthesis of protein and nucleic acid units:** molecular information contained in the viral DNA or RNA directs the host cell in replicating viral components (nucleic acids, enzymes, capsid proteins, and other viral proteins)

Reproductive Cycles of Viruses

4. Assembly of the units: The viral nucleic acids, enzymes, and proteins are brought together and assembled into new virus particles
5. Release of new virus particles: newly formed virus particles are released from the infected cell and the host cell dies.