

Chapter 13 Summary

- I. Viral Morphology (pp. 365–366)
 - A. Helical viruses
 - B. Geometric viruses
 1. Polyhedral/Icosahedral
 - C. Complex
 - D. Enveloped
 - E. Obligate intracellular parasites (pp. 370–372)
- II. Viral Structure (pp. 363–366)
 - A. Nucleic Acid (pp. 363–364)
 - B. Capsid and Envelope (pp. 364–365)
 - C. Virion
 - D. Host Range (pp. 362–363)
- III. Viral Taxonomy
 - A. Baltimore classification
 1. Type of nucleic acid
 2. mRNA synthesis (replication strategy)
 3. Naming
- IV. Viral Identification (p. 372)
 - A. Cytopathic effects
 - B. Serological tests
 - C. Nucleic Acid assays
- V. Bacteriophage Replication (p. 370, 373–376)
 - A. Lytic cycle (stages 1–5)
 - B. Plaques & PFUs
 - C. Lysogenic cycle
- VI. Animal & Human Viruses (pp. 376–384)
 - A. May include envelope acquisition
 - B. Latent Viral Infections (p. 386)
 - C. Persistent Viral Infections (p. 386)
 - D. RNA-dependent RNA polymerases
- VII. Prions (pp. 388–389)
 - A. Cause Spongiform Encephalopathies in humans and animals
 1. Sporadic
 2. Transmissible

- a) Iatrogenic
 - b) Ingested
- B. The Protein Only hypothesis
1. PrP^c protein on chromosome 20.
 2. Mutates to PrP^{sc}
 3. Highly resistant to all methods of control.
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Study Questions

1. What are the characteristics common to all viruses? Which characteristics are found in only some viruses?
 2. How is the genome of a virus unique?
 3. How are viruses cultured? Why is this necessary for their propagation?
 4. How are viruses identified?
 5. How are viruses classified taxonomically? On what basis are the seven viral groupings made?
 6. Identify each of the three basic viral morphologies and viral envelopes. How are viral envelopes acquired?
 7. How do viruses attach to their host cells? Why is their attachment so specific?
 8. What is a bacteriophage? Define plaque and PFU.
 9. Compare and contrast the lytic and lysogenic life cycles of bacteriophages. Define plaque and PFU.
 10. Compare and contrast acute, latent, and persistent viral infections.
 11. When would a virus need an RNA-dependent RNA-polymerase?
 12. Discuss prions in terms of the general types of diseases they cause and how they are transmitted.
 13. What is the infectious agent of prion diseases? What does this require from the host in order to propagate itself?
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Animation Links

Note: many of the animations collected below require Adobe Flash or Shockwave players to work. These can be downloaded by clicking the links above. In addition: THESE WILL NOT PLAY ON GOOGLE CHROME or most MOBILE APPLICATIONS.

- [Prions: Characteristics](#)
- [Prions: Diseases](#)
- [Viral Replication: Animal Viruses](#)
- [Viral Replication: Temperate Bacteriophages](#)
- [Viral Replication: Virulent Bacteriophages](#)
- [Phage replication with quiz](#)