

Virology Live Fall 2021

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Study questions for session 3 – Genomes and Genetics

These questions are intended to summarize key points from this session and prepare you for the exams.

1. Describe two experimental approaches prove that viral DNA or RNA is the genetic material.
2. How many genome types are known? Name all of them, including a representative virus, and trace the pathway of each to mRNA.
3. The genome inside a virus particle is always a nucleic acid. If you could get *only* the genome into a cell, would it start the replication cycle? Consider this question for each of the seven known viral genome types.
4. What is the source of the enzyme that copies the genome of DNA viruses? Why are there different sources?
5. What is the source of the enzyme that copies the genome of RNA viruses? Explain why this always the source.
6. What can viruses with segmented genomes do that other viruses with unimolecular genomes cannot? Why is this process of evolutionary significance?
7. There is an infectious DNA clone for at least one member of nearly every virus family. How would these be used to produce a mutant virus? Why is this process so important to the field of virology? Why is it a source of concern to some?