

Chapter 13: Evolution and Diversity Among the Microbes



Chapter 13 Opener
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***Bacteria, archaea, protists, and viruses: the
unseen world***

Do Now:

Turn in webquest to bin.

Collect Infection Epidemic Worksheet.

Answer the following questions in your notebook.

- Where are glycoproteins found?
- What is their function?

Take-home message 13.18

- Glycoproteins on the surfaces of viruses determine what cells they can invade.
- Most viruses infect just one species, or only a few closely related species, and enter only one kind of cell in that species.

13.19 HIV illustrates the difficulty of controlling infectious viruses.

HIV mutates easily.

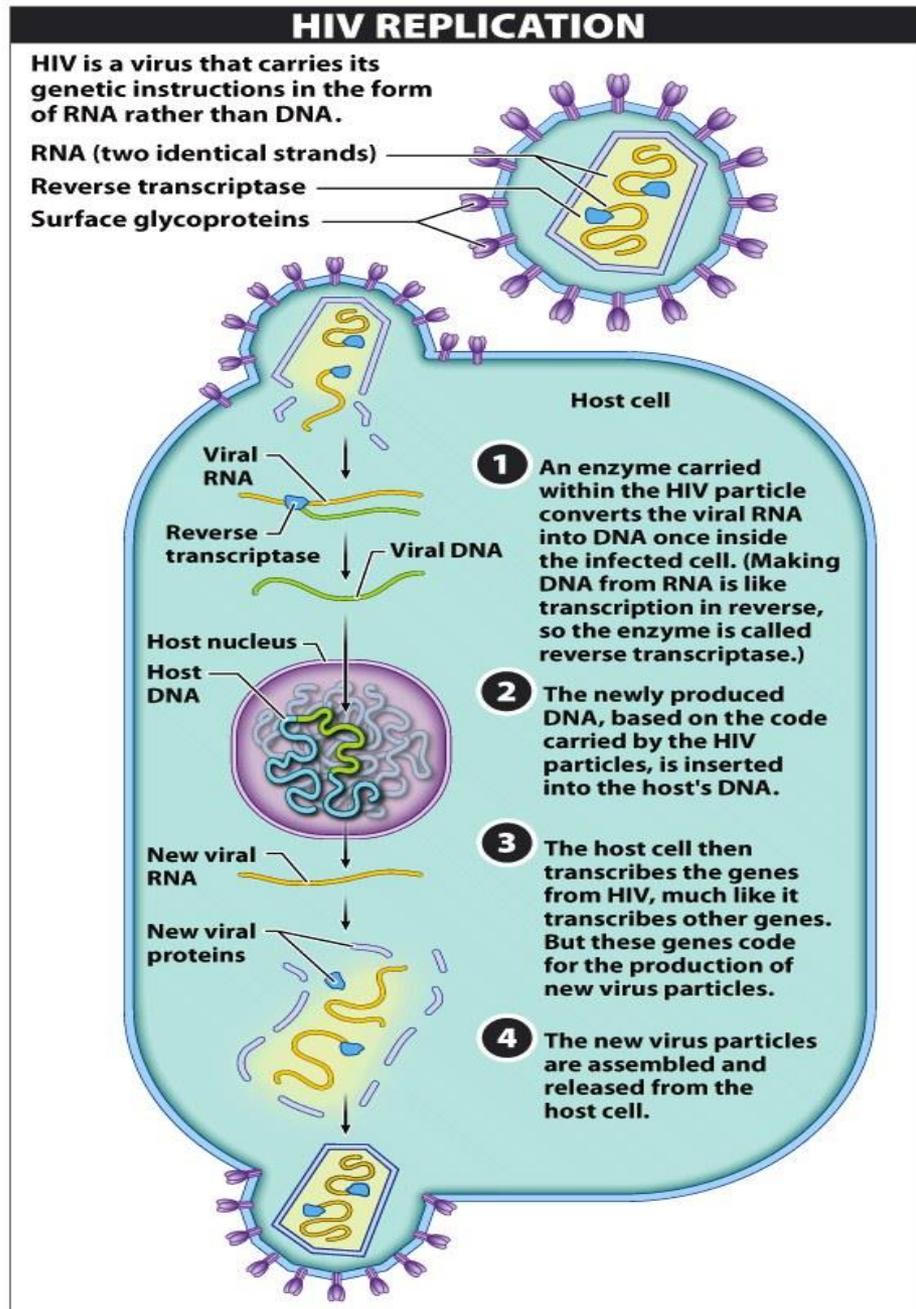


Figure 13-29

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HIV Attacks White Blood Cells

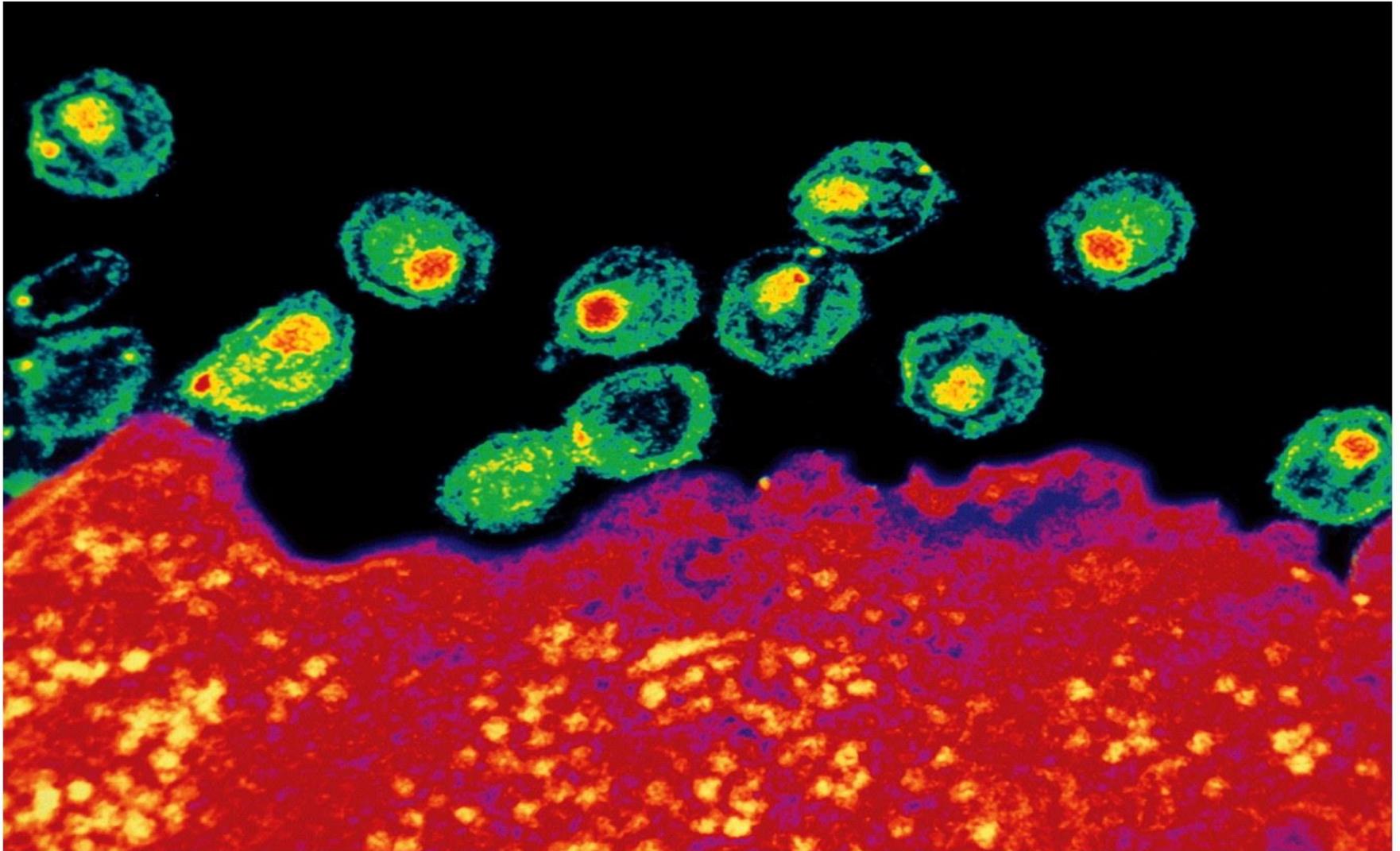


Figure 13-30

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The Immune System Collapses

- Normally, white blood cells all work together to identify and destroy cells that have been infected by a virus.
- HIV kills the cells that hunt for viruses and bacteria.
- The immune system begins to fail.

How does HIV evade the host immune system?

1. It attacks white blood cells of the immune system.
2. It mutates rapidly.
3. HIV actually evolves in the patient, so it is always changing.
4. All of the above

Take-home message 13.19

- HIV is especially difficult to control.
- Mutations change the properties of the virus so that it is hard for the immune system to recognize it, and they produce variants that are resistant to the drugs being used to treat the HIV infection.

- Which number does not belong? Why?

4, 16, 36, 48, 64, or 81

Pathogen transmission

- Vector transmission
- Droplet transmission
- Direct contact transmission
- Bodily fluid transmission
- Food Borne transmission

Pathogen Prevention and Treatment

- Use your phones or the textbooks to research the following topics
- 1s – Bacterial pathogen prevention
- 2s – Viral pathogen prevention
- 3s – Bacterial pathogen treatment
- 4s – Viral pathogen treatment

After you have found the answers, share with your group

Pathogen Prevention and Treatment

- Prevention
 - Vaccination
 - Sanitation
 - Disinfectants
 - Personal Hygiene
 - Wash food preparation surfaces and food
 - Food preparation
 - Heating food properly
 - Refrigerating food
- Treatment
 - Antibiotics
 - Over the counter cold medicine
 - Treat symptoms
 - Rest
 - Hydration

Retaking the Survey

- Retake survey
- Use a different colored pen (I have some available)
- Answer questions again. Did you choose different answers?

Viruses and Bacteria: Alive or Not Alive

Take-home message 13.16

- A virus is not alive, but it can carry out some of the same functions as living organisms, provided that it can get inside a cell.