ACTIVITY¹

Unit 2: Lesson 2 – Case Studies: Influenza and HIV

Activity 3: The Life Cycle of the Human Immunodeficiency Virus

Refer to Figure 1 on page 2 of this activity sheet and use resources suggested by your teacher to answer the questions.

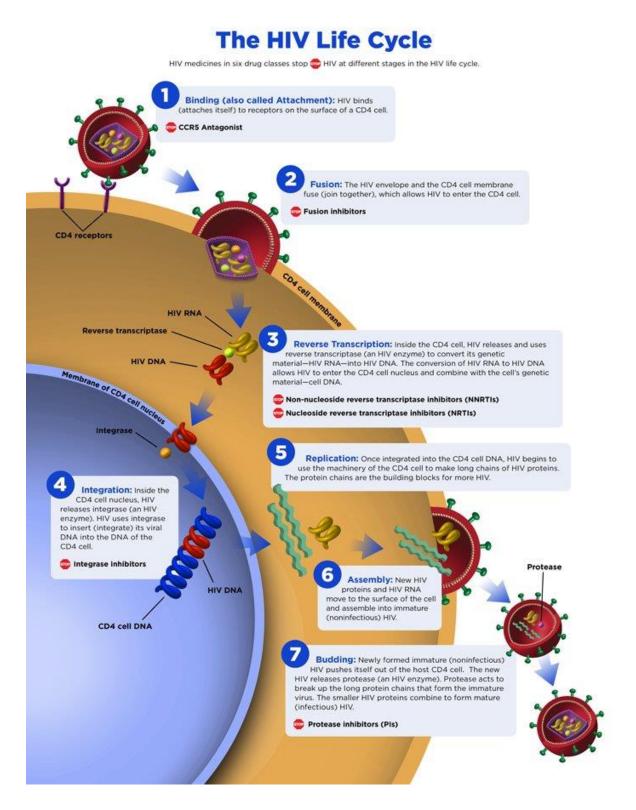
- 1. In Step 1, virus attaches (binds) to the host cell surface. What is the significance of the CD4 receptor?
- 2. In Step 2 the virus envelope fuses with the host cell membrane. How could a fusion inhibitor drug prevent HIV infection of the host cell?
- 3. What is the role of the reverse transcriptase enzyme molecule?
- 4. Which molecule enables HIV to integrate its DNA into the host cell's DNA?
- 5. In Step 5, what is the role of the host cell in allowing replication of HIV DNA?
- 6. Step 6 shows a process known as "assembly." In what way is assembly similar to the process of fusion in Step 2?
- 7. When the HIV particle first leaves the cell, it is inactive and cannot reinfect another host cell. What final step allows the HIV particle to become infectious?



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Figure 1. The HIV Life Cycle (Image source: NIH)





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