**Ch. 19 VIRUSES**

**Compare and contrast Bacteria and Viruses**

|  |  |
| --- | --- |
| **BACTERIA** | **VIRUSES** |
|  | **Modern Medicine Image Gallery** |

**Describe and label the structure of a virus.**

**Viral Functioning:**

* Limited \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Entry = attach to host cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Reproduce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ within \_\_\_\_\_\_\_\_\_\_ cells
* Can \_\_\_\_\_\_\_\_\_\_\_\_\_ easily
	+ RNA viruses: no \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Observe the viral pictures and descriptions on slides 8-10**

1. What are 2 things common to ALL viruses?
2. What arrangements of nucleic acid are possible in viruses? List them.
3. What type of virus is HIV?

**Viral Replication**



Viruses have 2 reproduction cycles. Compare them.

|  |  |
| --- | --- |
| **LYTIC CYCLE** | **LYSOGENIC CYCLE** |
|  |  |



This is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cycle

**Watch the T4 Bacteriophage animation on slide 14.**

1. What was being injected into the host cell? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What remained outside the host membrane? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What type of virus is a bacteriophage? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

****

**What is unique about an animal virus?**

**Watch the video on slide 18 on the animal virus that causes Dengue Fever. Answer these questions:**

1. Describe (or draw) the structural components of the Dengue virus.
2. What (general) type of cell is its target host?
3. How does the virus enter the host cell? What type of receptor is used?
4. The virus changes the pH of the inside of the endomembrane vesicle. Use what you know about pH, protons, and proteins to explain the conformational changes that occur.
5. What does the virus ultimately release into the host cell?

**Watch the HIV life cycle on slide 19. Answer the questions.**

1. Describe the structure of the HIV retrovirus.
2. What enzyme can turn RNA into DNA? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What type of host cell is the target of the HIV virus? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. What is the name of the unique, and defining protein receptor on the cell surface of the Helper T-cells?
5. Predict: How well would the HIV virus be able to infect a cell that did not have a functional ccr5 receptor? Why?
6. Notice how the cell membranes of the HIV and the host T cell fuse together. What is left outside of the host cell?
7. Describe the activity of reverse transcriptase and complete the flow chart below.

ssRNA 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slide 20: **RETROVIRUSES**:

**Prevention/Treatment Drugs:**

**VIROIDS:**

**PRIONS:**

**Watch the Edpuzzle videos and the TedEd on Smallpox.**