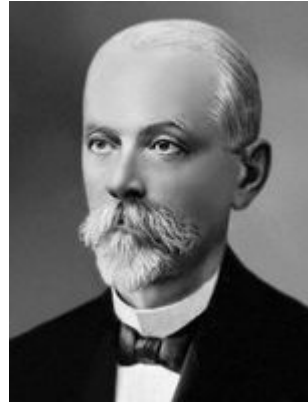


The background is a vibrant, microscopic scene. A large, translucent blue cell with a purple nucleus is the central focus. Surrounding it are various colorful viruses, including yellow and red spherical ones with spikes, and a pink one with long, thin filaments. The overall color palette is dominated by blues, purples, and bright yellows and oranges.

# BACTERIA & VIRUSES

**How do microorganisms influence our lives?**



1892, Dmitri Ivanovski extracted the juice from diseased plants and identified tiny particles in the juice he believed were causing the disease...

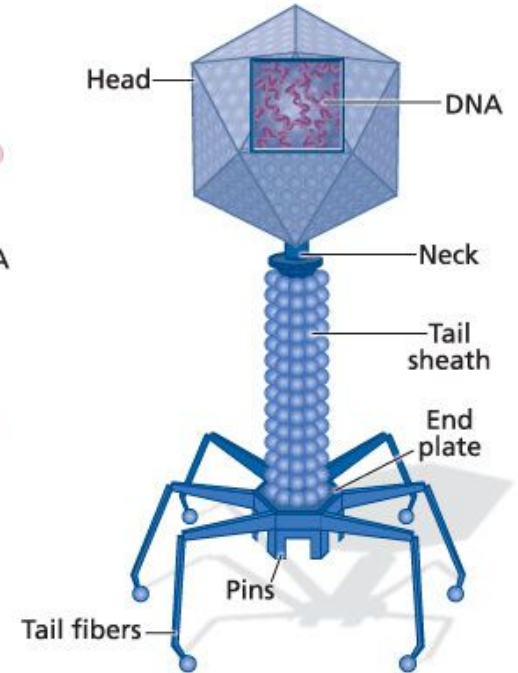
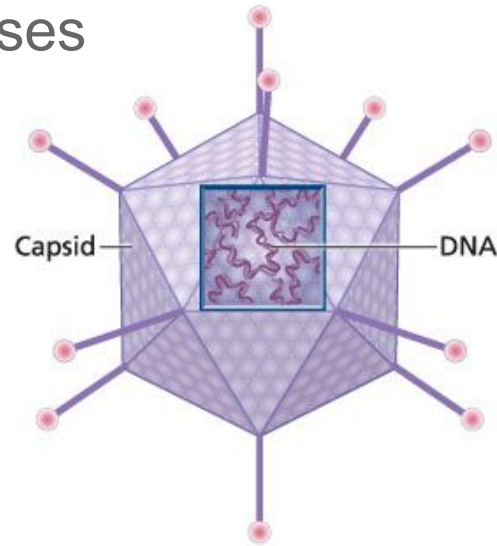
*virus= poison*

1935, Wendell Stanley observed that these tiny particles could crystallize and therefore are not alive...



**Virus**: tiny particles of nucleic acids, proteins, and sometimes lipids that are **not** living

- Enter living cells and use the cell to produce more viruses
- Composed of a core of DNA or RNA surrounded by a protein coat
- **Capsid**: protein coat

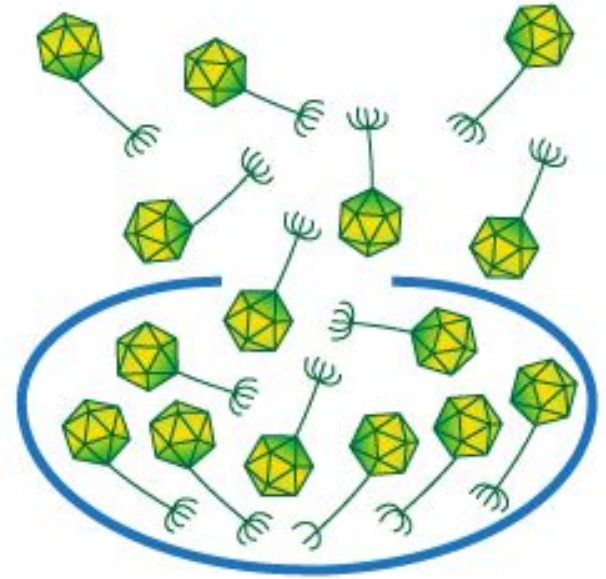


# 2 TYPES OF VIRAL INFECTIONS

## Lytic infection:

virus enters a cell makes copies of itself and causes the cell to burst... *kills the cell*

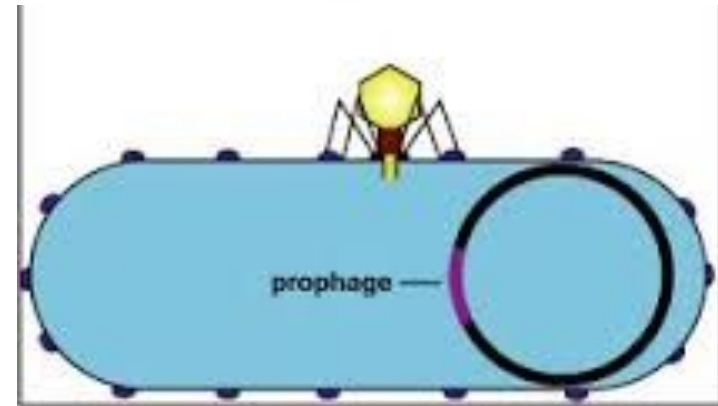
*Lyse= to burst*



## Lysogenic infection:

virus integrates its DNA into the DNA of the cell and the viral genetic information is replicated with the host cell.

- Prophage: injected viral DNA

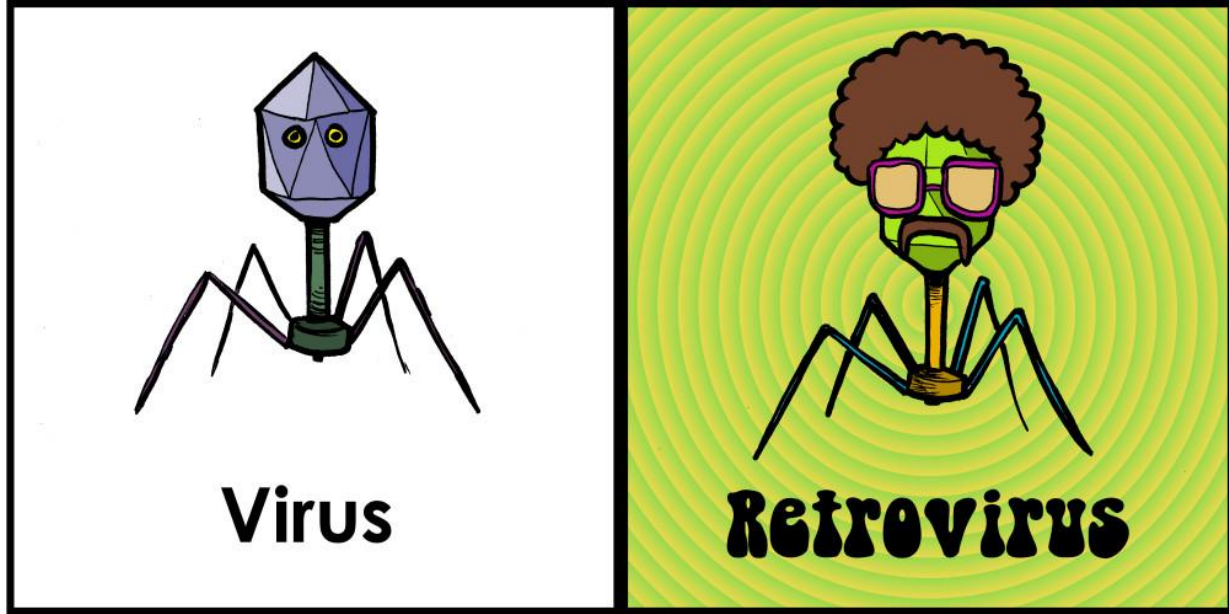


**Retroviruses**: contain RNA

Once they enter a cell they can make a DNA copy of their RNA and insert it to host DNA (like a prophage)

*Retro = backwards*

RNA



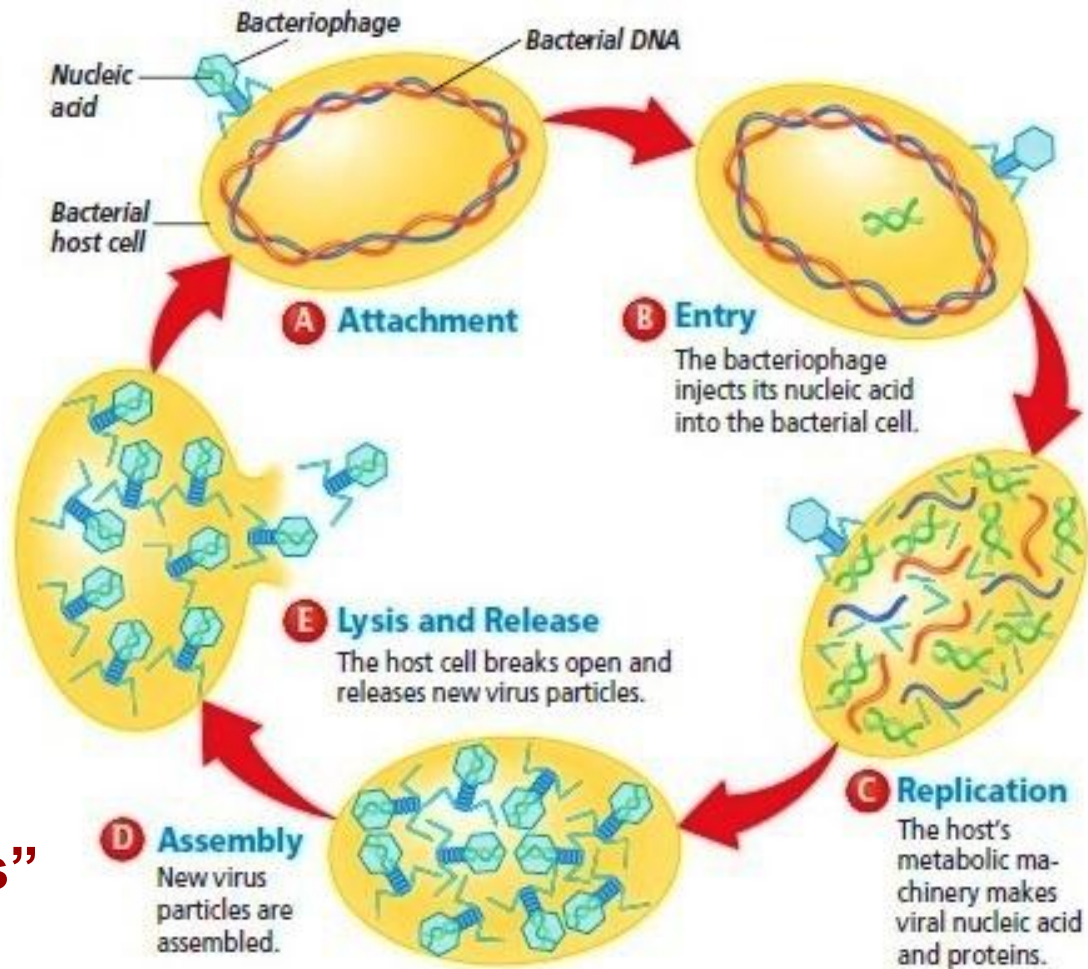
**Virus**

**Retrovirus**

DNA

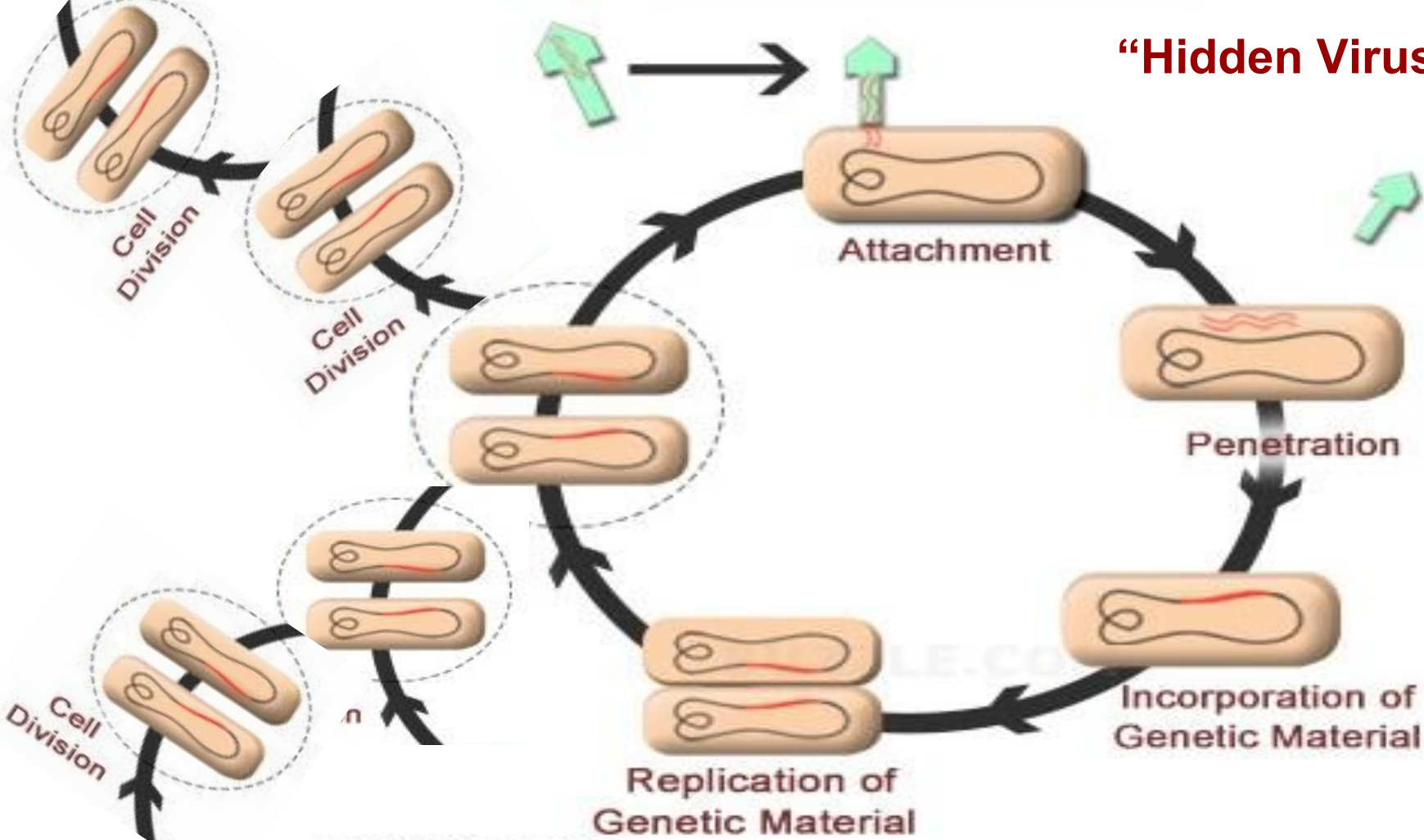
RNA

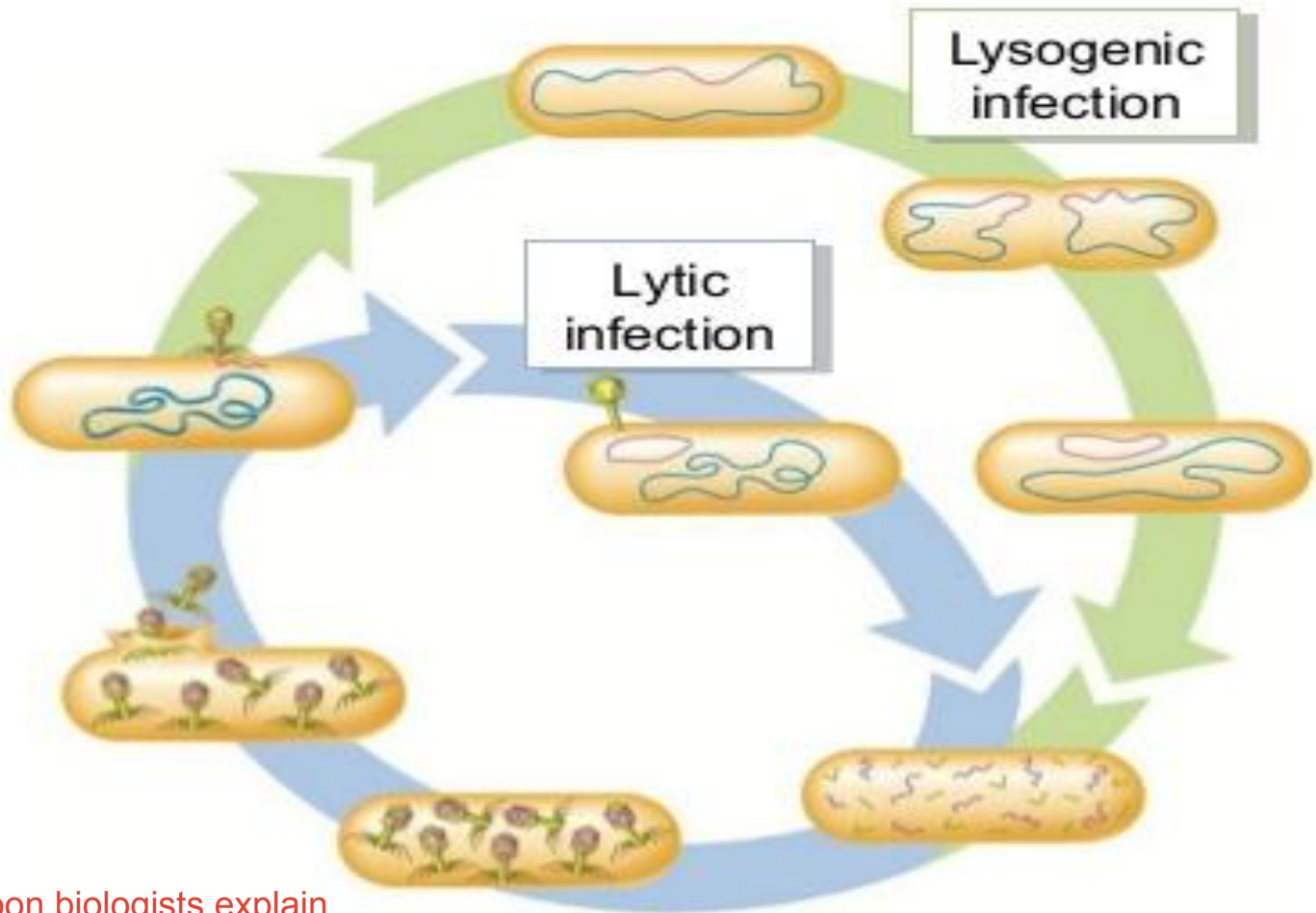
In a lytic cycle, a virus uses the host cell's energy and raw materials to make new viruses. A typical lytic cycle takes about 30 minutes and produces about 200 new viruses.



**“Active Virus”**

# “Hidden Virus”





[Your favorite cartoon biologists explain Viruses!!](#)



# VIRUS REVIEW:

- What sort of living thing could you compare a virus to?
- Are viruses alive? Why or why not?
- How can we compare viruses to living cells?

