

# Viruses and Prions

- \* Virus – nonliving strand of material with a protein coat
- \* Some are harmful, some are not
- \* They do not exhibit all 8 characteristics of life
  - \* No organelles
  - \* Cannot take in nutrients or use energy
  - \* Cannot move
  - \* Cannot replicate on their own

# Viruses and Prions

AIDS (HIV)	Herpes	Measles	Mumps	Chicken pox
Common cold	Influenza	Warts	Shingles	Gastroenteritis
Polio	Viral meningitis	Rabies	Smallpox	hepatitis

# Viruses and Prions

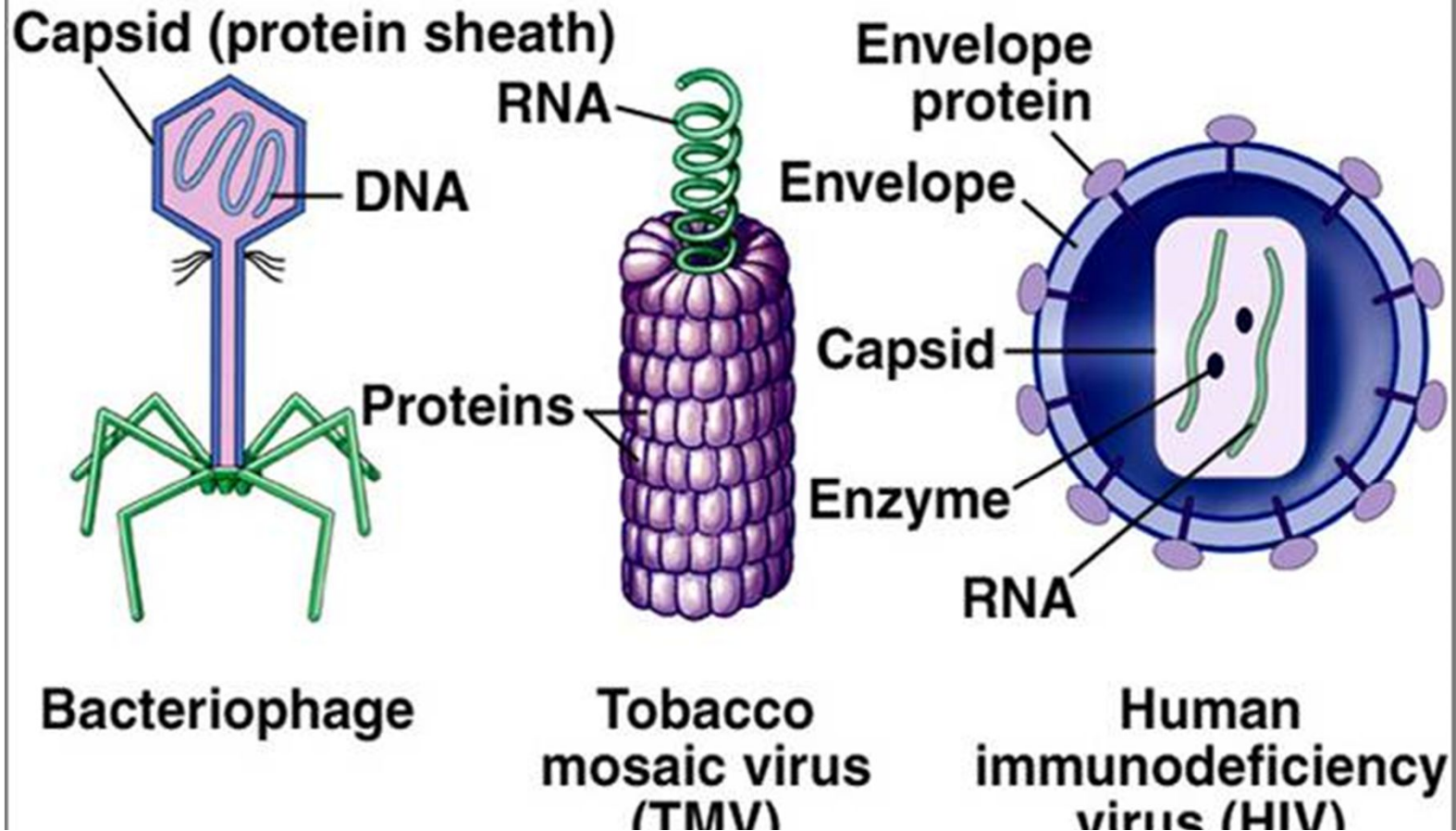
- \* Virus Size
  - \* Electron microscopes needed because they are so small
  - \* 10,000 cold viruses would fit on this sentence
- \* Virus Origin
  - \* Not actually known – just theories
  - \* Evolved from parts of cells
  - \* Genetic material is similar to cellular genes

# Viruses and Prions

- \* Outer layer of all viruses is made of protein called a capsid
  - \* Contains the genetic material – either DNA or RNA
- \* Classified by type of DNA or RNA they contain
  - \* Smallpox is a DNA virus
  - \* Replicates using DNA, not RNA

# Viruses and Prions

## Viral Structure



# Viruses and Prions

- \* Prion – protein that can cause infection or disease
- \* Not well understood until 1982
- \* Normally exist in our cells and shaped like a coil
- \* Mutations in genes make the coil to be misshapen
- \* The misshapen protein then infects the host with a prion-disease
  - \* Mad cow disease
  - \* Creutzfeldt-Jakob disease
  - \* Scrapie in sheep
  - \* Chronic wasting disease in deer

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