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→ No cell

acellular infectious agents

- viruses
  - extracellular
    - virion (total virus package)
      - capsid (protein coat)
        - required virus
      - genetic material (DNA or RNA)
      - envelope (host's membrane)
  - intracellular
    - genetic material
- viroids
  - circular RNA
    - plants
- prions
  - infectious protein
    - PrP
      - cell membrane
        - α helices
          - good
        - β sheets
          - bad
            - Prion
              - neuron degeneration
                - spongiform encephalopathies
                - BSE (mad cow disease)
                - CJD, Kuru
                - humans
                - scrapie - sheep
                - autoclave w/ NaOH
                - degrade prion

Viral Replication (bacteriophages)

- lytic
  - active viral replication
    - attack
    - * entry (DNA/RNA)
    - synthesis
    - assembly
    - * Released
      - * lysozyme
        - degrade bacterial cell wall
      - lysis / death of cell
- lysogenic = latency
  - animal cell viruses
  - dormant
    - integrates host genome
      - prophage
      - permanent state
      - virus replicates w/ host cell
        - Xrays
        - uvrays
    - provirus
      - HIV herpes