Virus Attachment & Entry

Tuesday, October 28, 2014 6:22 PM

Steps in Virus Infection of a Cell

Attachment

- Random Chance
  - Diffusion, Brownian motion, electrostatic intx.
- Non-specific → Specific adherence

Vocabulary

- Cell receptor : Specific molecule on cell surface
- Virus attachment protein : Molecules on virion that bind cell receptor

Identifying cell receptors for specific virus

- Lyse cells and gel membrane proteins
- Blot gel with labelled virus
- Block infection using antibody to receptor
- Express receptor in resistant but permissive cells

Entry / Penetration

- Non-enveloped can only enter through endocytosis
  - Uncoating reqs conformational change
    - Binding receptors
    - pH changes ; vesicle → lysosome
  - Change releases hydrophobic into bilayer, forming channel
- Enveloped virus must fuse w/ membranes
  - Fusing w/ outer membrane
    - Initiated by virus receptor intx.
    - Insertion of hydrophobic region → Fusion pore
  - Endocytosis
    - pH changes → Same as fusing w/ outer

Targeting

- Virus that req. nucleus
- Use cell's transport (e.g. microtubules)