

Chapter 16 - Viruses: Cultivation Methods, Pathogenicity

Cancer Viruses - insert selves into host chromosome to make oncogene

Viriods - nucleic acid without protein coat, associated with slow virus diseases

Prions - proteins without nucleic acids (proteinacious infectious material)

Detection of Viruses

1. Direct

- a. Infected tissue culture (CPE or Cytopathic effect) What happens to the cell after its infected (characteristics)
- b. Observe under an Electron Microscope

2. Indirect - Check for antibody increase in serum

- a. increase in titer status = 4X increase 1 month later

3. Signs of body cell infection

- a. Change in cell morphology (CPE)

Negri Bodies - deposits in brain cells as dark spots (found from rabies)

Koplik Spots - white spots on mucous membrane of mouth (found from measles)

Downy Cells - swollen lymphocytes (monocytes) (found from mono)

Inhibition of Viruses

Phagocytosis & neutralizing antibody (non specific defense)

Interferon (protein made by your own infected cells)

- targets cells with virus or cancer cells

Anti-Viral Drugs

Amantadine - effective on Influenza type A if taken within 1st day

Acyclovir - topical for genital herpes

AZT - used for AIDS (Thymidine analog prevents replication)

Ribavirin used for rotavirus and new borns with RSV

Viral Vaccines

- Inactivated, attenuated - "Salk Polio vaccine" (but capsids remain)
- Recombinant viral vaccines - Hep B, AIDS vaccine

Other Agents

Chemical

Boiling

Phenols

Physical

UV light

Formaldehyde

Heat

Halogens

Clorox

autoclave

Heavy metals

Iodine/Betadine

ether, chloroform, detergent for enveloped viruses only