



Antiviral Agents

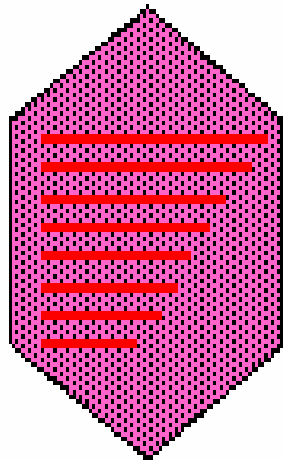
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virus

Influenza virus:

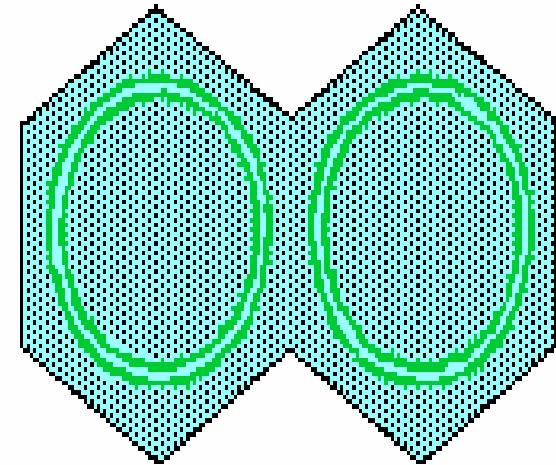
8 segments negative-sense RNA



Segmented

Gemini virus:

2 molecules double-stranded DNA



Bipartite

Introduction:

- ∞ **Viral infection became one of the most dangerous diseases in the world, the most common viruses affecting human being are influenza virus, hepatitis A,B,C,D viruses, human immunodeficiency virus (HIV), Rubella, Herpes and respiratory virus.**
- ∞ **The first systemic antiviral agent, amantadine, was approved in 1966. Because viruses share many of the metabolic processes of the host cell, it is difficult to find drugs that are selective for the pathogen. So those agents that may inhabits or cause the death viruses are also very likely to injury the host cells that harbor them.**

Mechanism of Action

∞ Because of diversity of antiviral agents, a general discussion of the action of antiviral drugs is difficult. In general, most antiviral agents interfere with viral DNA polymerase, which inhibits viral replication. In case of amantadine and rimantadine, the antiviral agent interferes with viral entry into the host cell.

Antiviral Agents

<i>drug</i>	<i>M.O.A</i>	<i>Indication</i>
Acyclovir	Interfere with DNA of virus leading to inhibition of DNA synthesis	<ul style="list-style-type: none">•hepatitis•herpes genitalis•herpes simplex virus type 1
Amantadine	block the uncoating of the virus It also may interfere with penetration of the cell wall by adsorbed virus	<ul style="list-style-type: none">•influenza prophylaxis•influenza virus type A•influenza virus type C
Famciclovir	Selectively inhibits viral DNA polymerase by competing with deoxyguanosine triphosphate.	<ul style="list-style-type: none">•herpes genitalis•herpes genitalis prophylaxis†

Side effects

- ∩ **Acyclovir**
abdominal pain, anorexia and headache
- ∩ **Amantadine**
confusion, constipation and depression
- ∩ **Famciclovir**
diarrhea, dizziness and fatigue



Contraindication

- ∞ **Acyclovir**
neurological disease, pregnancy and renal disease
- ∞ **Amantadine**
pregnancy, psychosis and renal impairment
- ∞ **Famciclovir**
breast-feeding, pregnancy and renal impairment



Drug interaction

∩ **Acyclovir**

probenecid, zidovudine, AZT

∩ **Amantadine**

ethanol, hydrochlorothiazide



pregnancy

- ∩ Acyclovir category C
- ∩ amantadine category C
- ∩ Cidofovir category C
- ∩ Ganciclovir category C
- ∩ Ribavirin category X

Acyclovir(herpes)

- ∴ For use on your skin or genitals only; do not get this medicine in your eyes.
- ∴ Wash your hands with soap and water before and after using this medicine.
- ∴ Store this medicine at room temperature away from heat and moisture



Famciclovir

- ⌚ Famciclovir may cause drowsiness or dizziness. Be careful when driving or operating machinery.
- ⌚ Take your medicine as soon as you remember that you have missed your dose.