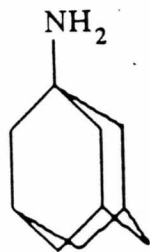
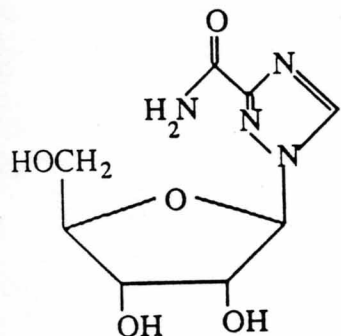


ANTIVIRAL DRUGS



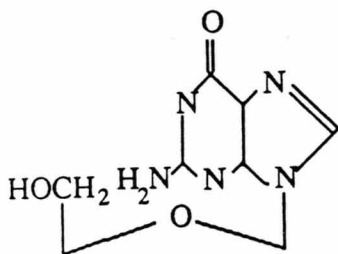
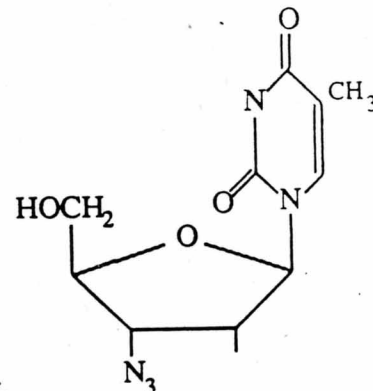
AMANTADINE is one of the earliest antiviral drugs. Its mechanism is not well understood -- it may inhibit attachment, penetration, or uncoating of the flu virus in human cells.

INTERFERONS are proteins, and are obviously far too complex to represent graphically. See discussion in Smith. Only Human interferon seems to work for people.



RIBAVIRIN inhibits purine nucleotide synthesis and also resembles guanosine enough to inhibit eucaryotic mRNA capping. It is useful against a rather wide variety of viruses including Lassa Fever.

AZIDOTHYIMIDINE was originally developed as an anti-cancer drug, but it has been much more successful as an inhibitor of Reverse Transcriptase. It is used against Retroviral infections including AIDS. Regular DNA Polymerase can detect the difference and exclude it, whereas reverse transcriptase uses it, which is fatal to that form of DNA synthesis.



ACYCLOVIR resembles Guanosine with part of the ribose ring missing. This binds strongly to the DNA Pol found in cells infected by Herpes Viruses but has a low affinity for normal cellular DNA polymerases. Both Acyclovir and Azidothymidine resemble the 2' 3' Dideoxynucleotides which are used in Sanger's DNA sequencing method. DNA Synthesis is terminated the same way in living cells in the presence of these drugs.

A report in Industrial Chemist, March 1987, page 32, mentions that simple compounds such as BENZALKONIUM CHLORIDE and nonoxynol-9, already in use as spermicides, appear to be able to kill the AIDS virus before it gets to its target cells.



There is a good article on antivirals in the April 1987 issue of SCIENTIFIC AMERICAN, page 76 by Martin Hirsch and Joan C. Kaplan.