

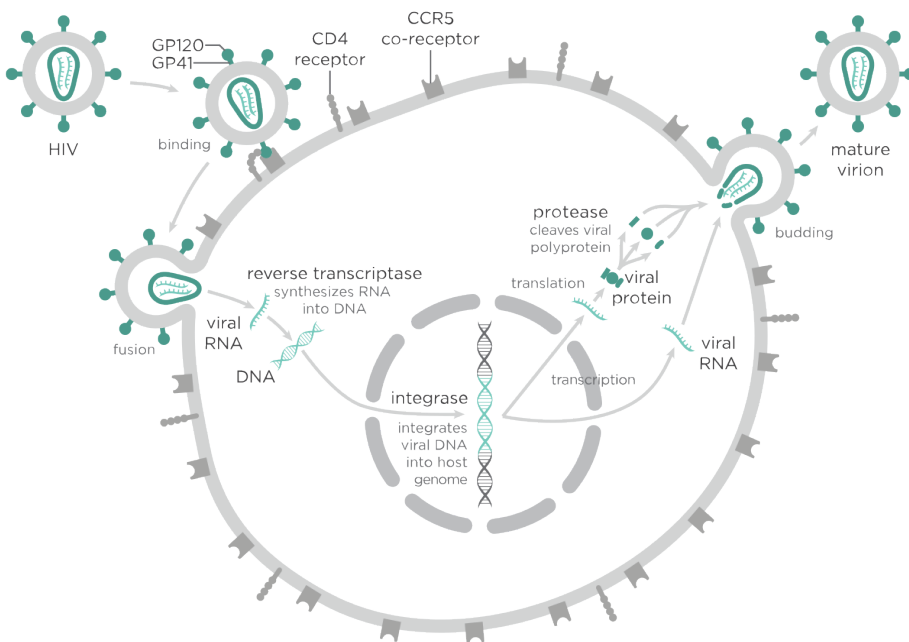
Antivirals

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Introduction to Antivirals

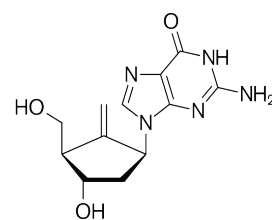
Viruses are infectious agents that use host cell machinery to replicate rather than their own. The life cycle of a virus includes several stages: attachment, entry, replication, assembly, and release. During the attachment stage, viral capsid proteins bind host cell surface receptors. After this binding, the viral and cell membranes may fuse, allowing viral entry into the cell. Once in the cell, viral DNA is produced and integrated into host cell DNA, allowing the host cell to begin replicating viral DNA. This viral DNA is processed and translated into proteins that are assembled into virus particles such as viral capsids or envelopes. Viruses are released from host cells either through budding, an exocytosis-like process, or cell lysis.



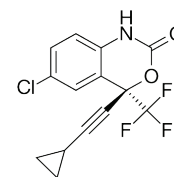
Reverse Transcriptase Inhibitors

Cat #	Product Name	Description	Purity
A0401	Abacavir	Inhibits HIV reverse transcriptase	≥98%
A0402	Abacavir Sulfate	Inhibits HIV reverse transcriptase	≥98%
D0261	Dapivirine	Inhibits HIV reverse transcriptase	≥98%
D3212	2',3'-Dideoxycytidine	Inhibits HIV reverse transcriptase	≥98%
D3214	2',3'-Dideoxyinosine	Inhibits HIV reverse transcriptase	≥98%
E2003	Efavirenz	Inhibits HIV reverse transcriptase	≥98%
E5178	Emtricitabine	Inhibits HIV and HBV reverse transcriptase	≥98%
E5576	Entecavir	Inhibits HIV and HBV reverse transcriptase	≥97%
G0243	(-)-Gallocatechin	Inhibits HIV integrase and reverse transcriptase	≥98%
L0350	Lamivudine	Inhibits HIV and HBV reverse transcriptase	≥98%
Q8016	Quercetin Dihydrate	Inhibits MMLV and RAV-2 reverse transcriptase	≥95%
R8207	β-Rubromycin	Inhibits HIV reverse transcriptase	≥98%
S7603	Stavudine	Inhibits HIV reverse transcriptase	≥98%
T1854	Tenofovir Monohydrate	Inhibits HIV and HBV reverse transcriptase	≥98%

Reverse transcriptase (RT) is an enzyme used to generate complimentary DNA (cDNA) from RNA during reverse transcription. This enzyme complex includes an RNA-dependent DNA polymerase and a DNA-dependent DNA polymerase that work together to perform transcription. cDNA encoded by RTs is incorporated into the host genome and replicated during the spread of infection. RTs are primarily associated with retroviruses but can also be found in other viruses, including hepatitis B virus.



E5576 Entecavir

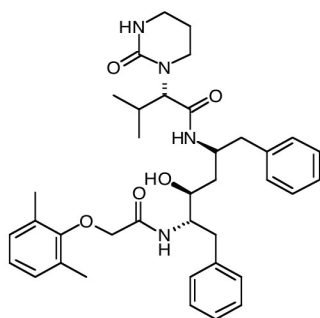


E2003 Efavirenz

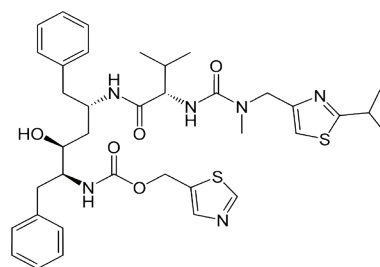
Protease Inhibitors

Viral proteases are enzymes involved in proteolytic cleavage of protein precursors necessary for production of infection viral particles such as the viral capsid or envelope proteins required to create a mature virion. HIV-1 protease is a retroviral aspartyl protease; without activity of this protease, virions are not infectious. Inhibition of proteases prevents the virus from being able to infect other cells.

Cat #	Product Name	Description	Purity
D1872	Des(benzylpyridyl) Atazanavir	Inhibits HIV protease	≥98%
G3353	Ginkgolic Acid	Inhibits HIV protease	≥98%
G3352	Ginkgolic Acid (13:0)	Inhibits HIV protease	≥98%
G3351	Ginkgolic Acid Mixture	Inhibits HIV protease	≥98%
I5313	Indinavir Sulfate	Inhibits HIV protease, GLUT4, and calpain	≥98%
L5862	Lopinavir	Inhibits HIV protease and SERCA	≥98%
N5550	Nomilin	Inhibits HIV protease	≥98%
R3577	Ritonavir	Inhibits HIV protease	≥98%
V9200	VX-950	Inhibits HCV NS3/4A protease	≥98%



L5862 Lopinavir

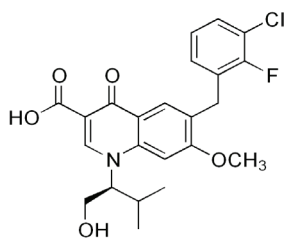


R3577 Ritonavir

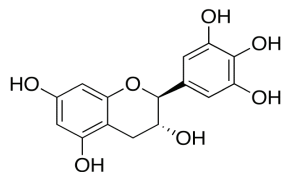
Integrase Inhibitors

Cat #	Product Name	Description	Purity
H3275	HCKFWW Peptide	Inhibits HIV integrase	≥95%
C0253	Candesartan	Inhibits interaction between LEDGF and HIV-1 integrase	≥98%
C0254	Candesartan Cilexetil Ester	Inhibits interaction between LEDGF and HIV-1 integrase	≥98%
G0245	Gallocatechin Gallate	Inhibits HIV integrase	≥98%
G0243	(-)-Gallocatechin	Inhibits HIV integrase and reverse transcriptase	≥98%
E4785	Elvitegravir	Inhibits HIV integrase	≥98%
R0247	Raltegravir	Inhibits HIV integrase	≥98%

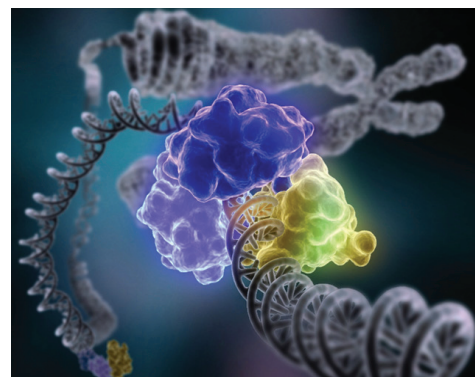
Integrase is an enzyme produced by retroviruses that enables viral genetic matter to be incorporated into the DNA of the host cell. Integrase takes the DNA produced by reverse transcriptase and catalyzes 3' processing and strand transfer to initiate ligation of viral DNA to host DNA. After this step, the host cell becomes a permanent carrier for the virus as it is often unable to differentiate between host and viral DNA.



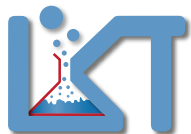
E4785 Elvitegravir



G0243 (-)-Gallocatechin



Integrase prepares viral DNA for ligation



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