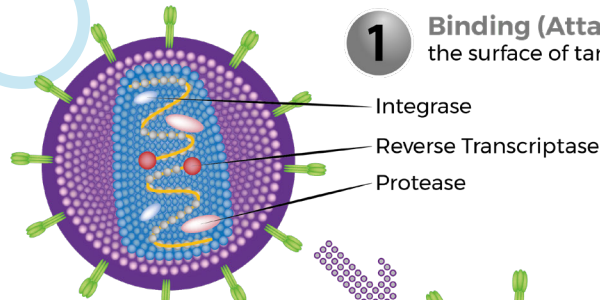


# DeepChek<sup>®</sup> HIV Genotyping & Drug Resistance Sequencing Assays

**1 Binding (Attachment):** The virus binds to CD4 receptors on the surface of target cells, such as CD4+ T lymphocytes.

 **Binding inhibitors** (e.g., Maraviroc)




**2 Fusion:** The virus fuses its membrane with that of the host cell, releasing its contents into the target cell's cytoplasm.

 **Fusion inhibitors** (e.g., Enfuvirtide)

CD4 cell membrane  
CD4 receptors

Nucleocapsid protein p7  
HIV RNA

**Reverse Transcription:** Viral RNA is converted into DNA by the action of the enzyme reverse transcriptase.

**3**  **Nucleoside reverse transcriptase inhibitors (NRTIs)** (e.g., Zidovudine, Lamivudine, Tenofovir)  
**Non-nucleoside reverse transcriptase inhibitors (NNRTIs)** (e.g., Efavirenz, Nevirapine)

Reverse Transcriptase  
HIV DNA

**Assembly:** Viral proteins and new RNA strands assemble to form new viral particles.

**6**


**Transcription:** The provirus is transcribed into viral RNA.  
**Translation:** Viral RNA is translated into viral proteins.

**5**

CD4 nucleus cell membrane

**Integration:** The viral DNA integrated into the host cell genome becomes part of the cellular DNA. This integrated DNA is called a provirus.

**4**

 **Integrase inhibitors** (e.g., Raltegravir, Dolutegravir)

Integrase

**Budding:** New viral particles exit the host cell through budding, taking with them a portion of the cell membrane that becomes the coating of the new viral particle.

**7**

 **Protease inhibitors** (e.g., Atazanavir, Darunavir)

Protease

**8**

**Capsid assembly:** involves packaging the viral genome, viral proteins, and necessary host components inside a protein capsid before export from the cell.

**Capsid assembly inhibitors** (e.g., Bevirimat, Ciclosporin, Lenacapavir)