Fusion Inhibitors

Fusion inhibitors, or entry inhibitors, are medications that are often used in combination therapy to prevent binding, fusion, and entry of the HIV virion into the host cell. Two drugs are commonly used and act in different manners. Enfuvirtide works by binding to gp41 (an HIV protein) and interferes with its ability to fuse with CD4+ cells. Maraviroc binds to CCR5 (receptor on human cells), preventing its interaction with viral gp120.



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Indications

HIV
Band-AIDS
Fusion inhibitors are indicated for treating HIV infection, typically as a part of multidrug therapy.

Drugs

Maraviroc
Maverick
Maraviroc is an oral medication that binds to CCR5 (receptor on human cells), preventing its interaction with viral protein gp120. This process disallows viral entry into the human cell.

Binds CCR-5 on T Cells
Binding to CCR-5 Crown on Tennis-ball
Maraviroc binds to CCR5, which is a receptor found on the surface of CD4+ cells and is called a chemokine receptor. Binding this receptor prevents interaction with gp120.

Blocks Interaction with gp120
Blocking Interaction with (gp) Grapes-120
Maraviroc prevents the host cell from interacting with gp120, which is a protein on the HIV surface that binds to CD4+ cells. Inhibiting interaction with gp120 prevents the binding of the HIV cell to CD4+, disrupting viral entry into the host cell.

Enfuvirtide
In-fruity-tights
Enfuvirtide is a fusion inhibitor that works by binding to gp41 (an HIV protein) and interferes with its ability to fuse with CD4+ cells.

Binds gp41
Binding to (gp) Grapes-41
Enfuvirtide works by binding to gp41, which is an HIV protein that penetrates the host's cell membrane.

Inhibits Viral Entry
Inhibiting-chains on Virus Entry
Binding to gp41 interferes with the viral cell's ability to approximate its membrane with the hosts, leading to defective fusion.

Side Effects

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Skin Reactions at Injection Sites (Enfuvirtide)

Skin-suit Reacting to Injection

Patients report a variety of drug effects from enfuvirtide administration through IV. These very common side effects include pain, hardening, erythema, nodules, itch, and cysts at the injection site.

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