APPENDIX B: SAFETY AND TOXICITY OF INDIVIDUAL ANTIRETROVIRAL AGENTS IN PREGNANCY

Updated: June 12, 2025
Reviewed: June 12, 2025

Overview

Nucleoside and Nucleotide Analogue Reverse Transcriptase Inhibitors

Nucleoside and nucleotide reverse transcriptase inhibitors (NRTIs) interfere with HIV reverse transcriptase by competitive inhibition. Nucleoside analogue drugs require three intracellular phosphorylation steps to form the triphosphate nucleoside, which is the active drug moiety. The nucleotide analogue tenofovir contains a monophosphate component attached to the adenine base and requires only two phosphorylation steps to form the active moiety.

For information regarding the nucleoside analogue drug class and potential mitochondrial toxicity during pregnancy and among infants, see Recommendations for Use of Antiretroviral Drugs During Pregnancy and Long-Term Follow-Up of Infants Exposed to Antiretroviral Drugs.

- Abacavir (Ziagen, ABC)
- Emtricitabine (Emtriva, FTC)
- Lamivudine (Epivir, 3TC)
- Tenofovir Alfenamide (Vemlidy, TAF)
- Tenofovir Disoproxil Fumarate (Viread, TDF)
- Zidovudine (Retrovir, ZDV)

Didanosine and stavudine are no longer recommended for use in pregnancy. Zalcitabine is not available in the United States. Information on these drugs can be found in the Archived Drugs section.

Non-Nucleoside Reverse Transcriptase Inhibitors

Non-nucleoside reverse transcriptase inhibitors (NNRTIs) interfere with HIV reverse transcriptase by binding directly to the enzyme.

- Doravirine (Pifeltro, DOR)
- Efavirenz (Sustiva, EFV)
- Etravirine (Intelence, ETR)
- Nevirapine (Viramune, NVP)
- Rilpivirine (Edurant, RPV)

- Delavirdine is no longer available in the United States. Information on this drug can be found in the Archived Drugs section.

Protease Inhibitors

Protease inhibitors (PIs) block the activity of the protease enzyme, which is required to assemble new HIV viral particles that are capable of infecting new cells.

Using PIs during pregnancy may increase the risk of adverse outcomes in the mother and neonate; see Antiretroviral Drug Regimens and Pregnancy Outcomes for more information.

- Atazanavir (Reyataz, ATV)
- Darunavir (Prezista, DRV)
- Lopinavir/Ritonavir (Kaletra, LPV/r)

Fosamprenavir, indinavir, nelfinavir, saquinavir, and tipranavir are no longer recommended for use in pregnancy. Amprenavir is no longer available in the United States. Information on these drugs can be found in the Archived Drugs section.

Entry and Attachment Inhibitors

Entry and attachment inhibitors block viral binding or fusion of HIV to host cells.

- Fostemsavir (Rukobia, FTR)
- Ibalizumab-uiyk (Trogarzo, IBA)
- Maraviroc (Selzentry, MVC)
- Enfuvirtide is not recommended for use in pregnancy. Information on this drug can be found in the Archived Drugs section.

Integrase Inhibitors

Integrase inhibitors block integrase, the viral enzyme that catalyzes the two-step process that inserts HIV DNA into the genome of the host cell.

- Bictegravir (BIC)
- Cabotegravir (CAB)
- Dolutegravir (Tivicay, DTG)
- Elvitegravir (EVG)
- Raltegravir (Isentress, RAL)

For information regarding the possible increased risk of neural tube defects in infants with potential *in utero* or intrapartum exposure to dolutegravir, see Teratogenicity and Recommendations for Use of Antiretroviral Drugs During Pregnancy.

Pharmacoenhancers

Pharmacoenhancers reduce the metabolism of antiretroviral drugs and prolong their presence in plasma, allowing for more convenient dosing regimens.

- Cobicistat (Tybost, COBI)
- Ritonavir (Norvir, RTV)

Capsid Inhibitors

Capsid inhibitors interfere with HIV capsid, a protein shell that protects HIV's genetic materials and the enzymes required for its replication. Capsid inhibitors can disrupt HIV capsid in multiple stages of the viral life.

- Lenacapavir (Sunlenca, LEN)