

PI Major Mutations:None

PI Accessory Mutations:None

PR Other Mutations:[V11I](#) • [T12V](#) • [I13S](#) • [K14Q](#) • [I15V](#) • [K20R](#) • [E35D](#) • [M36I](#) • [R41K](#) • [R57K](#) • [I62V](#) • [L63P](#) • [H69K](#) • [V75I](#) • [L89M](#)

Protease Inhibitors	
atazanavir/r (ATV/r)	Susceptible
darunavir/r (DRV/r)	Susceptible
fosamprenavir/r (FPV/r)	Susceptible
indinavir/r (IDV/r)	Susceptible
lopinavir/r (LPV/r)	Susceptible
nelfinavir (NFV)	Susceptible
saquinavir/r (SQV/r)	Susceptible
tipranavir/r (TPV/r)	Susceptible

PR comments

Other

- V11I/L** are relatively non-polymorphic accessory mutation selected in persons receiving DRV. V11I is a nonpolymorphic PI-selected mutation associated with reduced in vitro DRV susceptibility when it occurs in combination with other PI-resistance mutations.
- K20R** is a highly polymorphic PI-selected accessory mutation that increases replication fitness in viruses with PI-resistance mutations.

No drug resistance mutations were found for PI.

NRTI Mutations:[K219E](#)

NNRTI Mutations:[L100V](#) • [K103N](#)

RT Other Mutations:[V35T](#) • [E36D](#) • [T39M](#) • [P55S](#) • [V60I](#) • [H96P](#) • [K104R](#) • [K122E](#) • [D123N](#) • [I135T](#) • [N147D](#) • [K173S](#) • [Q174K](#) • [V179I](#) • [T200E](#) • [Q207A](#) • [R211S](#) • [F214S](#) • [K223R](#) • [E224X](#) • [M230D](#) • [Y232I](#) • [E233\\*](#) • [L234A](#) • [V245Q](#) • [P247L](#) • [K249E](#) • [N255M](#) • [D256I](#) • [G262R](#) • [W266R](#) • [A267V](#) • [Y271H](#) • [A272P](#) • [I274M](#) • [K275X](#) • [C280G](#) • [R284Q](#) • [T286E](#) • [K287P](#) • [A288M](#)

Nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	Susceptible
zidovudine (AZT)	Potential Low-Level Resistance
stavudine (D4T)	Potential Low-Level Resistance
didanosine (DDI)	Susceptible
emtricitabine (FTC)	Susceptible
lamivudine (3TC)	Susceptible
tenofovir (TDF)	Susceptible

Non-nucleoside Reverse Transcriptase Inhibitors	
doravirine (DOR)	Potential Low-Level Resistance
efavirenz (EFV)	High-Level Resistance
etravirine (ETR)	Potential Low-Level Resistance
nevirapine (NVP)	High-Level Resistance
rilpivirine (RPV)	Low-Level Resistance

RT comments

NRTI

- **K219E/Q/N/R** are accessory TAMs that usually occur in combination with multiple other TAMs.

NNRTI

- L100I is a non-polymorphic mutation that usually occurs in combination with K103N. In this setting it confers high-level resistance to NVP, EFV, and RPV and intermediate resistance to ETR and DOR. **L100V** is a rare mutations that likely has effects similar to L100I.
- **K103N** is a non-polymorphic mutation that confers high-level reductions in NVP and EFV susceptibility. It is the most commonly transmitted DRM.

Other

- **V179I** is a polymorphic mutation that is frequently selected in persons receiving ETR and RPV. However, it has little, if any, direct effect on NNRTI susceptibility.
- M230L is an uncommon non-polymorphic mutation selected in persons receiving EFV, NVP, and RPV. It causes intermediate to high-level resistance to each of the NNRTIs. M230I is a rare mutation selected by RPV. Its effects on NNRTI susceptibility have not been well studied. It also often occurs as a result of APOBEC-mediated G-to-A hypermutation resulting in viruses that are likely to be noninfectious. **M230D** is a highly unusual mutation at this position.
- L234I is a nonpolymorphic mutation selected in persons receiving NVP and EFV. It is also selected in vitro by ETR and DOR. In combination with V106A, it is associated with high-level DOR resistance. Its effect on susceptibility when it occurs alone has not been well characterized. **L234A** is a highly unusual mutation at this position.
- This virus is predicted to have low-level reduced susceptibility to **RPV**. The use of the combination of CAB/**RPV** should be considered to be relatively contraindicated.

Mutation scoring: RT

HIVDB 9.5.1 (2023-11-05)

Drug resistance mutation scores of NRTI:

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Rule	ABC ↕	AZT ↕	D4T ↕	DDI ↕	FTC ↕	3TC ↕	TDF ↕
<u>K219E</u>	5	10	10	5	0	0	5

Drug resistance mutation scores of NNRTI:

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Rule	DOR ↕	EFV ↕	ETR ↕	NVP ↕	RPV ↕
<u>L100V</u>	10	30	10	30	15
<u>K103N</u>	0	60	0	60	0
Total	10	90	10	90	15