

PI Major Mutations:None

PI Accessory Mutations:None

PR Other Mutations:

T12P10%
seen:29,702 • I13V17%
seen:29,703 • I15V70%
seen:30,801 • K20K1-12%
seen:32,327 • E35D10%
seen:34,796 • M36I98%
seen:34,779 • R41K10%
seen:34,728 • I62V10%
seen:28,805 • H69K10%
seen:29,660 • T74S10%
seen:25,017 • L89M17%
seen:28,914

Protease Inhibitors	
atazanavir/r (ATV/r)	Susceptible
darunavir/r (DRV/r)	Susceptible
lopinavir/r (LPV/r)	Susceptible

PR comments

Other

- K20I** is the consensus amino acid in subtype G and CRF02_AG. In subtypes B and C, **K20I** is a PI-selected mutation of uncertain effects on currently used PIs.
- T74S** is a PI-selected accessory mutation that is polymorphic in most non-B subtypes.

No drug resistance mutations were found for PI.

NRTI Mutations:

K70R14%
seen:32,383 • L74I14%
seen:32,674 • M184V10%
seen:32,217 • K219E10%
seen:32,808

NNRTI Mutations:

K103N10%
seen:9,302 • V108V1-70%
seen:9,379 • M230L10%
seen:33,393

RT Other Mutations:

E6EG1-10%
seen:28,305 • T7TA1-10%
seen:24,302 • A-24%
seen:34,381 • K20R14%
seen:33,803 • V35T10%
seen:34,281 • T39G10%
seen:33,314 • K43KR0-10%
seen:33,817 • D110DG0-10%
seen:9,301 • V118I10%
seen:9,294 • D121DH0-75%
seen:9,543 • H-22%
seen:34,343 • K122E98%
seen:9,402 • I135T10%
seen:11,100 • I142IT7-42%
seen:12,099 • V-14%
seen:33,747 • K173S10%
seen:11,747 • Q174K10%
seen:12,751 • V179I10%
seen:12,811 • T200A10%
seen:11,102 • I202V10%
seen:11,200 • Q207K10%
seen:11,200 • R211S10%
seen:11,790 • F214L10%
seen:11,104 • P225R10%
seen:31,801 • L228H10%
seen:11,840 • V243Q10%
seen:24,048 • E248D10%
seen:18,202 • A272P10%
seen:31,903 • K281R10%
seen:14,568 • L283LI1-75%
seen:33,799 • A-28%
seen:34,381

Nucleoside Reverse Transcriptase Inhibitors		Non-nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	Intermediate Resistance	doravirine (DOR)	High-Level Resistance
zidovudine (AZT)	Intermediate Resistance	efavirenz (EFV)	High-Level Resistance
emtricitabine (FTC)	High-Level Resistance	etravirine (ETR)	Intermediate Resistance
lamivudine (3TC)	High-Level Resistance	nevirapine (NVP)	High-Level Resistance
tenofovir (TDF)	Susceptible	rilpivirine (RPV)	High-Level Resistance

RT comments

NRTI

- K70R** is a TAM that confers intermediate resistance to AZT and contributes to reduced ABC and TDF susceptibility in combination with other TAMs.
- L74V causes intermediate ABC resistance. **L74I** causes low-level ABC resistance.
- M184V/I** cause high-level in vitro resistance to 3TC and FTC and low/intermediate resistance to ABC (3-fold reduced susceptibility). **M184V/I** are not contraindications to continued treatment with 3TC or FTC because they increase susceptibility to AZT and TDF and are associated with clinically significant reductions in HIV-1 replication.
- K219E/Q/N/R** are accessory TAMs that usually occur in combination with multiple other TAMs.

NNRTI

- K103N** is a non-polymorphic mutation that confers high-level reductions in NVP and EFV susceptibility. It is the most commonly transmitted DRM.
- V108I** is a relatively non-polymorphic accessory mutation selected in vitro and/or in vivo with each of the NNRTIs. It appears to contribute to reduced susceptibility to most NNRTIs only in combination with other NNRTI-resistance mutations.
- 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.

Other

- V118I** is a polymorphic accessory NRTI-resistance mutation that often occurs in combination with multiple TAMs.
- 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.
- P225H is a non-polymorphic EFV-selected mutation that usually occurs in combination with K103N. The combination of P225H and K103N synergistically reduces NVP, EFV and DOR susceptibility. **P225R** is a highly unusual mutation at this position.

Drug resistance mutation scores of NRTI:

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Rule	ABC	AZT	FTC	3TC	TDF
K70R	5	30	0	0	5
L74I	15	0	0	0	5
M184V	15	-10	60	60	-10
K219E	5	10	0	0	5
Total	40	30	60	60	5

Drug resistance mutation scores of NNRTI:

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Rule	DOR	EFV	ETR	NVP	RPV
V108V	10	10	0	15	0
M230L	60	45	30	60	60
K103N	0	60	0	60	0
Total	70	115	30	135	60