

PI Major Mutations:None

PI Accessory Mutations:None

PR Other Mutations:I13V 100%
seen:1,461 • I15V 79%
seen:2,338 • E35D 100%
seen:4,585 • M36I 100%
seen:4,585 • R41K 100%
seen:4,321 • R57K 100%
seen:3,311 • H69K 100%
seen:3,545 • K70KR 0.100%
seen:3,545 • L89M 100%
seen:2,732

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

No drug resistance mutations were found for PI.

NRTI Mutations:

M41L 100%
seen:1,338 • K70R 100%
seen:1,028 • M184V 100%
seen:5,028 • K219Q 100%
seen:3,338

NNRTI Mutations:

K103T 100%
seen:1,371 • V106A 100%
seen:851 • P225H 100%
seen:488

RT Other Mutations:EEEK 0.100%
seen:2,732 • K11T 100%
seen:2,311 • K20R 100%
seen:5,807 • V35T 100%
seen:3,275 • T39N 100%
seen:1,338 • T69N 100%
seen:1,328 • K122E 100%
seen:751 • D123G 100%
seen:714 • S163T 100%
seen:5,022 • K173S 100%
seen:5,402 • D177G 100%
seen:5,432 • I202V 100%
seen:2,305 • Q207A 100%
seen:1,002 • R211S 100%
seen:1,541 • L228HR 0.100%
seen:838 • V245Q 100%
seen:281 • E248N 100%
seen:173

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
stavudine (D4T)	Intermediate Resistance	etravirine (ETR)	Susceptible
didanosine (DDI)	Intermediate Resistance	nevirapine (NVP)	High-Level Resistance
emtricitabine (FTC)	High-Level Resistance	rilpivirine (RPV)	Susceptible
lamivudine (3TC)	High-Level Resistance		
tenofovir (TDF)	Susceptible		

RT comments

NRTI

- M41L is a TAM that usually occurs with T215Y. In combination, M41L plus T215Y confer intermediate / high-level resistance to AZT and d4T and contribute to reduced ddi, ABC and TDF susceptibility.
- K70R is a TAM that confers intermediate resistance to AZT and contributes to reduced ABC and TDF susceptibility in combination with other TAMs.
- 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/W/R are accessory TAMs that usually occur in combination with multiple other TAMs.

NNRTI

- K103T is an extremely rare non-polymorphic mutation that appears to confer intermediate/high-level resistance to NVP but it has little if any effect on EFV susceptibility.
- V106A is a non-polymorphic mutation that confers high-level resistance to NVP and DOR, and intermediate resistance to EFV. It is commonly selected in vitro and in vivo by DOR.
- 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.

Other

- T69N/S/A/I/E are relatively non-polymorphic mutations weakly selected in persons receiving NRTIs. They may minimally contribute reduced AZT susceptibility.

Drug resistance mutation scores of NRTI:

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Rule	ABC	AZT	D4T	DDI	FTC	3TC	TDF
M41L	5	15	15	10	0	0	5
K70R	5	30	15	10	0	0	5
M184V	15	-10	-10	10	60	60	-10
K219Q	5	10	10	5	0	0	5
Total	30	45	30	35	60	60	5

Drug resistance mutation scores of NNRTI:

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Rule	DOR	EFV	ETR	NVP	RPV
V106A	60	45	0	60	0
P225H	20	45	0	45	0
K103T	0	15	0	60	0
Total	80	105	0	165	0