

PI Major Mutations:	None
PI Accessory Mutations:	None
PR Other Mutations:	I13V <small>10% seen+12,301</small> • E35D <small>10% seen+52,636</small> • M36I <small>10% seen+52,632</small> • R41K <small>10% seen+52,327</small> • H69K <small>11% seen+85,502</small> • K70R <small>11% seen+85,238</small> • L89M <small>11% seen+26,333</small>
Protease Inhibitors	
atazanavir/r (ATV/r)	Susceptible
darunavir/r (DRV/r)	Susceptible
lopinavir/r (LPV/r)	Susceptible

No drug resistance mutations were found for PI.

NRTI Mutations:	M41ML <small>11.11% seen+21,307</small> • K65R <small>10% seen+29,622</small> • S68SG <small>10.10% seen+29,379</small> • M184V <small>10% seen+12,285</small>
NNRTI Mutations:	L100I <small>10% seen+25,480</small> • K103N <small>10% seen+26,263</small>
RT Other Mutations:	E6K <small>11% seen+22,242</small> • V8I <small>11% seen+23,758</small> • E28A <small>10% seen+22,368</small> • V35T <small>10% seen+21,352</small> • T39TA <small>11.11% seen+25,812</small> • K43S <small>10% seen+20,555</small> • K49KR <small>11.10% seen+25,771</small> • V60I <small>10% seen+25,212</small> • T107S <small>10% seen+25,352</small> • V111I <small>10% seen+22,363</small> • K122E <small>10% seen+22,352</small> • I135T <small>11% seen+19,838</small> • K173T <small>10% seen+12,292</small> • Q174K <small>10% seen+23,235</small> • D177E <small>11% seen+25,835</small> • I178L <small>10% seen+22,838</small> • V179I <small>10% seen+22,821</small> • T200A <small>10% seen+24,265</small> • Q207D <small>10% seen+12,855</small> • H208Y <small>11% seen+22,363</small> • R211K <small>10% seen+12,627</small> • V245E <small>10% seen+17,289</small> • D250E <small>10% seen+27,327</small> • T286A <small>11% seen+26,635</small> • I293V <small>10% seen+29,312</small> • F294T <small>10% seen+29,343</small> • E312D <small>10% seen+35,218</small> • V317A <small>10% seen+29,885</small> • G333D <small>10% seen+287</small> •
Nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	High-Level Resistance
zidovudine (AZT)	Susceptible
emtricitabine (FTC)	High-Level Resistance
lamivudine (3TC)	High-Level Resistance
tenofovir (TDF)	Intermediate Resistance
Non-nucleoside Reverse Transcriptase Inhibitors	
doravirine (DOR)	Intermediate Resistance
efavirenz (EFV)	High-Level Resistance
etravirine (ETR)	Intermediate Resistance
nevirapine (NVP)	High-Level Resistance
rilpivirine (RPV)	High-Level Resistance

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.
- K65R confers intermediate reductions in susceptibility to TDF, ABC, and 3TC/FTC. It increases AZT susceptibility. In NRTI-experienced, INSTI-naïve patients with K65R, TDF+3TC+DTG is usually highly effective and more effective than AZT/3TC/DTG. However, in patients receiving TDF+3TC+DTG, there is a risk of emergent DTG resistance that does not arise in NRTI-naïve patients receiving TDF+3TC+DTG.
- S68G is a polymorphic mutation that is often selected in combination with K65R. It partially restores the replication defect associated with K65R.
- 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.

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.
- 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.

Drug resistance mutation scores of NRTI:

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Rule	ABC ⇅	AZT ⇅	FTC ⇅	3TC ⇅	TDF ⇅
M41ML	5	15	0	0	5
K65R	45	-10	30	30	30
M184V	15	-10	60	60	-10
K65R + S68SG	0	0	0	0	5
Total	65	-5	90	90	50

Drug resistance mutation scores of NNRTI:

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Rule	DOR ⇅	EFV ⇅	ETR ⇅	NVP ⇅	RPV ⇅
L100I	15	60	30	60	60
L100I + K103N	15	0	0	0	0
K103N	0	60	0	60	0
Total	30	120	30	120	60