

PI Major Mutations:None

PI Accessory Mutations:None

PR Other Mutations:[V11X](#) • [T12C](#) • [I13Q](#) • [K14*](#) • G16A • [L23Y](#) • [L24*](#) • E35D • M36I • N37K • R41K • H69K • 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

No drug resistance mutations were found for PI.

NRTI Mutations:[M41L](#) • [M184V](#) • [L210W](#) • [T215Y](#)

NNRTI Mutations:[K103N](#)

RT Other Mutations:E28K • K32E • V35T • K49R • V60I • K122E • D123S • I135T • E169A • K173S • Q174K • D177E • T200A • I202V • Q207A • [K219X](#) • E224D • P226S • L228R • E233D • [L234S](#) • [H235S](#) • [P236D](#) • [D237S](#) • [K238D](#) • [W239S](#) • [T240H](#) • [V241Y](#) • Q242K • P243L • [I244Q](#) • V245K • L246R • [P247E](#) • [E248L](#) • [K249T](#) • [D250V](#) • [S251M](#)

Nucleoside Reverse Transcriptase Inhibitors		Non-nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	High-Level Resistance	doravirine (DOR)	Susceptible
zidovudine (AZT)	High-Level Resistance	efavirenz (EFV)	High-Level Resistance
stavudine (D4T)	High-Level Resistance	etravirine (ETR)	Susceptible
didanosine (DDI)	High-Level Resistance	nevirapine (NVP)	High-Level Resistance
emtricitabine (FTC)	High-Level Resistance	rilpivirine (RPV)	Susceptible
lamivudine (3TC)	High-Level Resistance		
tenofovir (TDF)	Intermediate Resistance		

RT comments

NNRTI

- 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 ddl, ABC and TDF susceptibility.
- 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.
- L210W** is a TAM that usually occurs in combination with M41L and T215Y. The combination of M41, **L210W** and T215Y causes high-level resistance to AZT and intermediate resistance to ABC and TDF.
- T215V/F** are TAMs that causes intermediate/high-level resistance to AZT and potentially low-level resistance to ABC and TDF.

Other

- 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. **L234S** is a highly unusual mutation at this position.
- P236L is a rare mutation selected commonly by DLV, which appears to have little if any effect on current NNRTIs. **P236D** is a highly unusual mutation at this position.
- K238T/N are uncommon non-polymorphic mutations selected in persons receiving NVP and EFV usually in combination with K103N. Alone, K238T/N appear to have minimal effects on NNRTI susceptibility. **K238D** is a highly unusual mutation at this position.

Drug resistance mutation scores of NRTI:

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Rule	ABC ⚡	AZT ⚡	D4T ⚡	DDI ⚡	FTC ⚡	3TC ⚡	TDF ⚡
<u>M41L</u>	5	15	15	10	0	0	5
<u>M41L + M184V + T215Y</u>	10	0	0	0	0	0	0
<u>M41L + L210W</u>	10	10	10	10	0	0	10
<u>M41L + L210W + T215Y</u>	10	0	0	0	15	15	10
<u>M41L + T215Y</u>	10	10	10	10	5	5	10
<u>M184V</u>	15	-10	-10	10	60	60	-10
<u>L210W</u>	5	15	15	10	0	0	5
<u>L210W + T215Y</u>	10	10	10	10	0	0	10
<u>T215Y</u>	10	60	40	15	0	0	10
Total	85	110	90	75	80	80	50

Drug resistance mutation scores of NNRTI:

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Rule	DOR ⚡	EFV ⚡	ETR ⚡	NVP ⚡	RPV ⚡
<u>K103N</u>	0	60	0	60	0