

Drug resistance interpretation: PR		HIVDB 9.5.1 (2023-11-05)
PI Major Mutations:	None	
PI Accessory Mutations:	None	
PR Other Mutations:	V11X • T12V • I13S • K14E • I15L • E35D • M36I • L38* • R41K • H69K • K70R • 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	
Mutation scoring: PR		HIVDB 9.5.1 (2023-11-05)

Drug resistance interpretation: RT	HIVDB 9.5.1 (2023-11-05)
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NRTI Mutations:

NNRTI Mutations:

RT Other Mutations:

M41L • K65R • S68G • M184V

L100I • K103N

E6K • V8I • E28A • V35T • T39A • K43S • K49R • V60I • T107S • V111I • K122E • I135T • K173T • Q174K • D177E • I178L • V179I • T200A • Q207D • H208Y • R211K • K220S • Q222S • K223E • E233D • Δ234 • H235S • P236S • D237G • K238Q • V245E • P247Q • E248K • K249E • D250S • S251* • W252L • T253S • V254* • N255Y • D256T • I257E • Q258* • K259* • L260K • V261I • G262N • A267G • G273X • C280V • K281* • R284S

Nucleoside Reverse Transcriptase Inhibitors

abacavir (ABC)

zidovudine (AZT)

stavudine (D4T)

didanosine (DDI)

emtricitabine (FTC)

lamivudine (3TC)

tenofovir (TDF)

High-Level Resistance

Susceptible

High-Level Resistance

High-Level Resistance

High-Level Resistance

High-Level Resistance

Intermediate Resistance

Non-nucleoside Reverse Transcriptase Inhibitors

doravirine (DOR)

efavirenz (EFV)

etravirine (ETR)

nevirapine (NVP)

rilpivirine (RPV)

Intermediate Resistance

High-Level Resistance

Intermediate Resistance

High-Level Resistance

High-Level Resistance

RT comments
NRTI
<ul style="list-style-type: none">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
<ul style="list-style-type: none">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
<ul style="list-style-type: none">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.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. L234del 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. P236S 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. K238Q 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>K65R</u>	45	-10	60	60	30	30	50
<u>M184V</u>	15	-10	-10	10	60	60	-10
<u>K65R + S68G</u>	0	0	0	0	0	0	5
Total	65	-5	65	80	90	90	50

Drug resistance mutation scores of NNRTI:

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Rule	DOR ⚡	EFV ⚡	ETR ⚡	NVP ⚡	RPV ⚡
<u>L100I</u>	15	60	30	60	60
<u>L100I + K103N</u>	15	0	0	0	0
<u>K103N</u>	0	60	0	60	0
Total	30	120	30	120	60