Drug resistance interpretation: PR

HIVDB 9.5.1 (2023-11-05)

PI Major Mutations: None
PI Accessory Mutations: None
PR Other Mutations: L10I 54% (cov:30,362) • I13V 34% (cov:30,922) • I15V 51% (cov:11,639) • E35D 53% (cov:30,139) • M36I 57% (cov:30,160) • N37D 53% (cov:30,251) • R41K 34% (cov:30,772) • R57K 95% (cov:33,739) • D60E 51% (cov:31,606) • H69Q 50% (cov:30,750) • L89M 34% (cov:29,279)

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

PR comments

Other

- **L10I/V** are polymorphic, PI-selected accessory mutations that increase the replication of viruses with other PI-resistance mutations.

Mutation scoring: PR

HIVDB 9.5.1 (2023-11-05)

No drug resistance mutations were found for PI.

Drug resistance interpretation: RT

HIVDB 9.5.1 (2023-11-05)

NRTI Mutations: K65R 95% (cov:32,803) • L74I 93% (cov:22,910) • Y115F 91% (cov:9,259) • M184V 97% (cov:27,328)
NNRTI Mutations: L100I 93% (cov:8,402) • K103N 96% (cov:8,750)
RT Other Mutations: V35R 93% (cov:34,030) • V60I 94% (cov:16,078) • D121H 93% (cov:9,403) • K122E 97% (cov:9,404) • I135T 96% (cov:13,158) • T139A 94% (cov:11,429) • K173L 95% (cov:10,302) • Q174K 96% (cov:16,956) • D177E 98% (cov:17,197) • V179I 96% (cov:17,215) • G196E 94% (cov:14,961) • Q207A 95% (cov:11,676) • R211S 94% (cov:11,474) • F214L 92% (cov:10,720) • E248EN 9: 80%, I: 12% (cov:5,182) • K249KQ 1: 80%, R: 12% (cov:5,159) • D250E 88% (cov:5,161) • A272AP I: 86%, P: 13% (cov:4,583) • T286A 89% (cov:5,208) • E291ED E: 88%, D: 10% (cov:3,304) • I293V 90% (cov:1,214) • P294PT T: 82%, P: 17% (cov:1,114) • E312ED E: 73%, D: 22% (cov:2,792)

Nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	High-Level Resistance
zidovudine (AZT)	Susceptible
emtricitabine (FTC)	High-Level Resistance
lamivudine (3TC)	High-Level Resistance
tenofovir (TDF)	High-Level 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

- **K65R** confers intermediate reductions in susceptibility to TDF, ABC, and 3TC/FTC. It increases AZT susceptibility. In NRTI-experienced, INSTI-naive 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-naive patients receiving TDF+3TC+DTG.
- L74V causes intermediate ABC resistance. **L74I** causes low-level ABC resistance.
- **Y115F** causes intermediate resistance to ABC and low-level resistance to TDF.
- **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.

Mutation scoring: RT

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Drug resistance mutation scores of NRTI: Download CSV

Rule	ABC	AZT	FTC	3TC	TDF
K65R	45	-10	30	30	50
L74I	15	0	0	0	5
Y115F	30	0	0	0	15
Y115F + M184V	15	0	0	0	5
M184V	15	-10	60	60	-10
Total	120	-20	90	90	65

Drug resistance mutation scores of NNRTI: Download CSV

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