Drug resistance interpretation: PR

HIVDB 9.5.1 (2023-11-05)

PI Major Mutations: None
PI Accessory Mutations: None
PR Other Mutations: E35D 99% cov=64,777 · M36I 100% cov=64,777 · N37D 99% cov=64,782 · R57K 98% cov=64,471 · L63A 99% cov=61,840 · H69K 98% cov=59,859 · L89M 99% cov=45,169

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

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: S68G 98% cov=33,905 · M184V 99% cov=40,538 · T215F 99% cov=35,581
NNRTI Mutations: A98G 99% cov=33,180 · Y181C 99% cov=40,511 · G190S 99% cov=37,416 · H221Y 99% cov=41,084
RT Other Mutations: I5V 98% cov=43,257 · K20R 99% cov=38,877 · V35T 99% cov=35,967 · T39K 99% cov=35,941 · K43E 98% cov=35,527 · K49R 99% cov=35,698 · V60I 100% cov=36,102 · L100LS L: 71%, S: 28% cov=34,411 · V111M 99% cov=34,620 · V118I 99% cov=33,188 · D121Y 99% cov=32,120 · K122E 99% cov=32,099 · I135T 99% cov=36,098 · T165I 99% cov=43,255 · K173S 99% cov=40,812 · Q174R 99% cov=40,811 · D177E 98% cov=40,782 · V179I 99% cov=40,089 · G196E 99% cov=37,538 · T200A 99% cov=37,270 · I202V 99% cov=37,423 · Q207A 99% cov=33,917 · R211K 99% cov=38,637 · F214L 99% cov=35,585 · V245K 99% cov=46,967 · A272P 99% cov=51,051 · T286A 99% cov=54,332 · I293V 99% cov=56,868 · I329IR I: 66%, R: 26% cov=53

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

Non-nucleoside Reverse Transcriptase Inhibitors	
doravirine (DOR)	High-Level Resistance
efavirenz (EFV)	High-Level Resistance
etravirine (ETR)	High-Level Resistance
nevirapine (NVP)	High-Level Resistance
rilpivirine (RPV)	High-Level Resistance

RT comments

NRTI

- **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.
- **T215Y/F** are TAMs that causes intermediate/high-level resistance to AZT and potentially low-level resistance to ABC and TDF.

NNRTI

- **A98G** is a non-polymorphic accessory mutation associated with low-level reduced susceptibility to each of the NNRTIs.
- **Y181C** is a non-polymorphic mutation selected in persons receiving NVP, ETR and RPV. It confers high-level resistance to NVP, intermediate resistance to ETR and RPV, and low-level resistance to EFV. It does not significantly reduce DOR susceptibility.
- **G190S** is a non-polymorphic mutation that confers high-level resistance to NVP and EFV. It may also be associated low-levels reductions in DOR susceptibility. It does not appear to be selected by ETR or RPV or to reduce their in vitro susceptibility.
- **H221Y** is a non-polymorphic accessory mutation selected primarily by NVP, RPV, and DOR. It frequently occurs in combination with Y181C.

Other

- 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. L100V is a rare mutations that likely has effects similar to L100I. **L100S** is a highly unusual mutation at this position.
- **V118I** is a polymorphic accessory NRTI-resistance mutation that often occurs in combination with multiple TAMs.
- **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

HIVDB 9.5.1 (2023-11-05)

Drug resistance mutation scores of NRTI: Download CSV

Rule	ABC	AZT	FTC	3TC	TDF
M184V	15	-10	60	60	-10
T215F	10	60	0	0	10
Total	25	50	60	60	0

Drug resistance mutation scores of NNRTI: Download CSV

Rule	DOR	EFV	ETR	NVP	RPV
A98G	15	15	10	30	15
A98G + Y181C	5	5	5	5	5
Y181C	10	30	30	60	45
Y181C + G190S	10	0	10	0	10
Y181C + H221Y	10	0	0	0	10
G190S	20	60	10	60	15
H221Y	10	10	10	15	15
Total	80	120	75	170	115