Drug resistance interpretation: PR

HIVDB 9.5.1 (2023-11-05)

PI Major Mutations: None
PI Accessory Mutations: None
PR Other Mutations: I13V 98% cov=51,878 • K20R 89% cov=36,236 • E35D 92% cov=41,395 • M36I 98% cov=41,392 • R41K 99% cov=42,010 • R57K 93% cov=39,216 • H69K 94% cov=31,963 • L89M 96% cov=23,152

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

PR comments

Other

- **K20R** is a highly polymorphic PI-selected accessory mutation that increases replication fitness in viruses with 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: M41L 92% cov=18,977 • D67DE I: 59%, D: 37% cov=20,775 • K70R 95% cov=21,305 • M184V 93% cov=12,875
NNRTI Mutations: K103N 98% cov=23,928 • P225H 94% cov=23,981
RT Other Mutations: V35T 99% cov=18,555 • T39K 92% cov=18,430 • V60I 99% cov=20,572 • K64KR K: 63%, R: 36% cov=20,836 • W88A 95% cov=22,827 • K101Q 96% cov=23,689 • D121Y 98% cov=22,256 • K122E 99% cov=22,230 • D123G 95% cov=20,640 • I135V 94% cov=19,085 • A158T 91% cov=14,605 • K173S 93% cov=12,696 • Q174K 95% cov=12,701 • D177E 97% cov=12,781 • I178L 91% cov=12,785 • T200A 97% cov=15,194 • Q207A 95% cov=14,355 • R211S 94% cov=17,261 • F214L 94% cov=18,089 • K219G 94% cov=18,662 • L228R 94% cov=20,704 • V245K 95% cov=24,548 • D250E 97% cov=25,759 • I270IN I: 61%, N: 38% cov=26,938 • A272S 94% cov=26,767 • L282C 96% cov=26,380 • L283I 95% cov=26,453 • R284RK R: 62%, K: 37% cov=29,584 • T286A 97% cov=28,984 • I293V 98% cov=32,121 • E344D 78% cov=67 • P345Q 84% cov=68 • F346Y 85% cov=67 • R356K 95% cov=63 • R358K 78% cov=59

Nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	Intermediate 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)	Intermediate Resistance
efavirenz (EFV)	High-Level Resistance
etravirine (ETR)	Susceptible
nevirapine (NVP)	High-Level Resistance
rilpivirine (RPV)	Susceptible

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.
- D67N is a non-polymorphic TAM associated with low-level resistance to AZT. **D67G/E/S/T/H** are non-polymorphic NRTI-selected mutations that generally occur in viruses with multiple TAMs.
- **K70R** is a TAM that confers intermediate resistance to AZT and contributes to reduced ABC and TDF susceptibility in combination with other TAMs.
- **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

- **K103N** is a non-polymorphic mutation that confers high-level reductions in NVP and EFV susceptibility. It is the most commonly transmitted DRM.
- **P225H** is a non-polymorphic EFV-selected mutation that usually occurs in combination with K103N. The combination of **P225H** and K103N synergistically reduces NVP, EFV and DOR susceptibility.

Other

- **K101Q** is a relatively non-polymorphic mutation that is weakly selected in persons receiving NVP and EFV. It is of uncertain phenotypic and clinical significance.
- K219E/Q/N/R are accessory TAMS that usually occur in combination with multiple other TAMs. K219W is an uncommon NRTI-selected mutation. **K219G** is an unusual mutation at this position.

Mutation scoring: RT

HIVDB 9.5.1 (2023-11-05)

Drug resistance mutation scores of NRTI: Download CSV

Rule	ABC	AZT	FTC	3TC	TDF
M41L	5	15	0	0	5
D67DE	5	15	0	0	5
K70R	5	30	0	0	5
M184V	15	-10	60	60	-10
Total	30	50	60	60	5

Drug resistance mutation scores of NNRTI: Download CSV

Rule	DOR	EFV	ETR	NVP	RPV
K103N + P225H	10	0	0	0	0
P225H	20	45	0	45	0
K103N	0	60	0	60	0
Total	30	105	0	105	0