

Drug resistance interpretation: PR

HIVDB 9.5.1 (2023-11-05)

PI Major Mutations:None

PI Accessory Mutations:**L33F** 10%
seen 4,444

PR Other Mutations:**I13V** 100%
seen 2,404 • **M36I** 10%
seen 4,329 • **R41K** 94%
seen 4,289 • **R57K** 10%
seen 4,495 • **L63T** 90%
seen 4,740 • **G68E** 10%
seen 4,708 • **H69R** 10%
seen 4,708 • **L89M** 100%
seen 4,401

Protease Inhibitors

atazanavir (r (ATV/r)	Susceptible
darunavir (r (DRV/r)	Susceptible
fosamprenavir (r (FPV/r)	Potential Low-Level Resistance
indinavir (r (IDV/r)	Susceptible
lopinavir (r (LPV/r)	Susceptible
nelfinavir (NFV)	Potential Low-Level Resistance
saquinavir (r (SQV/r)	Susceptible
tipranavir (r (TPV/r)	Potential Low-Level Resistance

PR comments

Accessory

- L33F** is a relatively non-polymorphic accessory mutation selected by each of the PIs. In combination with other PI-resistance mutations, it is associated with reduced susceptibility to LPV, ATV, and DRV.

Mutation scoring: PR

HIVDB 9.5.1 (2023-11-05)

Drug resistance mutation scores of PI:

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Rule	ATV/r	DRV/r	FPV/r	IDV/r	LPV/r	NFV	SQV/r	TPV/r
L33F	5	5	10	5	5	10	5	10

Drug resistance interpretation: RT

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NRTI Mutations:**M184MV** 10 100%
seen 582 V 100% • **K219Q** 100%
seen 1,711

NNRTI Mutations:**A98G** 10%
seen 322 • **Y181C** 10%
seen 328 • **H221Y** 100%
seen 1,714

RT Other Mutations:**K11T** 47%
seen 2,399 • **V35T** 100%
seen 1,424 • **T39A** 10%
seen 4,201 • **V60I** 100%
seen 1,240 • **L100L** 5 1 100%
seen 585 V 1 100%
seen 702 • **D121H** 100%
seen 702 • **K122E** 10%
seen 702 • **D123S** 10%
seen 692 • **I135T** 10%
seen 432 • **I142V** 100%
seen 128 • **K173A** 10%
seen 241 • **Q174K** 10%
seen 241 • **D177E** 100%
seen 322 • **V179I** 100%
seen 328 • **T200A** 100%
seen 368 • **I202V** 100%
seen 914 • **Q207A** 100%
seen 914 • **R211S** 100%
seen 1,378 • **F214L** 100%
seen 1,529 • **V245K** 100%
seen 328 • **D250E** 10%
seen 128 • **A554S** 17%
seen 39

Nucleoside Reverse Transcriptase Inhibitors

abacavir (ABC)	Low-Level Resistance
zidovudine (AZT)	Susceptible
stavudine (D4T)	Susceptible
didanosine (DDI)	Low-Level 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)	Intermediate Resistance
nevirapine (NVP)	High-Level Resistance
rilpivirine (RPV)	High-Level Resistance

RT comments

NRTI

- 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.
- K219E/Q/N/R** are accessory TAMs that usually occur in combination with multiple other TAMs.

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.
- 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.
- 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:

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Rule	ABC	AZT	D4T	DDI	FTC	3TC	TDF
M184MV	15	-10	-10	10	60	60	-10
K219Q	5	10	10	5	0	0	5
Total	20	0	0	15	60	60	-5

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 + H221Y	10	0	0	0	10
H221Y	10	10	10	15	15
Total	50	60	55	110	90

Drug resistance interpretation: IN

HIVDB 9.5.1 (2023-11-05)

INSTI Major Mutations:None

INSTI Accessory Mutations:None

IN Other Mutations:S17N100%
seen:276 • V31I100%
seen:306 • D41N99%
seen:306 • I72V99%
seen:236 • T112I100%
seen:61 • G134D100%
seen:30 • K136Q100%
seen:30 • D167E100%
seen:20 • V201I100%
seen:676 • T218S100%
seen:540 • I220L100%
seen:540 • Y227F99%
seen:561 • L234I100%
seen:626 • S283G100%
seen:732

Integrase Strand Transfer Inhibitors

bictegravir (BIC)Susceptible

cabotegravir (CAB)Susceptible

dolutegravir (DTG)Susceptible

elvitegravir (EVG)Susceptible

raltegravir (RAL)Susceptible

Mutation scoring: IN

HIVDB 9.5.1 (2023-11-05)

No drug resistance mutations were found for INSTI.