Drug resistance interpretation: PR

HIVDB 9.5.1 (2023-11-05)

PI Major Mutations: None

PI Accessory Mutations: L33LF

PR Other Mutations: I13V • K20KER • E35N • M36I • N37D • R41RK • D60E • H69K • I72IV • L89IM

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.

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)

Drug resistance mutation scores of PI: Download CSV

Rule	ATV/r	DRV/r	FPV/r	IDV/r	LPV/r	NFV	SQV/r	TPV/r
L33LF	5	5	10	5	5	10	5	10

Drug resistance interpretation: RT

HIVDB 9.5.1 (2023-11-05)

NRTI Mutations: D67N • K70R • M184V • K219Q

NNRTI Mutations: None

RT Other Mutations: I5IV • V35T • T39L • I50IV • V60I • T69N • K122E • D123S • I135T • K173S • Q174N • D177E • I178IM • I195IL • G196E • Q207A • R211A • F214L • Q009L • D511S • K512S • L517I • S519N • Q524K • I526IT • K527EG • E529D • A554S

Nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	Intermediate Resistance
zidovudine (AZT)	High-Level Resistance
stavudine (D4T)	Intermediate Resistance
didanosine (DDI)	Intermediate Resistance
emtricitabine (FTC)	High-Level Resistance
lamivudine (3TC)	High-Level Resistance
tenofovir (TDF)	Low-Level Resistance

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

RT comments

NRTI

- **D67N** is a non-polymorphic TAM associated with low-level resistance to AZT.
- **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.
- **K219E/Q/N/R** are accessory TAMS that usually occur in combination with multiple other TAMs.

Other

- **T69N/S/A/I/E** are relatively non-polymorphic mutations weakly selected in persons receiving NRTIs. They may minimally contribute reduced AZT susceptibility.

Mutation scoring: RT

HIVDB 9.5.1 (2023-11-05)

Drug resistance mutation scores of NRTI: Download CSV

Rule	ABC	AZT	D4T	DDI	FTC	3TC	TDF
D67N	5	15	15	5	0	0	5
D67N + K70R + M184V + K219Q	10	0	0	0	0	0	0
D67N + K70R + K219Q	10	15	10	10	10	10	10
K70R	5	30	15	10	0	0	5
M184V	15	-10	-10	10	60	60	-10
K219Q	5	10	10	5	0	0	5
Total	50	60	40	40	70	70	15

No drug resistance mutations were found for NNRTI.

Drug resistance interpretation: IN — HIVDB 9.5.1 (2023-11-05)

INSTI Major Mutations: None
INSTI Accessory Mutations: None
IN Other Mutations: E11D • K14R • N27NS • V31I • L101I • T112V • I113V • T124A • T125A • G134D • K136Q • G163V • V201I • L234I • D256DN • S283G • R284G • D286N

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.