Drug resistance interpretation: PR

HIVDB 9.5.1 (2023-11-05)

PI Major Mutations: V82A
PI Accessory Mutations: N88D
PR Other Mutations: L10I • I15V • L19M • K20M • M36MI • L63P • H69Q • A71AV • V77I • I93L

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

PR comments

Major

- **V82A** is a non-polymorphic mutation selected primarily by IDV and LPV. It is associated with reduced susceptibility to LPV and to a lesser extent ATV. It increases DRV susceptibility.

Accessory

- **N88D** is a nonpolymorphic mutation selected by NFV, usually in combination with D30N. It is associated with potential low-level cross-resistance to ATV.

Other

- **L10I/V** are polymorphic, PI-selected accessory mutations that increase the replication of viruses with other PI-resistance mutations.
- **K20M/V** are uncommonrelatively non-polymorphic PI-selected mutations that have not been well studied.
- **A71V/T** 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)

Drug resistance mutation scores of PI: Download CSV

Rule	ATV/r	DRV/r	FPV/r	IDV/r	LPV/r	NFV	SQV/r	TPV/r
V82A	15	0	15	30	30	30	15	0
N88D	10	0	0	0	0	60	10	0
Total	25	0	15	30	30	90	25	0

Drug resistance interpretation: RT

HIVDB 9.5.1 (2023-11-05)

NRTI Mutations: A62V • T69S_SS • K70R • M184V
NNRTI Mutations: None
RT Other Mutations: Q85QH • A98S • D123E • D177E • G196R • Q207E • R211K • V245K

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

- **A62V** is an accessory mutation that often occurs in combination with the multi-NRTI resistance mutations K65R or Q151M. **A62V** is widespread in subtype A viruses in former Soviet Union countries but A62 is otherwise non-polymorphic.
- Amino acid insertions between codons 67 and 70 are by convention assigned to codon 69. Together with TAMs, they are associated with high-level resistance to AZT, ABC and TDF, and intermediate to 3TC and FTC.
- **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.

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
A62V	5	5	5	5	0	0	5
T69ins	60	60	60	60	30	30	60
K70R	5	30	15	10	0	0	5
M184V	15	-10	-10	10	60	60	-10
Total	85	85	70	85	90	90	60

No drug resistance mutations were found for NNRTI.