Drug resistance interpretation: PR

HIVDB 9.5.1 (2023-11-05)

PI Major Mutations: None
PI Accessory Mutations: None
PR Other Mutations: T12M • G16E • L19V • E35D • M36I • R41K • R57RK • L63TV • H69K • I72V • L89M

Protease Inhibitors	
atazanavir/r (ATV/r)	Susceptible
darunavir/r (DRV/r)	Susceptible
fosamprenavir/r (FPV/r)	Susceptible
indinavir/r (IDV/r)	Susceptible
lopinavir/r (LPV/r)	Susceptible
nelfinavir (NFV)	Susceptible
saquinavir/r (SQV/r)	Susceptible
tipranavir/r (TPV/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: D67N • T215CL • K219Q
NNRTI Mutations: K103N • Y181V • H221Y
RT Other Mutations: P4H • V21I • V35T • T39M • V60I • T69N • K122E • D123N • I132IL • I135T • K173S • Q174K • V179I • E194EK • T200A • I202V • Q207E • R211RK • F214L • V245E • D250E • A554S

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

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

RT comments

NRTI

- **D67N** is a non-polymorphic TAM associated with low-level resistance to AZT.
- T215Y/F are TAMs that causes intermediate/high-level resistance to AZT and potentially low-level resistance to ABC and TDF. **T215S/C/D/E/I/V/N/A/L** do not reduce NRTI susceptibility but arise from viruses that once contained T215Y/F. The presence of one of these revertant mutations suggests that the patient may have once been infected with a virus containing T215Y/F.
- **K219E/Q/N/R** are accessory TAMS that usually occur in combination with multiple other TAMs.

NNRTI

- **K103N** is a non-polymorphic mutation that confers high-level reductions in NVP and EFV susceptibility. It is the most commonly transmitted DRM.
- **Y181I/V** are 2-base pair non-polymorphic mutations selected by NVP and ETR. They cause high-level resistance to NVP, ETR, and RPV but not EFV. Their effects on DOR have not been well-characterized.
- **H221Y** is a non-polymorphic accessory mutation selected primarily by NVP, RPV, and DOR. It frequently occurs in combination with Y181C.

Other

- **T69N/S/A/I/E** are relatively non-polymorphic mutations weakly selected in persons receiving NRTIs. They may minimally contribute reduced AZT susceptibility.
- I132M is an extremely rare non-polymorphic mutation associated with uncertain amount of reduced NVP and EFV susceptibility. **I132L** is a more common, non-polymorphic NNRTI-selected mutation that has not been well studied.
- **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	D4T	DDI	FTC	3TC	TDF
D67N	5	15	15	5	0	0	5
K219Q	5	10	10	5	0	0	5
T215CL	0	10	20	10	0	0	0
Total	10	35	45	20	0	0	10

Drug resistance mutation scores of NNRTI: Download CSV

Rule	DOR	EFV	ETR	NVP	RPV
Y181V	20	30	60	60	60
Y181V + H221Y	10	0	0	0	10
H221Y	10	10	10	15	15
K103N	0	60	0	60	0
Total	40	100	70	135	85

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

INSTI Major Mutations: None
INSTI Accessory Mutations: None
IN Other Mutations: K14KR • R20RK • V31I • I60M • L68LM • I72V • T112V • T124A • T125A • V126F • G134N • I135V • D167E • G193D • V201I • T218TS • K219N • N222K • L234V • S283SG

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.