

Drug resistance interpretation: PR

PI Major Mutations:

None

PI Accessory Mutations:

K20T

PR Other Mutations:

V11Q • T12G • I13* • K14P • I15D • G16R • Q18N • E35D • M36I • R41K • R57K • H69K • K70R • I85V • 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)

Low-Level Resistance

saquinavir/r (SQV/r)

Susceptible

tipranavir/r (TPV/r)

Susceptible

PR comments

Accessory

•

K20T is a non-polymorphic accessory PI-selected mutation associated with reduced susceptibility to ATV and LPV.

Other

•

I85V is a non-polymorphic PI-selected mutation. It has minimal, if any, effects on PI susceptibility.

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 |
|------|-------|-------|-------|-------|-------|-----|-------|-------|
| K20T | 5 | 0 | 5 | 5 | 0 | 15 | 5 | 0 |

Drug resistance interpretation: RT

HIVDB 9.5.1 (2023-11-05)

NRTI Mutations:

L74I • M184V

NNRTI Mutations:

A98G • K103N • P225H

RT Other Mutations:

E6K • K11Q • V35T • V60I • L100* • V111I • K122E • D123S • I135T • I142V • K173S • Q174K • D177E • T200X • Q207A • K220S • Q222S • K223E • H235I • D237T • K238S • W239D • T240S • V241Q • Q242L • Δ243 • V245T • L246A • P247A • D250E • D256* • I257Y • Q258T • K259E • L260I • S268V • Q269K • V276L • K281N • L282S • R284S • G285A • T286A • K287*

Nucleoside Reverse Transcriptase Inhibitors

abacavir (ABC)

Intermediate Resistance

zidovudine (AZT)

Susceptible

stavudine (D4T)

Susceptible

didanosine (DDI)

High-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)

Potential Low-Level Resistance

nevirapine (NVP)

High-Level Resistance

rilpivirine (RPV)

Low-Level Resistance

RT comments

NRTI

- L74V causes intermediate ABC resistance. **L74I** causes low-level ABC resistance.
- **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

- **A98G** is a non-polymorphic accessory mutation associated with low-level reduced susceptibility to each of the NNRTIs.
- **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

- K238T/N are uncommon non-polymorphic mutations selected in persons receiving NVP and EFV usually in combination with K103N. Alone, K238T/N appear to have minimal effects on NNRTI susceptibility. **K238S** is a highly unusual mutation at this position.
- This virus is predicted to have low-level reduced susceptibility to **RPV**. The use of the combination of CAB/**RPV** should be considered to be relatively contraindicated.

Mutation scoring: RT

HIVDB 9.5.1 (2023-11-05)

Drug resistance mutation scores of NRTI:

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| Rule | ABC ↕ | AZT ↕ | D4T ↕ | DDI ↕ | FTC ↕ | 3TC ↕ | TDF ↕ |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|
| L74I | 15 | 0 | 0 | 60 | 0 | 0 | 5 |
| M184V | 15 | -10 | -10 | 10 | 60 | 60 | -10 |
| Total | 30 | -10 | -10 | 70 | 60 | 60 | -5 |

Drug resistance mutation scores of NNRTI:

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| Rule | DOR ↕ | EFV ↕ | ETR ↕ | NVP ↕ | RPV ↕ |
|-------------------------------|-------|-------|-------|-------|-------|
| A98G | 15 | 15 | 10 | 30 | 15 |
| K103N + P225H | 10 | 0 | 0 | 0 | 0 |
| P225H | 20 | 45 | 0 | 45 | 0 |
| K103N | 0 | 60 | 0 | 60 | 0 |
| Total | 45 | 120 | 10 | 135 | 15 |