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

PI Major Mutations: L90M
PI Accessory Mutations: F53L

PR Other Mutations: M36Q • N37T • L38V • R41K • L63Q • I64V

# Protease Inhibitors

atazanavir/r (ATV/r) Intermediate Resistance

darunavir/r (DRV/r) Susceptible

fosamprenavir/r (FPV/r)
Intermediate Resistance
indinavir/r (IDV/r)
Intermediate Resistance
lopinavir/r (LPV/r)
Low-Level Resistance
nelfinavir (NFV)
High-Level Resistance
saquinavir/r (SQV/r)
High-Level Resistance
tipranavir/r (TPV/r)
Susceptible

### PR comments

# Major

L90M is a non-polymorphic PI-selected mutation that reduces susceptibility to ATV and to a lesser extent LPV.

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### Accessory

• F53L is a nonpolymorphic accessory mutation selected primarily by SQV, IDV, ATV and LPV. In combination with reduced susceptibility to ATV and possibly LPV. F53Y is an uncommon nonpolymorphic accessory PI-selected mutation that has not been well studied.

Drug resistance mutation scores of PI:

Mutation scoring: PR

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Rule	ATV/r ≎	DRV/r 🕏	FPV/r =	IDV/r ≎	LPV/r ≎	NFV ≑	sqv/r =	TPV/r 🗢
<u>F53L</u>	10	0	0	0	0	10	15	0
F53L + L90M	10	0	10	10	0	10	10	0
<u>L90M</u>	25	0	20	30	15	60	45	0
Total	45	0	30	40	15	80	70	0

Susceptible

Drug resistance interpretation: RT

tenofovir (TDF)

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NRTI Mutations: L74I • M184V NNRTI Mutations: K103N • P225H

RT Other Mutations: P4S - E6D - K11T - K22R - V35T - T39N - V60I - K102H - D121Y - K122E - T139M - 1142V - S162C - D177E - G196E - T200X - Q207E - R211K - G213X - K223R - E224H - \( \triangle \) \( \triangl

V245\* - L246R - P247E - E248S - K249\* - D250Q - W252\* - T253Y - V254T - N255E - D256\* - I257C - Q258E - K259I - L260M - V261G - G262Q - K263S - L264I

# Nucleoside Reverse Transcriptase Inhibitors

# abacavir (ABC) zidovudine (AZT) stavudine (D4T) didanosine (DDI) emtricitabine (FTC) lamivudine (3TC) Intermediate Resistance Susceptible High-Level Resistance High-Level Resistance High-Level Resistance

# Non-nucleoside Reverse Transcriptase Inhibitors

doravirine (DOR)
Intermediate Resistance
efavirenz (EFV)
High-Level Resistance
etravirine (ETR)
Susceptible
nevirapine (NVP)
High-Level Resistance
Susceptible
Susceptible

### 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

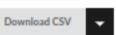
- . K103N is a non-polymorphic mutation that confers high-level reductions in NVP and EFV susceptibility. It is the most commonly transmitted DRM.
- . P225H is a non-polymorphic EFV-selected mutation that usually occurs in combination with K103N. The combination of P225H and K103N synergistically reduces NVP, EFV and DOR susceptibility.

### Other

- L234I is a nonpolymorphic mutation selected in persons receiving NVP and EFV. It is also selected in vitro by ETR and DOR. In combination with V106A, it is associated with high-level DOR resistance. Its effect on susceptibility when it occurs alone has not been well characterized. L234S is a highly unusual mutation at this position.
- P236L is a rare mutation selected commonly by DLV, which appears to have little if any effect on current NNRTIs. P236D is a highly unusual mutation at this position.

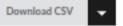
Mutation scoring: RT

Drug resistance mutation scores of NRTI:



Rule	ABC ≑	AZT ≑	D4T ≑	DDI 🕏	FTC ‡	3ТС ≑	TDF ‡
L741	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:



Rule	DOR \$	EFV \$	ETR ‡	NVP ‡	RPV \$
K103N + P225H	10	0	0	0	0
<u>P225H</u>	20	45	0	45	0
<u>K103N</u>	0	60	0	60	0
Total	30	105	0	105	0

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