

PI Major Mutations:None

PI Accessory Mutations:None

PR Other Mutations:

I13V

100%

from 21,342

•

K14R

100%

from 35,002

•

K20R

100%

from 11,538

•

E35D

100%

from 35,345

•

M36I

100%

from 35,338

•

N37D

100%

from 135,345

•

R41K

100%

from 17,329

•

K43R

100%

from 35,311

•

R57K

100%

from 35,853

•

L63S

100%

from 11,627

•

H69K

100%

from 29,833

•

K70KR

10,193%

from 29,852

•

L89M

100%

from 117,903

Protease Inhibitors	
atazanavir/r (ATV/r)	Susceptible
darunavir/r (DRV/r)	Susceptible
lopinavir/r (LPV/r)	Susceptible

PR comments

Other

- K20R** is a highly polymorphic PI-selected accessory mutation that increases replication fitness in viruses with PI-resistance mutations.

No drug resistance mutations were found for PI.

NRTI Mutations:

K70E

100%

from 11,775

•

M184I

100%

from 12,879

NNRTI Mutations:

K103N

100%

from 12,185

•

V179F

100%

from 12,295

•

Y181C

100%

from 12,038

•

G190A

100%

from 12,839

RT Other Mutations:

E6D

100%

from 26,552

•

V21I

100%

from 18,523

•

K32I

100%

from 14,358

•

V35T

100%

from 11,905

•

T39K

100%

from 11,717

•

V60I

100%

from 12,951

•

T69N

100%

from 11,793

•

V90I

100%

from 11,052

•

T163I

100%

from 15,953

•

K173S

100%

from 12,082

•

Q174K

100%

from 11,841

•

T200A

100%

from 11,295

•

I202V

100%

from 15,012

•

Q207E

100%

from 15,995

•

R211K

100%

from 15,852

•

L228R

100%

from 12,095

•

T286A

100%

from 11,650

•

E291D

100%

from 11,052

•

I293V

100%

from 11,538

•

P294T

100%

from 11,020

•

E312D

100%

from 12,951

•

G335D

100%

from 71

•

P343PQ

10,100%

from 19

•

F346FY

10,100%

from 19

•

R356RK

10,170%

from 12

•

M357LN

10,100%

from 17

•

G359GS

10,100%

from 12

Nucleoside Reverse Transcriptase Inhibitors		Non-nucleoside Reverse Transcriptase Inhibitors	
abacavir (ABC)	Intermediate Resistance	doravirine (DOR)	Intermediate Resistance
zidovudine (AZT)	Susceptible	efavirenz (EFV)	High-Level Resistance
emtricitabine (FTC)	High-Level Resistance	etravirine (ETR)	High-Level Resistance
lamivudine (3TC)	High-Level Resistance	nevirapine (NVP)	High-Level Resistance
tenofovir (TDF)	Low-Level Resistance	rilpivirine (RPV)	High-Level Resistance

RT comments

NRTI

- K70/E/Q/N/T/S/G** cause low-leve resistance to ABC and TDF.
- 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 EPV susceptibility. It is the most commonly transmitted DRM.
- V179F** is a non-polymorphic mutation selected in combination with Y181C in persons receiving ETR. Alone it has little effect on NNRTI susceptibility, however in combination with Y181C it is associated with high-level reductions in ETR and RPV susceptibility.
- Y181C** is a non-polymorphic mutation selected in persons receiving NVP, ETR and RPV. It confers high-level resistance to NVP, intermediate resistance to ETR and RPV, and low-level resistance to EFV. It does not significantly reduce DOR susceptibility.
- G190A** is a non-polymorphic mutation that causes high-level resistance to NVP and intermediate resistance to EFV. It does not significantly reduce susceptibility to RPV, ETR, or DOR.

Other

- T69N/S/A/I/E** are relatively non-polymorphic mutations weakly selected in persons receiving NRTIs. They may minimally contribute reduced AZT susceptibility.
- V90I** is a polymorphic accessory mutation weakly selected by each of the NNRTIs. It is associated with minimal, if any, detectable reduction in NNRTI susceptibility.

Drug resistance mutation scores of NRTI:

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Rule	ABC ⚡	AZT ⚡	FTC ⚡	3TC ⚡	TDF ⚡
<u>K70E</u>	15	0	10	10	15
<u>M184I</u>	15	-10	60	60	-10
<u>K70E + M184I</u>	0	0	0	0	10
Total	30	-10	70	70	15

Drug resistance mutation scores of NNRTI:

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Rule	DOR ⚡	EFV ⚡	ETR ⚡	NVP ⚡	RPV ⚡
<u>K103N + Y181C</u>	5	0	0	0	0
<u>V179F</u>	10	10	15	15	15
<u>Y181C</u>	10	30	30	60	45
<u>Y181C + G190A</u>	10	0	10	0	10
<u>K103N</u>	0	60	0	60	0
<u>G190A</u>	0	45	10	60	15
<u>V179F + Y181C</u>	0	0	15	0	15
Total	35	145	80	195	100