

PI Major Mutations:None

PI Accessory Mutations:None

PR Other Mutations:

L10I

82%

cov=44,788

•

I13V

88%

cov=45,628

•

G16E

93%

cov=46,794

•

E35D

95%

cov=53,835

•

M36I

88%

cov=53,821

•

R41K

89%

cov=54,274

•

H69K

95%

cov=44,016

•

L89M

97%

cov=29,706

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

PR comments

Other

- L10I/V are polymorphic, PI-selected accessory mutations that increase the replication of viruses with other PI-resistance mutations.

No drug resistance mutations were found for PI.

NRTI Mutations:

K65R

93%

cov=18,451

•

S68G

89%

cov=38,575

•

Δ69

85%

cov=38,598

NNRTI Mutations:

Y181C

95%

cov=22,545

•

G190S

92%

cov=22,161

RT Other Mutations:

E6D

90%

cov=26,716

•

V35T

98%

cov=22,372

•

V60I

98%

cov=30,395

•

K101Q

92%

cov=13,873

•

K122E

95%

cov=13,217

•

D123N

87%

cov=33,194

•

I135T

95%

cov=16,487

•

K173S

94%

cov=22,258

•

Q174K

94%

cov=22,255

•

D177E

92%

cov=22,586

•

V179I

95%

cov=22,716

•

T200TA

A: 59%, T: 39%

cov=22,781

•

Q207A

93%

cov=21,389

•

R211S

93%

cov=23,709

•

V245E

91%

cov=26,697

•

A272P

96%

cov=23,458

•

L283I

88%

cov=21,824

•

I293V

97%

cov=19,806

•

P294T

89%

cov=19,612

•

G335D

97%

cov=1,176

•

R356K

99%

cov=1,070

•

M357R

95%

cov=1,070

•

R358K

97%

cov=1,021

•

G359S

94%

cov=1,021

•

K366R

96%

cov=915

•

T369A

98%

cov=890

•

E370ED

E: 84%, D: 13%

cov=848

•

A371V

94%

cov=848

•

I375V

97%

cov=774

•

A376V

97%

cov=773

•

T377M

98%

cov=772

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

RT comments

NRTI

- K65R confers intermediate reductions in susceptibility to TDF, ABC, and 3TC/FTC. It increases AZT susceptibility. In NRTI-experienced, INSTI-naïve patients with K65R, TDF+3TC+DTG is usually highly effective and more effective than AZT/3TC/DTG. However, in patients receiving TDF+3TC+DTG, there is a risk of emergent DTG resistance that does not arise in NRTI-naïve patients receiving TDF+3TC+DTG.
- S68G is a polymorphic mutation that is often selected in combination with K65R. It partially restores the replication defect associated with K65R.
- Amino acid deletions between codons 67 and 70 are rare and usually occur in combination with multiple TAMs, K65R, or the Q151M mutation complex. Deletions at position 67 are more often associated with multiple TAMs. Deletions at positions 69 and 70 are more often associated with K65R or the Q151M mutation complex. Deletions at codon 68 are extremely rare and less well characterized.

NNRTI

- 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.
- G190S is a non-polymorphic mutation that confers high-level resistance to NVP and EFV. It may also be associated low-levels reductions in DOR susceptibility. It does not appear to be selected by ETR or RPV or to reduce their in vitro susceptibility.

Other

- K101Q is a relatively non-polymorphic mutation that is weakly selected in persons receiving NVP and EFV. It is of uncertain phenotypic and clinical significance.
- 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.

Drug resistance mutation scores of NRTI:

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Rule	ABC ⚡	AZT ⚡	FTC ⚡	3TC ⚡	TDF ⚡
<u>K65R</u>	45	-10	30	30	50
<u>T69del</u>	15	0	15	15	15
<u>K65R + S68G</u>	0	0	0	0	5
Total	60	-10	45	45	70

Drug resistance mutation scores of NNRTI:

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Rule	DOR ⚡	EFV ⚡	ETR ⚡	NVP ⚡	RPV ⚡
<u>Y181C</u>	10	30	30	60	45
<u>Y181C + G190S</u>	10	0	10	0	10
<u>G190S</u>	20	60	10	60	15
Total	40	90	50	120	70