Drug resistance interpretation: RT

HIVDB 9.5.1 (2023-11-05)

NRTI Mutations: None

NNRTI Mutations: None

RT Other Mutations: K512R • E514D • L517I • Q524K • K527E • E529D • A534S • A554S • V559I

Nucleoside Reverse Transcriptase Inhibitors

abacavir (ABC)	Susceptible
zidovudine (AZT)	Susceptible
stavudine (D4T)	Susceptible
didanosine (DDI)	Susceptible
emtricitabine (FTC)	Susceptible
lamivudine (3TC)	Susceptible
tenofovir (TDF)	Susceptible

Non-nucleoside Reverse Transcriptase Inhibitors

doravirine (DOR)	Susceptible
efavirenz (EFV)	Susceptible
etravirine (ETR)	Susceptible
nevirapine (NVP)	Susceptible
rilpivirine (RPV)	Susceptible

Mutation scoring: RT

HIVDB 9.5.1 (2023-11-05)

No drug resistance mutations were found for NRTI.

No drug resistance mutations were found for NNRTI.

Drug resistance interpretation: IN

HIVDB 9.5.1 (2023-11-05)

INSTI Major Mutations: E138K • G140A • Q148K

INSTI Accessory Mutations: S230R

IN Other Mutations: K14R • V31I • D41N • I60M • I72V • E96ED • T112V • I113V • T124A • T125A • V126F • G134D • K136Q • D167E • V201I • L234V • S283G

Integrase Strand Transfer Inhibitors

bictegravir (BIC)	High-Level Resistance
cabotegravir (CAB)	High-Level Resistance
dolutegravir (DTG)	High-Level Resistance
elvitegravir (EVG)	High-Level Resistance
raltegravir (RAL)	High-Level Resistance

IN comments

Major

- **E138K/A/T** are common nonpolymorphic accessory resistance mutations selected in patients receiving RAL, EVG, CAB, and DTG. Alone they do not reduce INSTI susceptibility. However, they contribute to reduced susceptibility in combination with other mutations particularly those at position 148.
- **G140S/A/C** are non-polymorphic mutations that usually occur with Q148 mutations. Alone, they have minimal effects on INSTI susceptibility. However, in combination with Q148 mutations they are associated with high-level resistance to RAL and EVG and intermediate reductions in DTG and BIC susceptibility.
- **Q148H/K/R** are nonpolymorphic mutations reported in persons receiving RAL, EVG, CAB, and DTG. They nearly always occur in combination with G140A/S or E138K. In this setting they are associated with near complete resistance to RAL and EVG, high-levels of reduction in CAB susceptibility, and low-to-intermediate reductions in DTG and BIC susceptibility.

Accessory

- **S230R** is a nonpolymorphic INSTI-selected mutation that primarily occurs in combination with other INSTI-resistance mutations. By itself, it appears to have minimal effect on susceptibility to available INSTIs.

- There is evidence for high-level **DTG** resistance. If **DTG** is used, it should be administered twice daily.

Mutation scoring: IN

HIVDB 9.5.1 (2023-11-05)

Drug resistance mutation scores of INSTI: Download CSV

Rule	BIC	CAB	DTG	EVG	RAL
E138K	10	10	10	15	15
E138K + G140A	10	15	10	15	15
E138K + Q148K	10	20	10	0	0
G140A	10	10	10	30	30
G140A + Q148K	10	20	10	0	0
Q148K	30	50	30	60	60
S230R	10	20	20	20	20
Total	90	145	100	140	140