

INSTI Major Mutations:

E138EK • G140GS • Q148QH

INSTI Accessory Mutations:

None

IN Other Mutations:

S17N • I72V • L101LI • K156N • V201I • I208L • D286DN

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.

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

Drug resistance mutation scores of INSTI:

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Rule	BIC ÷	CAB ÷	DTG ÷	EVG ÷	RAL ÷
E138EK	10	10	10	15	15
E138EK + G140GS	10	15	10	15	15
E138EK + Q148QH	10	20	10	0	0
G140GS	10	10	10	30	30
G140GS + Q148QH	10	20	10	0	0
Q148QH	25	30	25	60	60
Total	75	105	75	120	120