

INSTI Major Mutations:

G140S • Q148H

INSTI Accessory Mutations:

None

IN Other Mutations:

E11D • A21T • D25E • S119G • T122I • T125A • V201I • I203M • T218S • L234I • D253E • D278E

Integrase Strand Transfer Inhibitors	
bictegravir (BIC)	Intermediate Resistance
cabotegravir (CAB)	High-Level Resistance
dolutegravir (DTG)	Intermediate Resistance
elvitegravir (EVG)	High-Level Resistance
raltegravir (RAL)	High-Level Resistance

IN comments

Major

- 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 intermediate **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 ÷
G140S	10	10	10	30	30
G140S + Q148H	10	20	10	0	0
Q148H	25	30	25	60	60
Total	45	60	45	90	90