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HIV-1 Integrase Drug Resistance Report

Using next generation sequencing (NGS) to detect mutations down to 5% relative frequency

Micropathology Lab Number: 1234567 **Date:** 17/04/2025

Your Patient/Lab Number: M12345

The following report summarizes apparent antiretroviral drug resistance. It is based upon an analysis* of sequence data from the integrase gene of HIV-1 virus amplified from the supplied specimen (see laboratory numbers above). Additional information detailing the HIV-1 subtype and a quality assessment of the sequence data is also included. The report utilises the following abbreviations: IN = Integrase, SDRMs = Surveillance Drug Resistance Mutations.

Please note, we sequenced and analysed the IN amplicon using next generation sequencing (NGS) methods (awaiting UKAS-accreditation). A nucleotide variant is reported if it occurs in a proportion of the reads at or above the minimum nucleotide frequency threshold which was set at **5%**. The relative frequencies of drug resistance mutations are denoted only where a heterogeneous population is present at a particular site.

* Analysis performed using the Stanford Genotypic Resistance Interpretation Algorithm Version 9.8.

Result: No significant drug resistance mutations observed

SUMMARY DATA:

Sequence includes IN:	codons 10 - 271
Subtype:	C (2.67%)
IN SDRMs:	None

SEQUENCE QUALITY ASSESSMENT:

PASSED

DRUG RESISTANCE INTERPRETATION:

IN Mutations

INSTI Major Mutations:	None
INSTI Accessory Mutations:	None
IN Other Mutations:	K14R, D25E, V31I, K34R, M50MI, I72IV, F100Y, L101I, T112V, S119ST, T124A, T125A, K136Q, D167E, V201I, L234I, A265V

Integrase Strand Transfer Inhibitors

bictegravir (BIC)	Susceptible
cabotegravir (CAB)	Susceptible
dolutegravir (DTG)	Susceptible
elvitegravir (EVG)	Susceptible
raltegravir (RAL)	Susceptible

IN comments

Other

- **M50I** is a highly polymorphic mutation, which has a prevalence of 3% to 34% in INSTI-naïve persons depending on subtype. It has been selected in vitro by DTG and BIC in combination with R263K. It also appears to frequently occur in combination with R263K in patients receiving DTG and BIC. It has a minimal, if any, effect on INSTI susceptibility.