



BC Centre for Disease Control  
Provincial Health Services Authority

# Laboratory Results for Acute HIV

## Laboratory Results for Acute HIV

**To assist testing providers with interpretation of preliminary and final acute HIV infection results reported by the BCCDC Public Health Laboratory (BCCDC PHL)**

**Acute HIV Infection**: the period from the point of infection up to the first eight to 12 weeks after acquiring HIV. This period is characterized by high levels of viremia; a person living with acute HIV infection is especially at risk of transmitting HIV to others given their high HIV viral load during this period<sup>i</sup>.

## HIV Laboratory Tests

**Screening tests**: Initial screening for HIV is via the 4<sup>th</sup> generation enzyme immunoassay (EIA) that detects both HIV antibodies and p24 antigen (this test does not differentiate between these two markers). If the initial EIA screening test is reactive, a supplemental 4<sup>th</sup> generation EIA test on an alternative platform is performed to confirm the EIA results.

**Confirmatory tests**: The confirmatory immunoblot detects antibodies against HIV 1 and 2. Strong EIA signals are required for immunoblot testing to avoid unnecessary testing of false positives.

When the confirmatory immunoblot is non-reactive or indeterminate (could be weakly reactive) the laboratory will automatically test the sample by HIV-1 RNA nucleic acid test (NAT) (HIV 2 infection is very rarely identified in BC; it is endemic in West Africa). This is in an effort to identify viremia in people who are in the process of seroconverting (i.e., acute HIV cases).

**Timing**: The EIA, immunoblot and NAT testing can generally be performed the same business day as sample receipt. The reporting of results may be delayed until the next business day. Currently, routine NAT testing is not performed on weekends or holidays.

## **Preliminary Acute HIV Results**

- Preliminary lab results for acute HIV infection are reported to the BCCDC medical microbiologist(s) and HIV surveillance (HIVSS). These results reflect initial instrument signals and are not yet a final interpretation (see example below):

4 <sup>th</sup> gen EIA reactive	Supplemental 4 <sup>th</sup> gen EIA reactive	HIV 1 & 2* Immunoblot non-reactive or indeterminate	HIV 1 NAT pending
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- The BCCDC PHL, as well as HIVSS, will check the previous testing history of the case, but may not be able to link results if the individual previously tested anonymously or under a pseudonym.
- Recent negative HIV testing results are a further indication that this may be an acute case.
- After discussing the preliminary results with the BCCDC medical microbiologist, HIVSS immediately informs the Communicable Disease (CD) team working on behalf of the Medical Health Officer (MHO) in the appropriate health authority. A lab report will not be provided to the testing provider or the CD team/MHO until the results of an acute HIV infection are confirmed (final).

## **What do these Preliminary Acute results mean?**

- These results are considered preliminary and NOT a confirmed case
- Final results can be expected within 1 business day following NAT testing
- Interpretation of results are done in conjunction with previous testing history and assessment of a person's exposure factors

## **What should I do when I receive a Preliminary Acute HIV result?**

Please adhere to any relevant organizational/employer policies and procedures.

The following is a list of recommended steps and items for discussion post receipt of preliminary acute HIV results from BCCDC HIVSS:

- Notify the testing provider\*
  - Outline that test results are preliminary and results should be interpreted in light of a person's previous testing history (ex. window period) and relevant exposure factors\*\*.

- Notify the person who tested\*
  - Explain results are preliminary and that final results can be expected in 1 business day
  - Review and confirm previous HIV testing history and potential exposure factors for HIV acquisition\*\*
  - Discuss supports while waiting for confirmatory testing
  - Discuss abstaining from sexual contact until confirmatory testing is completed
  - Consider what partner(s) may be eligible for nPEP or PrEP

**\*Deferral of discussion until NAT diagnosis confirmation is not recommended due to the significant risk of onward transmission of HIV in acute cases.**

**\*\* Though absence of a person's self-reported exposure factors may suggest a false positive test result, this assumption should not be made as people may in fact not report or perceive that exposure factors for HIV acquisition exist.**

### **Final Results Suggestive of Acute or recent HIV Infection**

Once HIV NAT testing is complete, final results suggestive of acute or recent HIV infection will be provided to the testing provider and CD team/MHO.

BCCDC HIVSS will also follow up with the appropriate health authority immediately upon receipt of final results. The following lab results are examples of findings for acute or recent HIV infection cases:

Anti HIV Ag/Ab Combo HIV 1 and 2 Ab/Ag EIA	<b>** Reactive.</b>
Anti HIV Ag/Ab Combo Anti HIV 12 Combo EIA	<b>** Reactive.</b>
HIV 1 Quant NAT HIV 1 RNA	<b>** HIV 1 RNA detected.</b>
HIV Confirmatory Assay HIV 1 and 2 Immunoblot	Nonreactive.
HIV Report Anti HIV Report	Findings are suggestive of acute or recent HIV infection. Follow up serology in 2 to 4 weeks for Immunoblot is recommended. Please inform your Medical Health Officer if this infection might be due to a remote or recent blood product transfusion. Reported to Public Health

Anti HIV Ag/Ab Combo Anti HIV 12 Combo EIA	**	<b>Reactive.</b>
Anti HIV Ag/Ab Combo HIV 1 and 2 Ab/Ag EIA	**	<b>Reactive.</b>
HIV Report Anti HIV Report		Findings are consistent with recent HIV infection. However, a follow up EDTA blood is requested within 1 to weeks to confirm infection. Reported to Public Health
HIV 1 Quant NAT HIV 1 RNA	**	<b>HIV 1 RNA detected.</b>
HIV Confirmatory Assay HIV 1 and 2 Immunoblot	**	<b>HIV 1 Reactive.</b>

<sup>i</sup> BC Centre for Disease Control. Guidelines for testing, follow up, and prevention of HIV. August 2016. Available from: [http://www.bccdc.ca/resource-gallery/Documents/Communicable-Disease-Manual/Chapter%205%20-%20STI/HIV\\_Guidelines\\_Testing\\_FollowUp\\_Prevention.pdf](http://www.bccdc.ca/resource-gallery/Documents/Communicable-Disease-Manual/Chapter%205%20-%20STI/HIV_Guidelines_Testing_FollowUp_Prevention.pdf)