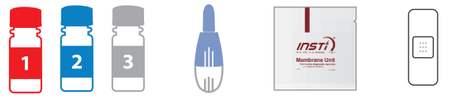
HIV Self Test
Instructions For Use

READ BEFORE USE

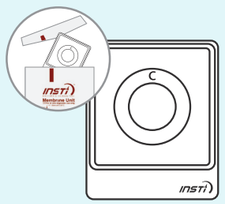
This Test Contains:



Bottle 1, 2, 3 | Lancet CE 0050 STERILE R | Test Device | Bandage

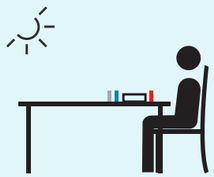
Preparation

Training video available at: www.insti.com



1. Open test device pouch.

IMPORTANT: Clean and dry hands.



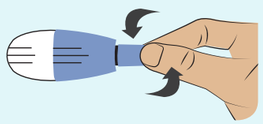
2. Place test device on a flat surface.

3. Remove cap of Bottle 1. Place on flat surface.

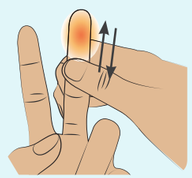
WARNING: Bottle 1 contains liquid. Handle with care.

Step 1: Collect Blood

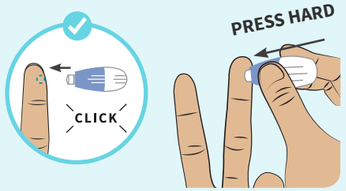
If you have trouble collecting blood, see Frequently Asked Questions on reverse side.



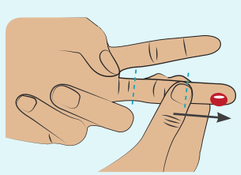
1. Twist and pull out lancet tip. Discard tip.



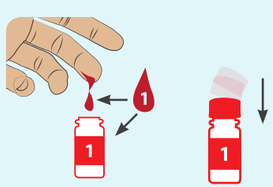
2. Rub finger and hand to increase blood flow.



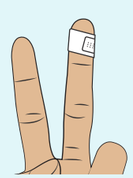
3. Place lancet on the side of finger tip.



4. Rub finger to create a **LARGE** drop of blood.

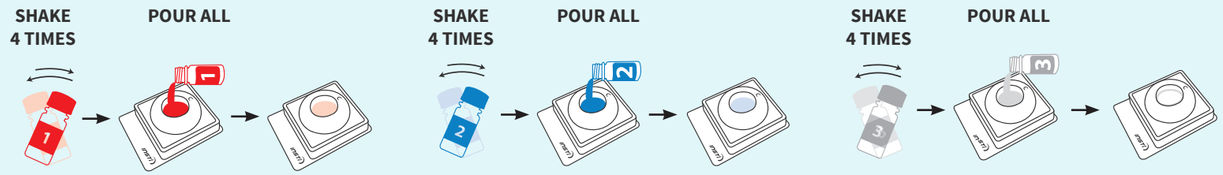


5. Let 1 drop **FALL** into Bottle 1. Twist on cap of Bottle 1.



6. Apply adhesive bandage.

Step 2: Test



1. Shake and pour all liquid. Wait until liquid disappears.

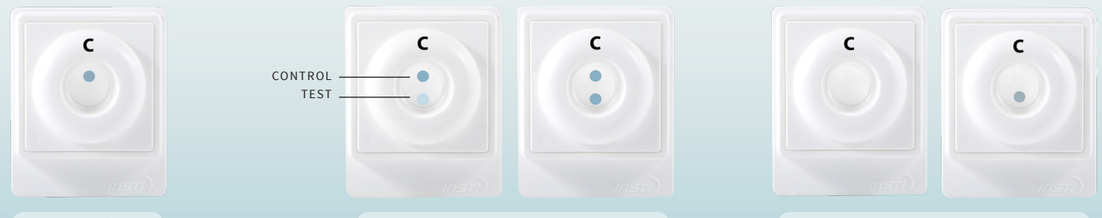
2. Shake and pour all liquid. Wait until liquid disappears.

TIP: You may need to gently tap Bottle 2 to get all the liquid out.

3. Shake and pour all liquid. Wait until liquid disappears.

Step 3: Read Result

Read result right away to within **1 HOUR**.



Negative

Your test result is negative.

Positive

Two dots means your test result is positive. You are probably HIV positive. Positive results **MUST** be confirmed by a doctor.

Invalid

Your test did not work. Control dot must appear to indicate that the test has been performed correctly.

TIP: One dot may be lighter than the other. In rare instances, a faint ring may appear at the test dot; this is a positive result.

A Negative Result

As with many tests, there is a chance for false results. To reduce the chance of false results, be sure to follow the instructions and use the test correctly. If you have a negative result but you were involved in an HIV-risk activity in the past 3 months, you could be in what is called the "window period" and it is recommended to repeat testing at a later date.

A Positive Result

Consult a doctor as soon as possible and inform him/her that you have performed a self test for HIV. All positive results must be confirmed by a laboratory test.

What Next After A Positive Result?

Having HIV does not mean you have AIDS. With early diagnosis and treatment, it is unlikely that you will develop AIDS.

Disposal

Dispose in accordance with local regulations. Put all items back into the outer packaging. Throw away into waste bin.

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Instructions for Use

90-1057 INSTI® HIV Self Test, Box Format

2°C–30°C	Store at 2 to 30°C	STERILE R	Sterilization using irradiation
	Caution	LOT	Lot number
IVD	*In Vitro* diagnostic medical device	REF	Catalogue Number
	Consult Instructions for Use		Manufacturer
	Do not reuse	CE	CE Mark
	Use by	X_n	R22 – Harmful if swallowed.
EC REP	Authorized Representative in the European Community		

For *in vitro* diagnostic use only. IVD

Read this Instructions for Use prior to beginning the test procedure. Although the INSTI HIV Self Test is designed to be simple to use, conformance with the test procedure is necessary to ensure accurate results.

BACKGROUND
HIV stands for Human Immunodeficiency Virus. HIV is the virus that causes AIDS (Acquired Immunodeficiency Syndrome) if left untreated. It is estimated that there are over 30 million people living with HIV in the world today, and up to half of those people have not been diagnosed and are unaware of their infection. This undiagnosed population accounts for most of the HIV transmissions worldwide. Treatment for HIV is highly effective. It is important to start treatment as early as possible following infection, to reduce the risk of serious illness or death.

INTENDED USE
The INSTI HIV Self Test is a single use, rapid, flow-through *in vitro* qualitative immunoassay for the detection of antibodies to Human Immunodeficiency Virus Type 1 (HIV-1) and Type 2 (HIV-2) in human fingerstick whole blood. The test is intended for use by untrained lay users as a self test to aid in the diagnosis of HIV-1 and HIV-2 infection using a small drop (50µL) of blood obtained through fingerstick collection procedures.

BIOLOGICAL PRINCIPLES OF THE TEST
The INSTI HIV Self Test is an immunoassay for detecting HIV antibodies**.** The test device consists of a synthetic membrane positioned atop an absorbent pad within a plastic cartridge. One section of the membrane has been treated with non-hazardous HIV-1 and HIV-2 recombinant proteins, which capture HIV antibodies (test dot). The membrane also includes a control dot treated with protein-A that captures other non-specific antibodies normally present in human blood. The test is performed by adding a fingerstick blood sample to Bottle 1. The diluted blood in Bottle 1 is poured into the well of the test device. Any HIV antibodies in the sample are captured by the test dot and non-specific antibodies are captured by the control dot. Bottle 2 is then added to the test device. Bottle 2 solution reacts with captured antibodies to produce a blue dot at control dot and, if HIV antibodies are present, a blue dot also appears at test dot. In the final step, Bottle 3 is added to the membrane to make the control and test dots more visible.

MATERIALS PROVIDED
1 Instructions for Use
1 Pouch with test device (labelled Membrane Unit)
1 Sample Diluent (Bottle 1, red top)
1 Colour Developer (Bottle 2, blue top)
1 Clarifying Solution (Bottle 3, clear top)
1 Sterile single-use lancet (CE 0050)
1 Adhesive bandage
1 Resources Card

Test device (packaged inside the pouch labelled Membrane Unit)
The control and/or test dot will appear on the test device once the test is performed. The test device is prepared with control (IgM/IgG capture) and test (gp41 and gp36 antigen) reaction dots. It is individually packaged and is to be used only once to complete a single INSTI test.

Sample Diluent (Bottle 1, red cap)
A solution designed to dilute the blood sample and break down red blood cells. It contains 1.5 mL of colorless Tris-Glycine buffered solution containing cell lysis reagents.

Color Developer (Bottle 2, blue cap)
A blue solution that detects human antibodies. It contains 1.5 mL of a blue-coloured Borate buffered proprietary indicator solution designed to detect IgM/IgG in the control dot and HIV-specific antibodies in the test dot.

Clarifying Solution (Bottle 3, clear cap)
A solution to remove background blue color. It contains 1.5 mL of a colorless Tris-Glycine buffered solution designed to remove background staining from the test device prior to reading the INSTI test results.

All solutions contain 0.1% Sodium Azide as a preservative and are harmful if swallowed. All solutions are for single use only and are stable to date and under storage conditions indicated on labels.

LIMITATIONS OF THE TEST
- In some instances, samples may exhibit longer than normal flow times from the time the diluted blood-Bottle 1 mixture is poured into the test device, to the time the contents of Bottle 3 have fully flowed through the test device. This is due to variable factors, such as cellular components within the whole blood sample.
- The INSTI HIV Self Test procedure and the interpretation of results must be followed closely when testing for the presence of antibodies to HIV.
- This test has not been validated for detection of antibodies to HIV-1 Group N subtypes.
- Because a variety of factors may cause non-specific reactions, a patient found to be positive using the INSTI HIV Self Test must have the results confirmed by a doctor.
- The presence of HIV antibodies indicates past exposure to HIV but is not a diagnosis of AIDS, which can only be made by a physician.
- A negative test result does not rule out exposure to HIV.

WARNINGS AND PRECAUTIONS
- Each device is for single use only and is designed for self testing by one person. IVD
- Keep out of the reach of children.
- The test is for use only with human whole blood.
- Do not use the INSTI HIV Self Test beyond the expiration date stated on the outer packaging.
- Do not use the test device if the foil pouch has been damaged.
- Wash your hands with warm water and ensure they are clean and dry before beginning the test.
- Do not read the result if more than 1 hour has passed after completing the test procedure.
- Failure to follow the instructions may result in leakage and/or overflow of liquids from the test device.
- If you have been on long term antiretroviral drug therapy your test may give a false negative result.
- If you have a severe blood disorder such as multiple myeloma you may obtain a false negative or invalid result.
- If you have higher than normal haemoglobin, you may test false negative.
- ⚠ All blood samples should be handled as if capable of transmitting infectious diseases.
- Spills should be cleaned up with household bleach or disinfecting wipes.
- Solutions in Bottle 1, 2 and 3 are harmful if swallowed due to the presence of Sodium Azide.
- Test procedure must be completed in the proper sequence without delays between steps.
- Adequate lighting is required to read the test results.

Restrictions on Use
- Not suitable for users who are afraid of needles
- May not be suitable for patients who have been infected within the last 3 months
- Not suitable for users who have a bleeding disorder
- Not suitable for users below the age of 18
- Not suitable for users who are taking anti-retroviral treatment (ART)
- Not suitable for users who have participated in a HIV vaccine study

Storage
- Store in the original packaging in a cool, dry location between 2 to 30°C. DO NOT FREEZE.
- Do not store near a heat source or in direct sunlight.
- The test should be performed at room temperature (15 to 30°C).
- Do not open the test device pouch until you are ready to perform the test. Note that although the test device pouch states storage at 15-30°C, it can be stored refrigerated, if required.

Disposal
Place all components back into outer packaging and dispose into waste bin. Dispose with accordance to local regulations.

PERFORMANCE CHARACTERISTICS

DIAGNOSTIC SENSITIVITY
Diagnostic sensitivity of a test like the INSTI HIV Self Test is a measure of how well the test detects the presence of HIV antibodies. Sensitivity is expressed as a percentage and is calculated from data from a clinical trial or performance evaluation. Sensitivity is calculated by dividing the number of INSTI positive test results by the number of truly HIV positive persons tested. The higher the sensitivity the better the test is at correctly identifying truly infected persons. In a study conducted by untrained lay users (Table 1), 517/517 true HIV antibody positive subjects were identified as positive by the INSTI test, resulting in a relative sensitivity of 100%.

Table 1 – Relative Sensitivity and Specificity of **the INSTI Self Test compared to the HIV Status of Individuals with Known and Unknown HIV Status by Untrained Lay Users**

Study Population	Number of Subjects	Relative Sensitivity	95% Confidence Interval	Relative Specificity	95% Confidence Interval
HIV status unknown	905	100% (34/34)	89.9% - 100%	99.8% (869/871)	99.2% - 99.9%
Known HIV-1 Positive	483	100% (483/483)	99.2% -100%	N.A.	N.A.
Total	1,388	100% (517/517)	99.3% - 100%	99.8% (869/871)	99.2% - 99.9%

Percent of invalid results was 0% (0/1388)

Studies to calculate the HIV-2 sensitivity of the INSTI HIV Self Test
The sensitivity of INSTI HIV-1/HIV-2 Antibody Test evaluated in an independent European study with 49 sera from Western Blot confirmed HIV-2 infected patients at the chronic stage of the infection was 100%.
Additional studies conducted in-house with 88 different HIV-2 positive serum and plasma samples obtained from European sources and 24 different plasma samples obtained from Nigeria added into individual whole blood (to simulate HIV-2 positive blood) also showed 100% sensitivity of INSTI for HIV-2 antibody detection.

Table 2: INSTI HIV-1/HIV-2 Antibody Test's Sensitivity in HIV-2 Positive Specimens

Sample Source	France[1]	France[2]	Nigeria[3]	Total
Positive Samples	49	88	24	161
INSTI Positives	49	88	24	161
Sensitivity	100%	100%	100%	100%

1. Tests performed in France using serum samples
2. Tests performed in-house using whole blood spiked with plasma (13 samples) and serum (75 samples)
3. Tests performed in-house using plasma samples

In addition**,** 12 out of 500 prospectively collected plasma specimens from an HIV-2 endemic region (Ivory Coast) were tested and confirmed as HIV-2 true positive by an FDA-approved differentiation assay or an HIV-2 RNA quantitative assay.
INSTI was reactive in all 12 of these specimens for a sensitivity of 100%. Results are summarized in Table 3.

Table 3 - Detection of Antibody to HIV-2 in Specimens from HIV-2 Seropositive Individuals and Individuals from an HIV-2 Endemic Region

Specimen Group	Total Specimens	HIV-2 Positive	INSTI HIV-1/HIV-2 Reactive
Endemic subjects	500	12[1]	12

[1]Determined by an approved HIV-1/HIV-2 differentiation assay or HIV-2 RNA testing

DIAGNOSTIC SPECIFICITY
Diagnostic specificity of a test like the INSTI HIV Self Test is a measure of how well the test detects healthy patients who do not have HIV. Specificity is expressed as a percentage and is calculated from data from a clinical trial or performance evaluation. Specificity is calculated by dividing the number of INSTI negative test results by the number of truly HIV negative persons that were tested. The higher the specificity the better the test is at correctly identifying truly non-infected persons. The INSTI HIV Self Test has a specificity of 99.8% in a performance evaluation conducted by untrained lay users and 99.5% in a separate study (see Table 4).

A specificity study was performed on 1408 low or unknown risk and high risk individuals. Of the 1386 individuals identified as HIV negative using an approved comparator assay, 1376 were INSTI negative, and 4 were invalid. The overall specificity of the INSTI HIV Self Test in fingerstick whole blood specimens from the combined high risk and low or unknown risk populations, minus the invalid results, was calculated to be 1376/1382 = 99.5%

Table 4 - Performance of the INSTI HIV-1/HIV-2 Antibody Test on Fingerstick Whole Blood Specimens from Individuals Presumed to be HIV Negative and Individuals at High Risk of HIV Infection

Test Group	Total specimens	INSTI Non-Reactive	INSTI Reactive	INSTI Invalid[1]	Approved Test Non-Reactive	Approved Test Reactive	True Negative[2]
Low or Unknown Risk	626	620	6	0	626	0	626
High Risk	782	756	22[3]	4	760	22	760
Total	1408	1376	28	4	1386	22	1386

[1] Invalid results were not included in the calculation of specificity. The 4 specimens which gave invalid results on INSTI were Non-Reactive on the approved test.
[2] Reactives were confirmed by licensed HIV-1 Western Blot and excluded from the calculation of specificity.
[3] Of the 22 INSTI Reactive specimens, one was Non-Reactive by the approved test, i.e. INSTI false Reactive.

Untrained Lay User Performance Evaluation
The performance of INSTI was evaluated in a prospective study conducted over 4 months at 3 different sites. At each site, testing was conducted by non-professional lay users who had no laboratory experience. The 11 people running the tests had no training on how to use the test. Fingerstick blood from a total of 905 subjects with unknown HIV status and 483 subjects known to be HIV positive were tested with INSTI and results compared to those determined by FDA approved reference methods. The sensitivity of INSTI was 100% (517/517) and the specificity was 99.8% (869/871) There were no invalid results reported (see Table 1).

Unrelated Medical Conditions and Potentially Interfering Substances
To assess the impact of unrelated medical conditions or potentially interfering substances on the sensitivity and specificity of INSTI, 195 serum/plasma specimens from a cross section of medical conditions unrelated to HIV-1 infection and 178 specimens with potentially interfering substances were tested "unspiked" (HIV Nonreactive) and "spiked" with an HIV-1 positive specimen to give a low level of reactivity in the INSTI HIV-1 Antibody Test. No cross-reactivity or interference with INSTI test performance was observed with the following two exceptions:
1. Up to 5 specimens from individuals with multiple myeloma produced invalid INSTI results depending on the INSTI kit lot tested.
2. Of the 20 specimens from individuals with elevated hemoglobin, one tested false Non-Reactive in 2 out of 3 INSTI kit lots.

Reproducibility Studies
The reproducibility of the INSTI test and ability of operators to consistently correctly interpret test results was evaluated at 3 laboratory sites using 3 lots of INSTI on 3 separate days with 9 operators (3 per site). A panel of 5 specimens, consisting of 4 HIV-1 antibody positive (one strong positive and three low positives) and 1 HIV-1 antibody negative specimen was tested at each site. A total of 405 tests were conducted, 135 at each site, with a total of 81 tests per panel specimen. Overall all operators interpreted the test results for each sample correctly, generating a reproducibility of the INSTI HIV Test of 100% (405/405 samples tested).

FREQUENTLY ASKED QUESTIONS

What is HIV and AIDS?
HIV stands for Human Immunodeficiency Virus. HIV is the virus that causes AIDS (Acquired Immunodeficiency Syndrome) if left untreated. When a person becomes infected with HIV, the virus begins to attack his or her immune system, which is the body's defense against illness. As a result, that person becomes more susceptible to disease and infection.

When his or her body loses the ability to fight diseases, that person is diagnosed with AIDS. There is no cure for HIV infection. However, treatment for HIV is highly effective.

How does someone get infected with HIV?
HIV spreads through contact with blood, semen, pre-seminal fluid, rectal fluid, vaginal fluids, or breast milk of an infected person. Transmission can occur from unsafe sex. It can also result from exposure to blood through the sharing of used syringes or needles. Women living with HIV can pass the virus to their babies during pregnancy, childbirth, and breastfeeding. It is also possible to become infected with HIV through a blood transfusion, although this is now very rare.

HIV cannot be passed on from one person to another through casual contact. There is no risk of infection when we share everyday items such as food, dishes, utensils, clothes, beds and toilets with a person living with HIV. The virus is not spread from contact with sweat, tears, saliva, or a casual kiss from an infected person. People do not become infected from eating food prepared by a person living with HIV. People have not become infected with HIV through insect bites.

How do I make sure I get enough blood?
Relax and have a drink of water about 20 minutes before you start the test. Warm your hands by washing them with warm water. Ensure your hands are dry. Place your hand below waist level to promote blood flow. Before using the lancet, look for a spot on the side of your finger tip that is smooth and not calloused and away from your fingernail.

What is an antibody?
Antibodies are proteins produced by your body's immune system in response to harmful organisms like viruses and bacteria. Their purpose is to defend the body against infection by these organisms.

How accurate is the test?
Extensive research studies have shown that this test is extremely accurate when performed correctly. In a recent study performed by untrained users, the test sensitivity was 100%.
It also has a proven specificity (a measure of reliability that the test will be negative for people who do not have HIV infection) of 99.5%. In the untrained user study, the specificity was 99.8%.
If you are unsure of your result you must go to a doctor to perform more testing.

The contents of Bottle 1, Bottle 2 or Bottle 3 do not absorb into the test device.
It is very rare for this to happen, but if it does, you will not be able to complete the test procedure and read the results. You will need to perform another test.

What happens if I spill some of the contents of Bottle 1, Bottle 2 or Bottle 3 outside the test device?
Keep going with the test procedure. As long as the control dot shows a visible dot after pouring Bottle 3 into the test device, the test results are valid.

How early can this test detect HIV?
Based on bioLytical's studies, INSTI demonstrates third generation performance and detects HIV antibodies of the IgM and IgG class. IgM antibodies are the earliest antibodies that the body produces after an HIV infection and are detectable within 21-22 days.[1,2] Depending on how quickly a person's immune system generates HIV antibodies after infection, it could still take up to 3 months to get a positive result.
If you think you have been exposed to HIV within the last 3 months, and your results are negative, you will need to test again after at least 3 months have passed since your exposure. The time from HIV infection to when a test can correctly give a positive result is referred to as the 'window period'.

[1]*Moshgabadi N, Galli RA, Daly AC, Ko SM, Westgard TE, Bulpitt AF, Shackleton CR., 2015. "Sensitivity of a rapid point of care assay for early HIV antibody detection is enhanced by its ability to detect HIV gp41 IgM antibodies." J Clin Virol. 2015 Oct; 71:67-72.*

[2]*M. Cohen, C. Gay, M. Busch, F. Hecht, The detection of acute HIV infection, J.Infect. Dis. 202 (2010) 270–277*

I can't see any dots
Make sure you have adequate lighting. If no dots are visible, you may not have completed the test correctly, or collected enough blood. You will need to perform another test.

How will I know if my test was done correctly?
The INSTI HIV Self Test has a built-in control dot to show that the test has been performed correctly and that you have added the proper sample type and amount of blood sample. If the control dot does not appear (invalid test result), your test has not worked. It is not possible to draw conclusions from this result and you will need to perform another test. In the event of repeated invalid results, consult a doctor.

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