- 6) Do not use the test device if the pouch is not intact.
- 7) Do not use the sterile twist lancet if the seal is broken (Refer specimen collection section)
- 8) Do not use the test device if the desiccant color has changed from orange to green.
- 9) Do not smoke, eat or drink while handling specimens and performing a test.
- 10) Do not re-use the test device, alcohol swab, sterile twist lancet, and specimen transfer device as these are intended for single use only.
- 11) Perform the test by using kit assay buffer, any other buffer or fluid will invalidate the test results
- 12) Do not allow the tip of assay buffer bottle to touch specimen well as it may contaminates the assay buffer.
- 13) Do not use the test device and assay buffer beyond the date of expiry.
- 14) Do not eat the desiccant.
- 15) Do not use any other specimen other than human Whole blood/Serum/Plasma. Do not mix and interchange different specimens.

Specimen Collection

- 1) Venous blood collection: Collect the Whole blood in the collection tubes containing anticoagulants like EDTA, Heparin, Sodium citrate or ACD by venipuncture
- 2) Plasma collection: Collect the Whole blood in the collection tubes containing anticoagulants like EDTA, Heparin, Sodium citrate or ACD by venipuncture and centrifuge it at 3000 g for 10-15 minutes to obtain Plasma.
- 3) Serum collection: Collect Whole blood in the collection tubes without having any anticoagulants by venipuncture. Keep it in standing position for 30 minutes and centrifuge it at 3000 g for 10-15 minutes to obtain serum.

4) Capillary whole blood specimen collection:

- Wear gloves and massage the fingertip gently. It will help to obtain a round drop of blood
- Wipe the complete fingertip with the alcohol swab provided and wait until the fingertip dried completely.



Verify the seal before detaching the cap. Sidelock confirms integrity of sterile twist lancet. Detach the protective cap of the sterile twist lancet. Squeeze the fingertip then prick the lateral side (avoid callus) of the fingertip with sterile twist lancet provided. Safely dispose of the used sterile twist lancet in sharps container immediately after use.

- Wipe the first drop of the blood using sterile gauze. Without pressing too hard, gently squeeze fingertip once again to obtain the second drop of blood (~40-50 µl).
- Take the specimen transfer device provided and hold it vertically. Gently squeeze the bulb of specimen transfer device and immerse open end in the center of a blood drop and release the bulb slowly to draw up the blood up to the 20 µl marking line on the specimen transfer device.



-20µl marking • Do not use the specimen transfer device having no marking. After completion of specimen collection, take the sterile gauze and apply pressure to the wound site to stop the bleeding. The specimen transfer device is for single use only.

Note: Sterile twist lancet is for single use only. Do not share used sterile twist lancet with another person. Dispose of used sterile twist lancet in sharp box and alcohol swab in biohazard waste container immediately after use.

Do not use expired sterile twist lancet. Use of any expired sterile twist lancet may cause infections at the punctured skin due to the expiry of its sterility. Use new sterile twist lancet, alcohol swab and specimen transfer device and choose a different puncture site, if another finger pricking is required.

Specimen storage

1) Venous whole blood specimen should be used for testing immediately (within 1 hour) or shall be stored at 2-8°C for up to 72 hours (3 days). Do not use whole blood specimen stored for more than 3 days, it can cause a non-specific reaction. Do not freeze whole blood specimens.

Note: Mix the whole blood specimens in the tube by inverting the tube 3 or 4 times before use.

- 2) If serum or plasma specimens are not immediately tested, then they should be refrigerated at 2-8°C. For storage period greater than 72 hours (3 days), freezing at <-20°C is recommended up to 4 months.
- 3) Venous whole blood, serum and plasma specimens stored at 2-8 °C must be brought to room temperature before use. Serum or plasma specimens stored at <-20°C must be thawed at 15 to 25°C. Avoid more than 2 freeze-thaw cycles.

4) Serum or plasma specimens containing precipitate may yield inconsistent test results. Such specimens must be centrifuged at 5000 g for 10 minutes and then use clear supernatants for testing.

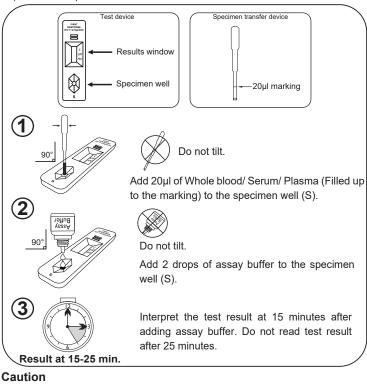
Test Procedure

- 1) Ensure that the test device & other components are at room temperature (15°C to 30°C) before starting the procedure.
- 2) Open the device pouch, take out the test device from aluminum pouch. Do not use the test device if the desiccant color has changed from orange to green.
- 3) Label the test device with the patient identification number. Place the test device on a flat, clean and dry surface.
- 4) Take out the specimen transfer device from plastic bag provided inside the kit. Gently squeeze the bulb of specimen transfer device and immerse the open end in the specimen and release the bulb slowly to draw up the serum/plasma/ capillary or venous whole blood up to 20µl marking line on the specimen transfer device.
- 5) Gently wipe away the excess specimen from the outer surface of the specimen transfer device with tissue paper before dispensing the specimen into the specimen well
- 6) Gently squeeze the bulb of specimen transfer device to add 20 µl of venous or capillary whole blood/ serum/ plasma to the specimen well by gently touching the tips of the specimen transfer device to the sample pad.

Caution: Dispose of used specimen transfer device and tissue paper as biohazard waste immediately after use.

- 7) Hold the assay buffer bottle vertically and add two drops of assay buffer to the specimen well (S).
- 8) Observe for development of purple colored lines in the results window. Interpret test results at 15 minutes after adding assay buffer to the specimen well (S).

9) Do not interpret the test result after 25 minutes.



- Hold the specimen transfer device and assay buffer bottle vertically, else it can lead to inaccurate results.
- Exactly 2 drops of assay buffer should be added. Adding more than 2 drops of assay buffer may cause over flooding or reverse migration phenomenon, which may lead to inaccurate results of the test.
- · Adding less than 2 drops of assay buffer may cause improper migration and poor background clearance which may lead to inaccurate results of the test.
- Do not read the test result after 25 minutes. Reading the result after the 25 minutes may give inaccurate results. After recording the results, dispose of the used test device as biohazard waste.

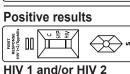
Internal Quality Control

The visualization of the purple colored Control Line in First Response® HIV 1+2 / Syphilis Combo Card Test indicates that the active ingredient of the strips are functional and the migration is successful. The control line is a procedural control serves to demonstrate functional reagents and correct migration of fluid.

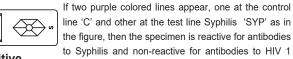
How to Interpret test results



If only a single purple colored line appears, at control line "C" as in the figure, then the specimen is non-reactive for antibodies to Syphilis and HIV.



If two purple colored lines appear, one at the control line 'C' and other at the test line HIV "HIV" as in the figure, then the specimen is reactive for antibodies to HIV 1 and/or HIV 2 and non-reactive for antibodies to Syphilis

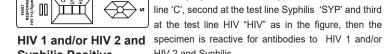


Syphilis Positive and/or HIV 2.

 \Leftrightarrow

 $\langle X \rangle$

 \Leftrightarrow



Invalid results

FIRST ESPONSE H-2/Syphil

If three purple colored lines appear, one at the control line 'C', second at the test line Syphilis 'SYP' and third at the test line HIV "HIV" as in the figure, then the

Syphilis Positive HIV 2 and Syphilis

Note: Interprete faint lines as the reactive lines.

No presence of purple colored control line 'C' in the results window (irrespective of the presence of purple colored test lines) indicates an invalid result.

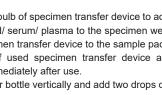
The directions may not be followed correctly or the test may have deteriorated.

The Invalid test results should be retested with a new test device

Performance Characteristics

First Response® HIV 1+2 / Syphilis Combo Card Test has been tested using an in-house panel of Positive and Negative clinical specimens characterized by a commercial anti-HIV 1&2 ELISA kit and TPHA kit. First Response® HIV 1+2 / Syphilis Combo Card Test showed 100% sensitivity and 100% specificity. First Response® HIV 1+2 / Syphilis Combo Card Test showed 100% agreement with reference assavs.

| Specimen detailsHIV PositiveHIV NegativeSyphilis PositiveSyphilis NegativeTotalHIV Positive Plasma Specimen13100131131HIV 1 Positive Plasma Specimen60066Syphilis Positive Plasma Specimen04646046HIV and Syphilis Positive plasma Specimen04646040HIV and Syphilis Positive plasma Specimen040040HIV and Syphilis Positive plasma Specimen0370370370Total Plasma Specimen03700370370Total Plasma Specimen03700370370Total Plasma specimens117741686507593HIV Positive Serum Specimen41900419419HIV 2 Positive Serum Specimen85008585Syphilis Positive Serum Specimen01011010101HIV and Syphilis Negative Serum specimens504355610139594060HIV Positive Serum Specimen03455034553455Total Serum specimens20002020Negative Serum Specimen03434034HIV Positive Whole blood specimens1031031HIV Positive Whole blood specimens03434034HIV Positive Whole Blood Specimen <td< th=""><th>od</th><th></th><th>First Res</th><th>sponse® HI\</th><th>/ 1+2/Syph</th><th>ilis Combo</th><th>Card</th></td<> | od | | First Res | sponse® HI\ | / 1+2/Syph | ilis Combo | Card | | | |
|--|---------------------|---|--------------|--------------|------------|----------------------|-------|--|--|--|
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| Syphilis Positive plasma Specimen 0 46 46 0 46 HIV and Syphilis Positive plasma Specimens HIV and Syphilis Positive Plasma specimens 40 0 40 40 HIV and Syphilis Positive plasma Specimen 40 0 40 0 40 HIV and Syphilis Positive plasma Specimen 40 0 40 0 40 HIV and Syphilis Negative Plasma specimens 0 370 370 370 Total Plasma specimens 177 416 86 507 593 HIV 1 Positive Serum Specimen 419 0 0 419 419 HIV 2 Positive Serum Specimen 85 0 0 85 85 Syphilis Positive Serum Specimen 0 101 101 0 101 HIV and Syphilis Negative Serum specimens 504 3556 101 3959 4060 HIV Positive Whole blood specimen 20 0 0 20 20 Syphilis Positive Whole blood specimen 20 0 0 34 34 HIV Positive Whole blood specimen 0 3 | | HIV 2 Positive Plasma Specimen | 6 | 0 | 0 | 6 | 6 | | | |
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| HIV Positive and Syphilis Negative Whole blood specimens HIV Positive Whole blood specimen 20 0 0 20 20 Syphilis Positive Whole blood specimen 0 34 34 0 34 Syphilis Positive Whole blood specimen 0 34 34 0 34 HIV and Syphilis Positive Whole blood Specimens 31 0 31 0 31 HIV and Syphilis Positive Whole blood Specimen 31 0 21 217 217 | Ð | Negative Plasma Specimen | 0 | 370 | 0 | 370 | 370 | | | |
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| HIV Positive and Syphilis Negative Whole blood specimens HIV Positive Whole blood specimen 20 0 0 20 20 Syphilis Positive Whole blood specimen 0 34 34 0 34 HIV and Syphilis Positive Whole blood Specimens 31 0 31 0 31 HIV and Syphilis Positive Whole blood Specimen 31 0 31 21 217 Negative Whole Blood Specimen 0 217 217 217 217 | A/I | Negative Serum Specimen | 0 | 3455 | 0 | 3455 | 3455 | | | |
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| Syphilis Positive and HIV Negative Whole blood specimens Syphilis Positive Whole blood specimen 0 34 34 0 34 HIV and Syphilis Positive Whole blood Specimens HIV and Syphilis Positive Whole blood Specimens 31 0 31 0 31 HIV and Syphilis Positive Whole blood Specimen 31 0 31 0 31 HIV and Syphilis Positive Whole blood Specimen 0 217 0 217 217 | - | | legative WI | nole blood s | specimens | | | | | |
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| HIV and Syphilis Positive Whole blood specimens HIV and Syphilis Positive Whole blood Specimen 31 0 31 HIV and Syphilis Positive Whole blood Specimen 31 0 31 HIV and Syphilis Positive Whole blood Specimen 0 217 217 Negative Whole Blood Specimen 0 217 0 217 | | Syphilis Positive and H | IV Negative | Whole blo | od specime | ens | | | | |
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| HIV and Syphilis Negative Whole blood specimens Negative Whole Blood Specimen 0 217 0 217 217 | ĺ | HIV and Syphilis Posit | tive Whole I | blood speci | mens | | | | | |
| Negative Whole Blood Specimen 0 217 0 217 217 | | 31 | Q . | • | ÷. | 0 | 31 | | | |
| | | , | ative Whole | blood spec | cimens | | | | | |
| Total Whole blood specimens 51 251 65 237 302 | | Negative Whole Blood Specimen | 0 | 217 | 0 | 217 | 217 | | | |
| | | Total Whole blood specimens | 51 | 251 | 65 | 237 | 302 | | | |



| Reference | Creative | n dataila | First Response [®] HIV 1+2 / Syphilis Combo Card Test | | | | | | |
|------------------------|--|-------------|--|----------|--------|----------------|--|--|--|
| Method | Specime | n details | Positive | Negative | Total | 95% Confidence | | | |
| | Test Marker | Parameter | | | Result | Interval | | | |
| Commercially available | | | Plasma Sp | becimens | | | | | |
| ble | HIV | Sensitivity | 177 | 00 | 177 | (97.35%-100%) | | | |
| aila | TIIV | Specificity | 00 | 416 | 416 | (98.85%-100%) | | | |
| ak | Syphilis | Sensitivity | 86 | 00 | 86 | (94.67%-100%) | | | |
| ally | Cyprine | Specificity | 00 | 507 | 507 | (99.06%-100%) | | | |
| mercia | Serum Specimens | | | | | | | | |
| E | HIV | Sensitivity | 504 | 00 | 504 | (99.05%-100%) | | | |
| | TIIV | Specificity | 00 | 3556 | 3556 | (99.86%-100%) | | | |
| DT | Syphilis | Sensitivity | 101 | 00 | 101 | (95.43%-100%) | | | |
| 2 | Cyprine | Specificity | 00 | 3959 | 3959 | (99.87%-100%) | | | |
| ELISA/ RDT | Whole blood Specimens (Capillary and venous blood) | | | | | | | | |
| Ш | HIV | Sensitivity | 51 | 00 | 51 | (91.27%-100%) | | | |
| | TIIV | Specificity | 00 | 251 | 251 | (98.12%-100%) | | | |
| | Syphilis | Sensitivity | 65 | 00 | 65 | (93.04%-100%) | | | |
| | Cyprine | Specificity | 00 | 237 | 237 | (98.01%-100%) | | | |

Seroconversion Panel Testing

The Analytical sensitivity of the First Response® HIV 1+2 / Syphilis Combo Card Test was carried out by testing commercially available Seroconversion panel. The commercially available HIV/Syphilis combo rapid lateral flow test was used as a reference kit for comparative performance study. Twenty-two (22) seroconversion panel was tested, in-house.

| Analytical Sensitivity - In - H | ouse Evaluation | | | | | | | |
|---------------------------------|-----------------|----------|---------------------------------|----------------------|--|----------|----------------------|--|
| Total Seroconversion Panels | Total | | oonse® HIV 1+2 Combo Card Te | | Reference HIV/Syphilis Combo rapid lateral flow test. | | | |
| | Specimens | Positive | Negative | Detection Index** | Positive | Negative | Detection Index** | |
| 22 | 130 | 36 | 94 | 0.27 | 35 | 95 | 0.26 | |

** Detection Index = Total number of positive specimen by test kit / Total number of specimens.

Cross-Reactivity Study

First Response® HIV 1+2 / Syphilis Combo Card Test was tested with other diseases/conditions, which may give cross-reactivity with the test. The following 18 potential cross-reacting diseases/conditions did not affect the performance of the First Response[®] HIV 1+2 / Syphilis Combo Card Test.

| Specimen details | HIV Negative | HIV Positive | Syphilis Negative | Syphilis Positive | Specimen details | HIV Negative | HIV Positive | Syphilis Negative | Syphilis Positive |
|-----------------------|-----------------|-----------------|----------------------|----------------------|--|-----------------|-----------------|----------------------|----------------------|
| P.falciparum Positive | 05 | Not Tested | 05 | Not Tested | HSV 1/2 Positive# | 05 | 16 | 05 | 08 |
| Pan Malaria Positive | 05 | Not Tested | 05 | Not Tested | HTLV- I Ab Positive# | 07 | 08 | 07 | 04 |
| Dengue NS1 Positive# | 05 | 08 | 05 | 04 | HTLV- II Ab Positive# | 09 | 08 | 09 | 04 |
| Pregnant Woman * | 320 | 02 | 321 | 01 | HSV - IIgG Positive# | 08 | 08 | 08 | 04 |
| CMV Positive# | 03 | 08 | 03 | 04 | Rubella IgG & IgM Positive [#] | 15 | 16 | 15 | 08 |
| ANA Positive# | 04 | 08 | 04 | 04 | HBV Positive# | 103 | 08 | 103 | 04 |
| HAV Positive# | 04 | 08 | 04 | 04 | Chikungunya Positive# | Not tested | 08 | Not tested | 04 |
| EBV Positive# | 02 | 08 | 02 | 04 | Anti-malarial drug medication# | 04 | 08 | 04 | 04 |
| HCV Positive# | 103 | 08 | 103 | 04 | Anti-TB drug medication# | 05 | 10 | 05 | 05 |

Note : ^ Naturally appeared HIV and Syphilis positive specimens.

* Spiked HIV and Syphilis positive specimens.

Potential interference substances

The First Response® HIV 1+2 / Syphilis Combo Card Test was tested with potential interfering substances. The following 08 potential interfering substances did not affect the performance of First Response® HIV 1+2 / Syphilis Combo Card Test. However, Haemolysed specimens and lipaemic specimens showed poor background clearance, hence not recommended for testing. Lipaemic specimens can be used for the testing after centrifugation. Such specimens must be centrifuged at 5000 g for 10 minutes and use the supernatants for testing.

| Specimen Details | HIV Negative | HIV Positive | Syphilis Negative | Syphilis Positive | Specimen Details | HIV Negative | HIV Positive | Syphilis Negative | Syphilis Positive |
|------------------------------|-----------------|-----------------|----------------------|----------------------|--|-----------------|-----------------|----------------------|----------------------|
| Lipaemic specimen**,# | 25 | 08 | 25 | 04 | Low Hematocrit specimens | 05 | Not tested | 05 | Not tested |
| Icteric specimens# | 05 | 08 | 05 | 04 | Whole blood specimen in ACD anticoagulant | 182 | Not tested | 182 | Not tested |
| Haemolytic specimens** | 05 | Not tested | 05 | Not tested | RF Ab Positive# | 09 | 08 | 09 | 04 |
| High Hematocrit specimens | 05 | Not tested | 05 | Not tested | dsDNA Antibody Positive Plasma [#] | 01 | 08 | 01 | 04 |

Potential interference Drug substances

The details of interfering drug molecules are mentioned in the following table. Each interfering drug molecule substances were spiked at the final concentration of 250µg/ml in HIV 1, HIV 2 and Syphilis, positive as well as negative specimens, respectively. No false positive or false negative results were observed with any of drug molecules when tested with First Response® HIV 1+2 / Syphilis Combo Card Test.

| Diclofenac | Naproxen IP Acetaminophen Rifampici | | Rifampicin | Ibuprofen | |
|---------------------------------------|-------------------------------------|-----------------|-------------------|------------------------|--|
| Folic acid Pantoprazole Pyrazinamide | | Pyrazinamide | Metformin | Aspirin | |
| Ecosprin | Hydrochlorothiazide | Cholecalciferol | Isoniazid | Ampicillin Sodium salt | |
| Magnesium sulphate | Ascorbic Acid (Limec) | Ritonavir | Ferrous Ascorbate | Nevirapine | |
| Daruvir Cyclobenzaprine Hydrochloride | | | | | |

Precision

The precision of the First Response[®] HIV 1+2 / Syphilis Combo Card Test was determined by using the 21 different specimens containing different concentrations of antibodies in 5 different replicates with 3 different lots of test devices. Between-run and within-run precision were observed 100%.

External Evaluation Report

| Place of Evaluation | Year | Sensit | ivity | Specificity | |
|--|-------|--------------------------|------------------------|------------------------|------------------------|
| | i cai | Syphilis | HIV | Syphilis | HIV |
| Zimbabwe (Plasma) | 2015 | 100% (92.94%-100%) | 100% (95.60%-100%) | 100% (98.00%-100%) | 100% (97.59%-100%) |
| Ghana (Serum/Plasma) | 2017 | 100% (94.29%-100%) | 100% (94.29%-100%) | 100% (96.88%-100%) | 100% (96.88%-100%) |
| WHO evaluation (Serum/Plasma) | 2018 | 99.0% (96.4% - 99.9%) | 100% (98.2% - 100%) | 100% (98.2% - 100%) | 99.5% (97.2% - 100% |
| Ghana (Capillary vs Venus whole blood specimen) | 2018 | 100% (87.35%-100%) | 100% (96.19%-100%) | 100% (97.71%-100%) | 100% (96.07%-100% |
| Zimbabwe (Pregnant women whole blood specimen) | 2019 | 100% (87.01%-100%) | 100% (96.55%-100%) | 100% (98.06%-100%) | 100% (96.69%-100% |

Limitations

- 1) Do not use anti-coagulants other than heparin, EDTA, and sodium citrate.
- 2) Do not use the haemolysed specimen. A haemolysed specimen may give reddish background even after the end of test time.
- 3) Interpret a faint line as a positive line. Repeat the test in case of a very faint test line or if have any doubt for the test line.
- 4) Although a positive result may indicate an infection of HIV 1 and/or HIV 2 or Syphilis (Treponema pallidum), a diagnosis of diseases can only be made on clinical grounds. This test should not be used as the sole criteria for the diagnosis of HIV/ Treponema pallidum.
- 5) For confirmation, further analysis of the specimens should be performed, such as ELISA, or western blot analysis for HIV and TPHA for Syphilis. As with all diagnostic tests, results must be interpreted together with other clinical information available to the physician.
- 6) False negative results may arise because of hook effect due to a very high titer of antibody in a specimen. Repeat the test by using 1:10 dilution of the same specimen (01 portion) in respective non-reactive specimen matrix (09 portions)
- 7) A non-reactive result does not eliminate the possibility of infection with HIV1/2 and/or Treponema pallidum. The specimen may contain a low level of antibodies that cannot be detected by First Response® HIV 1+2 / Syphilis Combo Card Test. If a test result is non-reactive and clinical symptoms persists, additional testing using other reference method is recommended and/or retested for HIV antibodies after more than 21 days since the original testing.
- 8) Some HIV infected persons on antiretroviral medication may produce false negative results when tested with rapid diagnostic tests

SYMBOL LEGENDS

| Symbol | Explanation of symbol | Symbol | Explanation of symbol | | |
|------------|---------------------------------------|----------|--|--|--|
| <u> </u> | Consult instructions for use | E | Contains sufficient for < n > tests | | |
| NON | Non Sterile | | Product Code | | |
| IVD | In vitro diagnostic medical device | LOT | Lot Number | | |
| 4°C - 30°C | Store at 4-30 °C | 444 | Manufacturer | | |
| | Caution | M | Date of manufacture (YYYY-MM) | | |
| Ť | Keep dry | | Expiration Date (YYYY-MM) | | |
| 8 | Do not reuse | 8 | Do not use if test device pouch is damaged | | |
| 紊 | Keep away from sunlight | | | | |

References:

- 1) Hook EW et al. 2002. A randomized, comparative pilot study of azithro mycin versus benzathine penicillin G for treatment of early Syphilis. Sexually Transmitted Diseases. 8: 486-90.
- 2) Universal Access Report, Scaling up priority HIV/AIDS interventions in the health sector, Progress report 2010.
- 3) UNAIDS, 2013. Report on the global AIDS epidemic "GLOBAL REPORT'
- 4) Kieffer M. 2005. Mortality of infants born to HIV-infected mothers in Africa. The Lancet, 365(9454):120-121
- 5) WHO, 2007. The global elimination of congenital Syphilis: rationale and strategy for action
- 6) WHO, 2011. Sexually transmitted infections. Geneva: World Health Organization.
- 7) Aledort JE et al. 2006. Reducing the burden of sexually transmitted infections in resource-limited settings: the role of improved diagnostics. Nature, 444: 59-72.
- 8) Peeling RW, 2009. Utilization of rapid tests for sexually transmitted infections: promises and challenges. Infectious Diseases Journal, 3: 156-163.
- 9) Newcombe, Robert G. "Two-Sided Confidence Intervals for the Single Proportion: Comparison of Seven Methods," Statistics in Medicine, 17, 857-872 (1998)
- 10) Wilson, E. B. "Probable Inference, the Law of Succession, and Statistical Inference," Journal of the American Statistical Association 22 209-212 (1927)
- 11) TGS-5: Designing Instruction for use for in vitro diagnostic medical devices
- 12) A Short guide on methods: Measuring the impact of national PMTCT programmes (2012 Julv).

13) http://vassarstats.net/clin1.html#def , Richard Lowry.

14) Mwumvaneza Mutagoma, Eric Remera, Dieudonné Sebuhoro, Steve Kanters, David J. Riedel, and Sabin Nsanzimana, "The Prevalence of Syphilis Infection and Its Associated Factors in the General Population of Rwanda: A National Household-Based Survey," Journal of Sexually Transmitted Diseases, vol. 2016, Article ID 4980417, 8 pages, 2016. https://doi.org/10.1155/2016/4980417.

Product Disclaimer & Warnings

Every warnings and precaution should be taken into consideration before using the test. Failure to consider "Precaution, Warning, and Limitations" may not ensure the diagnostic ability and accuracy of this product. The test result may accordingly be affected by environmental factors and/or user error outside of the control of the Manufacturer and Distributor.

A definitive clinical diagnosis should not be based on the results of a single test, but it should be made by the physician after all clinical and laboratory findings have been evaluated

"In no event shall our company or its distributor is liable for any direct, indirect, punitive, unforeseen, incidental, special consequential damages, to property or life, whatsoever arising out of or connected with an incorrect diagnosis, whether positive or negative, in the use or misuse of this product". In the event of performance changes or product malfunction, please contact manufacturer.



· ISO 13485 & EN ISO 13485 Certified Company

ENGLISH Part No.(S)I20-INS-007. Rev.: AB. Date:2020-02-17 Note : Instructions for use will be printed in local language of the country using the test, if required.

FIRST RESPONSE® HIV 1+2 / SYPHILIS COMBO CARD TEST Rapid immunochromatographic Card Test for detection of Antibodies to HIV and/or Syphilis in human whole blood/ serum/ plasma

REF 120FRC25, 120FRC30, 120FRC50, 120FRC60 & 120FRC100

Intended Use

First Response® HIV 1+2 / Syphilis Combo Card Test is intended for us healthcare professionals and qualified laboratory personnel. It is a rapid, quality screening, in vitro diagnostic test for the detection of antibodies (IgG & IgM) spe to HIV (type 1 & 2) and Treponema pallidum in human serum, plasma or ven and capillary whole blood. The test can be used as an aid in the diagnosis of and/or Syphilis. The product can be used for symptomatic, asymptomatic pregnant women population. The test kit is not automated and does not require additional instrument. Reactive specimens should be confirmed by suppleme testing with ELISA, Western Blot or TPHA.

Introduction

HIV (Human Immunodeficiency Virus) is recognized as the etiologic age Acquired Immune Deficiency Syndrome (AIDS). The virus is transmitted by se contact, exposure to infected blood, certain body fluids or tissues, and from me to fetus or child during the perinatal period.

Syphilis is a venereal disease caused by the spirochete bacterium Trepon pallidum. It is ordinarily transmitted by sexual contact. It can also be transm congenitally by the transplacental passage of mother to the fetus and by b transfusion. In a case where a patient is infected with HIV as well as Syphi increases the chances of HIV transmission by increasing viral shedding seminal viral load. The prevalence of HIV is 3 times more in patients infected Syphilis compared to those not infected with Syphilis infection(14). Incorpor Syphilis screening in HIV prevention programs will help to prevent mother to transmission of HIV and Syphilis. This can be achieved by the implementation simple and affordable dual testing strategy for HIV and Syphilis which could imp screening uptake and accessibility of testing to accelerate time to treatment. WHO has reported a significantly high number of HIV and Syphilis co-infecti mother to child transmission (MTCT) in Africa Therefore, the WHO has annou in June 2012 that Prevention of Mother to Child Transmission (PMTCT) shoul be considered alone for HIV but considered for HIV and/or Syphilis both, w vision to eliminate new HIV infections to children by 2015(12). To achieve this v each pregnant woman should be tested for Syphilis and HIV both rather than only. Development of a single test device containing HIV and Syphilis antigen solve the issue defined above and will also be a useful step in achieving W ambitious goal.

Assay Principle

First Response® HIV 1+2 / Syphilis Combo Card Test is based on the princip immunochromatography for the qualitative detection of antibodies(IgG & specific for HIV 1&2 and/or Syphilis. The nitrocellulose membrane is coated w cocktail of recombinant antigen for HIV 1 (gp41) and HIV 2 (gp36) at test line and Recombinant TP antigen (P47, P45, P17, P15) specific for Treponema pal at the test line "Syp" and control reagent coated at the control line "C". When se or plasma or whole blood specimen is applied to the specimen well of the device, the cocktail of recombinant HIV 1+2 (gp41 & gp36) antigen - colloidal conjugate (CGC) & recombinant Treponema pallidum antigens colloidal conjugate will react with HIV and/or Syphilis specific antibodies, if present in specimen. The antibody-CGC antigen complex and assay buffer move along membrane chromatographically to the test regions and form a visible purple col line as the antigen-antibody-CGC antigen complex forms with a high degr sensitivity and specificity. If the specimen contains antibodies to Trepor pallidum, the purple colored line will appear in the test area at test line ' corresponding to the Syphilis line. If the specimen contains antibodies to H and/or 2, the purple colored line will appear in the test area at test line corresponding to HIV 1+2 line.

The presence of both test lines indicates that the specimen contains antibodi HIV as well as Treponema pallidum. The absence of the purple colored line at test line regions indicates that the specimen is non-reactive for HIV and Trepon pallidum, showing a negative result. The purple colored Control line will ap irrespective of a reactive or non-reactive specimen. The control line is a proceed control, serves to demonstrate functional reagents and correct migration of fluid.



| | Materials Provide | d | | | | |
|------|--|-------------------------|-------------------------------------|----------------|---------------------|--|
| | | | PIRST RESPONSE HY 1-2/SysNils | | Icohol Swab | FRST RESPONSE" HIV 1+2 / SYPHILIS Production of following to the outline bytes (M) Darrects, Darrects, Darrects, Darrects |
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| | HIV 1+2 / SYPHILIS Combo Card Test Anti HIV 1+2 / SYPHILIS Antibody Card Test Whole Blood / Serum / Plasma | wanter and | | ssay | 1111 | air à Ra diapenia el RV anto Agnila. Tra pentor se ha o pinnela, apropresa and pagnet series popularis. Tra la acteniera de la fais nor registe qui attinui desenver. N entres duals la colornacity seguinental solog att d'Ada, o la Pina. Della dist. |
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| | Test device pouch | Desiccant | Assa | y buffer Alco | ohol Swab | worked an expensionly by the templocentric processor of matters to the trajectory of matters to the parameter is related as a second of the parameter is a second of the transmission of |
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| | Specimen | | s | Storilo | Twist Lancet | Instructions for use |
| | transfer device | Т | est device | Sterile | I WIST LATICET | |
| N | ote: Materials provided other | r than assay b | uffer bottle are | for single use | only. | |
| N | laterials provided | 120FRC25 | 120FRC30 | 120FRC50 | 120FRC60 | 120FRC10 |
| | est device pouch containing: | 25 Nos. | 30 Nos. | 50 Nos. | 60 Nos. | 100 Nos. |
| L | test device, 1 desiccant | OF Nee | 20 Nos | EQ Nine | CONICO | 100 Niss |
| - | pecimen transfer device | 25 Nos. | 30 Nos. | 50 Nos. | 60 Nos. | 100 Nos. |
| - | ssay buffer bottle (2.5 ml) | 1 No. | 1 No. | 2 Nos. | 4 Nos. | 4 Nos. |
| - | terile twist lancets | 25 Nos. | 30 Nos. | 50 Nos. | 60 Nos. | 100 Nos. |
| ⊢ | Icohol swabs | 25 Nos. | 30 Nos. | 50 Nos. | 60 Nos. | 100 Nos. |
| L Ir | structions for use | 1 No. | 1 No. | 1 No. | 1 No. | 2 Nos. |
| | Materials Require | d but No | t Provideo | k | | |
| • | New pair of disposab | le gloves a | nd face mas | k for each te | est conducte | ed/specime |
| | collected by Fingerst | ick. | | | | |
| • | Sterile gauze pad an | - | - | | | |
| • | Permanent marker pe | en and time | ər. | | | |
| • | Extra sterile twist la | ncets, alco | hol swabs, | and specin | nen transfe | r devices, |
| | needed. | | | | | |
| • | Sharp disposable box | | | | | |
| • | Venipuncture blood o | | t (if whole bl | ood is colle | cted by ven | ipuncture) |
| - | Storage and Stabi | | | | | |
| 1 | • | √ 1+2 / Sy | philis Combo | Card Test | kit should | be stored |
| | 4-30°C. | | | | | |
| 2 | | - | | | | |
| 3 | | - | | o not store t | he kit at the | temperatu |
| | above 30°C and in I | | | | | |
| 4 | • • • • | • | , | • | | e stable ur |
| _ | the expiry date print | | | | | |
| 5 | | | | | | |
| | pouch. If the desicca | ant color ha | is changed f | rom orange | to green, d | o not use t |
| ~ | test device. | b.l | | | | and the t |
| 6 | | | ne printed e | expiry date | on the po | ouch/exterr |
| | secondary packagir | ıy. | | | | |
| | Precautions Wear protective glov | les and foo | e mask while | a handling o | necimens | |
| | Viear protective glov Dispose of used glov | | | - | - | ly oftenwo |
| | Avoid splashing or a | | | . waan ndh | as morouyi | ny anciwa |
| | Clean up spills thoro | | | iate disinfer | ctant | |
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| 5 | and specimen trans | · | • | | | |
| | container. Dispose o | | | | | |
| | a waste container. | | | | | |
| 1 | Warnings | | | | | |
| 1 | | tic use only | ·. | | | |
| 2 | | | | forming the | test, any o | leviation v |
| | invalidate the test re | | • | č | | |
| 3 | | | autions for h | nandling and | d disposal o | of potentia |
| | infective materials | • • | | - | - | - |
| | disease state. | ũ | | • | | |
| | | | | | | |
| 4 |) Do not drink the ass | ay buffer. I | t contains so | odium azide | as a preser | vative whi |
| 4 |) Do not drink the ass may be toxic if ing | | | | | |
| 4 | | | | | | |

5) Devices and assay buffer of a different lot must not be used.