Size : 137 x 218 mm

Combiquic®
HIV & HCV

Rapid immunoconcentration assay for detection of antibodies to HIV-1 & 2 and HCV in human serum/plasma

DEVICE

INTENDED USE

COMBIQUIC® is rapid, qualitative, immunoconcentration (flow through) assay for the simultaneous and differential detection of antibodies to HIV1&2 and HCV in human serum/plasma. For Professional use.

SUMMARY

HIV

Acquired Immuno Deficiency Syndrome (AIDS) is caused by at least two retroviruses, the HIV-1 and the HIV-2, collectively referred to as HIV-1/2. Antibodies to HIV-1 envelope protein (gp120), transmembrane protein (gp 41) and HIV-2 transmembrane protein (gp36) are prevalent in sera of individuals with AIDS or AIDS related complex (ARC) or who are at high risk of contracting AIDS. Detection of these antibodies indicates exposure to the HIV-1/2 virus.

HCV

HCV is as single-stranded RNA virus containing a linear genome with a length of about 9,600 nucleotides with positive polarity. It is now recognized that HCV infection is the major ethiological agent of post transfusion hepatitis type non-A, non-B, HCV infection frequently progresses to chronic liver disease. On the basis of phylogenetic analysis. HCV has been grouped into six major genotypes, each of which contains one or more subtypes. The distribution of HCV genotypes varies in different geographical areas.

For the detection of HIV, synthetic peptides representing the highly immunodominant regions of HIV-1 &2 are coated on the membrane of **COMBIQUIC®.** Combination of these peptides in a new generation assay format (advanced flow-through) affords specific and early detection of seroconversion following exposure to HIV.

For the detection of HCV, **COMBIQUIC®** employs recombinant protein derived from Core, NS3, NS4 and NS5 regions of the HCV genome. For its HCV- detection module, **COMBIQUIC®** is a third generation assay the uses a cocktail of recombinant antigens derived from multiple HCV genotypes.

PRINCIPLE

COMBIQUIC® utilizes the principle of agglutination of antibodies/ antisera with respective antigen in immuno-chromatography format along with use of nano gold particles as agglutination revealing agent. It comprises of a test device striped with distinct bands or purified gp120, gp41 and gp36 synthetic peptides specific to HIV at a test region 'HIV' and recombinant antigens derived from the Core, NS3, NS4 and NS5 regions of the HCV genome (from multiple HCV-genotypes) specific to HCV at test region 'HCV'. The third band striped at region 'CNT' corresponds to the assay performance control and contains purified Protein -A . At first the membrane assembly is hydrated with wash buffer and then the specimen is added. Antibodies to HIV and /or HCV, if present, are captured by the respective antigens. After washing with wash buffer. Protein-A conjugates gold sole reagent is added to reveal the presence/absence of bound antibodies. Post final wash, a positive reaction is visualized by the appearance of purple colored bands at the test regions. The absence of bands at the test regions is a negative test result . The appearance of control band serves to validate device functionally, sample addition, reagent and assay performance.

KIT COMPONENTS

Each kit of COMBIQUIC® contains the following component

Device DEVICE	Stripped with HIV-1&2, HCV specific antigens and procedural control, individually pouched with a desiccant
Disposable sample applicator PIPETTE	Inside each individual pouch, for single use only
Dropper bottle for wash buffer BUF	Buffer containing surfactant and preservatives, ready to use
Dropper bottle for conjugate CON	Protein-A conjugated to colloidal gold in a stabilizing solution, ready to use
Package Insert	One package insert provided in each kit

REF	402080010	402080050
Σ	10 Tests	50 Tests

STORAGE AND STABILITY

COMBIQUIC® should be stored between 2-8°C for the duration of shelf life as indicated on the outer carton. Once the pouch is opened, the device must be used immediately.

MATERIAL REQUIRED BUT NOT PROVIDED

1. Disinfectant.
2. Disposable gloves.
3. Biohazard waste containers.

SAMPLE COLLECTION

1. **COMBIQUIC®** uses human serum/plasma as specimen.
2. No special preparation of the patient is necessary prior to specimen collection by approved techniques.
3. Preferably use fresh sample. However, specimen may be stored refrigerated (2- 8°C) for short duration. For long storage, freeze at –20 °C or below.
4. If serum is to be used as specimen, allow blood to clot completely. Centrifuge to obtain clear serum.
5. Repeated freezing and thawing of the specimen should be avoided.
6. Do not heat inactivate before use.
7. Do not use turbid, lipaemic and hemolysed serum/plasma.
8. Do not use hemolysed, clotted or contaminated specimens.
9. Specimen containing precipitates or particulate matter must be centrifuged and the clear supernatant only used for testing.
10. Refrigerated specimens must be brought to room temperature prior to testing.

PRECAUTIONS

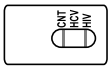
1. For in vitro diagnostic use only. NOT FOR MEDICINAL USE.
2. Bring all reagents and specimen to room temperature before use.
3. Do not use beyond expiration date.
4. Read the instructions carefully before performing the test.
5. Contact with the contents of desiccant pouch containing, among other substances, cobalt chloride (CAS# 7646-79-9) should be kept to a minimum. Inhalation / swallowing may cause harm.
6. Handle all specimens as if potentially infectious.
7. Do not pipette any material by mouth.
8. Do not eat, drink or smoke in the area where testing is done.
9. Use protective clothing and wear gloves when handling samples.
10. Use absorbent sheet to cover the working area.
11. Immediately clean up any spills with sodium hypochlorite.
12. Dispose off all the reagents and material used as if they contain infectious agent.
13. Do not mix components of one lot with another.
14. If desiccant color at the point of opening the pouch has turned from blue to white, another test device must be run.

TEST PROCEDURE

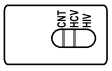
1. Bring the sealed aluminium foil pouch of **COMBIQUIC®** device to room temperature.
2. Open a foil pouch by tearing along the "notch".
3. Remove the testing device and the sample applicator. Once opened, the device must be used immediately.
4. Label the device with specimen identity.
5. Place the testing device on a flat horizontal surface.
6. Holding the dropper vertically, add **two drops** of wash buffer in the reaction well and allow to soak completely.
7. Add **one drop** (25µl) of serum specimen and allow to pass through.
8. Add **three drops** of wash buffer and allow to soak completely.
9. Add **two drops** of Proteín-A gold conjugate and allow to pass through.
10. Add **two drops** of wash buffer and allow to pass through.
11. Record the results immediately.

RUN CRITERIA

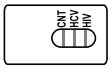
A purple colored band must appear in the control area marked 'CNT'. If control band does not appear the test is invalid. Absence of control band indicates either deterioration of the kit or absence of sample addition. Repeat test, making sure that sample has been added.



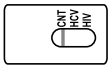
HIV-1 and/or HIV-2 Positive
A colored band appears in the Control area marked 'CNT' as well as in the area marked 'HIV'. The sample reactive for HIV1 and/or HIV2.



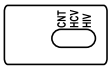
HCV Positive
A colored band appears in the Control area marked 'CNT' as well as in the area marked HCV'. The sample reactive for HCV.



HIV-1 and/or HIV-2 and HCV Positive (Co-infection)
A colored band appears in the Control area marked 'CNT' as well as in the area marked 'HIV'& 'HCV'. The sample reactive for HIV1 and/or HIV2 and HCV.



Negative
Only one colored band appears in the Control area marked 'CNT'.



Invalid
The test should be considered invalid if the control band 'CNT' does not appear. The test is also invalid if only the test band and no control band appears. Repeat the test with a new **COMBIQUIC®** HIV/HCV device.

PERFORMANCE CHARACTERISTICS

In an in-house study, the performance of **COMBIQUIC®** device was evaluated using a panel of specimens of positive (at varying stages of seroconversion) for HIV1 & 2 and HCV along with negative sera in comparison with commercially available ELISA kits.

SAMPLES TESTED	COMBIQUIC®		Licensed ELISA	
	HIV1&2	HCV	HIV1&2	HCV
Total No. of Samples tested	1228	569	1228	569
Total No. of Negatives	1064	517	1064	519
No. of HIV positive	164	-	164	-
No. of HCV positive	-	50	-	50

Based on the above evaluation, the sensitivity and specificity of **COMBIQUIC®** is as follows

PARAMETER	HIV1&2	HCV
Sensitivity	100%	100%
Specificity	100%	99.61%

EVALUATION WITH SEROCONVERSION PANEL : HIV MODULE

COMBIQUIC® was evaluated with anti -HIV-1 Seroconversion Panel D (PRB904) obtained from Boston Biomedica Inc., USA. The results were found to be satisfactory and are as follows:

Panel ID#	Days Since 1st bleed	ORGANON TEK. HIV*	DUPONT Western Blot	Roche RNA PCR	COMBIQUIC®
PRB 904-01	0	0.5	No Bands	**BLD****	Negative
PRB 904-02	21	0.4	No Bands	**BLD**	Negative
PRB 904-03	49	0.5	No Bands	Positive	Negative
PRB 904-04	92	5.1	18, 24, f41, 55, f65, 120, 160	Positive	HIV-1Positive
PRB 904-05	99	4.9	18, 24, 41, 51, 55, 65, 120, 160	Positive	HIV-1 Positive

** Below Detection Limit

EVALUATION WITH SEROCONVERSION: HCV MODULE

By using Seroconversion panel from Boston Biomedica Inc., USA (Panel ID: PHV 901), that contains11 samples, the sensitivity of **COMBIQUIC®** was evaluated. The results were found to be satisfactory and are as follows:

Panel ID#	Days since first bleed	Abbott HCV 3.0	Ortho HCV 3.0	Ortho RIBA 3.0	COMBIQUIC®
PHV 901-01	0	0.2	0.0	NEGATIVE	NEGATIVE
PHV 901-02	72	0.2	0.0	NEGATIVE	NEGATIVE
PHV 901-03	104	1.0	5.9	POSITIVE	POSITIVE
PHV 901-04	106	1.0	6.0	POSITIVE	POSITIVE
PHV 901-05	111	1.2	6.1	POSITIVE	POSITIVE
PHV 901-06	113	1.3	6.0	POSITIVE	POSITIVE
PHV 901-07	138	9.0	> 9.1	POSITIVE	POSITIVE
PHV 901-08	146	6.8	7.4	POSITIVE	POSITIVE
PHV 901-09	166	> 10.6	> 9.1	POSITIVE	POSITIVE
PHV 901-10	173	> 10.6	9.1	POSITIVE	POSITIVE
PHV 901-11	209	> 10.6	> 9.1	POSITIVE	POSITIVE

Data other than that of ***COMBIQUIC®*** *is supplied by BBI, USA. Numerical values are expressed as cut-off ratios. Ratios more than or equal to 1.0 are considered positive.*

INTRA-ASSAY PRECISION STUDY

Two samples-One HCV-positive and the other HIV-positive was assayed 10 times on the same day.
Results: No variation in results was observed indicating 100 % correlation.

INTER-ASSAY PRECISION STUDY

Two samples-One HCV-positive and the other HIV-positive was assayed 3 times on 3 different days.
Results: No variation in results was observed indicating 100 % correlation.

LIMITATIONS OF THE STUDY

1. The addition of reagents must be accomplished without interruptions. After addition of the wash buffer, in step # 10 of the procedure. If background in the reaction port is high, the samples must be re-centrifuged @ 3000 rpm for 15 minutes so as to pellet invisible particulate matter. Subsequently, test should be re-run using clear supernatant with a fresh **COMBIQUIC®** device.

Size : 137 x 218 mm

2. Absence of antibodies to HIV or HCV does not indicate that an individual is absolutely free of HIV or HCV as the collection of samples and its timing vis-a-vis seroconversion will influence the test outcome.
3. Since various tests for HIV and HCV differ in their performance characteristics and antigenic composition, the reactivity patterns may differ.
4. Do not compare the intensity of the test lines and the control lines to judge the concentration of the antibodies in the test sample.
5. Testing of pooled specimens is not recommended.
6. Though **COMBIQUIC**® is an sensitive and reliable screening test, it should be used as a sole criterion for diagnosis of HIV/HCV infection.
7. All positive specimens should be further tested using appropriate supplemental/confirmatory tests.
8. As **COMBIQUIC**® is read by visual inspection of colored bands, reading of the test is subjective for specimens giving weak colored band(s).
9. A weak positive result may be due to cross reactivity or low or borderline titers.
10. As with all diagnostic tests, a definitive clinical diagnosis should not be based on the result of a single test, but should only be made by the physician after all clinical and laboratory findings have been evaluated.

WARRANTY

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

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SYMBOL KEYS

Temperature Limitation	Consult Instructions for use	Date of Manufacture	DEVICE — Device
Manufacturer	IVD — *In vitro* Diagnostic Medical Device	This side up	BUF — Wash Buffer
Use by	REF — Catalogue Number	Do not reuse	CON — Protein A Gold Conjugate
Σ — Contains sufficient for <n> tests	LOT — Batch Number / Lot Number	PIPETTE — Disposable Plastic Sample Applicator	

Manufactured by:

Qualpro Diagnostics

A Division of Tulip Diagnostics (P) Ltd.

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