

# Filariasis IgG/IgM Rapid Test Kit

## Instructions For Use

### PRODUCT NAME

Filariasis IgG/IgM Rapid Test Kit

### PACKAGE SPECIFICATION

25 tests/kit

### INTENDED USE

Filariasis IgG/IgM Rapid Test Kit is an in vitro qualitative immunochromatographic assay for the rapid detection of IgG and IgM antibodies to lymphatic filarial parasites (W. Bancrofti and B. Malayi) in human serum/plasma/whole blood specimens.

### SUMMARY AND PRINCIPLES OF THE PROCEDURE

Lymphatic filariasis, commonly known as Elephantiasis, is mainly caused by W. bancrofti and B. malayi and affects about 120 million people across 80 countries. The disease is transmitted to humans by the bites of infected mosquitoes within which the microfilariae sucked from an infected human subject develops into third-stage larvae. Generally, repeated and prolonged exposure to infected larvae is required for establishment of human infection. The definitive parasitologic diagnosis is the demonstration of microfilariae in blood samples. However, this gold standard test is restricted by the requirement for nocturnal blood collection and lack of adequate sensitivity. Detection of circulating antigens is another commercially available diagnostic method, but its usefulness is limited to infection with W. bancrofti. In addition, microfilaremia and antigenemia develop from months to years after exposure. Antibody detection provides an early means to detect filarial parasite infection. Presence of IgM to the parasite antigens suggests current infection, whereas, presence of IgG corresponds to late stage of infection or past infection. Furthermore, identification of conserved antigens allows 'pan-filaria' tests to be applicable. Utilization of recombinant proteins eliminates crossreaction with individuals having other parasitic diseases. The Filariasis IgG/IgM Rapid Test uses conserved recombinant antigens to simultaneously detect IgG and IgM to the W. bancrofti and B. malayi parasites without the restriction on specimen collection.

The Filariasis IgG/IgM Rapid Test is a lateral flow chromatographic immunoassay. The test cassette consists of: 1) a colored conjugate pad containing recombinant W. bancrofti and B. malayi common antigens conjugated with colloidal gold (Filariasis conjugates) and a control antibody conjugated with colloidal gold, 2) a nitrocellulose membrane strip containing two test lines (M and G lines) and a control line (C line). The M line is pre-coated with monoclonal anti-human IgM for the detection of IgM to W. bancrofti and B. malayi, the G line is pre-coated with reagents for the detection of IgG to W. bancrofti and B. malayi, and the C line is pre-coated with a control antibody. When an adequate volume of test specimen is dispensed into the sample well of the cassette, the specimen migrates by capillary action across the cassette. Anti-W. bancrofti or anti-B. malayi IgM antibodies if present in the specimen will bind to the Filariasis conjugates. The immunocomplex is then captured on the membrane by the pre-coated anti-human IgM antibody forming a colored M line, indicating a anti-W. bancrofti or anti-B. malayi IgM positive test result. Anti-W. bancrofti or anti-B. malayi IgG antibodies if present in the specimen will bind to the Filariasis conjugates. The immunocomplex is then captured by the pre-coated reagents on the membrane forming a colored G line, indicating an anti-W. bancrofti or anti-B. malayi IgG positive test result. Absence of any test lines (M and G) suggests a negative result. The test contains an internal control (C line) which should exhibit a colored line of the immunocomplex of the control antibodies regardless of the color development on any of the test lines. If the C line does not develop, the test result is invalid and the specimen must be retested with another device.

### KIT COMPONENTS

#### Each kit contains:

1. Test devices: 25 pieces test devices individually pouched.
2. Wash Buffer Solution: 2.5 ml in dropper bottle.
3. Droppers: 25 pieces droppers of 25 ul.
4. Package insert: 1 piece attached.

### MATERIALS REQUIRED BUT NOT PROVIDED

- Timer or stopwatch.
- Specimen collection containers
- Disposable gloves and/or protective clothing
- Centrifuge(for plasma only)
- Micro-pipette

### WARNINGS

1. Read the Instructions For Use completely before using the product. The instructions must be followed carefully as not doing so may result in inaccurate results.
2. The kit is for diagnostic use only.
3. Perform test at room temperature.

### PRECAUTIONS

1. The kit is for professional use only.
2. The Instructions For Use instructions must be followed to ensure optimum test performance.
3. The kit is intended for in vitro diagnostic use.
4. As with all screening assays, any results should be considered presumptive until confirmatory assays have been performed according to local practice or WHO guidelines.

#### Safety Precautions

1. Standard precautions for handling infectious agents should be observed when using this kit.
2. Wear protective clothing such as lab coat, safety glasses and disposable gloves when handling specimens and assay reagents.
3. Wash hands thoroughly after use.
4. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

#### Bio safety Precautions

Appropriate bio safety practices should be used when handling specimens and reagents. These precautions include, but are not limited to the following:

1. Do not smoke, eat, drink, apply cosmetics or handle contact lenses in areas in which specimens are handled.
2. Dispose of all specimens, used devices and tubes as though they are capable of transmitting infection. The preferred methods of disposal are by autoclave at 121°C for a minimum of 60 minutes or by incineration. Disposable materials may be incinerated. Liquid waste may be mixed with appropriate chemical disinfectants. A solution of 10% bleach is recommended. Allow 60 minutes for effective decontamination. NOTE: Do not autoclave solutions containing bleach.
3. When disposing of sample collection tubes, avoid contact with acid to prevent liberation of a toxic gas.
4. All spills should be wiped thoroughly using a suitable disinfectant such as a sodium hypochlorite solution.
5. Use a separate tube and device for each specimen tested.

#### Handling Precautions

1. Do not use if the kit box safety seal is absent, damaged or broken.
2. Do not use any device if the pouches have been perforated.
3. Each device is for single use only.
4. Do not mix sample collection tubes/test devices from different kit lots.
5. Do not use the kit past the expiration date (this date is printed on the kit box).
6. Adequate lighting is required to read the test results.
7. The result should be read immediately after the end of the 10 minutes incubation time following the addition of collected specimen. Do not read results beyond 15 minutes.

### STORAGE INSTRUCTIONS

1. The kit should be stored between 2-30°C and the shelf life is 24 months.
2. The kit components are stable until the expiration date printed on the outer label, when stored as directed. The kit expiry date is determined by whichever of the components has the shortest expiry date. The kit expiry date is not impacted once the extraction Solution has been opened. Do not use kit components beyond overall kit expiry date.
3. If stored refrigerated, ensure that the pouched device is brought to room temperature before opening.
4. Do not freeze the kit.

### SAMPLE COLLECTION AND PREPARATION

1. Applicable samples: Whole Blood/Serum/Plasma.
2. Separate serum or plasma from whole blood as soon as possible to avoid hemolysis. Use only clear nonhemolysis specimens.
3. Testing should be performed immediately after the specimens have been collected as soon as possible. Do not leave the specimens at room temperature for prolonged periods.
4. Serum and plasma specimens may be stored at 2~8 °C for up to 7 days, for long term storage, serum/plasma specimens should be kept below -20°C. Whole blood collected by venipuncture should be stored at 2~8°C if the test is to be run within 2 days of collection.
5. Do not freeze whole blood specimens.
6. Bring specimens to room temperature prior to testing. Frozen specimens must be completely thawed and mixed well prior to testing. Specimens should not be frozen and thawed repeatedly.
7. If specimens are to be shipped, they should be packed in compliance with local regulations covering the transportation of etiologic agents.
8. EDTA K2, Heparin sodium, Citrate sodium and Potassium Oxalate can be used as the anticoagulant for collecting the specimen.

## TEST PROCEDURE

Allow the test cassette, specimen, buffer solution to equilibrate to room temperature (15-30°C) prior to testing.

1. Remove the test cassette from the sealed pouch and use it within one hour. Place the test cassette on a clean and level surface.

2. For Serum or Plasma Specimens

**To use a dropper:** Hold the dropper vertically, draw the specimen and transfer the specimen to the sample well of the test cassette (one drop/approximately 25ul), then squeeze the wash buffer solution bottle, add two drops wash buffer solution inside (approximately 60ul) to the sample well and start the timer. Avoid trapping air bubbles in the sample well.

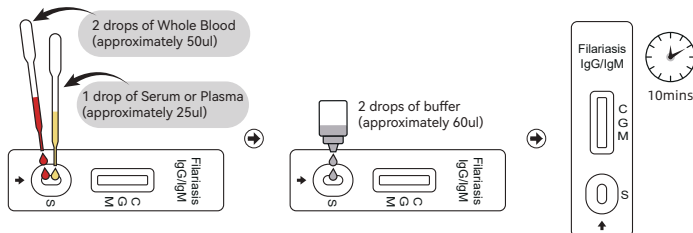
**To use a micro-pipette:** Pipette and dispense 25ul of specimen to the sample well of the test cassette, then squeeze the wash buffer solution bottle, add two drops wash buffer solution inside (approximately 60ul) to the sample well and start the timer.

For Whole Blood Specimens

**To use a dropper:** Hold the dropper vertically, draw the specimen and transfer... the specimen to the sample well of the test cassette (two drops/approximately 50ul), then squeeze the wash buffer solution bottle, add two drops wash buffer solution inside (approximately 60ul) to the sample well and start the timer. Avoid trapping air bubbles in the sample well.

**To use a micro-pipette:** Pipette and dispense 50ul of specimen to the sample well of the test cassette, then squeeze the wash buffer solution bottle, add two drops wash buffer solution inside (approximately 60ul) to the sample well and start the timer.

3. Wait for the colored line(s) to appear. The test result should be read at 10 minutes. Do not interpret the result after 15 minutes.



## INTERPRETATION OF RESULTS

**IgG and IgM POSITIVE:** Three lines appear. One colored line should be in the control line region (C), and two colored lines should appear in IgG and IgM test line region. The color intensities of the lines do not have to match. This is positive for both IgM and IgG antibodies to *W. bancrofti* or *B. malayi*.

**IgG POSITIVE:** Two lines appear. One colored line should be in the control line region (C), and a colored line appears in IgG test line region. The test indicates the presence of anti-*W. bancrofti* or anti-*B. malayi* IgG antibody. The result is IgG reactive or positive.

**IgM POSITIVE:** Two lines appear. One colored line should be in the control line region (C), and a colored line appears in IgM test line region. The test indicates the presence of anti-*W. bancrofti* or anti-*B. malayi* IgM antibody. The result is IgM reactive or positive.

**NEGATIVE:** One colored line should be in the control line region (C). No line appears in IgG and IgM test line region(s).

**INVALID:** Control line fails to appear. Insufficient buffer volume or incorrect procedural techniques are the most likely reasons for control line failure. Review the procedure and repeat the procedure with a new test cassette. If the problem persists, discontinue using the test kit immediately and contact your local distributor.

## LIMITATIONS

1. The kit is for professional in vitro diagnostic use only. This test should be used for detection of antibodies for Filariasis in whole blood, serum or plasma specimens. Neither the quantitative value nor the rate of increase in the concentration of Filariasis can be determined by this qualitative test.
2. A negative result can occur if the quantity of the anti-Filariasis antibodies present in the specimen is below the detection limits of the assay or the antibodies that are detected are not present during the stage of disease. Other clinically available tests are required. As with all diagnostic tests, a definitive clinical diagnosis should not be based on the results of a single test, but should only be made by the physician after all clinical and laboratory findings have been evaluated.

## PERFORMANCE CHARACTERISTICS

### Sensitivity and Specificity

Clinical study was performed to compare the results obtained by The kit and a commercially available Filariasis IgG/IgM Rapid Test as reference. The results indicated that The kit has a high sensitivity and specificity as summarized below:

Filariasis IgG clinical study		Commercial Filariasis IgG/IgM Rapid Test		
Filariasis IgG/IgM Rapid Test Kit	Results	Positive	Negative	Total Results
	Positive	25	0	25
	Negative	1	198	199
Total Results		26	198	224

Clinical sensitivity=96.15% (80.36% ~ 99.90%)

Clinical specificity=100.00% (98.15% ~ 100.00%)

Accuracy=99.55% (97.54% ~ 99.99%)

Filariasis IgM clinical study		Commercial Filariasis IgG/IgM Rapid Test		
Filariasis IgG/IgM Rapid Test Kit	Results	Positive	Negative	Total Results
	Positive	23	0	23
	Negative	1	198	199
Total Results		24	198	222

Clinical sensitivity=95.83% (78.88% ~ 99.89%)

Clinical specificity=100.00% (98.15% ~ 100.00%)

Accuracy=99.55% (97.52% ~ 99.99%)

### Cross Reaction

The Filariasis IgG/IgM Rapid Test Kit has been tested HBsAg, anti-HIV, anti-HCV, anti-RF, anti-Spylitis, anti-H.pylori, anti-Toxo IgG positive specimens. The results showed no cross-reactivity.

### Interfering Substances

The following compounds have also been tested using the Filariasis IgG/IgM Rapid Test Kit and no interference was observed. Caffeine: 20mg/dl, Creatine: 200mg/dl, Acetylsalicylic Acid: 20mg/dl, Gentisic Acid: 20mg/dl, Albumin: 2000mg/dl, Ascorbic Acid: 2g/dl, Hemoglobin: 1000mg/dl, Oxalic acid: 600mg/dl, Bilirubin: 1000mg/dL, Triglycerides: 1600mg/dl, Cholesterol: 800mg/dl

## INDEX OF SYMBOLS

	In vitro diagnostic medical device		single-use, Please don't reuse it
	Use-by date		Consult instructions for use
	Cautions		Manufacturer
	Temperature limit		Batch code
	Date of manufacture		Keep Dry
	Avoid overexposure to the sun		Don't use the product when the package is damaged
	Biological risks		

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## INSTRUCTION APPROVAL AND REVISION DATE

Revision Date: 2025.10.22

Approval Date: 2025.10.22

Date of Issue: 2025.10.22