浙江东方基因生物制品股份有限公司
Zhejiang Orient Gene Biotech Co., LTD

CE-DOC-OG029
Version 4.0

Digitally signed by Iurchevici Valeriu
Date: 2024.03.28 16:17:29 EET
Reason: MoldSign Signature
Location: Moldova

EC Declaration of Conformity

In accordance with Directive 98/79/EC

Legal Manufacturer: *Zhejiang Orient Gene Biotech Co., Ltd*

Legal Manufacturer Address: *3787#, East Yangguang Avenue, Dipu Street, Anji 313300, Huzhou, Zhejiang, China*

Declares, that the products
Product Name and Model(s)

Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood)	GCMAL(pf/pv)-402a

Classification: *Other*
Conformity assessment route: *Annex III (EC DECLARATION OF CONFORMITY)*

We, the Manufacturer, herewith declare with sole responsibility that our product/s mentioned above meet/s the provisions of the Directive 98/79/EC of the European Parliament and of the Council on In-Vitro Diagnostic Medical Devices.

We hereby explicitly appoint

EC Representative's Name: QARAD BV

EC Representative's Address: Cipalstraat 3, 2440 Geel, BELGIUM

to act as our European Authorized Representative as defined in the aforementioned Directive.

I, the undersigned, hereby declare that the medical devices specified above conform with the directive 98/79/EC on in vitro diagnostic medical devices and pertinent essential requirements

Date Signed: March 4, 2022

Name of authorized signatory: Joyce Pang
Position held in the company: Vice-President

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-11321-01-00

TÜV SÜD
Product Service

Certificate

No. Q5 092305 0001 Rev. 02

Holder of Certificate: **Zhejiang Orient Gene Biotech Co., Ltd.**
3787#, East Yangguang Avenue, Dipu Street Anji
313300 Huzhou, Zhejiang
PEOPLE'S REPUBLIC OF CHINA

Certification Mark:

TÜV SÜD
EN ISO 13485
tuvsud.com/ps-cert

Scope of Certificate: **Design and Development, Production and Distribution of In Vitro Diagnostic Reagent and Instrument for the Detection of Drugs of Abuse, Fertility, Infectious Diseases, Oncology, Biochemistry, Cardiac Diseases, Allergic Disease based on Rapid Test, PCR and Liquid Biochip Method.**

The Certification Body of TÜV SÜD Product Service GmbH certifies that the company mentioned above has established and is maintaining a quality management system, which meets the requirements of the listed standard(s). All applicable requirements of the testing and certification regulation of TÜV SÜD Group have to be complied with. For details and certificate validity see: www.tuvsud.com/ps-cert?q=cert:Q5 092305 0001 Rev. 02

Report No.: SH2398804

Valid from: 2024-03-17
Valid until: 2027-03-16

Date, 2024-03-01

Christoph Dicks
Head of Certification/Notified Body

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-11321-01-00

TÜV SÜD
Product Service

Certificate

No. Q5 092305 0001 Rev. 02

Applied Standard(s): ISO 13485:2016
(EN ISO 13485:2016/AC:2018, EN ISO 13485:2016/A11:2021)
Medical devices - Quality management systems -
Requirements for regulatory purposes

Facility(ies): **Zhejiang Orient Gene Biotech Co., Ltd.**
3787#, East Yangguang Avenue, Dipu Street Anji, 313300
Huzhou, Zhejiang, PEOPLE'S REPUBLIC OF CHINA

See Scope of Certificate

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood)

CE

INTENDED USE

The Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood) is a rapid lateral flow chromatographic immunoassay for the simultaneous detection and differentiation of Malaria P.falciparum specific histidine rich protein-2 (Pf HRP-II) and Malaria P.vivax specific lactate dehydrogenase (Pv-LDH) in human blood specimen as an aid in the diagnosis of Malaria infection.It is for *In-Vitro* Diagnostic use only.

INTRODUCTION

Malaria is a serious, sometimes fatal, parasitic disease characterized by fever, chills, and anemia and is caused by a parasite that is transmitted from one human to another by the bite of infected Anopheles mosquitoes. There are four kinds of malaria that can infect humans: Plasmodium falciparum, P. vivax, P. ovale, and P. malariae. In humans, the parasites (called sporozoites) migrate to the liver where they mature and release another form, the merozoites. The disease now occurs in more than 90 countries worldwide, and it is estimated that there are over 500 million clinical cases and 2.7 million malaria-caused deaths per year. At the present, malaria is diagnosed by looking for the parasites in a drop of blood. Blood will be put onto a microscope slide and stained so that the parasites will be visible under a microscope.

PRINCIPLE

The Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood) contains a membrane, which is precoated with mouse monoclonal antibodies specific to HRP-II of P. falciparum on test line Pf region and with mouse monoclonal antibodies specific to lactate dehydrogenase of P.vivax species on test line Pv region respectively. Conjugate pad is dispensed with monoclonal antibodies conjugated to colloidal gold, which are specific to P.falciparum histidine rich protein-2 (Pf HRP-II) and specific to the lactate dehydrogenase of P.vivax.

During the assay, an adequate volume of the blood specimen is dispensed into the sample well (S) of the test cassette, a lysis buffer is added to the buffer well (B). The buffer contains a detergent that lyses the red blood cells and releases various antigens, which migrate by capillary action across the strip held in the cassette. Pv-LDH if presents in the specimen will bind to the Pv-LDH-gold conjugates. The immunocomplex is then captured on the membrane by the pre-coated anti-Pv-LDH antibody, forming a burgundy colored Pv band, indicating a Pv positive test result.

Alternatively, pHRP-II if presents in the specimen will bind to the pHRP-II-gold conjugates. The immunocomplex is then captured on the membrane by the pre-coated anti-pHRP-II antibodies, forming a burgundy colored Pf band, indicating a Pf positive test result.

Absence of any T bands suggests a negative result. The test contains an internal control (C band) which should exhibit a burgundy colored band of the immunocomplex of goat anti- mouse IgG I mouse IgG (anti-Pv-LDH and anti-pHRP-II)-gold conjugates regardless of the color development on any of the T bands. Otherwise, the test result is invalid and the specimen must be retested with another device.

MATERIALS SUPPLIED

25 Sealed pouches each containing a test cassette, a dropper and a desiccant
1 Buffer, 7.0 mL
1 Package insert

MATERIAL REQUIRED BUT NOT PROVIDED

1. Clock or timer
2. Collection by venipuncture: collection tube (containing EDTA, citrate or heparin)
3. Collection using a lancet: sterile lancet

STORAGE AND STABILITY

All reagents are ready to use as supplied. Store unused test device unopened, preferably at 2°C-30°C. Do not expose the kit over 30°C. Do not freeze the kit. Ensure that the test device is brought to room temperature before opening. The test device is stable through the expiration date printed on the sealed pouch if it is stored at 2°C-30°C.

WARNINGS AND PRECAUTIONS

1. For professional *in vitro* diagnostic use only. Do not use after expiration date.
2. The instruction must be followed exactly to get accurate results. Failure to follow the insert gives inaccurate test results.
3. Do not eat, drink or smoke in the area where the specimens or kits are handled.
4. Handle all specimens as if they contain infectious agents. Observe established precautions against microbiological hazards throughout testing and follow the standard procedures for proper disposal of specimens.
5. Hemolized blood may be used for the testing, but do not take precipitants.
6. Wear protective clothing such as laboratory coats, disposable gloves and eye protection when specimens are being tested.
7. Humidity and temperature can adversely affect results.
8. Do not perform the test in a room with strong air flow, ie. an electric fan or strong airconditioning.

SPECIMEN COLLECTION

Collection by venipuncture:

1) Collect whole blood into a collection tube (containing EDTA, citrate or heparin) by venipuncture.
2) If specimens are not immediately tested, they should be refrigerated at 2-8°C. For storage periods greater than three days, freezing is recommended. They should be brought to room temperature prior to use. Using the specimen after long-term storage of more than three days can cause non-specific reaction.
3) When stored at 2-8°C, the whole blood sample should be used within three days.

Collection using a lancet:

1) Clean the area to be lanced with an alcohol swab.
2) Squeeze the end of the fingertip and pierce with a sterile lancet.
3) Wipe away the first drop of blood with sterile gauze or cotton.
4) Using the dropper provided, while gently squeezing the tube, immerse the open end in the blood drop and then gently release the pressure to draw blood into the dropper.

TEST PROCEDURE

Allow the test device, specimen, buffer, and/or controls to equilibrate to room temperature (15-30°C) prior to testing.

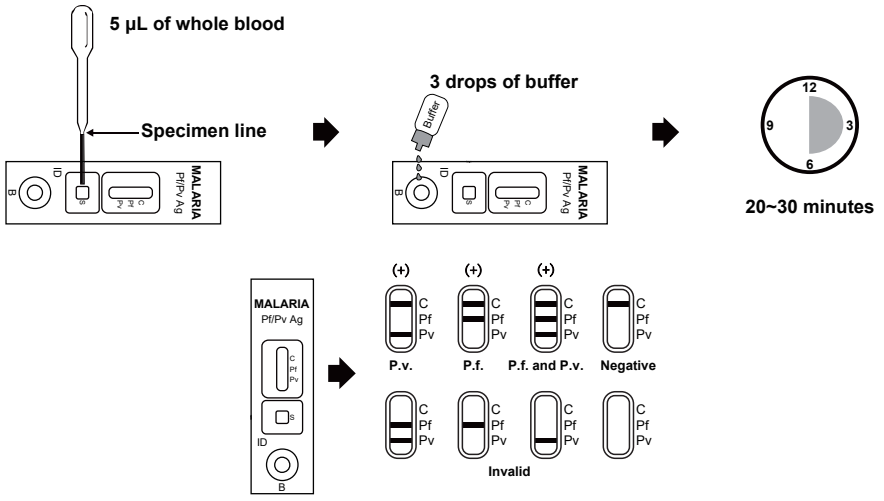
1.Remove the test cassette from the foil pouch and use it as soon as possible. Best results will be obtained if the assay is performed within one hour.
2. Place the test cassette on a clean and level surface. Be sure to label the device with specimen's ID number.
3. With a 5 µL mini plastic dropper provided, draw whole blood specimen to exceed the specimen line as showed in the following image and then transfer drawn whole blood into the sample well (S). Then add 3 drops (about 120 µL) of Lysis Buffer to the buffer well (B) immediately.

Note: Practice a few times prior to testing if you are not familiar with the mini dropper. For better precision, transfer specimen by pipette capable to deliver 5 µL of volume.

4. Set up timer.

If preferred, after 5 minutes of adding specimen and buffer, you may add one more drop of Lysis Buffer to help the background become clearer.

5. Results can be read in 20 to 30 minutes. It may take more than 20 minutes to have the background become clearer. Don't read results after 30 minutes. To avoid confusion, discard the test cassette after interpreting the result.



Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood)

INTERPRETATION OF RESULTS

(Please refer to the illustration above)
POSITIVE:
P.f Positive: One line appears in the control region, and one line appears in P.f. line region.
P.v Positive: One line appears in the control region and one line appears in Pv line region.
P.f and P.v Positive: One line appears in the control region, one line appears in Pv line region and one line appears in P.f. line region.
NEGATIVE: Only one colored line appears in the control region.
INVALID: Control line fails to appear. Insufficient specimen volume or incorrect procedural techniques are the most likely reasons for control line failure. Review the procedure and repeat the test with a new test device. If the problem persists, discontinue using the test kit immediately and contact your local distributor.

QUALITY CONTROL

Internal procedural controls are included in the test. A colored line appearing in the control region (C) is an internal procedural control. It confirms sufficient specimen volume and correct procedural technique. Control standards are not supplied with this kit; however, it is recommended that positive and negative controls be tested as a good laboratory practice to confirm the test procedure and to verify proper test performance.

LIMITATIONS

1. The Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood) is for in vitro diagnostic use only. This test should be used for the detection of P.f and P.v antigens in whole blood specimens only. Neither the quantitative value nor the rate of increase in P.f and P.v concentration can be determined by this qualitative test.
2. The Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood) will only indicate the presence of antigens of P.f and / or P.v in the specimen and should not be used as the sole criterion for the diagnosis of malaria infection.
3. As known relevant interference, haemolytic samples, rheumatoid factors-contained samples and lipaemic, icteric samples can lead to impair the test results.
4. The test is limited to the detection of antigen to Malaria Plasmodium sp. Although the test is very accurate in detecting HRP-II specific to P.f or pLDH specific to P.v, a low incidence of false results can occur. Other clinically available tests are required if questionable results are obtained.
5. If the test result is negative and clinical symptoms persist, additional testing using other clinical methods is recommended. A negative result does not at any time preclude the possibility of malaria infection.
6. 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

1. Clinical Performance for P.f Ag test:
A total of 352 samples from susceptible subjects were tested by the Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood) and by thick blood smear test.

Method		Smear Test		Total Results
Malaria Pf/Pv Ag Rapid Test	Results	Positive	Negative	
	Positive	50	4	54
	Negative	0	298	298
Total Results		50	302	352

Relative Sensitivity: 100%
Relative Specificity: 98.7%
Overall Agreement: 98.9%

2. Clinical Performance for P.v Ag test:
A total of 289 samples from susceptible subjects were tested by the Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood) and by thick blood smear test.

Method		Smear Test		Total Results
Malaria Pf/Pv Ag Rapid Test	Results	Positive	Negative	
	Positive	63	3	66
	Negative	0	223	223
Total Results		63	226	289

Relative Sensitivity: 100%
Relative Specificity: 98.7%
Overall Agreement: 99.0%

3. Precision: Within-run and between-run have been determined by the testing 10 replicates of four specimens: a negative, a low positive, a medium positive and a strong positive. All values were correctly identified 100% of the time.
4. Interference: To evaluate the interference of Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood) with known relevant interfering specimens, the haemolytic samples, rheumatoid factors-contained samples and lipaemic, icteric samples were investigated. In these studies, those specimens did not interfere with the Malaria P.f./P.v. Ag Rapid Test Cassette (Whole Blood).

REFERENCE

1. Leonard K. Basco, Frederique Marquet, Michael M. Makler, and Jacques Le Bras.: Plasmodium falciparum and Plasmodium vivax: Lactate Dehydrogenase Activity and its Application for *in vitro* Drug Susceptibility Assay. Experimental Parasitology 80, 260-271 (1995)
2. David L. Vander Jagt, Lucy A. Hunsaker and John E. Heidrich : Partial Purification and Characterization of Lactate Dehydrogenase from Plasmodium falciparum. Molecular and Biochemical Parasitology, 4 (1981) 255-264
3. David J. Bzik, Barbara A, Fox and Kenneth Gonyer : Expression of Plasmodium falciparum lactate dehydrogenase in Escherichia coli Molecular and Biochemical Parasitology, 59(1993) 155-166
4. Histidine-Rich Protein II: a Novel Approach to Malaria Drug Sensitivity Testing ANTIMICROBIAL AGENTS AND CHEMOTHERAPY, June 2002, p. 1658°©1664 Vol. 46, No. 6

INDEX OF SYMBOLS

	Consult instructions for use	Σ	Tests per kit	EC REP	Authorized Representative
IVD	For *in vitro* diagnostic use only		Use by		Do not reuse
2°C 30°C	Store between 2~30°C	LOT	Lot Number	REF	Catalog#

Zhejiang Orient Gene Biotech Co., Ltd
Address: 3787#, East Yangguang Avenue, Dipu Street,
Anji 313300, Huzhou, Zhejiang, China
Tel: +86-572-5226111 Fax: +86-572-5226222
Website: www.orientgene.com

EC REP QARAD BV
Cipalstraat 3, 2440 Geel BELGIUM

REF GCMAL(pf/pv)-402a

Revision Date: 2022-09-26
B20885-03

H. pylori Antibody Test	S/P	GCHP-301a√	Strip	/	50 Tests/Kit
		GCHP-302a√	Cassette	/	25 Tests/Kit
	WB/S/P	GCHP-401a√	Strip	/	50 Tests/Kit
		GCHP-402a√	Cassette	/	25 Tests/Kit
H. pylori Antigen Test	Feces	GCHP-601a√	Strip	/	25 Tests/Kit
		GCHP-601Ca√	Strip	/	25 Tests/Kit
		GCHP-602a√	Cassette	/	20 Tests/Kit
		GCHP-602Ca√	Cassette	/	20 Tests/Kit
Influenza A Antigen Test	Nasal/Throat Swabs	GCFLU(A)-501a√	Strip	1.5 x 10^4 $TCID_{50}$	25 Tests/Kit
		GCFLU(A)-502a√	Cassette	1.5 x 10^4 $TCID_{50}$	20 Tests/Kit
Influenza A/B Antigen Test	Nasal/Throat Swabs	GCFLU(A/B)-501a√	Strip	1.5x 10^4 $TCID_{50}$/ 1.5 x 10^5 $TCID_{50}$	25 Tests/Kit
		GCFLU(A/B)-502a√	Cassette	1.5x 10^4 $TCID_{50}$/ 1.5 x 10^5 $TCID_{50}$	20 Tests/Kit
		GCFLU(A/B)-502Ca√	Cassette	1.5x 10^4 $TCID_{50}$/ 1.5 x 10^5 $TCID_{50}$	20 Tests/Kit
Influenza & COVID-19 Antigen Combo Test	Nasopharyngeal Swab	GCFC-525a√	Cassette	/	20 Tests/Kit
	NA & NP Swab	GCFC-525a-NN√	Cassette	/	20 Tests/Kit
	Nasal Swab	GCFC-525a-NA√	Cassette	/	20 Tests/Kit
		GCFC-T502a√ New	Cassette	/	1/5/20 Tests/Kit
		GCFC-T503a√ New	Device	/	1/2/5/10 Test(s)/Kit
Flu, COVID-19, RSV & Adeno Antigen Combo Test	Nasopharyngeal Swab	GCFCRA-545a√	Cassette	/	20 Tests/Kit
	Nasal Swab	GCFCRA-T525a√ New	Cassette	/	20 Tests/Kit
Leishmania Antibody Test	S/P	GCKal-301a	Strip	/	50 Tests/Kit
		GCKal-302a	Cassette	/	25 Tests/Kit
	WB/S/P	GCKal-401a√	Strip	/	50 Tests/Kit
		GCKal-402a	Cassette	/	25 Tests/Kit
		GCKal-T402a√	Cassette	/	25 Tests/Kit
Malaria Pan Antigen Test	Whole Blood	GCMAL(pan)-402a√	Cassette	200 parasites	25 Tests/Kit
Malaria P.f. Antigen Test	Whole Blood	GCMAL(pf)-402a√	Cassette	200 parasites	25 Tests/Kit
Malaria P.f./Pan Antigen Test	Whole Blood	GCMAL(pf/pan)-402a√	Cassette	200 parasites	25 Tests/Kit
Malaria P.f./P.v. Antigen Test	Whole Blood	GCMAL(pf/pv)-402a√	Cassette	200 parasites	25 Tests/Kit
Malaria P.f./P.v. Antibody Test	S/P	GCMAL(pf/pv Ab)-302a√	Cassette	/	25 Tests/Kit
	WB/S/P	GCMAL(pf/pv Ab)-402a√	Cassette	/	25 Tests/Kit
Monkeypox IgG/IgM Antibody Test	WB/S/P	GCMKP-402a√ New	Cassette	/	25 Tests/Kit
Monkeypox Antigen Test	Throat swab or vesicle / acne scab focus swab	GCMKP-502b√ New	Cassette	/	1/2/5/7/20 Tests/Kit
Mononucleosis Test	S/P	GCMON-325a√	Cassette	/	25 Tests/Kit
	WB/S/P	GCMON-402a√	Cassette	/	25 Tests/Kit
		GCMON-425a√	Cassette	/	25 Tests/Kit
M. pneumonia IgM Test	S/P	GCMP(IgM)-302a√	Cassette	/	25 Tests/Kit
Respiratory Syncytial Virus Antigen Test	Swab	GCRSV-502a√	Cassette	/	20 Tests/Kit
Rotavirus Test	Feces	GCROA-602a√	Cassette	/	20 Tests/Kit
Rotavirus/Adenovirus Test	Feces	GCROA/ADE-602a√	Cassette	/	20 Tests/Kit
Rubella IgG Test	S/P	GCRUB(IgG)-302a	Cassette	/	25 Tests/Kit
	WB/S/P	GCRUB(IgG)-402a	Cassette	/	25 Tests/Kit
Rubella IgM Test	S/P	GCRUB(IgM)-302a	Cassette	/	25 Tests/Kit
	WB/S/P	GCRUB(IgM)-402a	Cassette	/	25 Tests/Kit
Rubella IgG/IgM Test	S/P	GCRUB(IgG/IgM)-302a	Cassette	/	25 Tests/Kit
	WB/S/P	GCRUB(IgG/IgM)-402a	Cassette	/	25 Tests/Kit
		GCRUB(IgG/IgM)-T402a	Cassette	/	25 Tests/Kit
Strep A Test	Throat Swab	GCSTR-501a√	Strip	/	25 Tests/Kit
		GCSTR-501Ca√†	Strip	/	25 Tests/Kit
		GCSTR-502a√	Cassette	/	20 Tests/Kit
		GCSTR-502Ca√	Cassette	/	20 Tests/Kit
Syphilis Test	S/P	GCSYP-301a√	Strip	/	50 Tests/Kit
		GCSYP-302a√	Cassette	/	25 Tests/Kit
	WB/S/P	GCSYP-401a√	Strip	/	50 Tests/Kit
		GCSYP-402a√	Cassette	/	25 Tests/Kit
S. typhi Antigen Test	S/P/Feces	GCSAL(ST)-602a√	Cassette	/	20 Tests/Kit
TOXO IgG Test	S/P	GCTOX(IgG)-302a√	Cassette	/	25 Tests/Kit
	WB/S/P	GCTOX(IgG)-402a	Cassette	/	25 Tests/Kit
TOXO IgM Test	S/P	GCTOXO(IgM)-302a√	Cassette	/	25 Tests/Kit
	WB/S/P	GCTOXO(IgM)-402a	Cassette	/	25 Tests/Kit
Toxo IgG/IgM Test	S/P	GCTOX-302b	Cassette	/	25 Tests/Kit
		GCTOX(IgG/IgM)-302a√	Cassette	/	20 Tests/Kit
	WB/S/P	GCTOX-402b	Cassette	/	25 Tests/Kit
ToRCH Toxo/Rub CMV/HSV IgG Combo Test	S/P	GCTOG-345a	Cassette	/	20 Tests/Kit
ToRCH Toxo/Rubella/CMV/HSV IgM Combo Test	S/P	GCTOM-345a	Cassette	/	20 Tests/Kit
Trichomonas vaginalis Test	Vaginal Swab	GCTV-502a√	Cassette	/	20 Tests/Kit
Tuberculosis IgG/IgM Test	S/P	GCTB-302a√	Cassette	/	25 Tests/Kit
	WB/S/P	GCTB-402a√	Cassette	/	25 Tests/Kit
Typhoid IgG/IgM Test	S/P	GCTYP-301a	Strip	/	50 Tests/Kit
		GCTYP-302a√	Cassette	/	25 Tests/Kit
V. cholerae O1 Antigen Test	Feces	GCVCH(O1)-602a√	Cassette	/	20 Tests/Kit
V. cholerae O1/O139 Antigen Test	Feces	GCVCH(O1/O9)-602a√	Cassette	/	20 Tests/Kit
ZIKA IgM Test	WB/S/P	GCZIK(IgM)-402a	Cassette	/	25 Tests/Kit
ZIKA IgG Test	WB/S/P	GCZIK(IgG)-402a	Cassette	/	25 Tests/Kit
ZIKA NS1 Test	WB/S/P	GCZIK(NS1)-402a	Cassette	/	25 Tests/Kit

√CE Marked †Cleared for US 510(k) In Specimen column: WB: Whole Blood S: Serum P: Plasma