INSTRUCTIONS FOR USE

EN

Rat Kidney/Stomach/Liver Tissue

REF FA3402 | IVD | Rx Only | Σ 80 | CE

INTENDED USE

Rat Kidney/Stomach/Liver Tissue kit is designed for the qualitative and semi-quantitative detection of antinuclear, mitochondrial, smooth muscle and parietal cell antibodies by the indirect immunofluorescence assay (IFA) technique. It aids in determining systemic lupus erythematosus (SLE) and differentiating clinically similar connective tissue disorders, and is for *In vitro* diagnostic use.

SUMMARY AND EXPLANATION

The Rat Kidney/Stomach/Liver Tissue kit enables one to monitor five primary autoantibodies in a single test. This kit will simultaneously detect antinuclear, anti-mitochondrial, anti-liver-kidney microsome (LKM), anti-smooth muscle and anti-parietal cell antibodies. The Rat Kidney/Stomach/Liver Tissue is designed for use in conjunction with the ANA, MA, and SMA specific kits.

The indirect immunofluorescence assay (IFA) was adapted to antinuclear antibody testing by several investigators (1 - 2) following the basic methods originally described by Coons (3). This method has been used extensively for detecting the presence of ANA in the sera of patients with systemic lupus erythematosus (SLE), and other clinically similar connective tissue disorders (4 - 8). In addition, ANA may be associated with drug-induced lupus disease (9 - 10) which clinically mimic the spontaneous form of SLE. ANA are primarily composed of IgG; however, IgA and IgM ANA may also be detected (11).

1. **Cytoplasmic (Mitochondrial) (MA, AC-21):** The pattern will characteristically have numerous cytoplasmic speckles with the highest concentration in the peri-nuclear area. The pattern can be observed in interphase and mitotic cells. The clinical significance of AMA is most frequently an association with primary biliary cholangitis, especially when the AMA is a high titer.
2. **Smooth Muscle antibodies (SMA, actin-like, AC-15)** were first described by Johnson, et al (36) and were thought to be specific for chronic active hepatitis. Although SMA are found in more than 50% of patients with chronic active hepatitis, they have also been found in association with PBC (37), asthma (38), and certain malignancies (39). SMA titers of 1:80 or greater that persist for several months to years are characteristically found in chronic active hepatitis (29). Patients with viral hepatitis on the other hand, rarely have titers above 1:40, and only have transient trace amounts of SMA. The specific antigen for SMA appears to be actin or actin-like substances which may be present in liver cells (40). Until this report (40), it was difficult to reconcile the presence of SMA with chronic active liver disease. Another report has shown SMA to be an autoantibody reactive with actin (41), the contractile substance of platelets, brush borders of epithelial cells, and other substances (41).
3. **Parietal-Cell antibodies (PCA)** are seen in 90% of pernicious anemia patients. The test is helpful in differentiating this anemia from other macrocytic anemias. The parietal-cell antibody is seen in a large percentage of cases of atrophic gastritis and noted in a significant percentage of patients with iron deficiency anemia, thyroid disease, idiopathic Addison's disease, and juvenile diabetes mellitus (42). In normal subjects, parietal-cell antibodies are rare under the age of 20 years. There is an increasing incidence with age in females and males, which reflects increased frequency of atrophic gastritis (43). Intrinsic factor antibodies are usually of the IgG class and are found in 50 - 70% of patients with pernicious anemia (43). The intrinsic factor antibody is rarely seen in the absence of pernicious anemia.

PRINCIPLE OF THE ASSAY

The Rat kidney/Stomach/Liver Tissue is a pre-standardized assay designed to screen patient sera for antinuclear, anti-mitochondrial, anti-LKM, anti-smooth muscle and anti-parietal cell antibodies utilizing a single test procedure. The assay employs stomach kidney, and liver tissue substrate sections in each well of an eight-well slide. Antibodies are then diluted using goat anti-human immunoglobulin conjugate adjusted for optimum use dilution with minimum background staining. The reaction occurs in two steps:

1. Step one involves the interaction of antibody in the patient's sera with the antigen on the slide. In a positive specimen, antibodies in the serum will bind to the tissue section and remain attached after rinsing.
2. Step two is the reaction between the conjugate and the antigen-antibody reaction that produces an apple-green staining in a positive assay (see assay procedure).

The Rat Kidney/Stomach/Liver Tissue should be used to screen patients suspected of having SLE or other connective tissue diseases, autoimmune liver disease, such as chronic active hepatitis, or primary biliary cholangitis, patients with pernicious anemia, and patients with symptoms consistent with possible autoimmune disease.

ANA (Antinuclear antibody): In a positive assay, the antinuclear antibody in the patient's sera interacts with the kidney, stomach, and liver nuclei. With the addition of the FITC conjugate, an apple-green staining will occur. Antinuclear antibodies will exhibit a homogeneous, rim, speckled, or nucleolar pattern.

MA (Mitochondrial antibody): In a positive assay, the mitochondrial antibody in the patient's sera interacts with the mitochondrial antigens localized in the kidney proximal and more intensely, in distal tubular epithelium and gastric (stomach) parietal cells. Reactions

with mitochondrial antigens in the liver cells will also be evident. With the addition of the FITC conjugate, an apple-green staining will occur within the above structures.

SMA (Smooth muscle antibody): In a positive assay, the smooth muscle antibody in the patient's sera interacts with the smooth muscle antigen in the muscularis band basal to the glandular mucosa of the stomach and in the smooth muscle tissue in the blood vessel walls. With the addition of the FITC conjugate, a positive reaction is indicated by an apple-green staining within the muscularis band and blood vessel walls.

PCA (Parietal-Cell antibody): In a positive assay, serum or plasma samples are incubated with a substrate containing gastric mucosal cells. If PCA are present, they bind to parietal-cell antigens. With the addition of the FITC conjugate, a positive reaction is indicated by an apple-green staining.

REAGENTS

Materials Provided:

Each kit contains the following components in sufficient quantities to perform the number of tests indicated on the packaging label.

NOTE: Conjugate and controls contain a combination of Proclin (0.05% v/v) and Sodium Azide (<0.1% w/v) as preservatives.

S L D	1	Rat Kidney/Stomach/Liver Tissue Substrate slides: Ten, 8-well Slides with absorbent blotter and desiccant pouch.
CONJ	2	Conjugate: Goat anti-human immunoglobulin (polyvalent) labeled with fluorescein isothiocyanate (FITC). Contains phosphate buffer with BSA and counterstain. Two, 3.5mL, amber-capped, bottle. Ready to use
CTRL + 1	3	ANA (Homogeneous) Positive control (Human Serum): Will produce homogenous staining of the kidney substrate. One, 0.5mL, red-capped, vial. Ready to use.
CTRL + 2	4	MA Positive control (Human Serum): Will produce mitochondrial staining of the kidney substrate. One, 0.5mL, blue-capped, vial. Ready to use.
CTRL + 3	5	SMA Positive control (Human Serum): Will produce staining of the stomach smooth muscle substrate. One, 0.5mL, orange-capped, vial. Ready to use.
CTRL -	6	Negative control (Human Serum): Will produce no detectable ANA, MA, or SMA staining of the stomach or kidney substrate. One, 0.5mL, green-capped, vial. Ready to use.
BUF PBS	7	Phosphate-buffered-saline (PBS): pH 7.2 ± 0.2. Empty contents of each buffer packet into one liter of distilled or deionized water. Mix until all salts are thoroughly dissolved. two packets, sufficient to prepare 2 liters.
MNTMED	8	Mounting Media (Buffered Glycerol): One, 3.0mL, white-capped, dripper tipped vials.
COVGLS	9	Cover glass. Package of twelve, 24 x 60 mm, Thickness #1**.**

NOTES:

1. **The following components are not Kit Lot Number dependent and may be used interchangeably with the Kit, as long as the product numbers are identical: Mounting Media (Product #: FA0009S), PBS (Product #: 0008S), and Cover Glass (product number: S8007).**

MATERIALS REQUIRED BUT NOT PROVIDED

1. dIFine® automated microscope or a properly equipped fluorescence microscope.
2. Small serological, pasteur, capillary, or automatic pipettes.
3. Disposable pipette tips.
4. Small test tubes, 13 x 100mm or comparable.
5. Test tube racks.
6. Staining dish: A large staining dish with a small magnetic mixing set-up provides an ideal mechanism for washing slides between incubation steps.
7. Distilled or deionized water.
8. Properly equipped fluorescence microscope.
9. 1 Liter Graduated cylinder.

10. Laboratory timer to monitor incubation steps.
11. Disposal basin, disposable gloves, and disinfectant (i.e.: 10% household bleach – 0.5% Sodium Hypochlorite).

The following filter systems, or their equivalent, have been found to be satisfactory for routine use with transmitted or incident light darkfield assemblies:

Transmitted Light		
Light Source: Mercury Vapor 200W or 50W		
Excitation Filter	Barrier Filter	Red Suppression Filter
KP490	K510 or K530	BG38
BG12	K510 or K530	BG38
FITC	K520	BG38
Light Source: Tungsten – Halogen 100W		
KP490	K510 or K530	BG38

Incident Light			
Light Source: Mercury Vapor 200, 100, 50 W			
Excitation Filter	Dichroic Mirror	Barrier Filter	Red Suppression Filter
KP500	TK510	K510 or K530	BG38
FITC	TK510	K530	BG38
Light Source: Tungsten – Halogen 50 and 100 W			
KP500	TK510	K510 or K530	BG38
FITC	TK510	K530	BG38

STORAGE CONDITIONS

2°C – 8°C	Unopened Kit.
	Mounting Media, Conjugate, Slides, Positive and Negative Controls.
	Rehydrated PBS (Stable for 30 days).
2°C – 25°C	Phosphate-buffered-saline (PBS) Packets.

PRECAUTIONS

1. For *In Vitro* diagnostic use.
2. Follow normal precautions exercised in handling laboratory reagents. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. Do not breathe vapor. Dispose of waste observing all local, state, and federal laws.
3. The wells of the slide do not contain viable organisms. However, consider the slide **potentially bio-hazardous materials** and handle accordingly.
4. The controls are **potentially bio-hazardous materials**. Source materials from which these products were derived were found negative for HIV-1 antigen, HBsAg and for antibodies against HCV and HIV by approved test methods. However, since no test method can offer complete assurance that infectious agents are absent, these products should be handled at the Bio-safety Level 2 as recommended for any potentially infectious human serum or blood specimen in the centers for disease control/national institutes of health manual "Biosafety in Microbiological and Biomedical Laboratories": current edition; and OSHA's Standard for Bloodborne Pathogens (20).
5. Adherence to the specified time and temperature of incubations is essential for accurate results. **All reagents must be allowed to reach room temperature (20 - 25°C) before starting the assay**. Return unused reagents to their original containers immediately and follow storage requirements.
6. Improper washing could cause false positive or false negative results. Be sure to minimize the amount of any residual PBS, by blotting, before adding conjugate. Do not allow the wells to dry out between incubations.
7. Conjugate, and controls contain Sodium azide at a concentration of <0.1% (w/v). Sodium azide has been reported to form lead or copper azides in laboratory plumbing which may cause explosions on hammering. To prevent, rinse sink thoroughly with water after disposing of solution containing Sodium azide. This preservative may by toxic if ingested.
8. Dilution or adulteration of these reagents may generate erroneous results.
9. Never pipette by mouth. Avoid contact of reagents and patient specimens with skin and mucous membranes.
10. Avoid microbial contamination of reagents. Incorrect results may occur.
11. Cross contamination of reagents and/or samples could cause erroneous results.
12. Reusable glassware must be washed and thoroughly rinsed free of all detergents.
13. Avoid splashing or generation of aerosols.
14. Do not expose reagents to strong light during storage or incubation.
15. Allowing the slide packet to equilibrate to room temperature prior to opening the protective envelope will protect the wells and blotter from condensation.

16. Collect the wash solution in a disposal basin. Treat the waste solution with disinfectant (i.e.:10% household bleach - 0.5% Sodium Hypochlorite). Avoid exposure of reagents to bleach fumes.
17. Do not expose any of the reactive reagents to bleach-containing solutions or to any strong odors from bleach-containing solutions. Trace amounts of bleach (Sodium Hypochlorite) may destroy the biological activity of many of the reactive reagents within this Kit.
18. Do not apply pressure to slide envelope. This may damage the substrate.
19. The components of this Kit are matched for optimum sensitivity and reproducibility. Reagents from other manufacturers should not be interchanged. Follow Package Insert carefully.
20. Unopened/opened components are stable until the expiration date printed on the label, provided the recommended storage conditions are strictly followed. Do not use beyond the expiration date. Do not freeze.
21. Evans blue counterstain is a potential carcinogen. If skin contact occurs, flush with water. Dispose of according to local regulations.
22. Do not allow slides to dry during the procedure. Depending upon lab conditions, it may be necessary to place slides in a moist chamber during incubations.

SPECIMEN COLLECTION

1. Carry out specimen collection in accordance with CLSI document M29: Protection of Laboratory Workers from Occupationally Acquired Infectious Diseases. No known test method can offer complete assurance that human blood samples will not transmit infection. Therefore, all blood derivatives should be considered potentially infectious.
2. Only freshly drawn and properly refrigerated sera obtained by approved aseptic venipuncture procedures with this assay (44, 45). No anticoagulants or preservatives should be added. Avoid using hemolyzed, lipemic, or bacterially contaminated sera.
3. Store sample at room temperature for no longer than 8 hours. If testing is not performed within 8 hours, sera may be stored between 2 - 8°C, for no longer than 48 hours. If a delay in testing is anticipated, store test sera at –20°C or lower. Avoid multiple freeze/thaw cycles which may cause loss of antibody activity and give erroneous results. It is the responsibility of the individual laboratory to use all available references and/or its own studies to determine stability criteria for its laboratory (46).

ASSAY PROCEDURE

1. Remove slides from refrigerated storage and allow them to warm to room temperature (20 - 25°C). Tear open the protective envelope and remove slides. **Do not apply pressure to flat sides of protective envelope.**
2. Identify each well with the appropriate patient sera and controls. **NOTE: The controls are intended to be used undiluted**. Prepare a 1:20 dilution (e.g.: 10µL of serum + 190µL of PBS) of each patient serum.
   Dilution Options:
   a. As an option, users may prepare initial sample dilutions using PBS, or Zorba-NS® (Zorba-NS® is available separately. Order Product Number FA025 – 2, 30mL bottles).
   b. Users may titrate the Positive control to endpoint to serve as a semi-quantitative (1+ Minimally Reactive) control. In such cases, the control should be diluted two-fold in PBS. An endpoint dilution is established and printed on the Positive control vial (± one dilution). It should be noted that due to variations within the laboratory (equipment, etc.), each laboratory should establish its own expected end-point titer for each lot of Positive control.
   c. When titrating patient specimens, initial dilutions should be prepared in PBS, or Zorba-NS and all subsequent dilutions should be prepared in PBS only. **Titrations should not be prepared in Zorba-NS®.**
3. With suitable dispenser (listed above), dispense 20µL of each control and each diluted patient sera in the appropriate wells.
4. Incubate slides at room temperature (20 - 25°C) 35±5 minutes.
5. Gently rinse slides with PBS. **Do not direct a stream of PBS into the test wells.**
6. Wash slides for two, 5-minute intervals, changing PBS between washes.
7. Remove slides from PBS one at a time. Invert slide and key wells to holes in blotters provided. Blot slide by wiping the reverse side with an absorbent wipe. **CAUTION:** Position the blotter and slide on a hard, flat surface. Blotting on paper towels may destroy the slide matrix. **Do not allow the slides to dry during the test procedure**.
8. Add 20-40µL of conjugate to each well.
9. Repeat steps 4 through 7.
10. Apply 3-5 drops of mounting media to each slide between wells and apply the cover glass. Alternatively, one may apply a small amount of mounting media to each well and apply cover glass. Examine the slides immediately with an appropriate fluorescence microscope.

NOTE: If delay in examining slides is anticipated, seal coverslip with clear nail polish and store in refrigerator. It is recommended that slides be examined on the same day as testing.

QUALITY CONTROL

1. Every time the assay is run, a Positive control, and a Negative control must be included.
2. It is recommended that one read the Positive and Negative controls before evaluating test results. This will assist in establishing the references required to interpret the test sample. If controls do not appear as described below, results are invalid.
   a. ***Antinuclear Antibody*:** Homogeneous Positive control is characterized by diffuse staining of the entire nucleus in the kidney, stomach, or liver sections. The Negative control is characterized by the absence of specific fluorescence and a red background staining of all the cells due to Evans Blue counterstain.

b. ***Mitochondrial Antibody:*** The Positive control is characterized by apple-green staining in the proximal and distal tubular epithelium, gastric (stomach) parietal cells or liver cells, with a staining intensity of 2+ to 4+. The Negative control is characterized by the absence of fluorescent staining of the kidney cells.

c. ***Smooth muscle Antibody:*** The Positive control is characterized by apple-green fluorescent staining on the muscularis band of the stomach substrate. The Negative control is characterized by the absence of fluorescent staining on the muscularis of the stomach muscle.

3. Additional controls may be tested according to guidelines or requirements of local, state, and/or federal regulations or accrediting organizations.

NOTES:

a. The intensity of the observed fluorescence may vary with the microscope and filter system used.

b. Non-specific reagent trapping may exist. It is important to adequately wash slides to eliminate false positive results.

INTERPRETATION OF RESULTS

1. Titers less than 1:20 are considered negative.
2. Positive test: A positive reaction is the presence of any pattern of nuclear apple green staining observed at a 1:20 dilution, based on 1+ to 4+ scale of staining intensity. 1+ is considered a weak reaction, and a 4+ a strong reaction. All sera positive at 1:20 should be titrated to end point dilution. This is accomplished by making a 1:20, 1:40, 1:80, etc., serial dilution of all positives. The end point is the highest dilution that produces a 1+ positive reaction (see Principle of the assay).
3. Antinuclear, mitochondrial, smooth muscle, and parietal cell antibody reactions may be observed with this substrate.

LIMITATIONS OF THE ASSAY

The Rat Kidney/Stomach/Liver Kit is a laboratory diagnostic aid and by itself is not diagnostic. Positive test results may be found in diseases other than those described in the “Significance and Background” section of this Package Insert. It is therefore imperative that positive test results be interpreted by a medical authority.

EXPECTED RESULTS

The expected value in the normal population is negative, or less than 1:20. However, apparently healthy individuals in the 5th to 7th decade of life may have positive results (8).

PERFORMANCE CHARACTERISTICS

The Rat Kidney/Stomach/Liver Tissue was tested in parallel against a reference procedure as follows:

1. Routine ANA testing was performed by both procedures on 434 patient specimens. Of these 434 sera, 116 were positive by both procedures. The Rat Kidney/Stomach/Liver Tissue showed 97% agreement with respect to positive and negative results, and 100% agreement with respect to staining patterns. Of the 29 discrepancies in titer, the ZEUS procedure was one dilution lower in 16 specimens while the reference procedure was one dilution lower in 13 specimens. Of the 16 specimens with lower titers by the test system procedure, all were one dilution discrepancies, and 13 of these 16 involved specimens that were negative by the test system procedure and positive at 1:20 by the reference procedure.
2. Routine MA testing was performed by both procedures on 77 patient specimens. Of the 77 sera, 15 were positive by both procedures. The Rat Kidney/Stomach/Liver Tissue showed 100% agreement with respect to positive and negative results. Of the 15 positive MA sera, 13 were obtained from patients with a diagnosis of primary biliary cirrhosis and two low titer positives were obtained from patients who were undergoing routine employee health examinations.
3. Routine SMA testing was performed by both procedures on 69 serum specimens. Of these 69 sera, 28 were positive at a 1:40 or greater titer by both methods and 41 were negative. There were 6 discrepancies between the two methods with respect to titer. The test system procedure was one dilution higher in four specimens and one dilution lower in two specimens. There were no discrepancies with respect to the number of negative sera.

REFERENCES

1. Friou GJ: J. Clin. Invest. 36:890, 1957.
2. Friou GJ, Finch SC, Detre KD: J. Immuno. 80:324, 1958.
3. Coons AH, Creech H, Jones RN, *et al*: J. Immunol. 80:324, 1958.
4. Barnett EV: Mayo Clin. Proc. 44:645, 1969.
5. Burnham TK, Fine G, Neblett TR: Ann. Int. Med. 63:9, 1966.
6. Casals SP, Friou GJ, Meyers LL: Arthritis Rheum. 7:379, 1964.
7. Condemni JJ, Barnett EV, Atwater EC, *et al*: Arthritis Rheum. 8:1080, 1965.
8. Dorsch CA, Gibbs CV, Stevens MB, Shelman LE: Ann. Rheum. Dis. 28:313, 1979.
9. Dubois EL: J. Rheum. 2:204, 1975.
10. Alarcon-Segovia D, Fishbein E: J. Rheum. 2:167, 1975.
11. Barnett EV, North AF, Condemni JJ, Jacox RF, Vaughn JH: Ann. Intern. Med. 63:100, 1965.
12. Beck JS: Lancet. 1:1203, 1961.
13. Beck JS: Scot. Med. J. 8:373, 1963.
14. Lachman PJ, Junkel HG: Lancet. 2:436, 1961.
15. Friou GJ: Arthritis and Rheum. 7:161, 1964.
16. Anderson JR, Gray KG, Beck JS, *et al*: Ann. Rheum. Dis. 21:360, 1962.
17. Luciano A, Rothfield NF: Ann. Rheum. Dis. 32:337, 1973.
18. Beck JS: Lancet. 1:241, 1962.
19. Tan EM, Kunkel HG: J. Immunol. 96:464, 1966.
20. Burnham TK, Bank PW: J. Invest. Dermatol. 62:526, 1974.
21. Hall AP, Berdawil WA, Bayles TB, *et al*: N. Engl. J. Med. 263:769, 1960.
22. Pollack VE: N. Engl. J. Med. 271:165, 1964.
23. Raskin J: Arch. Derm. 89:569, 1964.
24. Beck JS, Anderson JR, Gray KG, Rowell NR: Lancet. 2:1188, 1963.
25. Doniach D, Walter JG, Roitt IM, *et al*: N. Engl. J. Med. 282:86, 1970.
26. Walker JG, Doniach D, Roitt IM, *et al*: Lancet. 1:827, 1965.
27. Goudie RB, MacSween RNM, Goldberg DM: J. Clin. Pathol 19:527, 1966.
28. Kantor FS, Klatskin G: Trans. Assoc. Am. Physicians. 80:267, 1967.
29. Popper H, Schaffner F: Progress in Liver Diseases, Vol IV, Grune and Stratton, NY, pp 381-402, 1972.
30. Sherlock S: Diseases of the Liver & Biliary System, 4th Ed, Philadelphia. FA Davis Co., 1968, pp 311.
31. Klatskin G, Kantor FS: Ann. Int. Med. 77:533, 1972.
32. Paronetto F: Post Grad. Med. 53:156, 1973.
33. Richer F, Viallet A: Am. J. Dig. Dis. 19:740, 1974.
34. Kroltn K, Finlayson NDC, Jokelainen PT, *et al*: Lancet. 2:379, 1970.
35. Tourville DR, Solomon J. Wertlake PT: Bacteriolog. Proc., 1974.
36. Johnson GD, Holborow EJ, Glynn LE: Lancet. 2:878, 1965.
37. Holborow EJ: Br. Med. Bull. 28:142, 1972.
38. Warwick MT, Haslam P: Clin. Exp. Immunol. 731, 1980.
39. Whitehouse JM, Holborow EJ: Dr. Med. J. 2:511, 1971.
40. Farrow LJ, Holborow EJ, Brighton WD: Nature, 232:186, 1971.
41. Gabbian G, Ryan GB, Lamelin JP, *et al*: Am. J. Path. 72:473, 1973.
42. Irvine WJ: Recent Advances in Clinical Pathology, in Dyke Sc. Ced. Boston. Little Brown and Co., 1968, pp 497-580, 1974.
43. Procedures for the collection of diagnostic blood specimens by venipuncture. Second Edition: Approved Standard (1984). Published by National Committee for Clinical Laboratory Standards.
44. Procedures for the Handling and Processing of Blood Specimens. NCCLS Document H18-A, Vol. 10, No. 12, Approved Guideline, 1990.
45. U.S. Department of Labor, Occupational Safety and Health Administration: Occupational Exposure to Bloodborne Pathogens, Final Rule. Fed. Register 56:64175-64182, 1991.
46. Procedures for the Handling and Processing of Blood Specimens for Common Laboratory Tests; Approved Guidelines – 4th Edition (2010). CLSI Document GP44-A4 (ISBN 1-56238-724-3). Clinical and Laboratory Standards Institute, 950 West Valley Road, Suite 2500, Wayne, PA 19087.

GLOSSARY OF SYMBOLS

The following symbols **may** have been used in the labelling of this product.

Symbol	Description	Symbol	Description
	Manufacturer	S L D	Substrate Slide
IVD	*In vitro* diagnostic medical device	BUF PBS	PBS Buffer
REF	Catalogue number	MNTMED	Mounting Media
	Sufficient for *n* tests	CONJ	Conjugate
LOT	Batch code	CTRL + 1	ANA Positive Control
	Use by	CTRL -	Negative Control
	Storage Temperature limitations	CTRL + 2	MA Positive Control
RX Only	For Prescription Use Only	CTRL + 3	SMA Positive Control
	Consult electronic instructions for use	COVGLS	Cover Glass
	Keep away from sunlight	Made in the USA	Made in the USA
CE	Conformity with Directive 98/79		Store in the upright position

ZEUS Scientific
200 Evans Way, Branchburg, New Jersey, 08876, USA
Toll Free (U.S.): 1-800-286-2111, Option 2
International: +1 908-526-3744
Fax: +1 908-526-2058
Website: www.zeusscientific.com

For US Customer Service contact your local distributor.
For US Technical Support contact ZEUS Scientific, call toll free or e-mail support@zeusscientific.com.
For Non-US Customer Service and Technical Support inquiries, please contact your local distributor.

EC REP
EMERGO EUROPE
Westervoortsedijk 60
6827 AT Arnhem
The Netherlands