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

Benannt durch/Designated by
Zentralstelle der Länder für Gesundheitsschutz bei Arzneimitteln und Medizinprodukten
www.zlg.de
ZLG-BS-245.10.07

Product Service

EC Certificate

Full Quality Assurance System
Directive 98/79/EC on In Vitro Diagnostic Medical Devices (IVDD), Annex IV excluding (4, 6)
(List A and B and devices for self-testing)

No. V1 104507 0003 Rev. 06

Manufacturer: **ACON Laboratories, Inc.**
5850 Oberlin Drive, #340
San Diego CA 92121
USA

Product Category(ies): **Blood glucose measuring systems for self testing and self-testing devices for clinical chemistry, hematology and pregnancy and ovulation**

The Certification Body of TÜV SÜD Product Service GmbH declares that the aforementioned manufacturer has implemented a quality assurance system for design, manufacture and final inspection of the respective devices / device families in accordance with IVDD Annex IV. This quality assurance system conforms to the requirements of this Directive and is subject to periodical surveillance. For marketing of List A devices an additional Annex IV (4) certificate is mandatory. 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:V1 104507 0003 Rev. 06

Report no.: SH22743EXT01

Valid from: 2022-05-04
Valid until: 2025-05-26

Date, 2022-05-04

Christoph Dicks
Head of Certification/Notified Body

Digitally signed by Monastîrschii Viorica
Date: 2023.12.20 15:24:49 EET
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Location: Moldova

TÜV SÜD Product Service GmbH is Notified Body with identification no. 0123

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(List A and B and devices for self-testing)

No. V1 104507 0003 Rev. 06

Model(s):

On Call Plus Blood Glucose Monitoring System,
On Call Plus Blood Glucose Test Strips,
On Call EZ II Blood Glucose Monitoring System,
On Call Advanced Blood Glucose Monitoring System,
On Call Advanced Blood Glucose Test Strips,
On Call Chosen Blood Glucose Test Strips,
On Call Vivid Blood Glucose Monitoring System (OGM-101),
On Call Vivid Blood Glucose Test Strips (OGS-101),
On Call Sharp Blood Glucose Monitoring System (OGM-121),
On Call Sharp Blood Glucose Test Strips (OGS-121)
On Call Plus II Blood Glucose Monitoring System (OGM-171),
On Call Plus II Blood Glucose Test Strips (OGS-171),
On Call Extra Blood Glucose Monitoring System (OGM-191),
On Call Extra Blood Glucose Test Strips (OGS-191),
On Call GK Dual Blood Glucose & Ketone Monitoring System (OGM-161),
On Call Blood Ketone Test Strips (OGS-161),
Urinalysis Reagent Strips (Urine),
UTI Urinary Tract Infection Test Strips,
Cholesterol Monitoring System (CCM-111),
CHOL Total Cholesterol Test Devices (CCS-111),
TRIG Triglycerides Test Devices (CCS-112),
HDL High Density Lipoprotein Test Devices (CCS-113),
3-1 Lipid Panel Test Devices (CCS-114),
Cholesterol CTRL Control Devices,
Cholesterol Monitoring System (CCM-101),
CHOL Total Cholesterol Test Strips (CCS-101),
PT/INR Monitoring System (CCM-151),
PT/INR Test Strips (CCS-151),
Hemoglobin Testing System (CCM-141),
Hemoglobin Test Strips (CCS-141),
hCG Pregnancy Rapid Test Cassette (Urine),
Pregnancy Rapid Test Midstream,
On Call Extra Mobile Blood Glucose Monitoring System (OGM-281),
On Call Sure Blood Glucose Monitoring System (OGM-211),
On Call Sure Sync Blood Glucose Monitoring System (OGM-212),
On Call Sure Blood Glucose Test Strips (OGS-211),
GIMA Blood Glucose Monitoring System,
GIMA Bluetooth Blood Glucose Monitoring System,
GIMA Blood Glucose Test Strips,
On Call GU Dual Blood Glucose & Uric Acid Monitoring

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Product Service

EC Certificate

Full Quality Assurance System
Directive 98/79/EC on In Vitro Diagnostic Medical Devices (IVDD), Annex IV excluding (4, 6)
(List A and B and devices for self-testing)

No. V1 104507 0003 Rev. 06

System (OGM-201),
On Call Blood Uric Acid Test Strips (OGS-201),
LH Ovulation Rapid Test Cassette (Urine),
Ovulation Rapid Test Midstream,
Ovulation & Pregnancy Test Combo Pack,
On Call Extra Voice Blood Glucose Monitoring System (OGM-291),
Early Detection Pregnancy Test,
Digital Pregnancy Test,
Go-Keto Blood Glucose & Ketone Monitoring System (OGM-161),
Go-Keto Blood Ketone Test Strips (OGS-161),
Go-Keto Blood Glucose Test Strips,
On Call Extra GM Blood Glucose Monitoring System(OGM-191),
On Call Extra GM Blood Glucose Test Strips (OGS-191),
On Call Plus GM Blood Glucose Monitoring System,
On Call Plus GM Blood Glucose Test Strips,
Go-Keto Urinalysis Reagent Strips

Facility(ies):

ACON Laboratories, Inc.
5850 Oberlin Drive, #340, San Diego CA 92121, USA

ACON Laboratories, Inc.
10125 Mesa Rim Road, San Diego CA 92121, USA

AZURE Institute, Inc.
10125 Mesa Rim Road, San Diego CA 92121, USA

Acon Laboratories Inc.
Guerrero Negro 9942 Parque Industrial Pacifico IV, 22644 Tijuana B.C. CP, MEXICO

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TÜV SÜD Product Service GmbH is Notified Body with identification no. 0123

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TÜV®

Declaration of Conformity

ACON Laboratories, Incorporated
5850 Oberlin Drive #340
San Diego, CA 92121, USA

We, the manufacturer, declare under our sole responsibility that the *in vitro* diagnostic device:

Mission® Urinalysis Reagent Strips (U031-XX1)

classified as Others in the directive 98/79/EC,

meets all the provisions of the directive 98/79/EC on *in vitro* diagnostic medical devices which apply to it

The self-declaration is according to Annex III (excluding Section 6) of the Directive.

Authorized Representative:
Medical Device Safety Service GmbH
Schiffgraben 41
30175 Hannover, Germany

Signed this 11 day of February, 2020
in San Diego, CA USA

Qiyi Xie, MD, MPH
Senior Staff, Regulatory Affairs & Clinical Affairs
Acon Laboratories, Inc.

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

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

Product Service

Certificate

No. Q5 104507 0001 Rev. 03

Holder of Certificate: **ACON Laboratories, Inc.**
5850 Oberlin Drive, #340
San Diego CA 92121
USA

Certification Mark:

Scope of Certificate: **Design and Development, Manufacture and distribution of In Vitro Diagnostic Test Kits and Reagents for the Determination of Infectious Diseases, Clinical Chemistry, Drugs of Abuse, Tumor/Cardiac Marker, Fertility/Pregnancy and Blood Glucose Monitoring System, Lancing Devices and Lancets**

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 104507 0001 Rev. 03

Report No.: SH22743A01

Valid from: 2022-09-15
Valid until: 2025-09-06

Date, 2022-09-15

Christoph Dicks
Head of Certification/Notified Body

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

TÜV SÜD Product Service

Certificate

No. Q5 104507 0001 Rev. 03

Applied Standard(s):

EN ISO 13485:2016
Medical devices - Quality management systems - Requirements for regulatory purposes
(ISO 13485:2016)
DIN EN ISO 13485:2016

Facility(ies):

ACON Laboratories, Inc.
5850 Oberlin Drive, #340, San Diego CA 92121, USA

Address holder for registration only

ACON Laboratories, Inc.
10125 Mesa Rim Road, San Diego CA 92121, USA

Manufacture and distribution of
In Vitro Diagnostic Test Kits and Reagents for the Determination of Infectious Diseases, Clinical Chemistry, Drugs of Abuse, Tumor/Cardiac Marker, Fertility/Pregnancy and Blood Glucose Monitoring System, Lancing Devices and Lancets

ACON Laboratories, Inc.
6865 Flanders Dr., Suite B, San Diego CA 92121, USA

Storage of
In Vitro Diagnostic Test Kits and Reagents for the Determination of Infectious Diseases, Clinical Chemistry, Drugs of Abuse, Tumor/Cardiac Marker, Fertility/Pregnancy and Blood Glucose Monitoring System, Lancing Devices and Lancets

AZURE Institute, Inc.
10125 Mesa Rim Road, San Diego CA 92121, USA

Design and Development of
In Vitro Diagnostic Test Kits and Reagents for the Determination of Infectious Diseases, Clinical Chemistry, Drugs of Abuse, Tumor/Cardiac Marker, Fertility/Pregnancy and Blood Glucose Monitoring System, Lancing Devices and Lancets

Acon Laboratories Inc.
Guerrero Negro 9942 Parque Industrial Pacifico IV, 22644
Tijuana B.C. CP, MEXICO

Manufacture of
blood glucose test strips, antigen rapid test and IgG/IgM antibody rapid test for infectious disease.

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TÜV®

STATEMENT

We, ACON Laboratories, Inc., having a registered office at *5850 Oberlin Drive #340, San Diego, CA 92121* authorize SRL Sanmedico having a registered office at *A. Corobceanu street 7A, apt. 9, Chisinău, MD-2012, Moldova*

to register, notify, renew or modify the registration of medical devices on the territory of the Republic of Moldova.

Date: January 3, 2023

Signature: 

Qiyi Xie, Md, MPH
Sr. Officer, Regulatory & Clinical Affairs
ACON Laboratories, Inc.
Ph: 858-875-8011
Email: qxie@aconlabs.com

Mission® Urinalysis Reagent Strips (Urine)

Package Insert

REF U031-011	REF U031-051	REF U031-091	English
REF U031-021	REF U031-061	REF U031-101	
REF U031-031	REF U031-071	REF U031-111	
REF U031-041	REF U031-081		

For rapid detection of multiple analytes in human urine.
For in vitro diagnostic use only.

INTENDED USE

The Urinalysis Reagent Strips (Urine) are firm plastic strips onto which several separate reagent areas are affixed. The test is for the qualitative and semi-quantitative detection of one or more of the following analytes in urine: Ascorbic acid, Glucose, Bilirubin, Ketone (Acetoacetic acid), Specific Gravity, Blood, pH, Protein, Urobilinogen, Nitrite and Leukocytes.

SUMMARY

Urine undergoes many changes during states of disease or body dysfunction before blood composition is altered to a significant extent. Urinalysis is a useful procedure as an indicator of health or disease, and as such, is a part of routine health screening. The Urinalysis Reagent Strips (Urine) can be used in general evaluation of health, and aids in the diagnosis and monitoring of metabolic or systemic diseases that affect kidney function, endocrine disorders and diseases or disorders of the urinary tract.[1,2]

PRINCIPLE AND EXPECTED VALUES

Ascorbic acid: This test involves decolorization of Tillmann's reagent. The presence of ascorbic acid causes the color of the test field to change from blue-green to orange. Patients with adequate diet may excrete 2-10 mg/dL daily. After ingesting large amounts of ascorbic acid, levels can be around 200 mg/dL.

Glucose: This test is based on the enzymatic reaction that occurs between glucose oxidase, peroxidase and chromogen. Glucose is first oxidized to produce gluconic acid and hydrogen peroxide in the presence of glucose oxidase. The hydrogen peroxide reacts with potassium iodide chromogen in the presence of peroxidase. The extent to which the chromogen is oxidized determines the color which is produced, ranging from green to brown. Glucose should not be detected in normal urine. Small amounts of glucose may be excreted by the kidney.[3] Glucose concentrations as low as 100 mg/dL may be considered abnormal if results are consistent.

Bilirubin: This test is based on azo-coupling reaction of bilirubin with diazotized dichloroaniline in a strongly acidic medium. Varying bilirubin levels will produce a pinkish-tan color proportional to its concentration in urine. In normal urine, no bilirubin is detectable by even the most sensitive methods. Even trace amounts of bilirubin require further investigation. Atypical results (colors different from the negative or positive color blocks shown on the color chart) may indicate that bilirubin-derived bile pigments are present in the urine specimen, and are possibly masking the bilirubin reaction.

Ketone: This test is based on ketones reacting with nitroprusside and acetoacetic acid to produce a color change ranging from light pink for negative results to a darker pink or purple color for positive results. Ketones are normally not present in urine. Detectable ketone levels may occur in urine during physiological stress conditions such as fasting, pregnancy and frequent strenuous exercise.[4-6] In starvation diets, or in other abnormal carbohydrate metabolism situations, ketones appear in the urine in excessively high concentration before serum ketones are elevated.[7]

Specific Gravity: This test is based on the apparent pKa change of certain pretreated polyelectrolytes in relation to ionic concentration. In the presence of an indicator, colors range from deep blue-green in urine of low ionic concentration to green and yellow-green in urine of increasing ionic concentration. Randomly collected urine may vary in specific gravity from 1.003-1.035.[8] Twenty-four hour urine from healthy adults with normal diets and fluid intake will have a specific gravity of 1.016-1.022.[8] In cases of severe renal damage, the specific gravity is fixed at 1.010, the value of the glomerular filtrate.

Blood: This test is based on the peroxidase-like activity of hemoglobin which catalyzes the reaction of diisopropylbenzene dihydroperoxide and 3,3',5,5'-tetramethylbenzidine. The resulting color ranges from orange to green to dark blue. Any green spots or green color development on the reagent area within 60 seconds is significant and the urine specimen should be examined further. Blood is often, but not invariably, found in the urine of menstruating females. The significance of a trace reading varies among patients and clinical judgment is required in these specimens.

pH: This test is based on a double indicator system which gives a broad range of colors covering the entire urinary pH range. Colors range from orange to yellow and green to blue. The expected range for normal urine specimens from newborns is pH 5-7.[9] The expected range for other normal urine specimens is pH 4.5-8, with an average result of pH 6.[9]

Protein: This reaction is based on the phenomenon known as the "protein error" of pH indicators where an indicator that is highly buffered will change color in the presence of proteins (anions) as the indicator releases hydrogen ions to the protein. At a constant pH, the development of any green color is due to the presence of protein. Colors range from yellow to yellow-green for negative results and green to green-blue for positive results. 1-14 mg/dL of protein may be excreted by a normal kidney.[10] A color matching any block greater than trace indicates significant proteinuria. Clinical judgment is required to evaluate the significance of trace results.

Urobilinogen: This test is based on a modified Ehrlich reaction between p-diethylaminobenzaldehyde and urobilinogen in strongly acidic medium to produce a pink color. Urobilinogen is one of the major compounds produced in heme synthesis and is a normal substance in urine. The expected range for normal urine with this test is 0.2-1.0 mg/dL (3.5-17 µmol/L).[8] A result of 2.0 mg/dL (35 µmol/L) may be of clinical significance, and the patient specimen should be further evaluated.

Nitrite: This test depends upon the conversion of nitrate to nitrite by the action of Gram negative bacteria in the urine. In an acidic medium, nitrite in the urine reacts with p-arsanilic acid to form a diazonium compound. The diazonium compound in turn couples with 1 N-(1-naphthyl) ethylenediamine to produce a pink color. Nitrite is not detectable in normal urine.[9] The nitrite area will be positive in some cases of infection, depending on how long the urine specimens were retained in the bladder prior to collection. Retrieval of positive cases with the nitrite test ranges from as low as 40% in cases where little bladder incubation occurred, to as high as approximately 80% in cases where bladder incubation took place for at least 4 hours.

Leukocytes: This test reveals the presence of granulocyte esterases. The esterases cleave a derivatized pyrazole amino acid ester to liberate derivatized hydroxy pyrazole. This pyrazole then reacts with a diazonium salt to produce a beige-pink to purple color. Normal urine specimens generally yield negative results. Trace results may be of questionable clinical significance. When trace results occur, it is recommended to retest using a fresh specimen from the same patient. Repeated trace and positive results are of clinical significance.

REAGENTS AND PERFORMANCE CHARACTERISTICS

Based on the dry weight at the time of impregnation, the concentrations given may vary within manufacturing tolerances. The following table below indicates read times and performance characteristics for each parameter.

Reagent	Read Time	Composition	Description
Ascorbic Acid (ASC)	30 seconds	2,6-dichlorophenolindophenol; buffer and non-reactive ingredients	Detects ascorbic acid as low as 5-10 mg/dL (0.28-0.56 mmol/L).
Glucose (GLU)	30 seconds	glucose oxidase; peroxidase; potassium iodide; buffer; non-reactive ingredients	Detects glucose as low as 50-100 mg/dL (2.5-5 mmol/L).
Bilirubin (BIL)	30 seconds	2, 4-dichloroaniline diazonium salt; buffer and non-reactive ingredients	Detects bilirubin as low as 0.4-1.0 mg/dL (6.8-17 µmol/L).
Ketone (KET)	40 seconds	sodium nitroprusside; buffer	Detects acetoacetic acid as low as 2.5-5 mg/dL (0.25-0.5 mmol/L).
Specific Gravity (SG)	45 seconds	bromthymol blue indicator; buffer and non-reactive ingredients; poly (methyl vinyl ether/maleic anhydride); sodium hydroxide	Determines urine specific gravity between 1.000 and 1.030. Results correlate with values obtained by refractive index method within ± 0.005.
Blood (BLO)	60 seconds	3,3',5,5'-tetramethylbenzidine (TMB); diisopropylbenzene dihydroperoxide; buffer and non-reactive ingredients	Detects free hemoglobin as low as 0.018-0.060 mg/dL or 5-10 Ery/µL in urine specimens with ascorbic acid content of < 50 mg/dL.
pH	60 seconds	methyl red sodium salt; bromthymol blue; non-reactive ingredients	Permits the quantitative differentiation of pH values within the range of 5-9.
Protein (PRO)	60 seconds	tetrabromophenol blue; buffer and non-reactive ingredients	Detects albumin as low as 7.5-15 mg/dL (0.075-0.15 g/L).
Urobilinogen (URO)	60 seconds	p-diethylaminobenzaldehyde; buffer and non-reactive ingredients	Detects urobilinogen as low as 0.2-1.0 mg/dL (3.5-17 µmol/L).
Nitrite (NIT)	60 seconds	p-arsanilic acid; N-(1-naphthyl) ethylenediamine; non-reactive ingredients	Detects sodium nitrite as low as 0.05-0.1 mg/dL in urine with a low specific gravity and less than 30 mg/dL ascorbic acid.
Leukocytes (LEU)	120 seconds	derivatized pyrrole amino acid ester; diazonium salt; buffer; non-reactive ingredients	Detects leukocytes as low as 9-15 white blood cells Leu/µL in clinical urine.

The performance characteristics of the Urinalysis Reagent Strips (Urine) have been determined in both laboratory and clinical tests. Parameters of importance to the user are sensitivity, specificity, accuracy and precision. Generally, this test has been developed to be specific for the parameters to be measured with the exceptions of the interferences listed. Please refer to the Limitations section in this package insert.
Interpretation of visual results is dependent on several factors: the variability of color perception, the presence or absence of inhibitory factors, and the lighting conditions when the strip is read. Each color block on the chart corresponds to a range of analyte concentrations.

PRECAUTIONS

- For *in vitro* diagnostic use only. Do not use after the expiration date.
- The strip should remain in the closed canister until use.
- Do not touch the reagent areas of the strip.
- Discard any discolored strips that may have deteriorated.
- All specimens should be considered potentially hazardous and handled in the same manner as an infectious agent.
- The used strip should be discarded according to local regulations after testing.

STORAGE AND STABILITY

Store as packaged in the closed canister either at room temperature or refrigerated (2-30°C). Keep out of direct sunlight. The strip is stable through the expiration date printed on the canister label. Do not remove the desiccant. Remove only enough strips for immediate use. Replace cap immediately and tightly. **DO NOT FREEZE.** Do not use beyond the expiration date.
Note: Once the canister has been opened, the remaining strips are stable for up to 3 months. Stability may be reduced in high humidity conditions.

SPECIMEN COLLECTION AND PREPARATION

A urine specimen must be collected in a clean and dry container and tested as soon as possible. Do not centrifuge. The use of urine preservatives is not recommended. If testing cannot be done within an hour after voiding, refrigerate the specimen immediately and let it return to room temperature before testing.
Prolonged storage of unpreserved urine at room temperature may result in microbial proliferation with resultant changes in pH. A shift to alkaline pH may cause false positive results with the protein test area. Urine containing glucose may decrease in pH as organisms metabolize the glucose.
Contamination of the urine specimen with skin cleansers containing chlorhexidine may affect protein (and to a lesser extent, specific gravity and bilirubin) test results.

MATERIALS

Materials Provided

- Strips
- Package insert

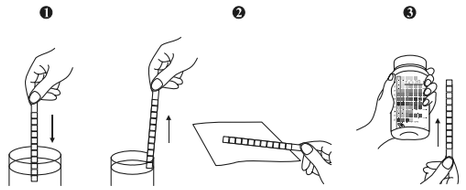
Materials Required But Not Provided

- Specimen collection container
- Timer

DIRECTIONS FOR USE

Allow the strip, urine specimen, and/or controls to reach room temperature (15-30°C) prior to testing.

1. Remove the strip from the closed canister and use it as soon as possible. Immediately close the canister tightly after removing the required number of strip(s). Completely immerse the reagent areas of the strip in fresh, well-mixed urine and immediately remove the strip to avoid dissolving the reagents. See illustration 1 below.
2. While removing the strip from the urine, run the edge of the strip against the rim of the urine container to remove excess urine. Hold the strip in a horizontal position and bring the edge of the strip into contact with an absorbent material (e.g. a paper towel) to avoid mixing chemicals from adjacent reagent areas and/or soiling hands with urine. See illustration 2 below.
3. Compare the reagent areas to the corresponding color blocks on the canister label at the specified times. Hold the strip close to the color blocks and match carefully. See illustration 3 below.
   Note: Results may be read up to 2 minutes after the specified times.



INTERPRETATION OF RESULTS

Results are obtained by direct comparison of the color blocks printed on the canister label. The color blocks represent nominal values; actual values will vary close to the nominal values. In the event of unexpected or questionable results, the following steps are recommended: confirm that the strips have been tested within the expiration date printed on the canister label, compare results with known positive and negative controls and repeat the test using a new strip. If the problem persists, discontinue using the strip immediately and contact your local distributor.

QUALITY CONTROL

For best results, performance of reagent strips should be confirmed by testing known positive and negative specimens/controls whenever a new test is performed, or whenever a new canister is first opened. Each laboratory should establish its own goals for adequate standards of performance.

LIMITATIONS

Note: The Urinalysis Reagent Strips (Urine) may be affected by substances that cause abnormal urine color such as drugs containing azo dyes (e.g. Pyridium®, Azo Gantrisin®, Azo Gantanol®), nitrofurantoin (Microdantin®, Furadantin®), and riboflavin.[8] The color development on the test pad may be masked or a color reaction may be produced that could be interpreted as false results.
Ascorbic acid: No interference is known.
Glucose: The reagent area does not react with lactose, galactose, fructose or other metabolic substances, nor with reducing metabolites of drugs (e.g. salicylates and nalidixic acid). Sensitivity may be decreased in specimens with high specific gravity (>1.025) and with ascorbic acid concentrations of ≥ 25 mg/dL. High ketone levels ≥ 100 mg/dL may cause false negative results for specimens containing a small amount of glucose (50-100 mg/dL).
Bilirubin: Bilirubin is absent in normal urine, so any positive result, including a trace positive, indicates an underlying pathological condition and requires further investigation. Reactions may occur with urine containing large doses of chlorpromazine or rifampen that might be mistaken for positive bilirubin.[9] The presence of bilirubin-derived bile pigments may mask the bilirubin reaction. This phenomenon is characterized by color development on the test patch that does not correlate with the colors on the color chart. Large concentrations of ascorbic acid may decrease sensitivity.
Ketone: The test does not react with acetone or β-hydroxybutyrate.[8] Urine specimens of high pigment, and other substances containing sulfhydryl groups may occasionally give reactions up to and including trace (±).[9]
Specific Gravity: Ketoacidosis or protein higher than 300 mg/dL may cause elevated results. Results are not affected by non-ionic urine components such as glucose. If the urine has a pH of 7 or greater, add 0.005 to the specific gravity reading indicated on the color chart.
Blood: A uniform blue color indicates the presence of myoglobin, hemoglobin or hemolyzed erythrocytes.[8] Scattered or compacted blue spots indicate intact erythrocytes. To enhance accuracy, separate color scales are provided for hemoglobin and for erythrocytes. Positive results with this test are often seen with urine from menstruating females. It has been reported that urine of high pH reduces sensitivity, while moderate to high concentration of ascorbic acid may inhibit color formation. Microbial peroxidase, associated with urinary tract infection, may cause a false positive reaction. The test is slightly more sensitive to free hemoglobin and myoglobin than to intact erythrocytes.
pH: If the procedure is not followed and excess urine remains on the strip, a phenomenon known as "runover" may occur, in which the acid buffer from the protein reagent will run onto the pH area, causing the pH result to appear artificially low. pH readings are not affected by variations in urinary buffer concentration.
Protein: Any green color indicates the presence of protein in the urine. This test is highly sensitive for albumin, and less sensitive to hemoglobin, globulin and mucoprotein.[8] A negative result does not rule out the presence of these other proteins. False positive results may be obtained with highly buffered or alkaline urine. Contamination of urine specimens with quaternary ammonium compounds or skin cleansers containing chlorhexidine may produce false positive results.[8] The urine specimens with high specific gravity may give false negative results.
Urobilinogen: All results lower than 1 mg/dL urobilinogen should be interpreted as normal. A negative result does not at any time preclude the absence of urobilinogen. The reagent area may react with interfering substances known to react with Ehrlich's reagent, such as p-aminosalicylic acid and sulfonamides.[9] False negative results may be obtained if formalin is present. The test cannot be used to detect porphobilinogen.
Nitrite: The test is specific for nitrite and will not react with any other substance normally excreted in urine. Any degree of uniform pink to red color should be interpreted as a positive result, suggesting the presence of nitrite. Color intensity is not proportional to the number of bacteria present in the urine specimen. Pink spots or pink edges should not be interpreted as a positive result. Comparing the reacted reagent area on a white background may aid in the detection of low nitrite levels, which might otherwise be missed. Ascorbic acid above 30 mg/dL may cause false negatives in urine containing less than 0.05 mg/dL nitrite ions. The sensitivity of this test is reduced for urine specimens with highly buffered alkaline urine or with high specific gravity. A negative result does not at any time preclude the possibility of bacteruria. Negative results may occur in urinary tract infections from organisms that do not contain reductase to convert nitrate to nitrite; when urine has not been retained in the bladder for a sufficient length of time (at least 4 hours) for reduction of nitrate to nitrite to occur; when receiving antibiotic therapy or when dietary nitrate is absent.
Leukocytes: The result should be read between 60-120 seconds to allow for complete color development. The intensity of the color that develops is proportional to the number of leukocytes present in the urine specimen. High specific gravity or elevated glucose concentrations (≥ 2,000 mg/dL) may cause test results to be artificially low. The presence of cephalexin, cephalothin, or high concentrations of oxalic acid may also cause test results to be artificially low. Tetracycline may cause decreased reactivity, and high levels of the drug may cause a false negative reaction. High urinary protein may diminish the intensity of the reaction color. This test will not react with erythrocytes or bacteria common in urine.[8]

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8. Henry JB, et al. Clinical Diagnosis and Management by Laboratory Methods, 20th Ed. Philadelphia. Saunders. 371-372, 375, 379, 382, 385, 2001.
9. Tietz NW. Clinical Guide to Laboratory Tests. W.B. Saunders Company. 1976.
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Index of Symbols

	Consult instructions for use	Σ	Tests per kit		Manufacturer
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 #
EC REP	Authorized Representative				

ACON **Laboratories, Inc.**
10125 Mesa Rim Road,
San Diego, CA 92121, USA

EC REP
MDSS GmbH
Schiffgraben 41
30175 Hannover, Germany

Number: 1150310404
Effective date: 2011-03-14

Mission® Urinalysis Reagent Strips and Urine Analyzers

Obtain reliable and cost-effective results with *Mission*® Urinalysis Reagent Strips and Urine Analyzers!

- ***Accurate***
- ***Reliable***
- ***Convenient***

ACON®

Global Diagnostics for Local Markets™

Urinalysis Reagent Strips

Simple and Accurate

- Analytical sensitivity better than or comparable to market leaders
- High quality color chart ensures accurate visual reading

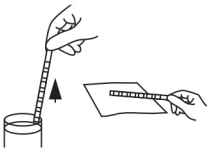
Flexible

- Compatible for visual and analyzer reading
- Over 35 different combinations available

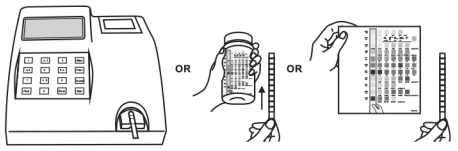
Multiple Packaging Options and Long Shelf Life

- Canister Packaging
  - Available in 25, 50 and 100 strips per canister
  - 2 year shelf life for unopened canisters which 150 strips per kit without MA/CRE Combo offers cost savings and convenience for high volume testing
  - 3 month shelf life for strips in opened canisters
- Pouch Packaging
  - Individually packaged strips available in kit of 3 or 6 strips for visual reading only (includes 1 color chart)
  - Unique packaging maintains 2 year shelf life for all strips in the kit compared to 3 months for remaining strips in an opened canister

Step 1: Immerse strip into urine



Step 2: Remove excess urine



Step 3: Obtain results by analyzer or visual reading

No.	Catalog No.	No. of Parameters	Type of Strip§		Reading Availability				Parameters													
			Visual Reading	Analyzer Reading	Visual	U120	U120 Ultra	U500	ASC	GLU	BIL	KET	SG	BLO	PH	PRO	URO	NIT	LEU	ALB	CRE	CA
1	U031-141	14	14C√		Yes	Yes	Yes	Yes	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	U031-131	13	13CE√		Yes	Yes	Yes	Yes	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	U031-111	11	11A√†		Yes	Yes	Yes	Yes	*	*	*	*	*	*	*	*	*	*	*			
4	U031-101	10	10U√x		Yes	Yes	Yes	Yes		*	*	*	*	*	*	*	*	*	*			
5	U031-191	9	9U√x		Yes	Yes	Yes	Yes		*	*	*	*	*	*	*	*	*				
6	U031-081	8	8U√x		Yes	Yes	Yes	Yes		*	*	*		*	*	*	*	*				
7			8N√x		Yes	Yes	Yes	Yes		*		*	*	*	*	*		*	*			
8			8S√x		Yes	Yes	No	Yes		*			*	*	*	*	*	*	*			
9			*8K*√x		Yes	Yes	No	Yes		*	*	*			*	*	*	*	*			
10	U031-071	7	7N√x		Yes	Yes	Yes	Yes		*		*		*	*	*		*	*			
11	U031-061	6	6N√x	6NE√x	Yes	Yes	No	Yes		*				*	*	*		*	*			
12			6U√x	6UE√x	Yes	Yes	No	Yes			*		*	*		*	*	*				
13	U031-051	5	5B√x	5BE√x	Yes	Yes	No	No		*		*		*	*	*						
14			5N√x	5NE√x	Yes	Yes	Yes	No		*				*		*		*	*			
15			*5S*√x	*5SE*√x	Yes	Yes	No	No		*			*	*	*	*						
16			*5U*√x	*5UE*√x	Yes	Yes	No	No			*			*			*	*	*			
17	U031-041	4	4P√x	4PE√x	Yes	Yes	Yes	Yes		*						*		*	*			
18			4S√x	4SE√x	Yes	Yes	Yes	Yes		*			*		*	*						
19			4B√x	4BE√x	Yes	Yes	No	No		*				*	*	*						
20			4K√x	4KE√x	Yes	Yes	Yes	Yes		*		*			*	*						
21			4G√x	4GE√x	Yes	Yes	No	No		*				*		*			*			
22			4N√x	4NE√x	Yes	Yes	No	Yes						*		*		*	*			
23	U031-031	3	3P√x	3PE√x	Yes	Yes	Yes	Yes		*					*	*						
24			3K√x	3KE√x	Yes	Yes	Yes	Yes		*		*				*						
25			*3G*√x	*3GE*√x	Yes	Yes	No	Yes		*		*			*							
26			3N√x	3NE√x	Yes	Yes	No	Yes						*				*	*			
27	U031-021	2	2G√x	2GE√x	Yes	Yes	Yes	Yes		*						*						
28			2K√x	2KE√x	Yes	Yes	Yes	Yes		*		*										
29			2N√x	2NE√x	Yes	Yes	Yes	Yes										*	*			
30			2B√x	2BE√x	Yes	Yes	No	Yes						*					*			
31			2U√x	2UE√x	Yes	Yes	No	Yes			*						*					
32			*2S*√x	*2SE*√x	Yes	Yes	No	Yes					*		*							
33			2C√	2CE√	Yes	Yes	Yes	Yes												*	*	
34	U031-011	1	*1B*√x	*1BE*√x	Yes	Yes	No	No						*								
35			1P√x	1PE√x	Yes	Yes	No	No							*							
36			1G√x	1GE√x	Yes	Yes	Yes	No		*												
37			1K√x	1KE√x	Yes	Yes	No	No				*										
38			1R√x	1RE√x	Yes	Yes	No	No								*						

§Type of Strip:
Visual Strip Size: 1-6 Parameters: 80 mm x 5 mm; 7-14 Parameters: 108 mm x 5 mm
U120/U500 Strip Size: 1-14 Parameters: 108 mm x 5 mm
"E" means extended strip length for 1-6 Parameters and exclusive strip length for 13 Parameter
Default Type of Strip (U120/U500): 11A, 10U, 9U and 8N
Standard Black Canisters : Available for 25, 50 and 100 strips; 150 strips per kit without MA/CRE Combo
Pouch: Single-strip pouch available in kit of 3 or 6 for visual reading only

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† FDA 510(k) Cleared
x FDA 510(k) Cleared and CLIA Waived

U120 Urine Analyzer

Accurate
- Up to 120 tests/hour in Continuous Test Option
- Test categories include Routine, STAT and QC
- Automatic calibration for accurate results and easy operation

Reliable
- Can read strips with up to 14 parameters, including Microalbumin/Creatinine/Calcium
- Minimal training required

Convenient Operation
- Saves and recalls the last 2,000 results automatically
- Audible beep signals operator to dip strips in urine
- Can print up to 3 copies per test for convenient reviewing and easy record keeping
- Option to print results on sticker paper for quick and simple record management

Easy Data Management
- Includes RS232C and USB ports for easy data transfer to an external computer or LIS
- Record Operator/Patient ID by Manual Entry and Barcode Reader

Specifications

Features	Specifications
Analyzer Type	Manual
Methodology	Reflectance Photometry
Detection	Photosensitive Diode
Throughput	Single Test Option: 60 tests/hour Continuous Test Option: 120 tests/hour
Test Categories	Routine, STAT and QC
Memory	Last 2,000 results
Strip Incubation Time	1 Minute
Wavelength of Monochromatic LED	525 nm and 635 nm
Default Strips	8, 9, 10, 11 Parameters (108 mm x 5 mm)
Strips Available	1-14 parameters (108 mm x 5 mm); see URS Parameters
Total Combinations Per Analyzer	4 Combinations
Analyzer Ports	RS232C Port for Barcode Reader or Data Transfer USB Port for Data Transfer 25 Pin Parallel Port for External Printer
Data Entry Capabilities	Operator/Patient ID - Manual Entry and Barcode Reader (Up to 20 characters)
Connection Capabilities	Internal Thermal Printer (included) RS232C Barcode Reader (optional) Optional External Printer (not included) USB or RS232C Data Transfer Cable (optional)
Major Readable Barcodes	Code 128, Code 39, Codabar (NW-7), EAN 8, EAN 13, Interleave 25 , UPCA, UPCE
Calibration	Automatic
Available Languages on the Screen	English and additional language(s)
Operating Conditions	0-40°C (32-104°F); ≤85% RH
Storage Conditions	-5-50°C (23-122°F); ≤90% RH
Power Source	100-240 VAC, 50-60 Hz
Dimensions (L x W x H)	27.2 cm x 26.9 cm x 14.6 cm (10.7" x 10.6" x 5.7")
Display Dimensions (L x W)	10.8 cm x 5.7 cm (4.2" x 2.2")
Weight	2.6 kg (5.7 lbs) without batteries or power supply

Ordering Information

Product Name	Catalog No.	Components	Kit Box Dimensions (L x W x H) & Weight	Carton Dimensions (L x W x H) & Weight	Number of Kits/Carton
U120 Urine Analyzer	U111-101√X	1 Urine Analyzer 1 Strip Holder 2 Printer Paper Rolls 2 Fuses (2.0A) 1 Power Cord 1 Quick Start Guide 1 Instruction Manual	42.0 cm x 41.5 cm x 31 cm; 5.0 kg 16.4" x 16.2" x 12.1"; 176.4 oz		1
U120 Urine Analyzer with Barcode Reader	U111-111√X	1 Urine Analyzer 1 Strip holder 2 Printer Paper Rolls 1 Barcode Reader (RS232C) 2 Fuses (2.0A) 1 Power Cord 1 Serial Splitter Cable (RS232C) 1 Quick Start Guide 1 Instruction Manual	44.5cm x 44.5cm x 40.0cm; 5.5 kg 17.5" x 17.5" x 15.7"; 194 oz		1
Barcode Reader	U221-111√X	1 Barcode Reader (RS232C) 1 Serial Splitter Cable (RS232C)	23.6 cm x10.8 cm x 7.8 cm; 0.482 kg 9.3" x 4.3" x 3.1"; 17.0 oz	63.0 cm x 37.0 cm x 30.0 cm; 12.0 kg 24.8" x 14.6" x 11.8"; 423.3 oz	22
Printer Paper Rolls	U121-101	4 Printer Paper Rolls — Thermal Paper (0.06 m x 20 m): 200 results/roll	12.0 cm x 12.0 cm x 6.5 cm; 0.36kg 4.7" x 4.7" x 2.6"; 12.7oz	63.0 cm x 37.0 cm x 30.0 cm; 19.4 kg 24.8" x 14.6" x 11.8"; 684.3 oz	50
		4 Printer Paper Rolls — Sticker Paper (0.06 m x 9 m): 100 results/roll	12.0 cm x 12.0 cm x 6.5 cm; 0.4 kg 4.7" x 4.7" x 2.6"; 14.1 oz	63.0 cm x 37.0 cm x 30.0 cm; 21.4 kg 24.8" x 14.6" x 11.8"; 684.3 oz; 754.9 oz	
U120 Data Transfer Kit	U221-131√X	1 Data Transfer Cable (RS232C) 1 Package Insert	16.0 cm x 13.0 cm x 3.5 cm; 0.147 kg 6.3" x 5.1" x 1.4"; 5.2 oz	25.0 cm x 21.0 cm x 15.0 cm; 1.36 kg 9.8" x 8.3" x 5.9"; 48.0 oz	8

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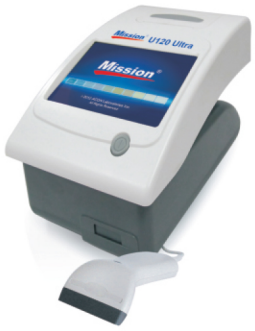
X **FDA 510(k) Cleared and CLIA Waived**

U120 Ultra Urine Analyzer



Easy to Operate
- Large color touchscreen LCD for simple menu navigation
- Work List and Help Menu available for specimen review and troubleshooting
- Powered by AC adaptor or 6 AA batteries for easy portability
- Up to 2,000 patient memory and 800 Operator ID storage
- Ability to select Time Logout between 1-99 with minutes or hours option

Accurate and Efficient
- Advanced CMOS Image Sensor ensures accurate readings
- Can read strips with up to 14 parameters, including Microalbumin, Creatinine and Calcium
- Option to edit test number sequence, or skip then return to specific test numbers
- Ability to edit abnormal results

Simple Data Transfer
- Immediate transmission of LIS data using Bluetooth, LAN or WLAN
- Ability to update software with SD card or USB flash drive

Unique Lockout Functions
- Strip Lockout
  - Pre-set option to prevent using strips of another brand, with a barcode reader or by manual entry
- User Lockout
  - Option to eliminate unapproved users with up to 800 operators
- QC Lockout
  - Prevents testing without passing QC
  - If QC tests fail, analyzer will switch to STAT mode and list "E" at the end of each test number

Specifications

Feature	Specifications
Analyzer Type	Manual
Methodology	Reflectance Photometry
Detection	CMOS Image Sensor
Throughput	Single Test Option: 55 tests/hour; Continuous Test Option: 120 tests/hour
Test Modes	Quick Test Mode, Full Test Mode and Customized Test Mode
Test Category	Routine, STAT and QC
Lockout Functions	Strip Lockout: Available Upon Request; User/QC Lockout: Included with option to turn ON/OFF
Memory	Last 2,000 Records
Strip Incubation Time	1 Minute
Wavelength	390 nm - 770 nm
Strips Available	1-14 parameters (108 mm x 5 mm); see URS Parameters
Parameter Order	Can select the order of parameters for display and print out
Total Combinations Per Analyzer	Over 15 Combinations
Analyzer Ports	RS232C Port for Barcode Reader or Data Transfer and External Printer USB Ports for Keyboard or Data Transfer
Data Entry Capabilities	Operator ID, Patient ID/Name - Manual Entry and Barcode Reader (Up to 20 characters) Urine Color and Clarity, Strip Lot Number, and Expiration Date - Manual Entry
Connection Capabilities	Internal Thermal Printer (included) Bluetooth (included) Bluetooth Adaptor (optional) RS232C Barcode Reader (optional) USB or RS232C Data Transfer Cable (optional) SD Card or USB flash drive for Software Update (optional) Ethernet via USB to RJ45 Adapter (optional) Keyboard (not included) Optional External Printer (not included)
Major Readable Barcodes	Code 39, Code 93, Code 128, Codabar (NW-7), EAN 8, EAN 13, EAN 128, French Pharmacode, Industrial 25, Interleave 25, Italy Pharmacode, Matrix 25, MSI, Plessey, RSS, Telepen, UPCA, UPCE
Screen Type	Large color touch screen LCD (12 cm x 9 cm)
LIS Interface	Formatted and compatible with HL-7 compliant, *ACON* standard interface, S interface, D interface, U interface and R interface for downloading of LIS data
Calibration	Automatic
Available Languages on the Screen	More than 10 languages available, including English
Analyzer Operating Conditions	0-40°C (32-104°F); 5%-85% RH
System Operating Conditions	15-30°C (59-86°F); 20%-80% RH
Storage Conditions	-5-50°C (23-122°F); ≤90% RH
Power Source	100- 240 VAC, 45-65 Hz; 6 AA Alkaline Batteries
Line Leakage Current	0.5 mA
Dimensions (L x W x H)	26 cm x 15 cm x 18 cm (10" x 6" x 7")
Display Dimensions (L x W)	12 cm x 9 cm (5" x 4")
Weight	1.7 kg (3.7 lb) without batteries or power supply

Ordering Information

Product Name	Catalog No.	Components		Kit Box Dimensions (L x W x H) & Weight	Carton Dimensions (L x W x H) & Weight	Number of Kits/Carton
U120 Ultra Urine Analyzer	U114-101 √	1 Urine Analyzer 2 Test Tables 2 Test Table Inserts 2 Printer Paper Rolls 1 Power Cord and Supply Adapter 1 Brush 1 Quick Start Guide 1 Instruction Manual		40 cm × 39 cm × 36 cm; 4 kg 16" x 15" x 14"; 141 oz		1
U120 Ultra Urine Analyzer with Barcode Reader	U114-111 √	1 Urine Analyzer 2 Test Tables 2 Test Table Inserts 2 Printer Paper Rolls 1 Barcode Reader (RS232C) 1 Power Cord and Supply Adapter 1 Brush 1 Quick Start Guide 1 Instruction Manual		40 cm × 39 cm × 36 cm; 4 kg 16" x 15" x 14"; 141 oz		1
Barcode Reader	U124-111 √	1 Barcode Reader (RS232C)		23.6 cm x10.8 cm x 7.8 cm; 0.36 kg 9.3" x 4.3" x 3.1"; 17.0 oz		22
Printer Paper Rolls	U121-101	4 Printer Paper Rolls	Thermal Paper (0.06 m x 20 m): 200 results/roll	12.0 cm x 12.0 cm x 6.5 cm; 0.36 kg 4.7" x 4.7" x 2.6"; 12.7oz	63.0 cm x 37.0 cm x 30.0 cm; 19.4 kg 24.8" x 14.6" x 11.8"; 684.3 oz	50
			Sticker Paper (0.06 m x 9 m): 100 results/roll	12.0 cm x 12.0 cm x 6.5 cm; 0.4 kg 4.7" x 4.7" x 2.6"; 14.1 oz	63.0 cm x 37.0 cm x 30.0 cm; 21.4 kg 24.8" x 14.6" x 11.8"; 684.3 oz; 754.9 oz	
U120 Ultra Data Transfer Kit	U124-131 √	1 Data Transfer Cable (RS232C) 1 Package Insert		16.0 cm x 13.0 cm x 3.5 cm; 0.147 kg 6.3" x 5.1" x 1.4"; 5.2 oz	25.0 cm x 21.0 cm x 15.0 cm; 1.36 kg 9.8" x 8.3" x 5.9"; 48.0 oz	8

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U500 Urine Analyzer

Accurate and Efficient
- Up to 500 tests/hour for medium/large volume sample testing
- Professional accuracy equivalent to market leader
- Automatic strip detection and alignment for better efficiency
- Test categories include Routine, STAT and QC

Easy to Operate
- Large touch screen LCD offers simple menu navigation
- Uniquely designed strip platform/waste tray unit for easy one-step cleaning

Convenient
- Automatic calibration and waste disposal reduce hands-on time
- Can read strips with up to 14 parameters, including Microalbumin/Creatinine/Calcium
- Strip selection of up to 4 combinations for analyzer reading
- Stores up to 2,000 records and automatically flags abnormal results
- Capable of printing results on sticker paper for quick and easy record management

Data Management Capability
- Includes RS232C port for easy data transfer to an external computer or LIS
- Record Operator/Patient ID by Manual Entry and Barcode Reader

Unique Lockout Functions
- Strip Lockout
  - Pre-set option to prevent using strips of another brand, with a barcode reader or by manual entry
- User Lockout
  - Option to eliminate unapproved users with up to 10 operators
- QC Lockout
  - Prevents testing without passing QC
  - If QC tests fail, analyzer will switch to STAT mode and list “E” at the end of each test number

Specifications

Feature	Specifications
Analyzer Type	Semi-Automatic
Methodology	Reflectance Photometry
Detection	Photosensitive Diode
Throughput	500 tests/hour (Measuring cycle: 7 seconds/test)
Test Categories	Routine, STAT and QC
Lockout Functions	Strip Lockout: Available Upon Request; User/QC Lockout: Included with option to turn ON/OFF
Memory	Last 2,000 Records
Strip Incubation Time	1 Minute
Wavelength	525 and 635 nm
Default Strips	8, 9, 10, 11 Parameters (108 mm x 5 mm)
Strips Available	1-14 parameters (108 mm x 5 mm); see URS Parameters
Parameter Order	Can select the order of parameters for display and print out
Total Combinations Per Analyzer	4 Combinations
Waste Disposal Capacity	Up to 150 Strips
Analyzer Ports	RS232C Port for Barcode Reader or Data Transfer 25 Pin Parallel Port for External Printer
Data Entry Capabilities	Operator/Patient ID - Manual Entry and Barcode Reader (Up to 25 characters)
Connection Capabilities	Internal Thermal Printer (included) RS232C Barcode Reader (optional) Optional External Printer (not included) RS232C Data Transfer Cable (optional)
Major Readable Barcodes	Code 128, Code 39, Codabar (NW-7), EAN 8, EAN 13, Interleave 25, UPCA, UPCE
Calibration	Automatic
Available Languages on the Screen	English and additional language(s)
Operating Conditions	0-40°C (32-104°F); ≤85% RH
Storage Conditions	-5-50°C (23-122°F); ≤90% RH
Power Source	100-240 VAC, 50-60 Hz
Dimensions (L x W x H)	36.6 cm x 28.3 cm x 19.5cm (14.4" x 11.1" x 7.7")
Display Dimensions (L x W)	11.5 cm x 9.0 cm (4.5" x 3.5")
Weight	4.0 kg (8.8 lbs) without batteries or power supply

Ordering Information

Product Name	Catalog No.	Components		Kit Box Dimensions (L x W x H) & Weight	Carton Dimensions (L x W x H) & Weight	Number of Kits/Carton
U500 Urine Analyzer	U211-101√†	1 Urine Analyzer 1 Strip Platform/Waste Tray 2 Printer Paper Rolls	2 Fuses (2.0A) 1 Power Cord 1 Instruction Manual	51.0 cm x 42.0 cm x 38.5 cm; 7 kg 20.1" X 16.5" x 15.2"; 246.9 oz		1
U500 Urine Analyzer with Barcode Reader	U211-111√†	1 Urine Analyzer 1 Strip Platform/Waste Tray 2 Printer Paper Rolls 1 Barcode Reader (RS232C)	2 Fuses (2.0A) 1 Power Cord 1 Serial Splitter Cable (RS232C) 1 Instruction Manual	55.0 cm x 55.0 cm x 55.0cm; 9.2 kg 21.7" x 21.7" x 21.7"; 324.5 oz		1
Barcode Reader	U221-111√†	1 Barcode Reader (RS232C)	1 Serial Splitter Cable (RS232C)	23.6 cm x10.8 cm x 7.8 cm; 0. 482 kg 9.3" x 4.3" x 3.1"; 17.0 oz	63.0 cm x 37.0 cm x 30.0 cm; 12 kg 24.8" x 14.6" x 11.8"; 423.3 oz	22
Printer Paper Rolls	U121-101	4 Printer Paper Rolls	Thermal Paper (0.06 m x 20 m): 200 results/roll	12.0 cm x 12.0 cm x 6.5 cm; 0.360 kg 4.7" x 4.7" x 2.6"; 12.7oz	63.0 cm x 37.0 cm x 30.0 cm; 19.4 kg 24.8" x 14.6" x 11.8"; 684.3 oz	50
			Sticker Paper (0.06 m x 9 m): 100 results/roll	12.0 cm x 12.0 cm x 6.5 cm; 0.40 kg 4.7" x 4.7" x 2.6"; 14.1oz	63.0 cm x 37.0 cm x 30.0 cm; 21.4 kg 24.8" x 14.6" x 11.8"; 684.3 oz; 754.9 oz	
U500 Data Transfer Kit	U221-131√†	1 Data Transfer Cable (RS232C)	1 Package Insert	16.0 cm x 13.0 cm x 3.5 cm; 0.147kg 6.3" x 5.1" x 1.4"; 5.2 oz	25.0 cm x 21.0 cm x 15.0 cm; 1.36 kg 9.8" x 8.3" x 5.9"; 48.0 oz	8

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† FDA 510(k) Cleared

Urine Controls

Reliable

- Use with *Mission*® and *Mission*® *Expert* Urinalysis Reagent Strips and Urine Analyzers for optimum quality control
- Validate urinalysis results and prevent procedure errors

Quick and Convenient Testing

- Ensures accurate results for all parameters
- Obtain quick results in any setting
- Competitively priced

Two Types of Urine Controls Available

Liquid Urine Control

- Ready to use without dissolving in distilled water
- 24 months shelf life for unopened controls at 2-8°C
- Two Packaging Options
  - Dropper Tip Bottles
    - Dropper tip bottles provide efficient use of the control solution
    - Easily drop the control solution onto each reagent pad using the dropper tip bottle
    - Controls can be used up to 40 times within 30 days at room temperature
  - Diptubes
    - Diptube packaging allows for quick testing similar to using a urine specimen
    - Simply dip the strip into the control solution and read results
    - Controls can be used up to 20 times within 30 days at room temperature

Dry Strip Urine Control

- Portable for use anywhere with no refrigeration required
- Dissolve the dry strip urine control in distilled water, dip urine strip in the control solution, then compare to color chart
- Each control solution can be used for up to 12 tests at 2-30˚C within 8 hours for all parameters
- 24 months shelf life at 2-30˚C for unopened controls

Specifications

Features		Specifications		
Product Name		Liquid Urine Control	Liquid Diptube Urine Control	Dry Strip Urine Control
Test Parameters		LEU, NIT, URO, PRO, pH, BLO, SG, KET, BIL, GLU, ASC, ALB, CRE, CA (13)		
Solution Detection Levels	Level 1	Negative: LEU, NIT, URO, PRO, pH, BLO, SG, KET, BIL, GLU, ASC, ALB, CRE, CA		
	Level 2	Positive: LEU, NIT, URO, PRO, pH, BLO, SG, KET, BIL, GLU, ALB CRE, CA and Negative ASC		
Compatible Urine Strips		*Mission*® Urinalysis Reagent Strips, *Mission*® *Expert* Urinalysis Reagent Strips		
Reading Time/Stability		Refer to insert	Refer to insert	Refer to insert
Storage Temperature		2-8˚C	2-8˚C	2-30˚C
Unopened Control Shelf Life		24 months	24 months	24 months
Opened Control Stability		30 days at 15-30°C or until the expiration date at 2-8°C	30 days at 15-30°C or until the expiration date at 2-8°C	2-30˚C: 3 months for Dry Strip; 8 hours for Control Solution for all parameters
Maximum Tests per Unit		20 or 40 tests/bottle	20 tests/diptube	12 tests/control solution of 1 dry strip

Ordering Information

Product Name	Catalog No.	Components	Kit Box Dimensions (LxWxH) & Weight	Carton Dimensions (LxWxH) & Weight	# Kits/Carton
Liquid Urine Control √X	U021-011	Level 1: 3 x 10 mL /bottle; Level 2: 3 x 10 mL/bottle	85 mm x 55 mm x 60 mm; 107 g	400 mm x 270 mm x 345 mm; 5.2 kg	198
		Level 1: 3 x 5 mL/bottle; Level 2: 3 x 5 mL/bottle	85 mm x 55 mm x 60 mm; 75 g	400 mm x 270 mm x 345 mm; 4.2 kg	198
		Level 1: 1 x 10 mL/bottle; Level 2: 1 x 10 mL/bottle	55 mm x 28 mm x 60 mm; 41 g	400 mm x 270 mm x 345 mm; 6.6 kg	228
		Level 1: 1 x 5 mL/bottle; Level 2: 1 x 5 mL/bottle	55 mm x 28 mm x 60 mm; 31 g	400 mm x 270 mm x 345 mm; 5.5 kg	228
Liquid Diptube Urine Control √X	U021-071	Level 1: 2 x 12 mL/diptube; Level 2: 2 x 12 mL/diptube	130 mm x 55 mm x 55 mm; 101 g	385 mm x 255 mm x 320 mm; 4.7 kg	30
		Level 1: 1 x 12 mL/diptube; Level 2: 1 x 12 mL/diptube	130 mm x 55 mm x 55 mm; 62 g	385 mm x 255 mm x 320 mm; 3.5 kg	30
Dry Strip Urine Control √X	U021-041	Level 1: 1 x 25 strips/canister; Level 2: 1 x 25 strips/canister	100 mm x 51 mm x 110 mm; 126 g	280 mm x 280 mm x 260 mm; 3.6 kg	24
		Level 1: 1 x 10 strips/canister; Level 2: 1 x 10 strips/canister	100 mm x 51 mm x 110 mm; 106 g	280 mm x 280 mm x 260 mm; 3.1 kg	24

√ CE Marked for sale in the European Community CE

X FDA 510(k) Cleared and CLIA Waived

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EC DECLARATION OF CONFORMITY

EG-KONFORMITÄTSERKLÄRUNG

www.dialab.at

Dialab Produktion und Vertrieb von
chemisch-technischen Produkten und Laborinstrumenten Gesellschaft m.b.H.
IZ-NOE Sued, Hondastrasse, Objekt M55, A-2351 Wiener Neudorf

REF	Product Name / Produktname	Content / Inhalt
Z13001	Total 25-OH Vitamin D	96 wells

We declare, on our own responsibility, that our above-mentioned product classified as follows according to the directive on in vitro diagnostic medical devices 98/79/EC:
Devices other than those covered by Annex II

meets the applicable provisions of the EU Directive 98/79/EC for in-vitro-diagnostic medical devices and the Austrian Medical Product Law.

This Declaration is based on the Conformity Assessment Procedure according to Annex III of the aforesaid Directive.

This Declaration is valid until 2025-03-28.

Hiermit erklären wir, auf eigene Verantwortung, dass unser oben genanntes Produkt, gemäß der Richtlinie 98/79/EG über In-vitro-Diagnostika klassifiziert als:
Andere als die in Anhang II genannten Produkte

die anwendbaren Vorschriften der EU-Richtlinie 98/79/EG über in-Vitro-Diagnostika und des Österreichischen Medizinproduktegesetzes erfüllt.

Diese Erklärung basiert auf dem Konformitätsbewertungsverfahren nach Anhang III der oben angeführten Richtlinie.

Diese Erklärung ist bis zum 2025-03-28 gültig.

Produktion und Vertrieb von chemisch - technischen
Produkten und Laborinstrumenten Gesellschaft m.b.H.
A - 2351 Wr. Neudorf, IZ-NÖ Süd, Hondastr. Obj.M55
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Wiener Neudorf, 2022-03-29

Heidi Kroiß
Qualitätsmanagementbeauftragte
Quality Management Representative

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

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

TÜV SÜD Product Service

Certificate

No. Q5 026709 0009 Rev. 01

Holder of Certificate:

DIALAB Produktion und Vertrieb von chemisch-technischen Produkten und Laborinstrumenten Gesellschaft m.b.H.
IZ-NOE Sued
Hondastrasse, Objekt M55
2351 Wr. Neudorf
AUSTRIA

Certification Mark:

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

Scope of Certificate:

Design, development, production and distribution of in-vitro diagnostic reagents and testkits in the areas of immunological detection of infectious diseases, immunochemistry/immunology/clinical chemistry biomarkers (analytes: enzymes, substrates, electrolytes reagents; controls/standards/calibrators), urinalysis, haematology, haemostasis and immunohaematology (blood grouping). Distribution of in-vitro diagnostic instruments including accessories for immunology, clinical chemistry, haematology, haemostasis and urinalysis.

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 026709 0009 Rev. 01

Report No.: 713237224

Valid from: 2022-03-29
Valid until: 2025-03-28

Date, 2022-03-17

Christoph Dicks
Head of Certification/Notified Body

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

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

TÜV SÜD Product Service

Certificate

No. Q5 026709 0009 Rev. 01

Applied Standard(s):

EN ISO 13485:2016
Medical devices - Quality management systems - Requirements for regulatory purposes
(ISO 13485:2016)
DIN EN ISO 13485:2016

Facility(ies):

DIALAB Produktion und Vertrieb von chemisch-technischen Produkten und Laborinstrumenten Gesellschaft m.b.H.
IZ-NOE Sued, Hondastrasse, Objekt M55, 2351 Wr. Neudorf, AUSTRIA

See Scope of Certificate

Parameters: ./.

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

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Phone: +43 (0) 2236 660910-0, Fax: +43 (0) 2236 660910-30, e-mail: office@dialab.at

Total 25-OH Vitamin D

(en) English

REF **Z13001**

Content

- 1 Microwell Plate: 96 wells (12x 8-well antibody coated strips, individual breakaway)
- 6x 0.5 mL Calibrators
- 1x 0.5 mL Control Low
- 1x 0.5 mL Control High
- 1x 22 mL Enzyme Conjugate
- 1x 0.5 mL Biotin Conjugate (51x)
- 1x 24 mL Assay Diluent
- 1x 22 mL Substrate Solution
- 1x 12 mL Stop Solution
- 1x 25 mL Wash Buffer (20x)
- 1 Package Insert
- 1 Certificate of Analysis

For professional in vitro diagnostic use only.

INTENDED USE

Immunoenzymatic colorimetric method for quantitative determination of 25-OH Vitamin D concentration in human serum or plasma.
This kit is intended for in-vitro diagnostic use only.

DIAGNOSTIC SIGNIFICANCE

Vitamin D is a steroid hormone that is usually found in two main isomers, called Vitamin D2, that is obtained from dairy products and Vitamin D3 - that is produced in the skin after exposure to ultraviolet light. Vitamin D is involved in the active intestinal absorption of calcium and in the regulation of its homeostasis. 25-OH Vitamin D form is obtained after hydroxylation of Carbon 25 in the liver: this is the main form present in the circulating system, and its levels are used as an indicator for the general Vitamin D status of an individual.
Vitamin D deficiency has been associated to many diseases such as osteoporosis, rickets, osteomalacia, cancers and cardiovascular disease; thus the quantification of Vitamin D in the serum or plasma is a useful marker for clinical settings.
In case of Vitamin deficiency, the main way is the uptake of Vitamin D obtained from the market through the dietary; also this external Vitamin D is converted to the 25-OH Vitamin D form in the liver, but, due to the fact that excessive levels of 25-OH Vitamin D are toxic, the levels of Vitamin D in the serum/plasma should regularly be monitored.

TEST PRINCIPLE

The kit is a solid phase enzyme-linked immunoassay (ELISA) based on the principal of competitive binding.
In the first step, Calibrators, Controls, samples and the Vitamin D-Biotin Conjugate are incubated in the wells of microplate; the biotin-labeled Vitamin D competes with the endogenous Vitamin D in the sample and Calibrators for the binding to the anti-Vitamin D antibodies coated on the microplate wells.
At the end of incubation, unbound material is washed away through a washing step. During a second incubation, the Vitamin D-Biotin bound in the microplate wells is detected with the Streptavidin-HRP Conjugate, through the interaction between Biotin and Streptavidin.
At the end of incubation, unbound material is washed away through a washing step. In the final step the TMB Substrate is added; the enzyme HRP in the bound-fraction reacts with the TMB Substrate and develops a blue color that changes into yellow when the Stop Solution (H_2SO_4) is added to stop the reaction. The absorbance is measured with a microplate reader at 450 nm; the color intensity is inversely proportional to the Vitamin D concentration in the sample.
Vitamin D concentration in the sample is calculated through a calibration curve; this assay measures both Vitamin D2 and D3.

REAGENT COMPOSITION

Component	Description
Microwell Plate	Microwell Plate covered with anti-Vitamin D antibodies
Calibrators	The calibrators are human serum based and have approximate concentrations of 25-OH Vitamin D:

	C_0	C_1	C_2	C_3	C_4	C_5
ng/mL	0	1	5	20	50	120

	Calibrators concentration is lot-specific; the exact values are stated on labels and Certificate of Analysis for each lot. Once opened, the Calibrators are stable 2 months at 2-8°C.
Control Low	Human serum based. **Control concentration is lot-specific; the exact values are stated on labels and Certificate of Analysis for each lot.**
Control High	Human serum based. **Control concentration is lot-specific; the exact values are stated on labels and Certificate of Analysis for each lot.**
Enzyme Conjugate	Streptavidin conjugated to horseradish peroxidase (HRP)
Biotin Conjugate (51x)	Biotinylated Vitamin D, 51x concentrated, dilute before use.
Assay Diluent	Buffered Solution
Substrate Solution	H_2O_2-TMB 0.26 g/L *(avoid any skin contact)*
Stop Solution	Sulphuric acid 0.15 mol/L *(avoid any skin contact)*
Wash Buffer (20x)	NaCl 9 g/L, Tween 20

MATERIAL REQUIRED BUT NOT PROVIDED

- Distilled water
- Automatic dispenser
- Microplate reader (450 nm, 620-630 nm)

REAGENT PREPARATION

Preparation of the Calibrators

The calibrators are human serum based and have approximate concentrations of 25-OH Vitamin D:

	C_0	C_1	C_2	C_3	C_4	C_5
ng/mL	0	1	5	20	50	120

Calibrators concentration is lot-specific, the exact values are stated on labels and Certificate of Analysis for each lot.

Once opened, the Calibrators are stable for 2 months at 2-8°C.

Preparation of the Vitamin D-Biotin Conjugate

Immediately before use, dilute the Vitamin D-Biotin Conjugate 1:51 with Assay Diluent; for example, add 0.1 mL of Vitamin D-Biotin Conjugate" to 5 mL of Assay Diluent.
Remaining undiluted reagents must be stored at 2-8°C in the dark and tightly capped.

Preparation of the Wash Buffer

Dilute the content of each vial of the Wash Buffer with distilled water to a final volume of 500 mL prior to use. For smaller volumes respect the 1:20 dilution ratio. The diluted Wash Buffer is stable for 30 days at room temperature (22-28°C).

STORAGE AND STABILITY

Store all reagents between 2 - 8°C in the dark. Open the bag of reagent 5 (Coated Microplate) only when it is at room temperature and close it immediately after use; once opened, it is stable 2 months at 2-8°C.

WARNINGS AND PRECAUTIONS

- Use appropriate personal protective equipment while working with the reagents provided.
- Follow Good Laboratory Practice (GLP) for handling blood products.
- All human source material used in the preparation of the reagents has been tested and found negative for antibody to HIV 1&2, HBsAg, and HCV. No test method however can offer complete assurance that HIV, HBV, HCV or other infectious agents are absent. Therefore, the reagents should be handled in the same manner as potentially infectious material.
- Some reagents contain small amounts of Sodium Azide or Proclin 300® as preservative. Avoid the contact with skin or mucosa.
- Sodium Azide may be toxic if ingested or absorbed through the skin or eyes; moreover it may react with lead or copper plumbing to form potentially explosive metal azides. If you use a sink to remove the reagents, allow scroll through large amounts of water to prevent azide build-up.
- The TMB Substrate contains an irritant, which may be harmful if inhaled, ingested or absorbed through the skin. To prevent injury, avoid inhalation, ingestion or contact with skin and eyes.
- The Stop Solution consists of a diluted sulphuric acid solution. Sulphuric acid is poisonous and corrosive and can be toxic if ingested. To prevent chemical burns, avoid contact with skin and eyes.
- Avoid the exposure of reagent TMB/H_2O_2 to direct sunlight, metals or oxidants. Do not freeze the solution.

- Do not interchange kit components from different lots. The expiry date printed on box and vials labels must be observed. Do not use any kit component beyond their expiry date.
- If you use automated equipment, the user has the responsibility to make sure that the kit has been appropriately tested.
- The incomplete or inaccurate liquid removal from the wells could influence the assay precision and/or increase the background. To improve the performance of the kit on ELISA automatic systems, it is recommended to increase the number of washes.
- It is important that the time of reaction in each well is held constant for reproducible results. Pipetting of samples should not extend beyond ten minutes to avoid assay drift. If more than 10 minutes are needed, follow the same order of dispensation. If more than one plate is used, it is recommended to repeat the dose response curve in each plate
- Addition of the TMB Substrate solution initiates a kinetic reaction, which is terminated by the addition of the Stop Solution. Therefore, the TMB Substrate and the Stop Solution should be added in the same sequence to eliminate any time deviation during the reaction.
- Observe the guidelines for performing quality control in medical laboratories by assaying controls and/or pooled sera.
- Maximum precision is required for reconstitution and dispensation of the reagents.
- Samples microbiologically contaminated, highly lipemic or haemolysed should not be used in the assay.
- Plate readers measure vertically. Do not touch the bottom of the wells.
- **Important Note: some reagents are light sensitive, thus avoid prolonged exposure to direct sunlight.**

SPECIMEN COLLECTION AND STORAGE

The assay can be performed in human serum or plasma.
Samples may be refrigerated at 2-8°C for a maximum period of 2 weeks. If the specimens cannot be assayed within this time, they may be stored at -20°C. Avoid repetitive freezing and thawing.

TEST PROCEDURE

- **Allow all reagents to reach room temperature (22-28°C) for at least 30 minutes.** At the end of the assay, store immediately the reagents at 2-8°C: avoid long exposure to room temperature.
- Unused coated microwell strips should be released securely in the foil pouch containing desiccant and stored at 2-8°C.
- To avoid potential microbial and/or chemical contamination, unused reagents should never be transferred into the original vials.
- As it is necessary to perform the determination in duplicates in order to improve accuracy of the test results, prepare two wells for each point of the calibration curve (C_0-C_5), two for each Control, two for each sample, one for Blank.

Reagent	**Calibrator**	**Sample/Control**	**Blank**
Calibrator C_0-C_5	10 µL		
Sample/Control		10 µL	
Biotin Conjugate	200 µL	200 µL	
Swirl the microplate gently for 20-30 seconds to mix. Incubate for 90 minutes at room temperature (22-28°C). Remove the contents from each well; wash the wells 3 times with 300 µL of diluted Wash Buffer. (If you use automated equipment, wash the wells at least 5 times). **Important note**: during each washing step, gently shake the plate for 5 seconds and remove excess solution by tapping the inverted plate on an absorbent paper towel.			
Enzyme Conjugate	200 µL	200 µL	
Incubate for 30 minutes at room temperature (22-28°C). Remove the contents from each well, wash the wells 3 times with 300 µL of diluted Wash Buffer. (If you use automated equipment, wash the wells at least 5 times). **Important note**: during each washing step, gently shake the plate for 5 seconds and remove excess solution by tapping the inverted plate on an absorbent paper towel.			
Substrate Solution	200 µL	200 µL	200 µL
Incubate at room temperature (22-28°C) for 30 minutes in the dark.			
Stop Solution	50 µL	50 µL	50 µL
Shake the microplate gently for 15-20 seconds. Read the absorbance at 450 nm using a reference wavelength of 620-630 nm or against Blank within 5 minutes.			

INTERPRETATION OF RESULTS

A dose response curve is used to ascertain the concentration of human 25-OH Vitamin D in unknown specimens.

1. Record the absorbance obtained from the printout of the microplate reader.
2. Plot the average absorbance for each duplicate serum reference versus the corresponding 25-OH Vitamin D concentration in ng/mL on linear graph paper (do not average the duplicates of the serum references before plotting).
3. Draw the best fit curve through the plotted points.
4. To determine the concentration of 25-OH Vitamin D for an unknown locate the average absorbance of the duplicates for each unknown on the vertical axis of the graph, find the intersecting point on the curve, and read the concentration (in ng/mL) from the horizontal axis of the graph (the duplicates of the unknown may be averaged as indicated).

Note: computer data reduction software designed for ELISA assays may also be used for the data reduction. If such software is utilized, the validation of the software should be ascertained.

Results are expressed in ng/mL. To convert to nmol/L, multiply results by 2.5; for example: 10 ng/mL = 25 nmol/L.

QUALITY CONTROL AND CALIBRATION

Each laboratory should assay controls at low, normal and high range of 25-OH Vitamin D for monitoring assay performance. These controls should be treated as unknowns and values determined in every test procedure performed.
Quality control charts should be maintained to follow the performance of the supplied reagents. Pertinent statistical methods should be employed to ascertain trends. The individual laboratory should set acceptable assay performance limits. Other parameters that should be monitored include the 80, 50 and 20% intercepts of the calibration curve for run-to-run reproducibility. In addition, maximum absorbance should be consistent with past experience. Significant deviation from established performance can indicate unnoticed change in experimental conditions or degradation of kit reagents. Fresh reagents should be used to determine the reason for the variations.

Quality Control Parameters:
Respect the assigned ranges indicated on the Certificate of Analysis lot-specific, for both, OD and Controls.

Example of a Calibration Curve:
The values shown below must be considered as an example and must not be used in place of experimental data.

Calibrator	OD 450	Mean OD
Cal 0	2.310	2.304
	2.298	
Cal 1	1.862	1.865
	1.868	
Cal 2	1.267	1.278
	1.280	
Cal 3	0.780	0.795
	0.810	
Cal 4	0.560	0.559
	0.558	
Cal 5	0.402	0.399
	0.396	

PERFORMANCE CHARACTERISTICS

Precision
Intra-Assay
Within run variation was determined by replicate (16x) the measurement of three different sera in one assay. The within assay variability is ≤ 6.4%.

Inter-Assay
Between run variations was determined by replicate (10x) the measurement of three different control sera in different lots of kit. The between assay variability is ≤ 6.95%.

Sensitivity
The lowest detectable concentration of 25-OH Vitamin D that can be distinguished from the Calibrator 0 is 0.67 ng/mL at a 95% confidence limit.

Correlation
Dialab 25-OH Vitamin D ELISA was compared to another commercially available assay. 54 serum samples were analysed.

The linear regression curve was calculated:
$y = 0.78x + 5.03$
$r^2 = 0.829$

TRACEABILITY

Traceability of values assigned to calibrator: 25-OH Vitamin D (Powder; Purity: (HPLC) ≥ 95%)

EXPECTED VALUES

The following values are based on scientific literature and can be used as a guideline; however, a local specific reference range should be established.

Level	25-OH Vitamin D value (ng/mL)
Deficient	< 10
Insufficient	10 – 30
Sufficient	30 – 100
Intoxication	> 100

Please pay attention to the fact that the determination of a range of expected values for a “normal” population in a given method is dependent on many factors, such as specificity and sensitivity of the method used and type of population under investigation. Therefore, each laboratory should consider the range given by the manufacturer as a general indication and produce their own range of expected values based on the indigenous population where the laboratory works.

LIMITATIONS

- This kit is intended for in vitro use by professional persons only. Not for internal or external use in Humans or Animals.
- The assay can only be performed with human serum- or plasma samples.

WASTE MANAGEMENT

Reagents must be disposed off in accordance with local regulations.

LITERATURE

1. Holick, MF. Vitamin D Status: Measurement, Interpretation and Clinical Application. Ann Epidemoil. 2009, 19(2):73 – 78
2. Morris H. A. Vitamin D: A Hormone for All Seasons-How Much is enough? Clin. Biochem. Rev., 2005, 26, 21-32.
3. Bikle D. D. Vitamin D and the skin. J. Bone Miner. Metab., 2010, 28, 117-30.
4. Zerwekh J. E. Blood biomarkers of vitamin D status. Am. J. Clin. Nutr., 2008, 87, 1087S-91S.
5. Moyad M. A. Vitamin D: a rapid review. Dermatol Nurs., 2009, 21, 25-30.

USED SYMBOLS

Symbol	Description
Cont.	Content
CE	
IVD	
2°C 8°C	

ISO 9001:2008 DEKRA Certification DEKRA certified

Quality Management

We are certified

Voluntary participation in regular monitoring according to ISO 9001:2008

Quality Management EN ISO 13485 www.dekra-usa.com DEKRA certified

TECO

MEDICAL INSTRUMENTS
PRODUCTION+TRADING GMBH

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TO WHOM IT MAY CONCERN
To any governmental departments,
registration and/or trade offices
in Moldova

Distribution / Service Authorisation for the years 2019 - 2023

This letter confirms that company

SANMEDICO SRL
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MOLDOVA
Phone: 00373-22-623032
Email: sanmedico.office@gmail.com

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Validity: August 20th, 2019 to December 31st, 2023

Termination: Confirmation ends automatically on Dec. 31st of 2023 and must be then renewed.

TECO products:

- Coatron X (Eco, Pro, Top) new manual Coagulometers (1, 2 and 4 channel)
- Coatron A4, A6, A6 Plus Fully automated Coagulometers (4 and 6 channel)
- Complete line of Hemostasis Reagents, Consumables and Spareparts

This document is signed in Neufahrn, Germany, on August 20th, 2019.

TECO Medical Instruments, Production + Trading GmbH

TECO MEDICAL INSTRUMENTS PRODUCTION+TRADING GMBH Dieselstraße 1 D-84088 Neufahrn N.B. fon: +49-8773/70780-0

Christian Hoetzl
General Manager

KONFORMITÄTSERKLÄRUNG
DECLARATION OF CONFORMITY

Doc#001-01/06-2022

Hersteller / Manufacturer: **TECO Medical Instruments Production and Trading GmbH**

Adresse / Address: **Dieselstrasse 1, 84088 Neufahrn, Germany**

Marktakteur / Actor ID SRN: **DE-MF-000022642** https://ec.europa.eu

Die hier benannten Produkte der generischen Produktgruppe erfüllen die Anforderungen der aufgeführten Verordnungen, Richtlinien und Normen. Im Falle eigenmächtiger Veränderungen am Produkt oder der nicht bestimmungsgemäßen Verwendung verliert diese Erklärung ihre Gültigkeit.

Diese Konformitätserklärung wird unter der alleinigen Verantwortung des Herstellers ausgestellt.

BASIS UDI-DI 426018278CMX81152

IVD - halb-automatische Blutgerinnungsmessgeräte - Handelsbezeichnung, Typ, Kat.-Nr.
IVD - semi-automated Coagulation Systems - trade name, type, model, Cat.-No.

Coatron X Eco / Coatron X Pro / Coatron X Top

81 101 10 **81 101 20** **81 101 40**

The products of the generic product group named here fulfil the requirements of listed regulations, directives and standards. In the case of unauthorised modifications to the product or use not in accordance with the intended purpose, this declaration becomes invalid.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Verordnung (EU) 2017/746
für in-vitro Diagnostika-IVDR
und dem harmonisierten Standard am 2022-05-12:

Risikoklassifizierung gemäß Artikel 47–Anhang VIII
Regel 5 b – „Klasse A "

Konformitätsbewertungsverfahren gemäß:
(EU) 2017/746 Artikel 17 (Anhang II+III)

Angewandte Normen zur Sicherstellung der grundlegenden Anforderungen an Leistung und Sicherheit:

EN ISO 18113-3:2011
DIN EN 62304:2018
DIN EN 62366-1
DIN EN 62366-1:2017
DIN EN 61326-1:2013
DIN EN 55011:2009 + A1:2010
IEC 61010-1:2010, AMD1:2016
IEC 61010-2-101:2015
IEC 61010-1:2010

Richtlinie 2011/65/EU RoHS III
(incl. (EU) 2015/863) - DIN EN IEC 63000

QM-System gemäß (EU) 2017/746 Art.10(8)
angewandter Standard: EN ISO 13485:2021

Regulation (EU) 2017/746
for In-vitro diagnostic medical devices
and it's harmonized standard at 2022-05-12:

Risk classified according to article 47 annex VIII
Rule 5 b – "Class A"

Conformity assessment procedure in accordance with:
(EU) 2017/746 Article 17 (annex II+III)

Standards applied to ensure the essential requirements for performance and safety:

EN ISO 18113-3:2011
DIN EN 62304:2018
DIN EN 62366-1
DIN EN 62366-1:2017
DIN EN 61326-1:2013
DIN EN 55011:2009 + A1:2010
IEC 61010-1:2010, AMD1:2016
IEC 61010-2-101:2015
IEC 61010-1:2010

Directive 2011/65/EU RoHS III
(incl. (EU) 2015/863 - DIN EN IEC 63000

QM-Systems in accordance with (EU) 2017/746 art.10(8)
Applied standard procedure: EN ISO 13485:2021

Ort und Datum der Unterzeichnung:
Place and date of issue: Neufahrn, 2022-06-21

Matthias Dieckmann
General Manager

Medical Instruments TECO Production+Trading GmbH

Christian Hötzl
Verantwortliche Person / PRRC

KONFORMITÄTSERKLÄRUNG

DECLARATION OF CONFORMITY

Doc#100/07-2021

Wir / *We*

TECO Medical Instruments Production and Trading GmbH
Name des Herstellers / Manufacturer's *name*
Dieselstrasse 1, 84088 Neufahrn, Germany
Anschrift / *Address*

erklären in alleiniger Verantwortung, dass die unten gelisteten IVD Zubehör Produkte:
declare under our own responsibility, that the IVD accessories products, listed below:

Doppelküvette / *Double cuvette*	Ref. 19 000 02
Einzelküvette / *Single cuvette*	Ref. 20 000 02, 24 100 00
4-fach Küvette / *Cuvette 4 pos/ea*	Ref. 80 521 10
6-fach Küvette / *Cuvette 6 pos/ea*	Ref. 80 560 00
6-fach Küvette (micro) / *Cuvette 6 pos/ea (micro)*	Ref. 80 570 00

allen anwendbaren Anforderungen folgender Richtlinien entsprechen:

meet all applicable requirements of:

1. Richtlinie 98/79/EG über In-vitro Diagnostika und ihrem Zubehör, klassifiziert gemäß Artikel 9 als: "alle anderen Produkte"- im Sinne von Zubehör zu In vitro Diagnostika gemäß Artikel 1.

1. Directive 98/79/EC on In-vitro diagnostic medical devices and their accessories, classified according to article 9 as: "all other products" – and in term of accessories for in vitro diagnostics according to artivel 1.

2. Richtlinie 2011/65/EU (RoHS III)

2. Directive 2011/65/EU (RoHS III)

Das QM-System des Herstellers ist zertifiziert nach:

The QM-system of the manufacturer is certified for:

EN ISO 13485:2016

EN ISO 13485:2016

Konformitätsbewertungsverfahren gemäß:

Conformity assessment procedure according to:

Gemäß Anhang III der Richtlinie 98/79/EG

According to Annex III of Directive 98/79/EC

Ort und Datum der Unterzeichnung:
Place and date of issue:

Neufahrn, 27.07.2021
Neufahrn, July 27, 2021

Medical Instruments TECO Production+Trading GmbH

Matthias Dieckmann
General Manager

KONFORMITÄTSERKLÄRUNG
DECLARATION OF CONFORMITY

Doc#200/08-2022

Hersteller / Manufacturer:	**TECO Medical Instruments Production + Trading GmbH**
Adresse / Address:	**Dieselstrasse 1, 84088 Neufahrn, Germany**
Marktakteur / Actor ID SRN:	**DE-MF-000022642** https://ec.europa.eu

Wir erklären hier für die im Anhang A (Seite 2 – 23 IVD Produkte) spezifizierten Produkte dass sie gemäß der Richtlinie für In-vitro-Diagnostika Medizinprodukte 98/79/EC klassifiziert sind als allgemeine IVD.

Diese Konformitätserklärung wird unter der alleinigen Verantwortung des Herstellers i.V.m. Artikel 110 Abs.3 und Abs.4 der Verordnung (EU) 2017/746 und des § 8 Abs.1 des Medizinprodukte-Durchführungsgesetzes, in der jeweils geltenden Fassung, ausgestellt.

Im Falle eigenmächtiger Veränderungen am Produkt oder der nicht bestimmungsgemäßen Verwendung verliert diese Erklärung ihre Gültigkeit.

We declare herewith for the products specified in Annex A (page 2 - 23 IVD products) that they are classified as general IVD according to the In Vitro Diagnostic Medical Devices Directive 98/79/EC.

This declaration of conformity is issued under the sole responsibility of the manufacturer in according to article 110 para.3 and para.4 of Regulation (EU) 217/746 and section 8 para.1 of the Medical Device Law Implementing Act.

In case of unauthorised modifications to the products or un-intended use, this declaration loses its validity.

Sie entsprechen den anwendbaren Anforderungen der Richtlinie:	They meet applicable requirements of:
Richtlinie 98/79/EG über In-vitro-Diagnostika klassifiziert gemäß Artikel 9 als "alle anderen Produkte"	Directive 98/79/EC on in-vitro-diagnostic medical devices classified according to article 9 as „all other products"
Die Qualitätssicherung entspricht den Anforderungen der Richtlinie 98/79/EG über In-vitro-Diagnostika für diese Art von Produkten.	The Quality Assurance is in accordance with the requirements of Directive 98/79/EC on in-vitro-diagnostic medical devices for those kind of products.
Der implementierte QM-Prozess entspricht der EN ISO 13485:2021	The implemented QM Process complies with EN ISO 13485:2021
Die vorstehende Konformitätserklärung ist gültig für alle Chargen dieser Produkte, die nach dem Datum der Unterzeichnung in Verkehr gebracht wurden.	The above mentioned declaration of conformity is valid for all lots of this product, which are distributed after the date of signature.
Das Konformitätsbewertungsverfahren entspricht Anhang III der Richtlinie 98/79/EG über In-vitro-Diagnostika für diese Art von Produkten.	The conformity assessment procedure complies with Annex III of Directive 98/79/EC on in-vitro-diagnostic medical devices for those kind of products.

Ort und Datum der Unterzeichnung:
Place and date of issue: Neufahrn, 2022-08-31

Medical Instruments TECO Production+Trading GmbH

Christian Hötzl
Verantwortliche Person / PRRC

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Doc#200/08-2022

KONFORMITÄTSERKLÄRUNG – DECLARATION OF CONFORMITY

Directive 98/79/EC Annex A
Übrige Produkte – Reagenzien für In-vitro-Diagnostika
Other products – Reagents for in vitro diagnostic – general IVD

Pos.	Article No	Tradename	Unit	Generic Device Term	EMDN / GMDN Code EUDAMED DI
1	A0230-040	TEClot PT-S (Quick)	10x4ml PT-S	Prothrombin time (quick test)	W0103020101 / 30539 B-PTS-A0230-040X7
2	A0230-100	TEClot PT-S (Quick)	10x10ml PT-S	Prothrombin time (quick test)	W0103020101 / 30539 B-PTS-A0230-100WY
3	A0260-050	TEClot PT-B (Owren)	5x10ml PT-B	Prothrombin time (quick test)	W0103020199 / 55986 B-PTB-A0260-050G2
4	A0320-050	TEClot APTT-S	10x5ml APTT-S	Activated partial thromboplastin time	W0103020102 / 55982 B-APTTS-A0320-050AM
5	A0401-020	TEClot TT	10x2ml TT	Thrombin time / reptilase / batroxbin time	W0103020103 / 55988 B-TT-A0401-0207P
6	A0511-020	TEClot FIB	10x2ml FIB	Fibrinogen assays (factor i)	W0103020201 / 55997 B-FIB-A0511-020N2
7	A0511-050	TEClot FIB	10x5ml FIB	Fibrinogen assays (factor i)	W0103020201 / 55997 B-FIB-A0511-050NB
8	C1010-020	TEChrom AT	6x6ml reagent FXa 3x3 ml substrate	Antithrombin	W0103020602 / 56156 B-AT-C1010-020HL
9	D2010-012	Red D-Dimer	3x4ml latex 3x7ml reaction buffer	D-Dimer	W0103020503 / 47349 B-DD-D2010-0126W
10	D2020-005	Blue D-Dimer LC	1x5ml latex LC 1x7ml reaction buffer	D-Dimer	W0103020503 / 47349 B-DD-D2020-0057E
11	P8001-010	TECal N	10x1ml	Calibration plasma for haemostasis	W0103020701 / 45786 B-CAL-P8001-005X8
12	P8200-005	TECal DD	5x1ml	Calibration plasma for haemostasis	W0103020701 / 47348 B-CAL-P8200-005XX
13	P6001-010	TEControl N	10x1ml	Control plasma for haemostasis	W0103020702 / 30590 B-CTRL-P6001-010H7
14	P6101-010	TEControl A	10x1ml	Control plasma for haemostasis	W0103020702 / 30590 B-CTRL-P6101-010HQ
15	P6201-010	TEControl A Plus	10x1ml	Control plasma for haemostasis	W0103020702 / 30590 B-CTRL-P6201-010J9
16	P5001-010	TEClot Factor II	10x1ml	Coagulation factor ii (prothrombin)	W0103020202 / 30542 B-FAC-II-P5001-010ML
17	P5101-010	TEClot Factor V	10x1ml	Coagulation factor v	W0103020204 / 30544 B-FAC-V-P5101-010AN
18	P5201-010	TEClot Factor VII	10x1ml	Coagulation factor vii	W0103020205 / 30545 B-FAC-VII-P5201-0107B
19	P5301-010	TEClot Factor VIII	10x1ml	Coagulation factor viii	W0103020207 / 30547 B-FAC-VIII-P5301-01097
20	P5401-010	TEClot Factor IX	10x1ml	Coagulation factor ix	W0103020208 / 30548 B-FAC-IX-P5401-0106C
21	P5501-010	TEClot Factor X	10x1ml	Coagulation factor x	W0103020209 / 30549 B-FAC-X-P5501-010EQ
22	P5601-010	TEClot Factor XI	10x1ml	Coagulation factor xi	W0103020210 / 30551 B-FAC-XI-P5601-010A8
23	P5701-010	TEClot Factor XII	10x1ml	Coagulation factor xii	W0103020211 / 30552 B-FAC-XII-P5701-010CJ

(Recital 23 of Directive 98/79/EC on In Vitro Diagnostics Medical Devices) - Annex A - general IVD

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ISO 9001:2008 DEKRA Certification DEKRA certified

Quality Management

We are certified

Voluntary participation in regular monitoring according to ISO 9001:2008

Quality Management EN ISO 13485 www.dekra-iasl.com DEKRA certified

TECO

MEDICAL INSTRUMENTS
PRODUCTION+TRADING GMBH

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CERTIFICATE

for: **Mr. Vitalie Goreacii**

Company: **Sanmedico SRL**
Str. Petricani 88/1, oficiul 10
Chisinau - Rep. Moldava MD-2059
MOLDOVA

have participated with success at the intensive training session:

Application and technical training for following instruments:

- **Coatron X series**
  - **Installation**
  - **Application**
  - **General use, also in combination with TECAM Software**
  - **Technical and After Sales Service**

Supervisors: Mr. Chr. Hoetzl and Mrs. Wendy Guo

Place of Training: TECO – Germany

Date: November 18th, 2019

Christian Hoetzl
General Manager

Current issue date:	10 November 2022	Original approval(s):
Expiry date:	9 November 2025	ISO 13485 - 10 November 2022
Certificate identity number:	10479697	

Certificate of Approval

This is to certify that the Management System of:

TECO Medical Instruments, Production + Trading GmbH

Dieselstr. 1, 84088 Neufahrn, Germany

has been approved by LRQA to the following standards:

ISO 13485:2016

Approval number(s): ISO 13485 – 00038268

The scope of this approval is applicable to:

Design, development, manufacturing, storage and sales of coagulation instruments and in-vitro-diagnostic reagents used in the hemostaseology and coagulation.

Paul Graaf

Area Operations Manager, Europe

Issued by: LRQA Limited

UKAS MANAGEMENT SYSTEMS 0001

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Neufahrn, 26/04/2018

TO WHOM IT MAY CONCERN

We confirm that the instruments Coatron X Eco, Coatron X Pro and Coatron X Top have a closed cuvette system. Cuvettes have to be purchased with voucher identification code from TECO GmbH.

Medical Instruments
TECO
Production+Trading GmbH

Christian Hoetzl
General Manager
TECO Germany

Vitrotest ELISA kits & components	EC DECLARATION OF CONFORMITY		
	No DoC_EBV_VCA_IgG_EL053-96	1st ed.	P. 1 of 1

MANUFACTURER:	**Vitrotest Europe Sp. z O.O.**
ADDRESS:	**Krakowska str., 139-155, 50-428, Wroclaw, Poland**
PRODUCT NAME:	**Vitrotest EBV VCA IgG** ELISA test kit for the qualitative and semiquantitative determination of IgG class antibodies to capsid antigen of Epstein-Barr Virus
PRODUCT CATALOGUE NUMBER:	**EL053-96**
GMDN CODE:	**49657**

We hereby declare that the above mentioned product meet the provisions of the Directive 98/79/EC of the European Parliament and of the Council of 27 October 1998 on in vitro diagnostic medical devices.

CLASSIFICATION:	In vitro medical device, other device (not applicable to list A or B of Annex II of Directive 98/79/EC, not a product for self-testing, not for performance evaluation).
CONFORMITY ROUTE:	Annex III of Directive 98/79/EC.
APPLICABLE STANDARDS:	EN ISO 13485:2016; EN ISO 14971:2019; EN 13612:2002; EN ISO 15223-1:2016; EN ISO 18113-1:2011; EN ISO 18113-2:2011; EN ISO 23640:2015.

This Declaration of conformity is issued under the responsibility of the manufacturer.

Edition 1

Wroclaw, Poland
Issued in

23.02.2022
Date

Vitrotest Europe Sp. z o.o.
ul. Krakowska 139-155, 50-428 Wrocław
NIP: 8992881308, REGON: 386329301
KRS: 0000844411

Galyna Rayevska, Ph.D.
Chief of the Board

Vitrotest Europe Sp. z O.O.
Krakowska str 139-155,
50-428, Wrocław, Polska
тел:+48 882 950 379
info@vitrotest.pl
NIP: 8992881308

Wrocław, 02.06.2022

To whom it may concern

STATEMENT

Herewith we, Vitrotest Europe Sp. z O.O. with registered address at Krakowska str., 139-155, 50-428, Wroclaw, Poland, acting as a manufacturer, hereby assign SRL SANMEDICO having a registered office at A. Corobceanu street 7A, apt. 9, Chişinău MD-2012, Moldova , as authorized representative in Republic Moldova.

We declare that the company mentioned above is authorized to register, notify, renew or modify the registration of medical devices on the territory of the Republic of Moldova.

June 2, 2022

Galyna Rayevska, Chief of the board

Vitrotest Europe Sp. z O.O.

Vitrotest Europe Sp. z o.o.
ul. Krakowska 139-155, 50-428 Wrocław
NIP: 8992881308, REGON: 386329301
KRS: 0000844411

Vitrotest®
ELISA kits & components

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tel. +48-88-2950379
www.vitrotest.pl e-mail: info@vitrotest.pl

CLARIFICATION LETTER

Hereby, we Vitrotest Europe Sp. Z O.O. with legal address at ul. Krakowska 139-155, 50-428, Wroclaw, Poland, inform that Vitrotest ELISA kits are produced according to Directive 98/78 EC. They are classified as in vitro medical device, other device (not applicable to list A or B of Annex II of Directive 98/79/EC, not a product for self-testing, not for performance evaluation). ISO certificate isn't mandatory for manufacturing of this group of IVD according to requirements of Directive 98/79/EC. Although we are not certified to standard 13485, all its requirements had been implemented and apply to the production of Vitrotest ELISA kits since 2022.

Ihor Nikolaienko, Ph.D.
Vice Chairman of the Board

Vitrotest Europe Sp. z o.o.
ul. Krakowska 139-155, 50-428 Wrocław
NIP: 8992881308, REGON: 386329301
KRS: 0000844411

08.12.2023
Wroclaw, Poland

Vitrotest EBV VCA IgG

ELISA test kit for the qualitative and semiquantitative determination of IgG class antibodies to capsid antigen of Epstein-Barr Virus

REF EL053-96

IVD Σ 96

1. INTENDED USE

The test kit Vitrotest EBV VCA IgG is an enzyme linked immunosorbent assay (ELISA) for the qualitative and semiquantitative determination of IgG class antibodies to viral capsid antigen (VCA) of Epstein-Barr virus (EBV) in human serum or plasma.

The test kit might be applied for the ELISA using both automatic pipettes and standard equipment as well as open system automated ELISA analyzers.

2. CLINICAL VALUE

Epstein-Barr virus (EBV), also known as human herpesvirus 4, is the causative agent of diseases such as infectious mononucleosis, Burkitt's lymphoma, nasopharyngeal carcinoma.

EBV acquired in early childhood usually does not cause symptoms. Infection in adolescence or early adulthood often results in clinical IM. Typically, the disease presents as pharyngitis, lymphadenopathy, and fever. In most cases, symptoms resolve within 2–4 weeks, but more than 90% of adults develop a latent B-lymphocyte infection. Approximately 1% of immunocompetent individuals may experience severe complications (hepatitis, myocarditis, splenic rupture, neurological complications). In immunosuppressed individuals, primary EBV infection leads to severe disorders (eg, BL).

For laboratory diagnosis of EBV infection, a polymerase chain reaction and serological methods are used that include a test for the detection of heterophilic antibodies and the detection of specific antibodies by ELISA. The latter method allows not only to establish the fact of infection with EBV, but also the stage of the disease.

The optimal combination of serological tests for the diagnosis of EBV infection involves the detection of IgG and IgM antibodies that are specific for the viral capsid antigen (anti-VCA-IgG and anti-VCA-IgM) and nuclear antigen (anti-EBNA-IgG). Anti-VCA-IgM antibodies appear in the body during an early infection and disappear within 4-12 weeks. IgG to VCA appear later (2-4 weeks after infection), their concentration reaches a maximum level at the initial stages of the disease, gradually decreasing. However, these antibodies are determined throughout life. If antibodies to the viral capsid antigen do not appear, a person is susceptible to EBV infection.

Anti-EBNA-IgG are produced by the body 2-4 months after the onset of symptoms. The concentration of the antibodies is maintained at a high level for a long time or throughout life in the majority of infected people. Simultaneous detection of specific IgG to EBNA and VCA indicates the past infection.

3. PRINCIPLE OF THE TEST

Vitrotest EBV VCA IgG ELISA is a solid phase, indirect ELISA method for the determination of IgG antibodies to EBV capsid antigen (VCA) of in a two-step incubation procedure. Microwells are coated with EBV recombinant capsid antigen. During the first incubation step, the specific antibodies to VCA, if present, will be bound to the solid phase precoated antigens. The wells are washed to remove unbound antibodies, leaving only the specific antigen-antibody complexes. A secondary antibody (anti-IgG) which are conjugated to horseradish peroxidase (HRP) added next and bind to the immune complexes on the solid phase. Unbound components are removed by washing. Immune complexes are revealed by addition of chromogen solution containing 3,3',5,5'- tetramethylbenzidine (TMB) and hydrogen peroxide. After 15 minutes the reaction has been stopped, the absorbance values are read using a spectrophotometer at 450/620-695 nm. The colour intensity is proportional to the amount of antibody in the sample.

4. MATERIALS AND EQUIPMENT

4.1. Composition of the test kit

ELISA STRIPS	1x96 wells	Microplate ELISA (12 strips x 8 wells) Each well is coated with EBV recombinant capsid antigen. The wells can be separated.
CONTROL +	1x0.5 ml	Positive control Solution of specific monoclonal immunoglobulins with preservative (pink).
CONTROL –	1x0.5 ml	Negative control Buffer solution with detergent and preservative (yellow).
CONTROL CUT-OFF	1x0.5 ml	Cut-off control Solution of specific monoclonal immunoglobulins with preservative (orange).

SAMPLE DILUENT	1x12 ml	Sample diluent Buffer solution with detergent and preservative (brown-green).
CONJUGATE SOLUTION	1x12 ml	Conjugate solution Buffer solution of monoclonal antibodies to human IgG conjugated to HRP with stabilizers and preservative (green), ready to use.
TMB SOLUTION	1x12 ml	TMB solution TMB, H_2O_2, stabilizers, preservative (colourless), ready to use.
WASH TWEEN 20X	1x50 ml	Washing solution Tw20 (20x concentrate) 20X concentrated of PBS buffer with Tween-20 and NaCl (colourless).
STOP SOLUTION	1x12 ml	Stop solution 0.5 mol/l H_2SO_4 (colourless), ready to use.

Adhesive films (2), sera identification plan (1), instruction for use and certificate of analysis.

4.2. Material required but not provided

- variable volume automatic pipettes (10 µl–1000 µl) and disposable pipette tips;
- plate reader (single wavelength 450 nm or dual wavelength 450/620–695 nm);
- volumetric laboratory glassware (10–1000 ml);
- distilled/DI water;
- incubator thermostatically controlled at 37 °C;
- automatic/semiautomatic plate washer;
- appropriate waste containers for potentially contaminated materials;
- timer;
- absorbent paper;
- disposable gloves;
- disinfectants;
- protective clothes.

5. PRECAUTIONS AND SAFETY

5.1. Precautions

The ELISA assays are time and temperature sensitive. Strictly follow the test procedure and do not modify it.

- do not use expired reagents;
- do not use for analyses and do not mix reagents from different lots or from test kits of different nosology as well as other manufacturer's reagents with Vitrotest kits;

Note: it is possible to use WASH TWEEN 20X, TMB SOLUTION *and* STOP SOLUTION *from other Vitrotest ELISA kits.*

- close reagents after use only with appropriate caps;
- control the filling and full aspiration of the solution in the wells;
- use a new tip for each sample and reagent;
- avoid exposure of kit reagents to direct sunlight;
- TMB SOLUTION must be colourless before use. If TMB SOLUTION is blue or yellow it cannot be used. Avoid any contact of TMB SOLUTION with metals or metal ions. Use glassware thoroughly washed and rinsed with distilled/DI water;
- never use the same glassware for CONJUGATE SOLUTION and TMB SOLUTION.

The manufacturer is not responsible or liable for any incorrect results and/or incidents taking place as a result of any violation of the instruction. The manufacturer is not responsible for visual readings of samples (without using a plate reader).

5.2. Safety

- all components of test kit are intendent for *in vitro* diagnostic use only;
- all materials of human or animal origin should be regarded and handled as potentially infectious;
- the ELISA is only designed for qualified personnel;
- disposable gloves and safety glasses must be worn at all times while performing analysis;
- never eat, drink, smoke or apply cosmetics in the assay laboratory;
- never pipette solutions by mouth;
- controls do not contain of human origin components;
- avoid contact with STOP SOLUTION containing 0.5 mol/l H_2SO_4. It may cause skin irritation and burns;
- some components of the test kit contain low concentrations of harmful compounds and could cause irritation of the skin and the mucosa. In the case of contact of TMB SOLUTION,

STOP SOLUTION or CONJUGATE SOLUTION with skin or mucosa, the place of contact should be immediately rinsed with large amounts of water;
- in case of spilling of solutions that do not contain acid, e.g. sera, rinse the surface with disinfectant, then dry it with absorbent paper. In other case acid first must be neutralized by sodium bicarbonate and then wiped out as described above;
- for information on hazardous substances included in the kit please refer to Safety Data Sheets. Safety Data Sheets for this product are available upon request.

5.3. Waste treatment

Patient specimens, controls, and incubated microplate strips should be treated as infectious waste, residues of chemicals and preparations are generally considered as hazardous waste. The disposal of this kind of waste is regulated through national and regional laws and regulations. Contact your local authorities or waste management companies which will give advice on how to dispose hazardous waste.

6. STORAGE AND STABILITY

Reagents are stable until stated expiration date on the label when stored refrigerated (2-8 °C). Do not freeze. The kit should be shipped at 2-8 °C. Single transportation at the temperature up to 23 °C for two days is acceptable.

After the first opening of the packaging, the components of the ELISA kits are stable within 3 months, except for those specified in p. 8 of this Instruction.

7. SPECIMEN COLLECTION

The fresh serum or plasma (EDTA, lithium-heparin, sodium citrate, potassium fluoride) samples can be stored for 3 days at 2-8 °C or frozen for longer periods at -20 – -70 °C. Frozen samples must be thawed and kept at room temperature for at least 30 min before use. Do not use preheated samples. Mix thawed samples thoroughly to homogeneity. Avoid repeated freezing/thawing. Samples containing aggregates must be clarified by centrifugation (3000 rpm for 10-15 min). Do not use hyperlipeamic, hyperhaemolysed or contaminated by microorganisms serum specimens. The presence of bilirubin up to concentration of 0.21 mg/ml (361.8 µmol/l), haemoglobin up to concentration of 10 mg/ml and triglycerides up to concentration of 10 mg/ml (11.3 mmol/l) are allowed.

8. REAGENT PREPARATION

It is very important to keep all test components for at least 30 min at room temperature (18-25 ºC) before the assay!

8.1. ELISA STRIPS preparation

Before opening the bag with ELISA STRIPS, keep it at room temperature for 30 min to avoid water condensation inside the wells. Open the vacuum bag and take out the necessary number of the wells. Once opened the bag with the remaining strips and desiccant must be ***resealed with zip-lock*** immediately and kept refrigerated at 2-8 °C for no more than 3 months.

8.2. Washing solution preparation

Check the WASH TWEEN 20X for the presence of salt crystals. If crystals have formed, re-solubilise by warming at 37 °C, until crystals have been fully dissolved (15-20 min). Dilute the WASH TWEEN 20X 1:20 (1+19) with distilled/DI water before use and mix. For example, 4 ml concentrate + 76 ml water is sufficient for 8 wells. Once diluted it is stable at 2-8 °C for 7 days.

9. ASSAY PROCEDURE

9.1. Take out from the protective bag the support frame and the necessary number of the wells ELISA STRIPS (the number of specimens + 4 for controls). Place the wells into the frame. Wells with the controls must be included in every test.
9.2. Complete the sera identification plan.
9.3. Prepare washing solution (see 8.2.).
9.4. Dispense 90 µl of SAMPLE DILUENT into each well.
9.5. Dispense 10 µl of controls and patient samples into the wells in the following order: A1 – CONTROL +, B1, C1 – CONTROL CUT-OFF, and D1 – CONTROL –, other wells – patient samples. Mix gently to avoid foaming. The colour of the sample diluent changes from brown -green to blue.
9.6. Cover strips with an adhesive film and incubate for 30 min at 37 °C.
9.7. At the end of the incubation period, remove and discard the adhesive film and wash the well 5 times with automatic washer or 8-channel pipette as follows:
- aspirate the contents of all wells into a liquid waste container and add immediately a minimum of 300 µl of diluted washing solution to each well;
- soak each well for 30 s between each wash cycle;
- aspirate again. The residual volume must be lower than 5 µl.
- repeat the washing step 4 times;
- after the final washing cycle, turn down the plate onto an absorbent paper and tap it to remove any residual buffer.

9.8. Dispense 100 µl of CONJUGATE SOLUTION per well. Cover strips with a new adhesive film, incubate for 30 min at 37°C.
9.9. At the end of the incubation period, remove and discard the adhesive film and wash the wells five times as described above (see 9.7).
9.10. Dispense 100 µl TMB SOLUTION into all wells. Do not touch the walls and bottoms of the wells to avoid contamination.
9.11. Incubate the strips for 15 min at room temperature (18-25 °C) in the dark. Do not use adhesive film in this step.
9.12. Dispense 100 µl STOP SOLUTION into all wells in the same order and at the same rate as for TMB SOLUTION.
9.13. Read the optical density (OD) of the wells at 450/620-695 nm using a microplate reader within 5 min after adding the STOP SOLUTION. Pay attention to the cleanness of the plate bottom and absence of bubbles in the wells before reading.

Measurement in the single-wave procedure at 450 nm is possible. Reserve blank well to adjust spectrophotometer in such analysis. Only TMB SOLUTION *and* STOP SOLUTION *must be added in blank well.*

10. CALCULATION AND INTERPRETATION OF RESULTS

10.1. Validation of the test

The test run may be considered valid provided the following criteria are met:

CONTROL +	OD ≥ 1.2
CONTROL CUT-OFF	OD in a range 0.25-0.65
CONTROL –	OD ≤ 0.150

If one of the control cut-off absorbances does not match the above criteria, this value should be discarded and a mean value should be calculated using the remaining cut-off value. If both control cut-off absorbance do not meet the criteria, the test is invalid and must be re-tested.

10.2. Calculation of results

The cut-off (CO) is the mean optical density (OD) of the wells containing CONTROL CUT-OFF:

$$CO = (OD_{CONTROL\ CUT\text{-}OFF\ 1} + OD_{CONTROL\ CUT\text{-}OFF\ 2})/2;$$

The sample result is reported as a Ratio:

$$Ratio_{sample} = OD_{sample}/CO, \quad OD_{sample} – \text{optical density of the well containing sample}$$

10.3. Interpretation of results

$Ratio_{sample} > 1.1$	POSITIVE
$0.9 \leq Ratio_{sample} \leq 1.1$	DOUBTFUL*
$Ratio_{sample} < 0.9$	NEGATIVE

* If the result is doubtful, repeat the test. If it remains doubtful, collect a new serum sample.

11. PERFORMANCE CHARACTERISTICS

11.1. Specificity and sensitivity

In the comparative studies of the test kit Vitrotest EBV VCA IgG with other CE marked ELISA kit 162 serum samples that contained IgG antibodies to EBV capsid antigen and 124 serum samples that did not contain serological markers of the EBV infection. Relative sensitivity of the test kit Vitrotest EBV VCA IgG was 99.4 %, relative specificity was 100 %.

11.2. Accuracy

Intra assay repeatability

Coefficient of variation (CV) was calculated by measuring 2 samples with various specific antibody levels in 32-replicate determinations using 1 lot of the test kit.

Serum No.	OD	Ratio	CV, %
9S	2.525	8.02	3.2
22S	1.009	3.20	3.9

Inter assay reproducibility

Coefficient of variation (CV) was calculated by measuring 2 samples with various specific antibody levels in 4 ELISA performances during 4 days, in 8-replicate determinations.

Serum No.	OD	Ratio	CV, %
9S	2.547	8.07	3.8
22S	1.005	3.18	3.7

12. LIMITATIONS OF THE PROCEDURE

A positive result in the test kit Vitrotest EBV VCA IgG indicates the presence of specific antibodies IgG to EBV VCA produced by infected organism with EBV and remain at the level of detection throughout life. The presence of the antibodies in infants does not indicate the infection with EBV.

For correct diagnosis of EBV infection it is recommended to study the presence of anti-VCA-IgM and anti-EBNA-IgG antibodies, for example, with test kits Vitrotest EBV VCA IgM and Vitrotest EBV EBNA-1 IgG.

Diagnosis of an infectious disease should not be established on the basis of a single test result. A precise diagnosis, in fact, should take into consideration both the results of laboratory tests and the clinical symptoms of the disease.

13. TROUBLESHOOTING

Possible causes	*Solutions*
High background in all wells	
Contaminated washer	Clean the washer head, then rinse it with 30 % ethanol and distilled water
Low quality water or contaminated water	Use distilled/DI with resistivity ≥ 10 MΩ·cm.
Using contaminated glassware	Use clean glassware
Using chlorine based disinfectants	Use disinfectants without chlorine
Using contaminated tips	Use new tips
Increased time of incubation or temperature regimen was changed	Follow incubation regimen according to instruction for use
High background in a few wells	
TMB solution was added more than once	Add TMB solution once
Pipette shaft was contaminated with conjugate solution	Clean the pipette; pipette the liquids carefully
One the channels of the washer was contaminated	Clean the washer channel, clean the washer
OD of the positive control below normal	
Conjugate solution/TMB solution was prepared improperly or not added	Run ELISA repeatedly, prepared conjugate solution / TMB solution properly
Reduced incubation time in one of the stages	Follow incubation regimen according to the instruction for use
Visual colour intensity of the wells does not correspond to optical density	
The optical beam or another component of the reader is misaligned or malfunctioning	Test the absorbance reader's performance

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Catalogue number


Consult instructions for use

In vitro diagnostic medical device


Manufacturer


Caution


Contains sufficient for <*n*> tests


Temperature limit

Batch code


Use-by date


Date of manufacture


Keep away from sunlight


Signifies European conformity (CE) mark

Inst_EBV_VCA_IgG_EL053-96_V01_ENG
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Vitrotest EBV VCA IgG

ASSAY PROCEDURE

Keep all reagents and specimens for at least 30 min at 18-25 °C before use

Dispense 90 µl of SAMPLE DILUENT into the wells of ELISA STRIPS
(brown-green colour)

Dispense 10 µl of controls and samples into the wells in the following order:
A1 – CONTROL +,
B1, C1 – CONTROL CUT-OFF,
D1 – CONTROL –,
E1 and other wells – patient samples
(colour changes from brown-green to blue)

Cover wells with an adhesive film, incubate for 30 min at 37 °C

Rinse the wells 5 times with diluted 1:20 (1+19) washing solution Tween-20 (300 µl per well)

Add 100 µl of CONJUGATE SOLUTION into the wells
(green colour)

Cover wells with an adhesive film, incubate for 30 min at 37 °C

Rinse the wells 5 times with diluted 1:20 (1+19) washing solution Tween-20 (300 µl per well)

Add 100 µl of TMB SOLUTION into the wells

Incubate for 15 min in the dark at 18-25 °C

Add 100 µl of STOP SOLUTION
(colour changes from blue to yellow)

Determine the optical density (OD) at 450/620-695 nm

CALCULATION

$CO = (OD_{CONTROL\ CUT\text{-}OFF\ 1} + OD_{CONTROL\ CUT\text{-}OFF\ 2})/2;$

$Ratio_{sample} = OD_{sample}/CO$

INTERPRETATION

$Ratio_{sample} > 1.1$	POSITIVE
$0.9 \leq Ratio_{sample} \leq 1.1$	DOUBTFUL
$Ratio_{sample} < 0.9$	NEGATIVE