Dx Urinalysis Solutions

"Help for today
Hope for tomorrow"

Point of care. Anytime.
Anywhere.

DiaSys
Diagnostic Systems

CHOOSING QUALITY.

Parameter Specific Information

Parameter	Significance	Method	Reference range
Specific gravity	Detect the presence of drugs in urine or narcotics	Complex formation and detect the emitted photons	Below 1010g/mL
pH	Detect the acid-base balance in the body	Depends on the 3 indicators: methyl red, bromthymol blue and phenolphthalein	Normal day: 4.8 – 7.4 Early Morning: 5-6
Leukocytes	Detect the inflammatory disease of efferent urinary tract & kidneys	The free indoxyl reacts with a diazonium salt to form a violet dye	Normal : < 10 leukocytes/µL Borderline : 10–20 leukocytes/µL Pathological: > 20 leukocytes/µL
Nitrite	Bacterial urinary tract infections	Nitrite in the urine and aromatic amino sulphanilamide are diazotized to form a daizonium compound. The diazonium compound reacts with tetrahydro benzo (H) quinolin 3-phenol causing the color change.	11 µmol/L (0.05 mg/dL)
Protein (albumin)	The indicator reacts particularly sensitively to albumin excreted in the presence of kidney damage	The protein test area contains a buffer mixture and an indicator which changes color from yellow to green in the presence of protein, even though the pH is held constant.	Below 10 mg/dL (for total protein)
Glucose	The determination of glucose in urine has a high diagnostic value for early detection of disorders such as diabetes mellitus	The detection of glucose is based on a specific glucose-oxidase-peroxidase reaction in which D-glucose is oxidized enzymatically by atmospheric oxygen to D-gluconolactone	Fasting morning urine: <1.1 mmol/L (< 20 mg/dL) Daytime urine: <1.7 mmol/L (< 30 mg/dL)
Urobilinogen	Urobilinogen is excreted in increased amounts in the urine when, in the enterohepatic circulation of the bile pigments, the functional capacity of the liver is impaired or overloaded, or when the liver is bypassed.	p-methoxybenzenediazonium fluoroborate, a stable diazonium salt, forms a red azo dye with urobilinogen in an acid medium	Below 17 µmol/L (below 1 mg/dL).
Bilirubin	Conjugated bilirubin is found in the case of increased intracanalicular pressure due to an extrahepatic or intrahepatic obstruction, and with periportal inflammation or fibrosis and swelling or necrosis of the liver cells.	Bilirubin reacts with a stable diazonium salt (2,6 - dichloroben-zenediazonium fluoroborate) in an acid medium of the test paper. A red-violet azo dye is formed, causing a color change to violet.	Adults below 3.4 mol/L (below 0.2 mg/dL).
Blood	The principal causes of hematuria, (excretion of erythrocytes in the urine) may indicate urinary tract infection (UTI), kidney disease, kidney stones or tumors.	The test is based on the peroxidative action of hemoglobin or myoglobin which catalyzes the oxidation of the color indicator TMB by an organic hydroperoxide (2,5- dimethylhexane-2,5-dihydroperoxide) to give a blue-green dye which on the yellow test paper causes a colour change to green.	0–5 erythrocytes/µL.

Dx Urilyzer DS100

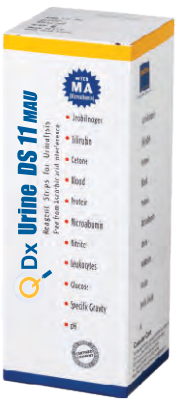
- "High luminosity cold source reflection determination" technology.
- Intrinsic "compensation pad" for Abnormal Samples.
- Specially designed multi parameter strips with Unique sequence for
  - 10 parameters (DS 10)
  - 11 parameters including Micro- albumin (DS 11 MAU)
  - 11 parameters including Albumin Creatinine Ratio (DS 11 ACR)
- Zero Ascorbic acid interference
- End point reaction, thereby preventing time based reading of reactions
- Use of "Special Recognition Pad" on each urine strip making it a 100 % closed system.
- Barcode reader for sample barcode reading.
- Test, Calibration and QC mode with low and high levels available.
- Results for each mode are stored respectively.
- Alpha numeric keypad present in the software for manual data entry.

Technical Specifications	
Analyzer Type	Semi-Automated urine chemistry Analyzer
Test Principle	Photoelectric Colorimetry
Detection	Photosensitive Diode
Throughput	Normal Mode 60 strips/hr. Fast mode 120 strips/hr.
Test Categories	Routine Test, Calibration and QC low and QC high
Lockout Functions	Strips lockout: Available upon request; User/QC Lockout: Included with option to turn ON/OFF
Test Memory	1000 results
Strips Incubation Time	30 – 60 seconds
Wavelength of Monochromatic LEDs	420 nm, 525 nm, 560 nm, 610 nm, 660 nm and 950 nm
Test Strips	10 para, 11 para with MAU & 11 para with ACR
Analyzer Ports	RS232C ports for barcode reader or data transfer. Parallel port for external printer

Dx Urine Test Strips

Dx Urine DS 10

Dx Urine DS 11 MAU



Dx Urine Test DS 4 MAU

- Especially designed strips with unique sequence
- End point reactions with Zero Ascorbic acid interference
- Dual reporting of parameters (Qualitative "++") as well as Quantitative "mg/dL")

Dx Urine DS 11 ACR

- **DS 11 strips with quantitative analysis of Urine Creatinine & Micro-albumin.**
- **DS 100 have a software upgrade which calculates urine Albumin to Creatinine ratio (ACR)**
- **Very useful tool for Diabetologists and Nephrologists for detection of Micro- albuminuria, Diabetes and kidney damage.**
- **This parameter brings us in the niche market of urine business.**

Importance of ACR

- The urine albumin test or albumin/creatinine ratio (ACR) is used to screen people with chronic conditions, such as diabetes and high blood pressure (hypertension) that put them at an increased risk of developing kidney disease.
- Albumin is a protein that is present in high concentrations in the blood. Virtually albumin is not presentur ine when the kidneys are functioning properly. However, albumin may be detected in the urine even in the early stages of kidney disease.
- Albumin and creatinine are usually measured in a random urine sample and albumin/creatinine ratio (ACR) is calculated. The concentration (or dilution) of urine varies throughout the day with more or less liquid being released in addition to the body's waste products.

When is the test ordered ?

According to the American Diabetes Association and National Kidney Foundation, everyone with type 1 diabetes should get tested annually, starting 5 years after onset of the disease, and all those with type 2 diabetes should get tested annually, starting at the time of diagnosis. If albumin in the urine (albuminuria) is detected, it should be confirmed by retesting twice within a 3-6 month period. People with hypertension may be tested at regular intervals, with the frequency determined by their healthcare provider.

Application of urine strips

Urine test strips are a central diagnostic instrument, their ease of use yielding quick and reliable information on pathological changes in the urine. Their significance lies primarily in first-line diagnostics. Routine testing with multi-parameter strips allows a determination of the complete urine status. This is the first step in the diagnosis of a very wide range of diseases.

Indications for urine test strips:

- Screening for prevention
- Treatment monitoring
- Patient self-testing

Screening for prevention

Urine test strips are routinely used for screening both in hospitals and in general practice. The aim of screening is early identification of likely patients by examining large groups of the population.

- Routine examinations can reveal early symptoms of the following four disease groups:
- Kidney diseases
- Urinary tract infections
- Carbohydrate metabolism disorders (such as diabetes mellitus)
- Liver disease and hemolytic disorders
- Cardiovascular disease

Treatment monitoring

Treatment monitoring with the aid of urine test strips allows the treating doctor to check on the results of the prescribed therapy, and if necessary to introduce any changes into the therapeutic strategy. An additional benefit of such monitoring is improved patient compliance.

- **Monitoring is particularly useful in two clinical conditions:**

  First, in diabetes mellitus, where combined checks for glucose and ketones are advisable for early detection and correction of changes in metabolic status. Second, in patients suffering from hypertension who run an increased risk of developing kidney damage in the course of their condition.

QDx Urine Control

- QDx Urine quality control are specifically designed for use with both manual and automated methods of urine test strip analysis.
- The controls are available in convenient 3 x 5 ml vials with assay ranges provided for routine 10 parameters (QDx Urine DS 10 & 11 parameters (QDx Urine DS 11 ACR)

Features & Benefits

- Powder form to increase stability.
- Assayed ranges provided for DS 10 and DS 11 ACR.
- Stable to expiry date at 2°C – 8°C
- Open vial stability of 5 days at 2°C – 25°C

Do You Know ?

- A field study carried out in seven European countries with over 11,000 urine samples illustrates the value of screening with urine test strips. A pathological urine finding (after checking for nitrite, protein, glucose, ketones, urobilinogen, and blood) was diagnosed in 16% of "normal healthy persons", in 40% of outpatients, and in 57% of hospitalized patients.
- Nearly 20% of women who have a UTI will have another, and 30% of those will have yet another. Of the last group, 80% will have recurrences
- Kidney disease may also occur after a bacterial infection in another part of the body, such as a streptococcus infection of the throat or skin or an infection inside the heart. Viruses, such as the HIV virus that leads to AIDS, can also trigger kidney disease. Kidney disease requires prompt attention, and high-risk populations should be carefully monitored for abnormal kidney function. Otherwise, testing for CKD only begins when symptoms are present, which may be too late.
- Diagnostic tests, such as simple urine tests, are the first line of defense in detecting kidney problems and minimizing damage.

Order Information

Cat No	Product	Pack Size
400295539	QDx Urine DS 10	100 Strips
400295540	QDx Urine DS 11 MAU	100 Strips
400295541	QDx Urine DS 4 MAU	100 Strips
400295546	QDx Urine DS 11 ACR	100 Strips
400295542	QDx Urilyzer DS 100	1 Unit
400295550	QDx Urine Control for DS 10	3 × 5 mL
400295551	QDx Urine Control for DS 11 ACR	3 × 5 mL

DiaSys
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