HIGH QUALITY TESTS FOR THE DIAGNOSIS OF DIABETES AND THE MONITORING OF ITS COMPLICATIONS
DIABETES PORTFOLIO

- Adiponectin
- Glucose
- HbA1c
- Fructosamine
- Cystatin C
- Enzymatic Creatinine
- JAFFE Creatinine
- D-3-Hydroxybutyrate
- Microalbumin
- Albumin
- Non-Esterified Fatty Acids (NEFA)
- β2-Microglobulin
BENEFITS OF RANDOX REAGENTS

Randox offers an extensive range of third party diagnostic reagents which are internationally recognised as being of the highest quality; producing accurate and precise results. We have the largest test menu of 118 assays, covering over 100 disease markers including specific proteins, lipids, therapeutic drug monitoring, drugs of abuse, antioxidants, coagulation, diabetes and veterinary testing.

A wide range of formats and methods are available providing greater flexibility and choice for any laboratory size. In addition to flexible pack sizes and a comprehensive list of analyser applications, we can also provide dedicated reagent packs (Randox Easy Read and Easy Fit regents) for a wide range of chemistry analysers providing you with freedom of choice from an independent manufacturer.

EXPAND YOUR ROUTINE TESTING

With speciality assays for 195 of the most common clinical chemistry analysers; assays which usually require dedicated equipment (or was previously only available as an ELISA) can now be run on automated biochemistry analysers, allowing your laboratory to expand its routine test menu. E.g., TxBCardio™, cystatin C, adiponectin, and many more.

BRING TESTING IN-HOUSE

With smaller kit sizes and excellent reagent stability (most are stable for 28 days on-board the analyser), you don’t have to worry about reagent wastage, allowing testing to be brought in-house.

EXPAND YOUR TEST MENU WITHOUT EXPANDING YOUR LAB

There is no need to buy any extra equipment in order to expand your test menu. Our reagents can be programmed onto the majority of the most common biochemistry analysers.

For more information about Randox and for our full range of products, please visit www.randox.com, or contact your local Randox representative.
We can help create cost-savings for your laboratory through excellent reagent stability; by eliminating the need for costly re-runs through the excellent quality of products; and by offering a range of kit sizes (including smaller kit sizes for niche tests to reduce waste).

Our traceability of material and extremely tight manufacturing tolerances ensure uniformity across reagent batches reducing lot-to-lot variability and our assays are validated against gold-standard methods; giving you the confidence that you are sending out the correct patient results.

Reduce your time spent on running tests through liquid ready-to-use reagents, automated methods (compared to the traditional laborious ELISA methods used for some tests such as cystatin C or adiponectin); and our easy-fit options.
Randox Diabetes Reagents

Randox is committed to advancing diabetes related testing and offers a comprehensive range of high quality reagents. From diabetes diagnosis to the monitoring of associated complications, Randox diabetes reagents cover the full spectrum of clinical biochemistry laboratory testing requirements.

Type 2 Diabetes represents one of the biggest challenges for healthcare today as the number of people both at risk of developing, as well as living with this disease continues to increase across the world.

KEY

(S) INDICATES STANDARD INCLUDED IN KIT and is for manual and semi-automated use only

★ INDICATES LIQUID OPTION AVAILABLE

UF UNIQUE FEATURE: When you see this symbol you will know that this feature is unique to the Randox product

NP NICHE PRODUCT - When you see this symbol you will know that Randox have one of the only automated biochemistry assays available on the market

Not all products are available for diagnostic use in USA. Please contact your local representative for further information.
### CLINICAL SIGNIFICANCE

- Monitoring glucose levels are significant to **diagnose and monitor** diabetes.

### RANDOX GLUCOSE

- 16 different kit options available ensuring laboratories of all sizes can find a kit to suit their needs.
- Liquid and lyophilised formats available offering greater choice.
- GOD-PAP and Hexokinase methodologies available satisfying individual laboratory testing preferences.
- Applications available for an extensive range of biochemistry analysers detailing instrument specific settings for the convenient use of Randox Glucose assays on a variety of systems.
- Complementary controls and calibrators available for a complete testing package.

#### ORDERING INFORMATION

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### CLINICAL SIGNIFICANCE

- HbA1c levels are directly correlated with **increased risk of diabetes related deaths**, making HbA1c testing vital.
- HbA1c is used in both **diagnosis and long-term monitoring** of diabetes.

### RANDOX HbA1c

- Extensive measuring range of 1.8-17.1%. HbA1c levels in controlled diabetics are approximately 6-8% therefore Randox HbA1c will more than comfortably detect abnormal analyte levels.
- Liquid ready-to-use reagents for convenience and ease of use.
- Latex Enhanced Immunoturbidimetric method delivering high performance.
- Applications available for an extensive range of biochemistry analysers detailing instrument specific settings for the convenient use of Randox HbA1c assays on a variety of systems.
- Complementary HbA1c calibrator and controls available offering a complete testing package.

#### ORDERING INFORMATION

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* Suitable for RX series analysers only.
Fructosamine testing enables an accurate review of a person’s average blood glucose level, and therefore diabetic status, over a period of 2-3 weeks. Fructosamine testing is required for:

- **Medication changes** – Testing fructosamine levels enable a faster review of a diabetic patient’s glucose levels (therefore health) when introduced to medicine or when there is a change in medicine.
- **Gestational diabetes** – Gestational diabetes comes with considerable risks to both the mother and baby. Risks include: Premature birth (including jaundice or breathing difficulties); immediate infant health problems (e.g., low blood sugar); miscarriage or stillbirth. Therefore monitoring the mother’s and infant’s glucose levels (therefore health) during pregnancy is crucial. Fructosamine offers the ability to monitor glucose levels effectively according to the patient’s medication and diet (including any changes).
- **Red blood cell concerns** - If there is concern over a patient’s haemoglobin status, testing glycated haemoglobin (HbA1c) will not be accurate, and as such testing the glycated protein (fructosamine) offers a more significant result. Haemoglobin issues are of particular concern in the inherited disorder thalassemia or other haemoglobinopathies.
- **Comorbidities** - When patients have comorbidities that may impact upon the erythrocyte life span, it can falsely elevate or lower HbA1c levels. These include: liver disease, kidney failure, haemolytic anaemia, HIV, iron deficiency anaemia and aplastic anaemia.

**RANDOX FRUCTOSAMINE**

- **Enzymatic methodology** enabling more sensitive and specific testing of patient samples. This method does not suffer from non-specific interferences that can be seen with NBT-based methods. Problems that can occur with NBT methods include:
  - Artificially high results if there are higher levels of urate or glutathione in the blood
  - Vitamin C >227µmol/L interferes significantly
  - Bilirubin >32.2µmol/L can falsely elevate fructosamine levels
  - Haemolysis can falsely reduce fructosamine levels
  - Colorimetric NBT methodology is affected by changes in ambient temperatures
- **Liquid ready-to-use reagents** for convenience and ease of use
- **Applications available for a wide range of biochemistry analysers** detailing instrument-specific settings for the convenient use of Randox Fructosamine on a variety of systems
- **Fructosamine controls and fructosamine calibrator available** for a complete testing package

**ORDERING INFORMATION**

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**FIG.1.** Visual time representation of rise and fall of fructosamine and HbA1c (not to scale)
BIOLOGICAL SIGNIFICANCE

- Cystatin C is a small protein that is produced by all cells that contain a nucleus (i.e. the majority of cells in the body). In healthy people it is produced and destroyed at a constant rate and is found in a variety of body fluids such as blood, spinal fluid, and breast milk.
- The small molecular weight (13 kDa) of cystatin C allows it to be completely removed and broken down by the kidneys - levels therefore remain steady if the kidneys are working efficiently and the Glomerular Filtration Rate (GFR) is within a healthy range.
- When the kidneys are functioning normally, concentrations of cystatin C in the blood are stable, but as kidney function deteriorates (as seen in people with type 2 diabetes), the concentrations begin to rise, often before those of creatinine. This increase occurs as the GFR falls and is usually detectable before there are any symptoms of kidney disease.

CLINICAL SIGNIFICANCE

- Diabetes mellitus is the most common cause of CKD. It is the leading cause of new patients requiring renal replacement therapy, accounting for 40%, 34%, and 30% of cases in United States, Germany and Australia respectively¹.
- Cystatin C is a more sensitive marker of kidney function than creatinine (either Jaffe or Enzymatic) and is especially useful in patients for whom the measurement of creatinine is unreliable.
- Cystatin C is virtually unaffected by non-renal factors (unlike creatinine) such as muscle mass, weight, height, age, gender, diet and drugs.
- Cystatin C is more sensitive to changes in the "creatinine blind" range 40-70 ml/min/1.73 m². Up to 50% of renal function can be lost before a significant creatinine change occurs¹.
- Patient groups which benefit most from cystatin C measurement are:
  - people with diabetes or skeletal muscle diseases
  - those with mild to moderate kidney disease
  - patients with acute renal failure
  - elderly people (>50 years)
  - children
  - pregnant women with suspected pre-eclampsia
  - renal transplant recipients
- Cystatin C can be used for detection of early renal dysfunction in patients with type 1 or type 2 diabetes.
- Cystatin C has also been shown to detect cardiovascular disease in patients with diabetes and it may also be linked with incident type 2 diabetes in obese patients.

GUIDELINES ON CYSTATIN C

- 2012 KDIGO Guideline for Evaluation and Management of CKD suggests measuring cystatin C in patients with CKD defined solely by eGFR of 45–60 ml/min/1.73 m² but without other manifestations of CKD, such as albumin-creatinine ratio >30 mg/g.
- 2014 NICE (UK) Guidelines [CG182] recommends that in people with stage 3a CKD who don’t have proteinuria, that serum cystatin C is measured and laboratories report cystatin-based eGFR. This is intended to reduce the misdiagnosis of stage 3a CKD by 25%.

RANDOX CYSTATIN C

- Latex Enhanced Immunoturbidimetric method delivering high performance
- Applications available for a wide range of biochemistry analysers detailing instrument-specific settings for the convenient use of Randox Cystatin C on a variety of systems
- Liquid ready-to-use reagents for convenience and ease of use
- Extensive measuring range of 0.4-10 mg/l, capable of detecting extremely high levels of Cystatin C
- Cystatin C control and cystatin C calibrator available for a complete testing package

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REFERENCES

ENZYMATIC CREATININE

BIOLOGICAL SIGNIFICANCE

- The enzymatic method for creatinine measurement displays several advantages over the traditional alkaline picrate (Jaffe) method:
  - does not suffer greatly from interferences (there is a particular problem with bilirubin interferences with Jaffe method)
  - does not overestimate serum creatinine
  - more suitable for neonatal samples
  - more precise and accurate at low creatinine concentrations, leading to more reliable eGFR estimations
- Obtaining accurate serum creatinine measurements using the enzymatic method is essential, since systematic errors from the Jaffe method cause unreliable renal function estimates - leading to incorrect drug dose adjustments, misclassifications in CKD staging and incomparability of patient data.
- Although the creatinine determination in clinical practice is more than 100 years old, there is still much debate regarding its accuracy due to the variability of Jaffe methodologies.

CLINICAL SIGNIFICANCE

Use of enzymatic creatinine as a substitute for Jaffe creatinine offers numerous advantages:

- More accurate assessment of eGFR
- No known interferences from bilirubin, ascorbic acid, serum/plasma indices or a wide range of drugs
- Highly specific
- No interferences from endogenous creatinine as no sample blank is required
- Eliminates the need for urea determination

RANDOX ENZYMATIC CREATININE

- UV enzymatic method delivering high performance
- Applications available for a wide range of biochemistry analysers detailing instrument-specific settings for the convenient use of Randox Creatinine on a variety of systems
- Excellent stability - working reagent stable for 30 days
- Highly sensitive - 18umol/l
- Standard included in kit and is traceable to creatinine reference materials NIST 909b and NIST 967
- Complementary controls and calibrators available for a complete testing package

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JAFFE CREATININE

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BIOLOGICAL SIGNIFICANCE

• Metabolism of fatty acids in the liver results in the production of ketone bodies, consisting of acetone (2%), acetoacetate (20%) and D-3-Hydroxybutyrate (78%).
• The nitroprusside method, used to test ketone levels in semi-quantitative dipstick tests, only detects acetone and acetoacetate not D-3-Hydroxybutyrate.
• As D-3-Hydroxybutyrate is the most abundant ketone produced during ketosis, the measurement of this analyte is essential.
• D-3-Hydroxybutyrate therefore provides a superior methodology compared to other commercially available ketone detection tests.
• The traditionally-used dipstick ketone test commonly suffers from accuracy, reliability and specificity issues. The Randox D-3-Hydroxybutyrate test can be applied on a wide variety of biochemistry analysers, offering a much more accurate and reliable method for ketone testing.

CLINICAL SIGNIFICANCE

• Diabetic ketoacidosis is a serious complication of diabetes, occurring when blood sugar levels are consistently high and insulin levels are severely low.
• Due to the lack of glucose entering the cells the body begins to use fat stores as an alternative source of energy.
• Levels of ketone bodies in the blood are elevated (ketosis) when synthesis exceeds breakdown. Very high levels of ketosis can lead to diabetic ketoacidosis.
• Symptoms of ketoacidosis include nausea, vomiting and abdominal pain. The condition can even lead to coma or death if the individual is not treated immediately.
• As D-3-Hydroxybutyrate is the most abundant ketone produced during ketosis the measurement of this analyte is essential.

RANDOX D-3-HYDROXYBUTYRATE (RANBUT)

• Superior methodology when compared to other commercially available ketone detection tests. For example, the nitroprusside method used in semi-quantitative dipstick tests only detects acetone and acetoacetate. As D-3-Hydroxybutyrate is the most abundant ketone produced during ketosis the measurement of this analyte is more specific. The Randox D-3-Hydroxybutyrate assay facilitates this analysis, thereby giving more accurate and reliable results.
• Applications available for an extensive range of biochemistry analysers detailing instrument specific settings for the convenient use of Randox D-3-Hydroxybutyrate on a variety of systems.
• Sample type - Serum, heparinized plasma or EDTA plasma.
• Extensive measuring range 0.07-2.9 mmol/l, comfortably detecting abnormal levels of D-3-Hydroxybutyrate in a sample.
• Lyophilised reagents for maximum stability.
• Complementary controls and calibrators available for a complete testing package.
**CLINICAL SIGNIFICANCE**

- Microalbumin testing can identify individuals with diabetic nephropathy approximately 5-10 years earlier than proteinuria tests.

**Randox Microalbumin**

- Calibrator supplied with kit simplifying the ordering process
- Liquid ready-to-use reagents offering optimum convenience and ease of use
- Extensive measuring range 5.11-234 mg/l, ensuring abnormal microalbumin levels can be detected
- Limited interference from Bilirubin, Haemoglobin, Intralipid® and Triglycerides for more accurate results
- Microalbumin control and calibrator available for a complete testing package

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**Microalbumin**

- Calibrator supplied with kit simplifying the ordering process
- Liquid ready-to-use reagents offering optimum convenience and ease of use
- Extensive measuring range 3.2-50.6 g/l, ensuring abnormal albumin levels are comfortably detected
- Limited interference from Bilirubin, Haemoglobin, Intralipid® and Triglycerides for more accurate results
- Microalbumin control and calibrator available for a complete testing package

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**Albumin**

- Testing albumin is necessary as levels decrease in diabetes and may also affect HbA1c levels

**Randox Albumin**

- Liquid ready-to-use reagents offering optimum convenience and ease of use
- Limited interference from Bilirubin, Haemoglobin, Intralipid® and Triglycerides for more accurate results
- Extensive measuring range 3.2-50.6 g/l, ensuring abnormal albumin levels are comfortably detected
- Applications available for an extensive range of biochemistry analysers detailing instrument specific settings for the convenient use of Randox Albumin assays on a variety of systems
- Complementary controls and calibrators available for a complete testing package

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<td>R1 6 x 20ml, R2 3 x 11ml</td>
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**NON-ESTERIFIED FATTY ACIDS (NEFA)**

**BIOLOGICAL SIGNIFICANCE**
- NEFAs are molecules released from triglycerides by the action of the enzyme lipase and are transported in the blood bound to albumin. They contribute only a small proportion of the body’s fat, but provide a large part of its energy.
- Elevated NEFA concentrations in obesity are thought to arise from an increased adipose tissue mass, which in turn leads to insulin resistance in insulin target tissues.

**CLINICAL SIGNIFICANCE**
- NEFA has been shown to increase in conditions such as insulin resistance, type 2 diabetes and obesity, and is therefore linked to an increased risk of developing diabetes.
- It is also highly useful in the monitoring of metabolic syndrome and diabetes.

**RANDOX NEFA**
- Speciality reagent from Randox giving laboratories the opportunity to take their diabetes related testing beyond the routine and collate more extensive patient results.
- Extensive measuring range 0.04-2 mmol/l allowing comfortable detection of NEFA levels.
- Applications available for an extensive range of biochemistry analysers detailing instrument specific settings for the convenient use of Randox NEFA on a variety of systems.
- Complementary controls and calibrators available for a complete testing package.

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**ß2 MICROGLOBULIN (ß2 M)**

**BIOLOGICAL SIGNIFICANCE**
- ß2 M is a protein that is found on the surface of cells, and it functions as part of the human immune system.
- It is routinely shed by cells into the blood and is present in most body fluids, with the highest levels found in blood and very low levels found in urine.
- If the glomeruli in the kidneys are damaged, then they are unable to filter out ß2 M, so the level in the blood rises.

**CLINICAL SIGNIFICANCE**
- When kidney damage has occurred, ß2 M can be used to distinguish between the two most commonly affected sites, glomeruli and renal tubules.
- It might also be used to monitor end-stage renal disease, provide information on prognosis and to detect kidney transplant rejection.
- ß2 M is also used in detecting heavy metal poisoning (heavy metals can be toxic to kidney tubules), such as in occupational cadmium or mercury exposure.

**RANDOX ß2 MICROGLOBULIN**
- Liquid ready-to-use reagents offering optimum convenience and ease of use.
- Limited interference from Bilirubin, Haemoglobin, Intralipid® and Triglycerides for more accurate results.
- Extensive measuring range 0.56-20.9 mg/l, allowing comfortable detection of ß2 M levels.
- Complementary controls and calibrators available for a complete testing package.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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<tr>
<td>ß2 Microglobulin</td>
<td>R1 2 x 11ml, R2 2 x 4.3ml</td>
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<tr>
<td>ß2 Microglobulin</td>
<td>R1 2 x 11.6ml, R2 2 x 4.9ml</td>
<td>BM8016</td>
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</table>
Adiponectin exhibits anti-inflammatory, anti-atherogenic and anti-diabetic properties. Various functions of adiponectin may possibly serve to prevent and treat obesity-related diseases and CVD.

Adiponectin, the most abundant protein secreted by adipose tissue, exhibits insulin-sensitising, anti-inflammatory, anti-atherogenic, pro-apoptotic and anti-proliferative properties.

Circulating adiponectin levels, which are determined predominantly by genetic factors, diet, physical activity, and abdominal adiposity, are decreased in patients with diabetes, CVD, and several obesity-associated cancers.

Adiponectin levels are inversely associated with the risk of developing diabetes, CVD and several malignancies later in life.

Adiponectin is a powerful predictor of diabetes in subjects at high risk for diabetes, even after adjustment for weight. An increase in adiponectin is inversely associated with progression to diabetes.

Decreased serum adiponectin level is an independent risk factor for progression to type 2 diabetes.

Pregnant women with lower adiponectin levels at first trimester have higher levels of insulin resistance and are more likely to develop gestational diabetes mellitus (GDM) independently of adiposity or glycemic measurements.

Among overweight or obese women, having an adiponectin level below the normal (accepted) level has been linked to a 6.8-fold increased risk of developing gestational diabetes. In women of normal weight having an adiponectin level below the normal (accepted) level is linked to a 3.5-fold increased risk of developing gestational diabetes.

Subjects with high abdominal visceral fat (AVF) or low adiponectin had a three-fold increased risk of insulin resistance. The combination of low adiponectin with high abdominal visceral fat doubled this probability.

Abdominal visceral fat (AVF) has proven to be a better predictor of metabolic abnormalities (particularly insulin resistance) than BMI and waist circumference.

**BIOLOGICAL SIGNIFICANCE**

- Adiponectin is solely secreted by adipocytes and is a protein hormone with anti-inflammatory and insulin-sensitising properties.
- It plays an important role in a number of metabolic processes such as glucose regulation and fatty acid oxidation.
- Levels of adiponectin (its abundance) have been linked with several pathologies including metabolic syndrome, cancer and cardiovascular disease.

**CLINICAL SIGNIFICANCE**

- Adiponectin is a powerful predictor of diabetes in subjects at high risk for diabetes, even after adjustment for weight. An increase in adiponectin is inversely associated with progression to diabetes.
- Decreased serum adiponectin level is an independent risk factor for progression to type 2 diabetes.
- Pregnant women with lower adiponectin levels at first trimester have higher levels of insulin resistance and are more likely to develop gestational diabetes mellitus (GDM) independently of adiposity or glycemic measurements.
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- Abdominal visceral fat (AVF) has proven to be a better predictor of metabolic abnormalities (particularly insulin resistance) than BMI and waist circumference.

**METABOLIC, INSULIN AND DIABETIC CONCERNS**

- Adiponectin is a powerful predictor of diabetes in subjects at high risk for diabetes, even after adjustment for weight. An increase in adiponectin is inversely associated with progression to diabetes.
- Decreased serum adiponectin level is an independent risk factor for progression to type 2 diabetes.
- Pregnant women with lower adiponectin levels at first trimester have higher levels of insulin resistance and are more likely to develop gestational diabetes mellitus (GDM) independently of adiposity or glycemic measurements.
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- Abdominal visceral fat (AVF) has proven to be a better predictor of metabolic abnormalities (particularly insulin resistance) than BMI and waist circumference.

**RANDOX ADIPONECTIN**

- Automated biochemistry assay with applications available for a wide range of analysers.
- Liquid ready-to-use reagents for convenience and ease of use.
- Latex Enhanced Immunoturbidimetric method delivering high performance.
- Extensive measuring range for clinically important results.
- Adiponectin control and adiponectin calibrator available offering a complete testing package.
FIG. 3. (Menzaghi et al, 2007) Proposed salutary effects of adiponectin

FIG. 2. (Adapted from Matsuzawa, 2010) Correlation between visceral adiposity and plasma levels of adiponectin

REFERENCES

4. Lacroix, M., Battista, M.C., Doyon, M., Marchand, A., Arnaudouze, J.L., Perron, P. and Hivert M. F. Lower adiponectin levels at first trimester of pregnancy are associated with increased insulin resistance and higher risk of developing gestational diabetes mellitus. Diabetes Care, vol. 36, no. 6, p. 1577-83 (2013).

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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<th>CATALOGUE NUMBER</th>
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<tbody>
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<td>Adiponectin</td>
<td>R1: 2 x 15.8ml; R2: 2 x 8.4ml</td>
<td>AO2999</td>
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<tr>
<td>Adiponectin</td>
<td>R1: 4 x 65ml; R2: 4 x 33.5ml</td>
<td>AO2799</td>
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</table>
Randox is committed to supporting the advancement of diabetes related chemistry testing and offers a comprehensive range of high quality reagents. From diabetes diagnosis to the monitoring of associated complications, Randox diabetes reagents cover the full clinical spectrum of laboratory testing requirements. Diabetes represents one of the biggest challenges for healthcare today as the number of people both at risk of developing, as well as living with this disease continues to increase across the world.

Risk Assessment
Adiponectin

Diagnosis and Monitoring
Glucose | HbA1c | Fructosamine

Complications Monitoring
Cystatin C | Enzymatic Creatinine | JAFFE Creatinine
D-3-Hydroxybutyrate (Ranbut) | Microalbumin | Albumin
Non-Esterified Fatty Acids (NEFA) | β₂ Microglobulin
**CARDIAC & LIPIDS BIOCHEMISTRY PANEL**

The need for a more extensive lipid profiling is on the increase, to truly identify the risk of cardiovascular diseases, both in primary and secondary risk categories; and as such provide the necessary tools to prevent and reduce the risks. Randox offer a comprehensive cardiology product profile which includes high performance chemistry reagents for the detection of conventional risk factors, as well as emerging biomarkers associated with further risk.

**Risk Assessment**
- Adiponectin
- Apolipoprotein A-I
- Apolipoprotein A-II
- Apolipoprotein B
- Apolipoprotein C-II
- Apolipoprotein C-III
- Apolipoprotein E
- Total Cholesterol
- HDL Cholesterol
- LDL Cholesterol
- HDL2/3 Cholesterol
- sLDL Cholesterol
- Triglycerides
- Lipoprotein (a)
- sPLA₂-IA Homocysteine
- hsCRP

**Diagnosis of MI**
- Heart-type Fatty Acid Binding Protein (H-FABP)
- CK-MB
- Myoglobin

**Therapy Monitoring**
- Digoxin
- TxBCardio™
Randox has been supplying laboratories worldwide with revolutionary diagnostic solutions for over 30 years. Our experience and expertise allow us to create a leading product portfolio of high quality diagnostic tools which offer reliable and rapid diagnosis. We believe that by providing laboratories with the right tools, we can improve health care worldwide.

**RX SERIES OF CLINICAL ANALYSERS**

The RX series combines robust hardware and intuitive software with the world leading RX series test menu, including routine chemistries, specific proteins, lipids, therapeutic drugs, drugs of abuse, antioxidants and diabetes testing. Renowned for quality and reliability, the RX series boasts one of the most extensive dedicated clinical chemistry test menus on the market guaranteeing real cost savings through consolidation of routine and specialised tests onto a single platform. This extensive dedicated test menu of high quality reagents guarantees excellence in patient care reducing costly test re-runs or misdiagnosis and offers unrivalled precision and accuracy for results you can trust.

**ACUSERA**

Randox is a world leading manufacturer of multi-analyte, true third party controls. Thousands of laboratories rely on us to accurately assess test system performance and ultimately empower them with the confidence required to release patient test results. With more than 390 analytes available across the Acusera range we can uniquely reduce the number of individual controls required while simultaneously reducing costs, time and storage space. A choice of formats are available, including liquid or lyophilised, ensuring flexibility and suitability for laboratories of all sizes and budgets. Some of our principle products include Clinical Chemistry, Immunoassay, Urine, Immunology/Proteins, Cardiac Markers and Therapeutic Drugs among others. As a primary manufacturer, Randox are also able to offer the unique service of custom made controls.

**RIQAS**

Boasting over 45,000 participants and more than 360 parameters across 32 comprehensive & flexible EQA programmes, RIQAS is the largest international EQA scheme. Designed to cover all areas of clinical testing, each of our multi-analyte programmes benefit from a wide range of concentrations, frequent reporting, rapid feedback and informative yet user-friendly reports.

**BIOCHIP ARRAY TECHNOLOGY**

Biochip Array Technology (BAT) is an innovative assay technology for multi-analyte screening of biological samples in a rapid, accurate and easy to use format. BAT offers highly specific tests, coupled to highly sensitive chemiluminescent detection, providing quantitative results in easy to interpret reports. Randox BAT assays offer diagnostic, prognostic and predictive solutions across a variety of disease areas including sexually transmitted infection, cardiovascular disease (CVD), familial hypercholesterolemia (FH), colorectal cancer and respiratory infection.
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