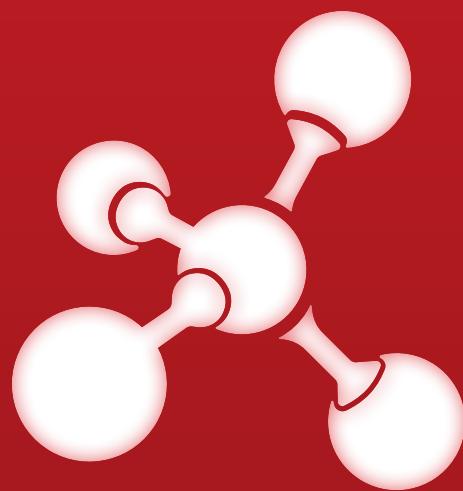


RANDOX

## SPECIFIC PROTEINS

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EXCELLENT MEASUREMENT OF SPECIFIC PROTEINS

# SPECIFIC PROTEINS TIBC

Anti-Streptolysin O | Apolipoproteins | Ceruloplasmin | Complement C3 | Complement C4 | Cystatin C | Ferritin | Haptoglobin | IgA | IgE | IgG | IgM | Lipoprotein (a) | Microalbumin | Myoglobin | Rheumatoid Factor | Soluble Transferrin Receptor (sTfR) | Transferrin | Transthyretin |

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WARNING

REF



- 01 BENEFITS
- 02 ANTI-STREPOLYSIN O
- 03 APOLIPOPROTEIN A-I
- 04 APOLIPOPROTEIN A-II
- 05 APOLIPOPROTEIN B
- 06 APOLIPOPROTEIN C-II
- 07 APOLIPOPROTEIN C-III
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- 15 FERRITIN
- 16 HAPTOGLOBIN
- 17 IMMUNOGLOBULIN A
- 18 IMMUNOGLOBULIN E
- 19 IMMUNOGLOBULIN G
- 20 IMMUNOGLOBULIN M
- 21 LIPOPROTEIN (A)
- 22 MICROALBUMIN
- 23 MYOGLOBIN
- 24 RHEUMATOID FACTOR
- 25 SOLUBLE TRANSFERRIN RECEPTOR (STFR)
- 26 TRANSFERRIN
- 27 TRANSTHYRETIN (PREALBUMIN)
- 28 ORDERING INFORMATION
- 34 A-Z PORTFOLIO OF REAGENTS
- 35 GLOBAL DIAGNOSTIC SOLUTIONS PROVIDER
- 36 CONTACT US
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Key:



UNIQUE feature

When you see this symbol you will know that this feature is unique to the Randox product

NICHE product

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

# 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 an extensive test menu of over 100 assays, covering over 100 disease markers including: antioxidants, diabetes, cardiology & lipid testing, clinical chemistry, specific proteins, therapeutic drug monitoring 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 clinical chemistry analysers, providing you with freedom of choice from an independent manufacturer.



## 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 clinical chemistry analysers.



## 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 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 clinical chemistry analysers; allowing your laboratory to expand its routine test menu.



## Reduce labour

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



## Reduce costs

We can help create cost-savings for your laboratory through excellent reagent stability; excellent quality of products (eliminating costly re-runs) and by offering a range of kit sizes (including smaller kit sizes for niche tests, reducing waste).



## Reduce the risk of errors and have confidence in patient results

Our traceability of material and extremely tight manufacturing tolerances ensure uniformity across reagent batches reducing lot-to-lot variability. All our assays are validated against gold-standard methods, offering low % CV's and excellent precision giving you the confidence that you are sending out the correct patient results.

# Anti-Streptolysin O

## What is Anti-Steptolysin O?

Streptolysin O (SLO) is a lethal, exocellular protein produced by Group A Streptococcal bacteria. The SLO toxin lyses erythrocytes and many other animal cells by disruption of the cytoplasmic and similar membranes. Consequently, anti-streptolysin O antibodies (ASO) are produced by the host to neutralise the haemolytic action of the SLO. Levels of ASO in serum are dependent on the age of the patient, geographical location and the local incidence of streptococcal infection. The upper limit of the normal range, internationally, is 200IU/ml as this value is rarely exceeded without symptoms indicative of streptococcal infection.

## Clinical Significance

ASO measurement can provide information on the extent and severity of infection. A streptococcal infection is considered to be one where there is a two-dilution rise in titre between acute and convalescent stage serum. Hence, the test should be repeated after 1 to 2 weeks. Raised ASO levels may also be present in other conditions such as scarlet fever, acute rheumatic arthritis, tonsillitis and various other streptococcal infections as well as in healthy carriers.

The World Health Organisation (WHO) recommends the use of ASO to aid the diagnosis of streptococcal infections such as rheumatic fever and glomerulonephritis.

## Benefits of the Randox ASO Assay

- **Wide measuring range** of 28-1314 IU/ml for the accurate detection of clinically important results
- **Automated latex enhanced immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox ASO assay on a wide range of biochemistry analysers
- **Complementary controls and calibrator** offering a complete testing package
- **Single point calibration, directly calibrated against NIBSC 97/662**
- No interference from C1q complement

# Apolipoprotein A-I

## What is APO A-I?

Apo A-I is the major protein component of HDL particles in plasma and plays a role in lipid metabolism. Chylomicrons secreted from the intestinal enterocyte also contain Apo A-I, but it is quickly transferred to HDL in the bloodstream.

## Clinical Significance

The chief role of Apo A-I is the activation of lecithin cholesterol acyl transferase (LCAT) and the capture and removal of free cholesterol from hepatic tissues, also known as reverse cholesterol transport. Apo A-I is therefore non-atherogenic, showing an inverse relationship to cardiovascular risk.

## Benefits of the Randox A-I Assay

- **Wide measuring range** of 5.27 - 251 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric assay** eliminating the need for dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox Apo A-I assay on a wide range of biochemistry analysers
- **Calibrators supplied** with kits simplifying the ordering process
- **Complementary controls** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results

# Apolipoprotein A-II

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## What is APO A-II?

Apo A-II is a major constituent of High Density Lipoprotein (HDL) particles and plays an important role in the reverse cholesterol transport and lipid metabolism. The increased production of Apo A-II promotes atherosclerosis by decreasing the proportion of anti-atherogenic HDL containing Apo A-I.

## Clinical Significance

Increased production of Apo A-II promotes atherosclerosis by decreasing the proportion of anti-atherogenic HDL containing Apo A-I.

## Benefits of the Randox A-II Assay

- **Wide measuring range** of 6.75-61.1 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric assay** eliminating the need for dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox Apo A-II assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results

# Apolipoprotein B

## What is Apo B?

Apo B is a component of LDL cholesterol and enables tissue cells to take up cholesterol. Apo B is considered atherogenic making it a useful risk marker for CVD.

## Clinical Significance

Elevated levels of Apo B correlates with an increased risk of CVD, even when total and LDL cholesterol levels are within the normal range, making Apo B an important risk marker.

### Benefits of the Randox Apo B Assay

- **Wide measuring range** of 9.37 - 233 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox Apo B assay on a wide range of biochemistry analysers
- **Calibrator supplied with some kits** simplifying the ordering process
- **Complementary controls and calibrators** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results

# Apolipoprotein C-II

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## What is Apo C-II?

Apo C-II acts as a co-factor for lipoprotein lipase, an enzyme that hydrolyses triglycerides in chylomicrons and vLDL. Lipoprotein lipase cannot function without Apo C-II; it is essential for the normal triglyceride breakdown. If an individual is deficient in Apo C-II, they would experience a build up of triglycerides and subsequent hypertriglyceridemia.

## Clinical Significance

Patients have been identified with excessive hypertriglyceridemia due to a deficiency in Apo C-II. Conditions associated with Apo C-II and hypertriglyceridemia include: chylomicronemia, xanthomas, and recurrent pancreatitis.

## Benefits of the Randox Apo C-II Assay

- **Excellent sensitivity** of 1.48 mg/dl, ensuring depleted levels are detected
- **Automated immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox C-II assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results

# Apolipoprotein C-III

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## What is Apo C-III?

Apo C-III inhibits the action of lipoprotein lipase and as a result modulates the uptake of triglyceride-rich lipoproteins.

## Clinical Significance

Elevated levels of Apo C-III are associated with both primary and secondary hypertriglyceridemia. Genetically determined Apo C-III deficiency in humans has shown to increase the rate of triglyceride clearance from the plasma by 6 to 7-fold. Elevated Apo C-III levels have been reported in many pathological conditions including type 2 diabetes, hyperbilirubinemia, kidney deficiency and decreased thyroid function. Several factors influence Apo C-III levels including: gender, age, menopause and genetic polymorphisms in the Apo C-III gene.

## Benefits of the Randox Apo C-III Assay

- **Excellent linearity** of 21.7 mg/dl for the comfortable detection of elevated levels
- **Automated immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox Apo C-III assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results

# Apolipoprotein E

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## What is Apo E?

Apo E is a protein synthesised mainly in the brain and to a lesser extent in the spleen, lungs, adrenal glands, ovaries, kidneys, muscle cells and macrophages. Apo E's functions include the transport of triglycerides to the liver tissues and the distribution of cholesterol between cells.

## Clinical Significance

Elevated levels of Apo C-III are associated with both primary and secondary hypertriglyceridemia. Genetically determined Apo C-III deficiency in humans has shown to increase the rate of triglyceride clearance from the plasma by 6 to 7-fold. Elevated Apo C-III levels have been reported in many pathological conditions including type 2 diabetes, hyperbilirubinemia, kidney deficiency and decreased thyroid function. Several factors influence Apo C-III levels including: gender, age, menopause and genetic polymorphisms in the Apo C-III gene.

## Benefits of the Randox Apo E Assay

- **Wide measuring range** of 1.04-12.3 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox Apo E assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results

# Complement C3

## What is Complement C3?

Complement C3 is the most important and prevalent protein within the complement system. Complement C3 works in conjunction with antibodies and other factors to protect the body from invasion by pathogens. When activated by either the classical or alternative pathway complement C3 acts on biological membranes and may cause cell death.

## Clinical Significance

Decreased complement C3 levels are important in determining inherited or acquired deficiencies and may increase the susceptibility to infections or developing autoimmune disorders. Conversely, levels may rise in a variety of inflammatory and necrotic disorders as part of the acute-phase plasma protein response.

### Benefits of the Randox complement C3 assay

- **Wide measuring range** of 15.5-502 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox complement C3 assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results
- **Traceable to ERM DA470k/IFCC**

# Complement C4

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## What is Complement C4?

Complement C3 is the most important and prevalent protein within the complement system. Complement C3 works in conjunction with antibodies and other factors to protect the body from invasion by pathogens. When activated by either the classical or alternative pathway complement C3 acts on biological membranes and may cause cell death.

## Clinical Significance

Decreased complement C4 levels are important in determining inherited or acquired deficiencies and may increase the susceptibility to infections or developing autoimmune disorders. Conversely, levels may rise in a variety of inflammatory and necrotic disorders as part of the acute-phase plasma protein response.

### Benefits of the Randox complement C4 assay

- **Wide measuring range** of 3.41-152 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox complement c4 assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results
- **Traceable to ERM DA470k/IFCC**

# CRP

## Why use the Randox CRP Assay?

CRP measurements are indicative of infection, tissue injury, inflammatory disorders and associated diseases. Recent research highlights that CRP measurements can also be used to assess the risk of cardiovascular disease, infection in neonates and for the early detection of renal allograft rejection. Elevated levels of CRP are associated with a 3-fold risk of myocardial infarction.

## Benefits of the Randox CRP assay

- **Wide measuring range** of 2.88-220 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox complement c4 assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package
- **Limited interference** from Bilirubin, Haemoglobin, Intralipid® and Triglycerides, producing more accurate results

# Full-Range CRP

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## Why use the Randox Full-Range CRP Assay?

The Randox Full-Range CRP assay combines exceptional sensitivity in the low CRP range with excellent linearity at elevated levels for an all-inclusive test. The Randox Full-Range CRP assay enables the precise and accurate measurement of CRP levels both within and above the normal range, all within one kit, eliminating the need for a dedicated high sensitivity CRP test. With instrument-specific applications, the Randox CRP assay can be automated on a range of biochemistry analysers for the rapid routine assessment of CRP levels.

### Benefits of the Randox Full-Range CRP assay

- **Wide measuring range** of 0.18-165 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package
- **Traceable to ERM DA474k/IFCC**

# High-Sensitivity CRP

## Why use the Randox High-Sensitivity CRP Assay?

High sensitivity CRP, or hsCRP, in addition to lipid evaluation and risk scoring systems helps in the assessment of cardiovascular disease (CVD) risk. The American Heart Association (AHA) and Centre for Disease Control and Prevention (CDC) now recommend the use of hsCRP as a more sensitive marker of CVD risk compared to traditional CRP assays. The hsCRP assay is particularly useful in predicting future cardiac events in individuals with no previous history of CVD. Healthy individuals with CRP levels higher than 3mg/l are 2 to 4 times more likely to have a heart attack or stroke. Approximately half of all heart attacks occur in patients who have a normal lipid profile and are classified as low risk based on traditional methods of risk estimation. The measurement of hsCRP can therefore help clinicians to identify these individuals earlier; it can also be used to evaluate the risk of a recurrent cardiac event. In high risk groups there have even been indications that hsCRP could be used as a prognostic tool.

## Benefits of the Randox High Sensitivity CRP assay

- **Wide measuring range** of 0.477-10 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox hsCRP assay on a wide range of biochemistry analysers
- **High sensitivity CRP** control and calibrator offering a complete testing package

## AHA/CDC RISK ASSESSMENT GUIDELINES:

Risk Level	hs-CRP (mg/L)
Low	<1
Average	1-3
High	>3

# Cystatin C

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## What is Cystatin C?

Cystatin C is a small (13 kDa) cysteine proteinase inhibitor that is steadily produced by all nucleated cells. The normal range for healthy individuals is 0.57-1.05 mg/l.

## Clinical Significance

The small molecular weight of cystatin C means it can be freely filtered by the glomerular membrane; cystatin C levels in the blood are therefore indicative of a normal or impaired Glomerular Filtration Rate (GFR). Creatinine is perhaps the most widely used marker of GFR however unlike cystatin C creatinine levels are affected by non-renal factors including: age, gender, race, muscle mass, diet and disease. As creatinine is secreted by tubular cells into the bloodstream a 24 hour urine sample is required, furthermore creatinine is unable to detect small decreases in GFR. Cystatin C on the other hand is degraded in renal tubular cells and is not secreted by the kidneys meaning plasma and serum levels are dependent on the GFR.

Cancer therapeutics can damage renal function; early indication of such damage through the measurement of cystatin C levels is therefore important as it allows the oncologist to adjust drug dosage.

Poor diabetes control can also affect renal function, therefore monitoring cystatin C levels is also useful in diabetic patients.

## Benefits of the Randox Cystatin C assay

- **Wide measuring range** of 0.4-10 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox Cystatin C assay on a wide range of biochemistry analysers
- **Cystatin C control and calibrators** offering a complete testing package

## What is Ferritin?

Iron is essential for respiration as it forms part of the haemoglobin structure. It is the iron atom which binds to oxygen and is responsible for oxygen transport to bodily cells and tissues. Iron is also found in myoglobin and other proteins and enzymes. Ferritin is a metalloprotein that stores iron intracellularly, mainly in the liver, spleen and bone marrow. Ferritin is an accurate and indirect indicator of the body's iron stores and levels are measured in iron deficiency and iron toxicity.

## Clinical Significance

Anaemia is a shortage of red blood cells with a wide range of causes including excessive bleeding, haemolysis and reduced red blood cell production. Anaemia symptoms tend to be vague, for example fatigue and shortness of breath, therefore anaemia is diagnosed using a full blood count.

Tests such as ferritin, glucose and renal function are used to confirm the diagnosis and determine the cause of anaemia. In iron toxicity, iron accumulates in the body causing organ dysfunction. High levels of stored iron may be an indicator of infection, liver disease, alcohol abuse, overactive thyroid, rheumatoid arthritis, certain cancers or Wilson Disease.

Early diagnosis of these conditions is critical as treatment is relatively simple: periodic phlebotomies and minor dietary changes. Serum iron, total iron-binding capacity and transferrin tests are also used in diagnosis. CRP may be used to rule out elevated ferritin levels due to inflammation.

## Benefits of the Randox Cystatin C assay

- **Wide measuring range** of 5.08 - 443 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox Cystatin C assay on a wide range of biochemistry analysers
- **Complementary controls** and calibrators offering a complete testing package

# Haptoglobin

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## What is Haptoglobin?

Haptoglobin is an acute phase protein made primarily in the liver. Its main function is to bind free oxyhaemoglobin and remove it from circulation in order to prevent renal injury and iron loss following haemolysis. Haptoglobin is also thought to have both anti-inflammatory and antioxidant properties.

## Clinical Significance

Haptoglobin measurements are used in the diagnosis of haemolytic anaemia and to distinguish it from other types of anaemia. In haemolytic anaemia haptoglobin levels in the blood decrease significantly, low levels however may also indicate red blood cell destruction due to sickle cell anaemia or thalassemia. In certain cases of liver disease haptoglobin levels may also be low as the liver cannot manufacture normal levels of the protein.

As an acute phase reactant, haptoglobin levels in the blood are significantly increased in response to infection, inflammation, acute tissue necrosis, malignant tumours, burns, surgery and trauma.

## Benefits of the Randox Haptoglobin assay

- **Wide measuring range** of 0.1-3.68 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox haptoglobin assay on a wide range of biochemistry analysers
- **Complementary controls** and calibrators offering a complete testing package
- **Traceable to ERM DA470k/IFCC**

# Immunoglobulin A

## What is IgA?

IgA makes up 15% to 20% of the body's immunoglobulin pool. Its main role is to provide antibody activity at or near mucosal surfaces, such as in the gastrointestinal system, genitourinary system and respiratory system. For this reason, secretions from these areas contain high levels of IgA (in a specialised secretory IgA form). Examples of secretions with high IgA levels include saliva, bile, airway secretions, genitourinary secretions and milk. IgA fixes complement via the alternative pathway.

## Clinical Significance

Measurement of IgA is used to diagnose diseases of the respiratory tract e.g. tuberculosis, Chron's disease and early cirrhosis of the liver. It is also useful in monitoring therapy of IgA myeloma and evaluating IgA immunity. IgA in colostrum and milk is important in neonatal defence against infection.

### Benefits of the Randox IgA assay

- **Wide measuring range** of 0.21-5.9 g/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox IgA assay on a wide range of biochemistry analysers
- **Complementary controls** and calibrators offering a complete testing package
- **Traceable to ERM DA470k/IFCC**

# Immunoglobulin E

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## What is IgE?

IgE accounts for 0.002% of immunoglobulins in the body. IgE antibodies are the chief immunoglobulin responsible for immediate hypersensitivity reactions in humans.

## Clinical Significance

Continual production of IgE antibodies in response to common naturally occurring allergens and the production of excessive amounts of histamine by the IgE bound mast cells results in the development of such clinically important allergic reactions such as asthma, hay fever, dermatitis and food allergies. Elevated IgE levels are also seen in parasitic diseases, IgE myeloma and in hepatitis.

## Benefits of the Randox IgE assay

- **Wide measuring range** of 19.6-1007 IU/ml for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox IgE assay on a wide range of biochemistry analysers
- **Complementary controls** and calibrators offering a complete testing package

# Immunoglobulin G

## What is IgG?

This is the principle immunoglobulin in normal human serum, and makes up 80% of the total serum immunoglobulin in adult humans. IgG is the main form of antibody produced in response to secondary infections. This immunoglobulin provides one of the body's major defences against bacterial infection in adults, unborn children and newborn babies as it is the only immunoglobulin that can cross the placenta.

## Clinical Significance

Measurement of IgG is the basis of the serological diagnosis of several infectious diseases. Uses of IgG measurement include diagnosis of infectious and inflammatory diseases, diagnosis of malignancies, to detect the presence of soluble antigens and monitoring therapy in myeloma.

### Benefits of the Randox IgG assay

- **Wide measuring range** of 2.8-27.6 g/l for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox IgG assay on a wide range of biochemistry analysers
- **Complementary controls** and calibrators offering a complete testing package
- **Traceable to ERM DA470k/IFCC**

# Immunoglobulin M

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## What is IgM?

This is the principle immunoglobulin in normal human serum, and makes up 80% of the total serum immunoglobulin in adult humans. IgG is the main form of antibody produced in response to secondary infections. This immunoglobulin provides one of the body's major defences against bacterial infection in adults, unborn children and newborn babies as it is the only immunoglobulin that can cross the placenta.

## Clinical Significance

Measurement of IgG is the basis of the serological diagnosis of several infectious diseases. Uses of IgG measurement include diagnosis of infectious and inflammatory diseases, diagnosis of malignancies, to detect the presence of soluble antigens and monitoring therapy in myeloma.

### Benefits of the Randox IgM assay

- **Wide measuring range** of 0.23-3.77 g/l for the accurate detection of clinically important results
- **Automated immunoturbidimetric** assay eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox IgG assay on a wide range of biochemistry analysers
- **Complementary controls** and calibrators offering a complete testing package
- **Traceable to ERM DA470k/IFCC**

# Lipoprotein (a)

## What is Lipoprotein (a)?

Lp(a) is an LDL like particle with a cholesterol rich core and a molecule of apo B-100 linked by a disulphide bridge to the glycoprotein apo(a). Apo (a) is unique in that it is extremely heterogeneous in size (which is genetically predetermined) due to the Kringle 4 type 2 domain which can be present in up to 40 copies. The size heterogeneity of apo(a) affects to varying degrees the outcome of many commercially available Lp(a) kits, resulting in over estimation of samples containing large apo(a) molecules and an under estimation of samples containing small apo(a) molecules. Research has documented and shown the Randox method to be one of only a few to exhibit minimum size related bias.

## Clinical Significance

Lipoprotein (a) in combination with other lipid tests can provide clinicians with much needed additional information on an individual's risk of CVD. High levels of Lp(a) are known to occur in individuals with an otherwise normal lipid profile and as such it is thought to contribute to an increased risk of cardiovascular disease independent of other lipids. It is also of particular use in assessing the risk of coronary heart disease in specific populations as Lp(a) concentrations are genetically determined and vary with ethnic population.

Although not a routinely requested test the National Cholesterol Education Programme and the National Academy of Clinical Biochemistry recognise the usefulness of Lp(a) and recommend testing patients with a family history of premature CVD or those classified as moderate/ high risk. In June 2010, the European Atherosclerosis Society (EAS) also published a consensus paper recommending the widespread use of Lp(a) as a screening tool in those at intermediate or high risk of cardiovascular disease.

## Benefits of the Randox Lp(a) assay

- The Randox Lp(a) assay is one of the only methodologies on the market that detects the non-variable part of the Lp(a) molecule and therefore suffers minimal size related bias, providing more accurate and consistent results. The Randox Lp(a) kit is standardised to the WHO/IFCC reference material SRM 2B and is closest in terms of agreement to the ELISA reference method.
- Five point calibrators with accuracy-based assigned target values are provided which accurately reflect the heterogeneity of isoforms present in the general population
- Wide measuring range of 3-90 mg/dl for accurate detection of clinically important results
- Automated latex enhanced immunoturbidimetric assay eliminating the need for any dedicated equipment
- Measuring units available in nmol/L upon request
- Highly sensitive and specific method for the detection of Lp(a) in serum and plasma
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox Lp(a) assay on a wide range of biochemistry analysers
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- Lp(a) controls and calibrator offering a complete testing package

# Microalbumin

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## What is Microalbumin?

Kidney function may be assessed through measurement of albumin levels in the urine. Normal kidney function entails filtering of waste products from the blood across tiny capillaries in the glomerulus. Kidney malfunction results when the capillaries become blocked, resulting in a build-up of waste products in the blood and a loss of important proteins. Kidney deterioration is progressive and begins with small amounts of albumin leaking into the urine. This is known as microalbuminuria and indicates early signs of nephropathy. The term 'micro-' refers to low concentrations of urinary albumin.

Progression of kidney disease will lead to larger amounts of albumin leaking into the urine which may develop further to end stage renal disease. Kidney disease is a major concern in diabetic patients and early detection and treatment may slow the onset and progression of the condition.

## Clinical Significance

Albumin is one of the major plasma proteins. In normal circumstances, albumin molecules are too large to cross the glomerular basement membrane, therefore, albumin is usually present in very low concentrations in urine. Damage to the glomerular basement membrane can alter its permeability allowing albumin to enter the urine. Sustained elevations of urinary albumin concentrations are called microalbuminuria.

Microalbumin testing can identify individuals with diabetic nephropathy approximately 5-10 years earlier than proteinuria tests helping reduce the incidence of end-stage renal disease. It is recommended that patients at a high-risk of renal disease (hypertension and diabetes) are tested for microalbumin.

## Benefits of the Microalbumin assay

- **Excellent sensitivity** of 5.11 mg/l ensuring depleted albumin concentrations are detected
- **Calibrator supplied with the kit** simplifying the ordering process
- **Automated immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox microalbumin assay on a wide range of biochemistry analysers
- **Microalbumin control and calibrator** offering a complete testing package

# Myoglobin

## What is Myoglobin?

Myoglobin is an oxygen binding haem-protein found in cardiac and skeletal muscle. It is released into the circulatory system when muscle cells are damaged.

## Clinical Significance

Elevated levels of myoglobin is a strong indicator of muscle tissue damage and muscular inflammation. Myoglobin determination can be useful in the diagnosis of myocardial infarction, myositis and in the treatment of myopathy and muscular dystrophy.

### Benefits of the Microalbumin assay

- **Wide measuring range** of 20.1-725 ng/ml for the accurate detection of clinically important results
- **Automated latex enhanced immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox myoglobin assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package

# Rheumatoid Factor

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## What is Rheumatoid Factor?

The agglutination reaction between antibody coated red blood cells and rheumatoid arthritis (RA) sera, was first demonstrated by Waaler and Rose in 1940. The reaction has since been shown to be caused by certain factors in the RA sera. These rheumatoid factors (RF) are a heterogeneous group of high molecular weight auto-antibodies directed against the body's own immunoglobulins. They are produced by plasma cells present at sites of tissue injury. The initiating antigen is thought to be one or more viruses or viral antigens that persist in the joint tissues.

## Clinical Significance

Research has shown that both environmental and genetic factors can affect the production of RF with various biological properties. Although they may be found in all immunoglobulin classes, the RF most frequently detected is the IgM type; present in about 75% of adult patients with RA and about 10% of children with juvenile RA. RF has also been observed in the serum of patients with lupus erythematosus, hepatitis, liver cirrhosis, syphilis and various other conditions; but the RF titre is much lower than in RA.

### Benefits of the Microalbumin assay

- **Wide measuring range** of 6.72-104 IU/ml for the accurate detection of clinically important results
- **Accurate assessment of RF titre** (calibrant standardised against primary WHO material; 1st British Standard 64/2)
- **No interference from C1q complement**
- **Automated latex enhanced immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox RF assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package

# Soluble Transferrin Receptor (sTfR)<sup>NP</sup>

## What is sTfR?

Transferrin transports iron around the body, donating it to bodily cells by interacting with a specific membrane receptor, the transferrin receptor (TfR). The soluble transferrin receptor (sTfR) is a truncated form (shortened) of the transferrin receptor, formed as a result of proteolysis (the breakdown of proteins into smaller polypeptides or amino acids). A soluble form of the TfR (sTfR) has been identified in animal and human serum, circulating freely in the blood. The serum concentration of sTfR is directly proportional to the concentration of the membrane bound transferrin receptors.

## Clinical Significance

sTfR is a marker of iron status. In iron deficiency anaemia, sTfR levels are significantly increased, however, remain normal in acute phase conditions including: chronic diseases and inflammation. As such, sTfR measurement is useful in the differential diagnosis of anaemia: anaemia of chronic disease (ACD) or iron deficiency anaemia (IDA). In IDA, increased sTfR levels have been observed in haemolytic anaemia, sickle cell anaemia, B12 deficiency and functional iron deficiency in pregnancy. In ACD, sTfR levels do not correlate with iron status. This was observed in patients with chronic illnesses (cystic fibrosis and cancer), certain infections, autoimmune diseases (insulin-dependent diabetics) and inflammatory diseases. sTfR is a useful test where ferritin tests may be inconclusive. As ferritin is an acute phase reactant, levels will increase in response to inflammation. As sTfR is not an acute phase reactant, sTfR levels are not impacted by inflammation.

## Benefits of the Microalbumin assay

- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Latex Enhanced Immunoturbidimetric method** facilitating testing on biochemistry analysers and eliminating the need for dedicated equipment
- **Excellent measuring range** of 0.5 – 11.77 mg/L, for the comfortable detection of clinically important results
- **Excellent correlation** coefficient of  $r=0.977$  when compared against another commercially available methods
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox sTfR assay on a wide range of biochemistry analysers

# Transferrin

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## What is Transferrin?

Transferrin (siderophilin) is the principal iron binding and transport protein in human plasma and can bind two molecules of iron. The normal range for healthy adults is 200-380 mg/dl. Iron availability in the plasma regulates transferrin levels which increase when plasma iron is low.

## Clinical Significance

Transferrin levels increase during pregnancy and oestrogen administration and correlate closely with Total Iron Binding Capacity of serum. Plasma transferrin levels are associated with a range of conditions including anaemia, iron deficiency, inflammation or malignancy, liver disease, malnutrition and protein loss.

### Benefits of the Microalbumin assay

- **Wide measuring range** of 7.60-497 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox transferrin assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package

# Transthyretin (Prealbumin)

## What is Transthyretin?

Transthyretin, or prealbumin, may be referred to as thyroxin-binding prealbumin as it binds thyroxine and triiodothyronine. Transthyretin has a molecular mass of 55kDa and the prealbumin name is derived from its electrophoretic mobility, as it migrates faster than albumin on electrophoresis. It is manufactured in the liver hepatocytes and forms a complex with retinol-binding protein, to aid the transport of vitamin A.

## Clinical Significance

Transthyretin is a negative acute phase reactant and serum levels fall in inflammation, malignancy, cirrhosis of the liver and protein-wasting diseases of the gut or kidneys, owing to decreased synthesis. Elevated levels have been reported in Hodgkin's disease. Transthyretin is a good marker of visceral protein status and positive nitrogen balance.

### Early Detection of Malnutrition

Transthyretin is a specific clinical indicator of nutritional risk in the management of diseases such as HIV/AIDS, renal disease, diabetes, pneumonia and cancer. Nutritional assessment using transthyretin has also been effective in surgical cases, pre-surgical screening, fractures and wound healing.

### Transthyretin Screening

Transthyretin screening can lead to the early identification of patients with Protein Calorie Malnutrition (PCM) and implementation of diet therapy. Transthyretin screening is more specific than albumin for the identification of PCM risk.

## Benefits of the Microalbumin assay

- **Wide measuring range** of 2.3-65 mg/dl for the accurate detection of clinically important results
- **Automated immunoturbidimetric assay** eliminating the need for any dedicated equipment
- **Liquid ready-to-use reagents** for convenience and ease-of-use
- **Stable to expiry** when stored at +2 to +8°C
- **Applications available** detailing instrument-specific settings for the convenient use of the Randox transthyretin assay on a wide range of biochemistry analysers
- **Complementary controls and calibrators** offering a complete testing package

# Ordering Information

Description	Method	Size	Cat. No.
Anti-Streptolysin O (ASO)	LEI ♦	RI 2 x 9ml, R2 2 x 14ml	LO3998
Anti-Streptolysin O (ASO)	LEI ♦	RI 2 x 8.7ml, R2 2 x 12ml	LO8015
Anti-Streptolysin O (ASO)	LEI ♦	RI 1 x 7.7ml, R2 1 x 11.2ml	LO8305
Apolipoprotein A-I	Immunoturbidimetric ♦ (C)	RI 4 x 40ml, R2 4 x 17ml	LP2116
Apolipoprotein A-I	Immunoturbidimetric ♦	RI 4 x 30ml, R2 4 x 12ml	LP3838
Apolipoprotein A-I	Immunoturbidimetric ♦	RI 2 x 8.6ml, R2 2 x 4.8ml	LP8007
Apolipoprotein A-II	Immunoturbidimetric ♦	RI 2 x 11ml, R2 2 x 5ml	LP3867
Apolipoprotein B	Immunoturbidimetric ♦ (C)	RI 4 x 50ml, R2 4 x 9ml	LP2117
Apolipoprotein B	Immunoturbidimetric ♦	RI 4 x 20ml, R2 4 x 6ml	LP3839
Apolipoprotein B	Immunoturbidimetric ♦	RI 2 x 8.7ml, R2 2 x 3.9ml	LP8008
Apolipoprotein C-II	Immunoturbidimetric ♦	RI 2 x 11ml, R2 2 x 5ml	LP3866
Apolipoprotein C-III	Immunoturbidimetric ♦	RI 2 x 11ml, R2 2 x 5ml	LP3865
Apolipoprotein E	Immunoturbidimetric ♦	RI 2 x 11ml, R2 2 x 5ml	LP3864

# Ordering Information

Description	Method	Size	Cat. No.
Complement C3	Immunoturbidimetric ♦	RI 3 x 20ml, R2 3 x 6ml	CM3845
Complement C4	Immunoturbidimetric ♦	RI 3 x 20ml, R2 3 x 6ml	CM3846
CRP	Immunoturbidimetric ♦	RI 7 x 20ml, R2 2 x 12ml	CP7950
CRP	Immunoturbidimetric ♦	RI 6 x 66ml, R2 6 x 13ml	CP9742
CRP	Immunoturbidimetric ♦	RI 6 x 20ml, R2 3 x 9ml	CP3826
frCRP	LEI ♦	RI 2 x 11ml, R2 2 x 11ml	CP3847
frCRP	LEI ♦	RI 4 x 50ml, R2 4 x 50ml	CP3849
frCRP	LEI ♦	RI 2 x 13ml, R2 2 x 13ml	CP8028
frCRP	LEI ♦	RI 4 x 10ml, R2 4 x 10ml	CP8315
hsCRP	LEI ♦	RI 2 x 11ml, R2 2 x 11ml	CP3885
Cystatin C	LEI ♦	RI 2 x 17.6ml, R2 2 x 6.1ml	CYS4004
Ferritin	LEI ♦	RI 1 x 40ml, R2 1 x 20ml	FN3452
Ferritin	LEI ♦	RI 4 x 40ml, R2 4 x 20ml	FN3453

# Ordering Information

Description	Method	Size	Cat. No.
Ferritin	LEI ♦	RI 3 x 20ml, R2 3 x 11ml	FN3888
Ferritin	LEI ♦	RI 4 x 16.2ml, R2 4 x 10.2ml	FN8037
Haptoglobin	Immunoturbidimetric	RI 1 x 12ml, R2 2 x 3.825ml	HP3886
Haptoglobin	Immunoturbidimetric ♦	RI 2 x 10.2ml, R2 2 x 4.2ml	HP8151
IgA	Immunoturbidimetric ♦	RI 3 x 20ml, R2 3 x 14ml	IA3832
IgA	Immunoturbidimetric ♦	RI 5 x 8.7ml, R2 5 x 3.9ml	IA8046
IgE	Immunoturbidimetric ♦	RI 1 x 8ml, R2 1 x 5ml	IE7308
IgE	Immunoturbidimetric ♦	RI 1 x 8.7ml, R2 1 x 5.7ml	IE8152
IgG	Immunoturbidimetric ♦	RI 3 x 20ml, R2 3 x 14ml	IG3833
IgG	Immunoturbidimetric ♦	RI 4 x 8.7ml, R2 4 x 3.9ml	IG8044
IgM	Immunoturbidimetric ♦	3 x 20ml	IM3834
IgM	Immunoturbidimetric ♦	RI 4 x 8.7ml, R2 4 x 3.9 ml	IM8045
Lipoprotein (a)	LEI	RI 1 x 30 ml, R2 1 x 15ml	LP2757

# Ordering Information

Description	Method	Size	Cat. No.
Lipoprotein (a)	LEI	RI 1 x 10 ml, R2 1 x 6ml	LP3403
Lipoprotein (a)	LEI	RI 2 x 8.7ml, R2 2 x 5.8ml	LP8054
Microalbumin	Peg Enhanced Immunoturbidimetric ♦ (C)	RI 1 x 60ml, R2 1 x 7ml	MA2426
Microalbumin	Peg Enhanced Immunoturbidimetric	RI 6 x 20ml, R2 3 x 8ml	MA3828
Microalbumin	Peg Enhanced Immunoturbidimetric ♦	RI 2 x 20ml, R2 2 x 6.6ml	MA8056
Microalbumin	Peg Enhanced Immunoturbidimetric ♦	RI 1 x 20ml, R2 1 x 4.6ml	MA8325
Microalbumin	Peg Enhanced Immunoturbidimetric ♦	RI 3 x 20ml, R2 3 x 7.5ml	MA4072
Microalbumin	Peg Enhanced Immunoturbidimetric ♦	RI 1 x 20ml, R2 3 x 7.8ml	MA8388
Microalbumin	Peg Enhanced Immunoturbidimetric ♦	RI 2 x 20ml, R2 2 x 9ml	MA8160
Myoglobin	LEI ♦	RI 1 x 9.5ml, R2 1 x 4.5ml	MY2127
Rheumatoid Factor	LEI ♦	RI 2 x 20ml, R2 2 x 8ml	RF3836
Rheumatoid Factor	LEI ♦	RI 2 x 8.7ml, R2 2 x 4.7ml	RF8063
Rheumatoid Factor	LEI ♦	RI 1 x 11.7ml, R2 1 x 5.7ml	RF8345

# Ordering Information

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Description	Method	Size	Cat. No.
Soluble Transferrin Receptor (sTfR)	LEI	R1 1 x 9.0ml, R2 1 x 5.8ml	TF10159
Transferrin	Immunoturbidimetric ♦	R1 6 x 20ml, R2 3 x 14ml	TF3831
Transthyretin (Prealbumin)	Immunoturbidimetric ♦	R1 6 x 20ml, R2 3 x 11ml	PA3843

# Immunoturbidimetry VS Nephelometry

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Immunoturbidimetry methods have become the main technique for performing protein tests. The transition from nephelometry has been cautious but is increasing as laboratories enjoy the comparability and flexibility of immunoturbidimetry.

Immunoturbidimetry and nephelometry both measure the turbidity of a sample to determine the level of an analyte. Upon addition of the assay reagent, antibodies and antigen cluster to form an immune complex that precipitates, increasing the turbidity of the sample. When light is passed through the reaction solution, some light is scattered by the sample, some light is absorbed by the sample and the rest passes through the sample.

Immunoturbidimetry measures the absorbance of the light by the sample, nephelometry measures the light scattered at a fixed angle. The level of analyte is determined by comparison with a calibrator of known concentration.

Immunoturbidimetry is ideal for the detection of proteins, where the analyte concentration is inversely proportional to the transmitted light signal. Historically nephelometry has been more sensitive than conventional immunoturbidimetry. In latex-enhanced immunoturbidimetry, inert microscopic particles enlarge the immune complexes, amplifying the reaction and significantly increasing the sensitivity of the reaction.

Nephelometers are dedicated analysers only capable of performing this type of assay.

In addition, they:

- have high consumable costs
- require highly trained personnel

Immunoturbidimetric tests are carried out on routine biochemistry analysers that are:

- versatile
- fast
- cost-effective
- offer longer reagent stability
- sensitive

The main advantage of nephelometry was its sensitivity; however latex-enhanced immunoturbidimetry has closed this gap. Immunoturbidimetric tests are an increasingly accepted alternative to nephelometry for specific protein assays, and studies have shown a close correlation between Randox immunoturbidimetric tests and nephelometry.

# A-Z portfolio of reagents

Albumin	G-6-PDH	Urea
Aldolase	Gamma GT	Uric Acid
Alkaline Phosphatase	GLDH	Urinary Protein
Alanine Aminotransferase (ALT)	Glucose	Valproic Acid
Ammonia	Glutamate	Zinc
Amylase	Glutamine	
Amylase (Pancreatic)	Glutathione Peroxidase (Ransel)	
Anti-Streptolysin O (ASO)	Glutathione Reductase	
Apolipoprotein A-I	Glycerol	
Apolipoprotein A-II	Haemoglobin	
Apolipoprotein B	Haptoglobin	
Apolipoprotein C-II	HbA1c	
Apolipoprotein C-III	HbA1c II	
Apolipoprotein E	Homocysteine	
Aspartate Aminotransferase (AST)	D-3-Hydroxybutyrate (Ranbut)	
$\beta_2$ Microglobulin	IgA	
Bile Acids	IgE	
Bilirubin Direct	IgG	
Bilirubin Total	IgM	
Calcium	Iron	
Carbamazepine	L-Lactate	
Ceruloplasmin	Lactate Dehydrogenase (L-P)	
Chloride	Lactate Dehydrogenase (P-L)	
Cholesterol (Total)	Lipase	
Cholesterol (HDL)	Lipoprotein (a)	
Cholesterol (HDL3)	Magnesium	
Cholesterol (LDL)	Microalbumin	
Cholesterol (sdLDL-C)	Myoglobin	
Cholinesterase	NEFA (Non-Esterified Fatty Acids)	
CK-MB	Phenobarbital	
CK-NAC	Phenytoin	
CO <sub>2</sub> Total	Phosphorus	
Complement C3	Potassium	
Complement C4	Rheumatoid Factor (RF)	
Copper	Sodium	
Creatinine	Soluble Transferrin Receptor (sTfR)	
CRP	sPLA <sub>2</sub> -IIA	
CRP (Canine)	Superoxide Dismutase (Ransod)	
CRP (Full Range)	Syphilis	
CRP (High Sensitivity)	Total Iron Binding Capacity (TIBC)	
Cystatin C	Total Antioxidant Status (TAS)	
Digoxin	Total Protein	
Ethanol	Transferrin	
Ferritin	Transthyretin (Prealbumin)	
Fructosamine	Triglycerides	

# Randox – Global Diagnostic Solutions Provider

Randox has been supplying laboratories worldwide with revolutionary diagnostic solutions for over 40 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.

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Renowned for quality and reliability, the RX series combines robust hardware and intuitive software with the world leading RX series test menu comprising an extensive range of high quality reagents including routine chemistries, specific proteins, lipids, therapeutic drugs, drugs of abuse, antioxidants and diabetes testing. The RX series offers excellence in patient care delivering unrivalled precision and accuracy for results you can trust, guaranteeing real cost savings through consolidation of routine and specialised tests onto one single platform.

## INTERNAL QUALITY CONTROL



Acusera third party quality controls are made using the highest quality material of human origin, ensuring they react like a real patient sample. With more than 390 analytes available across the Acusera range we can uniquely reduce the number of controls required while reducing costs and time. Our product range includes clinical chemistry, immunoassay, urine, immunology and more. Qnistics molecular controls for infectious disease testing are designed to meet the demand of today's molecular diagnostics laboratory while effectively monitoring the entire testing process. Our whole pathogen molecular controls comprise hundreds of characterised viral, bacterial and fungal targets.

## EXTERNAL QUALITY ASSESSMENT



RIQAS is the world's largest international EQA scheme with more than 50,000 participants worldwide. 33 comprehensive, yet flexible programmes cover a wide range of clinical diagnostic testing including chemistry, immunoassay, cardiac, urine, serology and more. Our programmes benefit from a wide range of concentrations, frequent reporting, rapid feedback and user-friendly reports. The QCMD range of molecular infectious disease EQA programmes feature a whole pathogen matrix ensuring a true test of patient sample analysis. With access to over 90 programmes including blood borne viruses, respiratory diseases, multi-pathogen infections and more, there is something for every laboratory.

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In 2002, Randox invented the world's first, Biochip Array Technology, offering highly specific tests, coupled to the highly sensitive chemiluminescent detection, providing quantitative results instantly changing the landscape of diagnostic testing forever. The Randox Evidence Series of multi-analyte immunoanalyser's provide an unrivalled increase in patient information per sample offering diagnostic, prognostic and predictive solutions across a variety of disease areas with a highly advanced clinical and toxicology immunoassay test menu including cardiac, diabetes, drugs of abuse, metabolic and renal markers.

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