

RANDOX

Veterinary Diagnostic Solutions

The complete package for veterinary laboratories

RANDOX

Randox is an international diagnostics company with more than 30 years experience in the veterinary diagnostics industry. High quality and reliable results are guaranteed.

Our extensive product portfolio includes diagnostic reagents, quality controls, external quality assessment (EQA) and the RX series of clinical analysers specifically designed to accurately diagnose and effectively monitor the general health and well-being of a diverse range of animals, including companion animals, livestock, exotic species and birds. At Randox we are committed to quality at every stage of the production process, from research and development to customer support. Our comprehensive range of products is manufactured at our state-of-the-art manufacturing plant in the UK and satisfies the requirements of ISO 13485:2003, the In Vitro Diagnostic Medical Devices Directive 98/79/EC, the Canadian Medical Device Regulations and the Quality System Regulation as set out in Part 820 of Title 21 of the Code of Federal Regulations.



Randox Reagents

High Quality Reagents - reliable and accurate results for veterinary testing

Randox reagents are recognised internationally as being of the highest quality, producing accurate and precise results. Randox has built up considerable experience as a supplier to the veterinary market and offers a broad range of tests for veterinary laboratories.

- Extensive test menu covering general health, anti-inflammatory monitoring, pre-anaesthesia and equine health
- Wide range of high quality specialised tests including Bile Acids, Fructosamine, NEFA, GLDH, HDL and LDL
- Unique veterinary tests available including Glutathione Peroxidase and D-3-Hydroxybutyrate
- Comprehensive range of liquid ready-to-use reagents requiring little or no preparation
- Flexible sample options available including serum, plasma and whole blood
- Variable pack sizes available to suit laboratories of all sizes
- Extensive validation process ensuring optimum performance and accurate results
- · Bar-coded reagents offer laboratories convenience and ease of use

Our complete range of veterinary reagents consists of over 100 tests. Some of the most important parameters are listed below:

ALT

Elevated levels of ALT can indicate liver damage as well as nonhepatic disorders including inflammation of the gastrointestinal tract, haemolytic anemia and heart failure. Dogs undergoing treatment with anticonvulsants, or those who have an inhibited flow of bile may also present with high levels of ALT.

Key Features

- Liquid reagents available
- Wide measuring range 9.70 666U/L
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

Bile Acids

Bile Acids is a highly sensitive and specific test used to assess liver function, detect portosystemic venous shunts and monitor response to treatment. The test is suitable for use with a wide range of animals, especially birds with whom other tests correlate poorly with liver disease.

Key Features

- Liquid ready-to-use reagents stable to expiry date
- Wide measuring range 3.20 188µmol/l
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

Creatinine

Creatinine measurements are frequently used in veterinary medicine as an indirect marker of renal function and glomerular filtration rate.

Key Features

- Liquid ready-to-use reagents available
- Jaffe method linear up to 2844 µmol/l
- Enzymatic method linear up to 1760 µmol/l
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

Creatine Kinase (CK)

High levels of CK indicate muscle trauma or damage due to seizures, surgery, bruises, inflammation, nutritional and degenerative diseases. Low levels are not clinically relevant.

Key Features

- Wide measuring range 8.3 1182 I/L
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

CRP - Canine

CRP is a major acute phase protein in dogs with increased levels observed in several conditions including infectious diseases, immunemediated diseases, neoplasia, inflammatory bowel disease and injury.

Key Features

- Liquid ready-to-use reagents stable up to expiry date when stored at 2-8°C
- No significant difference in performance when compared to the ELISA reference method
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

D-3 Hydroxybutyrate (Ranbut)

D-3 Hydroxybutyrate is a highly sensitive and specific marker of ketosis. Ketosis occurs during times of high energy demand such as milk production and pregnancy. In dairy cows, ketosis results in decreased milk yields, weight loss, infertility, excitability, and loss of appetite leading to financial loss for dairy farmers. In new born piglets, incorrect feeding may lead to hypoglycaemia; the detection of ketosis will alert the farmer to any problems and allow feeding to be corrected.

Key Features

- Standard supplied with the kit
- Working reagent stable for seven days at 2-8°C
- Wide measuring range 0.100 5.75mmol/l
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

Fructosamine

In veterinary medicine blood glucose measurements alone can be misleading and as such, a confirmatory test must be carried out when diagnosing diabetes. Fructosamine levels do not appear to be influenced or affected by stress making it the ideal test to differentiate between temporary hyperglycaemia and prolonged hyperglycaemia.

Gamma-glutamyltransferase (γ GT)

 γGT is a particularly useful marker of liver disease in horses and ruminants. It is also a sensitive and specific marker of cholestasis and bile duct proliferation.

Key Features

- Liquid ready-to-use reagents
- Wide measuring range 8.12 1803 µmol/l
- Suitable for manual, semi-automated and automated use
- Fully automated protocols available for a wide range of chemistry analysers

Key Features

- Liquid reagents available
- Wide measuring range 7.6 1285 U/L
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

Glutathione Peroxidase (Ransel)

In veterinary medicine Ransel can be used to diagnose animals suffering from diseases related to selenium deficiency eg. white muscle disease in sheep and goats. Ransel measures glutathione peroxidase which has a direct correlation with selenium - an essential trace element involved in the aetiology of several diseases.

Non-Esterified Fatty Acids (NEFA)

Triglycerides are broken down in response to increased energy demand. NEFA molecules are released from the breakdown of triglycerides and transported in the blood where they are used as an energy source throughout the body. NEFA measurements can be used to indicate a negative energy balance especially in periparturient dairy cows. A negative energy balance can lead to problems in cattle including fatty liver disease, ketosis and infertility.

Key Features

- Wide measuring range 74 900 U/L
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

Key Features

- Standard supplied with the kit
- Working reagent stable for seven days at 2-8°C
- Wide measuring range 0.072 2.24mmol/l
- Suitable for manual, semi-automated and automated use
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- Fully automated protocols are available for a wide range of chemistry analysers

Total Protein

Elevated levels of total protein in the blood are common in dehydrated cats and dogs. High levels are also associated with inflammation and paraproteinemia. Decreased levels are often due to congestive heart failure, protein-losing nephropathy/enteropathy, hemorrhage and viral conditions in horses.

Key Features

- Liquid reagents available
- Wide measuring range 4.76 130 g/l
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

Uric Acid

Uric acid can build up in the urinary tract of dogs resulting in urinary stones and can subsequently lead to serious health complications. Urinary stones are extremely common in male dalmatians due to a genetic anomaly.

Key Features

- Liquid reagents available
- Wide measuring range 0.599 24.5 mg/dl
- Suitable for manual, semi-automated and automated use
- Fully automated protocols are available for a wide range of chemistry analysers

Randox Reagents

Other reagents available from Randox

General Health Profile

Albumin Alkaline Phosphatase Amylase Calcium Cholesterol Glucose Lipase Total Bilirubin Direct Bilirubin Phosphorous Potassium Sodium Urea

Renal & Liver Profile

Ammonia Copper CRP Urinary Protein Zinc

Lipids

HDL LDL Triglycerides

Pre-Anaesthetic Profile

Alkaline Phosphatase Cholinesterase Glucose Urea

Anti-inflammatory Monitoring

Alkaline Phosphatase AST Urea

Electrolytes

Chloride Potassium Sodium

Other

Aldolase CO₂ GLDH Glycerol Iron Lactate Therapeutic Drugs

Equine Profile

Albumin Alkaline Phosphatase AST Calcium CK-NAC Glucose LDH Total Bilirubin Direct Bilirubin Urea

Diabetes

Fructosamine

Antioxidants

Glutathione Reductase Superoxide Dismutase (Ransod) Total Antioxidant Status (TAS)

Coagulation

Activated Partial Thromboplastin Time (APTT) Antithrombin III (AT III) Fibrinogen Prothrombin Time (PT) Thrombin Time (TT)



Clinical Chemistry Analysers

RX imola



For larger throughput veterinary laboratories

The RX imola is a fully automated, random access bench top chemistry analyser offering excellent performance, reliability and convenience. With a throughput of 400 photometric or 240 ISE tests per hour and a combined throughput of 560 tests per hour the RX imola is ideally suited to high throughput veterinary laboratories and veterinary testing services.

The RX imola has an extremely flexible and comprehensive test menu, allowing consolidation of both specialised and routine tests. Designed to be efficient, dependable and easy to use, the RX imola allows you to boost productivity and reduce costs whilst delivering consistent high quality results.

RX daytona*



For use in larger laboratories

The RX daytona plus provides high quality testing on a compact, easy to use clinical chemistry analyser for accurate results you can trust.

The RX daytona plus is a bench-top, fully automated, random access clinical chemistry analyser capable of performing routine and novel testing and emergency STAT sampling. With the world leading RX series test menu, the RX daytona plus provides excellent opportunity for consolidation and is perfect for use as a back up analyser in the larger laboratory.

RX monza



A thoroughbred in veterinary diagnostics

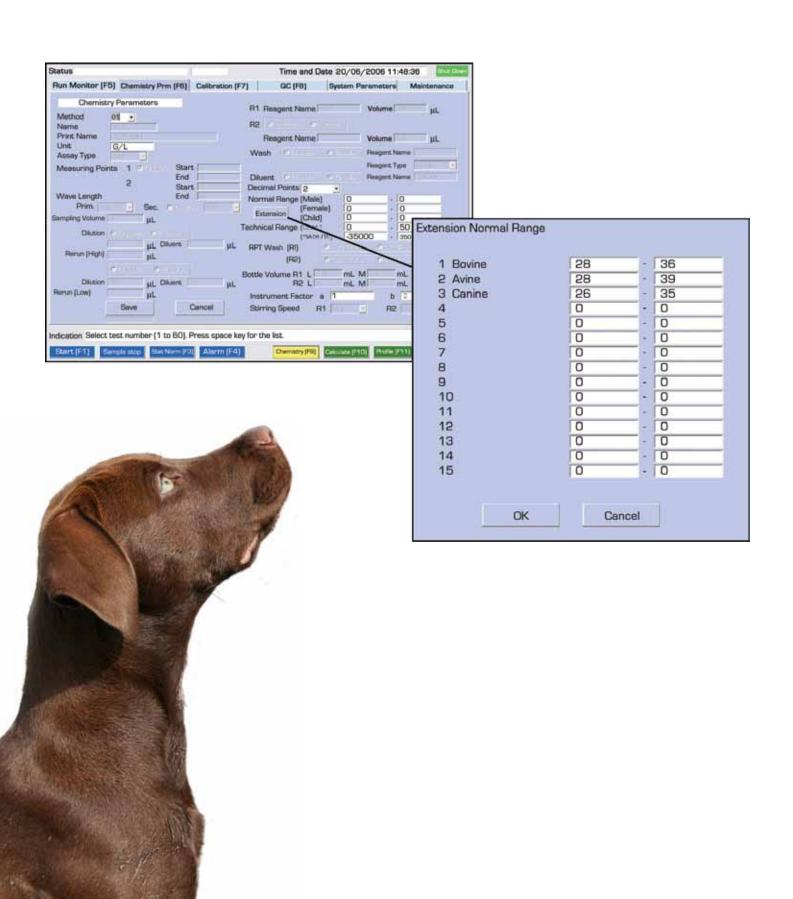
The RX monza is a leader in its field. With its extensive test menu covering both clinical chemistry, coagulation and unrivalled flexibility it is ideal for in-house veterinary testing.

As a semi-automated, clinical analyser the RX monza offers cost effective testing to any veterinary practice. Increased testing options also allow you to offer a faster, more extensive service eliminating the need for costly external testing.

The RX monza comes with an integral screen, keyboard and printer. Its compact size means it will not take up valuable space in your practice. Simple yet versatile, the RX monza is capable of carrying out all your diagnostic requirements. The small sample volume (10 - 100 μ I) is particularly beneficial when analysing samples from small animals.

Clinical Chemistry Analysers

Fig. 1: Input of species-specific reference ranges



Multiplex residue screening, ELISA screening kits and Clean up columns

With over 30 years experience in the market, Randox is dedicated to the development of high quality and accurate drug residue testing solutions for a wide range of sample matrices. Drug residue screening is not only important in food producing animals but also in the racing industry to test for illegal performance enhancing drugs.

The legitimate treatment of disease with antibiotics reduces mortality in livestock, however serious health concerns exist about the presence of antimicrobial compounds in food, and the development of antibiotic resistant strains of micro-organisms due to inappropriate use in food producing animals.

Growth-promoting drugs are another major concern in food producing animals and have been used by the livestock industry for over 30 years to improve an animal's ability to efficiently use nutrients and produce leaner, more affordable meat. Concerns first arose when a number of incidents linked hormone residues in meat with various medical conditions after consumption.

Global racing authorities are reliant upon drug residue screening solutions to maintain the integrity of the racing industry. An increasing number of compounds are being screened regularly to protect the safety of animals and ensure races are won on the animals' natural ability.

As a consequence of the abuse of drugs within both the food production and animal racing industries, the practice of using high doses of antibiotics, growth promoters and drugs of abuse is strictly regulated.



Randox ELISA tests for drug residue analysis

Randox ELISA kits provide a simple, highly specific and cost effective screening method for a wide range of drug residues. Our ELISA products are suitable for use with multiple sample matrices including urine, serum/plasma, tissue, muscle, feed, milk, honey, feather, bile, hair, egg and retina.

- Intra-assay precision <10%, Inter-assay precision <15%CV
- Favourable comparison with confirmatory methods
- Results within 90 minutes/40 samples
- No expensive or specialised equipment required
- Can be fully automated

ELISA products

Antimicrobial Sulphaguinoxaline

Sulphadiazine Sulphamethazine Sulphamethoxazole Chloramphenicol β-Lactams Quinolones Flumequine AOZ AMOZ AHD SEM Streptomycin Tetracyclines

Anabolic Steroids Trenbolone 19-Nortestosterone Boldenone Stanozolol

β-Agonists Clenbuterol/Brombuterol β-agonists Ractopamine

Drugs of Abuse Ketamine (Norketamine)

Tri-phenylmethane Dyes Leucomalachite Green

NSAIDs

Corticosteroids (Dexamethasone, Flumethasone, Betamethasone) Phenylbutazone Flunixin

Oestrogenic Stilbenes (Diethylstilbestrol, Hexestrol, Dienestrol) Zeranol

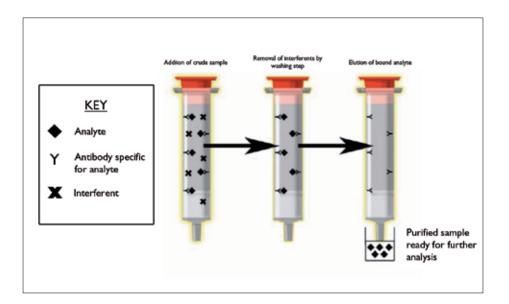


ELISA tests and immunoaffinity columns

Immunoaffinity columns for sample purification

Sample clean up is an essential part of drug residue testing, whether it is performed by ELISA, LC-MS or any other technique. To complement our range of ELISA kits we also offer a wide range of Immunoaffinity Columns for sample purification.

- Very efficient and highly specific
- Results in higher analyte recovery
- Multi-analyte allowing simultaneous sample clean up
- Improved safety and reduced waste
- Each column can be used up to 10 times considerably reducing costs
- Convenient and easy-to-use. All columns are available in packs of five with buffers for storage and equilibration included
- Easily automated



Products available

- Clenbuterol/β-agonists (Clenbuterol, Salbutamol, Mabuterol, Mapenterol, Terbutaline, Cimaterol, Perbuterol, Carbuterol, Brombuterol, Methylclenbuterol)
- Corticosteroids (Dexamethsone, Betamethasone, Flumethasone)
- Trenbolone and 19-Nortestosterone
- Stilbenes (Diethylstilbestrol, hexestrol, dienestrol)
- Zeranol
- Growth Promoters-multi-analyte column (for use with Growth Promoter multiple matrix biochip array)

Biochip Array Technology

evidence-**INVESTIGATOR**



Innovative Biochip Array Technology

Randox has developed a unique multiplex screening platform based on Biochip Array Technology (BAT) for the simultaneous detection of multiple drug residues from a single sample. The Evidence Investigator is the world's first multi-analyte semi-quantitative drug residue analyser

Multiplex screening offers the following benefits:

- Multiple results from a single sample
- Cost effective due to minimal consumables and service requirements
- Reduced labour and faster turnaround times
- Up to 45 samples or 675 tests can be processed in under two hours
- Minimal technical expertise required
- Extensive test menu of drug residues
- Suitable for use with multiple sample matrices including honey, feed, milk, urine and tissue
- Same sample preparation method can be applied across a number of our arrays

Applicable to multiple matrices



Tissue

Honey



Milk







Feed

Drugs of Abuse and Veterinary Drug Residue Arrays

Anthelmintics Array

Albendazole (Generic) Albendazole 2-amino sulphone Avermectins (Generic) Levamisole * Moxidectin * Thiabendazole Triclabendazole

Antimicrobial Array I

Sulphachlorpyridazine Sulphadiazine Sulphadoxine Sulphadoxine Sulphamerazine Sulphamethazine Sulphamethoxazole Sulphamethoxypyridazine Sulphamonomethoxine Sulphapyridine Sulphaquinoxaline Sulphathiazole Sulphathiazole Trimethoprim

Antimicrobial Array II

Ceftiofur Florphenicol/ Thiamphenicol Quinolones (generic) Streptomycin Tetracyclines (generic) Tylosin/ Tilmicosin Antimicrobial Array III AHD AMOZ AOZ SEM Chloramphenicol

Drugs of Abuse I

Amphetamine Barbiturates Benzodiazepine I Benzodiazepine II Cannabinoids Cocaine Methadone Methamphetamine Opiates Phencyclidine

Drugs of Abuse I Plus

Amphetamine Barbiturates Benzodiazepine I Benzodiazepine II Buprenorphine Cannabinoids Cocaine MDMA Methadone Methamphetamine Opiates Phencyclidine Tricyclic Antidepressants

Drugs of Abuse II

Buprenorphine Fentanyl Generic Opioids Ketamine LSD MDMA Methaqualone Oxycodone I Oxycodone II Propoxyphene.

Growth Promoter Rapid

β-Agonists Boldenone Corticosteroids Ractopamine Stanozolol Trenbolone Zeranol

Growth Promoter

Multiple Matrix β-Agonists Boldenone Corticosteroids Nandrolone Ractopamine Stanozolol Stilbenes Trenbolone Zeranol

Synthetic Steroids

I7β-Clostebol Ethinylestradiol Gestagens (Generic) Methandriol Methyltestosterone

Coming Soon

Drugs of Abuse Array III Drugs of Abuse Array IV Antimicrobial Array IV Amphetamines Array Coccidiostats Array β-Agonists Array Anti-inflammatory Array β-Lactams Array

* In development

Drug Residue Antibodies also available

Randox is a recognised primary manufacturer of a wide range of high quality, cost effective polyclonal antibodies, monoclonal antibodies and conjugates

- High sensitivity
- Excellent specificity to target compound
- Detailed cross-reactivity profiles
- Stable when stored at -20°C
- Excellent reproducibility between lot numbers
- Corresponding HRP labelled conjugates (tracers) available
- Wide range available including Growth Promoters, Anti-inflammatory, Anti-parasitic, and Antimicrobial drugs

Quality Controls

aQusera



Quality Control Solutions

Randox is one of the largest manufacturers of quality controls in the world, ensuring high quality reliable results. The Randox Acusera range of human and bovine-based quality control materials is ideally suited to veterinary laboratories due to the inclusion of commonly used veterinary parameters such as D3-Hydroxybutyrate, NEFA, Bile acids and Lactate.

- Multi-analyte controls allow effective consolidation and significant cost savings
- Choose between assayed and unassayed bovine-based controls
- Our bovine chemistry control contains an impressive 45 parameters in a single vial
- Three levels available covering a variety of analytical levels
- Suitable for use on a wide range of veterinary analysers
- Multi-analyte calibrators also available

RIQAS



External Quality Assessment (EQA)

The Randox International Quality Assessment Scheme (RIQAS) is the largest global EQA scheme in the world, with many veterinary laboratories using this service to ensure the quality and reliability of their results.

RIQAS supplies blind samples to ensure accuracy and precision and help you meet all your regulatory obligations.

"In addition to internal procedures, quality assurance by reference to external laboratories or samples should be routinely undertaken and results documented." - from the current RCVS Practice Standards Scheme





Interlaboratory Data Management

Randox Acusera 24.7 is a web based internal quality control and peer group reporting package, designed to complement and support the Acusera range of quality control sera. An effective IQC and peer group reporting scheme will help improve your laboratories analytical performance, achieve accreditation and meet regulatory requirements. Peer group data is updated every 24 hours providing laboratories with access to peer group reports and enabling extensive interlaboratory comparison.

- Advanced statistical analysis
- Unrivalled peer group review
- Comprehensive reports

Diagnostic Reagents

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