RX MODENA

A FULLY AUTOMATED CLINICAL CHEMISTRY ANALYSER CAPABLE OF PERFORMING UP TO 1200 TESTS PER HOUR





>> THE RX MODENA IS A FULLY AUTOMATED, CLINICAL CHEMISTRY ANALYSER, THAT PROMISES TO REVOLUTIONISE YOUR LABORATORY



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>> BENEFITS

The RX modena is a high throughput, floor standing clinical chemistry analyser, capable of performing up to 1200 tests per hour including ISE. With the ever expansive, unrivalled RX series test menu, the RX modena offers a winning combination for large multi-disciplinary laboratories. Icon based, interactive touch-screen technology offers an easy to use solution. The RX modena presents a new class of efficiency without compromising on the precision, reliability and accuracy that the RX series is famed for.

















TEST MENU & CONSOLIDATION

Expand your testing capabilities on one efficient platform

Extensive dedicated test menu, including; routine chemistries, lipids, antioxidants, cardiac and diabetes testing allows laboratories to expand their testing capabilities and bring more testing in-house reducing additional costs of sending tests out.

Direct, on-board, HbA1c testing capabilities provide many time saving benefits in the laboratory. As there is no incubation step required HbA1c tests can be performed immediately, performing QC and Calibration checks is quicker as only one assay is being tested, and offline calculations are not needed enabling faster recovery times.

ACCURATE RESULTS

Achieve accurate patient results first time, every time

The RX modena has two reagent pipettes and a sample pipette to ensure minimal carryover and reduce testing errors.

Dual five speed stirrers provide

optimised mixing for each assay.

Serum indices detect lipaemic, icteric
and haemolytic samples.

High quality results save operator time avoiding unnecessary additional costs of repeat testing reducing the possibility of patient misdiagnosis.

UNRIVALLED PERFORMANCE

Reliability ensures no interruption to workflow

Sensitive clot detection sensor detects clots such as fibrin at the sample pipette. On-board cuvette checking function ensures only clean and viable reaction vessels are used.

Built in **inventory management** system automatically calculates remaining reagent volume and the number of tests available.

Superior performance means minimal downtime and swift reporting of results.





QUALITY CONTROL

Developed to improve confidence in your results

Generation of Levey-Jennings
charts, calibration curves and QC
statistics for reliable results.
Users can view QC history.

7 different calibration options are available including; Factor, Linear, Point-to-Point, Log-Logit, Exponential, Spline and Spline 2.

Unrivalled QC capabilities put **patient safety** at the centre of your laboratory.





FLEXIBILITY & VERSATILITY

Increased functionality maximises testing capabilities

13 wavelengths (340nm – 800nm) can be generated via a diffraction grating ensuring a multitude of chemistries are possible on one system.

Continuous loading hatch allows samples to be analysed quickly and easily during a run, enhancing productivity.

Barcode readers for both sample and reagent identification.

STAT samples can be added and prioritised during a run saving time when it matters most.





COST SAVINGS

Smart technology designed to avoid additional costs

Simple twice yearly preventative maintenance reduces the likelihood of analyser downtime.

Extensive test menu allows consolidation of testing, and the ability to run specific proteins removes the need for a separate nephelometry system.

Economic platform with **low water** consumption of only 20 litres per hour



>> SYSTEM OVERVIEW



REAGENT CAROUSEL

The RX modena reagent carousel has 100 cooled positions for $50 \times 70 \text{ml} \& 50 \times 20 \text{ml}$ reagent bottles. An automatic barcode will identify the reagents added to the carousel which will be cooled between 8°C and 15°C to allow for a greater on-board stability.



CUVETTES

On-board the RX modena there are 153 semi-permanent cuvettes with a life span of 3-6 months. Cuvette check function ensures that only clean and viable reaction vessels are used. The user will be notified when cuvettes are required to be replaced.



WASH STATION

A 7 stage washing process includes acid, alkali and pure water, wash steps.

Stations I-5 have liquid level sensors to prevent cuvette overflows. The washing unit washes cuvettes before and after measurement to ensure accurate results each time.



SAMPLE CAROUSEL

The RX modena has 94 sample positions available and up to 10 positions for calibrators & controls. STAT functionality allows for the addition of emergency samples when required. An on-board barcode scanner will identify the sample being tested.



MONITOR

Interactive touchscreen technology with Windows® based software allows the user to easily navigate through the analyser software. The RX modena monitor is attached to the analyser via an extendable arm and is fully adjustable for the users convenience whilst testing.



CONTINUOUS LOADING

Continuous loading is facilitated through a hatch on the analyser. The sample carousel is made up of removable baskets. The software will detect a free space for the user to insert the basket allowing samples to be added quickly and easily during a run.

>> THE RX SERIES TEST MENU

CLINICAL

AUTOIMMUNE:

Complement Component 3
Complement Component 4

CRP

CRP Full Range (0.3-160mg/l)

CRP High Sensitivity

lgA lgE lgG lgM

Rheumatoid Factor

BASIC METABOLIC PROFILE:

Calcium CO₂ Total Chloride Creatinine Glucose Potassium

Sodium Urea

BONE PROFILE:

Alkaline Phosphatase

Calcium Phosphorus Total Protein

CARDIAC:

Adiponectin Cholesterol CK-MB CK-NAC CRP

CRP Full Range (0.3-160mg/l)

CRP High Sensitivity

Digoxin

Direct HDL Cholesterol

Direct LDL Cholesterol HDL3

H-FABP Homocysteine Lipoprotein (a) Myoglobin sLDL Triglycerides TxB Cardio

COMPREHENSIVE METABOLIC PROFILE:

Albumin

Alkaline Phosphatase

ALT

AST (GOT)

Direct Bilirubin Calcium Chloride CO₂ Total Creatinine

Glucose

Lactate Potassium Sodium Total Bilirubin Total Protein

DIABETES:

Urea

Adiponectin Cholesterol Creatinine Cystatin C

Direct HDL Cholesterol
Direct LDL Cholesterol

Fructosamine Glucose Glycerol HbA1c/Hb Microalbumin

NEFA (Non-Esterified Fatty Acids)

Ranbut (Hydroxybutyrate)

Total Protein Triglycerides Urinary Protein

ELECTROLYTES:

Calcium

Chloride (Nondirect)

CO₂ Total Lithium Magnesium

Potassium (Nondirect) Sodium (Nondirect)

HAEMOLYTIC ANAEMIA:

G-6-PDH Haptoglobin LDH

HEPATIC FUNCTION:

Albumin Aldolase

Alkaline Phosphatase Alpha-I Antitrypsin

ALT Ammonia lgΑ

lgG lgM

Iron (UIBC) LAP LDH

Total Bilirubin
Total Protein
Transferrin

Transthyretin (Prealbumin)

INFLAMMATION AND INFECTION:

Alpha- I Acid Glycoprotein

ASO CRP Lactate

Rheumatoid Factor

LIPIDS:

Apolipoprotein A-I Apolipoprotein AII Apolipoprotein B Apolipoprotein CII Apolipoprotein CIII Apolipoprotein E Cholesterol

Direct HDL Cholesterol
Direct LDL Cholesterol

HDL3

Lipoprotein (a) sLDL Triglycerides

NEONATAL SCREENING:

Alpha-I Antitrypsin

CRP

CRP Full Range (0.3-160mg/l)

CRP High Sensitivity

ΙgΕ

Transthyretin (Prealbumin)

NUTRITIONAL STATUS:

Albumin Copper Ferritin Iron

Iron (UIBC) Lipase Magnesium Potassium TIBC

Transferrin

Transthyretin (Prealbumin)

7inc

PANCREATIC FUNCTION:

Amylase Glucose LDH Lipase

Pancreatic Amylase

RENAL FUNCTION:

Albumin Ammonia

Beta-2 Microglobulin

Calcium
Chloride
Creatinine
Cystatin C
Glucose
HbA I c/Hb
IgG
LDH
Magnesium
Microalbumin

Phosphorus (Inorganic) Urinary Protein

Urea Uric Acid

Potassium

Sodium



VETERINARY

Albumin
Alkaline phosphatase
ALT (GPT)
Aldolase
Ammonia
Amylase
AST (GOT)
Bile acids
Bilirubin
Calcium

Cholesterol
Cholinesterase (Butyryl)
CK-NAC
CO₂ Total
Copper
Creatinine
Canine CRP
CRP
Fructosamine
Gamma-GT
GLDH

Glucose Glycerol HDL Iron (UIBC) Lactate Lactate dehydrogenase

LDL Lipase Magnesium NEFA (Non-esterified fatty acids) Phosphorus (Inorganic) Potassium

Ranbut (Hydroxybutyrate) Ransel (Glutathione peroxidase) Ransod (Superoxide dismutase)

Sodium
Total Protein
Triglycerides
Urea
Uric Acid
Urinary protein
Zinc

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Chloride

TOXICOLOGY

THERAPEUTIC DRUGS:
Acetaminophen
Carbamazepine
Digoxin
Gentamicin
Lithium

Phenobarbitol Phenytoin Salicylate Valproic Acid DRUGS OF ABUSE: Amphetamines Barbiturates Benzodiazepines Cannabinoids Cocaine metabolite Ecstasy EDDP Ethanol Methadone Opiates



PROTEINS

SPECIFIC PROTEINS: Alpha-1 Antitrypsin

Alpha-I Acid Glycoprotein Apolipoprotein A-I Apolipoprotein AII Apolipoprotein B

Apolipoprotein CII Apolipoprotein CIII

Apolipoprotein E

ASO

Beta-2 Microglobulin Ceruloplasmin

Complement Component 3
Complement Component 4

CRP

CRP Full Range (0.3-160mg/l) CRP High Sensitivity

Cystatin C

Fructosamine Haptoglobin HbA1c/Hb

Ferritin

lgA lgE lgG

lgM

Lipoprotein (a)

Microalbumin Myoglobin <u>Rheumatoid</u> Factor

sTfR

Transthyretin (Prealbumin)

Transferrin



RESEARCH

ANTIOXIDANTS:

Albumin Bilirubin Ferritin

Glutathione Reductase Ransel (Glutathione Peroxidase) Ransod (Superoxide Dismutase)

TIBC

Total Antioxidant Status

Transferrin Uric Acid

FOOD AND WINE TESTING: Acetic acid Ammonia Copper Ethanol Glucose/fructose Lactic acid Malic acid NOPA Potassium TAS Total SO, BIOTECHNOLOGY:

Glutamate Glutamine

SPECIALITY: Acid phosphatase

>> THE RX SERIES A-Z TEST MENU

Cannabinoids

AUTOMATED

Acetaminophen	Carbamazepine	Glutamate	Methadone
Acetic Acid	Ceruloplasmin	Glutamine	Microalbumin
Acid phosphatase	Chloride (Non-Direct)	Glutathione Peroxidase (Ransel)	Myoglobin
Adiponectin	Cholesterol	Glutathione Reductase	NEFA (Non-Esterified Fatty Acids)
Albumin	Cholinesterase (Butyryl)	Glycerol	Opiates
Aldolase	CK-MB	Haptoglobin	Pancreatic Amylase
Alkaline Phosphatase	CK-NAC	HbA1c/Hb	Phenobarbitol
Alpha-I Acid Glycoprotein	CO ₂ Total	HDL3	Phenytoin
Alpha-I Antitrypsin	Cocaine metabolite	HDL Cholesterol (Direct)	Phosphorus
ALT (GPT)	Complement Component 3	Heart-Type Fatty Acid Binding	Potassium (Non-Direct)
Ammonia	Complement Component 4	Protein (H-FABP)	Rheumatoid Factor
Amphetamines	Copper	Homocysteine	Salicylate
Amylase	Creatinine	Hydroxybutyrate (Ranbut)	sLDL
Apolipoprotein A-I	CRP	IgA	Sodium (Non-Direct)
Apolipoprotein All	CRP Full Range (0.3-160mg/l)	lgE	sTfR
Apolipoprotein B	CRP High Sensitivity	lgG	Superoxide Dismutase (Ransod)
Apolipoprotein CII	Cystatin C	IgM	TIBC
Apolipoprotein CIII	Digoxin	Iron	Total Antioxidant Status
Apolipoprotein E	Ecstasy	Lactate	Total Protein
ASO	EDDP	LAP	Transferrin
AST (GOT)	Ethanol	LDH	Transthyretin (Prealbumin)
Barbiturates	Ferritin	LDL Cholesterol (Direct)	Triglycerides
Benzodiazepines	Fructosamine	Lipase	TxB Cardio
Beta-2 Microglobulin	G-6-PDH	Lipoprotein (a)	Urea
Bile Acids	Gamma GT	Lithium	Uric Acid
Bilirubin (Direct & Total)	Gentamicin	L-Lactic Acid	Urinary Protein
Calcium	GLDH	Magnesium	Valproic Acid
Canine CRP	Glucose	Malic Acid	Zinc
Commelaineide	Cl. /F		

Glucose/Fructose



>> SOFTWARE

The RX modena offers intuitive software through an interactive, Windows based touch screen display. This technology allows the user to easily navigate through the testing screens of the analyser, enabling easy access to information and control of operations from the main screen using informative tabs. Smart software automatically calculates remaining reagent volumes and the number of tests available, including their stability. The RX modena software is capable of connecting to LIMS (Laboratory Information Management System) via ASTM standard.



REPORTS

The operator can easily search for reports and view real time results status, including time left until completion. The RX modena has a high capacity storage of 30,000 patient reports.



CHEMISTRY PARAMETERS

The chemistry parameters screen enables pre-sample dilution to be set up and re-running of assays as required. The user may set up to 20 different test profiles and define the order of analysis.



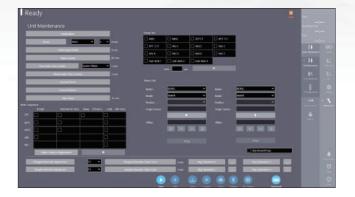
REAGENT INVENTORY

Remaining reagent volume is automatically calculated on-board alongside the number of tests available and stability of the reagents. Should insufficient volume remain for any reagent, an alert will appear, allowing the operator to resolve the situation.



RESULTS

Results are easily searchable via various search options, for example sample type or sample category. Laboratory staff can download and print results or transmit results to the LIMS system for all relevant clinicians to view.



MAINTENANCE

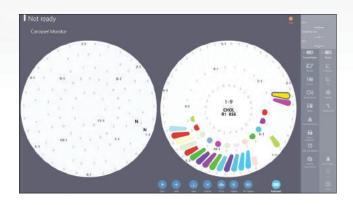
Maintenance on the RX modena is fast and effective.

There are several simple steps to carry out daily, weekly and monthly. Less than 5 minutes daily maintenance is required.



QUALITY CONTROL

The QC screen generates Levey-Jennings charts and calibration curves allowing for a visual performance assessment plus easy identification of QC errors and emerging trends. QC multi rules can be applied to ensure high error detection and minimal false rejection.



RUN MONITOR

The run monitor displays full patient demographics.

This screen indicates the number of tests and time left until completion. The operator can add emergency STAT samples from this screen.



CALIBRATION

The software displays the current valid calibration for each assay installed, the reagent blank absorbance (if appropriate) and the calibration check interval. There are 7 calibration models available: Factor, Linear, Point to point, Log-logit, Exponential, Spline & Spline 2.

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>> ORDERING & CUSTOMER SUPPORT



ORDERING INFORMATION

RX modena analyser	RX9000
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For more information contact your local representative, or email us at:



>> SPECIFICATIONS

PHYSICAL DIMENSIONS

Height	1150mm
Depth	850mm
Width	1300mm
Weight	<300kg

PERFORMANCE CHARACTERISTICS

Throughput	1200 tests per hour including ISE
	800 photometric tests per hour
Analyser accreditation	CE marking & FDA in progress
Analyser type	Compact fully automated random access floor standing clinical analyser
Assay types	End point, 2 point end, rate, 2 point rate and ISE

REAGENT & SAMPLE SYSTEM

Reagent capacity	Removable tray with 100 cooled positions (50 positions for 70ml bottles and 50 positions for 20ml bottles)
Reagent identification	Automatic barcode reagent identification
Reagent inventory	Calculation of remaining reagent volume and tests available, alert for shortage, expired reagent and expired calibration
Reagent pipette	Dedicated twin reagent micropipette with liquid level sensor and crash detection, rinsed inside and outside with purified water
Sample addition	Immediate sampling interruption for addition of samples via removable panel
Sample capacity	Removable tray with 94 positions for samples, 10 positions for controls and calibrators
Sample dead volume	150µl in standard or primary tubes, 100µl in paediatric cups
Sample dilution	Pre-dilution and automatic re-assay with diluted, reduced or increased sample volume
Sample identification	Barcode sample identification
Sample pipette	Dedicated sample micropipette with liquid level sensor, clot detection and crash detection
Sample tube Size	Multiple primary tube sizes (diameter 12-15mm, height 100mm), paediatric cups
Sample type	Serum, Plasma, Urine & Whole Blood
Sample volume	0.5-25µl (0.1µl increments) ISE: less than 22µl
STAT sampling	Immediate STAT sampling interruption

REACTION SYSTEM

Reaction time	10 minutes
Minimum reaction volume	50µl
Stirring system	Dual 5 speed paddle stirrers
Temperature	37°C ±0.2°C
Cuvettes	I53 Semi-permanent cuvettes, 5nm optical path. Life span:3-6 months
Wash unit	7 stage cuvette washing system
Water consumption	<20L per hour

OPTICAL SYSTEM

Detector method	Direct absorbance in cuvette (monochromatic or bi-chromatic)
Light source	Halogen tungsten lamp (air-cooled, 6 month service life)
Detection principal	13 wavelengths 340, 380, 415, 450, 478, 510, 546, 570, 600, 660, 700 750, 800nm
ISE tests	Integrated ISE unit (sodium, potassium, chloride)
Wavelength accuracy	±2nm
Absorbance range	0 to 3 Abs

CALIBRATION & QC

Quality control	Interactive Levey-Jennings charts, daily, monthly and batch QC with data archiving
Calibration principal	Factor, Linear, Point to point, Log-logit, Exponential, Spline and Spline 2

POWER & CONNECTIVITY

Input voltage	100 - 240 Vac

OPERATING SYSTEM

	Windows® based user Interface Touch screen (optional keyboard and mouse
Operator interface	available upon request)
	Software text/language fully editable by user

>> THE RX SERIES







A semi-automated clinical chemistry analyser with the ability to run flow cell or cuvette mode. The RX misano offers 9 wavelengths spanning 340-700nm as standard, with an optional 280nm. A large 7" touch screen monitor responsive even when wearing lab gloves allows the user to easily navigate through the testing screens of the analyser. USB port allows to import Randox-defined test menus and export patient, QC and calibration results.



A fully automated, random access clinical chemistry analyser with 12 wavelengths between 340-800nm and a throughput of 170 tests per hour. Available as a benchtop or floor standing model with Windows® based software and STAT sampling as standard. The low throughput of the RX monaco provides small to mid-volume laboratories with cost effective analysis and high quality testing.







A fully automated, random access, benchtop clinical chemistry analyser with a throughput of 270 photometric tests per hour, increasing to 450 with the optional ISE unit.

There are 12 wavelengths spanning 340-800nm and the RX daytona+ provides liquid level, clot and crash detection.

Software is windows based and STAT sampling is available via an emergency loading port. The RX daytona+ offers superior performance for mid volume laboratories.



A fully automated, random access benchtop clinical chemistry analyser with a photometric throughput of 400 tests per hour increasing to 560 including ISE. There are 12 wavelengths spanning 340-800nm and the RX imola provides liquid level, clot, crash and bubble detection. Software is windows based and STAT sampling is available via an emergency loading port. The RX imola offers efficiency for medium sized laboratories.

>> RANDOX - A GLOBAL DIAGNOSTIC SOLUTIONS PROVIDER

Randox has been supplying laboratories worldwide with revolutionary diagnostic solutions for over 35 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.

REAGENTS

Randox offers an extensive range of diagnostic reagents, giving biochemistry laboratories the opportunity to advance their routine and niche testing.

The Randox reagents range goes beyond routine chemistries. At Randox we re-invest significantly in research and development to ensure we meet the ever changing needs of the laboratory. As a result, the esoteric reagents range from Randox is extensive and includes sLDL, Lipoprotein(a), H-FABP, Cystatin C, TxBCardio, Adiponectin, Bile Acids, Copper, D-3-Hydroxybutyrate, G-6-PDH, Non-Esterified Fatty Acids, Total Antioxidant Status and Zinc.

Randox Reagents provide a number of benefits for the laboratory: Cost savings through excellent stability, automated methods and standards supplied with some kits; confidence in results with high performance methods, minimal interferences and wide measuring ranges; convenience and choice with applications for over 100 biochemistry analysers; liquid ready-to-use reagents, a wide range of kit sizes and complementary controls and calibrators.

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.

Contact us for more information on any of our products and services:

Head Quarters

Randox Laboratories Ltd, 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom

🕿 +44 (0) 28 9442 2413 🔀 marketing@randox.com 🔗 randox.com/clinical-chemistry-analysers/

International Offices



Randox (Australia) Pty Ltd. Tel: +61 (0) 2 9615 4640



BRAZIL Randox Brasil Ltda. Tel: +55 | | 5 | 8 | -2024



Randox Laboratories Ltd. Tel: +86 021 6288 6240



CZECH REPUBLIC Randox Laboratories S.R.O. Tel: +420 2 1115 1661



FRANCE Laboratoires Randox Tel: +33 (0) 130 18 96 80



GERMANY Randox Laboratories GmbH Tel: +49 (0) 215 1937 0611



HONG KONG Randox Laboratories Hong Kong Limited Tel: +852 3595 0515



ITALY Randox Laboratories Ltd. Tel: +39 06 9896 8954



INDIA Randox Laboratories India Pvt Ltd. Tel: +91 80 2802 5000



POLAND Randox Laboratories Polska Sp. z o.o. Tel: +48 22 862 1080



PORTUGAL Irlandox Laboratorios Quimica Analitica Ltda Tel: +351 22 589 8320



PUERTO RICO Clinical Diagnostics of Puerto Rico, LLC Tel: +1 787 701 7000



REPUBLIC OF IRELAND Randox Teoranta Tel: +353 7495 22600



SLOVAKIA Randox S.R.O. Tel: +421 2 6381 3324



SOUTH AFRICA Randox Laboratories SA (Pty) Ltd. Tel: +27 (0) | 1 | 3 | 2 | 3590



SOUTH KOREA Randox Korea Tel: +82 (0) 31 478 3121



SPAIN Laboratorios Randox S L Tel: +34 93 475 09 64



SWITZERI AND Randox Laboratories Ltd. (Switzerland) Tel: +41 41 810 48 89



Randox Medical Equipments Trading LLC Tel: +971 55 474 9075



USA Randox Laboratories-US, Ltd. Tel: +1 304 728 2890



VIETNAM Randox Laboratories Ltd. Vietnam Tel: +84 (0) 8 39 | 1 0904







