



## **COBAS INTEGRA<sup>®</sup> 400 plus**



**cobas<sup>®</sup>**  
*Life needs answers*

# COBAS INTEGRA<sup>®</sup> 400 plus

## *Advantages*



- **Real security of results**  
with the COBAS INTEGRA clot detection system
- **cobas c packs**  
make reagent preparation a task of the past
- **Workflow consolidation**  
with the choice of over 140 applications
- **Sophisticated software programs**  
to simplify operation and training
- **Reduced costs**  
through increased efficiency
- **Continuous access**  
to up to 90 samples for a smoother workflow

COBAS INTEGRA 400 plus is designed to consolidate testing and increase efficiency while reducing total running costs of the laboratory.

The COBAS INTEGRA 400 plus system is the right choice for consolidation in the low workload laboratory and special chemistry testing in medium volume sites.

The COBAS INTEGRA systems' extensive assay menu and innovation of the **cobas c** pack are combined with four proven measurement technologies and sophisticated, easy-to-use software.



# COBAS INTEGRA<sup>®</sup> 400 plus

## Convenience



### cobas c pack

Patented reagent carrier design plus on-board refrigeration prevents reagent evaporation and degradation, ensuring long-term on-board stability and long calibration intervals.

Each **cobas c** pack holds all necessary reagents for up to 800 determinations, maximising on-board capacity and reducing the need for operator intervention and frequent reloading.

Reagent preparation is a task of the past. The bar-coded **cobas c** packs are automatically handled by the system, reducing the possibility of errors and saving staff time.

Compact design of the reagent carrier means that more than a year's supply of tests for a typical laboratory can easily be stored in a single refrigerator.

### Continuous sample access

Sample racks allow continuous access as tests are completed and new samples arrive, eliminating unnecessary test delays.

Up to 90 barcoded samples, in six 15 position racks, can be loaded on-board. STATs are automatically given priority and immediately processed once the barcode is read to speed up delivery of results to the physician.

Serum, plasma, urine, hemolysate, whole blood and CSF can be used in barcoded primary or secondary tubes. Microcups can be used for low volume samples, e.g. paediatric and CSF.

### Workflow consolidation

More than 140 applications for all types of sample matrices are measured with one of 4 different measuring technologies – absorbance photometry, turbidimetry, fluorescence polarisation and ion selective potentiometry.

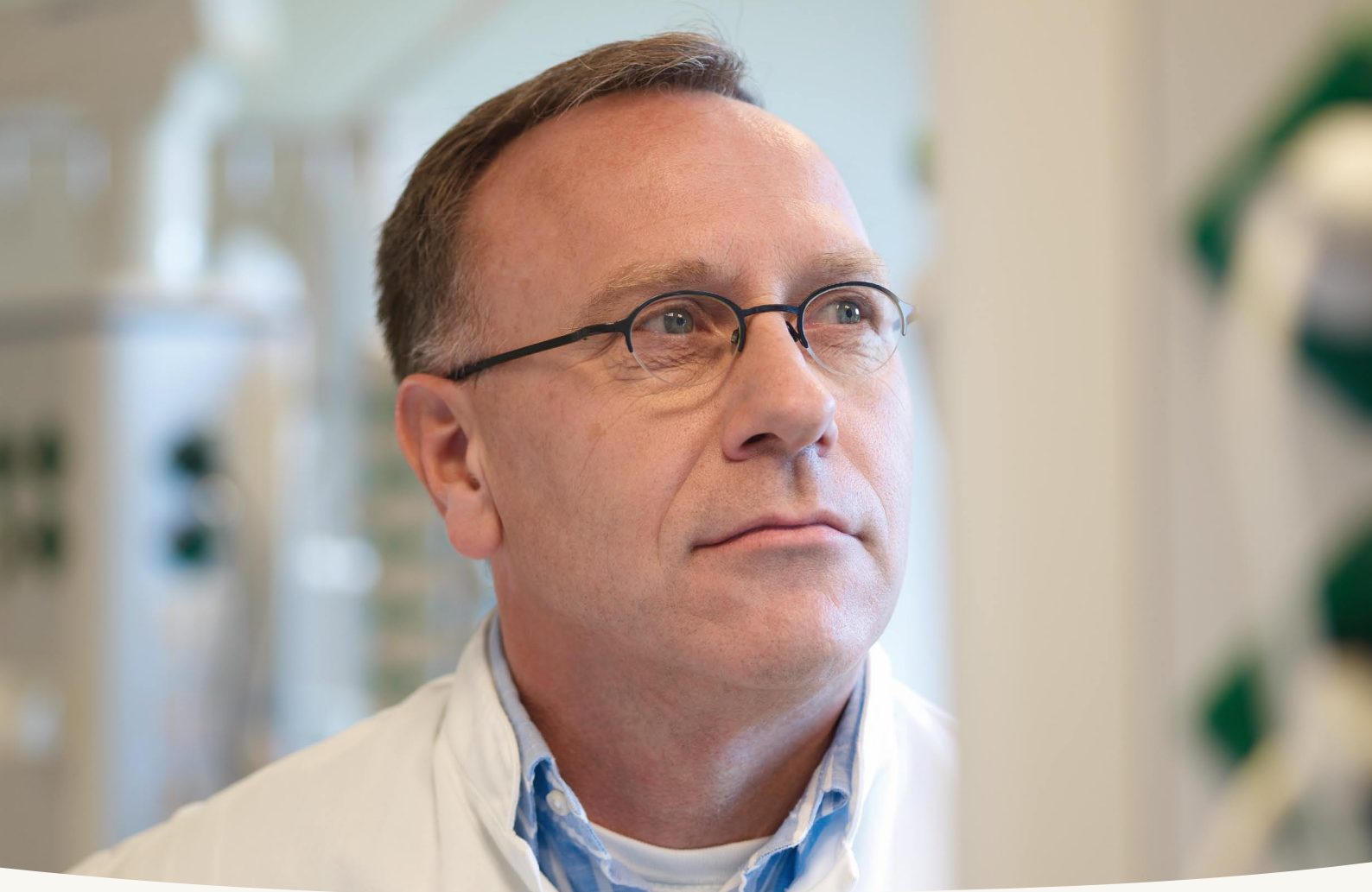
The COBAS INTEGRA 400 plus system has up to 36 different on-board assays. For quick access to additional tests, **cobas c** packs can be exchanged while the system is running. Off-board storage of pre-calibrated **cobas c** packs allows full flexibility.

The broad menu includes clinical chemistry, specific proteins, therapeutic drug monitoring, drug of abuse testing and much more. Consolidation on a single system improves turnaround times by reducing the need for sample splitting.

On-board storage of 32 **cobas c** packs at 12°C ensures reagent stability up to 3 months, reducing reagent waste and costs.

For high volume tests, multiple **cobas c** packs of the same assay can be on-board for automatic switch-over during run.





## **COBAS INTEGRA<sup>®</sup> 400 plus** *Reliable and efficient*

### **Sophisticated software**

On-screen inventory management tracks reagents available on board and forecasts if additional reagent packs are required based on daily workload statistics.

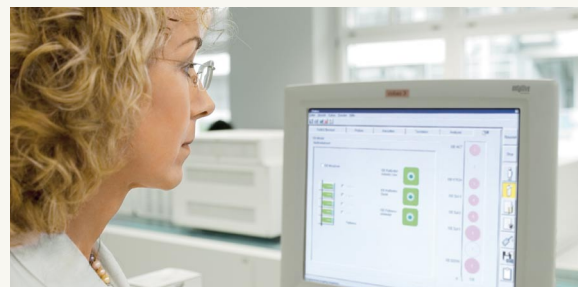
The intelligent processing on COBAS INTEGRA 400 plus automatically schedules each sample's tests to minimise analyser turnaround time and increase throughput, while allowing immediate STAT testing 24 hours a day.

Quality control programs monitor precision and accuracy to ensure reliable results.

Validated sample results are continuously transmitted to the LIS via the host query communication mode, guaranteeing fast result availability.

The software automatically tracks service needs and alerts the user when maintenance is due. Activities are recorded in the electronic log to support compliance with Good Laboratory Practice and Accreditation.

Remote diagnostics by modem allows Roche service personnel to resolve errors quickly and efficiently without an on-site visit.



### Reduced costs through increased efficiency

Consolidation eliminates pre-analytical phase tasks by reducing sample splitting to improve workflow and decrease handling costs.

Long on-board reagent stability and fewer calibrations mean less waste and lower cost per reportable result.

A single workstation optimises use of time and budget by reducing costs of operating, maintaining and servicing multiple analytical systems.

Processing time can be reduced by up to 50% compared with dedicated analysers.

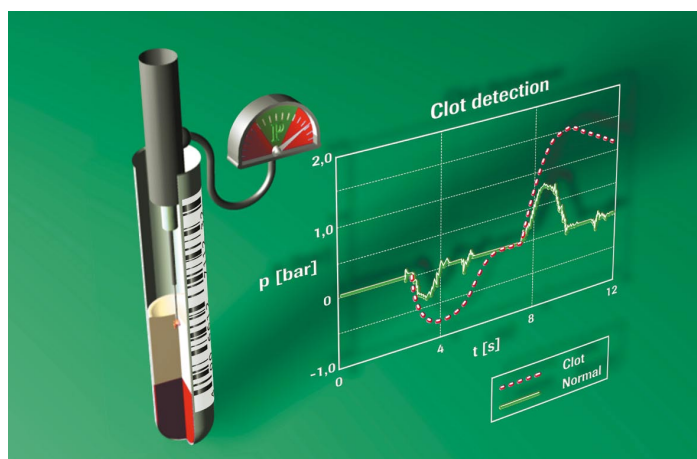
Post-analytical tasks such as sample tracking, rerunning, archiving and disposal are greatly simplified by use of a single consolidated system – COBAS INTEGRA 400 plus.

### Real security

Highly sensitive pressure sensors detect incorrect pipetting, even at 2  $\mu\text{L}$  sample volume.

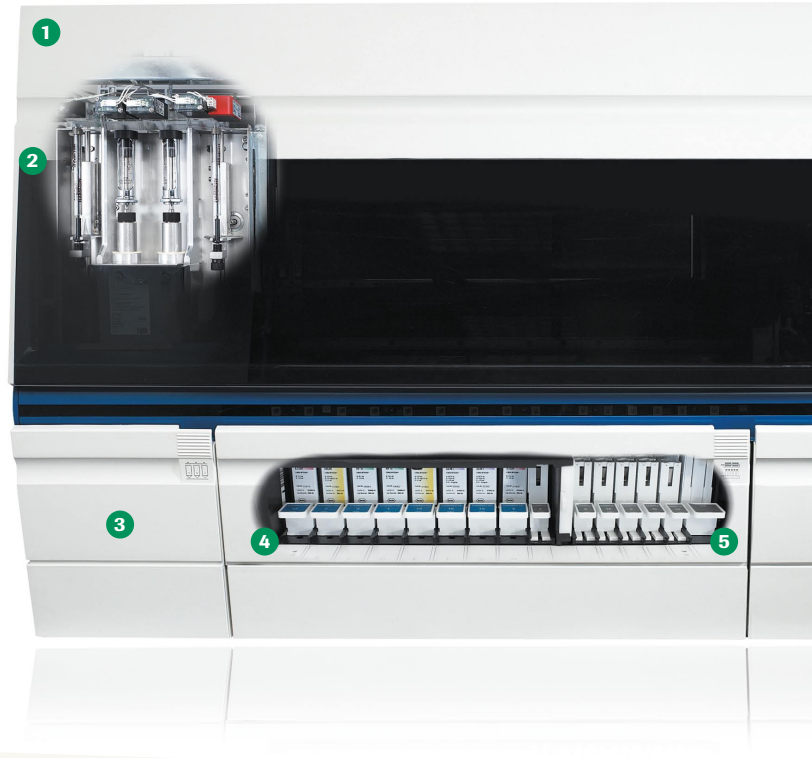
Handling of clotted samples is improved with immediate flagging of faulty samples.

System wash pressures have been optimised to fully remove the clot from the sample probes, avoiding any maintenance actions and interruptions to workflow.



# COBAS INTEGRA<sup>®</sup> 400 plus

## System overview



### 1 Automatic start-up

- Configurable start-up options ensure that the system is ready whenever needed
- Access to the full COBAS INTEGRA reagent menu 24 hours a day guarantees quick after hours turn around time
- Automatic system maintenance significantly reduces operator interventions

### 2 Result security

- Highly sensitive pressure sensors detect incorrect pipetting, even at 2  $\mu$ L sample volume.
- Handling of clotted samples is improved with immediate flagging of faulty samples
- System wash pressures have been optimised to fully remove the clot from the sample probe, avoiding maintenance actions and interruptions to workflow

### 3 ISE module

- Sodium, Potassium, Chloride and Lithium

### 4 Flexible change of onboard tests

- Onboard capacity of 8 racks with 4 **cobas c** packs each
- Easy change of menu via the reagent racks
- Refrigerated storage for long calibration stability





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#### 5 Continuous sample loading

- 6 sample racks for various primary and secondary cups
- Up to 90 samples onboard, racks can be replaced after sample pipetting
- Positive sample identification via barcode

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#### 6 Analytical unit

- Precise temperature controlled reaction rotor ensure stable test conditions and reliable results
- Sensitive photometric and turbidimetric measurements
- Extremely stable LED light source for fluorescence polarisation

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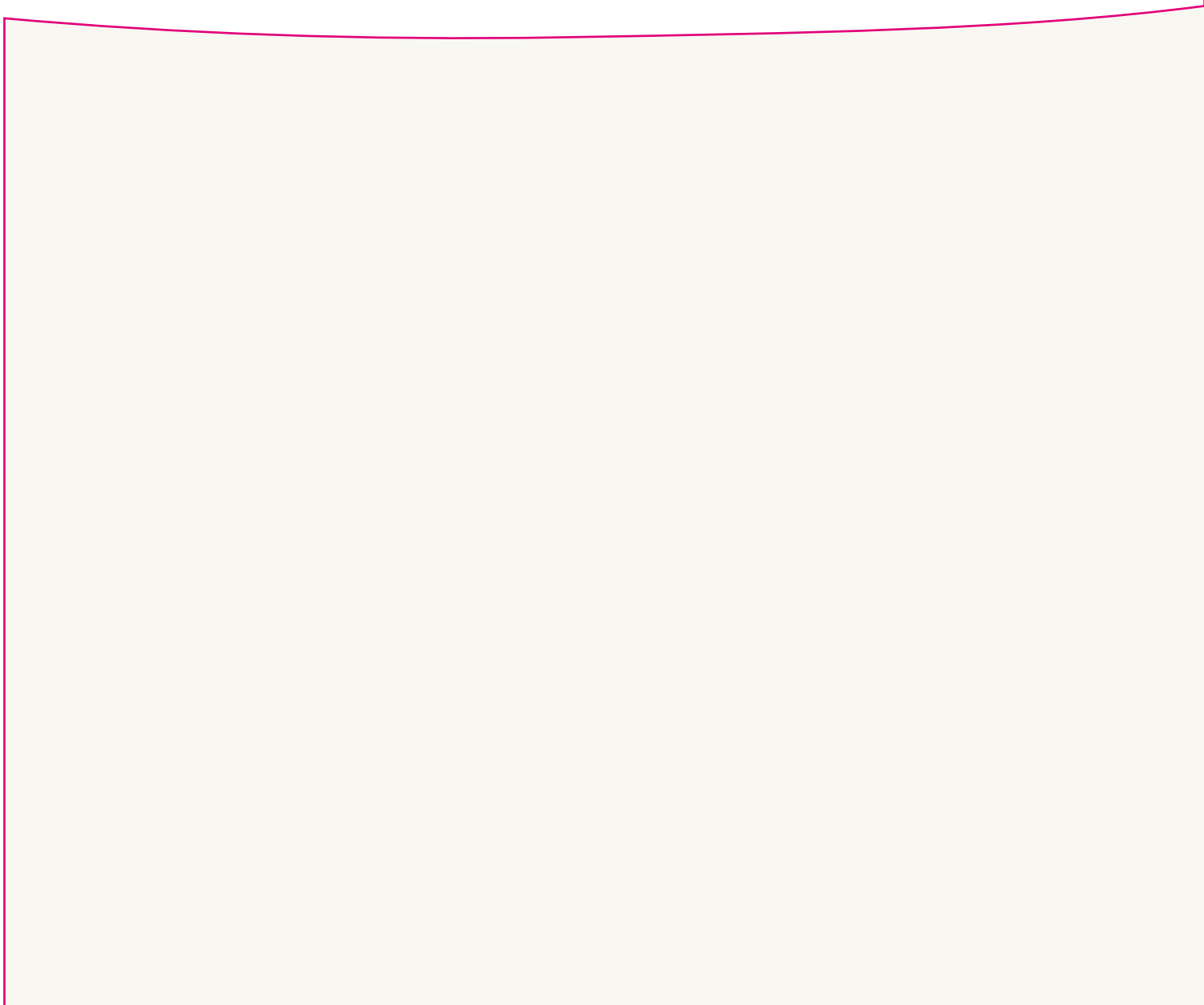
#### 7 Enhanced user interface

- System software is object-oriented, based on Windows XP, for standardised ease-of-use
- Intuitive online help provides instant and precise multilingual support
- Easy to read 19 inch flatscreen monitor

# COBAS INTEGRA<sup>®</sup> 400 plus

## Specifications

System	<p>Random and continuous access, sample selective analyser            Integration of 4 measuring principles            36 tests onboard            Absorbance photometry: Enzymes and substrates            Turbidimetry: Specific proteins, drugs of abuse            Fluorescence polarimetry: Therapeutic drugs, thyroid tests            Ion-selective electrode potentiometry: Na<sup>+</sup>,K<sup>+</sup>,Cl<sup>-</sup> and Li<sup>+</sup></p>
Test throughput	Up to 400 tests/hr (including ISE)
Sample types	Serum, plasma, urine, CSF, hemolysate and whole blood (HbA1c)
Sample handling	<p>90 primary or secondary tubes on-board            Up to 6 x RD15 racks on-board            Cooled rack position for controls and calibrators            Automatic sample dilution and concentration            Barcode reading via laser scanner, with immediate STAT recognition</p>
Sample container types	<p>Primary tubes: 5 to 10 mL; 16x100, 16x75, 13x100, 13x75 mm with closed cap for Hitachi microcup, 500 µL; Hitachi standard cup, 1.5 mL;  <b>cobas</b> cup, 650 µL; Eppendorf cup, 1.5 mL; Cup on tube definable</p>
Sample volume	Typically 2 to 10 µL per test, ISE indirect 20 µL, ISE direct 97 µL
Sample barcode types	Code 128, Codabar, Code 2 of 5 interleaved, Code 39
Reagents onboard capacity	<p>32 <b>cobas c</b> packs, 50-800 tests per <b>cobas c</b> pack            Up to 8 racks of 4 <b>cobas c</b> packs on-board            Reagent compartment cooled to 10-15°C            Onboard stability up to 3 months, calibration typically each lot</p>
Reaction cells	Holds 1,000 disposable cuvettes with 5 mm path length, and 120-240 µL reaction volume
Control unit	<p>HP workstation running Windows XP            Intel Pentium IV with 512 MB RAM            Dual 40 GB hard drives, CD ROM, floppy drive and inbuilt modem</p>
System interfaces	RS 232 serial interface, bi-directional, inbuilt modem for remote diagnostics access
Electrical requirements	100-125/200-240 Volts AC, 50 or 60 Hz, consumption 1,200 VA
Physical dimensions	<p>Width: 135 cm (53.1 in)            Depth: 66 cm (25.9 in)            Height: 75 cm (28.5 in)</p>
Weight	320 kg (506 lbs)
Water requirements	Up to 2 liters per hour in operating mode, Type 1 NCCLS
Certification	CE, UL, C-UL



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# COBAS INTEGRA<sup>®</sup> 400 plus

## Test menu

### Substrates

Albumin  
Albumin BCP<sup>2</sup>  
Ammonia  
Bicarbonate  
Bilirubin - direct  
Bilirubin - total  
Calcium  
Cholesterol  
HDL Cholesterol Direct  
LDL Cholesterol Direct  
Creatinine  
Fructosamine  
Glucose  
Homocysteine<sup>2</sup>  
Iron  
Lactate  
Magnesium  
Phosphorus  
Total Protein  
Protein Urine / CSF  
Triglycerides  
Total Bile Acids<sup>2</sup>  
UIBC  
Urea / BUN  
Uric Acid  
Zinc<sup>2</sup>

### Enzymes

5'Nucleotidase<sup>2</sup>  
ACE<sup>2</sup>  
Acid Phosphatase  
Alkaline Phosphatase  
ALT / GPT  
Amylase - pancreatic  
Amylase - total  
Antistreptodornase<sup>2</sup>  
AST / GOT  
Cholinesterase / Dibucain  
CK  
CK-MB  
GGT  
GLDH  
HBDH  
LDH (L-P)(P-L)  
Lipase

### ISE

Chloride  
Lithium  
Potassium  
Sodium

### Specific proteins

$\alpha$ 1-Acid Glycoprotein  
 $\alpha$ 1-Antitrypsin  
 $\alpha$ 1-Microglobulin (c pack MULTI)  
 $\alpha$ 2-Macroglobulin<sup>2</sup>  
 $\beta$ 2-Microglobulin<sup>2</sup>  
Albumin (Turbidimetric)  
APO A1  
APO B  
ASLO  
C3c  
C4  
Ceruloplasmin  
CRP  
Cystatin C  
Ferritin  
Haptoglobin  
HbA1c (whole Blood, Hemolysate)  
hsCRP  
IgA  
IgG  
IgM  
IMA<sup>2</sup>  
Kappa (c pack MULTI)  
Lambda (c pack MULTI)  
Lp (a)  
Myoglobin  
Prealbumin  
Rheumatoid Factor  
Soluble Transferrin Receptor  
Transferrin



Life needs answers

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**Drugs of abuse**

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Amphetamines

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Barbiturates – urine/serum

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Benzodiazepines – urine/serum

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Buprenorphine<sup>2</sup>

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Cannabinoids

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Cocaine Metabolite

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EDDP<sup>1</sup>

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Ethanol – urine/serum

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Lysergic Acid Diethylamide

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Methadone

---

Methaqualone

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Opiates

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Oxycodone<sup>2</sup>

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Phencyclidine

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Propoxyphene

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Tricyclic Antidepressants<sup>2</sup>

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**Therapeutic drug monitoring**

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Acetaminophen

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Amikacin

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Carbamazepine

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Caffeine<sup>2</sup>

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Cyclosporine

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Digitoxin

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Digoxin

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Ethosuximide<sup>2</sup>

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Gentamicin

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Lithium

---

Lidocaine

---

Methotrexate<sup>2</sup>

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MPA (total)

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NAPA

---

Netilmycin<sup>2</sup>

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Phenobarbital

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Phenytoin – free/total

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Primidone

---

Procainamide

---

Quinidine

---

Salicylate

---

Sirolimus<sup>2</sup>

---

Tacrolimus<sup>2</sup>

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Theophylline

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Tobramycin

---

Valproic Acid –free/total

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Vancomycin

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**Others**

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AT III

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D-Dimer

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Factor XIII<sup>2</sup>

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Serum Index

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T4

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T-Uptake

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**Note:**

*Not all tests may be available in all countries due to local registration requirements.*

*Please contact your local nearest Roche office for full details.*

*Urine and CSF applications are available for selected tests.*

<sup>1</sup> Assays currently under development

<sup>2</sup> Available as Development Channel

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