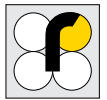


# RIDA<sup>®</sup> CUBE SCAN

The smart analyser

Product Information





## RIDA®CUBE SCAN

### Intended use

The R-Biopharm RIDA®CUBE SCAN is a new photometric system that allows biochemistry testing in small food laboratories or in production facilities. The photometric measurement allows covering all enzymatic and colorimetric assays for the detection of organic acids (e.g. Lactic acid), sugars (e.g. Glucose) or other food components (e.g. Sulfite). The test principles and reagents are the same than those used for manual testing.

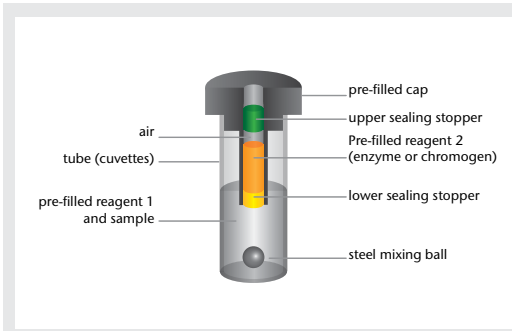
The RIDA®CUBE SCAN is incredibly small (16 x 13 x 14.5 cm), but delivers the same results than bigger biochemistry analysers. This new system captivates by its modern design and the simple operating procedure. Despite his small size, its innovative technology makes precise test results possible and it contains the functionalities of larger laboratory systems. Since there is no pipeting device, the system is very robust and maintenance-free.

The tests are delivered in reagent cartridges for single-testing, one after each other. Only the sample needs to be pipeted into the test-cartridge, all other steps are performed automatically for a true walk-away capability. The result is obtained in less than 15 minutes, giving a throughput of four tests per hour. With these features, the analyser is tailored for small laboratories performing a few tests per day, and can also be used in production facilities as Point-of-Care instrument.

The test-kit portfolio will include four tests at the end of 2014. It will be extended to more enzymatic tests at 340 nm, plus additional tests at 505, 546 and 580 nm.

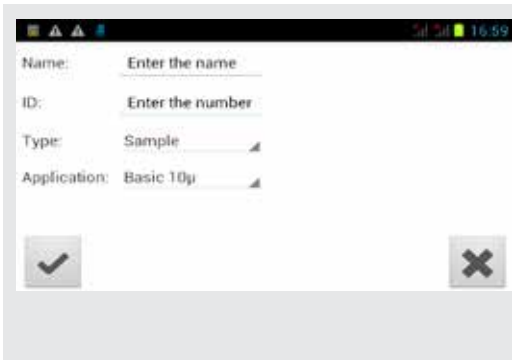
# RIDA® CUBE SCAN

## Technology



The single-test cartridges contain liquid and stable reagents, including a mixing steel-ball. Only the sample needs to be pipeted into the cartridge by the operator, all other steps are performed automatically by the analyser.

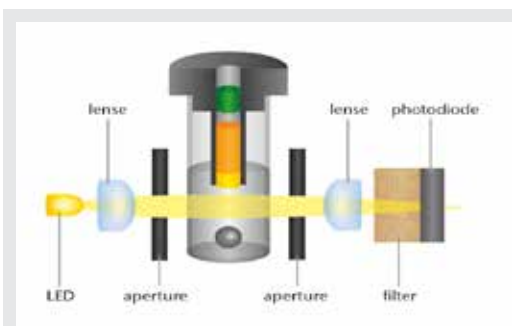
Because of this unique design, there is no pipeting device: only one arm is moving to push reagent 2 from the cap into the tube. The system is therefore very robust and maintenance-free.



The system is driven by an Android-based tablet, with a simple and intuitive app. The software provides all system-related functions valid for all tests, such as sample identification or results handling. It also provides additional content like instructions for use, FAQ's and various background information at the touch of a finger. The software is updated automatically via internet, so there is no need for a technician and no additional expenses. In the other direction, it is possible to send the tablet's data to the dedicated service center for remote support.



The RFID card (Radio-frequency identification) is the key technology used in the RIDA® CUBE SCAN instrument. One RFID card is included in each reagent kit, and contains specific information like name of the test, lot n° and expiry date. It also contains the specific application of the test, with all steps that need to be performed by the analyser. Finally it includes the calibration curve valid for the lot, so no calibration is needed in the laboratory.



The photometric measurement is performed via a LED and a photodiode, which will last for more than one decade without any maintenance. Two different filters are possible for each instrument, allowing two different chromogens to be measured.


## RIDA®CUBE SCAN

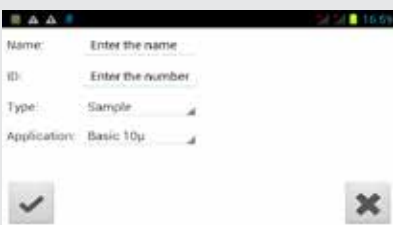
### Handling procedure


The RIDA®CUBE SCAN is a walk-away instrument that allows single-testing one after each other.


Each test-kit contains 32 single-test cartridges and one RFID card. All data specific for the test are stored on the RFID card, so there is no need to enter any instrument or application settings. Results are calculated automatically and displayed on the screen. They can be exported to a personal computer or to a Laboratory Information Management System (LIMS).

The operating procedure is fast and generates precise results in just four simple steps:

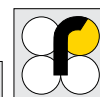
- 

Place the RFID card
- 

Enter the sample identification and choose the application (10 or 50 µl)
- 

Pipette the sample into the tube
- 

Close with the cap, insert the cartridge and close the door



## RIDA® CUBE SCAN

### Instruments

Three analysers are available with different combinations of wavelengths: 340 nm is always present, in combination with a second wavelength respectively at 505, 546 or 580 nm. The combination of different instruments allows to increase the throughput and to cover all wavelengths of the future test-kit portfolio.

The Analyser set includes the instrument and the tablet PC. The tablet-PC is also available separately if broken or lost.

Hardware	Art. No.
RIDA® CUBE SCAN 340/505 Analyser set	ZRCS0505
RIDA® CUBE SCAN 340/546 Analyser set	ZRCS0546
RIDA® CUBE SCAN 340/580 Analyser set	ZRCS0580
RIDA® CUBE SCAN Tablet PC	ZRCT0500

#### RFID-technology

- Pre-set calibration curve
- Lot number and expiry
- Number of tests remaining

#### Tablet-PC interface

- Android based app, updates available via Internet
- USB connection
- Quick data entry with Pictograms
- Feed-back option for trouble shooting
- Data transfer to printer of host

#### Specifications

- Weight: 2.4 kg
- Dimensions: 16 x 13 x 14.5 cm
- CE-compliant

#### Maintenance-free

- Fully-automated system but no pipeting device
- Closed test-cartridges
- Integrated QC self-test

#### Options

- Connection to a PC, HIS or LIM through USB

### Reagents

Six test-kits are planned for the first quarter of 2015, all of them will work at wavelength 340 nm:

Art. No.	Name	Wavelength
RCS4226	RIDA® CUBE Acetic Acid	340 nm
RCS4140	RIDA® CUBE D-Glucose	340 nm
RCS4160	RIDA® CUBE D-Glucose/D-Fructose	340 nm
RCS4260	RIDA® CUBE L-Lactic Acid	340 nm
RCS4280	RIDA® CUBE L-Malic Acid	340 nm
RCS4180	RIDA® CUBE Sucrose/D-Glucose	340 nm

# RIDA<sup>®</sup>CUBE SCAN

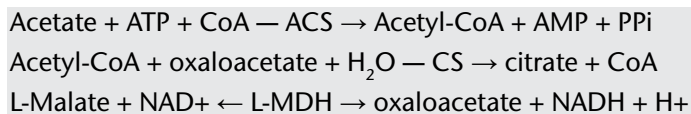
But in the future, other kits will be developed at different wavelengths. Therefore, three instruments are available for sales right from the beginning. When buying an instrument, each laboratory should plan which tests he could need in the future and choose the instrument accordingly:

- 304 nm: all Enzymatic assays using NADH, plus SO<sub>2</sub>-total and SO<sub>2</sub>-free
- 505 nm: Tartaric acid
- 546 nm: β-Glucan, Cholesterol and Hydroxybutyric acid
- 580 nm: Copper, Iron and Oxalic acid

## RIDA<sup>®</sup>CUBE Acetic Acid (Art. No. RCS4226)

### Test principle

The test follows the enzymatic procedure with L-malate dehydrogenase (L-MDH), citrate synthase (CS) and Acetyl-CoA-synthetase (ACS). NADH is produced and is measured at 340 nm:



### Content of the kit

The kit contains 32 test-units and the RFID card:

- # 1: 32 tubes with approx. 475 µl reagent 1 (buffer)
- # 2: 1 bottle with approx. 850 µl reagent 2 (NAD)
- # 3: 32 caps with approx. 100 µl reagent 3 (enzymes)
- # 4: One RFID card (Radio Frequency Identification)

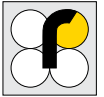
Because of the presence of 3 reagents, the manual pipeting step to start the assay includes the sample and reagent 2 (10 or 50 µl sample, plus 25 µl reagent 2). Once the test is started, the rest of the procedure is performed automatically as for the other assays.

### Measuring range

Two applications are available:

- Basic application with 10 µl sample, for a range from 50 mg/l to 1000 mg/l
- Sensitive application with 50 µl sample, for a range from 10 mg/l to 200 mg/l

The sample volume must be 10 µl or 50 µl. For the sensitive application, it is also possible to pipette any dilution with 50 µl total volume (for example 25 µl sample and 25 µl water), and to calculate the final result accordingly.

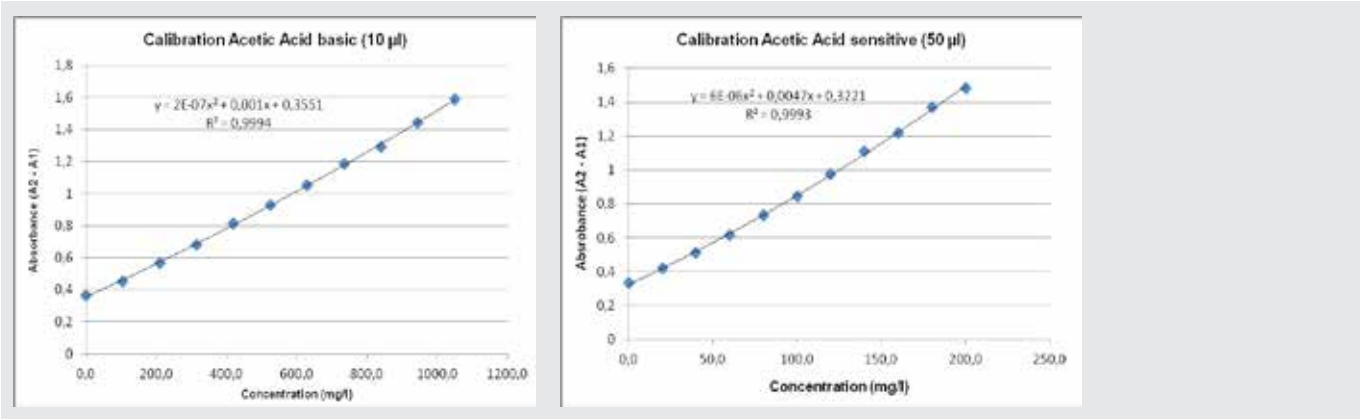


Product Information

RIDA® CUBE SCAN

Calibration

The calibration curves are defined as polynomial 2nd order in the RFID card:



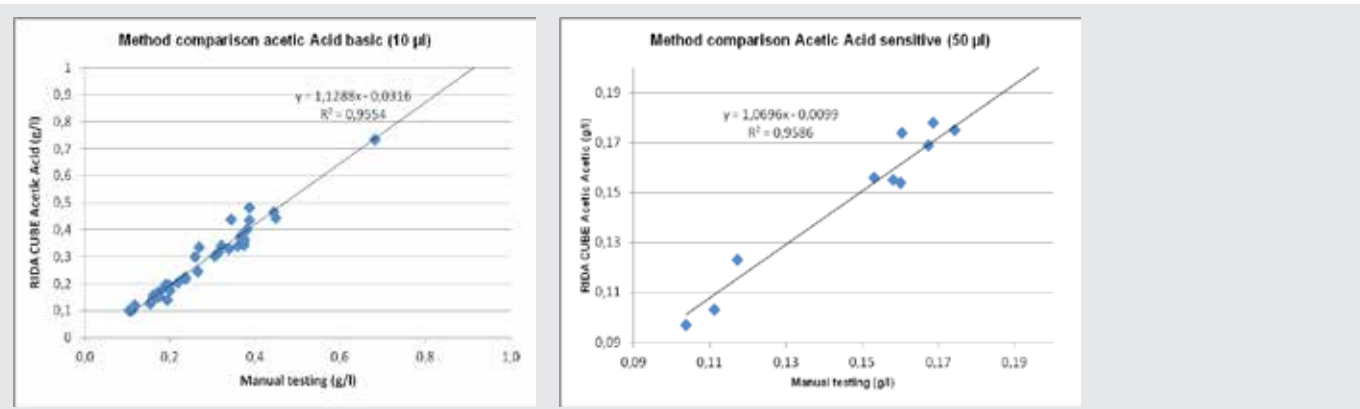
Precision

Precision data are comparable to those of large laboratory systems. The lowest levels are close to the detection limit, therefore the CV's are around 10 %:

Basic (10 µl)		Sensitive (50 µl)	
Conc.	CV	Conc.	CV
73 mg/l	10.45 %	29 mg/l	7.21 %
525 mg/l	2.32 %	140 mg/l	2.01 %
840 mg/l	2.14 %	175 mg/l	2.01 %

Method comparison

The method comparisons below, performed with wine samples, show a good correlation for both applications.



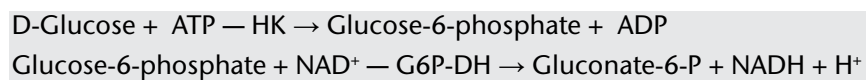


## RIDA<sup>®</sup>CUBE SCAN

### RIDA<sup>®</sup>CUBE D-Glucose (Art. No. RCS4140)

#### Test principle

The test follows the enzymatic procedure with Hexokinase (HK) and Glucose-6-phosphate dehydrogenase (G6P-DH), where NADH is produced and is measured at 340 nm:



#### Content of the kit

The kit contains 32 test-units and the RFID card:

- # 1: 32 tubes with approx. 880 µl reagent 1 (buffer)
- # 2: 32 caps with approx. 220 µl reagent 2 (enzymes)
- # 3: One RFID card (Radio Frequency Identification)

#### Measuring range

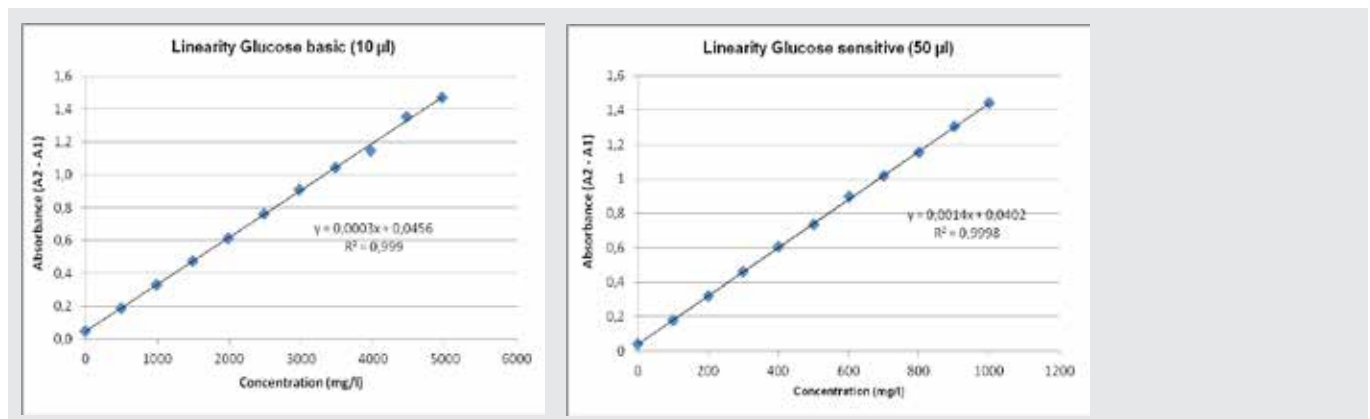
Two applications are available:

- Basic application with 10 µl sample, for a range from 50 mg/l to 5000 mg/l
- Sensitive application with 50 µl sample, for a range from 10 mg/l to 1000 mg/l

The sample volume must be 10 µl or 50 µl. For the sensitive application, it is also possible to pipette any dilution with 50 µl total volume (for example 25 µl sample and 25 µl water), and to calculate the final result accordingly.

#### Calibration

The calibration curves are perfectly linear over the whole measuring range:





# RIDA® CUBE SCAN

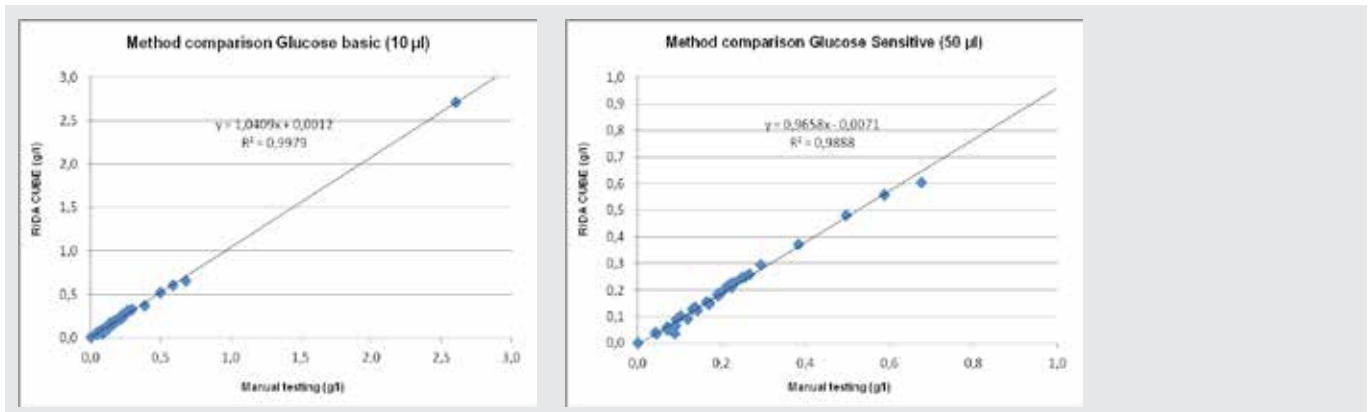
## Precision

Precision data are comparable to those of large laboratory systems, and are better than manual testing:

Basic (10 µl)		Sensitive (50 µl)	
Conc.	CV	Conc.	CV
246 mg/l	2.45 %	49 mg/l	3.22 %
992 mg/l	1.16 %	492 mg/l	0.75 %
4509 mg/l	1.34 %	827 mg/l	0.73 %

## Method comparison

The method comparisons below, performed with wine samples, show an excellent correlation for both applications.

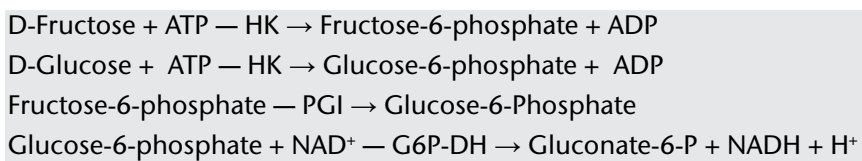


## RIDA® CUBE SCAN

### RIDA® CUBE D-Glucose/D-Fructose (Art. No. RCS4160)

#### Test principle

The test follows the enzymatic procedure with Hexokinase (HK), Glucose-6-Phosphate dehydrogenase (G6P-DH) and phosphoglucose Isomerase (PGI), where NADH is produced and is measured at 340 nm:



#### Content of the kit

The kit contains 32 test-units and the RFID card:

- # 1: 32 tubes with approx. 660 µl reagent 1 (buffer)
- # 2: 32 caps with approx. 330 µl reagent 2 (enzymes)
- # 3: One RFID card (Radio Frequency Identification)

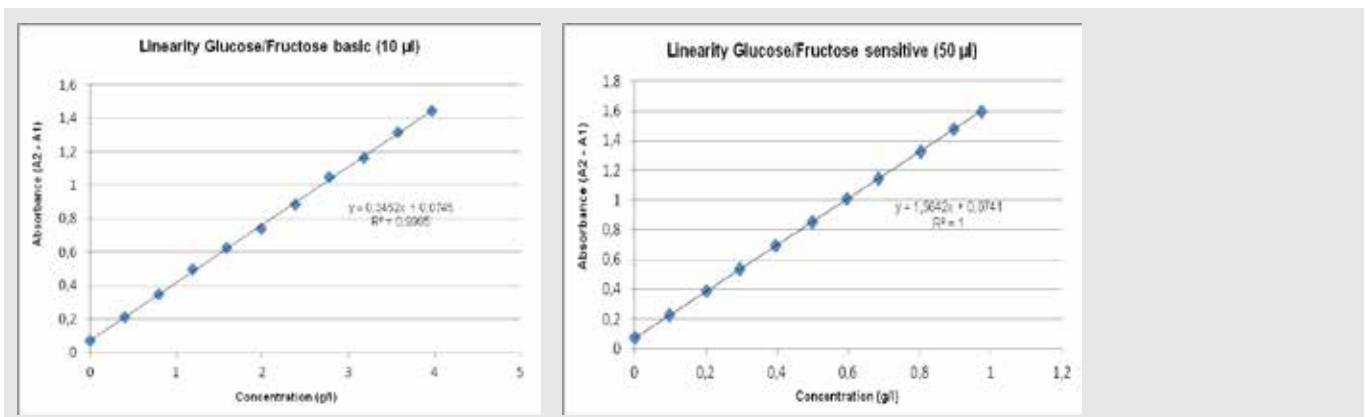
#### Measuring range

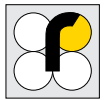
Two applications are available:

- Basic application with 10 µl sample, for a range from 50 mg/l to 5000 mg/l
- Sensitive application with 50 µl sample, for a range from 10 mg/l to 1000 mg/l

The sample volume must be 10 µl or 50 µl. For the sensitive application, it is also possible to pipette any dilution with 50 µl total volume (for example 25 µl sample and 25 µl water), and to calculate the final result accordingly.

#### Calibration





# RIDA® CUBE SCAN

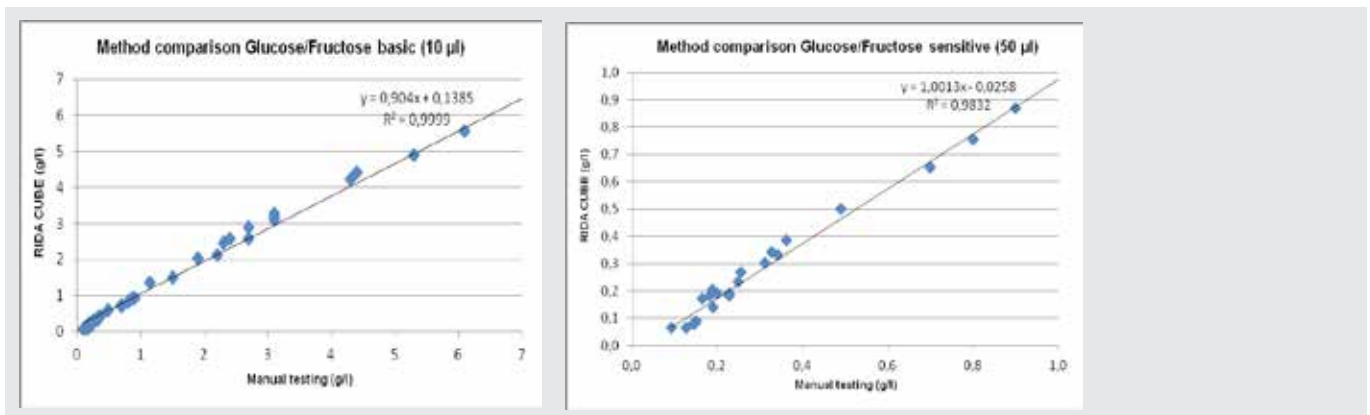
## Precision

Precision data are comparable to those of large laboratory systems, and are comparable to manual testing:

Basic (10 µl)		Sensitive (50 µl)	
Conc.	CV	Conc.	CV
0.5 g/l	2.46 %	0.1 g/l	1.11 %
1 g/l	1.97 %	0.5 g/l	2.13 %
5 g/l	1.19 %	1 g/l	1.37 %

## Method comparison

The method comparisons below, performed with wine samples, show an excellent correlation for both applications.



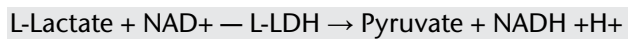
## Product Information

# RIDA<sup>®</sup>CUBE SCAN

## RIDA<sup>®</sup>CUBE L-Lactic Acid (Art. No. RCS4260)

### Test principle

The test follows the enzymatic procedure with L-Lactate Dehydrogenase (L-LDH). NADH is produced and is measured at 340 nm:



### Content of the kit

The kit contains 32 test-units and the RFID card:

- # 1: 32 tubes with approx. 520 µl reagent 1 (buffer)
- # 2: 32 caps with approx. 130 µl reagent 2 (enzymes)
- # 3: One RFID card (Radio Frequency Identification)

### Measuring range

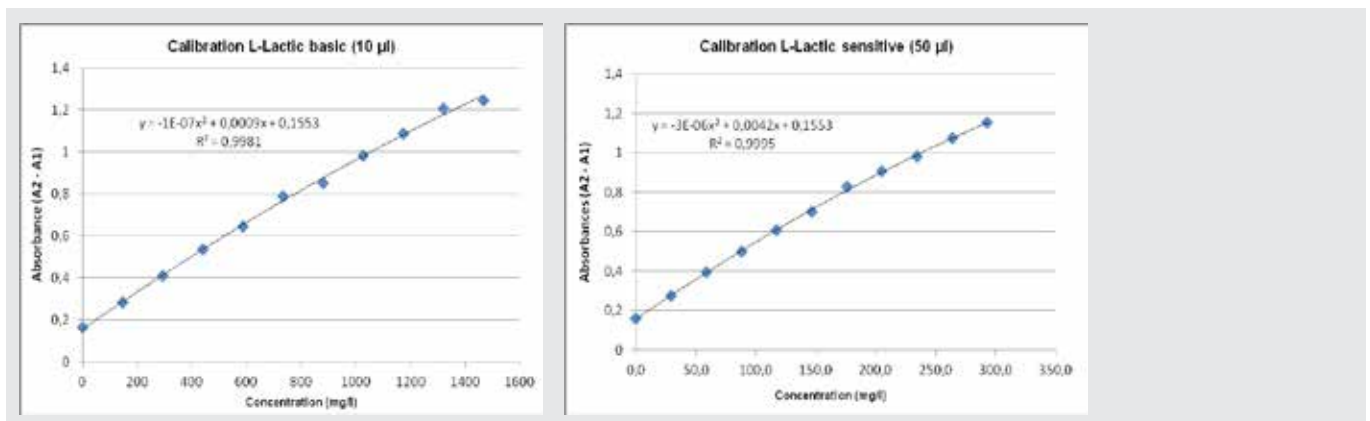
Two applications are available:

- Basic application with 10 µl sample, for a range from 50 mg/l to 5000 mg/l
- Sensitive application with 50 µl sample, for a range from 10 mg/l to 1000 mg/l

The sample volume must be 10 µl or 50 µl. For the sensitive application, it is also possible to pipette any dilution with 50 µl total volume (for example 25 µl sample and 25 µl water), and to calculate the final result accordingly.

### Calibration

The calibration curves are defined as polynomial 2nd order in the RFID card:



## RIDA® CUBE SCAN

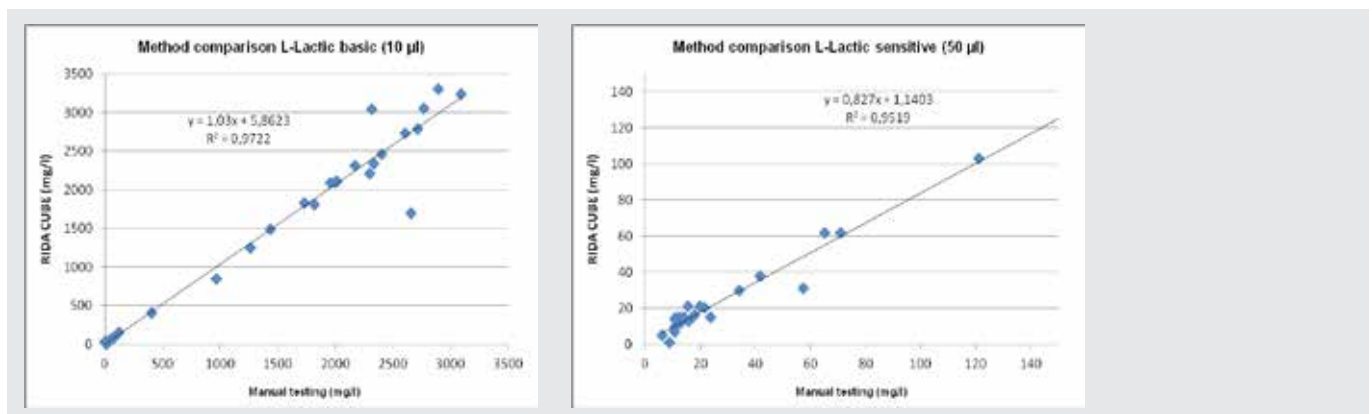
### Precision

Precision data are comparable to those of large laboratory systems, and are comparable to manual testing:

Basic (10 µl)		Sensitive (50 µl)	
Conc.	CV	Conc.	CV
141 mg/l	2.25 %	38 mg/l	2.77 %
550 mg/l	2.35 %	141 mg/l	2.34 %
1135 mg/l	2.38 %	293 mg/l	2.54 %

### Method comparison

The method comparisons below, performed with wine samples, show a good correlation for both applications. For the basic applications, all samples above 1500 mg/l were re-tested after dilution 1:10.



For further information or orders please contact R-Biopharm AG:

#### International Sales:

Phone: +49 (0) 61 51 - 81 02-0  
Fax: +49 (0) 61 51 - 81 02-40  
E-mail: [sales@r-biopharm.de](mailto:sales@r-biopharm.de)

#### National Sales:

Phone: +49 (0) 61 51 - 81 02-0  
Fax: +49 (0) 61 51 - 81 02-40  
E-mail: [info@r-biopharm.de](mailto:info@r-biopharm.de)

#### Order Department:

Phone: +49 (0) 61 51 - 81 02-0  
Fax: +49 (0) 61 51 - 81 02-20  
E-mail: [orders@r-biopharm.de](mailto:orders@r-biopharm.de)