

One platform –

# endless

possibilities

for DNA, RNA, protein and cell analysis



**Agilent 2100 Bioanalyzer**

Our measure is your success.



# Agilent 2100 bioanalyzer

## Applied lab-on-a-chip technology

The Agilent 2100 bioanalyzer is the industry standard for RNA sample QC and has replaced labor-intensive gel electrophoresis for this application. It is also rapidly replacing gel electrophoresis for DNA fragment analysis and SDS-PAGE analysis of protein samples. A unique feature of the Agilent 2100 bioanalyzer is that it can be used for both electrophoretic separation and flow cytometric analysis of cell fluorescence parameters. This versatility makes the Agilent 2100 bioanalyzer an indispensable tool for the molecular biologist and biochemist.

Miniaturization of analytical instrumentation has many advantages over conventional techniques. These advantages include improved data precision and reproducibility, short analysis times, minimal sample consumption, improved automation and integration of complex workflows. Launched in 1999, the Agilent 2100 bioanalyzer was the first commercially available instrument to use microfluidics technology for the analysis of biological samples.



### Choose from two configurations:

- Agilent 2100 bioanalyzer with exchangeable cartridges for electrophoresis and flow cytometry applications
- Agilent 2100 electrophoresis bioanalyzer with exchangeable cartridge for electrophoresis applications only

### Both instrument configurations include:

1. Chip priming station
2. Chip vortexer
3. Agilent 2100 expert software for instrument control and data analysis (expandable for full compliance support in regulated environments)
4. Service and support on system and applications

# A wide range of applications

A single compact system with ready-to-run kits

The Agilent 2100 bioanalyzer offers a broad range of pre-validated analysis kits combined with an easy-to-use benchtop system

- On-chip flow cytometry  
The easy way to acquire dual-color, cell-based fluorescence data
- RNA quality check with RIN  
The industry standard for RNA analysis offering total RNA, mRNA and Small RNA's data including RIN algorithm (RNA Integrity Number)
- DNA size and quantity  
Smart, high resolution separation and quantification of DNA
- SDS-PAGE replacement for Protein analysis  
The fast and reliable way to determine the quantity and purity of proteins from Coomassie down to silver stain sensitivity



## The Agilent bioanalyzer 2100: Automated, fast analysis with excellent data quality

- Ready-to-use assays and pre-packaged reagent kits
- Minimal sample consumption (1-4  $\mu$ L) and results within 30 minutes
- Replaceable electrode cartridge for contamination-free switch of methods
- Improved assay accuracy and precision
- Comparable results from lab to lab
- Digital data for convenient analysis, archiving and storage
- Various data-display options as gel view, electropherograms and tables
- Easy to use with simplified sample comparison
- Minimum exposure to hazardous materials
- Supports compliance with 21 CFR Part 11

# Easy to use

Simplified sample comparison

## 1. Fast and easy operation

Add sample



- Ready-to-use reagent kits
- Quick-start instructions
- Chip preparation in less than five minutes
- Minimal use of hazardous chemicals and waste disposal
- Sample volumes in the  $\mu\text{L}$  range

## 2. Automation

Start chip run



- Start analysis by simply pressing a single button
- Predefined methods
- System uses internal standards to calculate results
- Unattended analysis of up to 12 samples

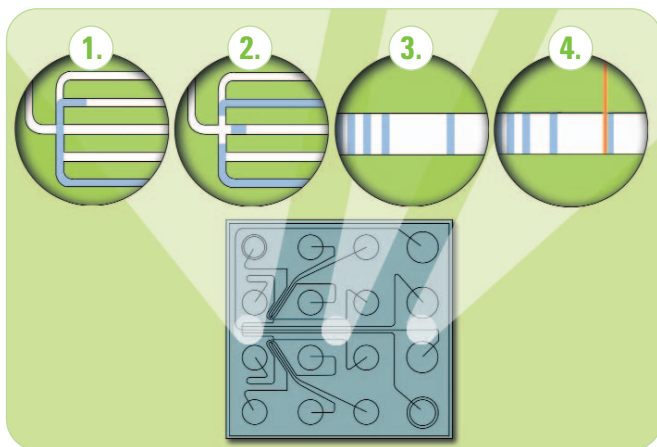
## 3. Digital data in 30 minutes

Watch real-time data display



- Automated data analysis
- Digital data can be shared with other applications or programs
- No user-dependent data interpretation
- RIN algorithm for RNA QC applications

## Principle of lab-on-a-chip operation



1. The sample moves through the microchannels from the sample well.
2. The sample is injected into the separation channel.
3. Sample components are electrophoretically separated.
4. Components are detected by their fluorescence and translated into gel-like images (bands) and electropherograms (peaks).

# Agilent 2100 expert software

Get the most out of your digital data

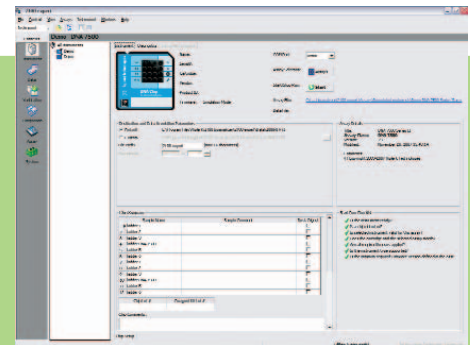
## Powerful software for the analysis of RNA, DNA, proteins and cells

The Agilent 2100 expert software is the single solution specifically created for the bioanalyzer system. Built on the experience of several generations of bioanalyzer software it offers the flexibility of the integrated 2100 expert platform, with features carefully designed to help you get the most out of your digital data.

## Benefits at a glance

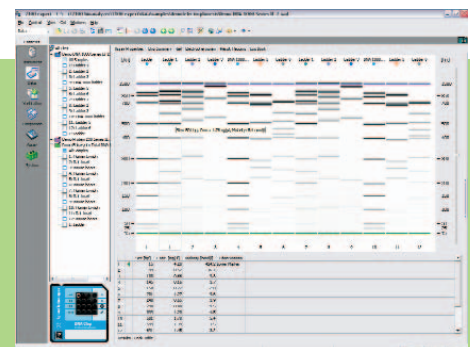
- Powerful data evaluation tools – single platform for all available assays
- Unique RNA Integrity Number (RIN) algorithm for unbiased total RNA integrity assessment
- Ready for compliance – support system validation services (IQ and OQ) and 21 CFR Part 11 compliance using the optional security pack
- Color-coded result flagging tool – an easy-to-use, rule-defined system for automated QC and data evaluation
- Flexible results tables and graphics allow easy instrument control and support standard and advanced user modes
- Fast single click overlay, scaling and zooming features allow quick comparison of up to 48 samples within one chip or across multiple chips
- Multiple exportable data formats allow flexible data exchange
- Free data-review software enables offline evaluation and sharing
- Efficient integrated diagnostic tools minimize system downtime
- Improved smear analysis for RNA, DNA and protein samples
- Native XML file format for seamless data integration across platforms and projects

Setup of samples, choice of method and start of run is conveniently available from an intuitive user interface giving access to 2100 Instruments.



Setup and start

Various graphical views, such as the gel-like format shown here, are supported by tables of additional information and facilitate easy analysis of results.



Analyze and compare

Reports can be configured easily by users to meet their individual needs. Color-coded flagging of results allows users to see at a glance whether specific results are within limits.



Print reports

# Agilent 2100 expert software

Feel safe in regulated environments

## Agilent supports your validation process from start to finish

For scientists working in regulated environments, the Agilent 2100 expert software supports software and hardware IQ and OQ/PV in a dedicated validation context.



**"I believe Agilent provides the most complete range of compliance and validation services in the world. It offers global, multi-vendor, multi-product packages that let you make one call for virtually all your compliance needs."**

*Dr. Ludwig Huber,  
International compliance expert*

## Agilent software tools and services pave the way for compliance

Biopharmaceutical companies bear the extra costs and workload associated with quality control and regulatory compliance. For companies to achieve compliance, laboratory and production procedures have to be standardized and reproducible, while meeting good laboratory practice (GLP) and good manufacturing practice (GMP). Agilent helps to ensure consumer safety while minimizing the impact on biopharmaceutical companies with the Agilent 2100 bioanalyzer for standardized, reliable quality control. Agilent supports the validation process with DQ documentation and IQ and OQ/PV tools and services. The security pack software for the Agilent 2100 bioanalyzer supports all 21 CFR Part 11 requirements. This includes the handling of electronic records, data security, data integrity and audit traceability. The Agilent 2100 expert software is a prerequisite for the Agilent 2100 expert security pack functionality.



### Design Qualification – DQ

DQ defines the functional and operational specifications of the 2100 bioanalyzer system and ensures that it has all the necessary functions and performance criteria. Documents provided for the 2100 bioanalyzer system include:

- Declaration of system validation
- Declaration of conformity for instrument to manufacturing specification

- Declaration of conformity for instrument according to ISO/IEC Guide 22 and CEN/CENELEC EN 45014
- Declaration of conformity for chips and reagents

### Installation Qualification – IQ

IQ ensures that the Agilent 2100 bioanalyzer instrument and the 2100 expert software are installed correctly upon delivery.

### Operational Qualification – OQ

OQ is the process of demonstrating that an instrument will function according to its operational specifications in the selected environment.

### Performance Qualification – PQ

Customers are responsible for the PQ which demonstrates that the 2100 bioanalyzer performs according to a specification appropriate for its routine use and produces reliable, consistent and accurate data.

# Instrument and application support

24-hour repair, extended warranty, application and compliance services

## Hardware and software support services

All Agilent 2100 bioanalyzer system components carry a one-year factory warranty. The Agilent 2100 bioanalyzer instrument is covered by the premium repair service of either 24-hour instrument express exchange or return for repair with loan instrument. This significantly reduces the instrument downtime. The premium warranty service can be extended in the following ways to ensure maximum uptime.

- One-year or two-year warranty extensions for all major Agilent 2100 bioanalyzer system components including, PC, printer, software and express exchange for the instrument. In addition, this warranty extension provides an annual system PM (Preventive Maintenance) service
- One-year or two-year express exchange warranty extension for the Agilent 2100 bioanalyzer instrument, with the option of including the Agilent bundle PC and printer
- One-year or two-year software warranty extension, comprising unlimited feature support, automated, free-of-charge software updates and software status bulletins

## Application support services

Two on-site application related support services are available:

- Start-up services to familiarize the new user with the hardware, software and an application of choice
- Operational services including trouble-shooting for application-related problems and user training for a kit of your choice. Running customer samples is included in this training

## Compliance services for system qualification

For all current Agilent 2100 bioanalyzer instrument bundles\*, Agilent offers complete system (IQ) Installation Qualification and (OQ) Operational Qualification services. The Agilent 2100 bioanalyzer IQ and OQ services are exclusively provided by specially trained and certified Agilent service personnel. The complete suite of compliance services comprises qualifying instrument and software for variable configurations.



**Agilent 2100 bioanalyzer**  
One platform – endless possibilities for DNA, RNA, protein and cell analysis

## Instrument specifications

Type	Specification
Weight	10 kg (22 lbs)
Dimensions (height x width x depth)	290 x 162 x 412 mm (11.4 x 6.4 x 16.2 inches)
Line voltage	100 – 240 VAC
Line frequency	50 – 60 Hz
Power consumption	60 VA
Ambient operating temperature	5 – 40 °C, (41 – 104 °F)
Safety standards IEC, EN, CSA, UL	Installation Category II, Pollution Degree 2, Laser Class 1

\* Not available for "A" series instruments sold before 2001.

**Learn more:**

[www.agilent.com/chem/labonachip](http://www.agilent.com/chem/labonachip)

**Buy online:**

[www.agilent.com/chem/store](http://www.agilent.com/chem/store)

**Find an Agilent customer  
center in your country:**

[www.agilent.com/chem/contactus](http://www.agilent.com/chem/contactus)

**U.S. and Canada**

1-800-227-9770

[agilent\\_inquiries@agilent.com](mailto:agilent_inquiries@agilent.com)

**Europe**

[info\\_agilent@agilent.com](mailto:info_agilent@agilent.com)

**Asia Pacific**

[adinquiry\\_aplsca@agilent.com](mailto:adinquiry_aplsca@agilent.com)

© Copyright 2008 Agilent Technologies  
Published February 1, 2008  
Publication Number 5989-7725EN



**Agilent Technologies**