Agilent 2100 Bioanalyzer System

SECURE EXPERIMENTAL SUCCESS

Agilent Technologies
AGILENT 2100 BIOANALYZER SYSTEM

SECURE EXPERIMENTAL SUCCESS

Trust the quality of your samples

Sample quality is of paramount importance for experimental success. Introduced in 1999, the Agilent 2100 Bioanalyzer system was the first commercially available instrument for miniaturized analysis of biological samples with on-chip electrophoresis.

With citations in more than 35,000 scientific papers, the Agilent 2100 Bioanalyzer system is a well-established tool for quality control of RNA and DNA samples. The fast electrophoretic analysis of biomolecules — DNA, RNA, and proteins — results in digital data providing objective information about concentration, size and integrity.

Even with limited material, the 2100 Bioanalyzer system offers unprecedented speed, flexibility, sensitivity and reproducibility. Trust the integrity values and concentrations of your precious samples for highest confidence in your downstream experiments.

The Agilent 2100 Bioanalyzer system, combined with prepackaged kits including chips and reagents, and intuitive software with application specific assays, provides a versatile solution for quality control ensuring experimental success.
The sample moves through the microchannels from the sample well.

The sample is injected into the separation channel.

Sample components are electrophoretically separated.

Components are detected by their fluorescence and translated into gel-like images (bands) and electropherograms (peaks).

Key benefits

**High sensitivity**
Down to pg/μL concentration

**Minimum sample consumption**
Only 1-4 μL of sample required

**Highly flexible**
On-chip electrophoresis of DNA, RNA, and proteins

**High quality digital data**
RIN algorithm for RNA sample integrity; DNA and protein sample quality control

**Contamination-free**
Exchangeable electrode cartridge for an easy switch between methods

**Compliance services and software**
21 CFR Part 11 compliant software and IQ/OQ services

Principle of operation
Assessing the quantity and quality of your experimental starting material is essential for research success. The Agilent 2100 Bioanalyzer system is a versatile tool for sample quality control (QC) in many workflows, including next generation sequencing, gene expression, and proteomics. It allows evaluation of integrity, concentration and purity of RNA, DNA and protein samples derived from a large range of origins, including FFPE samples, laser-microdissected tissues, and biopsies.

**DNA fragment analysis**
- Sample QC in next generation sequencing:
  - Size distribution analyses
  - QC of PCR-amplified libraries
- PCR validation and impurity check
- Restriction digestion analysis
- Food analysis

**Protein applications**
- Optimization and monitoring of protein purification
- Protein expression
- Protein production
- Food analysis
- Quality control of antibodies
- Absolute quantitation of proteins

![Graphs and charts illustrating DNA and protein applications](image)
Sample QC in gene expression

- QC prior to gene expression studies utilizing microarrays and qPCR
- Transcriptome profiling with RNA sequencing
- QC of small RNA fractions for miRNA research or Small RNA sequencing
- QC of plant RNA or bacterial RNA

Genome Editing Applications

- Quality control of guide RNA (gRNA)
- Cleavage/mutation detection
- Vector assembly analysis

RNA integrity assessment of total RNA

A. Sizing and quantitation of gRNA
B. Targeted cleavage or mutation assays to test gRNA function
A VERSATILE INSTRUMENT

For excellent data quality
Agilent provides a complete solution with the 2100 Electrophoresis RoHS Bioanalyzer system with exchangeable cartridge for electrophoresis applications.

The system includes:
1. Chip priming station
2. Chip vortexer
3. Agilent 2100 Expert software for instrument control and data analysis (optional expansion for full compliance support in regulated environments)
4. Service and support on system and applications

Maximum flexibility
Exchangeable cartridge for on-chip electrophoresis. An easy switch between methods.

Excellent sensitivity
Minimal sample consumption (only 1-4 µL required) due to miniaturization and highly sensitive laser induced fluorescence detection.

Most robust
Highly stable instrument that is not dependent on fragile components or multiple moving parts.

Instrument specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Weight</td>
<td>10 kg (22 lbs)</td>
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<tr>
<td>Dimensions (height x width x depth)</td>
<td>290 x 162 x 412 mm (11.4 x 6.4 x 16.2 inches)</td>
</tr>
<tr>
<td>Line voltage</td>
<td>100 – 240 VAC</td>
</tr>
<tr>
<td>Line frequency</td>
<td>50 – 60 Hz</td>
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<tr>
<td>Power consumption</td>
<td>60 VA</td>
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<tr>
<td>Ambient operating temperature</td>
<td>15 – 27 °C (59 – 80 °F)</td>
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<tr>
<td>Safety standards</td>
<td>IEC, EN, CSA, UL</td>
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<tr>
<td></td>
<td>Installation Category II, Pollution Degree 2, Laser Class 1</td>
</tr>
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GET THE MOST OUT OF YOUR DIGITAL DATA

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

The 2100 Expert software offers powerful data evaluation tools for all available assays, allowing you to get the most out of your digital data.

Unique features

- RNA Integrity Number (RIN) – the established parameter for unbiased total RNA quality control
- Color-coded result flagging tool – an easy-to-use rule-defined system for automated QC and data evaluation
- Security Pack expansion – supports all 21 CFR Part 11 requirements, including the handling of electronic records, data security, data integrity and audit traceability.

INSTRUMENT AND APPLICATION SUPPORT

Hardware and software support services

All 2100 Bioanalyzer system components carry a one-year factory warranty. Coverage may be extended with:

- One- to four-year warranty extension with the CrossLab Silver contract. This premium service provides instrument express exchange or return for repair, free-of-charge software updates, and an annual system preventative maintenance service.
- One- to four-year warranty extension for solely the 2100 Bioanalyzer instrument.

Compliance services

Agilent offers Installation Qualification and Operational Qualification services exclusively provided by certified Agilent service personnel. The complete suite of compliance services comprises qualifying instrument and software for variable configurations.

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.
- On-site consulting services, including troubleshooting for application-related problems and user training for a kit of your choice. Running customer samples is included in this training.