

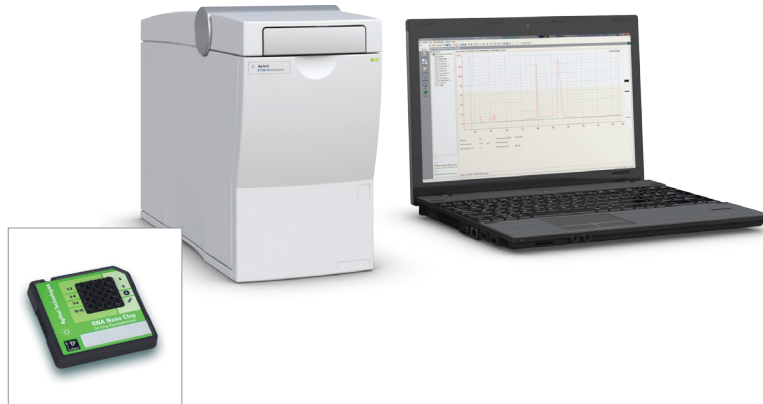
# Agilent RNA Kits for the 2100 Bioanalyzer System

Fast quality control of RNA with minimal sample consumption

Do you check the quality of your total RNA preparation after isolation? Are you confident about the quality of your mRNA, Cy5 labeled RNA, or guide RNA? Agilent offers RNA assays that allow characterization of a variety of RNA sample types and estimation of their concentrations within minutes, with only a few nano- or picograms of sample.

## Advantages

- **Minimal sample consumption** – use as little as 200 pg of total RNA for analysis, saving most of your valuable sample
- **Faster results** – complete automated analysis of 11 or 12 samples in about 30 minutes
- **High assay accuracy and precision** – pre-packaged reagents and standardized assay protocols yield highly accurate and reproducible data
- **Quick and easy sample comparison** – automated sample alignment, one-click



- **overlay, scaling and zooming features**
- **Conveniently archived and stored digital data** – easily share data with others and export it for publications or presentations
- **Alternative data display options** – results shown in gel-like image, electropherogram, and tabular formats
- **Easy-to-use** – simply load the chip, press "start" and the 2100 Bioanalyzer system does the rest
- **RNase free** – uses RNase free reagents and chips to avoid sample degradation during analysis
- **Clean** – minimal exposure to ethidium bromide or other hazardous materials

Analytical specifications	RNA 6000 Nano Kit		RNA 6000 Pico Kit		Small RNA Kit
	Total RNA Nano	mRNA Nano	Total RNA Pico	mRNA Pico	Small RNA
Quantitative range	25–500 ng/μL	25–500 ng/μL	-	-	50–2000 pg/μL of purified miRNA*
Qualitative range	5–500 ng/μL	25–250 ng/μL	50–5000 ng/μL*	250–5000 ng/μL*	50–2000 pg/μL of purified miRNA*
Quantification reproducibility	10% CV	10% CV	20% CV	20% CV	25% CV
Size range	-	-	-	-	6–150 nt
Sensitivity (S/N>3)*	5 ng/μL	25 ng/μL	50 pg/μL 200 pg/μL (in TE)	250 pg/μL 500 pg/μL (in TE)	50 pg/μL**
Quantification accuracy	20%	20%	30%	30%	-
Maximum sample buffer strength	100 mM Tris, 0.1 EDTA or 125 mM NaCl or 15 mM MgCL <sub>2</sub>	100 mM Tris, 0.1 EDTA or 125 mM NaCl or 15 mM MgCL <sub>2</sub>	50 mM Tris, 0.1 EDTA or 50 mM NaCl or 15 mM MgCL <sub>2</sub>	50 mM Tris, 0.1 EDTA or 50 mM NaCl or 15 mM MgCL <sub>2</sub>	10 mM Tris 0.1 mM EDTA
Physical specifications					
Analysis run time	30 minutes	30 minutes	30 minutes	30 minutes	30 minutes
Samples per chip	12	12	11	11	11
Sample volume	1 μL	1 μL	1 μL	1 μL	1 μL
Kit Stability***	4 months	4 months	4 months	4 months	4 months

\*Samples in water

\*\*Measured for the 40 nt fragment of the Small RNA ladder

\*\*\*Minimum guarantee

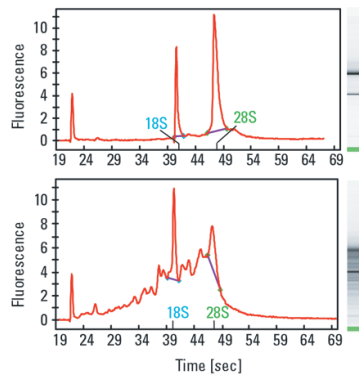


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## RNA 6000 Nano and Pico Assay

### Example: Quality control of RNA

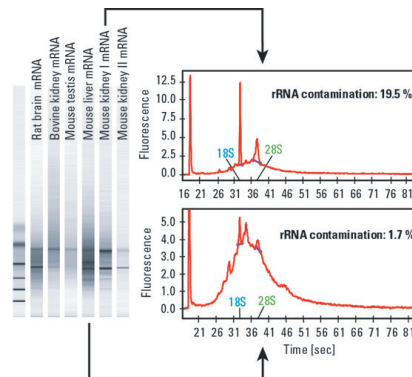
- Identify degradation of total RNA
- Identify degradation of mRNA
- High sensitivity with minimal sample consumption
- Unparalleled sensitivity in the picogram range



## RNA 6000 Nano and Pico Assay

### Example: Purity analysis of mRNA

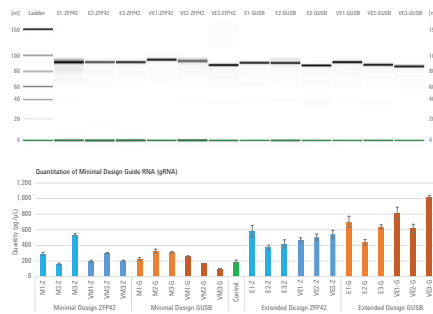
- Detect and visualize ribosomal RNA contamination in mRNA samples
- Determine the percentage of ribosomal contamination



## Small RNA Assay

### Example: Quality control in genome editing

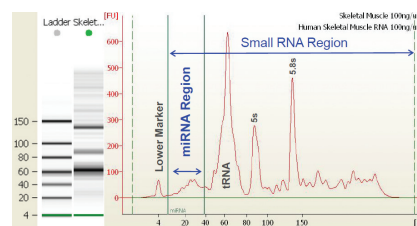
- Determination of yield and sizing of guide RNAs after *in vitro* transcription
- Identification of impurities, truncations, secondary structure formation



## Small RNA Assay

### Example: Monitoring of Small RNAs

- Detect and visualize miRNA directly in total RNA or enriched samples
- Measure and compare various small RNA regions in different extracts and tissues
- Monitor and compare expression under various conditions



RNase degradation of RNA samples is a common reason for failed experiments. The 2100 Bioanalyzer system provides RNA quality control results in both gel-like image as well as electrophoretic data making it easy to detect even small degradation effects. Indications for RNA degradation are:

- Decreasing ratio of ribosomal bands
- Additional peaks below the ribosomal bands
- Decrease in overall RNA signal
- Shift towards shorter fragments

Many applications, such as cDNA synthesis for library construction or RT-PCR profit from highly enriched mRNA. The RNA kits allow the visualization of small impurities of ribosomal RNA in mRNA samples. The percentage calculation of ribosomal contamination and a good estimate of RNA concentration are also shown. All of this can be achieved with minimal amounts of sample.

In CRISPR/Cas workflows, the synthesis of guide RNA (gRNA) is a key component for successful genome editing. gRNA created by *in vitro* transcription and purified may be run on the 2100 Bioanalyzer system. The Small RNA Kit is ideally suited for this application as it allows for high resolution separation of small RNAs from 6-150 nucleotides. Important features to look for: impurities or secondary structure, samples are of expected size and sufficient yield for follow-up studies.

Small RNAs sized below 200 nt are hard to separate and measure at low concentrations. For better results in downstream experiments, e.g. miRNA microarrays or real time PCR, it is beneficial to know what quality and amounts of miRNA are available.

[www.agilent.com/genomics/bioanalyzer](http://www.agilent.com/genomics/bioanalyzer)

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