Data Sheet

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# Agilent RNA Kits for the Agilent 2100 Bioanalyzer System

## Fast Quality Control of RNA with Minimal Sample Consumption

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.

### Key Features

- High assay accuracy and precision: Pre-packaged reagents and standardized assay protocols yield highly accurate and reproducible data
- Minimal sample consumption: Only 1 µL of sample required
- Fast results: Automated analysis of up to 12 samples in 30 minutes
- Quick and easy sample comparison: Automated sample alignment, one-click overlay, scaling and zooming features
- Data display options: Gel-like image, electropherogram, and tabular formats
- RNase free: Uses RNase free reagents and chips to avoid sample degradation during analysis
- Clean: Minimal exposure to hazardous materials, such as ethidium bromide
- Conveniently archive, store and share digital data

| Analytical specifications | RNA 6000 Nano Total RNA | RNA 6000 Nano mRNA | RNA 6000 Pico Total RNA | RNA 6000 Pico mRNA | Small RNA |
|---|---|---|---|---|---|
| Sizing range | - | - | - | - | 6 – 150 nt |
| Sensitivity[1] | 5 ng/µL in water | 25 ng/µL in water | 50 pg/µL in water<br>200 pg/µL in TE | 250 pg/µL in water<br>500 pg/µL in TE | 50 pg/µL in water[3] |
| Quantitative precision (within a chip) | 10 % CV | 10 % CV | 20 % CV | 20 % CV | 25 % CV |
| Quantitative accuracy[2] | ±20 % | ±20 % | ±30 % | ±30 % | - |
| Quantitative range | 25 – 500 ng/µL | 25 – 250 ng/µL | - | - | 50 – 2,000 pg/µL of purified miRNA in water |
| Qualitative range | 5 – 500 ng/µL | 25 – 250 ng/µL | 50 – 5,000 pg/µL in water | 250 – 5,000 pg/µL in water | 50 – 2,000 pg/µL of purified miRNA in water |
| Maximum buffer concentration in sample | 100 mM Tris<br>0.1 mM EDTA<br>or 125 mM NaCl<br>or 15 mM $MgCl_2$ | 100 mM Tris<br>0.1 mM EDTA<br>or 125 mM NaCl<br>or 15 mM $MgCl_2$ | 50 mM Tris<br>0.1 mM EDTA<br>or 50 mM NaCl<br>or 15 mM $MgCl_2$ | 50 mM Tris<br>0.1 mM EDTA<br>or 50 mM NaCl<br>or 15 mM $MgCl_2$ | 10 mM Tris<br>0.1 mM EDTA |
| **Physical specifications** | | | | | |
| Analysis time | 30 minutes | 30 minutes | 30 minutes | 30 minutes | 30 minutes |
| Samples per chip | 12 | 12 | 11 | 11 | 11 |
| Sample volume required | 1 µL | 1 µL | 1 µL | 1 µL | 1 µL |
| Kit stability | 4 months | 4 months | 4 months | 4 months | 4 months |
| Kit size | 300 samples | 300 samples | 275 samples | 275 samples | 275 samples |

*[1]Signal-to-noise >3 (single peak)* *[2]Determined using ladder as sample* *[3]Measured for the 40 nt fragment of the Small RNA ladder*

## Ordering information

| Order No. | Description |
|---|---|
| 5067-1511 | RNA 6000 Nano kit |
| 5067-1512 | RNA 6000 Nano reagents |
| 5067-1529 | RNA Nano ladder |

| Order No. | Description |
|---|---|
| 5067-1513 | RNA 6000 Pico kit |
| 5067-1514 | RNA 6000 Pico reagents |
| 5067-1535 | RNA Pico ladder |

| Order No. | Description |
|---|---|
| 5067-1548 | Small RNA kit |
| 5067-1549 | Small RNA reagents |
| 5067-1550 | Small RNA ladder |

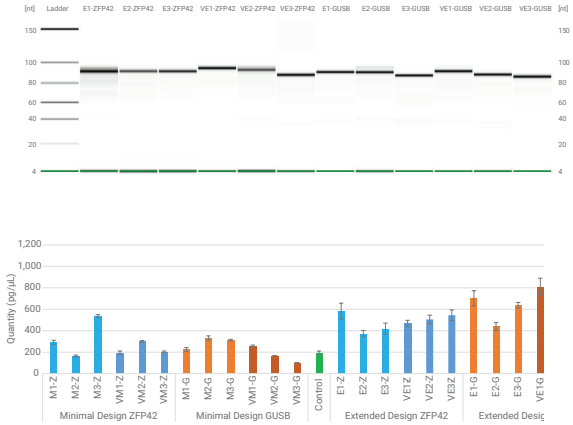
## Small RNA Assay

### 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

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.




## 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

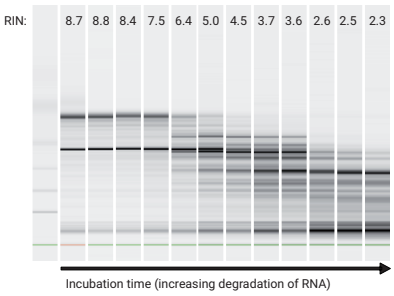
RNase degradation of RNA samples is a common reason for failed experiments. The 2100 Bioanalyzer system provides RNA quality control results in both gel-like image as well as electrophoretic data making it easy to detect even small degradation effects. Indications for RNA degradation are:

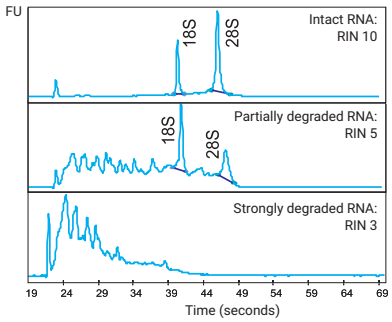
– Decreasing ratio of ribosomal bands

– Additional peaks below the ribosomal bands

– Decrease in overall RNA signal

– Shift towards shorter fragments




**www.agilent.com/genomics/bioanalyzer**

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