Agilent RNA ScreenTape System Quick Guide

The Agilent 2200 TapeStation system is an automated platform for simpler, faster and more reliable electrophoresis. It is made up of 3 elements:

- 2200 TapeStation system (G2964AA) or 2200 TapeStation Nucleic Acid system (G2965AA)
- RNA ScreenTape (5067-5576) with RNA ScreenTape Sample Buffer (5067-5577) and RNA ScreenTape Ladder (5067-5578)
- Agilent Software packages (2200 TapeStation Controller Software, and TapeStation Analysis Software)

Kits

The RNA ScreenTape system is designed for analysing eukaryote and prokaryote RNA molecules from 50 – 6000 nt (nucleotides).

Specifications

Analytical Specification	RNA ScreenTape assay and reagents
Quality Score	RIN^e
Quantitative Range	25 – 500 ng/µL
Quantitative Precision (%CV)[1]	5 %
Quantitative Accuracy	20 %
Sizing Range	100 – 6000 nt
Sensitivity[2]	5 ng/µL
RIN^e functional range	25 – 500 ng/µL
Analysis Type	Eukaryotic or Prokaryotic Total RNA QC
Maximum sample buffer strength	200 mM Tris, 20 mM EDTA, or 50 mM NaCl
Physical Specifications	
Analysis Time	16 samples < 16 min, 96 samples < 100 min
Samples per consumable	16
Sample volume required (µL)	1
Kit Stability	4 months
Kit Size	112 samples

For total RNA samples

[1] Within a ScreenTape device [2] Signal/noise >3 in water and TE

Storage Conditions

- Sample Buffer: 2 – 8 °C (36 – 46 °F)
- The ScreenTape device: 2 – 8 °C (36 – 46 °F) (if you run less than 16 lanes, store used ScreenTape device upright at 2 – 8 °C (36 – 46 °F) for a maximum of 2 weeks.)
- *Never* freeze the ScreenTape device - any ScreenTape device which is accidentally frozen should be discarded.
- Ladder: below -20 °C (-4 °F)

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Kit Components

Part Number	Name	Color	Amount
5067-5576	RNA ScreenTape		7 ScreenTape devices
5067-5577	RNA ScreenTape Sample buffer		1 vial
			600 µL
5067-5578	RNA ScreenTape Ladder		1 vial
			10 µL

Additional Consumables Required for the 2200 TapeStation Instrument

- Loading tips (5067-5152 or 5067-5153)
- Optical Tube 8x Strip (401428) and Optical Cap 8x Strip (401425) or 96-well Sample Plates (5067-5150) and 96-well Plate Foil Seal (5067-5154).
- Vortex mixer (See note below)

Additional Material Required (Not Supplied)

- Volumetric pipette
- Centrifuge
- Heating block or PCR machine

NOTE 2200 TapeStation instruments are supplied with an optional IKA MS3 vortexer which includes a 96-well plate adaptor suitable for both 96-well PCR plates and 8-way strips.

Safety Information

WARNING

Toxic agents

The handling of solvents, samples and reagents can hold health and safety risks.

- ➔ When using/handling the ScreenTape device and working with these substances observe appropriate safety procedures (for example by wearing goggles, safety gloves and protective clothing).
- ➔ Always follow good laboratory practices and adhere to the guidelines established in your laboratory.
- ➔ Refer to product material safety datasheets for further information.
- ➔ The volume of substances should be reduced to the minimum required for the analysis.

CAUTION

Damage to the 2200 TapeStation instrument

- ➔ Use only the recommended consumables and reagents with the 2200 TapeStation system.

Information on Working with RNA

CAUTION

Sample degradation

- ➔ Ensure all working areas, reagents and plastic ware are RNase free.
- ➔ Handle RNA samples with care.
- ➔ Wear gloves at all times.
- ➔ Thaw RNA samples on ice.
- ➔ Vortex and centrifuge all samples before use.
- ➔ Store RNA samples on ice throughout the ScreenTape analysis procedure.

NOTE

- For best results, ensure that all reagents are allowed to equilibrate to room temperature prior to use.
- When pipetting Sample Buffer, ensure that excess buffer droplets are removed from the tip before transfer to the sample tubes.

  Care must be taken due to the viscosity of Sample Buffers.
- When pipetting small volumes ensure that no sample remains within the tip.
- When adding Sample Buffer to sample, please ensure that they are mixed correctly. To achieve this, gently mix several times with additional pipetting, then cap the tubes, vortex mix using IKA vortexer and adaptor at 2000 rpm for 1 min.
- Briefly centrifuge to collect the contents at the base of the tubes.
- *Improper mixing can lead to quantification errors.*
- RNA ScreenTape Ladder should be stored at -20 °C (-68 °F).

Essential Measurement Practices

Environmental conditions	• Optimal operating temperature: 20 °C (68 °F) • Ambient operating temperature: 14 - 30 °C (57 - 86 °F)
Steps before use on the TapeStation instrument	• Equilibrate each vial to room temperature. • Vortex mix each vial and briefly spin. • 'Flick' ScreenTape devices to eliminate bubbles in the separation channel, which could interfere with sample loading.
Steps during sample preparation	• Keep reagents at room temperature during sample preparation. • Keep all samples on ice between steps.
Steps after sample preparation	• Store Sample Buffer and ScreenTape devices at 2 – 8 °C (36 – 46 °F), store Ladder below -20 °C (-4 °F) • Never store Sample Buffer or ScreenTape devices at room temperature or below 0 °C (32 °F) • If you run less than 16 lanes, store used ScreenTape devices upright at 2 – 8 °C (36 – 46 °F) for a maximum of 2 weeks
Pipette carefully	• Always pipette reagents against the side of the sample tube. • If using a standard pipette ensure that no residual material is left on the outside of the tip.
Mix properly after each pipetting step	• Mix = Vortex the PCR tubes or 96-well plate using IKA vortexer and adaptor at 2000 rpm for 1 min. • Spin = Move the samples to the bottom of the tubes/wells by pulsing in a centrifuge.
Heat reactions optimally	• Many heat blocks and PCR machines display a temperature that can be incorrect by up to 10 °C (50 °F). • Please accurately calibrate the hot block or PCR machine used to heat samples.
Spin after heating	• After each heating step, spin samples down by pulsing in a centrifuge to remove any condensed material from lid or cover.

Prepare TapeStation System RNA

Parts required	p/n	Description
	5067-5576	RNA ScreenTape

1 Launch the 2200 TapeStation Controller Software.

2 Load RNA ScreenTape device and loading tips into the 2200 TapeStation instrument.

3 Select RNA Protocol (**Eukaryotic RNA** or **Prokaryotic RNA**)

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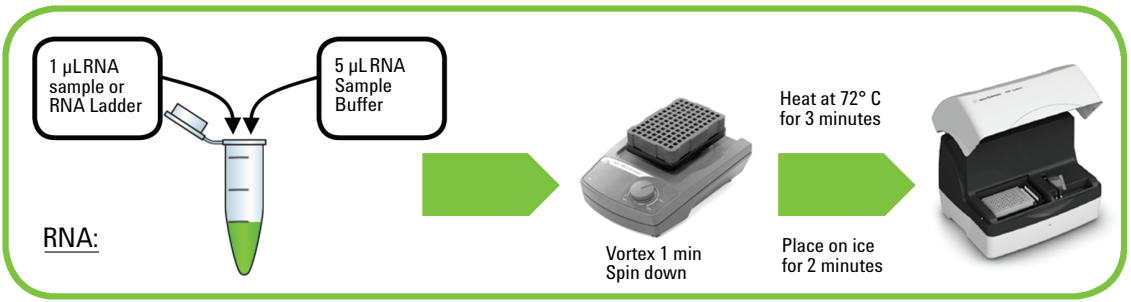
Sample Preparation RNA ScreenTape Assay

Parts required	p/n	Description
	5067-5577	RNA ScreenTape Sample Buffer
	5067-5578	RNA ScreenTape Ladder

1 Allow reagents to equilibrate at room temperature for 30 min
2 Vortex mix before use
3 Thaw total RNA samples on ice
4 If running ladder, prepare by mixing 5 µL RNA Sample Buffer (●) with 1 µL RNA Ladder (●).
5 Prepare sample by mixing 5 µL RNA Sample Buffer (●) with 1 µL RNA sample.

NOTE For best results, use the reverse pipetting technique.

6 Spin down, then vortex using IKA vortexer and adaptor at 2000 rpm for 1 min.
7 Spin down to position the sample at the bottom of the tube.
8 Ladder/Sample denaturation
   a Heat ladder and samples at 72 °C (162 °F) for 3 min
   b Place ladder and samples on ice for 2 min
   c Spin down to position the sample at the bottom of the tube



Sample Analysis

1 Load samples into the 2200 TapeStation instrument.
2 Select the required samples on the 2200 TapeStation Controller Software.
3 Click **Start** and specify a filename with which to save your results.

For Research Use Only

Not for use in Diagnostic Procedures.

Technical Support

For technical support, please visit www.agilent.com/genomics/contact

Further Information

Visit Agilent Technologies` web site. It offers useful information, support and current developments about the products and technology: www.agilent.com/genomics/tapestation

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