High Sensitivity RNA ScreenTape Assay for TapeStation Systems
Quick Guide

The Agilent 4150 (G2992AA) and 4200 (G2991AA and G2991BA) TapeStation systems are automated platforms for scalable, flexible, fast, and reliable electrophoresis of nucleic acids.
This Quick Guide is intended for use with the Agilent 4150 and 4200 TapeStation systems only.
The High Sensitivity RNA ScreenTape assay is designed for analyzing and assessing integrity of eukaryotic and prokaryotic total RNA.

Specifications

Analytical specifications	**High Sensitivity RNA ScreenTape assay**
Sensitivity[1]	100 pg/µL
Quantitative precision[2]	15 % CV
Quantitative accuracy[2]	±30 %
Quantitative range[2]	500 – 10000 pg/µL
RIN^e functional range[3]	1000 – 25000 pg/µL
Maximum buffer concentration in sample	10 mM Tris, 1 mM EDTA
Physical specifications	
Analysis time	16 samples: <35 min, 96 samples: <180 min
Samples per consumable	16
Sample volume required	2 µL
Kit stability	6 months
Kit size	112 samples

1 Signal-to-noise >3 (single peak)
2 Applicable to eukaryotic total RNA as sample
3 RIN^e – RNA integrity number equivalent

Storage Conditions

- Store High Sensitivity RNA sample buffer and ScreenTape devices: 2 – 8 °C (36 – 46 °F).
- Store High Sensitivity RNA ladder at -20 °C to -5 °C (-4 °F to 23 °F).
- Store partially used ScreenTape devices upright at 2 – 8 °C (36 – 46 °F) for a maximum of 2 weeks.
- Never freeze ScreenTape devices. Discard any accidentally frozen ScreenTape devices.

Kit Components

Part Number	Name	Color	Amount
5067-5579	High Sensitivity RNA ScreenTape		7 ScreenTape devices
5067-5580	High Sensitivity RNA ScreenTape Sample Buffer		1 vial, 250 µL
5067-5581	High Sensitivity RNA ScreenTape Ladder		1 vial, 10 µL

Limited Use Label License

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For Research Use Only

Not for use in Diagnostic Procedures.

Additional Material Required for Analysis with the TapeStation Systems

- Loading tips (5067-5598, 1 pk or 5067-5599, 10 pk)
- Optical Tube 8x Strip (401428) and Optical Tube Cap 8x Strip (401425)
- Vortex mixer IKA MS3 with 96-well sample plate adapter
- 96-well sample plates (5042-8502) and 96-well Plate Foil Seal (5067-5154) (4200 TapeStation systems only)

Additional Equipment Required (Not Supplied)

- Volumetric micropipettes for handling volumes from 1 to 15 µL
- Centrifuges for tube strips and 96-well sample plates
- Heating block or PCR cycler compatible with 200 µL tube strip vials and full skirted 96-well sample plates

WARNING

Toxic agents

- ✓ **Refer to product material safety datasheets for further information.**
- ✓ **When working with the ScreenTape assay follow the appropriate safety procedures such as wearing safety goggles, laboratory gloves and protective clothing.**

CAUTION

Damage to the TapeStation systems

- ✓ **Only use the recommended consumables and reagents with the TapeStation systems.**

Essential Measurement Practices

Read about good measurement practices in the TapeStation Information Center and/or in the System Manual.

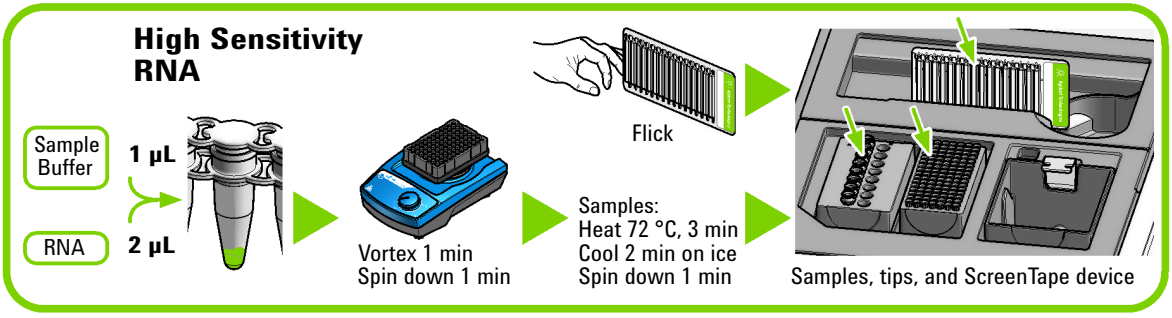
Environmental conditions	• Operating temperature: 14 – 30 °C (57 – 86 °F) • Keep reagents during sample preparation at room temperature
Working with RNA samples	• Wear gloves all the time • Thaw RNA samples and ladder on ice and keep them on ice during sample preparation • Ensure that all working areas and plastic ware are RNase free
Steps before sample preparation	• Allow Sample Buffer to equilibrate at room temperature for 30 min prior to use • Vortex each vial and briefly spin down • Flick ScreenTape device to eliminate bubbles in the buffer chamber
Pipetting practice	• Pipette reagents carefully against the side of the 96-well sample plate or sample tube • Ensure that no sample or Sample Buffer remains within or on the outside of the tip • Care must be taken due to viscosity of the Sample Buffer
Mixing and centrifugation recommendations	• Apply foil seal to 96-well sample plate or cap the tube strips prior to mixing and centrifugation • Centrifuge to collect liquid at the base; then vortex using the IKA MS3 vortexer and adaptor at 2000 rpm for 1 min • Briefly centrifuge and visually confirm that all liquid is collected at the bottom of the 96-well sample plate or tube strips and any air bubble is removed • Run samples immediately after preparation

Assay Considerations

- All assay specifications are based on average values.
- Ladder is exclusively loaded from location A1 on the tube strip holder.
- Always use a complete tube strip when running ladder or samples from the tube strip holder.
- For best sizing and molarity quantification results, a ladder per analysis is recommended. Alternatively, an electronic ladder is available, which can be selected in the Agilent TapeStation Controller software.

High Sensitivity RNA ScreenTape Assay Operating Procedure

1 Allow High Sensitivity RNA Sample Buffer to equilibrate at room temperature for 30 minutes.
2 Thaw High Sensitivity RNA Ladder and total RNA samples on ice.
3 Launch the Agilent TapeStation Controller software.
4 Flick the High Sensitivity RNA ScreenTape device and insert it into the ScreenTape nest of the TapeStation instrument.
5 Select required sample positions in the TapeStation Controller software.
6 The required consumables (tips, further ScreenTape devices) are displayed in the TapeStation Controller software.
7 Vortex reagents and samples. Spin down before use.
8 Prepare diluted Ladder solution by adding 10 µL RNase free water to the High Sensitivity RNA Ladder vial and mix thoroughly. Pipette 1 µL High Sensitivity RNA Sample Buffer (●) and 2 µL diluted High Sensitivity RNA Ladder (●) at position A1 in a tube strip.
9 For each sample, pipette 1 µL High Sensitivity RNA Sample Buffer (●) and 2 µL RNA sample in a tube strip or 96-well sample plate[1].
10 Apply caps to tube strips and/or foil seals to 96-well sample plates.
11 Mix liquids using the IKA MS3 vortexer at 2000 rpm for 1 min.
12 Spin down samples and ladder for 1 min.
13 Samples and ladder denaturation:
   a Heat samples and ladder at 72 °C (162 °F) for 3 min.
   b Place samples and ladder on ice for 2 min.
   c Spin down sample and ladder for 1 min.



Sample Analysis

1 Load samples into the TapeStation instrument. Place ladder in position A1 on tube strip holder.
2 Carefully remove caps of tube strips. Visually confirm that liquid is positioned at the bottom.
3 Click **Start**.
4 The TapeStation Analysis software opens automatically after the run and displays results.

Technical Support and Further Information

For technical support, please visit **www.agilent.com/chem/contactus**. Visit Agilent Technologies' web site. It offers useful information, support and current developments about the products and technology: **www.agilent.com/genomics/tapestation**.

[1] Agilent 4200 TapeStation system only

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