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**

<table>
<thead>
<tr>
<th>Analytical Specification</th>
<th>RNA ScreenTape assay and reagents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Score</td>
<td>RIN&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>Quantitative Range</td>
<td>25 – 500 ng/µL</td>
</tr>
<tr>
<td>Quantitative Precision (%CV)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>5 %</td>
</tr>
<tr>
<td>Quantitative Accuracy</td>
<td>20 %</td>
</tr>
<tr>
<td>Sizing Range</td>
<td>100 – 6000 nt</td>
</tr>
<tr>
<td>Sensitivity&lt;sup&gt;2&lt;/sup&gt;</td>
<td>5 ng/µL</td>
</tr>
<tr>
<td>RIN&lt;sup&gt;e&lt;/sup&gt; functional range</td>
<td>25 – 500 ng/µL</td>
</tr>
<tr>
<td>Analysis Type</td>
<td>Eukaryotic or Prokaryotic Total RNA QC</td>
</tr>
<tr>
<td>Maximum sample buffer strength</td>
<td>200 mM Tris, 20 mM EDTA, or 50 mM NaCl</td>
</tr>
</tbody>
</table>

**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

<sup>1</sup> Within a ScreenTape device  <sup>2</sup> 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)
Kit Components

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Name</th>
<th>Color</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>5067-5576</td>
<td>RNA ScreenTape</td>
<td></td>
<td>7 ScreenTape devices</td>
</tr>
<tr>
<td>5067-5577</td>
<td>RNA ScreenTape Sample buffer</td>
<td></td>
<td>1 vial</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>600 µL</td>
</tr>
<tr>
<td>5067-5578</td>
<td>RNA ScreenTape Ladder</td>
<td></td>
<td>1 vial</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 µL</td>
</tr>
</tbody>
</table>

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.
**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

<table>
<thead>
<tr>
<th>Parts required</th>
<th>p/n</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5067-5576</td>
<td>RNA ScreenTape</td>
</tr>
</tbody>
</table>

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)
Sample Preparation RNA ScreenTape Assay

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.

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