

Agilent D1K ScreenTape System Quick Guide

Principles

The Agilent 2200 TapeStation system is a tape-based platform for simpler, faster and more reliable electrophoresis. It is made up of three elements:

- 2200 TapeStation System (p/n G2964AA) or 2200 TapeStation Nucleic Acid System (p/n G2965AA)
- High Sensitivity D1K ScreenTape (p/n 5067-5363) with High Sensitivity D1K Reagents (Ladder and sample buffer) (p/n 5067-5364) or D1K ScreenTape (p/n 5067-5361) with D1K Reagents (Ladder and sample buffer) (p/n 5067-5362)
- Agilent 2200 TapeStation Software

Kits

The High Sensitivity D1K ScreenTape (p/n 5067-5363) and D1K ScreenTape (p/n 5067-5361) are designed for analysing DNA from 35 – 1000 bp.

Specifications

| Analytical Specification | High Sensitivity D1K ScreenTape | D1K ScreenTape |
|-------------------------------|---|---|
| Sizing Range | 35 – 1000 bp | 35 – 1000 bp |
| Resolution ¹ | 35 – 300 bp: 15 %, 300 – 1000 bp: 10 % | 35 – 300 bp: 15 %, 300 – 1000 bp: 10 % |
| Sensitivity ² | 5 pg/μL ³ | 0.05 ng/μL |
| Sizing Precision | 5 % CV | 5 % CV |
| Sizing Accuracy ⁴ | ±10 % | ±10 % |
| Quantitative Precision | 15 % CV | 10 % CV |
| Quantitative Accuracy | ±20 % | ±20 % |
| Quantitative Range | 75 – 1000 pg/μL | 0.1 – 50 ng/μL |
| Carry Over | N/A | N/A |
| Physical Specification | | |
| Analysis Time | 16 samples < 20 min, 96 samples < 100 min | 16 samples < 20 min, 96 samples < 100 min |
| Samples per consumable | 16 | 16 |
| Sample Volume Required | 2 μL | 1 μL |
| Shelf Life | 4 months | 4 months |
| Box/Kit size | 112 samples/box | 112 samples/box |

¹ Resolution is defined as the separation of fragments at half peak height or better

² signal:noise ratio > 3 for single peak

³ 2200 TapeStation Nucleic Acid System (G2965AA)

⁴ Determined using the D1K ladder as sample



Essential Measurement Practices

| | |
|---|--|
| Required tips and tubes for the TapeStation | <ul style="list-style-type: none"> Optical Cap 8x Strip, Box of 120, 0.2 mL (p/n 401425) and Optical Tube 8x Strip, Box of 120, 0.2 mL (p/n 401428) Loading tips, 1 x384 (p/n 5067-5153) |
|---|--|

| | |
|-------------------------------------|--|
| Steps before use on the TapeStation | <ul style="list-style-type: none"> Equilibrate each vial to room temperature. Vortex mix each vial and briefly spin. |
|-------------------------------------|--|

| | |
|---------------------------------|--|
| Steps during sample preparation | <ul style="list-style-type: none"> Keep reagents at room temperature during sample preparation. |
|---------------------------------|--|

| | |
|--------------------------------------|--|
| Storage after use on the TapeStation | <ul style="list-style-type: none"> Store all reagent vials and ScreenTape at 2 – 8 °C Never store reagents and ScreenTape at room temperature or below 0 °C. If you run less than 16 lanes, store used tape upright at 2 – 8 °C for maximum of 2 weeks. |
|--------------------------------------|--|

| | |
|-------------------|---|
| Pipette carefully | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Mix = Vortex the PCR tubes or 96 well plate on half-speed for 5 s. Spin = Move the samples to the bottom of the tubes/wells by pulsing in a centrifuge. |
|--|--|

Storage Conditions

- Reagents vials: 2 – 8 °C
- ScreenTape: 2 – 8 °C (if you run less than 16 lanes, store used tape upright at 2 – 8 °C for a maximum of 2 weeks, never freeze ScreenTape - any ScreenTape that is accidentally frozen should be discarded)

Products for analysing DNA

High Sensitivity ScreenTape D1K and Reagents

| | | | |
|-----------|--------------------------------------|---|--------------|
| 5067-5363 | High Sensitivity ScreenTape D1K | | 7 ScreenTape |
| 5067-5364 | High Sensitivity D1K Reagents | | 1 vial |
| | • High Sensitivity D1K Ladder |  | 75 µL |
| | • High Sensitivity D1K Sample Buffer |  | 360 µL |

ScreenTape D1K and Reagents

| | | | |
|-----------|---------------------|---|--------------|
| 5067-5361 | ScreenTape D1K | | 7 ScreenTape |
| 5067-5362 | D1K Reagents | | 1 vial |
| | • D1K Ladder |  | 75 µL |
| | • D1K Sample Buffer |  | 360 µL |

Additional Consumables required for the 2200 TapeStation

- Loading tips, 10 x384 (p/n 5067-5152) / Loading tips, 1 x384 (p/n 5067-5153)
- Optical Tube 8x Strip, Box of 120, 0.2 mL (p/n 401428) and Optical Cap 8x Strip, Box of 120, 0.2 mL (p/n 401425) or 96 -well Sample Plates, Pack of 10 plates (p/n 5067-5150) and 96 -well Plate Foil Seal, Pack of 100 foils (p/n 5067-5154)

Additional Material Required (Not Supplied)

- Volumetric pipette
- Vortex mixer
- Micro-centrifuge

Safety Information

WARNING

Toxic agents

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

- When using/handling the ScreenTape 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

- Use only the recommended tips, tubes and plates within the 2200 TapeStation instrument.

DNA Sample Preparation (High Sensitivity D1K)

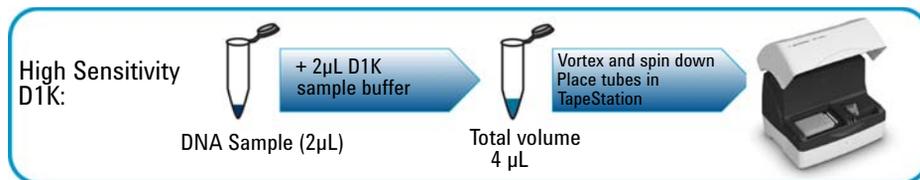
| Parts required | p/n | Description |
|----------------|-----------|--|
| | 5067-5363 | High Sensitivity D1K ScreenTape |
| | 5067-5364 | High Sensitivity D1K Reagents (Ladder and sample buffer) |

1 Prepare Ladder

- Aliquot a minimum of 3 μL High Sensitivity D1K Ladder (●) into the first tube/well.

2 Mix 2 μL sample buffer (●) with 2 μL DNA sample by vortex for 5 s.

3 Spin down to position the sample at the bottom of the tube.

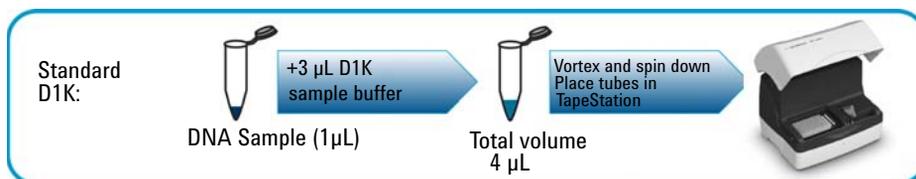


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DNA Sample Preparation (D1K)

| Parts required | p/n | Description |
|----------------|-----------|--|
| | 5067-5361 | D1K ScreenTape |
| | 5067-5362 | D1K Reagents (Ladder and loading buffer) |

- 1 Prepare Ladder
 - a Aliquot a minimum of 3 μL D1K Ladder (●) into the first tube/well.
- 2 Mix 3 μL sample buffer (●) with 1 μL DNA sample by vortex for 5 s.
- 3 Spin down to position the sample at the bottom of the tube.



Sample Analysis

- 1 Launch the Agilent 2200 TapeStation software.
- 2 Load the samples, ScreenTape D1K and loading tips into the 2200 TapeStation.
- 3 Select the required samples on the controller software.
- 4 Click **Start** and specify a filename with which to save your results.

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G2964-90030

Part Number: G2964-90030

Edition 10/11

Printed in Germany

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Agilent Technologies

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