Agilent P200 ScreenTape System Quick Guide

Principles

The Agilent 2200 TapeStation system is a tape-based platform for simpler, faster and more reliable electrophoresis. The system for analysing proteins comprises three elements:

- Agilent 2200 TapeStation System (G2964AA)
- P200 ScreenTape (5067-5171) and P200 Reagents (5067-5372)
- Agilent 2200 TapeStation Software

Kits

The Agilent P200 ScreenTape is designed for analysing proteins of 10 – 200 kDa and should only be used with the 2200 TapeStation System (G2964AA).

Specifications

Analytical Specification	**P200 ScreenTape**
Sizing range	10 – 200 kDa
Resolution[1]	15 %
Typical Sizing Accuracy	±10 % (CAII, Lysozyme, beta lactoglobulin)
Sizing Precision	3 % CV
Quantitative Range/precision	100 – 1000 ng/µL for IgG; 15 % CV
Qualitative Range	5 – 5000 ng/µL BSA, Lysozyme; 12.5 – 5000 ng/µL IgG
Sensitivity[2]	5 ng/µL Lysozyme; 12.5 ng/µL IgG
Physical Specification	
Sample volume needed	2 µL
Analysis Time	16 samples <15 min
Samples/consumable	16
Kit Size	112 Samples
Kit Stability	4 months

1 for ladder
2 signal :noise ratio > 3

Storage Conditions

- P200 reagent vials: -30 to -20 °C
- P200 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 P200 - any ScreenTape that is accidentally frozen should be discarded.

Agilent Technologies

Products for Analysing Protein

Part Number	Name	Color	Amount
5067-5371	P200 ScreenTape		7 ScreenTape
5067-5372	P200 Reagents		
	• P200 5X Labeling Dye		70 µL
	• P200 Labeling Buffer		350 µL
	• P200 Reducing Sample Buffer		550 µL
	• P200 pH Buffer	clear	1000 µL
	• P200 Non-Reducing Sample Buffer		550 µL
	• P200 Markers (pre-stained)		270 µL
	• P200 Ladder		40 µL

Additional Consumables required for the 2200 TapeStation instrument

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

Additional Material Required (Not Supplied)

- Volumetric pipette, Vortex mixer, Centrifuge, Heating block or PCR machine

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 instrument

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

NOTE

- 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.
- Please ensure samples and Sample Buffer are mixed correctly. To achieve this, gently mix several times with additional pipetting, then cap the tubes, vortex mix on maximum speed for 5 s, followed by briefly centrifuging to collect the contents at the base of the tubes. Please pay particular attention to the final mixing step after the addition of P200 Markers as this reagent has a high viscosity and density. As above, vortex mix on high speed for 5 s, followed by brief centrifugation.
- For best results ensure that all reagents are allowed to equilibrate to room temperature for 30 minutes prior to use.

Essential Measurement Practices

Environmental conditions	• Optimal operating temperature: 23 °C (73.4 °F). • Ambient operating temperature: 10 – 33 °C (50 – 91.4 °F)

NOTE

Sample buffers and ladder contain SDS
Ensure that these reagents are thoroughly equilibrated to avoid SDS precipitation. Storage of these reagents on ice after equilibration can cause SDS to precipitate.

Steps before use on the TapeStation	• Equilibrate each vial to room temperature. • Vortex mix each vial and briefly spin. • 'Flick' ScreenTape to ensure no bubbles are present on the top of the gel which could interfere with sample loading.
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 on maximum speed for 5 s. • 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. • 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.

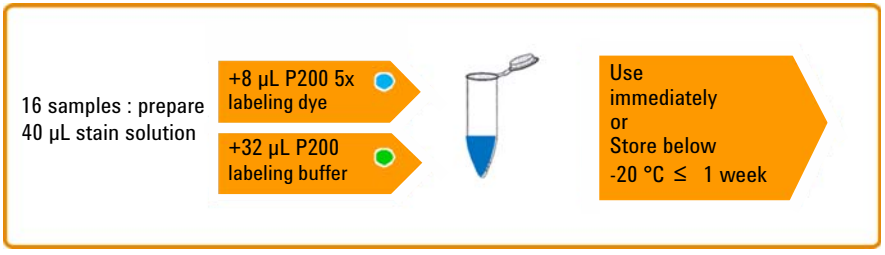
Protein Sample Analysis

Parts required	p/n	Description
	5067-5371	P200 ScreenTape
	5067-5372	P200 Reagents

1 Launch the Agilent 2200 TapeStation software.
2 Load P200 ScreenTape and loading tips into the 2200 TapeStation.

Protein Sample Preparation

1 Prepare the P200 stain solution.
   a Dilute P200 5X Labeling Dye (●) at a ratio of 1 :5 with P200 Labeling Buffer (●)



2 Stain protein sample or ladder.

NOTE The P200 ladder ( ) should be processed through the P200 sample preparation procedure in the same manner as your samples.
In **Ladder** mode, selected in the ladder options in the controller software, P200 ladder is automatically selected as the first sample in the TapeStation controller.
The user can also select to run no ladder, and then to insert a software saved ladder in the 2200 TapeStation Analysis software.

- **a** Place 2 µL of P200 stain solution (prepared above)into a PCR tube strip or 96 well plate.
- **b** Pipette 2 µL of the protein sample or ladder into the tube, mix and attach the lids or foil cover to prevent evaporation.
- **c** Heat for 7 min at 75 °C.
- **d** After heating, remove condensation from the lids (or foil cover) of the tubes by centrifugation.

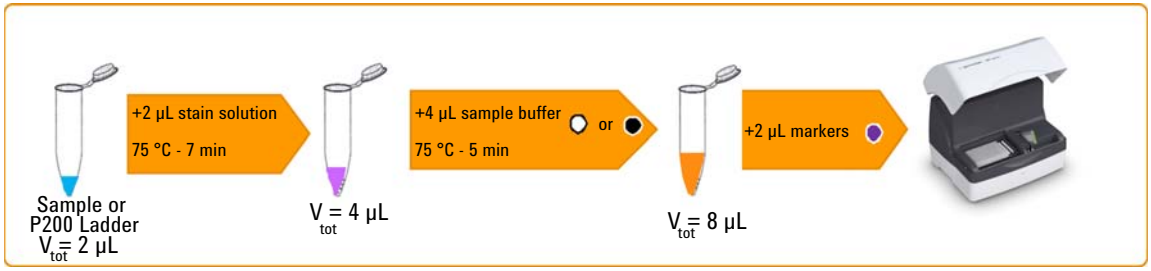
NOTE P200 pH buffer (clear) is supplied to allow the user to dilute samples to alleviate issues with staining efficiency caused by low pH. The use of P200 pH Buffer resolves these issues in most circumstances. For further information on buffer compatibility, contact your Agilent Technologies representative.

3 Denaturate sample.

- **a** Choose which sample buffer is required: P200 Reducing Sample Buffer ( ) or P200 Non-reducing Sample Buffer ( ).
- **b** Add 4 µL of the relevant P200 sample buffer to the stained sample and replace the lids or foil cover.
- **c** Mix and heat at 75 °C for 5 min.
- **d** Remove condensation from the lids (or foil cover) of the tubes by centrifugation.

4 Add 2 µL of P200 Marker ( ) to each sample and to the P200 ladder.

5 Mix the solution well, and centrifuge to ensure that the sample is at the bottom of the tube, ready for analysis on the TapeStation.



Sample Analysis

1 Load samples into the 2200 TapeStation.

2 Select the required samples on the controller software.

3 Click **Start** and specify a filename with which to save your results.

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

G2964-90011

Part Number: G2964-90011
Edition 08/2012
Printed in Germany

Agilent Technologies
Hewlett-Packard-Straße 8
76337 Waldbronn, Germany