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 (p/n G2964AA)
- P200 ScreenTape (p/n 5067-5371) and P200 Reagents (p/n 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 (p/n G2964AA).

Specifications

Analytical Specifications	**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 Specifications	
Sample volume needed	2 µL
Analysis Time	<15 min
Number of samples/kit	16
Kit Size	112 Samples
Kit Stability	4 months

1 for ladder
2 signal :noise ratio > 3

Essential Measurement Practices

Required tips and tubes for the TapeStation	• 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) or Loading tips, 10 x384 (p/n 5067-5152)

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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	• Ensure vials are thawed and well mixed prior to use. • Spin each vial at 500 rpm to remove any material from the lids.
Storage after use on the TapeStation	• Store all P200 reagent vials between -30 to -20 °C. • DO NOT store P200 Sample Kit reagents at room temperature.

Before use on the TapeStation	• Flick ScreenTape P200 before use - to ensure that any small bubbles are at the top of the buffer chamber. • Keep ScreenTape clean: dust and fingerprints can affect imaging.

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 half-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.

Storage Conditions

- P200 reagent vials: -30 to -20 °C
- ScreenTape P200: 2 – 8 °C (if you run less than 16 lanes, store used tape upright at 2 – 8 °C)
  DO NOT freeze ScreenTape P200 - any ScreenTape that is accidentally frozen should be discarded.

Products for Analysing Protein

ScreenTape P200 and Reagents			
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

- 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
- Centrifuge
- Heat 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

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

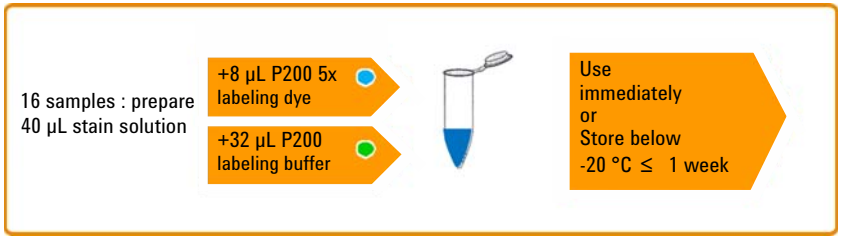
Protein Sample Preparation

The protein sample preparation is made up of the following steps:

- Preparation of the P200 stain solution.
- Protein sample or ladder staining.
- Sample denaturation.
- Addition of the P200 markers.

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 **Run a 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).
b Pipette 2 µL of the protein sample or ladder into the tube and mix.
c Heat for 7 min at 75 °C.
d After heating, remove condensation from the lids of the tubes by centrifugation.

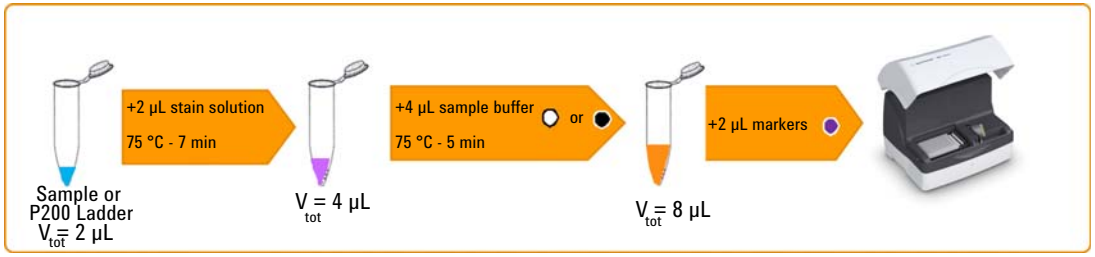
NOTE

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.
c Mix and heat at 75 °C for 5 min.
d Remove condensation from the lids 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 Launch the Agilent 2200 TapeStation software.
2 Load the samples, ScreenTape P200 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.

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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