



Technical Data

Evaluation of the maximal loading capacity¹ of FastGene® PAGE Gels

※1: Maximum amount of solution that can be loaded per well

Product

FastGene® PAGE Gel (Cat.No. PG-S420)

Purpose

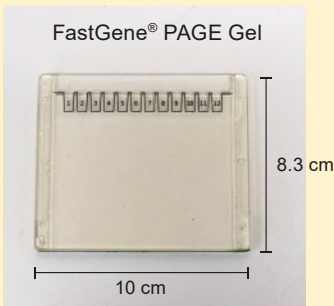
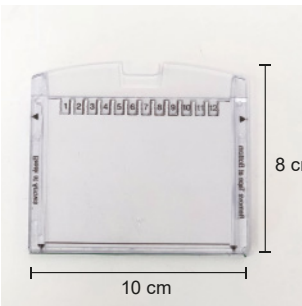
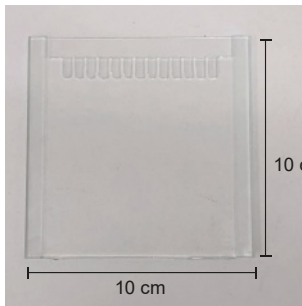
- ① Verify the maximum loading amount for competitors and the FastGene® PAGE Gels.
- ② Migration analysis with other than recommended buffer (MOPS Buffer vs. Tris-Glycine)

Evaluation method

- ① Wells were loaded with sample buffer to the maximum loading amount.
- ② Check the difference in migration between the recommended buffer (MOPS Buffer) and Tris-Glycine.

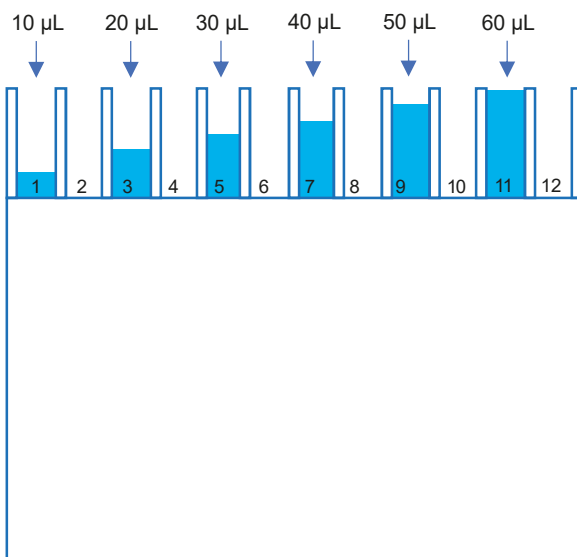
Overview

Comparison with competitor products

Manufacturer	FastGene®	Company B	Company C
Gel			
Gel cassette size	8.3 cm × 10 cm	8 cm × 10 cm	10 cm × 10 cm
Gel thickness	4.62 mm	4.62 mm	3.20 mm
Comb thickness	1.44 mm	1.05 mm	0.83 mm
Voltage · Current	140 V (200 V possible)	200 V	15 mM (200 V)
Recommended Buffer	MOPS Buffer	Tris-Glycine Buffer	Tris-Glycine Buffer
Time	55 min	30 min	60 min

All migration conditions are manufacturer recommended conditions.

Experiment ① – Confirmation of maximum input amount

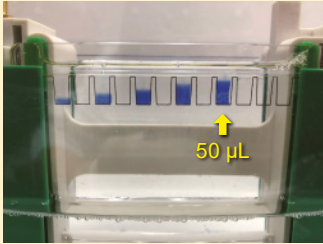
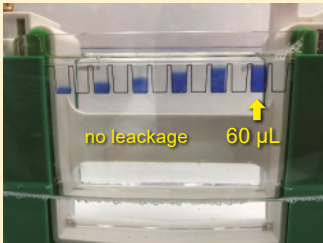
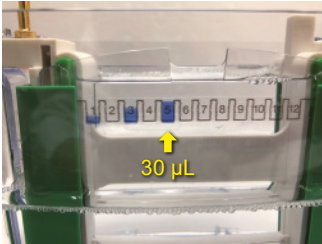
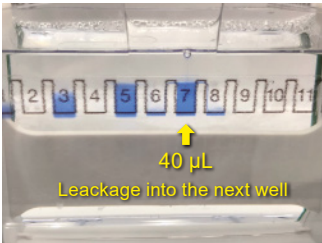
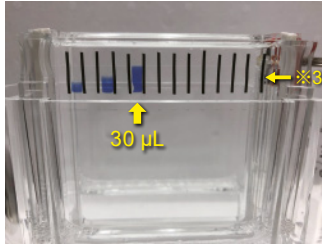
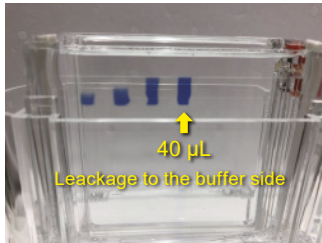


Sample solution: Laemmli sample buffer (BioRad) (#1610737)

Wells were filled, as shown on the left, until they overflow. The largest amount, that did not overflow, was taken as the largest volume.

Manufacturer	FastGene®	Company B	Company C
number of wells	12	12	13
maximum input amount ²	60 µL	20 µL	25 µL

※2: Amount stated in the manual

Manufacturer (Gel thickness)	FastGene® (4.62 mm)	Company B (4.62 mm)	Company C (3.20 mm)
Maximum amount	60 µL	20 µL	25 µL
Inspection result	 	 	 
Actual maximal amount	up to 60 µL	up to 30 µL	up to 30 µL

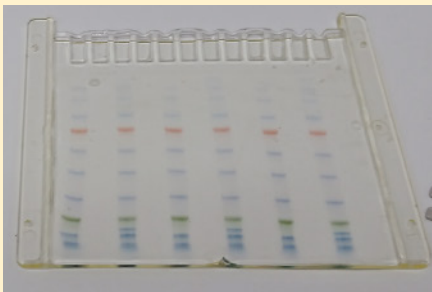
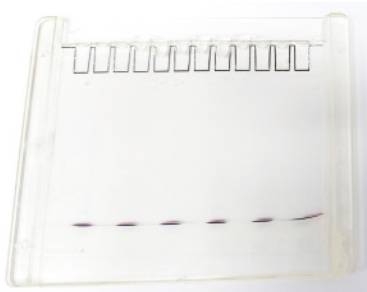
※3: On the gel of company C, an artificial line was drawn to make it easy to see the wells. There is no black line on the actual product.

As mentioned in the manual, the wells of this product can contain up to 60 µL.

Experiment ② — Difference in migration between recommended buffer and Tris-Glycine Buffer

Recommended MOPS Buffer and non-recommended Tris-Glycine buffer was used (separately) with FastGene® PAGE Gel (PG-S420) and loaded with Prestained Marker (Blue Star PLUS) (MWP04).

The difference between recommended buffer and non-recommended Tris-Glycine was examined. 5 µL marker per well was loaded.

Buffer	Recommended Buffer MOPS Buffer	Non-recommended Tris-Glycine Buffer
FastGene® PAGE Gel	 150 V, 50 min	 150 V, 50 min + 300 V, 50 min
Result	<p>The marker was migrated by electrophoresis. All bands could be confirmed.</p>	<p>Electrophoresis was performed at 150 V, 50 min, but no bands were detected. Because of this, additional electrophoresis was performed, but again no bands were visible.</p>

In MOPS buffer, migration was performed at 150 V and 50 min, but in non-recommended Tris-Glycine buffer no bands could be detected.

Summary

- FastGene® PAGE Gel was able to be loaded with 60 µL.
- FastGene® gel is not working with Tris-Glycine Buffer. Always use MOPS Buffer.