
Product Specification

Product Name: VE580 Mini Vertical Protein Cell

Product Code: VE580

PRODUCT DESCRIPTION:

The VE580 Mini Vertical Protein Cell is a versatile electrophoresis system designed for high-resolution vertical separation of proteins and nucleic acids. The system accommodates 1-4 hand cast or precast gels (10 × 10 cm or 8.6 × 8 cm) and features an innovative butterfly-shaped bottom tank with partitioned protrusions for independent dual-electrode control. V-shaped micro-apertures ensure uniform electric field distribution across gels, while multiple comb options (10/15/17-well, up to 60µL sample volume) provide loading flexibility. Compatible with high-voltage operation (200-250V constant voltage) for optimal band resolution and separation efficiency.

| Item | Specification |
|---|------------------------------|
| Number of Gels: | 1 - 4 |
| Compatible Gel Types: | Precast / Handcast |
| Gel Size (W x L): | 8.6 x 8 cm |
| Glass Plate Size (W x L): | 10 x 10 cm |
| External Dimensions (W x L x H): | 245 x 185 x 170 mm |
| Recommended Power Supply: | EPS-1500 |
| Compatible Transfer Module: | VE-586PRO Mini Transfer Cell |

FEATURES

- **Capacity:** Supports 1 to 4 hand-casted or pre-cast gels (10 x 10 cm glass plates; 8.6 x 8 cm gel area).
- **Durability:** Features innovative, wear-resistant, and scratch-resistant glass plates.
- **High Performance:** Supports high-voltage electrophoresis (constant voltage of 200 to 250V) without band distortion.
- **Design:** Newly designed "butterfly" tank base with visual markers for easy partition alignment.
- **Control:** Equipped with two sets of independently controlled power circuits.
- **Uniformity:** Micro "V" side-opening design ensures uniform current distribution.
- **Versatility:** Includes three comb specifications: 10, 15, and 17 wells.

APPLICATIONS

Vertical electrophoresis for the separation and analysis of small nucleic acid and protein samples.

OPERATION GUIDE

1.1 Non-Denaturing Electrophoresis

- 1) The protein mobility of native electrophoresis is affected by various factors such as protein molecular weight and protein spatial structure.
- 2) **Prepare sample:** Mix 5× protein sample loading buffer for native PAGE, without DTT (5×) (Cat. #: BPSB00301) or with DTT (Cat. #: BPSB00302) with sample in 1:4 ratio (volume).
- 3) **Prepare running buffer for native gel electrophoresis:** MOPS or MES Running Buffer for Native-PAGE (Cat. #: SGA0041 or SGA0051). Running buffer must be diluted to 1X final concentration before use.
- 4) Assemble the gels (hand-cast/precast) into the electrophoresis tank, add the running buffer, and then gently pull the comb out of the cassette.

- 5) Rinse the wells several times with 1X running buffer to remove storage buffer (if any) before the loading of samples. Load the appropriate volume of your samples and ladder into the respective wells.

Note: Avoid inserting the pipette tip too deep into the sample wells to prevent sample leakage caused by deformation of the plastic plates.

- 6) **Start the gel electrophoresis:** The electrophoresis conditions are usually 150V, 40~50 min.

Note: At fixed 150V, the initial current will be approximately 70mA per gel but will gradually decrease over time. Run gel at 100 - 120V if better resolution bands are preferred. (Please adjust voltage and duration according to your experiment setup).

- 7) Upon completion of the electrophoresis, retrieve the gel from the gel cassette. Open the gel plates using the gel opener from top to middle then bottom on one side. Repeat the process on the other side of the plates to separate the plates.

- 8) Gently remove the gel from the plate to prevent gel cracking.

Note: If the isoelectric point of the protein samples is greater than 7, you will need to reverse the electrodes for native electrophoresis.

1.2 Denaturing Electrophoresis

- 1) **Prepare sample:** Mix 5× protein sample loading buffer for SDS-PAGE, without DTT (5×) (Cat. #: BPSB00201) or with DTT (Cat. #: BPSB00202) with sample in 1:4 ratio (volume) and then heat the samples at 95°C for 5-10mins.
- 2) **Prepare running buffer for SDS-PAGE:** MOPS or MES Running Buffer for SDS-PAGE (Cat. #: SGA0040 or SGA0050). Running buffer must be diluted to 1X final concentration before use.
- 3) Assemble the gels (hand-cast/precast) into the electrophoresis tank, add the running buffer, and then gently pull the comb out of the cassette.
- 4) Rinse the wells several times with 1X running buffer to remove storage buffer (if any) before the loading of samples. Load the appropriate volume of your samples and ladder into the respective wells.

Note: Avoid inserting the pipette tip too deep into the sample wells to prevent sample leakage caused by deformation of the plastic plates.

- 5) **Start the gel electrophoresis:** The electrophoresis conditions are usually 150V, 40~50 min.

Note: At fixed 150V, the initial current will be approximately 70mA per gel but will gradually decrease over time. Run gel at 100 - 120V if better resolution bands are preferred. (Please optimize the voltage and duration according to your experiment setup).

- 6) Upon completion of the electrophoresis, retrieve the gel from the gel cassette. Open the gel plates using the gel opener from top to middle then bottom on one side. Repeat the process on the other side of the plates to separate the plates.
- 7) Gently remove the gel from the plate to prevent gel cracking.

Note: If the isoelectric point of the protein samples is greater than 7, you will need to reverse the electrodes for native electrophoresis.