INSTRUCTION MANUAL

Vertical Gel Systems-Dual

CAT NO: EPS-V0011 & EPS-V0012

EPS BIOSOLUTIONS

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INSTRUCTION MANUAL

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IMPORTANT USER INFORMATION

This Instruction Manual will explain how to use this product safely and effectively. Please read and carefully follow the instruction manual in its entirety.

The triangle/lighting bolt symbol alerts the user of the product to potentially hazardous electrical exposure.

Always turn off the DC power source prior to disconnecting power cords from the product.

Disconnect power cords from the power source first and then from the product.

For maximum safety, always operate this system in an isolated, low traffic area, not accessible to unauthorized personnel. Never operate damaged or leaking equipment

Section 1 General Information

1.1 Introduction

Gel electrophoresis is a method that separates macromolecules either Nucleic acids or proteins on basis of size, electric charge and other physical properties. The term electrophoresis describes the migration of charged particle under the influence of an electric field. *Electro* refers to the energy of electricity. *Phoresis* from the Greek verb *phoros* means,"to carry across". Thus the electrophoresis refers to the technique in which molecules are forced across a span of gel, motivated by electric current.

Vertical slab dual gel electrophoresis is same as the vertical slab gel electrophoresis except the only difference is that the former have 2 electrophoresis set up in a single unit.With this you can run two sets of gel at a time, thereby can able to save the work time.

The Vertical slab dual gel electrophoresis has a common upper buffer reservoir tanks and lower buffer reservoir tank on either side. The two sets of glass plates share the same upper tank and are kept on either side of the upper tank facing each other and resting on their individual separate bottom tanks. In this set up the electrodes run in common to both of the tanks.

1.2 Standard supply

- Main unit (electrophoresis chamber) and lid with Platinum electrode.
- Gel casting stand
- Supporting rod
- Polished teflon comb 1mm & 1.5mm thickness with attached spacers
- Clips
- Cooling Chamber
- Glass plates
- Screws
- Power cord.

1.3 Specifications

Constructions:

Buffer chamber, safety cover	Acrylic
Electrodes	Platinum wire 0.2mm diameter.
Combs	Teflon
Glass plates	Soda-lime float glass
Power cords	7500VDC,500mA, 65°C
Screws	Nylon

Section 2 Instructions for Use

2.1 Preparation of Gel

Step:1 The glass plates and spacers are prepared for pouring the gel. The Teflon spacers are arranged parallel to 3 edges of larger plate with a couple of minute dabs of petroleum jelly at each side to keep the spacer bars in position.

Note: The thickness of the spacers and comb should be equal for casting the gel

Step:2 The notched plate is laid in position resting on the spacer bar. The entire length of 2 sides and bottom of the plates is made water tight to prevent leakage.

Step:3 Place the glass plates in the gel casting unit such that the notched plate has to be placed outward facing towards you and clipped on two sides by the clips provided and tighten the whole assembly with the screws provided (screwed downward).

Step:4 The separating gel is prepared to desired concentration and poured on to the glass plate to one half and allowed to polymerize followed by stacking gel. Once the stacking gel is added, the comb is placed on the top and allowed to polymerize at room temperature.

2.2 Loading of Samples

After polymerization, the comb and the spacer from the bottom of the gel is removed carefully without riping the gel. The wells should be rinsed with water to remove any pieces of gel .Then the glass plate with the gel is attached to the vertical electrophoresis tank using clips and clamps by the following steps,

Step:1 Since it is the dual type of vertical page elpho apparatus, remove the two number of glass plate sets with the gel from the gel casting stand after polymerization.

Step:2 Before fixing these assembly to the main unit,separate the upper chamber from the lower chamber tank.

Step:3 Assemble the two sets of glass plates on either side of the upper tank with the holes provided on it by using supporting rods with screws(screw downward) such that the notched plate has to be placed inward facing towards the buffer reservoir, which is filled with running gel buffer.

Step:4 Now the upper chamber is ready for loading the samples. So it has to place over the lower chamber.

Step:5 Samples containing proteins mixed with loading buffer are then loaded in to the wells on the gel using Micropipettes suitable for pipetting out very small volumes. Molecular weight marker is also loaded in the wells allotted for marker.

2.3 Running the Gel

Once the gel has been prepared and loaded , the electrical leads on the gel tank are connected to the power supply and current is applied (100-150V). Current flow can be confirmed by observing bubbles from the electrodes. The protein will migrate towards the anode which is colored red.The distance, protein has migrated in the gel can be judged by visually monitoring migration of the dye.

2.4 Visualisation

When adequate migration has occurred, the protein bands can be visualized by staining with CBB or silver salts. In CBB staining, the bands are first stained with stainer followed by destainer.

2.5 Safety note

Be sure to examine the power supply and be able to identify the on/off switch, voltage selection dial, and the location for the leads. The power supply must be OFF every time anyone needs to touch or open a gel tank. Since any wet surface can become conductive, it is advisable NOT to touch any part of the apparatus (gel tank, wires) while the power supply is on. This is especially important if the outside of the box is wet or if your hands are wet.

SECTION 3 Maintenance of Equipment

3.1 Care and Handling

The plastic components of the Vertical Dual units are fabricated from acrylic. Electrodes and connectors are made from pure platinum, stainless steel. As with any laboratory instrument, adequate care ensures consistent and reliable performance.

After each use, rinse buffer chamber, gel tray and combs with de-ionized water. Wipe dry with a soft cloth or paper towel, or allow to air dry. Whenever necessary, all components may be washed gently with water and a non-abrasive detergent, and rinsed and dried as above.
Never use abrasive cleaners, glass cleaning sprays or scouring pads to clean the components, as these will damage the unit and components.

Additional precautions:

- Do not autoclave or dry-heat sterilize the apparatus or components.
- Do not expose the apparatus or components to phenol, acetone, benzene, halogenated
- hydrocarbon solvents or alcohols.
- Avoid prolonged exposure of the apparatus or components to UV light.

3.2 Maintenance

The following inspection and maintenance procedures will help maintain the safety and reliable performance of the vertical dual systems. Replacement parts can be ordered by calling 044-24363199 or by contacting your local distributor.

- Banana plugs and power cords should be inspected regularly. If the banana plugs become loose or do not feel friction tight replace the plugs or power cords.

- Should power cord assemblies (connectors, wire or shrouds) show any signs of wear or damage (e.g. cracks, nicks, abrasions, or melted insulation), replace them immediately.

- The platinum wire is secured to the banana jack by compression between a stainless washer and the jack nut. The nut/washer interface should be tight and free of corrosion.

CONGGTACT INFORMATION

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	ONLINE ORDERING: www.epsbiosolutions.com
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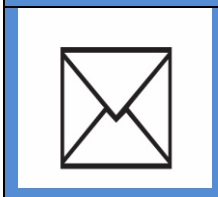
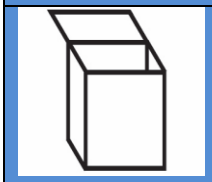
	MAILING ADDRESS: EPS BIOSOLUTIONS 42/54,V th Street Kamaraj Nagar,Ennore,Chennai-600057
	SHIPPING ADDRESS: EPS BIOSOLUTIONS 47/20,II nd Floor,K.B Dasan Road,Teynampet,Chennai-600018