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SOP: Fisher Scientific Vertical MiniGel System

Approvals:

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Reviewer:	Cianna Cooper	**Date:**	13Jun18

1. **Purpose:**
   1.1. Assembly and disassembly of the Fisher Scientific Vertical MiniGel System.
2. **Scope:**
   2.1. Applies to the assembly and disassembly of the gel box for use in SDS PAGE.
3. **Responsibilities:**
   3.1. It is the responsibility of the course instructor /lab assistant to ensure that this SOP is performed as directed and to update the procedure when necessary.
   3.2. It is the responsibility of the students/technicians to follow the SOP as described and to inform the instructor about any deviations or problems that may occur while performing the procedure.
4. **References:**
   4.1. Fisher Scientific Vertical MiniGel System Instruction Manual.
5. **Definitions:** N/A
6. **Precautions:**
   6.1. Maximum voltage limit: 330 Volts
   6.2. Maximum power limit: 35mAmps
   6.3. Acrylamide is a neurotoxin. Always wear protective gloves when handling the polyacrylamide gels.
7. **Materials:**
   7.1. Pre-cast gel cassette
   7.2. deionized water
   7.3. running buffer
   7.4. external power supply
   7.5. Fisher Scientific Vertical MiniGel System
   7.6. Gel knife
   7.7. precast polyacrylamide gels
8. **Procedure:**
   8.1. **Assembly of the Fisher Scientific Vertical MiniGel System**
      8.1.1. Remove the lid from the unit by pushing upwards on the tabs and pulling the lid upwards (if necessary).
      8.1.2. Prepare the precast gel according to the manufacturer's instructions. Wash thoroughly with deionized water.
      8.1.3. Inserting gels into the unit:
         8.1.3.1. **For 2 – 10x10cm precast gels**
            8.1.3.1.1. Gently lower the gel into the slot with the bottom of the gel resting on the white foot of the bottom of the upper buffer chamber

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assembly. Choose the appropriate wedge. Place the wedges in the upper buffer chamber slot. Wedges should be placed with the sloped side facing away from the gel. The gels should be closest to the gasket and the wedges should be closest to the wall of the buffer tank.

8.1.3.2. **For single gel operation**

8.1.3.2.1. Follow step 8.1.3.1.1, replacing one of the gels with a blocking plate.

8.1.3.3. **For 2 8x10cm precast gels**

8.1.3.3.1. Slide the adapter plate inside the system with the round rubber feet facing toward the center of the system.

8.1.3.3.2. Make sure that the end with the round rubber feet is located at the bottom of the system

8.1.3.3.3. Slide the gel cassette in front of the adapter plate, between the adapter plate and center of the unit, with the gel cassette resting on the round rubber feet and the notched side if the gel cassette facing in. The adapter plate should be closest to the outside of the system and the gel cassette should be closest to the inside of the system.

8.1.3.3.4. Place the appropriate size wedge behind the adapter plate to form a seal along the gasket and gel cassette.

8.1.3.3.5. Repeat steps 8.1.3.3.1 to 8.1.3.3.4 for a second gel.

8.1.3.4. **For NOVEX gels**

8.1.3.4.1. Gently lower the gel into the slot so that the bottom of the gel rests on the white foot at the bottom of the upper buffer chamber assembly.

8.1.3.4.2. Choose the thinner wedges meant for thicker precast and hand-cast gel operation. Place the wedges into the upper buffer chamber. Wedges should be positioned with the sloped side facing away from the gel. The gels should be closest to the gasket and the wedges should be closest to the wall of the buffer tank.

8.1.3.5. Push downward on the wedges until they are firmly in place. There is no need to force the wedge down. This could cause the gel plates to crack.

8.1.3.6. Add running buffer to the upper buffer chamber. Check for buffer leakage from the upper buffer chamber.

8.1.3.7. Load samples onto the gel per the SDS-PAGE SOP.

8.1.3.8. Add running buffer to the lower buffer chamber. Do not fill above the fill line.

8.1.3.9. Place the lid onto the unit attaching the power supply leads to the appropriate colored banana plug.

8.1.3.10. Plug the power supply leads into an appropriate power supply.

8.1.3.11. Run the gel according the SDS-PAGE SOP

8.2. **Disassembly of the Fisher Scientific Vertical MiniGel System**

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8.2.1. Upon completion of the run, turn off the power and disconnect the electrode cords from the power supply.
8.2.2. Remove the lid.
8.2.3. Pull the wedges upward, remove and pull the gel cassette up and out of the slot.
8.2.4. Handle gel cassette by the edges.
8.2.5. Lay the gel cassette on top of a lab towel, with the shorter plate on top. Allow one side to hang approximately 1 cm over the side of the bench top.
8.2.6. Insert the gel knife between the two plates. See **Figure 3**. (HINT: It may be easier to start with the corner.)
8.2.7. Twist the handle to separate the plates. You will hear a cracking sound which means you have broken the bonds which hold the plates together.
8.2.7.1. Do not push the knife forcefully between the cassette plates or the gel may be cut into and damaged.
8.2.8. Rotate the cassette and repeat steps 8.2.6. and 8.2.7. until the two plates are completely separated.
8.2.9. Using hands only and being very careful not to rip the gel, gently remove and discard the top plate, allow the gel to remain on the bottom plate.
8.2.10. Holding the cassette plate over a container with the gel facing downwards gently push the gel knife into the slot at the bottom of the cassette, until the gel peels away from the plate.
8.2.11. If the gel is not easily removed, rinse with D.I. water from a squirt bottle inserted gently between the plate and the gel.
8.2.12. Cut the lip off the bottom of the gel (if necessary).
8.2.13. Discard running buffer and rinse gel box well with deionized water. Do not use brushes. Do not immerse top of gel box or electrical components.

8.3. **Stain the gel**

8.3.1. Stain the gel per the SDS-PAGE SOP.

9. Attachments:

9.1. **Figure 1:** Diagram of Opening gel cassette.

10. History:

Name	Date	Amendment
Lara Dowland	19Jan10	Initial Release

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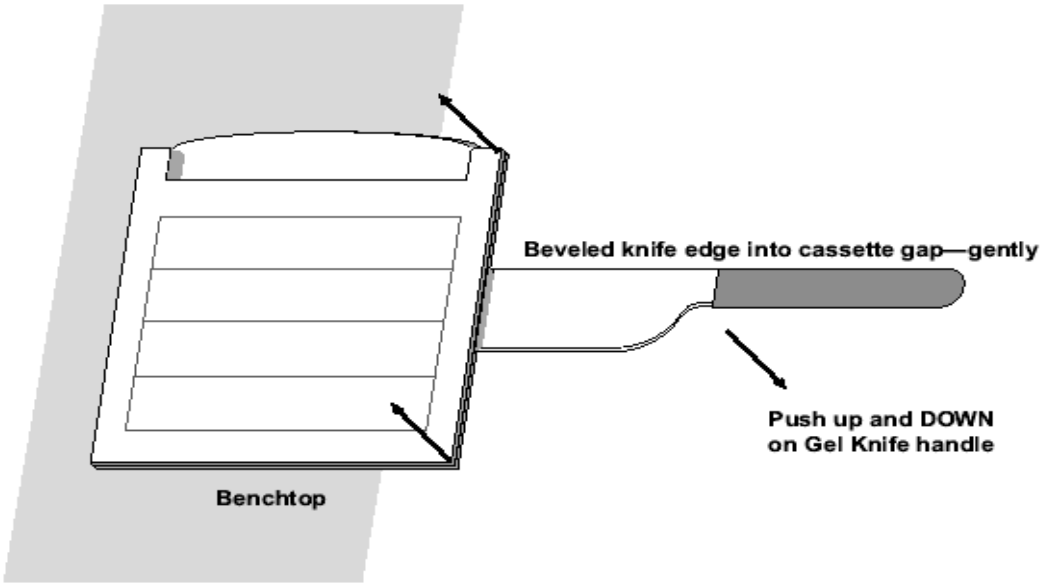

Figure 1: Opening a Gel Cassette